June 11, 2021

Mr. Todd Hall
Illinois Environmental Protection Agency
Bureau of Land - Remedial Project Management Section
1021 North Grand Avenue East
P.O. Box 19276
Springfield, Illinois 62794-9276

Re: *Remedial Action Completion Report*
308 North Fifth Street Site
Champaign Former Manufactured Gas Plant
LPC # 0190100008 – Champaign County

Dear Mr. Hall:

On behalf of Ameren, Environmental Resources Management (ERM) has prepared a *Remedial Action Completion Report* (RACR), dated June, 2021, for the 308 North Fifth Street Site at the former manufactured gas plant (FMGP) site in Champaign, Illinois. This RACR has been prepared to address existing data gaps present at the Champaign FMGP and is provided as an Attachment to this letter.

Ameren appreciates your assistance and cooperation as we proceed with this project. If you have any questions regarding the responses provided, or need additional information, please feel free to contact me.

Respectfully,

Brian Holderness, PMP
Environmental Specialist / Project Manager
Ameren - Environmental Strategy and Analysis
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Attachment

Attachment

Remedial Action Completion Report, dated June, 2021



Ameren Services

Remedial Action Completion Report

Former Manufactured Gas Plant
308 North Fifth Street
Champaign, Illinois

June 2021

Project No.: 0529307

The business of sustainability

ERM

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Acronyms and Abbreviations

AAMP	Ambient Air Monitoring Plan
AMS	air monitoring station
BCT	building control technology
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene and xylene
cfm	cubic feet per minute
COC	constituent of concern
CSIR	Comprehensive Site Investigation Report
ELUC	Environmental Land Use Control
GW	groundwater
HAA	Highway Authority Agreement
IAWC	Illinois American Water Company
IEPA	Illinois Environmental Protection Agency
ISCO	in-situ chemical oxidation
MGP	manufactured gas plant
NAVD	North American Vertical Datum
NFR	No Further Remediation
PNA	polynuclear aromatic hydrocarbon
RACR	Remedial Action Completion Report
RCRA	Resource Conservation and Recovery Act
RO	Remedial Objective, IEPA
ROR	Remedial Objectives Report
RBCA	Risk-Based Corrective Action
SIR	Site Investigation Report
SRP	Site Remediation Program, IEPA
SSL	Soil Screening Level, EPA
SVOC	semi-volatile organic compound
TACO	Tiered Approach to Corrective Action Objectives, IEPA
TPH	total petroleum hydrocarbons
UMW	underground monitoring well
USEPA	U.S. Environmental Protection Agency
VOC	volatile organic compound

Executive Summary

On behalf of Ameren Services (Ameren), Environmental Resources Management, Inc. (ERM) has prepared this Remedial Action Completion Report (RACR) for the Remediation Area associated with the Ameren-owned property located at 308 North Fifth Street in Champaign, Illinois (the "Site" or "property"). A former manufactured gas plant (MGP) facility previously existed on the Site, which is located in the northeast corner of North Fifth Street and East Hill Street in Champaign. The Site is currently owned by Ameren Illinois (Ameren), and is enrolled in the Illinois Environmental Protection Agency's (IEPA) Site Remediation Program (SRP) under State ID 0190100008. The Site consists of the property on Block 29 and Block 31 of the Seminary Addition of Urbana, now part of Champaign. The Site is currently an undeveloped lot bounded by a chain-link fence. No structures or buildings are located on the Site. Remediation activities related to the Site included two off-site areas, resulting in an expanded area of investigation and remediation ("Remediation Area"), as shown in Figure ES-1, to address Site remediation objectives. These two areas have also been investigated, characterized, and remediated. This report presents the completion of remediation activities associated with the entirety of the Remediation Area.

Site investigation activities were initiated at the Site in 1990. Additional site investigation activities continued and were completed in 2008. MGP-related impacts to soil and groundwater were identified during these collective Site investigation activities. Further investigation and remedial actions were then conducted at the Site and in the larger remediation area. These activities consisted of soil excavation and disposal performed between 2009 and 2011; in-situ chemical oxidation applications in 2013; and residual soil excavation and disposal in 2016 and 2017.

Excavation activities resulted in removal of soil impact in accessible areas across the Remediation Area to depths of approximately 3 feet to 28 feet below ground surface (bgs). The impacted soil was removed to the extent possible, both vertically and horizontally. The remediation extended laterally to the limiting features that included the Norfolk-Southern Railroad Property to the north; a parking lot for the Heart of Mary Medical Center to the east; East Hill Street to the south; and North Fifth Street to the west. Remediation confirmation samples were collected at the extents of the remedial action areas. In-situ chemical oxidation (ISCO) applications were also performed at the boundary of the Site along the north and northwest perimeter, at a localized area along the south perimeter of the Site, and at an additional localized area in the north-central portion of the Site. The ISCO applications followed by confirmation sampling.

Based on the soil confirmation sample results, MGP-related impacts (specifically benzene and naphthalene) remained in localized soil at depths greater than three feet in the northwest corner of the Site, and at depths greater than 20 feet over the northern two-thirds of the Site.

Quarterly groundwater sampling has been performed at the Site since 1997, and continues to the present. The quarterly groundwater monitoring performed since remedial actions were completed indicates only minimal impact remaining in groundwater on the southwest corner of the Site. Groundwater impacts are also present in one location of the larger remediation area, on the Sixth Street Right-of-Way (ROW) area adjacent to the east side of the property, and at a residential property adjacent to the south of the Site. An additional area adjacent to the west of the Site, known as the "Fifth Street ROW" is currently being investigated, and is discussed in this report where relevant to Site conditions, but is not included as part of the "Site", "Property", or "Remediation Area" for this report.

The remaining soil and groundwater impact at the Site can be addressed through risk-based approaches. Groundwater impact can be addressed through the use of institutional controls, such as Environmental Land Use Controls (ELUCs) and Highway Authority Agreements (HAA), as appropriate. Soil impact can be addressed through the use of on-site institutional controls and engineered barriers.

Based upon the remediation work performed to date, the use of engineered barriers and the planned implementation of institutional controls, Ameren has met the requirements for a Focused No Further Remediation (NFR) letter for the property located at 308 North Fifth Street, Champaign, IL.

1. Introduction

On behalf of Ameren Services (Ameren), this Remedial Action Completion Report (RACR) has been prepared by Environmental Resources Management, Inc. (ERM) for the property located at 308 North Fifth Street in Champaign, Illinois (the "Site" or "property") as shown in Figure 1-1. The investigation and remedial activities completed at this property (the Site) were part of the overall activities conducted at a larger "Remediation Area" to address the release of constituents related to the former manufactured gas plant (MGP) operations located on the Site. This RACR is a compilation and summary of work performed by others for Ameren over the past two decades, some of which has been provided to the Illinois Environmental Protection Agency (IEPA) in previously submitted documents that are referenced herein.

The former MGP property is currently owned by Ameren, and is enrolled in the Illinois Environmental Protection Agency's (IEPA) Site Remediation Program (SRP) under State ID0190100008. The Remediation Area, as shown in Figure ES-1, includes the Site (the real property at 308 North Fifth Street) and two off-site areas consisting of a portion of the adjacent Sixth Street right-of-way ("Sixth Street ROW") to the east of the Site, and a portion of the Norfolk Southern Railroad tracks property and ROW ("Railroad ROW") located adjacent to the north of the Site. Further information regarding the Site, its history, and geology are described in Section 2.

Subsurface impacts resulting from the former MGP operations were identified during site investigation activities that were performed between 1990 and 2008, as described in Section 3. The impacts in soil and groundwater were of those typically related to MGP operations with the presence of volatile organic compounds (VOCs); benzene, toluene, ethylbenzene and xylene (BTEX); semi-volatile organic compounds (SVOCs) including polynuclear aromatic hydrocarbons (PNAs); cyanide; and metals in soil and/or groundwater.

Substantial remedial activities have been conducted in the Remediation Area, including excavation of soil in 2009-2011, chemical treatment of soil in 2013, and further excavation of soil in 2016-2017. The multiple excavations at the Site have resulted in the installation of an approved soil barrier across the entire Site by 2017. The groundwater in the Remediation Area and the surrounding properties has been sampled since 1990, monitored quarterly since 1997, and continues to the present. The remedial activities conducted in the Remediation Area, as well as associated pilot testing and groundwater monitoring, are discussed in Section 4.

Remediation has significantly reduced the concentrations of MGP-related constituents in soil at the Site, and a decline in groundwater constituents exceeding Tier 2 standards has been achieved in the Remediation Area. Confirmation sampling and comparative evaluations to Remediation Objectives were conducted as part of this work. The effectiveness of the remedial activities completed in the Remediation Area is discussed in Section 5.

As presented in Figure 5-9, there are localized residual impacts that include:

- A limited area in the northwest portion of the Site (Lot 7) that has post-remediation residual impacts in soil exceeding Tier 2 soil standards; and
- One shallow groundwater well location on the Site (UMW-124 on Lot SL8-2) that has a post-remediation exceedance of the Class II Groundwater Standards for benzene.

In addition, one shallow groundwater well location (UMW-126), located within the Remediation Area, in the Sixth Street ROW, approximately 30 feet from the Site's southeastern boundary, does not currently exceed Class I or Class II Groundwater Standards; however, has exceeded historically for benzene. It is anticipated that the concentrations of benzene in this well will continue to decrease. This area is a vacant street ROW. There is also the presence of MGP-related constituents in soil on the Site at depths greater

than 10 feet below ground surface (bgs) that may present a risk to future construction workers. However, there are conditions at this Site that limit exposure to these constituents, including a clean surficial soil barrier across the Site, adjacent railroad and traffic way corridors, and a prohibition by the City of Champaign for the use of groundwater within the City of Champaign. In addition, Ameren plans to implement additional actions that will further control exposure at the Site, including institutional controls, such as the requirement to notify future construction workers of the potential for impacts in soil and the restriction of residential land use at the Site. In addition, Highway Authority Agreements (HAAs) will be sought to provide additional controls into the future. These and other special conditions present or to be applied to the Site are discussed in Section 6.

The Site is currently a fenced, vacant property with no building structures. As discussed in Section 7, there is currently no plans for a change in use of the property. This RACR is being submitted in accordance with Illinois Administrative Code (IAC) Section 740.455 to document completion of remedial actions and conditions for the Remediation Area as shown in Figure ES-1, and to request a Focused No Further Remediation (NFR) Letter for the Ameren-owned Property at 308 North Fifth Street in Champaign, IL.

2. Site Information

The Site is located at 308 North Fifth Street in Champaign, Illinois, approximately seven city blocks east of the downtown area of Champaign. The City of Champaign is in east central Illinois and has a population of approximately 87,000 (US Census 2017). The Remediation Area is located in the northeast quarter of the southwest quarter of Section 7, Township 19 North, Range 9 East of the Third Principal Meridian. The Site location is presented in Figure 1-1, and the current Site layout is depicted on Figure 2-1.

The Remediation Area for the Site includes two of the adjacent off-site areas:

- The Norfolk-Southern "Railroad ROW" which borders the Site to the north. Several residential properties are located north of the active track.
- The "Sixth Street ROW" is located adjacent to the east. However, Sixth Street is abandoned between the Railroad ROW and the alley south of the Site. During remedial activities, the eastern portion of the Site investigation and remediation was extended to encompass the abandoned portion of the Sixth Street ROW to address subsurface impact in that area. Other property located east of the 6th Street ROW is zoned commercial and consists of vacant land and parking lots.

Residential properties to the south are separated from the Site by a chain link fence and an alleyway. A Fifth Street ROW, which borders the Site to the west, and adjoining fencing separate the Site from residential properties in that direction. The surrounding neighborhood is anticipated to remain zoned as residential and light-commercial.

2.1 Current and Future Property Use

According to the Champaign County tax records, the Site is zoned as a Vacant Commercial Lot (Appendix A1) although the City of Champaign indicates the Site is zoned Multi-family Residential (Appendix A2). The Site has never been, nor is it expected to be, utilized for residential purposes. The specific future use of the Site has not been determined at this time. However, Ameren plans to limit the Site to commercial property use**.** The future use of the Site is discussed further in Section 6 regarding special conditions at the Site.

The surrounding area consists of primarily residential zoning, with commercial zoning to the east of the Site and the Railroad ROW to the north of the Site (Figure 2-2).

2.2 Legal Description

The Site is the Illinois Power Company (Ameren) property with Parcel ID 46-21-07-332-018. The "Remediation Area" discussed in this report consists of the Site, including the Norfolk Southern railroad property adjacent to the north of the Site and a portion of Sixth Street, between Church Street and the Railroad ROW. The legal description for the Site and the Ameren Property is:

> Part of the SW ¼, of Sec. 7 T.19N. R.9E. of the 3rd. PM., City of Champaign, Champaign County, Illinois, more particularly described as follows:
>
> Lots 7, 8, 9, 10, 11, and 12 in block 29 (except railroad right-of-way) of Seminary Addition to Urbana, now a part of the City of Champaign lying south of the railroad right-of-way;
>
> And lots 1, 2, and 3 in block 31 of Seminary Addition to Urbana, now a part of the City of Champaign;
>
> And a strip of land 66 feet in width known as vacated Hill Street lying between blocks 29 and 31;

> And lots 1, 2, and 3 of Assessor's Plat of subdivision of lot 8 in M.W. Busey's subdivision of south part of lot 1 of the south west quarter of Section 1, Township 19 North, Range 9 East of the third principal meridian, and lots 4, 5 and 6 in block 31 of Seminary Addition to Urbana, now a part of the City of Champaign, as per plat recorded in deed record 35 page 66;
>
> All situated in the City of Champaign, County of Champaign and the State of Illinois.

A property boundary survey of the Site was performed in 2019 and is provided in Appendix A3. A figure depicting parcel and lot information from the Champaign County Assessor's GIS website is provided in Appendix A4. A copy of the Quit Claim Deed of purchase by Ameren is provided in Appendix A5.

The residual soil impacts are present on Lots 7 and 8, which are located in the northwest corner of the Site. The residual groundwater impacts are situated in the southwest corner of the Site, as discussed further in Section 5.

2.3 Site History

The following information relative to MGP history at the Site is summarized from Sanborn Fire Insurance Maps (Sanborn Maps), Brown's Directory of American Gas Companies (Brown's Directories), Ameren files, and other historical documents.

Historical information indicates that gas was manufactured on the Site as early as 1869 and continued through 1933. After operations ceased, the plant was maintained for stand-by production purposes until about 1955.

Plant facilities were demolished between 1955 and 1960, with the exception of the booster house, which was demolished in December 2008. Although the property remained vacant, Illinois Power, a predecessor of Ameren Illinois and Ameren Services, maintained ownership of the property until 1979 when it was sold to the American Legion.

Illinois Power repurchased the property from the American Legion in 1991 after preliminary environmental investigations indicated the presence of MGP related impacts at the Site. The Site is currently owned by Ameren Services.

Past Site features included the former gas plant and associated buildings, three tar wells, two gas holders (GH-1 and GH-2), and two oil tanks located on the northern portion of the Site. The former booster house, a third gas holder (GH-3,) three purifiers, and seven oil tanks were located on the southern portion of the Site. Historical site features are illustrated in Figure 2-3. Figure 2-4 depicts the property in 2008 just prior to the initiation of remedial activities.

Multiple investigations of the soil and groundwater have been conducted at the Site between 1990 and 2008 and are discussed in Section 3.

Subsequent multiple remedial activities, including excavations and chemical treatment of soil, were conducted at the Site from 2009 to 2017. Quarterly groundwater monitoring has been conducted at the Site from 1997 to the present.

The Site has been vacant and fenced since 1991.

2.4 Site Setting

The following sections provide information regarding the Site setting. A more detailed description of the Site setting is provided in the 2007 *Comprehensive Site Investigation Report; Former Manufactured Gas Plant; Champaign, Illinois* (CSIR 2007) and in the 2008 *Off-Site Site Investigation Report; Former Manufactured Gas Plant; Champaign, Illinois* (CSIR 2008) reports previously submitted to the IEPA by Ameren.

2.4.1 Regional Setting

Champaign County in Illinois is situated within the Bloomington Ridge Plain in the Till Plains section of the Central Lowland Physiographic Province. The landscape is characterized by widely spaced continental glacial moraines with nearly featureless ground moraine plains. The geology beneath Champaign County has been summarized as 100 to 400 feet (ft) of Wisconsinan, Illinoian, and Kansan glacial drift deposited on Paleozoic bedrock which dips eastward and southward toward the Illinois Basin.

The Illinois American Water Company (IAWC) supplies water to the City of Champaign from municipal water supply wells located approximately three miles west of the Site in its "western" well field. These wells average approximately 310 feet in total depth with between 50 and 100 feet of screen. The wells in the west field produce water from the Mahomet Sand Member. IAWC also has water wells in its "northern" well field, located approximately one mile northeast of the Site. These wells average approximately 210 feet in depth with screens ranging from 10 to 50 feet in length. These northern wells produce water from the middle sand and gravel aquifer in the Glasford Formation.

2.4.2 Site Topography

Prior to remedial actions, the Remediation Area was mostly flat with isolated sloped areas along the east side where the "unopened" portion of Sixth Street is located. Only minimal relief was present on the Site, and the elevation was approximately 737 to 739 feet NAVD. The property drainage was generally toward the east, and no surface bodies of water were present on the Site. The nearest surface water is Boneyard Creek located approximately 1,000 feet southwest of the Site. After completion of the remedial actions, the Site was restored to approximate the original site conditions and topography.

2.4.3 Subsurface Geology

Champaign County, Illinois is situated within the Bloomington Ridge Plain in the Till Plains section of the Central Lowland Physiographic Province. The landscape is characterized by widely spaced continental glacial moraines with nearly featureless ground moraine plains. The geology beneath Champaign County, Illinois has been summarized as 100 to 400 feet of Wisconsinan, Illinoian, and Kansan glacial drift deposited on Pennsylvanian bedrock (shale, sandstone) which dips eastward and southward toward the Illinois Basin.

The subsurface geology at the Site has been characterized using the methods described in the 2007 Comprehensive Site Investigation Report (CSIR) and the 2008 Off-Site Site Investigation Report (SIR). The general subsurface geology for the Site consists of the units listed below.

- "clean soil" fill material from off-site borrow source;
- weathered till unit (silty clay);
- unweathered till unit (silty clay); and
- lower silty sand unit (sand, silty sand, gravel).

In the Remediation Area, prior to the remedial actions, the shallow units consisted of undifferentiated surficial fill material that was three to four feet in thickness and covered the entire Site. The former fill consisted of gravelly silt and sand, with cinders, bricks, and debris.

A brief description of the subsurface geologic units is provided below.

Clean Soil / Fill Material – Continuous across Site

With a localized exception in the southwest corner of the Site, the entire Site was excavated and backfilled with soil from off-site sources as part of the multiple excavations conducted at the Site. These activities ultimately resulted in the presence of an engineered barrier of clean soil across the Site. Details

on the fill materials used as backfill are included in the work plans and reporting submitted to IEPA for approval for each excavation. In general, the approved fill material consisted of either silty clay or CA-6 aggregate. Depths of this backfill ranges from three feet bgs in the western and southwestern perimeter areas, to over 28 feet bgs in the northern portion of the Site. The majority of the Site consists of this backfill to a depth of 20 feet bgs.

Weathered Till Zone – Discontinuous across Site

The first naturally-occurring subsurface material encountered during Site investigations and remediation activities was a zone of weathered till. A significant portion of this zone was removed from the Site during the remedial actions and replaced with fill material from off-site sources. Any remaining weathered till is believed to be part of the Batestown Till Member of the Wisconsinan Wedron Formation. It is the Wedron Formation in which the discontinuous, regional "upper" sand and gravel aquifer occurs. The weathered till was encountered at various depths beneath the Site. The zone averaged 10 to 15 feet thick across the Site, and was comprised of brown to gray silty clay with some oxidation evident along clay fractures.

Unweathered Till Zone – Continuous across Site

An unweathered till was encountered during remediation activities at depths ranging from 9 to 20.5 feet bgs. Remediation activities extended into this zone across a large portion of the Site. The unweathered till zone was also believed to be part of the Batestown Till Member of the Wisconsinan Wedron Formation. The zone was generally differentiated from the weathered till zone by the gray color and lack of weathering along fractures.

Sand and Gravel Zone

Sand and gravel deposits were observed at the Site from depths of approximately 20 to 35 feet bgs. This zone is likely a continuation of the Wedron Formation, which consists of sand and gravel formations and is typically present in the region from 25 to 100 feet bgs.

The majority of borings installed at the Site terminated at depths above 35 feet bgs. Three deeper boreholes were drilled during the 1990 Phase 2 investigation to approximately 170 feet bgs. These three borings encountered thick sand, silty sand, and gravel units from approximately 30 feet bgs to the termination depths. A differentiation was not notable enough during boring installation to distinguish the transition from the Wedron Formation to the Glasford Formation; however, it was assumed that the sand and gravels observed at 170 feet bgs were those of the upper units of the Illinoisan Glasford Formation.

2.4.4 Subsurface Hydrogeologic Conditions

The following section provide a brief description of the groundwater bearing units and the groundwater flow conditions at the Site.

Groundwater-Bearing Units

The groundwater bearing units at the Site appear to consist of shallow, intermediate, and deep groundwater systems. A more detailed description of the Site hydrogeology is presented in the 2007 *Comprehensive Site Investigation Report for Ameren IP Champaign Illinois* (PSC 2007) and the 2008 *Off-Site Investigation Report, Champaign MGP Site (PSC 2008)*.

The shallow groundwater system at the Site is an unconfined water-bearing zone with the saturation depth (groundwater surface) found in the surficial fill layer or the uppermost weathered till unit. Shallow groundwater has been monitored at the Site by a network of nineteen wells located on and around the Remediation Area. The depth to the shallow groundwater surface typically ranges from 3 to 10 feet bgs. This shallow groundwater is not believed to be associated with the regional "upper" (Wedron) aquifer but is most likely lenses of localized groundwater in the weathered till unit and above.

Slug testing was performed on five of the shallow groundwater monitoring wells in June 2011. The horizontal hydraulic conductivity results of the June 2011 testing ranged from a low of 2.6 x 10^{-6} cm/sec at monitoring well UMW-109 to a high of 9.6 x 10^{-5} cm/sec at monitoring well UMW-107, with a geometric mean value for all five wells of 3.1 x 10^{-5} cm/sec. The shallow groundwater meets the IEPA definition of a Class II groundwater. Additional information regarding the slug testing performed at the Site is included in the January 2011 Project Status Report.

The intermediate groundwater unit at the Site has been monitored by a network of nine wells located on and around the Remediation Area. Depth to the intermediate groundwater unit typically ranges from 27 to 31 feet bgs. The potentiometric surface for wells screened at the Site in this zone stabilized at 28.5 to 30.5 feet bgs in February 2021 sampling. It is likely that this groundwater is part of the regional "upper" (Wedron) aquifer. Wells in the region that are screened in the regional "upper" aquifer vary in depths from 25 to 100 feet bgs. Slug testing was performed in four of the eight intermediate monitoring wells (UMW-301, UMW-302, UMW-303, and UMW-304) during the off-site investigation in 2008. The horizontal hydraulic conductivity values ranged from 2.8 x 10^{-2} centimeters per second to 8.6 x 10^{-2} centimeters per second. The mean hydraulic conductivity calculated using data from the four wells was 4.85 x 10^{-2} centimeters per second or 137.5 feet per day. The intermediate groundwater meets the IEPA definition of a Class I groundwater.

The deepest groundwater system that has been observed at the Site is a sand and gravel zone, believed to be within the Lower Glasford Formation, beginning at a depth of about 151 feet bgs to a depth greater than 177 feet bgs. This would correlate to the regional "middle" (Glasford) aquifer. The potentiometric surface for the three wells screened in this zone stabilized at depths of approximately 120 feet bgs. The regional gradient is to the west-southwest. The deep groundwater monitoring wells at the Site were monitored from 1992 until 1998 and were abandoned in 1999. The Glasford aquifer is reported to extend to depths of 175 to 200 feet bgs.

In the region, there is a "deep" sand and gravel aquifer, present in the Mahomet Sand of the Kansan Banner Formation. It is this aquifer that supplies the majority of municipal groundwater supplies in east-central Illinois, including the City of Champaign. It is reported that the Mahoment Sand aquifer is found at a depth of approximately 500 feet bgs.

Groundwater Flow Conditions

Figure 2-5 and Figure 2-6 present the groundwater contours and flow directions measured in 2019 for the shallow and intermediate groundwater systems at the Site, respectively.

As discussed in Section 3, groundwater flow in the shallow system is typically outward from the center of the Site in a radial pattern (Figure 2-5). Groundwater flow for the intermediate groundwater bearing unit is to the southeast (Figure 2-6).

2.5 Recognized Environmental Conditions

2.5.1 Current Recognized Environmental Conditions

The current recognized environmental concerns (RECs) for the Remediation Area include the following:

- *On-site Soil in NW Corner*: A limited area in the northwest portion of the Site (Lot 7) that has post-remediation residual impacts in soil exceeding Tier 2 soil standards;
- *On-site Well UMW-124*: One well location on-site (UMW-124 on Lot SL8-2 in southwest corner of the Site) indicates post-remediation exceedances of Class I and II Groundwater Standards for benzene;

- *On-site Subsurface Soil*: MGP-related constituents exceeding the Soil Component to Groundwater (Migration to Groundwater) Remediation Objectives (RO), Construction Worker Inhalation RO, and Vapor Intrusion ROs for primarily benzene and/or naphthalene in soil at depths greater than 10 feet bgs in multiple areas, mostly in the northern two-thirds of the Site; and
- *Off-site Well UMW-126*: One well location (UMW-126), approximately 30 feet from the Site's southeast boundary, has historically had exceedances of Class I and II Groundwater Standards for benzene.

The location of the current RECs in the Remediation Area are presented in Figure 2-7. Institutional controls to address the current RECs are discussed in Section 5 and Section 6.

2.5.2 Historical Recognized Environmental Conditions

Historical RECs, identified prior to remediation, were related to the areas of past MGP operation and are shown on Figure 2-3. These included former structures of the gas plant operations, which are primarily the former gas holders, tar structures, tar wells, and a number of oil tanks. The former MGP was constructed in 1869 and gas production appears to have continued into the early 1930s.

Interim remedial measures were performed at the Site between 1997 and 1998, where the contents of the accessible structures that may have constituted source material were removed. The removal of the source materials from these structures reduced the potential for release of NAPL to the environment.

Constituents from gas production activities were identified in the soil and groundwater on the Ameren property during the investigations conducted in 1992. Investigation results indicated that soil impact exceeded Tier 1 ROs outlined in IAC Section 742 for soil ingestion, soil inhalation, and the soil component to groundwater ingestion. Additionally, the groundwater impact identified exceeded the Tier 1 ROs for the groundwater ingestion pathway and the indoor air inhalation pathway. Soil was also identified at levels that exceeded the criteria outlined in IAC Section 742.215 for soil attenuation capacity and 742.220 for soil saturation limits. The extent of the historical, pre-remediation, MGP-related impacts are described in the 2007 CSIR and 2008 Off-Site SIR, and discussed further in Section 3.

Multiple remedial activities have been conducted since the interim measures in the 1990s, and a majority of the historical RECs have been resolved and/or reduced by the remediation activities conducted. Currently, the Site is vacant property with no buildings or structures present.

3. Site Investigations

The following sections provide a summary of the historical impacts identified during the historical investigation activities conducted prior to the remedial actions.

3.1 Due Diligence (1986-1996)

In 1986, a detailed site inspection and soil gas sampling event was conducted at the Site and evidence of buried structures were observed.

In 1990, a Phase I Environmental Site Assessment (ESA) was conducted in addition to a soil-gas survey, preliminary health risk assessment, and a Phase II soil and groundwater investigation, which consisted of soil and groundwater sampling at 34 locations on-site and 37 locations off-site. The investigations identified subsurface impacts on-site and off-site, on the northeast, north, and west Site boundary areas.

In 1991, an air monitoring study was conducted and a subsequent risk assessment. In 1991 and 1992, a Phase II investigation was conducted. In 1992, a second investigation was conducted with the collection of tar well and surface soil samples. The results of these investigations confirmed the 1990 Phase I ESA assumption that the former MGP could be a source of impacts to the Site. In 1992, an in-ground treatment unit for the dewatering of the tar well was installed.

In 1993 and 1994, a remedial investigation report was prepared, which was accepted by IEPA in August 1994.

In 1996, a Total Organic Compounds (TOC) investigation was conducted in response to an insurance inquiry. Twelve soil samples were collected from four locations and analyzed for TOC.

3.2 Coal Tar Investigations (1997-1998)

Following the identification of coal tar on the east edge of the Site in 1997, multiple investigation work streams began at the Site. A Supplemental Site Investigation was conducted, and a Site Investigation Report (SIR) was submitted to IEPA in 1997. The goal of this investigation was to characterize materials below the GH-1 gas holder. A treatability study was also conducted during this period, and quarterly groundwater sampling began and has continued to the present, as discussed in Section 3.12. Ultimately, source removal activities, consisting of excavation and demolition, commenced in 1997 and were completed in 1998, as described in Section 4.

3.3 Site Investigation (2004)

Following remedial planning and stakeholder engagement, as described in Section 4.2, a comprehensive site investigation was conducted by PSC and Kelron Environmental in 2004 at the Site. A survey of the Site was also performed in 2004 by Vegrzyn, Sarver & Associates, Inc. The 2004 investigation included field acquisition of data for boundary survey, borings, wells, test pits, and specified boundaries. PSC mobilized to the Site on July 6, 2004, and excavated nine (9) test pits, ranging in depth from 8 to 12 feet bgs. From July 12 to July 19, 2004, 26 probe holes were advanced, ranging in depths from 24 feet to 32 feet bgs. A total of 120 samples (at least four per probe hole) were taken and sent to TekLab, Inc. for analysis. Analyses included BTEX, VOC, PAH, SVOC, cyanide, inorganics, pH, and TPH. Two samples from the waste soil were taken and sent to TekLab, Inc. for analyses including TCLP Benzene, Paint Filter, and Flashpoint. PSC completed the final Site grading on July 26, which included spreading topsoil, seeding, mulching and regrading the gravel road. In August 2004, Vegrzyn, Sarver & Associates, Inc. conducted a post-investigation survey, which included field staking the Site boundary and preparation of a survey plat with state plane coordinates and elevation information.

The findings of the 2004 Site Investigation are summarized in Section 3.5.

3.4 Analyses of Data and Stakeholder Input (2004-2007)

The electronic compilation of historical data was completed in February 2005. This allowed the development of comprehensive data tables and comparisons, and the development of cross-sections of the subsurface. The data and tools were shared with technical consultants and, along with the information obtained during negotiations with local agencies, landowners, and other stakeholders, an evaluation of the data, the determination of remedial options, and the preparation of an updated CSIR was begun. The process of completing the CSIR took up to three years, as it was necessary to improve the CSIR over time due to ongoing factors such as landowner input, local officials input, and access issues.

3.5 Comprehensive Site Investigation (2007)

The *Comprehensive Site Investigation Report, for AmerenIP Champaign, Illinois, Former Manufactured Gas Plant, State ID 0190100008A, December 2007* ("2007 CSIR) was submitted in December 2007 to IEPA to present the 2004 investigation findings. The CSIR also reviewed the historical data (pre-2004) and identified the potential RECs for the Site. The CSIR identified the former gas plant as a REC, including its associated buildings, three tar wells, two gas holders and two oil tanks on the northern portion of the Site, and its former booster house, three purifiers, one gas holder and seven oil tanks on the southern portion of the Site.

Details of the 2004 investigation and its findings were presented in the 2007 CSIR. The highlights are as follows:

- Soil Sampling: 28 surface soil samples were collected and analyzed for BTEX, PAHs, RCRA metals, and/or cyanide; two test pits were installed and sampled for BTEX, PAHs, and TPH; and two probehole samples were collected and analyzed for TPH, which was utilized as an indicator constituent to indicate potential impacts.
- Surface soil results (0-3 feet bgs): BTEX and PAHs were detected in all surface soil samples; five VOCs were detected in five of six surface soil samples; and seven metals were detected in all surface soil samples. SVOCs were not detected. TPH was also detected in surface soil.
- Shallow Subsurface soil results (3-10 feet bgs): BTEX were detected in all samples; PAHs in 47 of 58 deep soil samples; three VOCs and three SVOCs were detected in up to three samples; and six metals were detected in all shallow subsurface soil samples. TPH was also detected in shallow subsurface soil.
- Deep Subsurface soil results (>10 feet bgs): BTEX and PAHs were detected in 29 of 30 shallow subsurface soil samples; three VOCs and three SVOCs were detected in up to 10 samples; and six metals were detected in deep subsurface soil samples. TPH was also detected in deep subsurface soil.
- Shallow Subsurface soil results (3-10 feet bgs): BTEX and PAHs were detected in 29 of 30 shallow subsurface soil samples; three VOCs and three SVOCs were detected in up to three samples; and six metals were detected in all shallow subsurface soil samples.
- Groundwater Sampling: 15 wells were sampled. Groundwater samples were collected and analyzed for BTEX and PAHs.
- Groundwater results: BTEX and PAHs were detected in five well samples; five VOCs were detected in five of six surface soil samples; and seven metals were detected in all surface soil samples. SVOCs were not detected. TPH was also detected in surface soil.

In the 2007 CSIR, an endangerment assessment was conducted, including historical (1990 and 1991 data). The results of this assessment identified the following:

- Exceedances of BTEX (primarily benzene), PAHs, and arsenic for the soil ingestion pathway.
- Exceedances of BTEX and naphthalene for the soil inhalation pathway.
- Exceedances of BTEX and PAHs for the soil component to groundwater pathway.
- Exceedances of BTEX and PAHs for the groundwater ingestion/inhalation pathways.

The 2007 CSIR concluded that impacts exceeding Tier 1 ROs were present in soil and groundwater at the Site and in adjacent off-site areas.

3.6 Soil and Groundwater Investigation (2008)

In 2008, an investigation of soil and groundwater was conducted to determine the extent of potential impacts from the former MGP operation to off-site properties. This was a follow-up investigation to the identification of up to 18 constituents of concern (COCs) in the 2007 CSIR. In addition to the historical data, 52 probe holes were installed on-site and off-site. Investigation areas on-site included all four Site boundary areas. Investigation areas off-site included the Railroad ROW to the north of the Site, in the Hill Street ROW to the west of the Site, in two residential locations to the south of the Site, and in the Sixth Street ROW to the east of the Site.

The 2008 Off-Site Investigation findings are presented in the report entitled *Off-Site Investigation Report, Former Manufactured Gas Plant, Champaign, Illinois, State ID 0190100008A, August 22, 2008* ("2008 Off-Site IR"). As indicated in this report, there were impacts across the Site and in adjacent off-site areas, primarily to the north and west of the Site, which was consistent with the observed groundwater flow. It also found that the highest level of impacts were at depths greater than 10 feet bgs. The report also stated that BTEX, naphthalene, cyanide, and lead were present in one or more wells above Class I ROs for groundwater.

3.7 Off-Site Soil Gas Investigation (2008)

In 2008, an investigation of soil gas was conducted at three residential properties near the Site: 505 E. Washington Street, 507 E. Washington Street, and 412 E. Hill Street. Nine soil gas samples and one ambient air sample were collected and analyzed for VOCs, naphthalene, and 1,1-dichloroethane (a leak detection chemical). The findings are detailed in the *Evaluation of Soil Gas Data Collected at Residential Properties near Former MGP Site, Champaign, Illinois, December 2008* report submitted to the IEPA. Results in this report indicate that the soil gas concentrations identified did not exceed the ROs for the Site. IEPA concurred with this conclusion in its January 9, 2009 response letter to Ameren.

3.8 Off-Site Soil Gas Investigation (2009)

In 2009, an investigation of soil gas was conducted at four (4) residential additional properties, all associated with the Center for Women in Transition (CWT) near the Site: 304 N. Fifth Street, 504 E. Church Street, 506 E. Church Street, and 508 E. Church Street. Ten soil gas samples and one ambient air sample were collected and analyzed for BTEX, styrene, naphthalene, and 1,1-dichloroethane (as the leak detection chemical). The findings are detailed in the *Evaluation of Soil Gas Data Collected at the Center for Women in Transition, 304 N. 5th St., 504, 506, and 508 E. Church St, Champaign, Illinois, January 2010* report submitted to the IEPA. Results in this report indicated that the soil gas concentrations identified did not exceed Tier 1 ROs for the indoor inhalation pathway or ROs for the Site. IEPA concurred with this conclusion in its February 10, 2010, response letter to Ameren.

3.9 New Well Installations (2010)

Three groundwater monitoring wells were installed to the west of the Site on February 2 and 3, 2010. Monitoring well UMW-106R was installed to replace UMW-106 that was removed during a water main replacement project. Monitoring well UMW-123 was also installed within the Fifth Street ROW south of Hill Street. In addition, Monitoring well UMW-122 was installed between UMW-106R and UMW-123 in the alley south of Hill Street.

Seven new monitoring wells were installed during June and July 2012. The new wells were added to the groundwater monitoring network for the Site. The four new shallow monitoring wells were designated UMW-124 through UMW-127, while the three new intermediate monitoring wells were designated UMW-301R, UMW-304R, and UMW-308.

3.10 Field Hydraulic Conductivity Testing (1990, 2011)

Initial field hydraulic conductivity testing was performed on the shallow geologic materials during the Phase II Site Investigation in 1990. The tests resulted in an overall mean hydraulic conductivity of 1.6 x 10-4 centimeters per second (cm/sec). Since the original hydraulic conductivity tests were performed in 1990 and only two of the original shallow monitoring wells tested at that time were still in existence by 2011, additional field permeability testing was conducted in June 2011. In-situ permeability tests were performed on five monitoring wells – UMW-102, UMW-107, UMW-108, UMW-109, and UMW-116. Details on the hydraulic conductivity testing are discussed in the *Project Status Report*.

The hydraulic conductivity results of the June 2011 testing of the five shallow wells ranged from a low of 2.6×10^{-6} cm/sec at well UMW-109 to a high of 9.6×10^{-5} cm/sec at well UMW-107, with a geometric mean value for all five wells of 3.1×10^{-5} cm/sec. The overall geometric mean hydraulic conductivity for the June 2011 tests is very comparable to the geometric mean of the 1990 tests. The hydraulic conductivity testing indicated the groundwater within the uppermost geologic materials in the vicinity of the Site unconditionally meets the definition of Class II – General Resource Groundwater for the purposes of establishing Tier 1 ROs. Therefore, groundwater analytical evaluations in subsequent sections of this RACR will focus on comparison to Tier 1 groundwater ROs for Class II groundwater.

3.11 Off-Site Soil Gas Investigation (2013)

In 2013, a confirmation investigation was requested by CWT of the 2009 soil gas investigation results associated with the four CWT residential properties previously sampled: 304 N. Fifth Street, 504 E. Church Street, 506 E. Church Street, and 508 E. Church Street. Eleven additional soil gas samples and one ambient air sample were collected and analyzed for VOCs and 1,1-difluoroethane (as the leak detection chemical) associated with the CWT properties. The findings from this sampling are detailed in the *Evaluation of Soil Gas Data Collected at the Center for Women in Transition, 304 N. 5th St., 504, 506, and 508 E. Church St, Champaign, Illinois, January 7, 2014* report submitted to the IEPA. Results in this report indicate that the soil gas concentrations identified did not exceed Tier 1 ROs for the indoor inhalation pathway or ROs for the Site, and concentrations were in a similar range to that observed in the 2009 investigation.

3.12 Groundwater Monitoring

Groundwater monitoring has been conducted at the Site since at least 1990. Quarterly groundwater monitoring has been conducted since 1997 and continues to the current date. All quarterly reports have been submitted to the IEPA for review. This section provides a brief discussion of the groundwater sampling conducted and the results of the groundwater monitoring for the most recent four quarterly events – February 2021, October 2020, July 2020, and April 2020.

3.12.1 Groundwater Flow Conditions

Groundwater at the Site is monitored by a network of 28 monitoring wells, including nineteen shallow and nine intermediate depth wells (Figure 3-1).

Groundwater level measurements were recorded during all quarterly groundwater monitoring events from 1997 to the present and used to determine the groundwater flow conditions. Groundwater flow conditions and groundwater elevation contours were generated for the shallow groundwater zone and the intermediate groundwater zone.

The groundwater flow conditions for the shallow groundwater and the intermediate groundwater are depicted in Figure 3-1 and Figure 3-2, respectively. These are from the most recent (February 2021) sampling event and are representative of the general flow direction observed at the Site over time. The shallow groundwater level measurements have typically indicated a relatively flat flow condition, with a slightly higher groundwater elevation in the center of the Site. The shallow groundwater flow is radially outward toward the north, west, and southwest. The intermediate groundwater level measurements have also typically indicated a relatively flat flow condition. The groundwater flow for the intermediate groundwater zone is typically toward the southeast. The post-remediation groundwater flow conditions for both the shallow and the intermediate groundwater bearing zones are similar to the pre-remediation flow conditions.

3.12.2 Groundwater Sampling Results

With two exceptions, groundwater monitoring has indicated no exceedances of Class I or Class II groundwater ROs. As presented in Figure 3-3, samples from on-site monitoring well UMW-124, in the southwest corner of the Site, and monitoring well UMW-302, to the south of the Site, have exceeded the groundwater ROs since the completion of remedial activities.

Historically, samples from monitoring well UMW-124 have exceeded the Class I and Class II groundwater RO for benzene. The trend in benzene concentrations is reported each quarter in the quarterly groundwater monitoring reports submitted to the IEPA. There has been a significant downward trend in the benzene concentration since at least 2015 in this well. In the last two years, benzene in this well has decreased from its maximum concentration in May 2019 of 0.158 mg/L, to the most recent concentration of 0.0526 mg/L. This trend would indicate that concentrations achieving the Class II RO of 0.025 mg/L may be attainable in the next 2 to 5 years with natural attenuation.

Samples from monitoring well UMW-302 have exceeded the Class I and Class II groundwater RO for benzene, ethylbenzene, and/or naphthalene historically. Because this well is located on a residential property (506 East Church Street), these three constituents have also exceeded the ROs for the groundwater indoor inhalation pathway, assuming both diffusion and advection are occurring. The trends for these constituents are not as defined as those observed in monitoring well UMW-124. Groundwater in this area is not extracted, and is restricted for potable use by ordinance. The potential for vapor intrusion to the residence has been investigated and a risk assessment has been conducted, the results of which indicate no exceedance of target risk levels. The *Vapor Intrusion Risk Assessment, Residential Properties Near Former Manufactured Gas Plant, 308 N. 5th Street, Champaign, Illinois, March 16, 2021* prepared by TRC is attached as Appendix G. Vapor intrusion associated with monitoring well UMW-302 is discussed further in Section 5.7.5 and Section 6.2.2.1.

Although groundwater samples collected at monitoring well UMW-126, located in the southern portion of the Sixth Street ROW, have not exceeded Class I or Class II groundwater ROs for any constituent in the last two quarters of sampling, this well has had historical exceedances of the Class I and Class II groundwater ROs for benzene.

4. Remediation Activities

Remediation activities conducted in the Remediation Area have consisted of a number of elements, as listed below:

- Phased soil excavations conducted under tent structures across the majority of the Site from 2009 to 2011;
- Subsequent open-air excavations in perimeter areas of the Site from 2009 to 2011;
- An In-Situ Chemical Oxidation (ISCO) pilot study in 2009;
- ISCO treatment during the aforementioned phased soil excavations from 2009 to 2011;
- Groundwater monitoring well closures in 2011;
- Multiple rounds of ISCO treatments in 2013;
- Additional soil excavations in the northwest corner of the Site in 2016 and 2017; and
- Quarterly groundwater monitoring of the Site from 1997 to the present.

Work conducted during each of these remedial activities are summarized in the following sections.

4.1 Source Removals (1997 through 1998)

Coal tar was discovered in monitoring well UMW-103 at the east edge of the Site in 1997. This initiated multiple investigations and ultimately multiple source removal activities. An investigation to delineate the extent of the purifier waste west of the booster house was also conducted. According to the *Project Completion Report, Interim Remedial Measures, Source Removal, Former Manufactured Gas Plant, Champaign, Illinois, Philip Environmental Services Corporation, July 1998* (PESC 1998), a work plan for source removal and an ambient air monitoring plan were submitted to IEPA and approved in October 1997, and preliminary work at the Site began in late October. An addendum was submitted on November 15, 1997 to the ambient air monitoring plan addressing detailed instructions for shut-down and start-up of work on-site if emissions exceed real-time health-based levels. In addition, quarterly groundwater was initiated and continues to the present day.

During the 1997 source removal activities, purifier waste was excavated and stockpiled for blending with the source material from a below-ground gas holder, in addition to clay, coal and quicklime. This material was placed back into the gas holder. Water from the top layer of the gasholder was pumped through an oil/water (O/W) separator and into four fixed-axle storage tanks (“frac”) tanks. The NAPL from the frac tanks was pumped back into the holder. Approximately 62,000 gallons of water were pumped into the four frac tanks on-site. At a depth of approximately five feet bgs, the water/tar mixture could no longer be pumped through the O/W separator. Approximately 24.5 tons of corncob crumbles were added to soak up remaining free water, but additional soil was also required. In early November 1997, approximately 32,000 gallons of coal tar and water were pumped directly into two frac tanks. When the coal tar could no longer be pumped, purifier waste and clay were mixed with the tar in the holder and transferred to 20-cubic yard mixing boxes. An 8-inch abandoned, clay storm sewer line, running east-west across the Site, was plugged with cement at both ends, and 55-gallon drums were shipped to C.A.R.E.S. Disposal. Approximately 750 tons of blended material was transported to Baldwin Thermal Treatment (BTT) for disposal in November 1997.

Three tar wells were also excavated in November 1997. The diameter of these wells were as follows: TW-1 was 10 feet, TW-2 was 10 feet, and TW-3 was 18 feet in diameter. Their total depths were as follows: TW-1 was 10 feet, TW-2 was 10 feet, and TW-3 was 11 feet deep. Coal-tar impacted cinders and debris were solidified with clay and transported to the gasholder for blending with clay and lime. The tar wells were backfilled the week of December 15, 1997. Attempts were made to locate a fourth tar well (TW-4),

but a four-foot thick pad of concrete mixed with brick was in the location shown on historical documents. Attempts were made to move or break apart the pad, but were unsuccessful. Southeast of the pad, part of the foundation for the aboveground gasholder GH-3 was uncovered, along with a 20-inch section of pipe that contained liquid coal tar. The coal tar was solidified and added to the tar well material in the holder for blending.

A total of approximately 200 cubic yards of heavily impacted fill was excavated between GH-1, GH-2, and TW-4. The area was then backfilled with clay. Approximately 70 cubic yards of pure coal tar was discovered approximately 2 feet bgs, in the tar separator. This material was solidified and transported to the gasholder for blending. A valve box adjacent to the tar separator contained piping and heavily impacted soil and debris. This area was also excavated and added to the gasholder for blending.

In January 1998, all tar well material was blended and stockpiled. Backfilling of the gasholder was initiated and completed in February. Transportation of blended waste to BTT for disposal began in late January and continued into March. Wastewater from the two frac tanks was processed through the O/W separator and discharged into empty frac tanks. The NAPL and sludge from the O/W separator and the tank bottoms were blended into the soil and tar well material in the gasholder.

Approval for discharge of wastewater by the Urbana-Champaign Sanitary District was received in early February 1998. Special conditions associated with the approved discharge included: 1) discharge rate was limited to 10 gallons per minute; 2) water from Tank 1 could be discharged directly to the sewer; and 3) the five other tanks must be treated through a sand bio-filter and three units of carbon prior to discharge. Tank 1 was discharged over four days and completed on February 16, 1998. Loading of the blended material resumed on February 23, 1998. Approximately 8,239 tons of blended waste was transported to BTT for disposal by the first week of May. Air monitoring and pH sampling continued during the loading of waste. Discharge of Tanks 2 through 6 began in late February but had to be stopped because of freezing temperatures. Wastewater discharge began again on March 23 and was completed on April 29, 1998. Approximately 14,000 gallons were discharged in April 1998. The six frac tanks were cleaned and returned in early May 1998. Approximately 3,000 gallons of rinsate water from cleaning the tanks exhibited elevated BTEX levels, and was disposed of through Heritage Environmental. Site restoration was completed the week of May 18, 1998.

As presented in the 1998 PESC report to the IEPA, approximately 2,620 tons of sand, 214 tons of clay, and 143 tons of rock and gravel were used in backfilling the 1997-1998 excavations. These areas were further excavated during subsequent remediation efforts in 2009 to 2011, as discussed in Section 4.3.

4.2 Remedial Planning and Investigations (1999 through 2008)

Work plans and remedial planning, in collaboration with the IEPA, were conducted in 1999 and 2000. Evaluations of the data collected during the previous investigations and removals, as well as the ongoing groundwater monitoring, continued during this period. This period also allowed for agency meetings to gain input into potential additional remedial options for the Site. A Site Investigation Report was submitted to IEPA in April 2000, and an off-site investigation cost estimate was submitted to IEPA in October 2001. Revisions to the TACO action levels necessitated a revision to the ROR in 2001. Activities performed in 2002 and 2003 included meetings to seek IEPA input and approvals, including that of the City of Champaign Mayor and Alderman, as well as obtaining landowner access, including that of the Norfolk-Southern Railway. These activities were required in order to conduct off-site investigations and remedial options evaluations.

During this time period, additional Site investigations were also conducted in 2004 and 2005 as described in Section 3.3.

Agency meetings and public meetings were also held in 2008. The above investigations and stakeholder input resulted in the submittal of remedial objectives and a remedial action plans for the Site in 2008.

4.2.1 Remedial Objectives Report (2008)

A Remedial Objectives Report (2008 ROR) for the Site was developed and submitted to the IEPA in December 2008 for excavation of soil. The *Remedial Objectives Report, Former Manufactured Gas Plant, Champaign, Illinois, State ID 0190100008, December 5, 2008* was developed based on the premise that the presence of shallow groundwater would prevent excavation of impacted soil at depths greater than 10 feet bgs. Therefore, the original ROR proposed excavating to 10 feet bgs and utilizing ISCO treatments to address remaining soil impact at depths greater than 10 feet. Soil impact that could not be excavated or remediated through ISCO techniques would be addressed through institutional controls and/or engineered barriers. Ameren elected to use the most stringent Tier 1 ROs for soil ingestion and inhalation for commercial property use scenarios, or the IEPA-accepted background levels for metropolitan statistical areas as the project ROs. The project remedial objectives are presented on Table 4-1.

4.3 Soil Excavations (2009 through 2011)

Following submittal and approval of the *Remedial Action Plan, Former Manufactured Gas Plant, Champaign, Illinois, State ID 0190100008, December 2008* (2008 RAP), remedial activities were performed at the Site and in the larger Remediation Area in 2009 through 2011. Beginning in early May 2009, Ameren again met with the community leaders to discuss the project and address any concerns or questions. Preparations and project initiation began in May 2009. Excavation of impacted soil began in the Remediation Area in June 2009. PSC served as Ameren's oversite engineer of record. Environmental Operations, Inc. (EOI) performed the remedial actions.

4.3.1 Remedial Objectives

The ROs for the Remediation Area were established in the ROR submitted to the IEPA in December 2008 (Section 4.2.1). Following the initiation of field activities, it was determined that groundwater incursion during the field activities could be managed and excavations could be conducted to levels below 10 feet bgs in some locations. Groundwater entering the excavation was pumped into on-site storage tanks, which allowed the excavation to proceed to depths of approximately 16 to 28 feet bgs while still maintaining acceptable and safe working conditions. Consequently, areas were excavated to the maximum extent achievable within the limits of the equipment and personnel safety. An Addendum to the December 2008 ROR was submitted in September 2010 to include deeper excavation of up to 28 feet bgs, and the use of ISCO and/or Tier 2 evaluations to address remaining impacted soil. The locations of the 2009 through 2011 excavation areas are shown in Figure 4-1.

4.3.2 Ambient Air Monitoring

An ambient air monitoring program was initiated as part of the project in 2009. Ambient air monitoring was performed by PSC during all excavation activities.

Six perimeter air monitoring stations (AMS) identified as AMS-1 through AMS-6 were placed at intervals along the perimeter fence line and utilized during the 2009 to 2011 remedial activities. Time-integrated air samples were collected from the AMS every 72 hours and submitted to the laboratory for analysis. Samples were analyzed for BTEX using USEPA Methods TO-15. PNAs were analyzed using USEPA Method TO-13A and particulates were analyzed using PM-10 methodology. The PM10 sampling and analysis was performed in accordance with EPA Method 40 CFR, Part 50, Appendix M – "*Reference Method for Determination of Particulate Matter as PM10 in the Atmosphere*."

Real-time ambient air monitoring was performed hourly at 25 locations around the perimeter of the Site. Measured concentrations from a MiniRAE 3000® PID and a Dusttrak® II Aerosol Monitor were recorded on field data sheets. Real-time data was used to assist tin implementing odor controls measures at the Site.

Additional details and analytical results for the ambient air monitoring program are available in the *Remedial Action, Ambient Air Monitoring Report, Champaign Former Manufactured Gas Plant Site, Champaign Illinois, PSC Industrial Outsourcing, LP, April 2013* report.

4.3.3 Covered Excavations Across Majority of the Site

Beginning in June 2009, soil excavations were conducted in the Remediation Area, in nine phases, each of which were completed beneath an enclosed tent structure, measuring approximately 131 feet by 213 feet in size. The excavations were conducted across the majority of the Site and in the Railroad ROW and Sixth Street ROW. Subsequent, additional work was conducted in 2011 in "perimeter" areas. This section discusses the tent-covered excavations conducted between 2009 and 2011 as illustrated on Figure 4-1.

Each phase was treated as a separate excavation. Therefore, the excavation depths and extents varied depending upon soil conditions and tent positioning. Figure 4-2 illustrates the excavation depths.

The on-site field geologist provided sampling and oversight of the soil removal activities throughout the remedial actions. A grid system was utilized for sampling during each phase that followed the orientation of the tent. The geologist monitored the subsurface conditions and directed the remediation site supervisor as to the limits of the excavation. The on-site geologist made observations, documented the field activities, and directed additional over-excavation to remove material as identified from the analytical results of confirmation samples collected.

4.3.3.1 Tent Structure

The tent structure used at the Site was approximately 131 feet by 213 feet in size. Four 20,000 cubic feet per minute (cfm) carbon filter air-handling units were used to manage air circulation inside the tent. The air-handling units were used in association with the temporary tent structure to contain air emissions from the work completed within the structure. The tent was positioned at nine locations during the course of this work (Figure 4-1). Soil excavation, loading, and backfilling during each of the nine remediation phases were performed within the temporary tent structure.

Upon completion of a remedial phase, the tent was moved to the next location in one piece using a customized dolly system or in multiple pieces by crane.

4.3.3.2 Soil Removal and Backfilling Activities

Soil was excavated until no impact was noted by field screening methods, or to the maximum extent achievable while maintaining safe working conditions. A total of approximately 187,000 tons of soil were excavated from the Site. The excavation depths ranged on average from 20 to 25 feet deep. A ten-foot perimeter was maintained around the interior of the tent walls to maintain structure stability. Excavated soil was transported by Mel Price Trucking Company to the Brickyard Landfill located in Danville, Illinois.

After soil removal activities were completed, the covered soil excavations in the Remediation Area and in the perimeter areas (discussed in Section 4.3.4) were backfilled with approved fill material from an off-site source. Fill material consisted of either silty clay or CA-6 aggregate. The silty clay was sampled and sent to a laboratory for analysis of BTEX, PNAs, VOCs, SVOCs, and inorganics. The results were submitted to the IEPA for approval. A total of approximately 170,000 tons of clean backfill was used for backfilling the 2009-2011 excavations.

During the covered soil excavation conducted in the southern portion of the Phase 1 area, a tar structure was encountered near the southeast corner of the tent. The tar structure was located in an area of underground piping between former gas holder GH-3 and the booster house. The materials in the tar structure were removed, blended with bed ash and soil, and loaded into semi-dump trucks and transported to a hazardous waste landfill operated by Waste Management, Inc. in Emelle, Alabama. Approximately 334.66 tons of material from the tar structure were sent to the Emelle facility.

4.3.4 Open-Air Excavations in Perimeter Areas (2011)

Following the completion of the nine phases of excavation within the tent structure, in 2011, open air excavations along the Site perimeter (approximately 10-25 feet in width) were performed. The perimeter excavations were separated into six areas that included the entire northern and western boundaries of the Site, and a portion of the southern and eastern boundaries, as shown in Figure 4-3. The perimeter excavations were completed to a depth of three feet bgs, with the exception of Area 2, located in the area of the former oil tanks. Area 2 was excavated to a depth of 10 feet bgs. Figure 4-2 illustrates the depth of excavations conducted in perimeter excavation areas.

The site geologist collected soil confirmation samples approximately every 25 linear feet from the exterior walls of the perimeter excavation areas. Soil confirmation samples were also collected from the excavation floor in perimeter Area 2. The perimeter excavations were backfilled immediately following sample collection. Concover, a substance comprised of paper mulch and water, was sprayed into the excavations and on top of soil to control dust and odors as needed.

4.3.5 Confirmation Sampling of 2009-2011 Soil Excavations

The following sections provide a brief discussion of the collection of “confirmation” samples during the 2009-2011 soil excavations. Samples were collected at regular intervals to determine whether further excavation was needed at specific locations. It is important to note that the majority of the samples collected are not representative of residual concentrations, because many of the locations of the “confirmation” samples were further excavated and backfilled with clean soil in expanded excavations or subsequent remedial actions. Floor confirmation sample concentrations at depths above the final (2017) excavation depth of an area, or wall confirmation sample concentrations within the final (2017) horizontal extent of an excavation area, are no longer present. Concentrations in these locations or former detections will be currently below residential screening standards, as represented by the approved soil and/or sand that was used for backfill. Section 5 provides a discussion of residual COCs.

4.3.5.1 Confirmation Sampling - Covered Excavations Across Majority of the Site

Soil confirmatory samples were collected at regular intervals using a grid pattern. Samples were collected from the excavation walls at intervals of 25 feet. Each wall sample set consisted of three sample depths: 0 to 3 feet, 3 to 10 feet, and greater than 10 feet bgs. Excavation floor samples were collected every 50 feet according to the grid system. A total of approximately 374 soil confirmation samples were collected during the Site remediation, although soil at a number of these locations was later removed during excavation.

Soil samples were collected and analyzed for BTEX, VOCs, PNAs, SVOCs, total cyanide, amenable cyanide, and RCRA metals. A percentage of soil samples were also analyzed for pH, Total Petroleum Hydrocarbons (TPH), PCBs, pesticides, and herbicides. Soil samples for VOCs analysis were collected following USEPA Method 5035. Sampling procedures for PNAs, SVOCs, cyanide, and RCRA metals followed SW 846.

Labels were affixed to each sample jar. Each sample was given a unique sample identification based on the remediation phase, sample location on the grid, floor or wall location, and sample depth. For example, P1-A1-W (3) represents a sample where “P1” represents the first remediation phase, “A1”

represents grid location A1, “W” represents a sample collected from the excavation wall, and the (3) represents a depth of 3 feet bgs. The soil samples were submitted to Teklab Inc. (Teklab) of Collinsville, Illinois.

Soil confirmation samples were compared to Tier 1 ROs presented in the ROR and RAP. The Tier 1 comparisons indicated impact was still present in multiple floor and wall locations at concentrations greater than Tier 1 ROs, and further excavation was conducted in the subsequent phases of the excavations. Soil analytical results for the tent-covered excavations, conducted across the majority of the Site from 2009 to 2011, are presented in Table 4-2 through Table 4-9. Soil analytical results for the excavations conducted in 2011, in perimeter areas, are presented in Table 4-10 through Table 4-13.

Samples were collected from excavation floors and walls during each of the nine tent phases, as well as the open-air excavations in perimeter areas. The samples were given unique sample identification numbers for each phase. A discussion of the analytical results for the wall and floor samples is presented below. Sample locations are shown in Figure 4-5.

Soil to a depth of 3 feet bgs were excavated in both the covered excavation areas and in the open air excavations in perimeter areas. Exceedances of Tier 1 ROs identified in wall samples and used to determine horizontal extent of the excavations are shown in Figure 4-5 (3-10 feet bgs) and Figure 4-6 (>10 feet bgs). In shallower soil areas (0-3 feet bgs and 3-10 feet bgs), exceedances of Tier 1 ROs were generally limited to the perimeter areas of the Site. Although concentrations were below Tier 1 ROs in shallow soil in the central portions of the Site, excavation of soil below 10 feet bgs continued across the Site to evaluate the potential presence of impacts limited to soil at depth.

The areas with the highest levels of soil impact in wall samples were located in the northwest corner of the Site. Soil impact was identified in wall samples along the western boundary, from approximately Hill Street to a point north of the property boundary. Field observations along the western property boundary were consistent with impact typically associated with former MGP operations. Soil impact was also identified along the northern property boundary. Field observations of the soils along the Railroad ROW indicated the presence of railroad ties and a creosote-like substance and odor, especially within the 0 to 3-foot depth interval.

The highest level of impact in floor sampling was identified in the Phase 2 excavation, which was in the area of the former gas holders. Sample P2-D4-F, located on the Lot 8/Lot 9 boundary, at a depth of 22 feet bgs (Figure 4-6), had a benzene concentration of 133 milligrams per kilogram (mg/kg) and a naphthalene concentration of 223 mg/kg. Overall, the four BTEX constituents exceeded one or more Tier 1 ROs, in addition to six PNA constituents in this area.

4.3.5.2 Confirmation Sampling – Soil Excavations in Perimeter Areas

Each perimeter area was evaluated based on the analytical results from wall samples collected during Phases 1 through 9. The COCs for each perimeter area were identified, and the soil samples collected were only analyzed for the identified COCs corresponding to the wall samples from Phases 1 through 9 of the covered soil excavations.

The field geologist collected soil samples approximately every 25 feet in the perimeter excavation areas. Each soil sample was placed in a jar provided by the laboratory and given a unique sample identification based upon the sample location and depth. For example, PA1-01 (3) represents a sample where “PA1” was Perimeter Area 1, “01” was the first sample collected from the area, and (3) was a depth of three feet bgs.

The soil samples were submitted to Teklab for analysis. Samples were analyzed for BTEX, PNAs, VOCs, SVOCs, and inorganics. The perimeter excavations (Figure 4-3) were separated into six (6) areas. The analytical results are found in Table 4-10 through Table 4-13.

Seven samples, collected from the walls at a depth of three feet bgs, were obtained from perimeter Area 1, located near the center of the southern property boundary. Three samples contained PNA constituents in exceedance of one or more Tier 1 ROs. The most significant was that of sample location PA1-01, which indicated five constituents were present above both residential and commercial Tier 1 ROs, as presented in Table 4-10. One of the seven wall samples contained a methylene chloride concentration (0.12 mg/kg) below residential ingestion (85 mg/kg) and residential inhalation (13 mg/kg) standards. However, this sample was in exceedance of the soil component to groundwater RO of 0.02 mg/kg.

Three of the seven wall samples contained mercury concentrations (maximum of 0.186 mg/kg) below residential ingestion (23 mg/kg) and residential inhalation (10 mg/kg) standards. However, these three samples were in exceedance of the lower construction worker inhalation exposure pathway RO of 0.10 mg/kg. Two wall samples contained arsenic concentrations (maximum of 16.2 mg/kg), which was above the residential ingestion (13 mg/kg) standard and the default background concentration of 13 mg/kg. No exceedances of Tier 1 ROs for SVOCs were noted in this area.

Perimeter Area 2 was located in the southwest corner of the Site. Twelve soil samples were collected from the excavation area, including ten from the walls and two from the floors. Two of the twelve soil samples collected from Area 2 contained concentrations of COCs above Tier 1 ROs. Sample PA2-01B, collected at three feet bgs from the excavation wall, contained mercury at 8.47 mg/kg, below residential ingestion (23 mg/kg) and residential inhalation (10 mg/kg) standards. However, this sample was in exceedance of the construction worker inhalation exposure pathway RO of 0.10 mg/kg and the soil component of groundwater ingestion exposure pathway RO of 6.4 mg/kg. One of the twelve samples – Sample PA2-01A, collected at 10 feet bgs - contained a methylene chloride concentration (0.037 mg/kg) below residential ingestion (85 mg/kg) and residential inhalation (13 mg/kg) standards. However, this sample was in exceedance of the soil component to groundwater RO of 0.02 mg/kg. No exceedances of Tier 1 ROs for BTEX, PNAs, or SVOCs were noted in this area.

Perimeter Area 3 consisted of the majority of the western property boundary; Sample PA3-05(3) was located in the former Hill Street right-of-way. Twelve confirmation samples were collected from the excavation walls. Five of the twelve samples exceeded one or more Tier 1 ROs. PNAs were detected above residential standards in five of the twelve samples, with the most significant being that of Sample PA3-10 (located in the northwest corner of the Site) and Sample PA3-09, located approximately 30 feet south of Sample PA3-10. Benzene was present in Sample PA3-09 at a concentration of 0.0978 mg/kg, below the more stringent residential inhalation RO of 0.8 mg/kg. However, this concentration exceeded the soil component to groundwater RO of 0.03 mg/kg. All five samples that indicated exceedances were collected at a depth of three feet bgs. No exceedances of Tier 1 ROs for VOCs, SVOCs, or inorganics were noted in this area.

Perimeter Area 4 consisted of a portion of the northern property boundary and the railroad-owned property adjacent to the north of the Site. Seven soil confirmation samples were collected from the excavation wall at a depth of three feet bgs, with one exception; Sample PA4-00 was collected at a depth of 10 feet bgs. All seven of the Area 4 samples exceeded one or more Tier 1 ROs for PNAs, as presented in Table 4-10**,** with the most significant being that of Sample PA4-04 and Sample PA4-06, located in the northwestern corner of the Site.

Five samples were also identified to have benzene exceedances, including one exceedance of the residential standard (12 mg/kg) in Sample PA4-04 (32.2 mg.kg). Xylene was detected two samples (maximum concentration of 25.8 mg/kg in Sample PA4-03) below the residential standard of 320 mg/kg but above the construction worker inhalation exposure pathway RO of 5.6 mg/kg. Three SVOCs were detected above Tier 1 ROs in Area 5; carbazole, dibenzofuran, and 2-methylnaphthalene. Dibenzofuran and 2-methylnaphathalene were below residential standards but above their Tier 1 soil component to groundwater ROs, as was carbazole (33.6 mg/kg in Sample PA4-04), which also exceeded its residential standard (32 mg/kg).

Perimeter Area 5 consisted of the majority of the northern Remediation Area boundary, located on the railroad property adjacent to the north of the Site. Fourteen soil confirmation samples were collected from the excavation walls at a depth of three feet bgs. Ten of the fourteen samples exceeded one or more Tier 1 ROs, as presented in Table 4-10. Eight samples exceeded one or more Tier 1 ROs for PNAs, with the most significant being that of Sample PA5-12 located in the northeast corner of Lot 9, on the Railroad ROW. Five samples contained exceedances of at least one BTEX constituent with benzene as the primary constituent, with four samples exceeding the residential standard of 0.8 mg/kg. The most significant locations were that of Sample PA5-08 (benzene concentration of 4.14 mg/kg) and Sample PA5-13 (benzene concentration of 32.6 mg/kg).

VOCs were also detected in Area 5, below residential standards but above either the soil component to groundwater Tier 1 ROs (methylene chloride) or the construction worker inhalation exposure pathway ROs (1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and naphthalene). SVOCs that were detected above soil component to groundwater Tier 1 ROs were 2-methylnaphthalene and dibenzofuran. These were detected at below residential standards with the exception of Sample PA5-12 which indicated a 2-methylnaphathalene concentration of 357 mg/kg, above its residential standard of 310 mg/kg.

Three of the fourteen wall samples contained mercury concentrations (maximum of 0.414 mg/kg) below residential ingestion (23 mg/kg) and residential inhalation (10 mg/kg) standards. However, these three samples were in exceedance of the lower construction worker inhalation exposure pathway RO of 0.10 mg/kg. Overall, the highest levels of impact that were above Tier 1 ROs were identified in samples PA5-12 and PA5-13, located in the northernmost portion of Lot 9, on the railroad property.

Perimeter Area 6 consisted of the northeast corner of the Remediation Area, on or north of the Sixth Street right-of-way. Four soil confirmation samples were collected from the excavation wall in Perimeter Area 6, at a depth of three feet bgs. Two locations - Sample PA6-2 and PA6-3 – indicated exceedances of both the construction worker inhalation pathway RO and the soil component to groundwater RO for PNAs, as shown in Table 4-10. These locations also had one or more PNAs above residential standards. Sample PA6-3 contained an arsenic concentration of 40.3 mg/kg, exceeding the residential ingestion (13 mg/kg) standard and the default background concentration of 13 mg/kg for arsenic. No exceedance of Tier 1 ROs for BTEX, VOCs, or SVOCs were noted in this area.

4.3.6 Evaluation for Soil Attenuation during the 2009-2011 Soil Excavations

Soil samples collected from the excavation floors during each of the nine remediation phases conducted between 2009 and 2011 were evaluated for soil attenuation. The sum of the organic compounds was calculated for each sample that included the full list of VOCs, SVOCs, and PNAs. To be conservative, 50% of the detection limit was used for constituents that were not detected. Soil samples were also analyzed for TPH (OA-2), as an indicator constituent of potential impacts, using method 3550B/8015B for diesel, kerosene, mineral spirits, and motor oil. The sum of the organic compounds and TPH were compared to the Site-specific fraction organic carbon content (foc) of 10,400 mg/kg for the greater than 10-foot depth interval. This comparison is presented in Table 4-14.

The sum of organic compounds calculated for soil confirmation sample P2-D4-F (22) was 16,911.42 mg/kg, which exceeded the Site-specific foc value. This soil confirmation sample location was in the western portion of Lot 9 on the Site. The total TPH for the sample was 3,359 mg/kg, which is below the site-specific foc value.

The total organic compounds and TPH for soil confirmation sample P4-A1-W (20) were 73,138 mg/kg and 14,690 mg/kg, respectively. Both values exceeded the site-specific foc value. Soil confirmation sample P4-A1-W (20) is located along the northern boundary of the Site on Lot 10.

Three soil confirmation samples collected from Perimeter Area 5 were also analyzed for TPH. One sample, PA5-08 (3), had a TPH result of 33,535 mg/kg. The TPH value was in exceedance of the site-specific foc value of 23,200 mg/kg for the 0- to 3-foot depth interval. This location is at the perimeter of the Remediation Area boundary and located on the property owned by Norfolk-Southern Railroad.

4.4 ISCO Treatment of Soil (2009-2011)

4.4.1 ISCO 1 - Pilot Study (2009)

An ISCO pilot study was conducted on-site by XDD Environmental, LLC, to evaluate the feasibility of treating impacted soil using ISCO technology. Eighteen temporary injection wells were installed on the northwest corner of the Site within a 30' by 30' grid, as illustrated on Figure 4-4. Nine of the wells were screened at a depth of 10 to 15 feet bgs, and nine wells were screened at 17 to 27 feet bgs to correspond with the depths of impact identified during site investigation activities.

XDD selected an alkaline activated persulfate (AAP) solution for the pilot study. The AAP method involves the activation of a sodium persulfate oxidant by adjusting the pH of the aquifer to alkaline conditions. The activation of the persulfate results in the formation of an oxidant that is capable of reducing contaminants in-situ.

The pilot injection was completed on July 17, 2009. A total of approximately 8,763 gallons of AAP solution was injected into the temporary wells. Approximately 1,302 gallons were injected into the shallow wells, and 7,461 gallons were injected into the deep wells. Some of the oxidant that was injected into the shallow wells daylighted onto the ground surface rather than being distributed beneath the surface as intended. Injections into the deeper wells appeared to have greater subsurface distribution than the shallow wells.

Two post-injection monitoring events were conducted on July 24, 2009 and August 6, 2009 to evaluate the reactivity of the injected oxidant. The pH and persulfate remained elevated in several wells during the first monitoring event. The persulfate was fully reacted during the second monitoring event.

Post-injection soil sampling was conducted following the ISCO injection to evaluate the effectiveness of the oxidant in on-site soils. The results of the sampling are briefly discussed in the following sections.

4.4.1.1 Pilot Study Analytical Results

Soil Essentials Company, from New Glarus, Wisconsin, was contracted to advance three probeholes within the ISCO pilot study area. Soil Essentials advanced probeholes in the approximate vicinity of the original probehole locations installed prior to the ISCO injection activities. Two soil samples were collected from each probehole for comparison to samples collected prior to the ISCO injections. Mike Mullins of the IEPA Champaign Field Office was on-site to split samples for additional analysis.

The results of the pre- and post-ISCO soil samples indicated a reduction of the COCs in soils. Based on the results of the pilot study, Ameren elected to implement ISCO applications around the perimeter of the Remediation Area (on-site and off-site) to reduce COC impact and address elevated constituent levels.

4.4.2 ISCO 2 - Application during 2009-2011 Soil Excavations

Following the completion of the ISCO pilot study, chemical oxidant was applied to excavation floors during Phases 2, 3, and 4 of the covered soil excavations (Figure 4-1), as an additional remedial measure. The oxidant was intended to reduce potential impact remaining at depths that were inaccessible with conventional excavation equipment.

4.5 Groundwater Monitoring Well Abandonment (2011)

Groundwater monitoring wells located within the Remediation Area were abandoned during excavation activities. The following groundwater monitoring wells were removed during remedial activities: UMW-113, UMW-114, and UMW-115 located in the southern half of the Site; wells UMW-104 and UMW-110 located in the former Sixth Street ROW which was included in the Remediation Area boundaries; and UMW-304 located near the center of the Remediation Area. Each monitoring well was abandoned according to the IEPA and Illinois Department of Health requirements.

4.6 ISCO Treatment of Soil in Perimeter Areas (2013)

Soil confirmation samples collected from the excavation walls during the 2009-2011 remediation activities indicated that soil impact remained around a portion of the Site perimeter. The data from the 2009-2011 remediation also identified areas of concern where concentrations of COCs exceeded the attenuation capacity of the soil. Ameren elected to use ISCO to further remediate the soil impacts in these locations at the Site. The objectives of the 2013 ISCO remediation program were as follows:

- Reduce perimeter BTEX and naphthalene concentrations in the upper ten feet of soil to meet Tier 1 ROs for the soil inhalation exposure pathway for commercial property use; and
- Reduce organic compounds to levels below the soil attenuation capacity in areas of concern.

In-Situ Oxidative Technologies, Inc. (ISOTEC) was contracted to complete the 2013 ISCO remediation injections. ISOTEC designed an ISCO remediation program with the intent of meeting Ameren's objectives to reduce the BTEX and naphthalene concentrations to meet the Tier 1 ROs for the soil inhalation exposure pathway for commercial property use, and to reduce the concentrations of organic compounds to levels below the soil attenuation capacity. Detailed descriptions of the ISCO injections process are in the ISOTEC Phase Reports. These reports are contained in Appendix B.

Three ISCO injections were performed at the Site. The ISCO treatment areas are illustrated on Figure 4-7. The first event was conducted from April 29 to May 15, 2013. The second event was conducted from June 19 to June 26, 2013, and the third event was conducted from August 14 through August 20, 2013. The following sections describe the ISCO treatment methods and results for each of the three injection events performed on the Site.

4.6.1 First ISCO Injection Event (2013)

The first ISCO injection event was performed between April 29 and May 15, 2013. There were 98 proposed injection locations, for a total of 203 injection screens. Ten injection screens were installed at a depth of 20 to 25 feet bgs in the areas of concern that exceeded the attenuation capacity of the soil. Three injection screens were also installed at a depth of 36 to 44 feet bgs on the southern property boundary to encounter the intermediate groundwater bearing unit. The remaining screens were installed at depths of 3 to 6 feet or 6 to 10 feet bgs to reduce COC concentrations that exceeded soil inhalation Tier 1 ROs. Figure 4-8 illustrates the injection areas for the first ISCO injection event. The ISOTEC report for Phase 2A identifies these injection locations.

4.6.1.1 Injection Volume, Flow Rates, and Pressures

A total of approximately 9,664 gallons of reagent (catalyst and oxidizer) were injected into the subsurface during the first ISCO event. According to ISOTEC, an average of 41 gallons of reagent per screen was injected into screens located in the 3 to 6 feet bgs treatment interval, and an average of 49 gallons was injected into the screens within the 6 to 10 feet bgs treatment interval. The screens located in the 20 to 25 feet bgs and 36 to 44 feet bgs treatment depths were more amenable to treatment due to the sandier soil lithology, receiving an average of 83 gallons and 100 gallons per screen, respectively.

According to ISOTEC, flow rates ranged from approximately 1.8 to 2.8 gallons per minute (gpm), and injection pressures ranged from 0 to 30 pounds per square inch (psi) during the first injection event.

4.6.1.2 Soil Confirmation Sampling

Soil confirmation samples were collected from the ISCO remediation area between May 23 and May 28, 2013. The soil samples were collected from specific depths to correspond with the injection screen depths. A total of 46 soil confirmation samples were collected from the ISCO remediation area. Soil confirmation samples were collected using a DPT rig operated by Bulldog Drilling, Inc. (Bulldog). Macrocore samplers with acetate liners were advanced to the desired sampling depth and samples were retrieved. An on-site geologist selected the sample depths within the target intervals based on field observations and PID readings. The soil confirmation samples were placed into laboratory provided containers and labeled according to sample location, depth, date, time, and analytical method. The samples were packaged in coolers with ice and delivered to Teklab for analysis. Analytical results for the soil confirmation samples are discussed in Section 5 of this report.

4.6.1.3 Limiting Factors

Daylighting of reagent (reagent migration up to ground surface) was a limiting factor due to previous soil disturbance and injection into shallow, vadose zone soils. Additional information from the first ISCO injection event is provided in the report entitled *In-Situ Chemical Oxidation Remediation Program Interim Report prepared by ISOTEC and dated June 18, 2013*. A copy of the report is included in Appendix B.

4.6.2 Second ISCO Injection Event (2013)

The second ISCO injection event was performed between June 19 and June 26, 2013. Fewer injection locations were required for the second injection event due to the reduction of COC concentrations in soil confirmation samples collected following the first ISCO injection event. Figure 4-9 illustrates the injection areas for the second ISCO injection event. The specific injection points are presented in ISOTEC's Phase 2B Report and is included in Appendix B. There were 72 injection locations, for a total of 128 injection screens, during the second injection event. Nine of the injection screens were installed at a depth of 20 to 25 feet bgs in the areas of concern that exceeded the attenuation capacity of the soil. Four of the injection screens were installed at a depth of 36 to 44 feet bgs on the southern property boundary to encounter the intermediate groundwater bearing unit. The remaining screens were installed at depths of 3 to 6 feet bgs or 6 to 10 feet bgs to reduce COC concentrations that exceeded soil inhalation Tier 1 ROs.

4.6.2.1 Injection Volume, Flow Rates, and Pressures

A total of approximately 8,175 gallons of reagent (catalyst and oxidizer) were injected into the subsurface during the second ISCO injection event. According to ISOTEC, an average of 47 gallons of reagent per screen was injected into screens located in the 3 to 6 feet bgs treatment interval, and an average of 58 gallons was injected into the screens within the 6 to 10 feet bgs treatment interval. The screens located in the 20 to 25 feet bgs and 36 to 44 feet bgs treatment depths were more amenable to treatment due to the sandier soil lithology, receiving an average of 87 gallons and 315 gallons per screen, respectively.

According to ISOTEC, flow rates ranged from approximately 1.8 to 2.8 gpm and injection pressures ranged from 0 to 30 psi during the second injection event.

4.6.2.2 Soil Confirmation Sampling

Soil confirmation samples were collected from the ISCO remediation area on July 1 and July 2, 2013. The soil samples were collected from specific depths to correspond with the injection screen depths. A total of 29 soil confirmation samples were collected from the ISCO remediation area following the second

ISCO injection event. Soil confirmation samples were collected using a DPT rig operated by Bulldog. Macrocore samplers with acetate liners were advanced to the desired sampling depth and samples were retrieved.

The soil confirmation samples collected after the second ISCO injection event were collected from the same sample locations and depths as the confirmation samples collected after the first ISCO injection event to facilitate comparison of the analytical results. A comparison of the analytical results from the first and second ISCO injection events was then utilized to determine the number and location of injection points for the third ISCO injection event. Analytical results for the soil confirmation samples are discussed **in Section 5 of this** report.

4.6.2.3 Limiting Factors

Daylighting of reagent (reagent migration up to ground surface) was also a limiting factor during the second injection event due to previous soil disturbance and injection into shallow, vadose zone soils. Surfacing occurred at one location outside the western property boundary during the injection of reagent in the northwest corner of the Site. When the surfacing occurred, the injection process ceased, and no further injection was attempted at those injection locations. The reagents and surface soil were collected and placed into a drum, and clean topsoil and mulch were placed onto the area where the surfacing occurred.

On July 18 and September 20, 2013, PSC and Foth, a consultant for the City of Champaign, collected split samples of the surface soil at the location near Fifth Street where the ISCO reagents were observed, to determine whether the soil contained concentrations of MGP constituents as a result of the surfacing of the reagent during the ISCO injections. The sampling was observed by the Assistant City Engineer for the City of Champaign. These soil samples were sent to two separate laboratories for analysis.

Additional information from the second ISCO injection event is provided in the report entitled In-Situ Chemical Oxidation Remediation Program Interim Report-Phase 2B written by ISOTEC and dated July 24, 2013. A copy of the report is included in Appendix B.

4.6.3 Third ISCO Injection Event (2013)

The third ISCO injection event was performed between August 14 and August 20, 2013. Fewer injection locations were required for the third injection event due to the reduction of COC concentrations in soil confirmation samples collected following the second ISCO injection event. Figure 4-10 illustrates the injection areas for the third ISCO injection event. The specific injection points are presented in ISOTEC's Phase 2C or final report and is included in Appendix B. There were 49 injection locations, for a total of 84 injection screens, during the second injection event. Seven of the injection screens were installed at a depth of 20 to 25 feet bgs in the areas of concern that exceeded the attenuation capacity of the soil. Four of the injection screens were installed at a depth of 36 to 44 feet bgs on the southern property boundary to encounter the intermediate groundwater bearing unit. The remaining screens were installed at depths of 3 to 6 feet bgs or 6 to 10 feet bgs to reduce COC concentrations that exceeded soil inhalation Tier 1 ROs.

4.6.3.1 Injection Volume, Flow Rates, and Pressures

A total of approximately 5,202 gallons of reagent (catalyst and oxidizer) were injected into the subsurface during the third ISCO event. The total volume of reagent injected at the Site for the three ISCO injection events was approximately 23,000 gallons. According to ISOTEC, an average of 36 gallons of reagent per screen was injected into screens located in the 3 to 6 feet bgs treatment interval, and an average of 44 gallons was injected into the screens within the 6 to 10 feet bgs treatment interval. The screens located in the 20 to 25 feet bgs and 36 to 44 feet bgs treatment depths were more amenable to treatment due to the sandier soil lithology, receiving an average of 119 gallons and 325 gallons per screen, respectively.

According to ISOTEC, flow rates ranged from approximately 2 to 4 gpm and injection pressures ranged from 0 to 80 psi during the third injection event.

4.6.3.2 Soil Confirmation Sampling

Soil confirmation samples were collected from the ISCO remediation area on August 21, 2013. The analytical results from the August 21st sampling event were not consistent with the results from the previous two events. Therefore, the soil confirmation samples were collected again on September 20, 2013. The soil samples were collected from the same locations and depths where confirmation samples were collected from the first and second ISCO events.

Soil confirmation samples were collected using a DPT rig operated by Bulldog. Macrocore samplers with acetate liners were advanced to the desired sampling depth and samples were retrieved. An on-site geologist selected the sample depths within the target intervals based upon field observations and PID readings. The soil confirmation samples were placed into laboratory provided containers and labeled according to sample location, depth, date, time, and analytical method. The samples were packaged in coolers with ice and delivered to Teklab for analysis. Analytical results for the soil confirmation samples are discussed in Section 5 of this report.

4.6.3.3 Limiting Factors

Daylighting of reagent (reagent migration up to ground surface) was again a limiting factor due to previous soil disturbance and injection into shallow, vadose zone soils. Several injections were relocated due to the surfacing of reagent.

Additional information from the third ISCO injection event is provided in the report entitled In-Situ Chemical Oxidation Remediation Program Final Report written by ISOTEC and dated January 10, 2014. A copy of the report is included in Appendix B.

4.6.4 ISCO Remediation Soil Confirmation Analytical Results (2013)

Soil confirmation samples were collected following each of the three ISCO injection events. Confirmation sample locations are presented in Figure 4-11. The sampling results are presented in Table 4-15. The soil samples were collected from the same depth intervals where the ISCO treatment screens were installed. Following the first ISCO injection event, the Site geologist selected the soil samples from the most impacted areas within the appropriate depth intervals for analysis based upon visual observations and PID readings. The soil confirmation samples that were collected after the subsequent ISCO injection events were then collected from the same locations and depths, in order to facilitate comparison of the analytical data and determine the effectiveness of the ISCO reagent on the Site COCs.

If the analytical results for COC concentrations in a soil confirmation sample were below Tier 1 ROs, the treatment of that interval was considered complete and was eliminated at that location during subsequent injection events. Therefore, due to the reduction in concentrations, fewer soil confirmation samples were collected after each ISCO injection event. The following paragraphs summarize the soil analytical results from each of the post-ISCO injection events.

4.6.4.1 First ISCO Injection Event Analytical Results

The soil confirmation analytical results for the first ISCO injection event indicated concentrations of COCs in 17 of the 46 soil confirmation samples collected were below Tier 1 ROs for soil inhalation and were therefore not treated or sampled in the second or third ISCO injection events. Samples with laboratory detection limits above Tier 1 ROs due to laboratory dilution were not eliminated.

A total of eight samples collected from the 3 to 6-foot depth interval had reported concentrations of benzene below the Tier 1 ROs for soil inhalation, and 19 had reported concentrations of naphthalene below Tier 1 ROs. The analytical results for samples collected from 6 to 10 feet bgs indicated that ten samples contained benzene concentrations below Tier 1 ROs, and 15 were below ROs for naphthalene.

Multiple soil confirmation samples that were collected contained benzene and naphthalene concentrations above Tier 1 ROs for soil inhalation.

4.6.4.2 Second ISCO Injection Event Analytical Results

The soil confirmation analytical results for the second ISCO injection event indicated six of the 29 soil confirmation samples collected after the second ISCO injection event had reported COC concentrations below the Tier 1 ROs for soil inhalation. Three samples collected from the 3- to 6-foot depth interval and four samples collected from the 6- to 10-foot depth had reported benzene concentrations below the Tier 1 RO. Nine soil samples collected from the 3- to 6-foot depth interval and six of the soil samples collected from the 6- to 10-foot depth interval had reported naphthalene concentrations below the Tier 1 RO, and were therefore eliminated from the third ISCO event.

The soil confirmation sample analytical data confirmed that the concentrations of organic compounds in the areas of concern were reduced to below the soil attenuation capacity levels. However, multiple soil samples collected within the upper ten feet of soil had reported concentrations of benzene and naphthalene above Tier 1 ROs for soil inhalation.

4.6.4.3 Third ISCO Injection Event Analytical Results

The soil confirmation analytical results for the third ISCO injection event indicated that COC concentrations in soil (0'-10' bgs) samples CS-04 (5-6' bgs), CS-06 (9-10' bgs), CS-14 (20-22' bgs), and CS-23 (9-10' bgs) were below Tier 1 ROs for the soil inhalation exposure pathway, as presented in Figure 4-12. A reduction in concentrations of benzene and naphthalene was observed in samples collected following the third ISCO event. However, the concentrations were still above the Tier 1 ROs for soil inhalation for commercial settings in the western and northern perimeter areas.

Tier 2 ROs were calculated for the soil inhalation pathway. Figure 4-13 illustrates the confirmation sample locations with at least one sample that exceeded the calculated Tier 2 soil inhalation ROs for the project for benzene and/or naphthalene. Utilizing site-specific parameters, exceedances for the inhalation pathway were limited to the northwest/west corner of the Site.

Total petroleum hydrocarbons (TPH) was also detected above the Tier 1 indoor inhalation RO at locations CS-14 (3-5' bgs) and CS-15 (20-22' bgs), in the central portion of the Railroad ROW. This is the same area where the highest levels of TPH were observed in the 2011 soil sampling events. It is noted that the ISCO performance may have been affected by the presence of hydrocarbons from off-site sources for which the ISCO chemical treatment had not been optimized.

4.7 Combined ROR and RAP (2016)

A Combined ROR/RAP addendum was prepared in 2016 to present an approach to address the remaining impact in the northwest perimeter area of the Site. The *Addendum Combined Remedial Objectives Report and Remedial Action Plan, Champaign Former Manufactured Gas Plant, Champaign, Illinois, State ID 0190100008, October 28, 2016* was submitted to IEPA in November 2016. The Combined ROR/RAP proposed excavating up to 12 feet bgs in the perimeter northwest area, from the western boundary of the 2009-2011 excavation to a point on the western Site property boundary. This excavation would be backfilled with non-impacted soil to serve as a barrier for deeper, potentially-impacted soil that would remain. IEPA acknowledged the Combined ROR/RAO with comments on December 6, 2016.

4.8 Soil Excavations in Northwest Corner of Site (2016–2017)

As discussed further in Section 5, the ISCO approach was successful at addressing significant areas of impact around the perimeter of the Remediation Area, and in some of the heavily impacted areas at the base of the original remediation excavations. However, the ISCO remedial approach was not as effective in addressing impact in an area in the northwest corner of the Site. Significant concentrations of COCs exceeding Tier 1 ROs and soil attenuation levels were still present following ISCO injections in this area. To address this remaining impact, Ameren elected to use conventional methods to excavate, remove, and dispose of the remaining impact in this area. The following sections provide a summary of the soil remedial activities performed in the northwest corner of the Site.

4.8.1 Remedial Objectives

The objective of this remedial action was to remove impacted soil exceeding the soil attenuation capacity and/or soil saturation limits. The objective also included excavating and removing impacted soil exceeding Tier 1 ROs for soil inhalation and Tier 1 ROs for soil ingestion within 10 feet of ground surface. An Addendum ROR-RAP for the northwest corner of the Site was completed and submitted to the IEPA on November 11, 2016 (PSC 2016).

4.8.2 Perimeter Air Monitoring

Perimeter air monitoring was performed during the 2016-2017 remedial actions in the northwest corner of the Site. Four perimeter air monitoring stations were established. Prior to initiating the remedial actions, two 72-hour monitoring periods were used to establishing baseline ambient air conditions. Air sampling was performed in accordance with the submitted Ambient Air Monitoring Plan (PSC 2016). Samples were collected and analyzed for PNAs using USEPA Method TO-13A and for VOCs using USEPA Method TO-15.

During this remedial action, time-averaged air sampling was performed on 72-hour monitoring periods. Additionally, real-time monitoring was performed during operational periods. The real-time monitoring was conducted using a PID. Monitoring at the air monitoring stations was performed on an hourly basis. The air monitoring technician worked with the on-site remediation geologist to monitor the conditions, and to take appropriate actions if monitored conditions exceeded the project action levels.

Upon completion of the remedial actions, post-remediation ambient air monitoring was performed. This work included two 72-hour monitoring periods.

4.8.3 Waste Characterization

Prior to mobilizing for remedial actions, a representative sample of the material scheduled for removal was collected and analyzed for waste profiling. Samples were collected in three locations using direct push methods. Continuous soil sampling was performed from ground surface to a depth of approximately 10 feet bgs. The recovered soil from all three direct-push locations was blended to form a representative sample that was submitted to Teklab for analysis. Analytical results indicated that the material did not meet the criteria for disposal at a Subtitle D disposal facility. Based on the results, the material was profiled for acceptance at the US Ecology, Inc. (USEI) Subtitle C disposal facility in Belleville, Michigan.

4.8.4 Soil Removal and Backfill (2017)

Remediation crews were mobilized to the northwest portion of the Site in late November 2016. Soil material was excavated beginning at the north end of the area, and work continued southward. The soil was excavated west to the property boundary. Material was excavated east to the limits of the original remediation excavation. The vertical extent of soil removal was based on results of floor confirmation samples. Soil was excavated to depths of 12 to 16 feet bgs across the length of the excavation area.

Excavated soil was loaded directly into trucks provided by Beelman Trucking, Inc. The excavated material was then transported from the Site directly to the USEI Belleville, Michigan Subtitle C disposal facility. Approximately 2,775 tons of impacted material was excavated and disposed. The final extent of soil excavation is shown in Figure 4-14.

4.8.5 Soil Confirmation Sampling

Confirmation samples were collected from the floor and the sidewalls of the excavation. Sidewall confirmation samples were collected from approximate 50-foot spacings. Sidewall confirmation samples were collected from the 0- to 3-foot depth interval and from the 3- to 10-foot depth interval. Sidewall samples were collected from the west sidewall of the excavation along the perimeter of the property boundary and the Remediation Area. Floor samples were collected from the base of the excavation to represent approximately 50-foot by 50-foot areas.

Prior to collection of the confirmation samples, the on-site geologist evaluated the conditions along the sidewall and the base of the excavation. The on-site geologist also performed field screening to evaluate remaining impact in the sidewalls and floor. Field screening was performed using a PID. The on-site geologist also screened conditions for visible impact and for odors. Confirmation samples were collected from the most heavily impacted areas using the spacings previously noted. The confirmation samples were submitted to Teklab for laboratory analysis of selected SVOCs, selected VOCs, RCRA metals and cyanide. Selected soil samples were also analyzed for TPH as an indicator constituent of potential impacts. Copies of the laboratory datasheets are provided in Appendix C.

4.8.6 Analytical Results

The following sections present an evaluation of the analytical results of the soil confirmation samples collected in January and February of 2017 from the walls and floors of the excavations conducted in the northwest corner (Lot 7) of the Site.

Soil analytical results are presented in Table 4-16. Those locations where constituents exceeded their soil attenuation capacity are presented in Figure 4-15.

With one exception, the sampling indicated that benzene and naphthalene in shallow soil (0-3 feet bgs) along the western wall of the excavation was either not detected or detected below all Tier 1 ROs. One wall sample, collected at location W3 at a depth of 2 feet bgs, was reported as not detected with a laboratory reporting limit of 0.0326 mg/kg, which was slightly above the soil component to groundwater RO for benzene (0.03 mg/kg). It is unlikely that the constituent is actually present above the RO.

MGP-related constituents were detected in wall and floor samples above soil component to groundwater ROs and Construction Worker Inhalation ROs. The maximum concentrations of benzene and naphthalene were reported in samples from the SW-RES-REM-W6 location at a depth of 10 feet bgs. At this location, benzene and naphthalene were reported at concentrations exceeding residential ingestion but below commercial ingestion. The benzene and naphthalene concentrations at this location were 40.3 mg/kg and 3,400 mg/kg, respectively. The highest level of TPH concentration present in a sidewall sample was 25,680 mg/kg. This concentration was present in a sample collected from SW-RES-REM-W-4 at a depth of 10-feet bgs.

The highest benzene concentration (36 mg/kg) in the floor sampling conducted was reported for the FL-RES-REM-W7 location at a depth of 15 feet bgs. The highest naphthalene concentration (284 mg/kg) in the floor samples was reported for the FL-RES-REM-W4 location at a depth of 12 feet bgs. The highest level of TPH concentration (2,990 mg/kg) in floor sampling was from the FL-RES-REM-W4 location at a depth of 12-feet bgs.

These results are discussed further in the Section 5.

5. Remedial Action Results

A summary of the effectiveness of the remediation conducted in the Remediation Area is presented below. The detailed effectiveness of each removal action is discussed in the progress and/or completion reports submitted to the IEPA for each activity.

5.1 Remedial Objectives

The overall objective for this project has been to address exceedances of ROs applicable to the Remediation Area. The following ten exposure pathways have been potentially applicable to the Site, the Railroad ROW, and/or the Sixth Street ROW over the course of this project:

- Residential Ingestion and Outdoor Inhalation for Surface Soils – *Although the Site and ROWs are not residential properties, Ameren will consider these pathways as applicable to the Site for evaluation, to be protective;*
- Industrial-Commercial Ingestion and Outdoor Inhalation for Surface Soils;
- Construction Worker Ingestion and Outdoor Inhalation for Surface and Subsurface Soils;
- Construction Worker Volatile Inhalation for Subsurface Soils;
- Class II Soil Component to Groundwater Ingestion Pathway for Soils;
- Residential Class II Groundwater Ingestion Pathway – *To be protective, Ameren has elected to not rely on the City of Champaign ordinance restricting the use of groundwater in the area, so it is included as a pathway;*
- Industrial-Commercial Class II Groundwater Ingestion Pathway; and
- Industrial-Commercial Indoor Inhalation from Groundwater Pathway – Diffusion and Advection.

For off-site residential property adjacent to the south side of the Site, the following pathways are potentially applicable:

- Residential Indoor Inhalation from Groundwater Pathway – Diffusion and Advection; and
- Class II Groundwater Ingestion Pathway – *This pathway is also being retained to be protective.*

5.2 Constituents of Concern

Prior to the 1997-1998 source removals at the Site, MGP residuals (cinders, clinker, et. al.) had been observed in soil and BTEX, and naphthalene were reported as present in groundwater sampling results since 1990. Observations made during the investigations between 1986 and 1997 indicated impacts from MGP residuals were prominent below the GH-1 has holder, in the northwest portion of the Site, and in the eastern portion of the Site, near the Sixth Street boundary area. BTEX impacts were present in shallow and deep soil, and in groundwater. Soil impacts were reported to extend to greater depths on the northern portion of the Site, and in the northwest portion of the Site (Lot 7, Lot 8), and beyond the northwest boundary. The COCs investigated have included BTEX, PAHs, VOCs, SVOCs, TPH, RCRA metals, and cyanide.

The primary COCs that have had historical exceedances in soil and/or groundwater, and still exceed in some locations, are benzene and naphthalene. To a lesser extent, ethylbenzene has had exceedances sporadically in groundwater, and TPH, which was used as an indicator constituent historically at the Site and in off-site areas, remains a COC in the off-site area to the northwest of the Site.

Multiple Tier 1 and Tier 2 evaluations have been conducted over time at this Site. An overview of the Tier 1 evaluations for each exposure route pathway is provided in Section 5.7. A Tier 2 evaluation of the primary COCs identified, and those to be included in the requested NFR letter, is presented in Section 5.8.

5.3 Effectiveness of 1997-1998 Source Removal

Following the discovery of coal tar at the Site in 1997, source removal remedial actions were performed at the Site including excavations of tar and soil, disposal of over 10,000 tons of materials, and demolition and removal of the former MGP structures on-site. These removal actions eliminated the larger, primary historical sources at the Site. However, as anticipated, ROs were not met, as secondary impacts in the soil and groundwater remained and would need to be investigated as possible residual sources at the Site. Subsequent investigations confirmed the presence of secondary impacts in soil and groundwater.

5.4 Effectiveness of 2009-2011 Excavations

Following a period of investigations and stakeholder input, substantial remedial actions were taken to address the secondary impacts between 2009 and 2011. This work consisted of primarily the excavation of soil across the Site, to a maximum depth of 28 feet bgs, and disposal of 187,000 tons of soil and MGP materials.

With the exception of a small area in the southeast corner of the Site, where no significant impacts were found, the entire Site was excavated as part of the larger Remediation Area being addressed, which also included portions of the adjacent Railroad ROW and the Sixth Street ROW. Soil removal was performed to the extent practical, and the Site was backfilled with 170,000 tons of approved fill material, including soil and aggregate.

As presented in Figure 4-1, in perimeter areas of the Site, adjacent to roads and railroad tracks, approved fill material is now present to depths of 3 to 16 feet bgs, and across the majority of the Site, approved fill material is now present to depths ranging from 16 to 28 feet bgs. This represents an approved barrier to be protective of the following pathways:

- Residential Ingestion and Outdoor Inhalation for Soils;
- Industrial-Commercial Ingestion and Outdoor Inhalation for Soils; and
- Construction Worker Ingestion and Outdoor Inhalation for Surface Soils.

This barrier extends across the majority of the Site and in MGP-impacted portions of the Railroad ROW and Sixth Street ROW. As discussed in Section 6, Ameren will implement institutional land use controls on the Site associated with the barrier per IEPA requirements.

Although the 2009 to 2011 remedial actions addressed the ROs associated with surface soil (0-3 feet bgs), residual impacts were still present in the bottom of the central “covered” excavation areas located on-site, and in non-excavated soil and excavation walls in the “open-air” excavation areas located in the southern, western, and northern perimeters of the Site and the larger Remediation Area.

For subsurface soil in the “covered” excavation areas, which represent the majority of the Site area, the highest level of impact in floor samples collected and analyzed was identified in the Phase 2 excavation area, which was in the area of the former gas holders, located on the Site. Phase 2 area sample P2-D4-F, located on the Lot 8/Lot 9 boundary on the Site, at a depth of 22 feet bgs (Figure 4-6), had a reported benzene concentration of 133 mg/kg, and a naphthalene concentration of 223 mg/kg, as presented in Table 4-6. Both of these concentrations exceeded the Construction Worker Outdoor Inhalation for Subsurface Soil and the Class II Soil Component to Groundwater ROs.

Additional excavations to greater depths in the Phase 2 area and other central areas at the Site are not practical. It is also not warranted as decreases in the concentrations of impacts at these depths was likely achieved with the ISCO treatments conducted in the excavation floor areas before backfilling occurred. It is also expected that these concentrations will further decrease over time through natural attenuation processes. To address the residual exceedances of the construction worker inhalation and the soil component to groundwater pathways, institutional controls protective of these pathways will be implemented across the Site, as discussed further in Section 6.

For the southern, western, and northern perimeter areas of the Site (see Figure 4-1) and for the larger Remediation Area, the “open-air” excavations were also successful in removing impacted surface soil to at least 3 feet bgs. However, excavations were vertically limited in some perimeter areas to 3 to 10 feet bgs. The floor sampling in these excavations indicated one or more perimeter areas had residual exceedances of the Tier 1 ROs, with the most significant exceedance being the perimeter areas in the northwest corner of the Site and, to a lesser extent, in the central portion of the northern Site boundary and Railroad ROW. The benzene and naphthalene results for these samples collected are presented in Table 4-10. The residual impacts identified through post-remediation sampling in the outer walls or floor of the perimeter excavation areas are as follows:

- Perimeter Area 1 – No exceedance of benzene. Like the central areas of the Site, naphthalene (maximum detected post-remediation wall/floor sample concentration of 14.7 mg/kg) was removed to a level below residential and commercial Tier 1 ROs but still exceeded the construction worker inhalation and soil component to groundwater ROs at a depth of 3 feet bgs.
- Perimeter Area 2 – No exceedance of benzene or naphthalene. The excavation in this area was successful in removing the benzene and naphthalene impacts present above applicable ROs.
- Perimeter Area 3 – Benzene (maximum detected post-remediation wall/floor sample concentration of 0.0978 mg/kg) and naphthalene (maximum detected post-remediation wall/floor sample concentration of 7.08 mg/kg) were removed to levels below the residential and commercial Tier 1 ROs; however, in one location (PA3-09), at 3 feet bgs, residual benzene concentration exceeded the soil component to groundwater RO (0.03 mg/kg) and residual naphthalene concentration exceeded the construction worker inhalation RO (1.8 mg/kg).
- Perimeter Area 4 – Benzene (maximum detected post-remediation wall/floor sample concentration of 32.2 mg/kg at 3 feet bgs) and naphthalene (maximum detected post-remediation wall/floor sample concentration of 38 mg/kg at 10 feet bgs) were removed to levels below the commercial Tier 1 ROs. Naphthalene was removed to levels below residential ROs. Both exceeded the soil component to groundwater ROs and construction worker inhalation ROs.
- Perimeter Area 5 – Benzene (maximum detected post-remediation wall/floor sample concentration of 32.6 mg/kg at 3 feet bgs) and naphthalene (maximum detected post-remediation wall/floor sample concentration of 768 mg/kg at 3 feet bgs) were removed to levels below the commercial Tier 1 ROs. Naphthalene was removed to levels below residential ROs. Both exceeded the soil component to groundwater ROs and construction worker inhalation ROs.
- Perimeter Area 6 – No residual exceedance of benzene. Naphthalene (maximum detected post-remediation wall/floor sample concentration of 2.42 mg/kg) was removed to a level below the residential and commercial Tier 1 ROs and the soil component to groundwater RO; however, concentrations still exceeded the construction worker inhalation ROs at one location (PA6-3) at 3 feet bgs.

As with the central areas, surface soil was removed in the impacted perimeter areas and backfilled with approved soil. This remedial effort addressed the residential and industrial/commercial soil pathways. Unlike the central areas, the extent of impacts was not fully characterized in the northern and northwestern areas. In addition, the exceedances of the soil to groundwater pathway ROs in areas near the Site boundaries indicated that further remedial efforts in these areas was warranted.

5.5 Effectiveness of 2013 ISCO Programs

Following completion of the remedial actions between 2009 and 2011 using excavation technologies, additional in-situ remedial actions were performed at the Site in 2013. ISCO injections were utilized in areas that warranted additional remedial action to address residual impacts in the central excavation areas, and exceedances identified during confirmation sampling in the southern, western, and northern perimeter areas. The goal was to achieve concentrations below the Tier 1 ROs or calculated Tier 2 ROs. The ISCO injections were deemed successful in all but one area, in the northwest corner of the Site, where confirmation sampling indicated concentrations in remaining soil (Lot 7) exceeded the Tier 1 ROs.

The 2013 ISCO injection activities appeared to be effective at reducing the concentrations of the BTEX and naphthalene within the injection areas. The confirmation sample results for all three 2013 injection and sampling events are presented in Table 4-15. In the reporting on the excavations, these results were compared to the Tier 1 ROs for soil inhalation for commercial/industrial settings. Tier 2 calculations were developed for the soil inhalation pathway for commercial/industrial settings. The locations with BTEX and /or naphthalene that were reported to exceed the Tier 1 ROs for soil inhalation are shown in Figure 4-12. The confirmation sample results were also compared to the Tier 2 ROs. The locations with BTEX and/or naphthalene remained at concentrations exceeding their Tier 2 ROs for the soil inhalation pathway are depicted in Figure 4-13. The confirmation analytical results indicated that the ISCO injections were able to significantly reduce the levels of BTEX and naphthalene in the application areas. The only area where the reduction in concentrations did not meet project goals was in the extreme northwest corner of the Site.

TPH was observed in the ISCO-related sampling; however, no correlation was identified in sample concentrations between the TPH detected in the samples collected from the Railroad ROW and the known MGP sources at the Site. The more prevalent on-site MGP-related constituent, benzene, was not relatively higher in this location than others. Therefore, it is suggested that the TPH observed is related to an off-site source, such as that associated with railroad ties or diesel fuel. TPH was also reported to have been detected historically in the northernmost portion of the Fifth Street ROW, with increasing concentrations to the north of the Fifth Street ROW within the Remediation Area for the MGP site.

Unlike the hydrocarbons analyzed forensically by Meta Environmental in 2017 and identified as tar, in the central and eastern portions of the Fifth Street ROW area, the hydrocarbons in this area were reported to be a mixture of petroleum and tar. This TPH location also did not indicate the presence of elevated carbazole or dibenzofuran, as was observed in the Railroad ROW in the 2013 ISCO-related sampling. In addition, further investigation of the area north of the Fifth Street ROW indicated that a former fuel tank was located to the northwest of the Site. Therefore, the former tank or another similar off-site feature may be the source of elevated TPH in the northern Fifth Street ROW area. During the 2013 ISCO-related sampling, conducted in multiple locations between these two areas, no correlation in TPH concentrations was reported between the central Railroad ROW TPH location, and the north Fifth Street ROW TPH location. The combination of the above factors appears to indicate that the two elevated TPH locations may be due to two separate off-site sources of TPH.

5.6 Effectiveness of 2016-17 Excavations

In order to address the remaining impacts in the northwest corner of the Site following the ISCO injections in the area, additional excavation and soil removal were performed in 2016 and 2017. The 2016 and 2017 excavations targeted the western boundary area and excavations up to 16 feet in depth were conducted. As with the other excavations conducted, this area was backfilled with approved fill material.

The 2017 confirmation sample locations closest to the former ISCO injection location, CS-2 (Figure 4-12), were sample locations W6 and FL-W6 (Figure 4-14). The analytical results for these samples indicated a reduction in concentrations of benzene. Benzene was reduced from a maximum concentration of 80 mg/kg observed following the ISCO injections to a maximum concentration of 40.3 mg/kg, which exceeds the Tier 1 RO for residential soil ingestion and the Tier 1 ROs for soil inhalation and soil component to groundwater ingestion pathways. Confirmation sampling indicated that naphthalene concentrations in this area were only slightly reduced at most depths with the exception of the 10 feet bgs depth, where a higher concentration (618 mg/kg) was observed as compared to pre-excavation sampling in this area. This would appear to indicate that naphthalene remains at concentrations similar to those identified prior to excavation, with residual impacts present on the western Site boundary at the location of W2, at a depth of 10 feet bgs. However, the maximum concentrations detected in the post-excavation sampling did not exceed the Tier 1 soil ingestion ROs for all scenarios; only the Tier 1 inhalation and soil component to groundwater ROs.

Excavations in the former ISCO injection location, CS-3, as compared to the 2017 sampling locations W4 and FL-W4, indicated a reduction of benzene from a maximum concentration of 176 mg/kg to 16 mg/kg (FL-RES-REM-W4), removing the exceedance of the Tier 1 soil ingestion ROs for commercial/industrial exposure. Benzene in this area remained above Tier 1 inhalation and soil component to groundwater ROs, as well as the Tier 1 residential soil ingestion RO. Naphthalene was reduced from the previous maximum concentration of 1,580 mg/kg to 1,190 mg/kg; remaining above the Tier 1 soil inhalation and soil component to groundwater ROs.

Excavations in the CS-04 ISCO injection location, as compared to 2017 sample location W3, indicated a reduction of benzene from a maximum concentration of 10.1 mg/kg to 1.25 mg/kg. Benzene in this area remained below Tier 1 soil ingestion ROs and was reduced to a concentration below the Tier 1 soil inhalation pathways for commercial/industrial workers and the construction worker scenarios. However, concentrations exceeding the Tier 1 soil component to groundwater RO remained. Confirmation sampling for naphthalene in this area indicated a residual maximum concentration of 307 mg/kg, indicating that naphthalene remains at concentrations only exceeding the Tier 1 inhalation and soil component to groundwater ROs.

Excavations in the former CS-05 ISCO injection location, as compared to 2017 sampling locations W2 and FL-W2, indicated a reduction of benzene from a maximum concentration of 154.2 mg/kg to 2.75 mg/kg in wall samples and 6.63 mg/kg in floor sampling, eliminating the exceedance of the Tier 1 soil ingestion ROs for residential exposure. Benzene in this area remained above Tier 1 inhalation and soil component to groundwater ROs. Naphthalene was reduced from the previous maximum concentration of 951 mg/kg to 26 mg/kg, which remains above the Tier 1 construction worker soil inhalation and soil component to groundwater ROs.

Although impacted soil was removed from the northwest corner (Lot 7), residual concentrations exceeding Tier 1 ROs are still present at depths greater than 10 feet bgs and in perimeter/boundary walls at depths from 7-10 feet bgs. These exceedances extend to points below the Fifth Street ROW. In this area, it appears that impacts from both former on-site sources and off-site, non-MGP sources, may be comingled in the subsurface, although investigations in the Fifth Street ROW area are still in progress. Ameren is working under IEPA oversight to address the Fifth Street ROW Site as a separate action.

The maximum benzene and naphthalene concentrations detected in post-excavation floor samples collected in 2017 in the northwest corner was in sample FL-RES-REM-W7, at a depth of 15 feet bgs, which indicated that benzene was present at 36 mg/kg and naphthalene at 284 m/kg, as presented in Table 4-16. These concentrations both exceeded the Construction Worker Outdoor Inhalation for Subsurface Soil and the Class II Soil Component to Groundwater ROs at this location.

5.7 Tier 1 Evaluations

Tier 1 evaluations have been conducted following each investigation and confirmation sampling event. Analytical results from soil and groundwater samples were collected and compared to the Tier 1 ROs set forth in IAC Section 742, and other ROs published by the IEPA for all potential exposure routes and property use scenarios. These Tier I evaluations identify compounds with concentrations in exceedance of the Tier 1 ROs, and are included on Table 5-1 to be considered as COCs for inclusion in the Focused NFR letter for the Site property.

5.7.1 Soil Ingestion Pathway

Exceedances for the soil ingestion exposure route were identified at locations throughout the Site, as presented in the reports submitted to the IEPA. Surface soil impacts have, for the most part, been removed from the Site. However, exceedances of the soil ingestion exposure route remain in shallow and shallow subsurface soils (0 to 10 ft bgs) in the northwest and northern perimeter areas of the Site, and in deeper subsurface soils (greater than 10 ft bgs) in perimeter and on-site areas. Because residential and industrial/commercial exposure would be limited to the upper 3 feet of soil, within the approved soil barrier, the primary use scenario of concern for this pathway would be to the construction worker encountering soil below the depth of the excavations conducted, and/or in perimeter area walls that were not excavated.

5.7.2 Soil Inhalation Pathway

As with the soil ingestion pathway, outdoor soil inhalation for residents or workers would be limited to that of the approved soil barrier or non-impacted soil in the southwest corner of the Site. The primary land use of concern would be for the construction worker, who might encounter and inhale particulate or volatiles below the depths of excavations or in perimeter wall areas. Laboratory analytical results for the COCs have been compared to Tier 1 ROs for the soil inhalation exposure route for residential, industrial/ commercial, and construction worker property use scenarios. Seven COCs were identified at concentrations that exceed the Tier 1 ROs at one or more locations: benzene, ethylbenzene, toluene, xylene, naphthalene, styrene, and mercury.

5.7.3 Soil Component to Groundwater Ingestion Pathway

Twenty-five constituents were identified as COCs that have exceeded Tier 1 ROs for the soil component to groundwater ingestion route. The impact extended across the entire site in all depth intervals, with the most significant impact in deep subsurface soils.

5.7.4 Groundwater Ingestion Pathway

Groundwater has been monitored at the Site on a quarterly basis since 1997. Analytical results from the samples collected during the quarterly events in 2017 were compared to Class I Groundwater Standards by PSC. Based on this comparison, 20 COCs were identified in groundwater including benzene, ethylbenzene, toluene, twelve PNAs constituents, iron, nickel, manganese, lead, and cyanide. Groundwater monitoring has been expanded over time to include the surrounding area, including the Site and Remediation Area. Although more recent groundwater data indicate decreases in concentrations at multiple locations, the more conservative 2017 evaluation is retained to determine COCs for the NFR letter itself.

5.7.5 Indoor Air Inhalation from Groundwater Pathway

The soil component to groundwater ingestion exposure route, and the indoor air inhalation exposure route, are the primary routes that COC concentrations exceed ROs. In many locations, concentrations were below residential standards for soil or values considered safe for drinking water, but similar constituents exceeded on one or both of these RO values because they can be more conservative, especially for VOCs. Benzene and naphthalene were the primary COCs in groundwater, with concentrations that exceed the ROs for the indoor air inhalation pathway on the Site.

Regarding the indoor inhalation from the groundwater pathway in off-site areas to the south of the Site, the impacts in off-site groundwater are noted in monitoring well UMW-302, which is screened in intermediate groundwater, occurring at approximately 30 feet bgs in this area. The intermediate groundwater in this area underlies a confining layer of silty clay and a shallow groundwater zone. Therefore, it is unlikely that vapor intrusion of benzene and naphthalene would occur from the intermediate groundwater into buildings at the ground surface.

This area and pathway have been evaluated multiple times via soil gas and groundwater sampling events including, most recently, in 2021. The 2021 vapor intrusion evaluation was conducted for residences in the area of monitoring well UMW-302, which includes 506 East Church Street, where the well is located, and its immediate neighbor, 508 East Church Street. At the request of IEPA, a total of six residences to the south of the Site, along East Church Street, were evaluated. These included 504 and 510 East Church Street, which are within 100 feet of monitoring well UMW-302. The March 16, 2021, report by TRC summarizing this work is included as Appendix G. The evaluation also examined the results of the soil gas sampling conducted in 2009 and 2013, and groundwater sampling conducted from 2018 to 2020.

The evaluation considered the maximum groundwater sampling results for each constituent collected from the monitoring well UMW-302 location, which had a depth of 28.99 feet to the intermediate groundwater. The benzene and naphthalene concentrations of 0.516 mg/L and 3.53 mg/L, respectively, were utilized to assess the risk for groundwater in the area of monitoring well UMW-302. The evaluation also included the co-located, shallower monitoring well at this location, UMW-121, which indicated a depth of 5.71 feet to the shallow groundwater. No benzene or naphthalene was detected in the shallower monitoring well UMW-121. The report indicated that there was no unacceptable risk posed from impacted groundwater to the residences via the groundwater to vapor intrusion pathway.

Soil gas was also evaluated in the 2021 vapor intrusion evaluation. The soil gas ROs for residential indoor inhalation (diffusion only) for benzene and naphthalene are 41 mg/m^3 and 14 mg/m^3, respectively. The soil gas concentrations reported at 506 East Church Street for benzene ranged from non-detect to 0.0056 mg/m^3; naphthalene was not detected above laboratory reporting limits. The soil gas concentrations reported at 508 East Church Street for benzene ranged from non-detect to 0.0083 mg/m^3; naphthalene was also not detected at this location. The benzene and naphthalene detected in soil gas sampling at this location may or may not be attributable to the former MGP. Regardless, the concentrations were below residential ROs for the indoor inhalation from soil gas pathways.

5.8 Tier 2 Evaluation

As discussed above, multiple constituents from soil confirmation samples have reported concentrations that exceed the Tier 1 ROs for the soil component to groundwater ingestion pathway. Benzene and naphthalene concentrations in soil confirmation samples exceeded Tier 1 ROs for soil inhalation. These multiple constituents were detected at varying locations and depths across the Site. Additionally, benzene was detected in groundwater samples from the post-remediation groundwater monitoring that exceed the Tier 1 ROs for groundwater ingestion. However, groundwater will not be remediated at the

Site. Ameren will elect to use an institutional control for excluding the soil component to groundwater ingestion and the groundwater component to groundwater ingestion. The institutional controls will include Environmental Land Use Controls (ELUCs) and HAAs as warranted.

As required in IAC Section 742, Tier 2 evaluations were performed to estimate the projected downgradient migration of the constituents in groundwater from the potential sources. Figure 5-1 through Figure 5-3 identify the confirmation soil sample locations with concentrations of constituents that exceed the Tier 1 ROs. Figure 3-3 identifies the locations from the most recent post-remediation groundwater monitoring event with constituents that exceed a Tier 1 RO for groundwater ingestion. Post-ISCO locations that exceeded the Tier 1 ROs for the soil inhalation pathway are shown in Figure 4-12. Subsequent excavations were conducted in this area, but it was retained for consideration in the Tier 2 evaluation to be conservative.

Tier 2 evaluations were performed using the risk-based corrective action (RBCA) equations identified in IAC Section 742; Appendix C; Table C and the soil screening level (SSL) equations identified in IAC Section 742; Appendix C; Table A.

5.8.1 Tier 2 Evaluation Pathways

For this Site, as allowed by IEPA guidance, a Tier 2 evaluation was conducted as presented below. For conducting the Tier 2 evaluation for the soil component to groundwater ingestion, the RBCA equations R-12 thru R-26 were used.

5.8.1.1 Soil Component to Groundwater Ingestion Pathway

In conducting the Tier 2 evaluation for the soil component to groundwater ingestion pathway, the RBCA equations R-12 thru R-26 were used. Site-specific parameters were used where available and appropriate. Tier 2 evaluations were not performed for all constituents at all confirmation sample locations. The soil sample analytical results were reviewed, and select constituents and locations were modeled for migration distances. The selection of those constituents was based on the soil concentration and the proximity of the sample location to the property boundary (point of compliance). Tier 2 evaluations were not performed for several constituents, because the concentration of these constituents in soil and the sample locations were pre-determined to be low enough such that other constituents would serve as the driver for Tier 2 evaluations.

In general, the groundwater flow direction for the post-remediation conditions in shallow groundwater (generally measured at 5 to 10 feet bgs) is radial from the center of the Site toward the north, west, and south, with a gradient that varies from 0.036 to 0.053. Additional input parameters for the Tier 2 evaluations are summarized in Table 5-2. To be conservative, this Tier 2 assumes that constituents are transported by the shallow groundwater at the Site, which flows radially from the Site.

The remaining impact exceeding Tier 1 ROs for the soil component to groundwater ingestion as identified from the confirmation sampling was evaluated, and areas of significant remaining impact were identified as shown in Figure 5-4. Tier 2 evaluations to calculate the estimated extent of impact in groundwater were performed for multiple locations and parameters. However, not all locations and parameters were evaluated. Impact that was significantly less than areas of greater impact, and impact that was upgradient of other impacted areas, may not have been evaluated. The basis for the Tier 2 evaluation and modeling was to identify the overall potential migration distance and potentially affected property owners. The migration distance was based upon the constituents with the greatest potential for extended migration.

The Tier 2 evaluation calculations and datasheets are provided in Appendix D.

5.8.1.2 Groundwater Component to Groundwater Ingestion Pathway

For conducting the Tier 2 evaluation for the groundwater component to groundwater ingestion, the RBCA equation R-26 was used. Site-specific parameters were used where available and appropriate. This Tier 2 evaluation was performed for benzene based on the fourth quarterly sampling event for 2017.

The Tier 2 evaluation calculations and datasheets are provided in Appendix E.

5.8.1.3 Soil Inhalation Pathway

Tier 2 evaluations were performed and Tier 2 ROs were calculated for the soil inhalation exposure pathway for residential, commercial/industrial, and construction worker exposure scenarios. The Tier 2 ROs were calculated using the SSL equations S-4, S-5, S-6, and S-7 and their accompanying equations. The Tier 2 ROs were calculated for benzene and naphthalene. These two constituents are of concern in areas of the Site that were further treated by the ISCO injections in 2009 to 2011 (Figure 4-6).

The Tier 2 evaluation calculations and datasheets are provided in Appendix F.

5.8.2 Tier 2 Evaluation Results

The results of the Tier 2 evaluations for the soil component to groundwater, the groundwater component to groundwater ingestion and the soil inhalation pathway are summarized in the following sections.

5.8.2.1 Soil Component to Groundwater Ingestion Results

The objective of the Tier 2 evaluations was to model a projected downgradient migration distance after leaching of the constituent from soil. Multiple constituents from the areas of concern identified in Figure 5-4 were evaluated and migration distances modeled. The results of the Tier 2 evaluation for the soil component to groundwater ingestion modeling are presented in Table 5-3. Figure 5-5 depicts the modeled migration distance for benzene. The highest benzene concentration was present at location P4-A1-W along the north portion of the remediation site boundary. The benzene concentration at this location was 1,460 mg/kg. The modeled migration distance for benzene to meet the Class II Groundwater Standard is approximately 178 feet downgradient from the remediation site, with a flow direction toward the north. Benzene was also modeled in four other areas of the Site using the associated groundwater flow direction and gradient. The projected migration distances for benzene varied from 178 feet, as referenced above, to 35 feet. Naphthalene is also a constituent that exceeds ROs in soil and its projected migration distance is shown in Figure 5-6. Naphthalene's maximum modeled migration distance is 52 feet.

5.8.2.2 Groundwater Component of Groundwater Ingestion Results

The objective of the Tier 2 evaluations was to model a projected downgradient migration distance for existing groundwater impact from the most recent groundwater monitoring event. Benzene was identified in the most recent groundwater monitoring event with concentrations that exceed the Class II groundwater quality standard. The results of the Tier 2 evaluations are provided in Appendix E.

The migration of benzene from monitoring well UMW-124 was modeled for the two primary groundwater flow directions that are present in the southwest portion of the remediation site in the vicinity of UMW-124. The modeled distance to meet the Class II groundwater quality standard is less than 25 feet in each of the primary flow directions. Figure 5-7 shows the modeled migration distance for benzene from monitoring well UMW-124.

5.8.2.3 Soil Inhalation (Outdoor Air) Results

Site-specific conditions were used to calculate a Tier 2 RO for the soil inhalation exposure pathway (outdoor air) for residential, commercial/industrial/ and construction worker exposure. The results are summarized in Appendix F.

5.9 Post-Remediation Areas of Concern

A significant reduction in impacts has been achieved with the completion of the remedial actions between 2009 and 2011, the ISCO injections in 2013, and the additional remedial excavation activities in 2016 and 2017. However, some COCs remain at the Site at concentrations that exceed the Tier 1 ROs or, for specific pathways, the calculated Tier 2 ROs. The remaining COCs and their exposure pathways, which exceed applicable ROs, are presented in Table 5-1. The areas of the Site that are considered post-remediation areas of concerns (AOCs) are shown in Figure 5-9.

These remaining AOCs will be addressed through the use of institutional controls and engineered barriers, as discussed in the next section of this RACR.

6. Special Conditions

Special conditions are methods used for excluding exposure pathways without remediating soil and/or groundwater to the most stringent Tier 1 ROs. This section discusses the existing and planned special conditions for this Site to be protective and meet the criteria established to receive an NFR for the Site.

6.1 Existing Special Conditions

6.1.1 Existing Engineered Barrier – Clean Soil

Impact is present that exceeds the Tier 1 ROs for the soil ingestion and soil inhalation (outdoor air) exposure pathways. To address this remaining impact and to exclude these exposure pathways, an engineered barrier can be used to exclude portions of the Remediation Area that may continue to have subsurface soil impact exceeding either a Tier 1 RO for the soil ingestion or soil outdoor inhalation exposure pathways.

As part of the remediation activities conducted in 2009 through 2011 in the Remediation Area, a “clean soil” engineered barrier was installed across the Site. This barrier ranges from 3 feet to 28 feet in depth from the ground surface. The former fill material at the Site has been replaced across the Site and, in a number of areas, the deeper, weathered till was also removed and replaced. The extent of the barrier is shown in Figure 6-1.

This barrier is a minimum of 3 feet thick in the area of the RECs at the Site. On Lot 7, in the northwest portion of the Site, the barrier is present from ground surface to 10 to 16 feet bgs. In the central portion of the Site, the barrier is present from ground surface to 20 to 28 feet bgs.

The Site is currently vacant, with controlled access only for those activities needed to maintain landscaping at the Site. The Site is fenced with locking gates, and there are no walkways or traffic ways on the Site other than a small gravel-covered parking area near the entry gate. The clean soil engineered barrier installed at the Site will be maintained.

6.1.2 Other Existing Conditions

6.1.2.1 Existing Groundwater Restrictions

The City of Champaign has an ordinance (Champaign Illinois Code of Ordinances, Chapter 16, Sections 16-20) prohibiting the use of groundwater as a potable water supply source within the corporate limits of the City (Appendix H). Per 35 IAC Section 742.1015, city ordinances can be utilized as institutional controls to meet the requirements of Section 742.320(d), to exclude the groundwater ingestion exposure pathway. This existing ordinance reduces the likelihood of this pathway being complete in the area of the Site; however, Ameren does not propose to rely on the existing groundwater prohibition ordinance as an institutional control to exclude the soil component of groundwater ingestion exposure pathway for the 308 North Fifth Street Site.

The Site area is supplied water from the City of Champaign municipal water supply system. There are no potable drinking water wells within one mile of the Site. Therefore, there is no exposure via the groundwater ingestion pathway to residual impacts to groundwater at the Site.

6.1.2.2 Land Use and Restricted Access

The Site has no buildings or work areas in its present form as a vacant lot. There are no underground utilities at the Site, and no disruption to the soil or exposure to soil at depth is anticipated. Access to the Site is restricted by a security fence surrounding the entire property with locking gates. The only persons that will be accessing the Site for operations will be Ameren personnel and Ameren contractors. No daily operations occur on the Site, hence durations of exposure would be extremely limited.

Additionally, access to the former remediation areas off-site is also limited. The Sixth Street ROW is a lot to the west of the Site owned by the City of Champaign. Although not currently utilized as a traffic way, it remains a ROW for possible future extension of Sixth Street and, therefore, will not have buildings constructed upon it in the future. The Norfolk-Southern Railroad corridor adjacent to the north of the Site has no building structures, and the ground surface is elevated and graveled with railroad tracks present. These railway lines are maintained by the Norfolk-Southern Railroad, hence exposure to soil or groundwater at this location would also be extremely limited, and the construction of new buildings unlikely.

6.2 Planned Special Conditions

6.2.1 Planned On-site Institutional Controls

6.2.1.1 Groundwater Restriction

Impact to on-site groundwater in the area of monitoring well UMW-124 has been identified. To address this impact and to be conservatively protective, groundwater across the entire Site will be prohibited from use. Ameren will implement an ELUC on the Site, that will be affixed to the deed of the property. The area for this institutional control is shown in Figure 6-2. Ameren will use the standard ELUC format developed by the IEPA as the basis for the site-specific ELUC. A copy of the proposed ELUC, including a Groundwater Restriction ELUC for the Site, is presented in Appendix I.

6.2.1.2 Industrial/Commercial Property Use Restriction

The Site is currently vacant and the specific future use is undetermined. The Site is anticipated to remain a commercial property. However, Ameren will apply an institutional control restricting the property's future use for only industrial/commercial purposes. This will formally exclude the soil ingestion and soil inhalation (outdoor air) exposure pathways for residential property use scenarios. The area for which the property use restriction will apply is shown in Figure 6-3. Ameren will use the standard ELUC format developed by the IEPA as the basis for the site-specific ELUC. The Industrial/Property Use ELUC for the Site is included as presented in Appendix I.

6.2.1.3 Building Control Technologies

Impact at the Site has been identified and remains present from several VOCs. Ameren does not plan to perform soil-gas sampling or monitoring, or to calculate Tier 2 ROs for the soil inhalation exposure pathway (indoor air). Therefore, Ameren will elect to apply an institutional control that restricts the construction of buildings, and requires the implementation of vapor control technologies on any newly-constructed buildings. The area for this institutional control is depicted in Figure 6-4. The Building Construction ELUC for the Site is included in the ELUC as shown in Appendix I.

6.2.1.4 Construction Worker Notification

A construction worker notification is planned for the Site. This notification will require that construction or utility workers intending to perform intrusive activities at the Site are informed of where impact is present in the subsurface prior to implementation of the activity. Ameren will enforce the implementation of

appropriate protective measures for the construction workers while they are on the Site. The area for the required construction worker notification institutional control is shown in Figure 6-5. This is required for intrusive work being conducted on Lot 7, due to the RO exceedances in this area at depth. However, to be protective of future construction workers in the other areas of the Site that might need to work at depths below remedial excavations, Ameren will apply this ELUC across the entire Site. The Construction Worker Notification is included in the proposed ELUC as presented in Appendix I.

6.2.2 Planned Off-site Institutional Controls

6.2.2.1 Highway Authority Agreements (HAA)

Following the remedial activities conducted at the Site, impacts that exceed Tier 1 ROs have been identified historically in groundwater samples from monitoring well UMW-126 in a location on Sixth Street, between Church Street and the Norfolk Southern Railroad ROW. To address this off-site groundwater impact, and the modeled groundwater impact from the groundwater component and the soil component of the groundwater ingestion pathways, an HAA will be negotiated with the City of Champaign.

An HAA will extend across Sixth Street that prohibits use of the groundwater underlying the area of the HAA as presented in Figure 6-6. A copy of the model HAA developed, for example, for the Sixth Street ROW is presented in Appendix J. Upon acceptance of this RACR and this method for pathway exclusion, Ameren will negotiate the HAA for the area depicted.

7. Conclusion

Site investigations at this Site have been conducted since the 1980s through 2017, with quarterly groundwater monitoring ongoing at the Site since 1997. Remediation activities, as shown in Figure 7-1, have been conducted at the Site since 1997. Multiple excavations and demolitions in the late 1990s and early 2000s removed the primary sources of the Site COCs. To address secondary sources in soil and groundwater, multiple remediation programs have been conducted at the Site and in adjacent areas to the east and north of the Site. Excavations in 2009 to 2011 removed soil in accessible areas across the expanded Remediation Area to depths of approximately 20 feet to 28 feet bgs. In-situ chemical oxidation was also applied in 2013 in perimeter areas of the Site to further reduce COC concentrations. Following the ISCO injections, further excavation was performed in the northwest corner of the Site at those soil locations where ISCO treatment had not achieved the target ROs.

Remedial activities have removed or reduced the majority of impacts in soil and groundwater in the Remediation Area. Residual concentrations of constituents remain in soil below the depths of 10 feet bgs in the northwestern portion of the Site, and below 20 feet bgs in the central and northern portions of the Site. Further excavation is not considered warranted because locations with soil impacts have already been excavated to the extent practical and necessary to be protective.

Residual impacts related to the groundwater ingestion pathway are present in one shallow groundwater location in the southwest corner of the Site, and in one intermediate groundwater location within approximately 50 feet of the southern Site boundary. However, further remediation of the subsurface soil or groundwater in these locations is unnecessary. Multiple evaluations have indicated that the COC concentrations in the well located to the south of the Site boundary do not present an unacceptable risk. These concentrations are present in the intermediate aquifer, which is overlain by a confining layer and the overlying, shallow groundwater in this area is not impacted. To address the location of shallow groundwater exceedance of the groundwater ingestion ROs in the southwest corner, Ameren will be establishing an ELUC to prohibit the installation of potable groundwater wells and the extraction of groundwater at the Site for potable use. In addition, although concentrations at monitoring well UMW-126, located to the southeast of the Site boundary, no longer exceed groundwater ingestion ROs, to be protective, Ameren will negotiate an HAA for the Sixth Street ROW to prohibit the use of groundwater in the area for potable use.

The post-remediation residual impacts (exceedances of Tier 1 ROs for the construction worker inhalation pathway)in soil are present in the northwest corner of the Site and at depths greater than 20 feet bgs in former excavation areas. Exposure to these COCs is limited due to a a barrier layer of approved soil that is present across the Site. This engineered barrier consists of a minimum of 3 feet of non-impacted soil, as required for clean soil barriers. The soil was emplaced following remedial excavations and other activities at the Site. In addition, an ELUC will be established requiring notification to construction workers of the COCs present at the Site. Although the exceedances in soil of Tier 2 ROs are limited to the northwest portion of the Site, this barrier exists across the majority of the Site. Ameren has elected to maintain this barrier site-wide to continue to prevent exposure via the soil ingestion pathway to residual impacts in soil. For groundwater exceedances of the vapor intrusion ROs, located in the northwest corner of the Site, Ameren will establish an ELUC requiring vapor control technologies on any future structures on Lot 7 and Lot 8 at the Site.

These institutional controls will provide additional levels of assurance towards the control of exposure to Site-related COCs while the residual concentrations of COCs naturally attenuate. Figure 7-2 shows the parcel and lots lines for the property and the ELUCs that will be applied to the Site; it is submitted as a base map for the NFR letter.

In summary, Ameren plans to install additional controls to address residual impacts in groundwater and soil on-site. The following institutional controls will be established for the Site:

- Restriction on the use of groundwater below the property;
- Restriction of the property's future use to industrial or commercial use only;
- Restriction on future construction of buildings on Lots 7 and 8 of the property that will require implementation of vapor control technologies in construction of any new buildings; and
- Requirement for notification of residual impacts to future construction workers conducting intrusive work at the Site.

8. Request for NFR Letter

Based upon 1) the remediation work performed, 2) constraining factors that inhibit further remedial action, 3) the presence and use of an engineered barrier, 4) the restriction of groundwater use , and 5) the planned implementation of institutional controls, Ameren has met the requirements for a Focused NFR letter.

Ameren requests that a Focused NFR Letter be issued for the property located at 308 North Fifth Street in Champaign, IL.

9. Licensed Professional Engineer Affirmation

For those portions of the work performed before I assumed responsibility for site activities:

I have reviewed documentation of the prior investigation activities and believe the data is suitable for compliance with the Act, 35 Ill. Adm. Code 740, and generally accepted engineering practices.

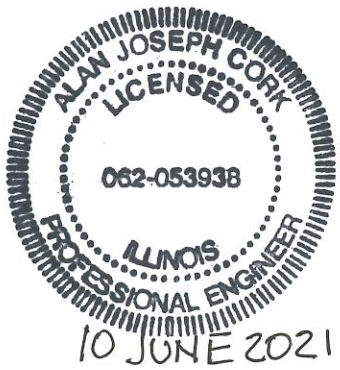
For those portions of the work performed after I assumed responsibility for site activities:

I attest that I have reviewed all site investigations and remedial activities that were performed prior to my involvement, and that this document and all attachments were prepared under my direction or reviewed by me, and that to the best of my knowledge and belief, the work described in this report has been designed or completed in accordance with the Act, 35 Ill. Adm. Code 740, and generally accepted engineering practices, and to the best of my knowledge, the information presented is accurate and complete.

Alan Joseph Cork, P.E.
Illinois Licensed Professional Engineer

License No.: 062-053938

Expiration Date: 11/30/2021



10. References

10.1 Site and Related Reports

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Ameren Illinois, *Champaign, Illinois, Manufactured Gas Plant Site, Progress Report,* January 2011. Description: This a January 2011 update flyer from Ameren to the public on the remedial progress for the former MGP Site in Champaign, Illinois.

In-Situ Oxidative Technologies, Inc., *In-Situ Chemical Oxidation Injection Program, Final Report*, January 10, 2014. Description: This is a report on the ISCO activities conducted in 2013 on subsurface impacts at the former MGP Site in Champaign Illinois.

Philip Environmental Services Corporation, *Project Completion Report, Interim Remedial Measures, Source Removal, Former Manufactured Gas Plant, Champaign, Illinois*, July 1998. Description: Report of the source removal measures taken between October 1997 and May 1998 at the former MGP Site in Champaign, Illinois.

PSC Industrial Outsourcing, LP, *Addendum Combined Remedial Objectives Report and Remedial Action Plan, Champaign Former Manufactured Gas Plant, Champaign, Illinois, State ID 0190100008*, October 28, 2016. Description: Combination report to establish ROs and a remedial action plan for residual impacts in northwest portion of the former MGP Site in Champaign, Illinois.

PSC Industrial Outsourcing, LP, *Comprehensive Site Investigation Report, for AmerenIP Champaign, Illinois, Former Manufactured Gas Plant, State ID 0190100008A,* December 2007. Description: Site investigation report for the former MGP Site, submitted in December 2007 and approved by IEPA on January 29, 2008.

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PSC Industrial Outsourcing, LP, *In-Situ Chemical Oxidation Remediation Results, Champaign MGP Site*, July 17, 2014. Description: Presentation made on July 17, 2014, to IEPA of the ISCO results at the former MGP Site in Champaign, Illinois.

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RAM Group, *Evaluation of Soil Gas Data Collected at Residential Properties near Former MGP Site, Champaign, Illinois*, December 10, 2008. Description: Report of the evaluation of soil gas data collected in 2008 at residences south of the former MGP Site, at 505 and 507 East Washington Street and 412 East Hill Street in Champaign, Illinois.

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10.2 Supporting References

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Figures

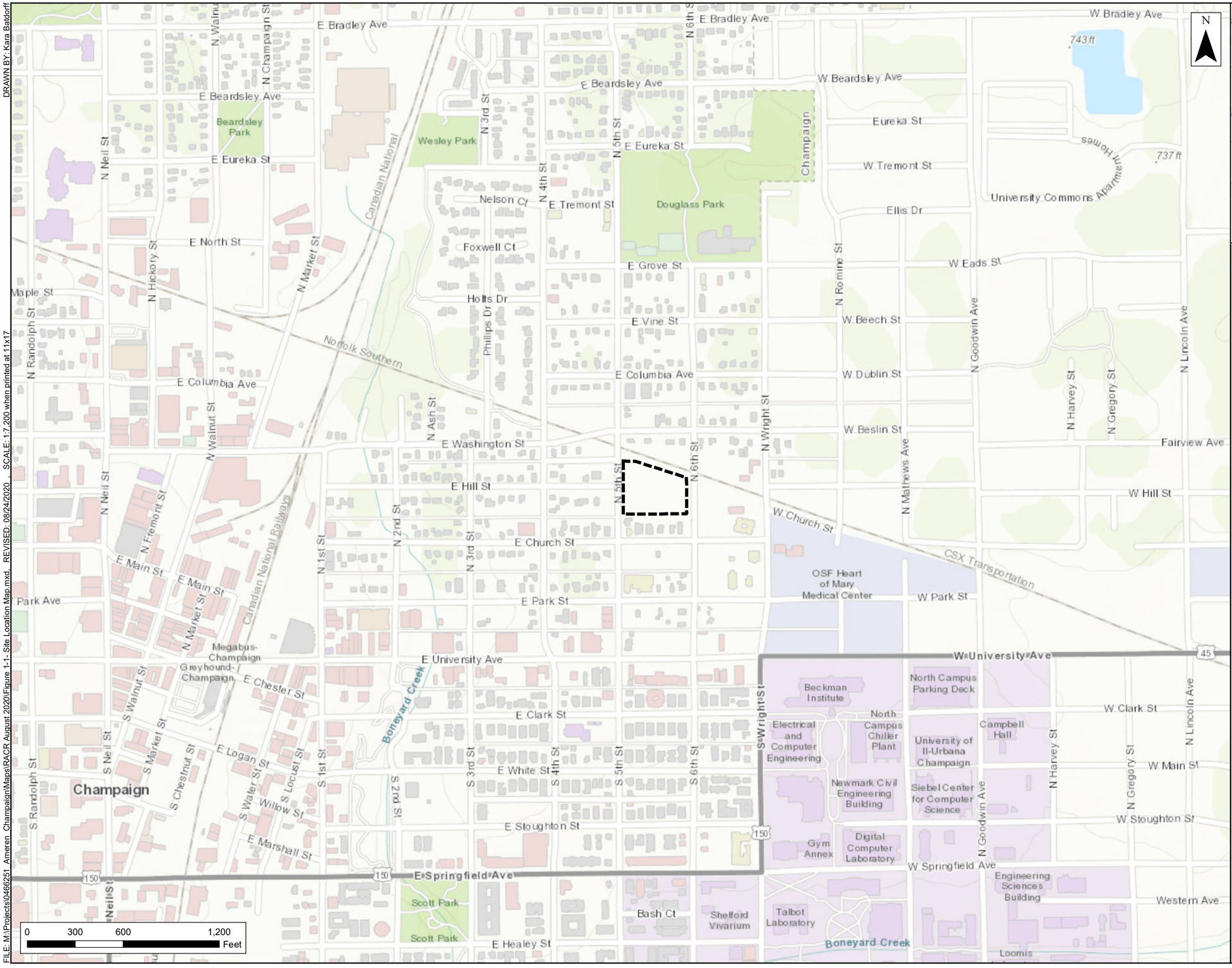


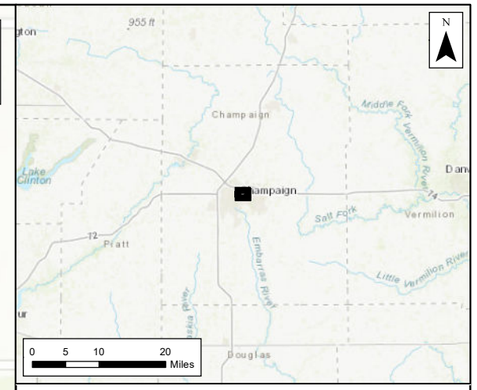
Figure ES-1. Area Boundaries
308 North Fifth Street, Champaign, IL

DRAWN BY: Kara Batdorff

SCALE: 1:7,200 when printed at 11x17

FILE: M:\Projects\0466251_Ameren_Champaign\Maps\RACR August 2020\Figure 1-1- Site Location Map.mxd, REVISED: 08/24/2020





Legend

- Former MGP Property Boundary

Figure 1-1
Site Location
Former Ameren Champaign MGP Site
Champaign, Illinois

Environmental Resources Management
www.erm.com



E Washington St

N 6th St

N 5th St

E Hill St

Gated Entrance

29-7 | 29-8 | 29-9 | 29-10 | 29-11 | 29-12

332-018 (Vacated)

SL8-3 | SL8-2 | SL8-1 | 31-1 | 21-2 | 31-3

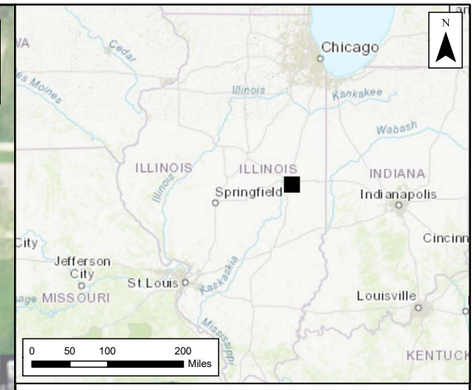
SITE
Vacant Property

Sixth Street ROW

Norfolk-Southern Property and ROW

E Church St

0 40 80 160 Feet



Legend

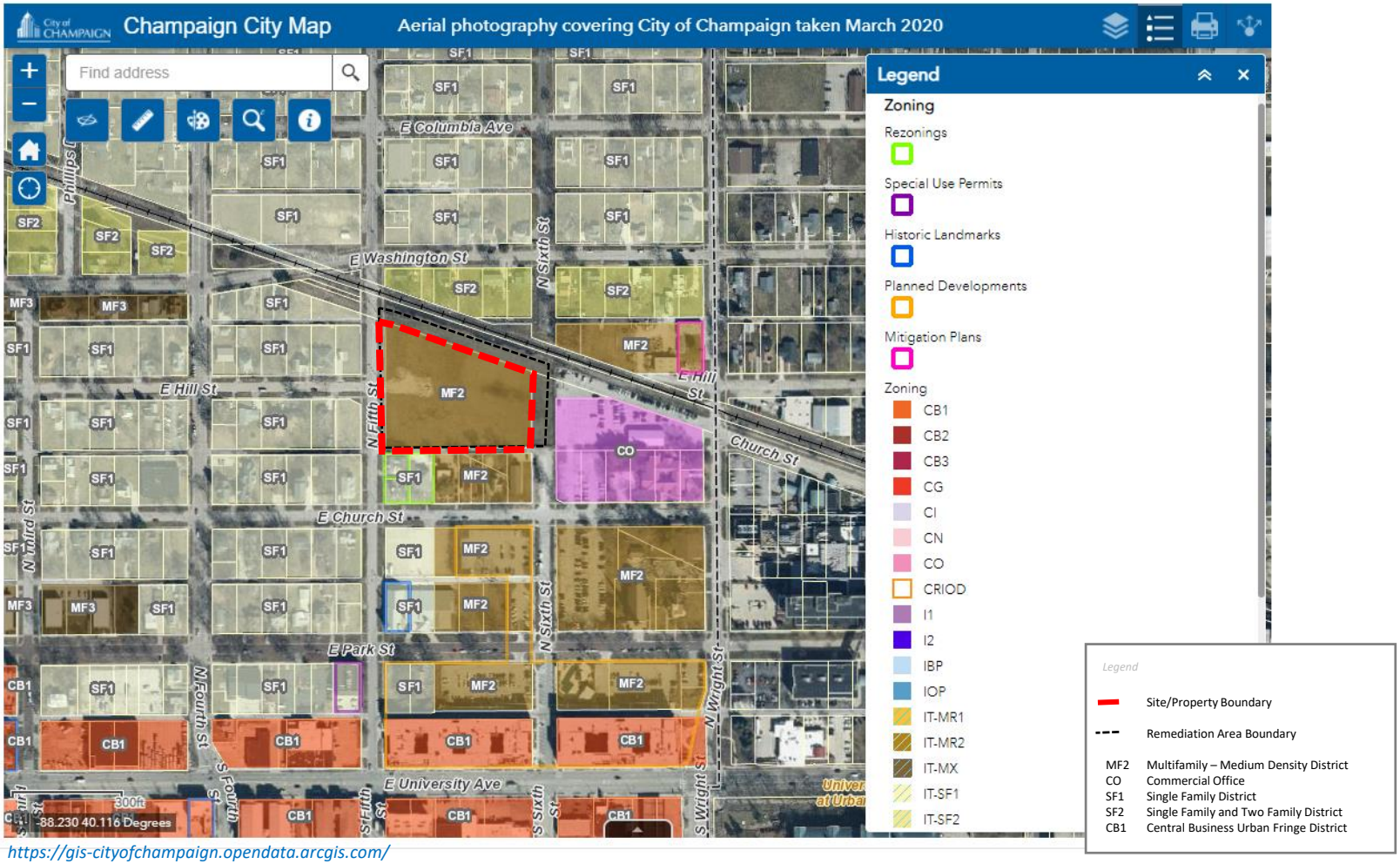
- Site/Property Boundary (Fenced)
- Remediation Area
- Norfolk-Southern Railroad Property and Right of Way
- Parcel Boundaries
- Railroad

Figure 2-1
Current Site Layout
Ameren Services
Champaign, Illinois

Environmental Resources Management
www.erm.com

DRAWN BY: Tyler Harris

FILE: M:\Projects\0496251_Ameren_Champaign\Maps\RACR August 2020\Revised 20210317\Figure 2-2 Current Site Conditions.mxd, REVISED: 03/17/2021 , SCALE: 1:1,036 when printed at 11x17



https://gis-cityofchampaign.opendata.arcgis.com/

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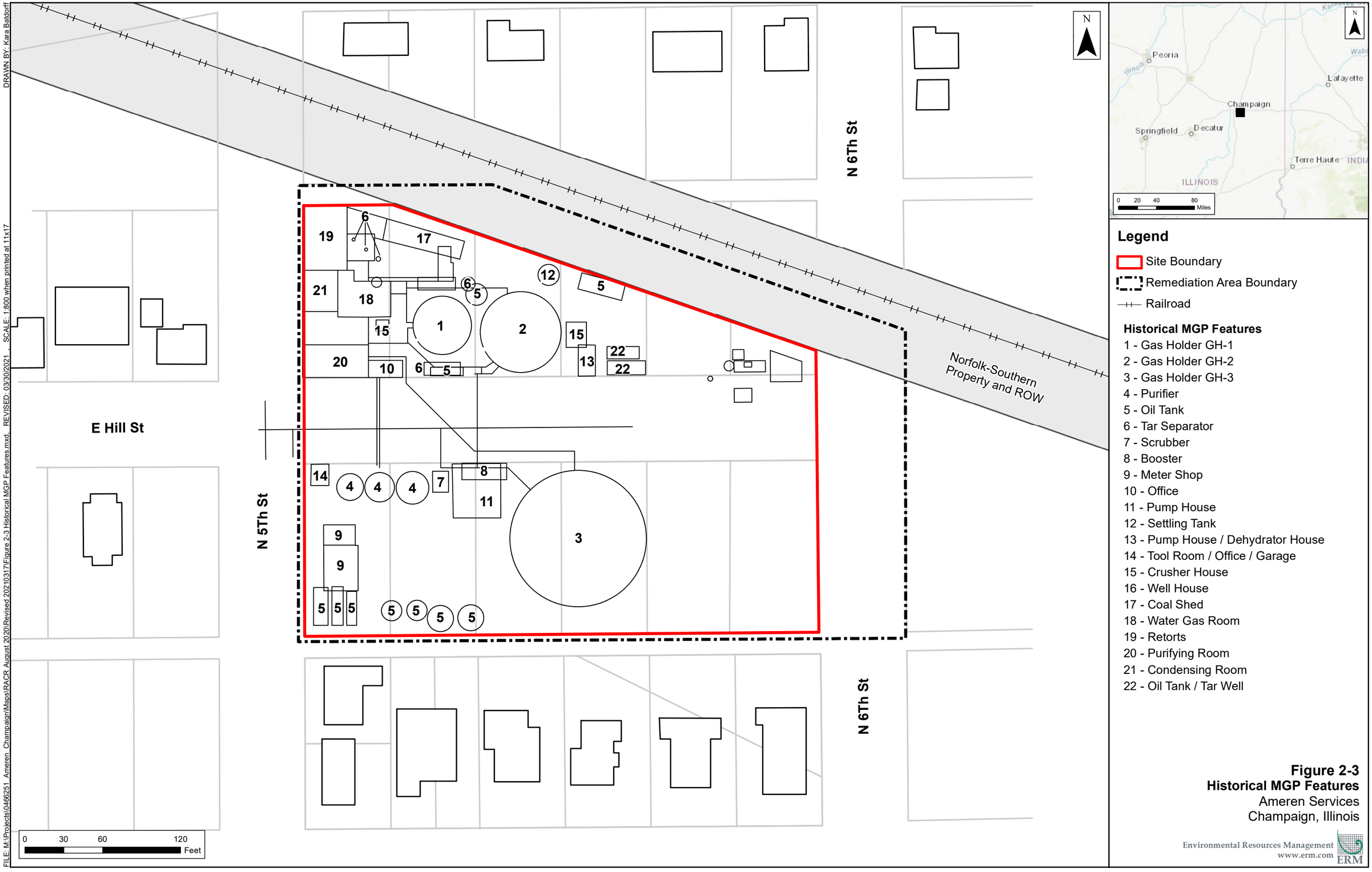
Zoning Map from City of Champaign
308 North Fifth Street, Champaign, IL

Figure:

2-2



Legend

- Site Boundary
- Remediation Area Boundary
- Railroad

Historical MGP Features

1 - Gas Holder GH-1
2 - Gas Holder GH-2
3 - Gas Holder GH-3
4 - Purifier
5 - Oil Tank
6 - Tar Separator
7 - Scrubber
8 - Booster
9 - Meter Shop
10 - Office
11 - Pump House
12 - Settling Tank
13 - Pump House / Dehydrator House
14 - Tool Room / Office / Garage
15 - Crusher House
16 - Well House
17 - Coal Shed
18 - Water Gas Room
19 - Retorts
20 - Purifying Room
21 - Condensing Room
22 - Oil Tank / Tar Well

Figure 2-3
Historical MGP Features
Ameren Services
Champaign, Illinois

Environmental Resources Management
www.erm.com

DRAWN BY: Kara Batdorff

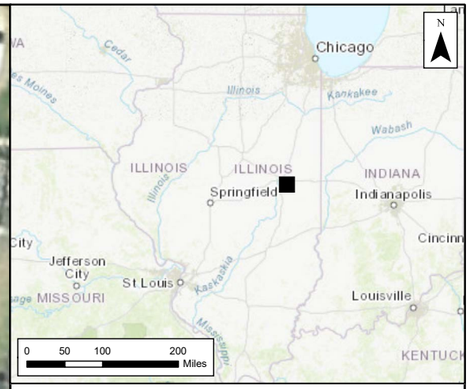
REVISED: 03/30/2021 , SCALE: 1:800 when printed at 11x17

FILE: M:\Projects\0466251 Ameren Champaign\Maps\RACR August 2020\Revised 20210317\Figure 2-3 Historical MGP Features.mxd

DRAWN BY: Tyler Harris

FILE: M:\Projects\0486251 Ameren Champaign\Maps\RACR August 2020\Revised 20210317\Figure 2-4 Pre-Remediation Site Conditions.mxd REVISED: 09/17/2021 , SCALE: 1:1,036 when printed at 11x17



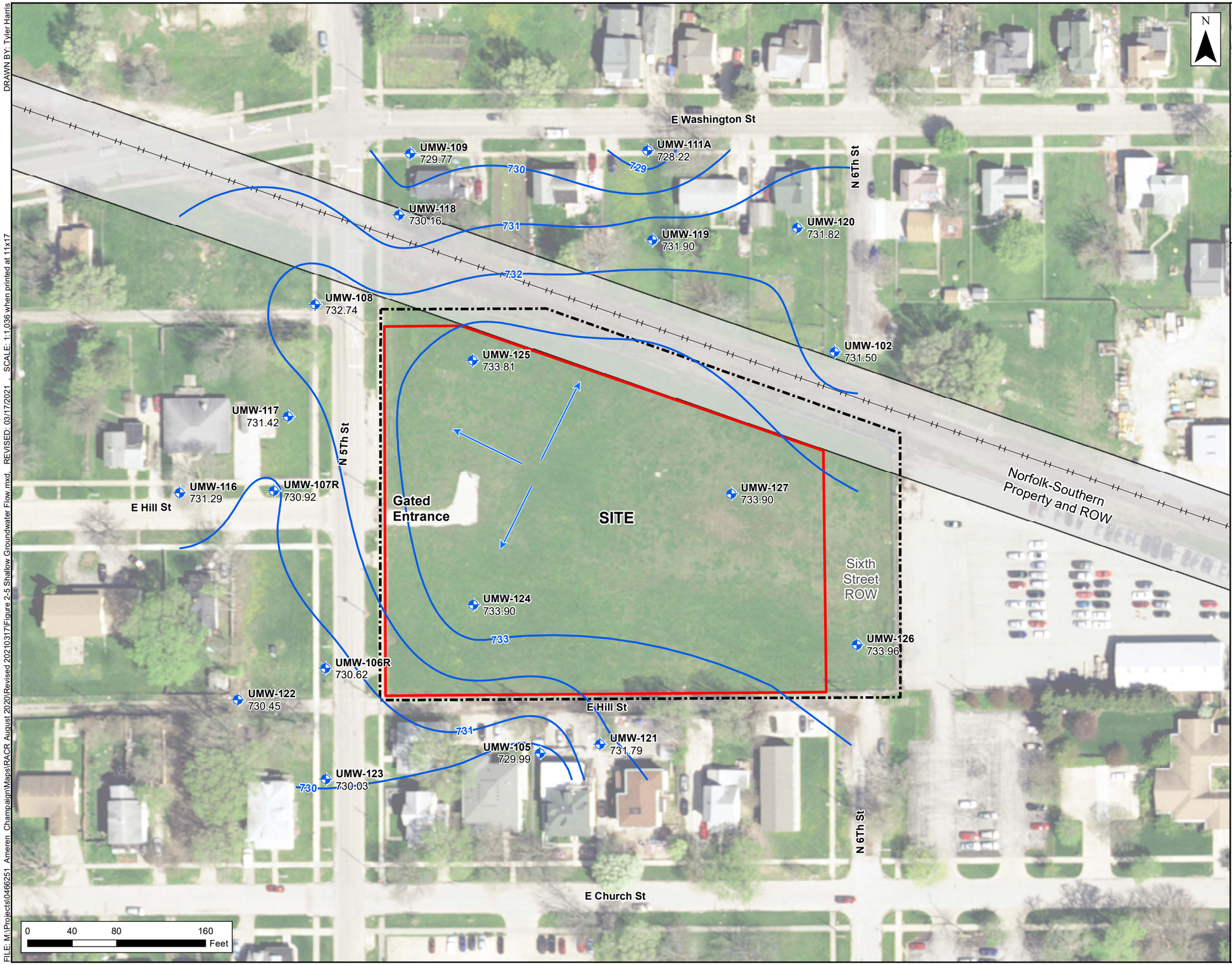


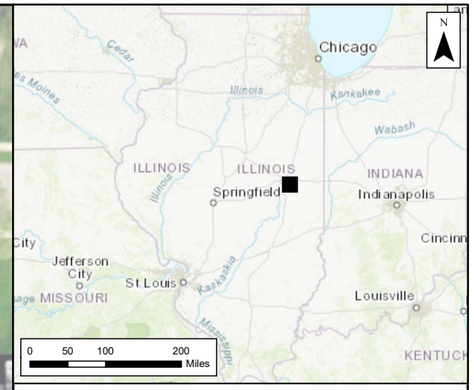
Legend

- Site/Property Boundary (Fenced)
- Remediation Area
- Norfolk-Southern Railroad Property and Right of Way
- Railroad

Figure 2-4
Pre-Remediation Site Conditions (2008)
Ameren Services
Champaign, Illinois

Environmental Resources Management
www.erm.com





Legend

- Shallow Monitoring Well with November 2019 Groundwater Elevation
- November 2019 Water Table Contour
- Shallow Groundwater Flow Direction
- Site/Property Boundary (Fenced)
- Remediation Area
- Norfolk-Southern Railroad Property and Right of Way
- Railroad

Notes:
All water levels in feet above NGVD29 datum.

Figure 2-5
Shallow Groundwater Flow
Ameren Services
Champaign, Illinois

Environmental Resources Management
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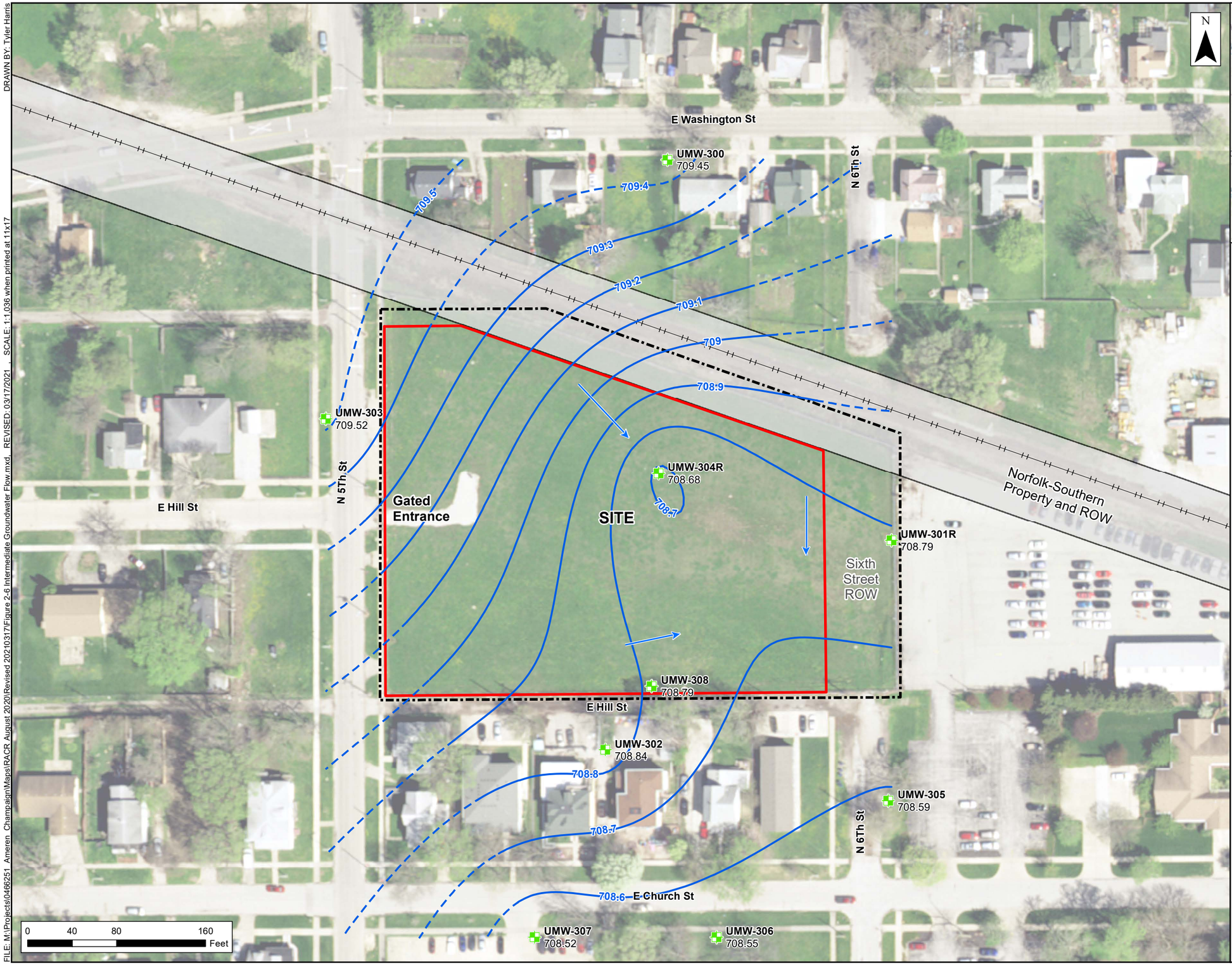
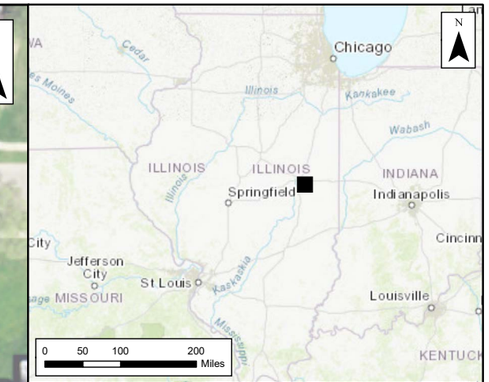
DRAWN BY: Tyler Harris

SCALE: 1:1,036 when printed at 11x17

REVISED: 03/17/2021

FILE: M:\Projects\0486251 Ameren Champaign\Maps\RACR August 2020\Revised 20210317\Figure 2-5 Shallow Groundwater Flow.mxd





Legend

- Intermediate Monitoring Well with August 2019 Groundwater Elevation
- August 2019 Potentiometric Surface Contour (Dashed Where Inferred)
- Intermediate Groundwater Flow Direction
- Site/Property Boundary (Fenced)
- Remediation Area
- Norfolk-Southern Railroad Property and Right of Way
- Parcel Boundaries
- Railroad

Notes:
All water levels in feet above NGVD29 datum.

Figure 2-6
Intermediate Groundwater Flow
Ameren Services
Champaign, Illinois

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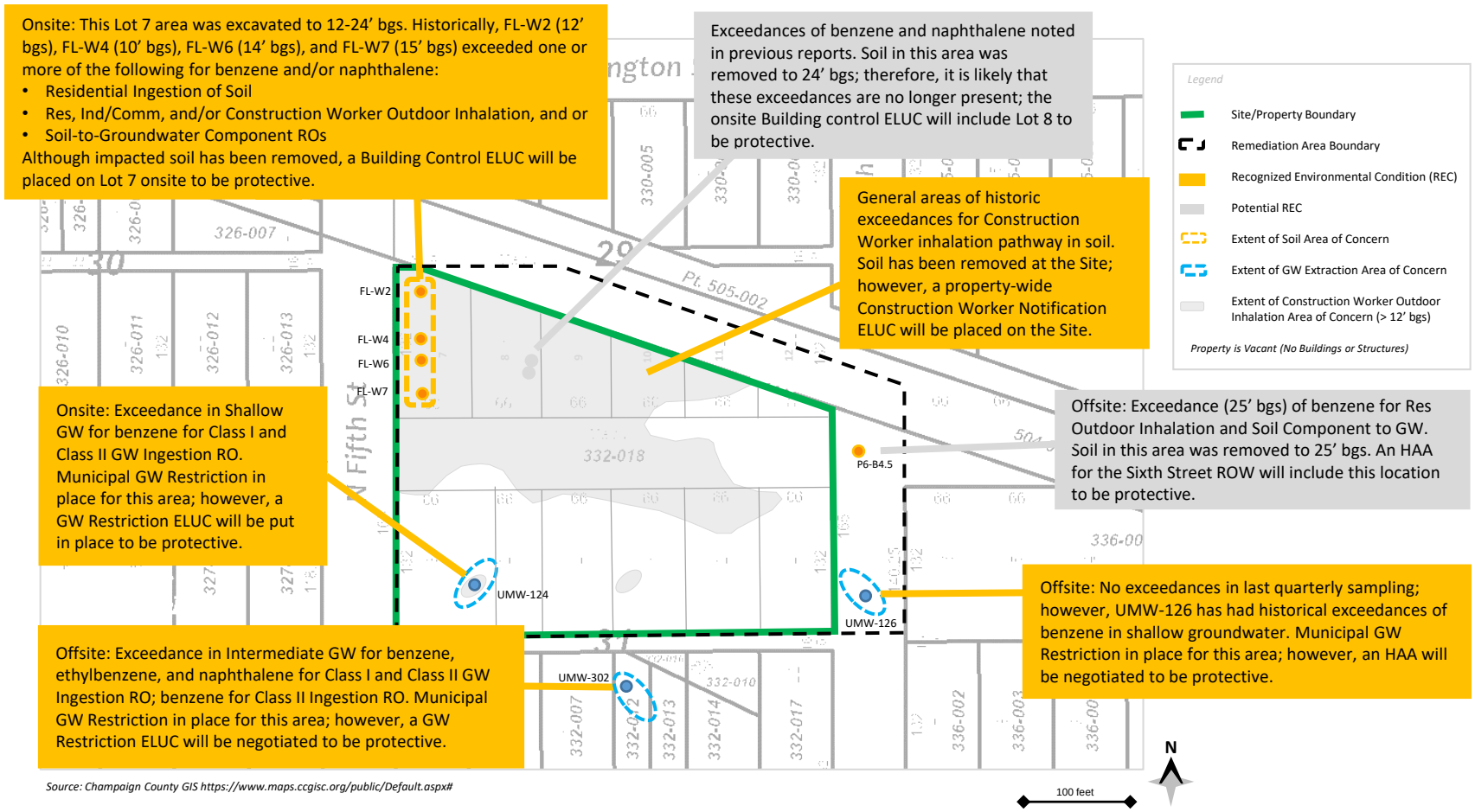
DRAWN BY: Tyler Harris
SCALE: 1:1,036 when printed at 11x17
REVISED: 03/17/2021
FILE: M:\Projects\0466251_Ameren_Champaign\Maps\RACR_August 2020\Revised 20210317\Figure 2-6 Intermediate Groundwater Flow.mxd



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Current Recognized Environmental Conditions in Remediation Area

308 North Fifth Street, Champaign, IL

Figure:

2-7

DRAWN BY: GIS

SCALE: 1:1,000 when printed at 11x17

REVISED: 03/28/2021

FILE: M:\Projects\0496251_Ameren_Champaign\Maps\RACR August 2020\Revised 20210317\Figure 3-1 Shallow Groundwater Elevation Contours.mxd

E Washington St

UMW-109
729.45

UMW-111A
728.29

729

730

UMW-118
730.16

731

UMW-119
731.85

UMW-120
731.78

732

732

UMW-108
732.09

UMW-125
733.32

733

UMW-102
731.99

UMW-117
731.26

Norfolk-Southern
Property and ROW

UMW-116
731.43

UMW-107R
731.03

UMW-127
733.48

E Hill St

N 5Th St

UMW-124
733.52

UMW-126
733.43

UMW-106R
730.74

732

UMW-122
730.29

731

E Hill St

UMW-105
729.88

UMW-121
732.54

UMW-123
730.46

730

N 6Th St

E Church St

0 40 80 160 Feet

N

Chicago

ILLINOIS

ILLINOIS

INDIANA

Springfield

Indianapolis

Jefferson City

St Louis

MISSOURI

Louisville

KENTUCK

0 50 100 200 Miles

Legend

- Shallow Monitoring Well with Feb 01 2021 Groundwater Elevation
- February 01 2021 Potentiometric Surface Contour (Dashed Where Inferred)
- Railroad
- Norfolk-Southern Railroad Property and Right of Way
- Site Boundary
- Remediation Area Boundary

Notes:
All water levels in feet above NAVD88 datum.

Figure 3-1
Shallow Groundwater Elevation Contours
February 01 2021
Ameren Services
Champaign, Illinois

Environmental Resources Management
www.erm.com
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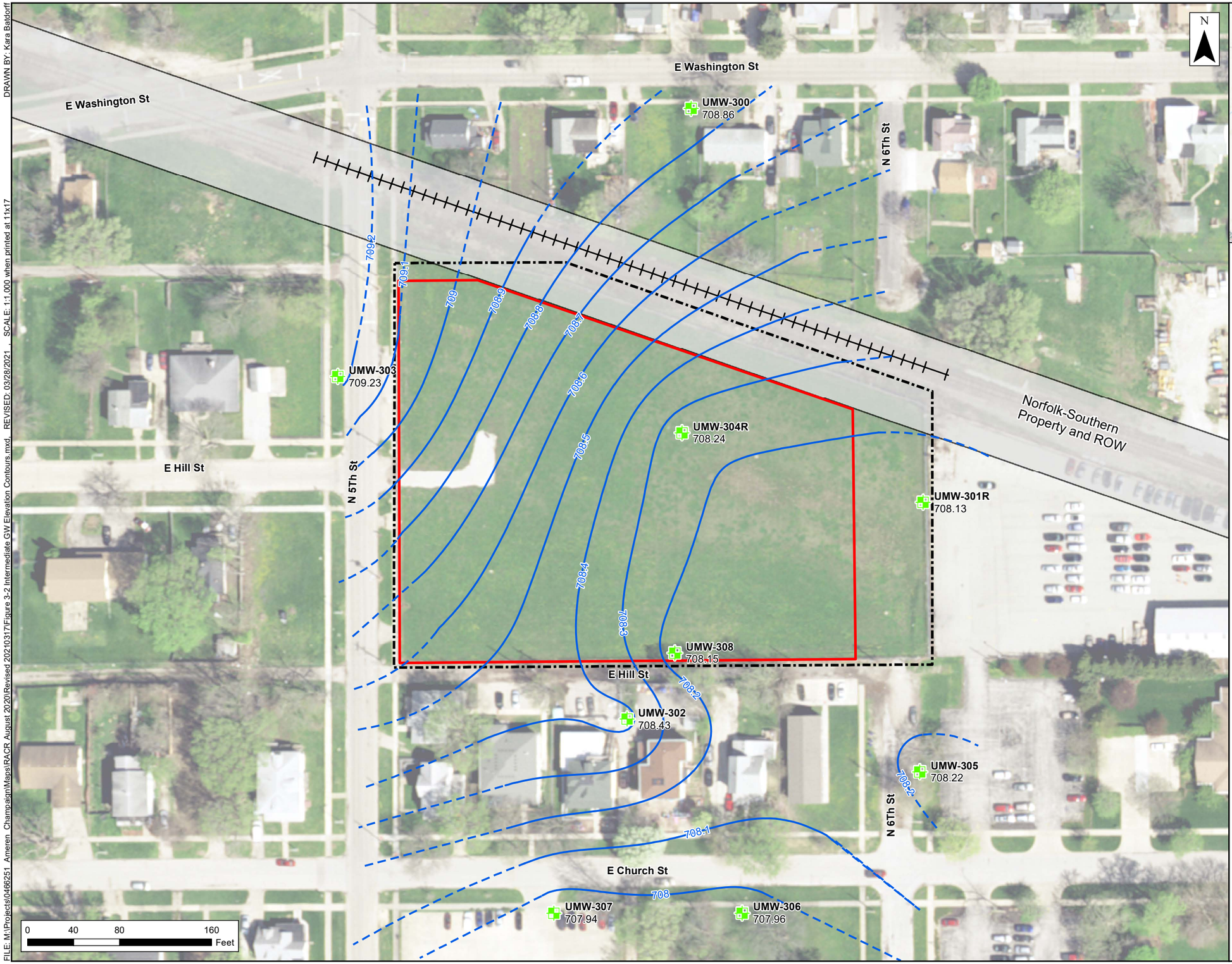

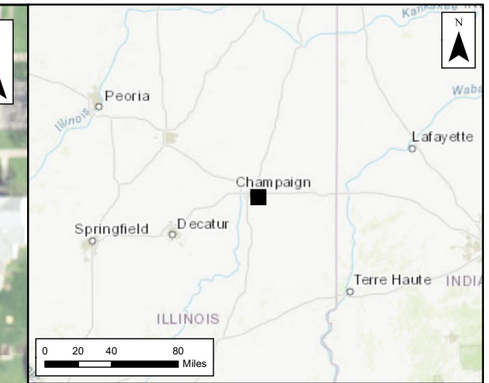

Legend

- Intermediate Monitoring Well with Feb 01 2021 Groundwater Elevation
- February 01 2020 Potentiometric Surface Contour (Dashed Where Inferred)
- Norfolk-Southern Railroad Property and Right of Way
- Site Boundary
- Remediation Area Boundary

Notes:
All water levels in feet above NAVD88 datum.

Figure 3-2
Intermediate Groundwater Elevation Contours
February 01 2021
Ameren Services
Champaign, Illinois

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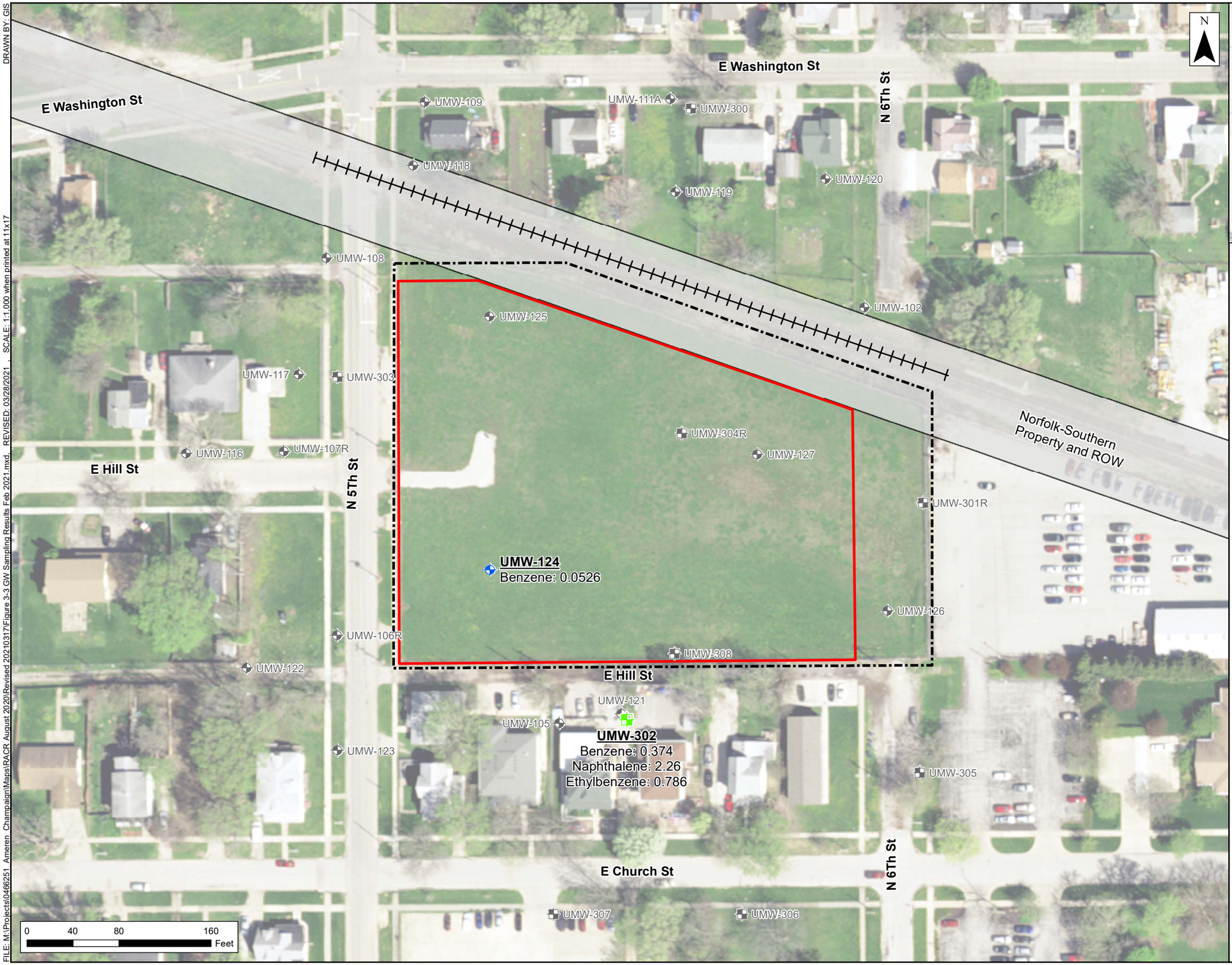
SCALE: 1:1,000 when printed at 11x17
REVISED: 03/28/2021
FILE: M:\Projects\0466251_Ameren_Champaign\Maps\RACR August 2020\Revised 20210317\Figure 3-2 Intermediate GW Elevation Contours.mxd



Legend

- Intermediate Monitoring Well with Class 1 RO Exceedance of Benzene, Ethylbenzene, and Naphthalene
- Shallow Monitoring Well with Class I and II RO Exceedance of Benzene
- Intermediate Monitoring Well with No Exceedances
- Shallow Monitoring Well with No Exceedances
- Railroad
- Norfolk-Southern Railroad Property and Right of Way
- Site Boundary
- Remediation Area Boundary

Notes:
All results in milligrams per liter (mg/L).
Only results that exceeded the Class I (Intermediate) or Class II (Shallow or Intermediate) Groundwater ROs are listed.

Figure 3-3
Groundwater Sampling Results
February 02 - 03, 2021
Ameren Services
Champaign, Illinois

Environmental Resources Management
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DRAWN BY: GIS

FILE: M:\Projects\0466251 Ameren Champaign\Maps\RACR August 2020\Revised 20210317\Figure 3-3 GW Sampling Results Feb 2021.mxd, REVISED: 03/26/2021 , SCALE: 1:1,000 when printed at 11x17

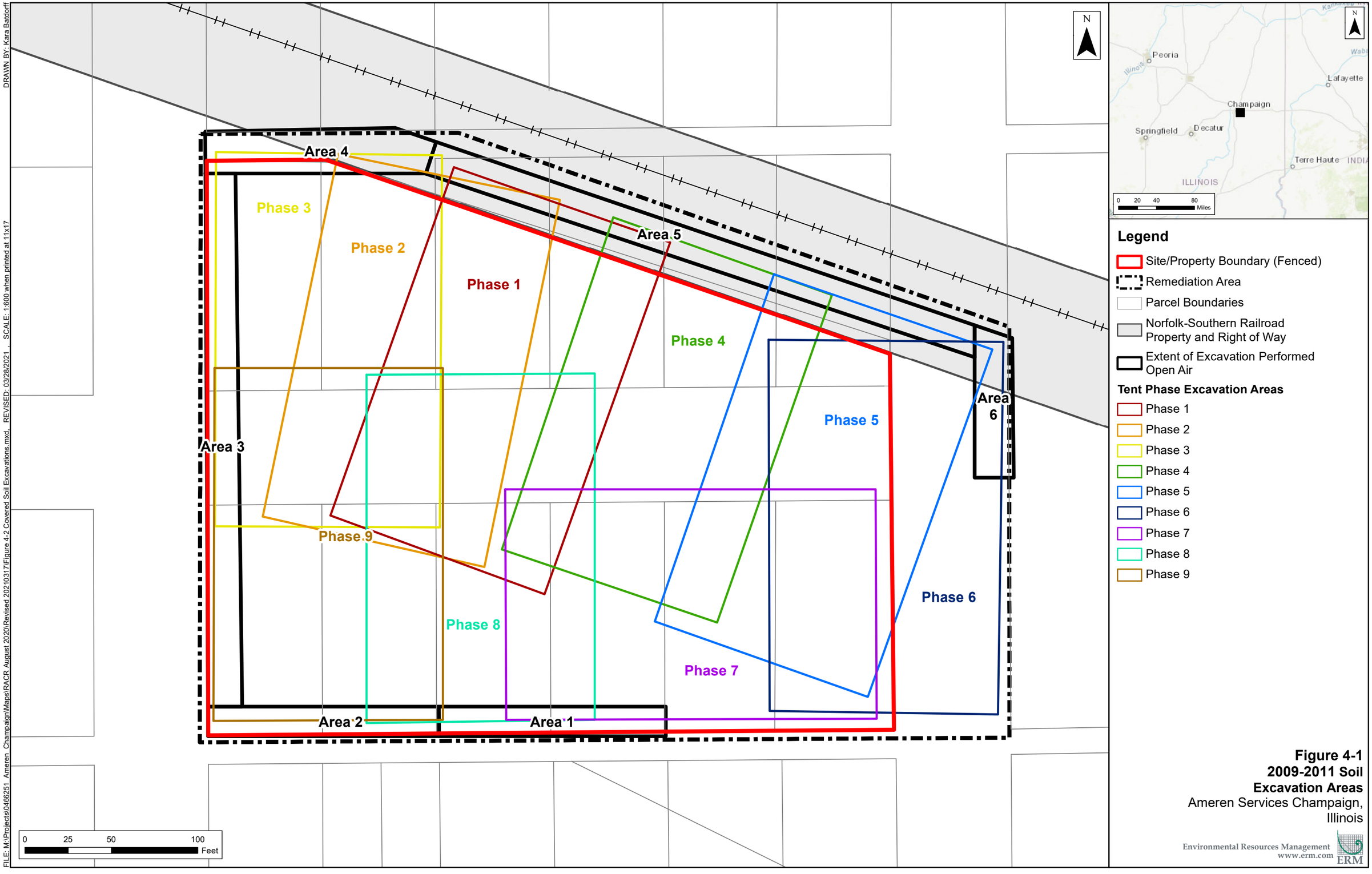

Figure 4-1
2009-2011 Soil Excavation Areas
Ameren Services Champaign, Illinois

Environmental Resources Management
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DRAWN BY: Kara Batdorff
FILE: M:\Projects\0466251_Ameren_Champaign\Maps\RACR August 2020\Revised 20210317\Figure 4-2 Covered Soil Excavations.mxd, REVISED: 03/28/2021 , SCALE: 1:600 when printed at 11x17

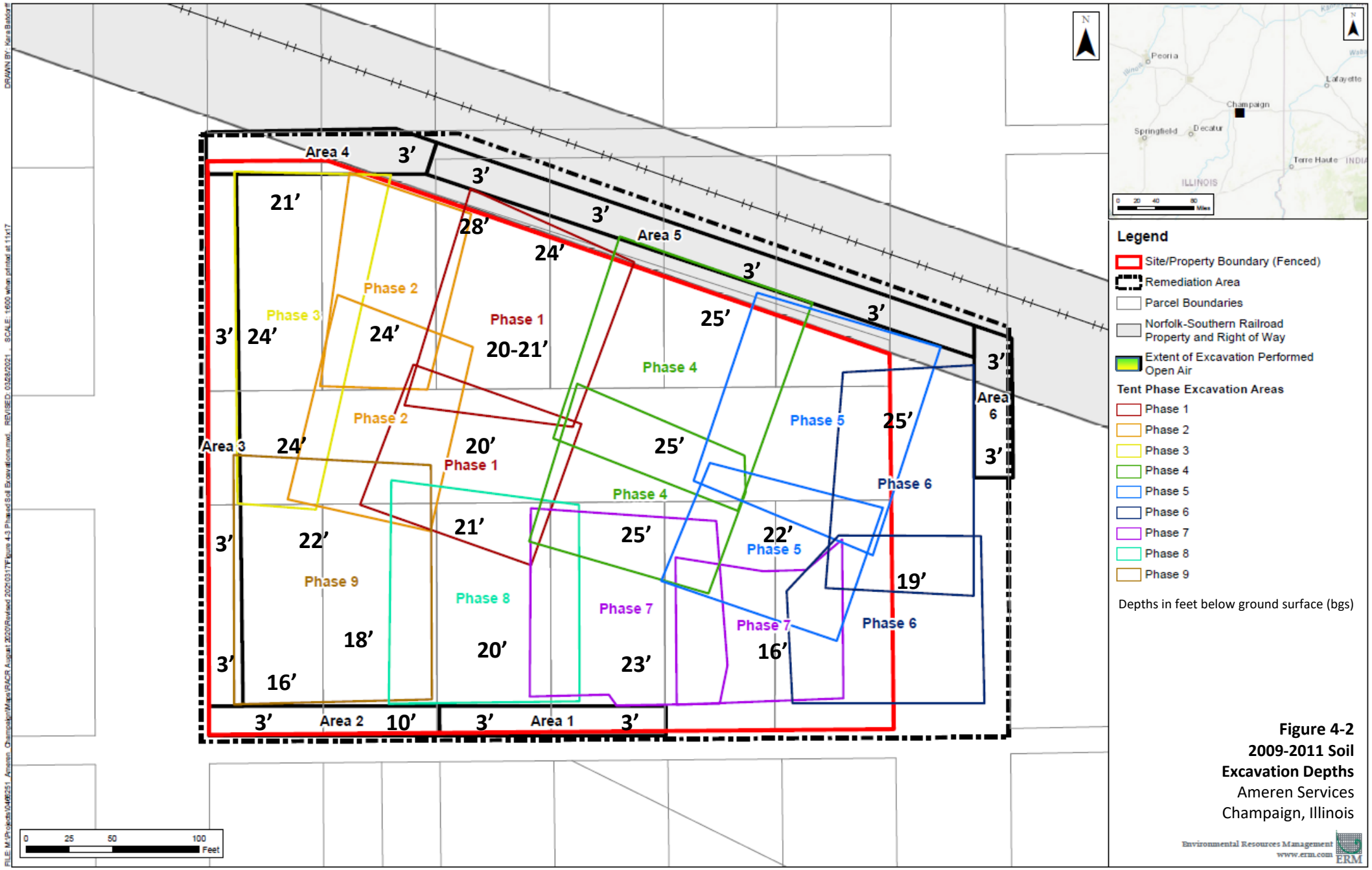

Figure 4-2
2009-2011 Soil Excavation Depths
Ameren Services
Champaign, Illinois

Environmental Resources Management
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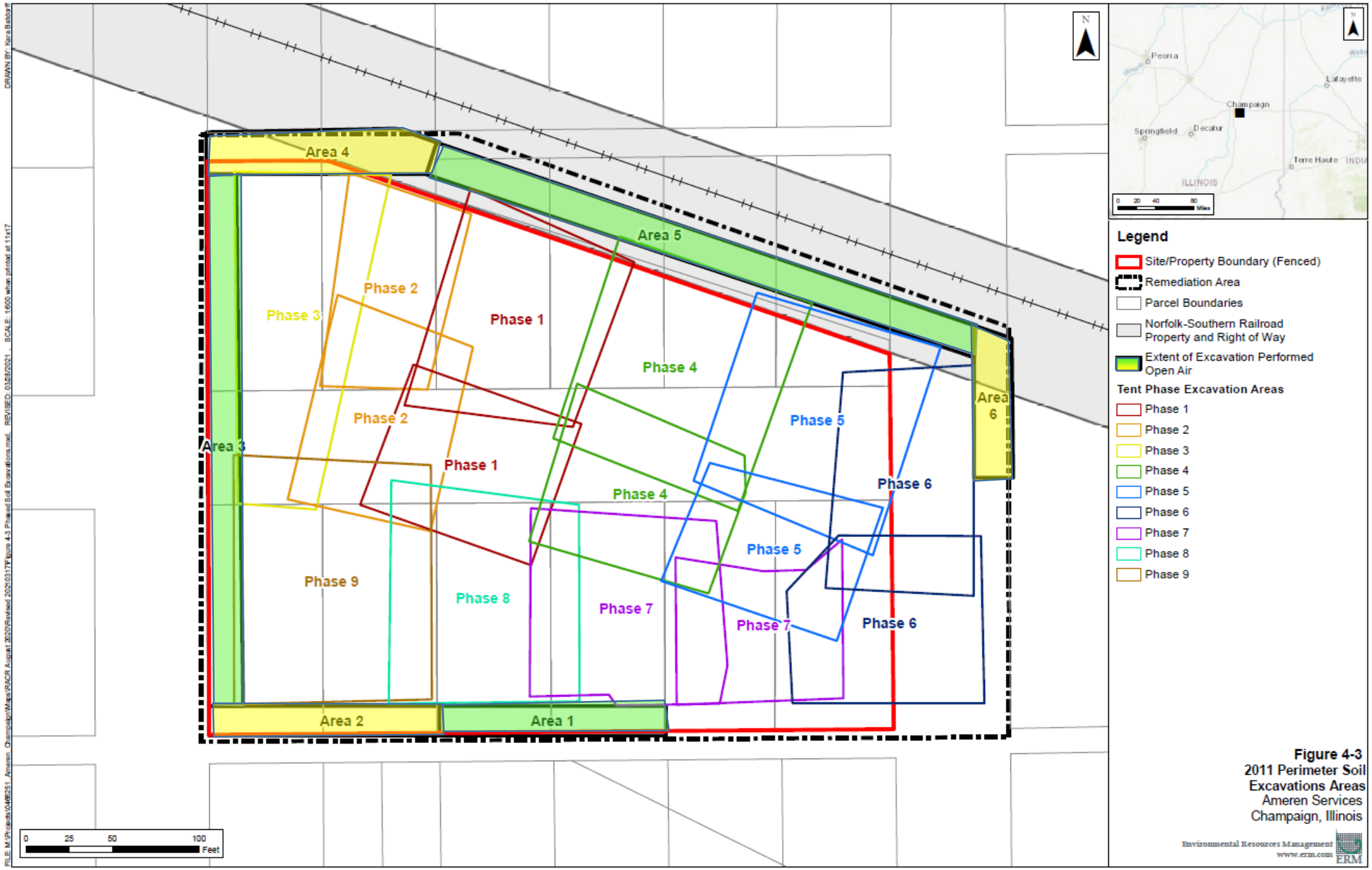

Figure 4-3
2011 Perimeter Soil Excavations Areas
Ameren Services
Champaign, Illinois

Environmental Resources Management
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DRAWN BY: Tyler Harris

FILE: M:\Projects\0486251 Ameren Champaign\Maps\RACR August 2020\Revised 20210317\Figure 4-4 ISCO Pilot Study Area.mxd REVISED: 03/26/2021 , SCALE: 1:80 when printed at 11x17

IW-PT-201
IW-PT-202
IW-PT-203
IW-PT-101
IW-PT-102
IW-PT-103
IW-PT-204
IW-PT-205
IW-PT-206
IW-PT-104
IW-PT-105
IW-PT-106
IW-PT-207
IW-PT-208
IW-PT-209
IW-PT-107
IW-PT-108
IW-PT-109

N

0 3.75 7.5 15 Feet



Legend

- Shallow Injection Well
- Deep Injection Well
- Site/Property Boundary (Fenced)
- Remediation Area
- Norfolk-Southern Railroad Property and Right of Way

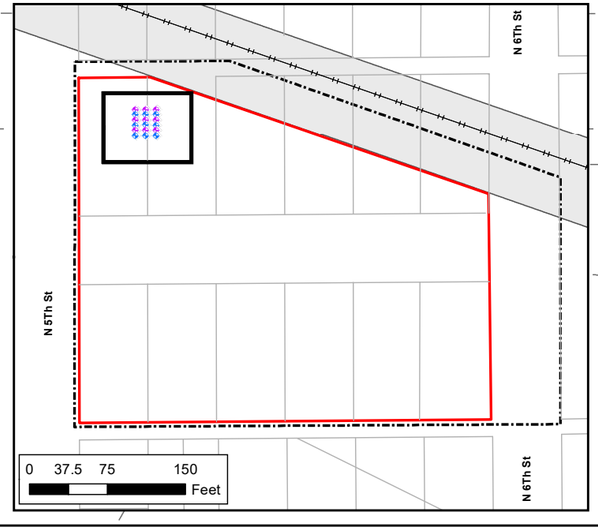

Figure 4-4
ISCO Pilot Study Area
Ameren Services
Champaign, Illinois

Environmental Resources Management
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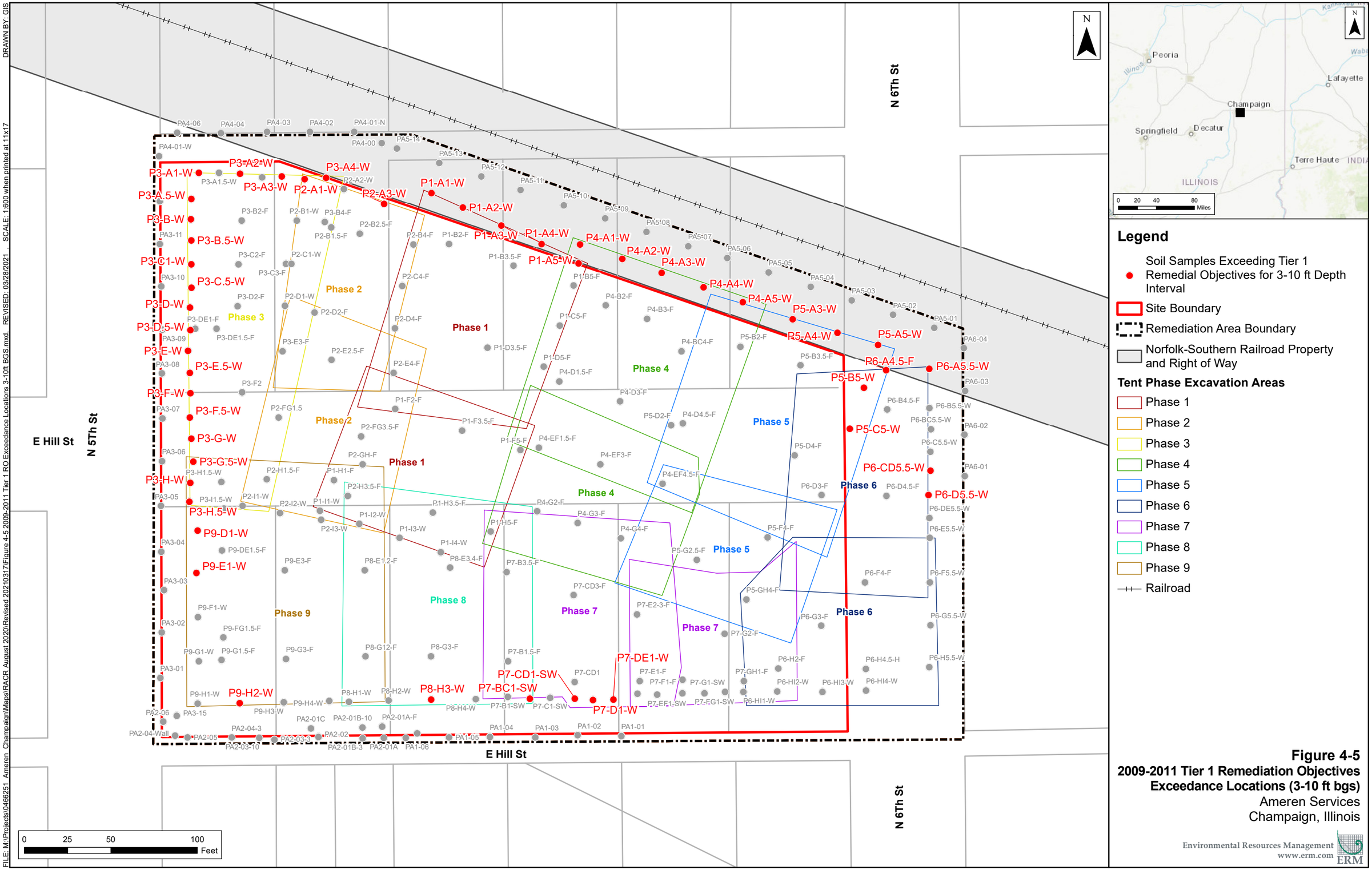
ERM

DRAWN BY: GIS

FILE: M:\Projects\0466251 Ameren Champaign\Maps\RACR August 2020\Revised 20210317\Figure 4-5 2009-2011 Tier 1 RO Exceedance Locations 3-10ft BGS.mxd, REVISED: 03/28/2021 , SCALE: 1:600 when printed at 11x17



Legend

- Soil Samples Exceeding Tier 1 Remedial Objectives for 3-10 ft Depth Interval
- Site Boundary
- Remediation Area Boundary
- Norfolk-Southern Railroad Property and Right of Way

Tent Phase Excavation Areas

- Phase 1
- Phase 2
- Phase 3
- Phase 4
- Phase 5
- Phase 6
- Phase 7
- Phase 8
- Phase 9
- Railroad

Figure 4-5
2009-2011 Tier 1 Remediation Objectives Exceedance Locations (3-10 ft bgs)
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Champaign, Illinois

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FILE: M:\Projects\0496251 Ameren Champaign\Maps\RACR August 2020\Revised 20210317\Figure 4-6 2009-2011 Tier 1 RO Exceedance Locations 10ft BGS.mxd REVISED: 03/28/2021 SCALE: 1:600 when printed at 11x17

N 6Th St

N 5Th St

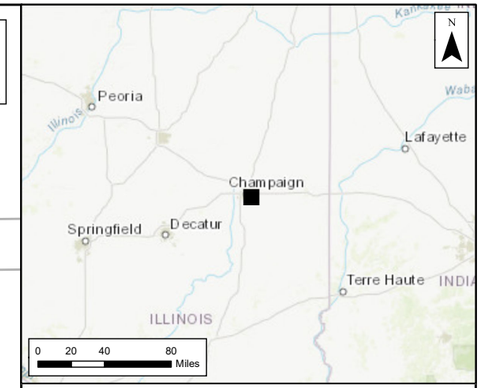
E Hill St

P3-A1-W P3-A1.5-W P3-A2-W P2-A1-W P3-A4-W P3-A.5-W P3-A2.5-W P2-A2-W P2-A3-W P1-A1-W P1-A2-W P1-A3-W P1-A4-W P4-A1-W CS-17 CS-16 P4-A3-W P1-A5-W CS-15 P4-A4-W P4-A2-W P4-A5-W P5-A3-W P5-A4-W P5-A5-W P6-A4.5-F P6-A5.5-W P3-B-W P3-B2-F P2-B2.5-F P2-B4-F P1-B2-F P1-B3.5-F P1-B5-F P4-B2-F P4-B3-F P5-B2-F P5-B3.5-F P5-B5-W P6-B4.5-F P6-B5.5-W P6-BC5.5-W P3-B.5-W P3-C1-W P3-C2-F P3-C3-F P2-C4-F P1-C5-F P3-C.5-W P3-D2-F P2-D1-W P2-D2-F P2-D4-F P1-D3.5-F P1-D5-F P4-BC4-F P4-D1.5-F P4-D3-F P4-D2-F P4-D4.5-F P5-C5-W P6-C5.5-W P6-CD5.5-W P6-D3-F P6-D4.5-F P6-D5.5-W P6-DE5.5-W P3-DE1-F P3-DE1.5-F P3-D.5-W P3-E-W P3-E3-F P2-E2.5-F P2-E4-F P3-E.5-W P3-F-W P3-F2 P2-FG1.5 P1-F2-F P1-F3.5-F P3-F.5-W P3-G-W P2-FG3.5-F P4-EF1.5-F P1-F5-F P4-EF3-F P4-EF4.5-F P3-G.5-W P2-GH-F P3-H1.5-W P1-H1-F P2-H1.5-F P3-H-W P2-H3.5-F P1-H3.5-F P4-G2-F P3-H.5-W P3-I1.5-W P2-I1-W P2-I2-W P1-I1-W P1-I2-W P2-I3-W P1-I3-W P1-I4-W P1-H5-F P4-G3-F P4-G4-F P5-F4-F P5-G2.5-F P5-GH4-F P6-E5.5-W P6-F4-F P6-F5.5-W P6-G3-F P6-G5.5-W P9-D1-W P9-DE1.5-F P9-E1-W P9-E3-F P8-E1.2-F P8-E3.4-F P7-B3.5-F P7-CD3-F P7-E2-3-F P7-G2-F P9-F1-W P9-FG1.5-F P9-G1-W P9-G1.5-F P9-G3-F P8-G12-F P8-G3-F P7-B1.5-F P7-C1-SW P7-CD1 P7-E1-F P7-F1-F P7-G1-SW P7-GH1-F P6-H2-F P6-H4.5-H P6-H5.5-W P6-HI2-W P6-HI3-W P6-HI4-W P9-H1-W P9-H2-W P9-H4-W P8-H1-W P8-H2-W P8-H3-W P8-H4-W P7-D1-W P7-B1-SW P7-BC1-SW P7-CD1-SW P7-E1-SW P7-F1-SW P6-HI1-W P9-H3-W

Phase 1 Phase 2 Phase 3 Phase 4 Phase 5 Phase 6 Phase 7 Phase 8 Phase 9 Phase-2

PA4-06 PA4-04 PA4-03 PA4-02 PA4-01-N PA4-00 PA4-01-W PA3-12 PA3-11 PA3-10 PA3-08 PA3-07 PA3-05 PA3-04 PA3-03 PA3-02 PA3-01 PA2-06 PA2-04-Wall PA2-05 PA2-04-3 PA2-03-10 PA2-03-3 PA2-01C PA2-01B-10 PA2-02 PA2-01B-3 PA2-01A-F PA2-01A PA1-06 PA1-05 PA1-04 PA1-03 PA1-02 PA1-01 PA5-14 PA5-13 PA5-12 PA5-11 PA5-10 PA5-09 PA5-08 PA5-07 PA5-06 PA5-05 PA5-04 PA5-03 PA5-02 PA5-01 PA6-04 PA6-03 PA6-02 PA6-01

0 25 50 100 Feet



Legend

- Soil Samples Exceeding Tier 1 Remedial Objectives for >10 ft Depth
- Site Boundary
- Remediation Area Boundary
- Norfolk-Southern Railroad Property and Right of Way

Tent Phase Excavation Areas

- Phase 1
- Phase 2
- Phase 3
- Phase 4
- Phase 5
- Phase 6
- Phase 7
- Phase 8
- Phase 9
- Railroad

Figure 4-6
2009-2011 Tier 1 Remediation Objectives Exceedance Locations (>10 ft bgs)
Ameren Services
Champaign, Illinois

Environmental Resources Management
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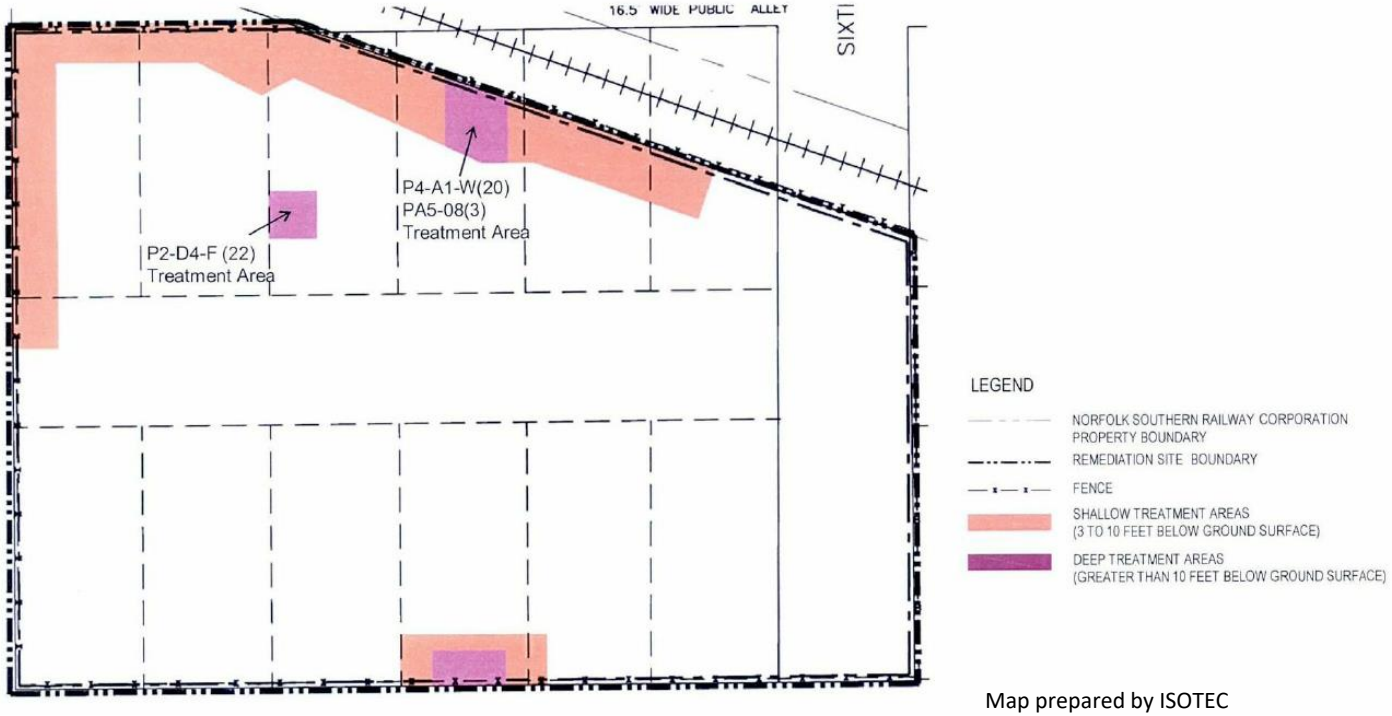
- ISCO Area: 35,000 square feet – northern and western site perimeter
- Primary COCs: BTEX, naphthalene
- Vadose and saturated zone soils (3–10 feet bgs)



Map prepared by ISOTEC

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2013 Perimeter ISCO Events – Treatment Areas
308 North Fifth Street, Champaign, IL

Figure:
4-7

First Injection Event



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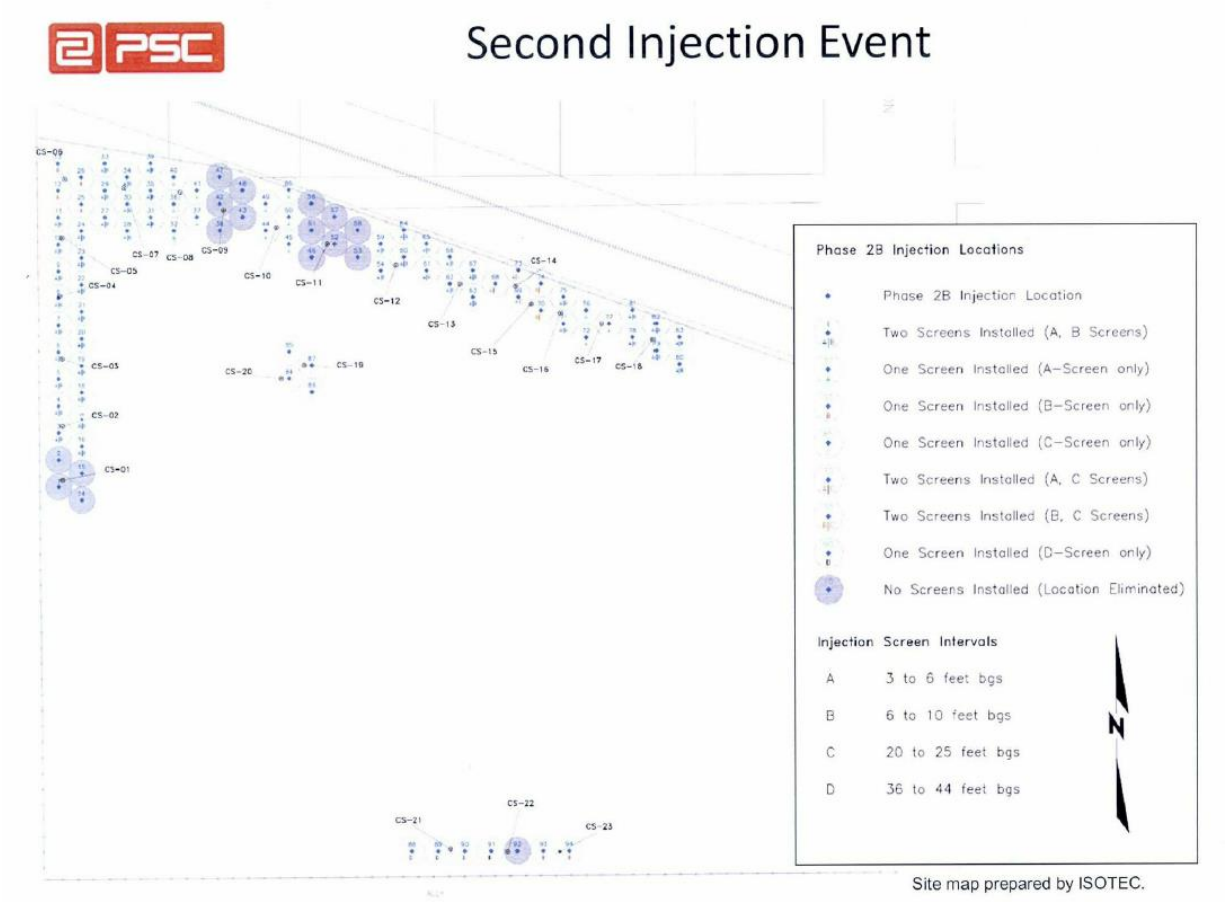
Injection Areas for First 2013 Perimeter ISCO Event
308 North Fifth Street, Champaign, IL

Figure:

4-8



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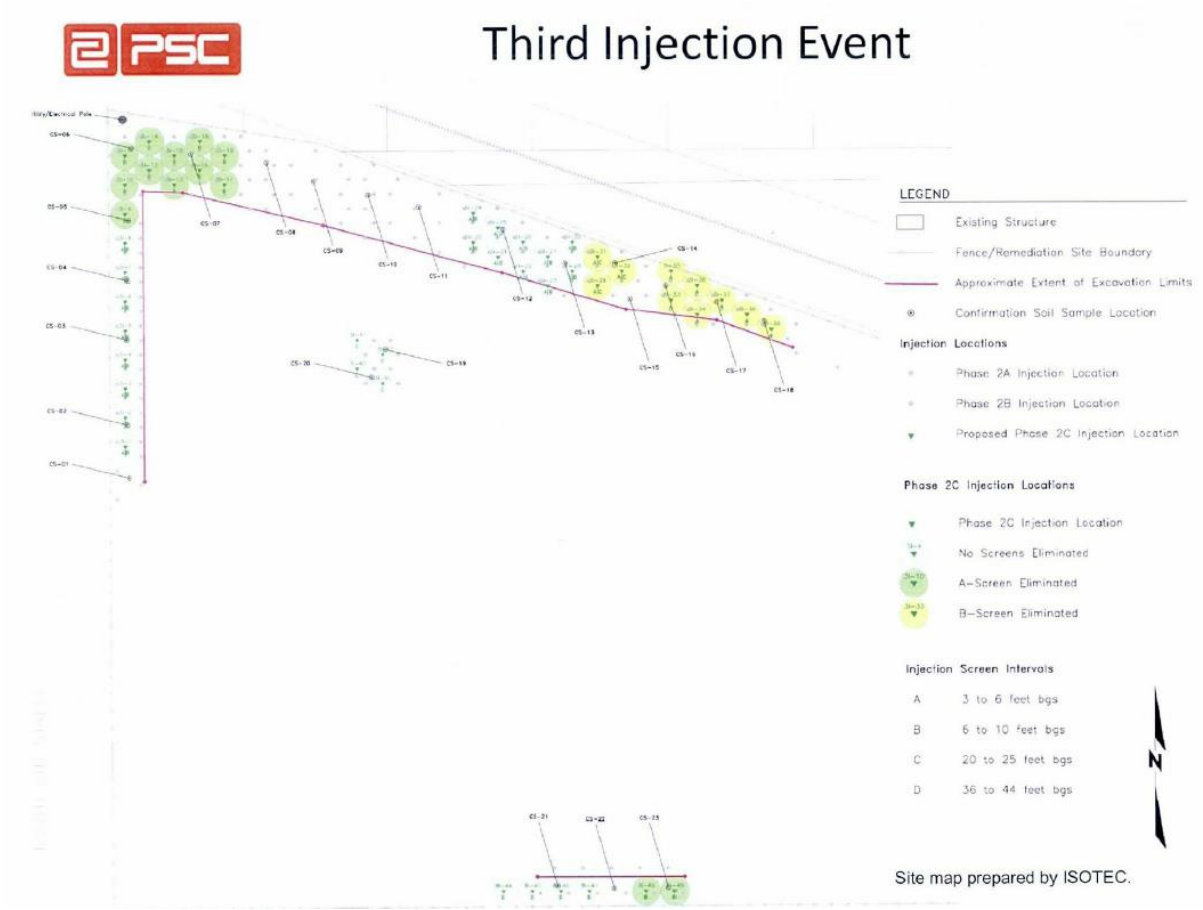
Injection Areas for Second 2013 Perimeter ISCO Event
308 North Fifth Street, Champaign, IL

Figure:

4-9



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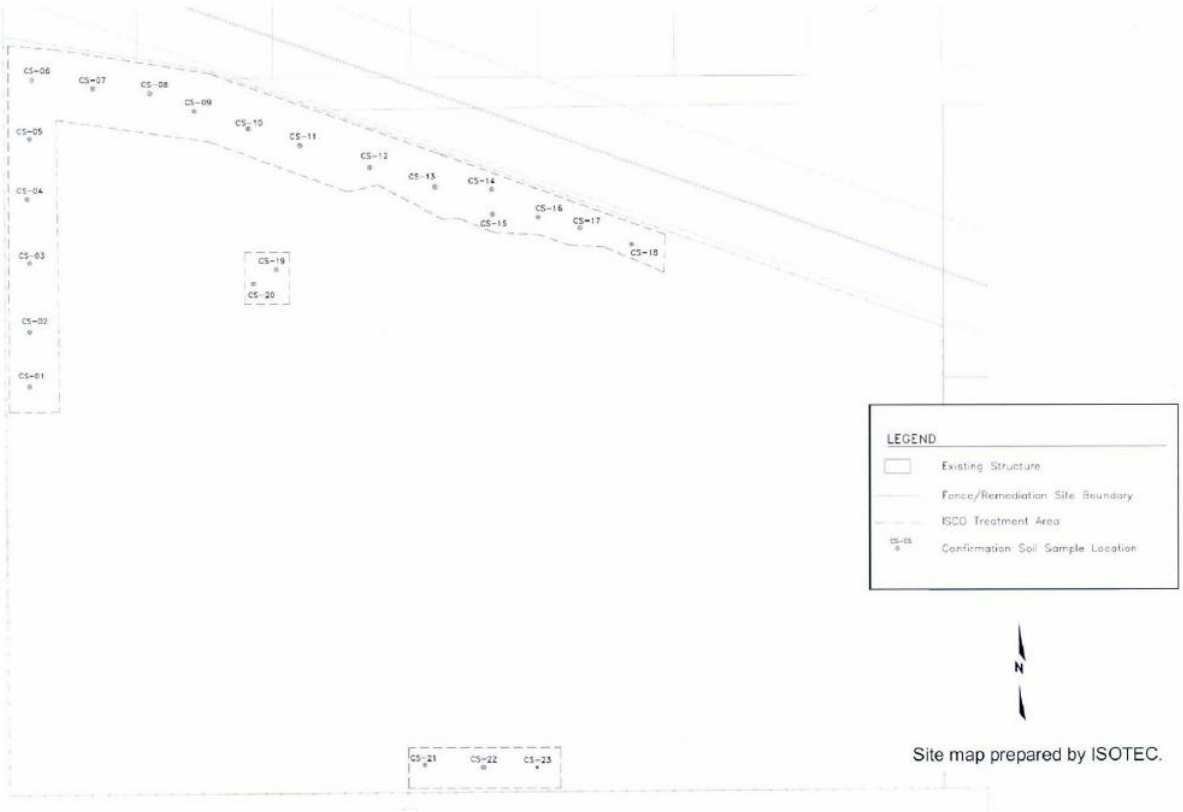
Injection Areas for Third 2013 Perimeter ISCO Event
308 North Fifth Street, Champaign, IL

Figure:

4-10

Confirmation Sample Locations



Site map prepared by ISOTEC.

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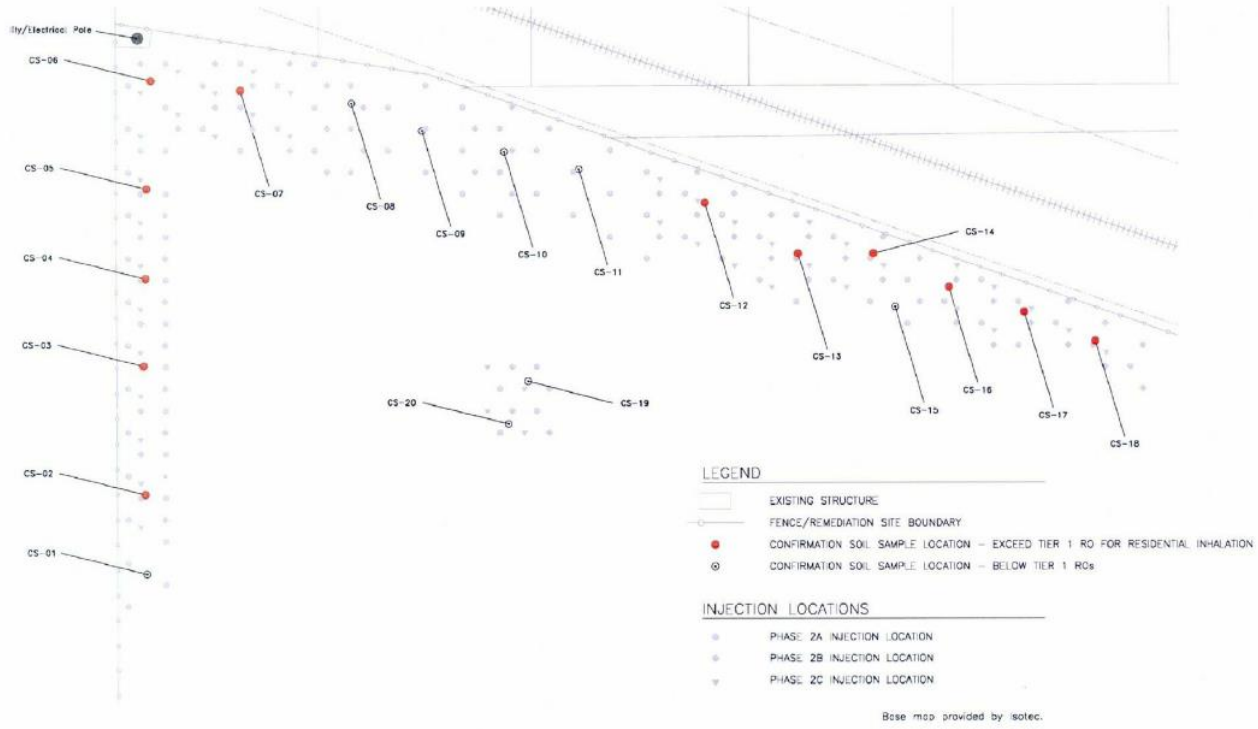
Confirmation Sample Locations - 2013 Perimeter ISCO Event
308 North Fifth Street, Champaign, IL

Figure:

4-11

Post-ISCO Tier 1 Exceedances for Soil Inhalation
0 to 10 Feet Below Ground Surface



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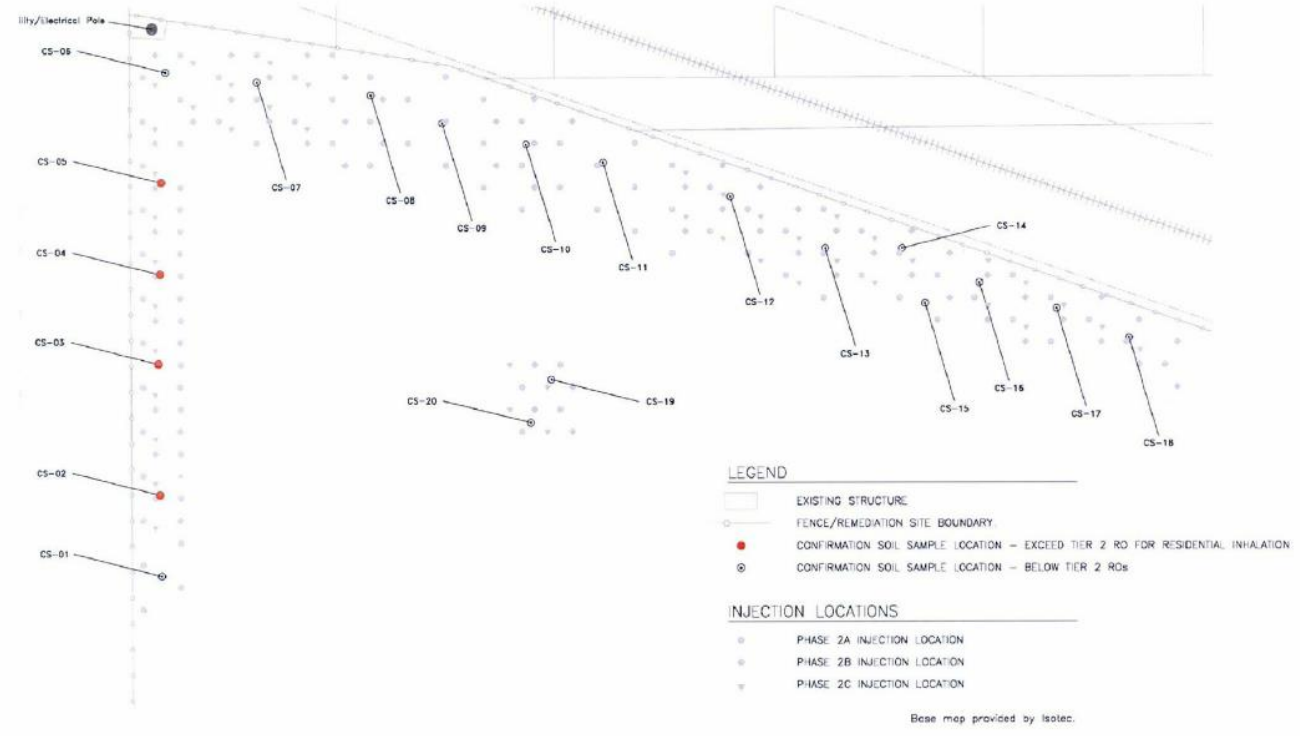
Tier 1 Soil Exceedance Locations - 2013 Perimeter ISCO Event
308 North Fifth Street, Champaign, IL

Figure:

4-12

Post-ISCO Tier 2 Exceedances for Soil Inhalation



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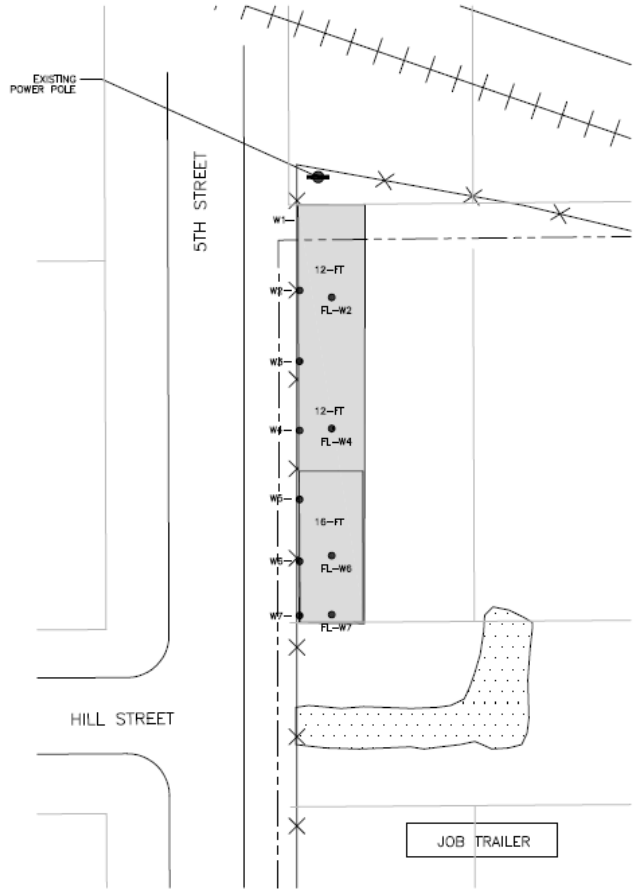
Tier 2 Soil Exceedance Locations - 2013 Perimeter ISCO Event
308 North Fifth Street, Champaign, IL

Figure:

4-13



LEGEND

- EXISTING STRUCTURES (APPROXIMATE)
- NORFOLK SOUTHERN RAILWAY CORPORATION PROPERTY BOUNDARY
- REMEDIATION SITE BOUNDARY
- FENCE
- APPROXIMATE EXCAVATION LIMITS
- GRAVEL
- W1 CONFIRMATION SAMPLE LOCATIONS

SOURCE: THE SOURCE FOR THE PROPERTY BOUNDARY SURVEY IS VEGRZYN, SARVER AND ASSOCIATES.

0 40
FEET

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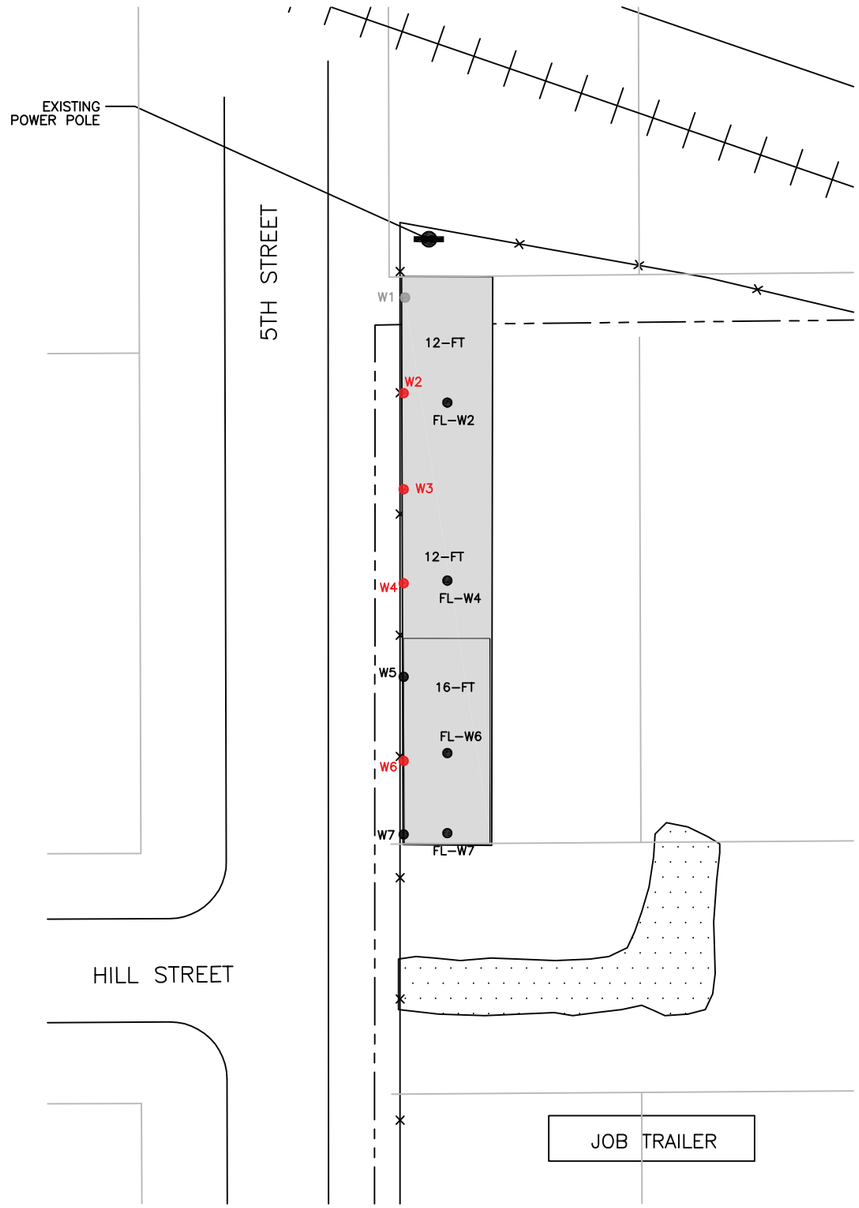
TITLE:
EXCAVATION AREA FLOOR AND SIDEWALL CONFIRMATION SAMPLE LOCATIONS
JANUARY – FEBRUARY 2017

DWN: TMM	DES: MRC	PROJECT NO: 62412010008 AMERENIP CHAMPAIGN, ILLINOIS
CHKD:	APPD:	
DATE: 5/3/17	REV:	**Figure 4-14**

COL J:\624\026478-203



LEGEND

- EXISTING STRUCTURES (APPROXIMATE)
- NORFOLK SOUTHERN RAILWAY CORPORATION PROPERTY BOUNDARY
- REMEDIATION SITE BOUNDARY
- FENCE
- APPROXIMATE 2016–2017 EXCAVATION LIMITS
- GRAVEL
- W1 CONFIRMATION SAMPLE LOCATIONS

SOURCE: THE SOURCE FOR THE PROPERTY BOUNDARY SURVEY IS VEGRZYN, SARVER AND ASSOCIATES.

NOTE: LOCATIONS IN RED HAVE PETROLEUM HYDROCARBON CONCENTRATIONS EXCEEDING SOIL ATTENUATION CAPACITY

0 40
FEET

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COL J:\624\02647B-230

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A DMEE Construction Firm
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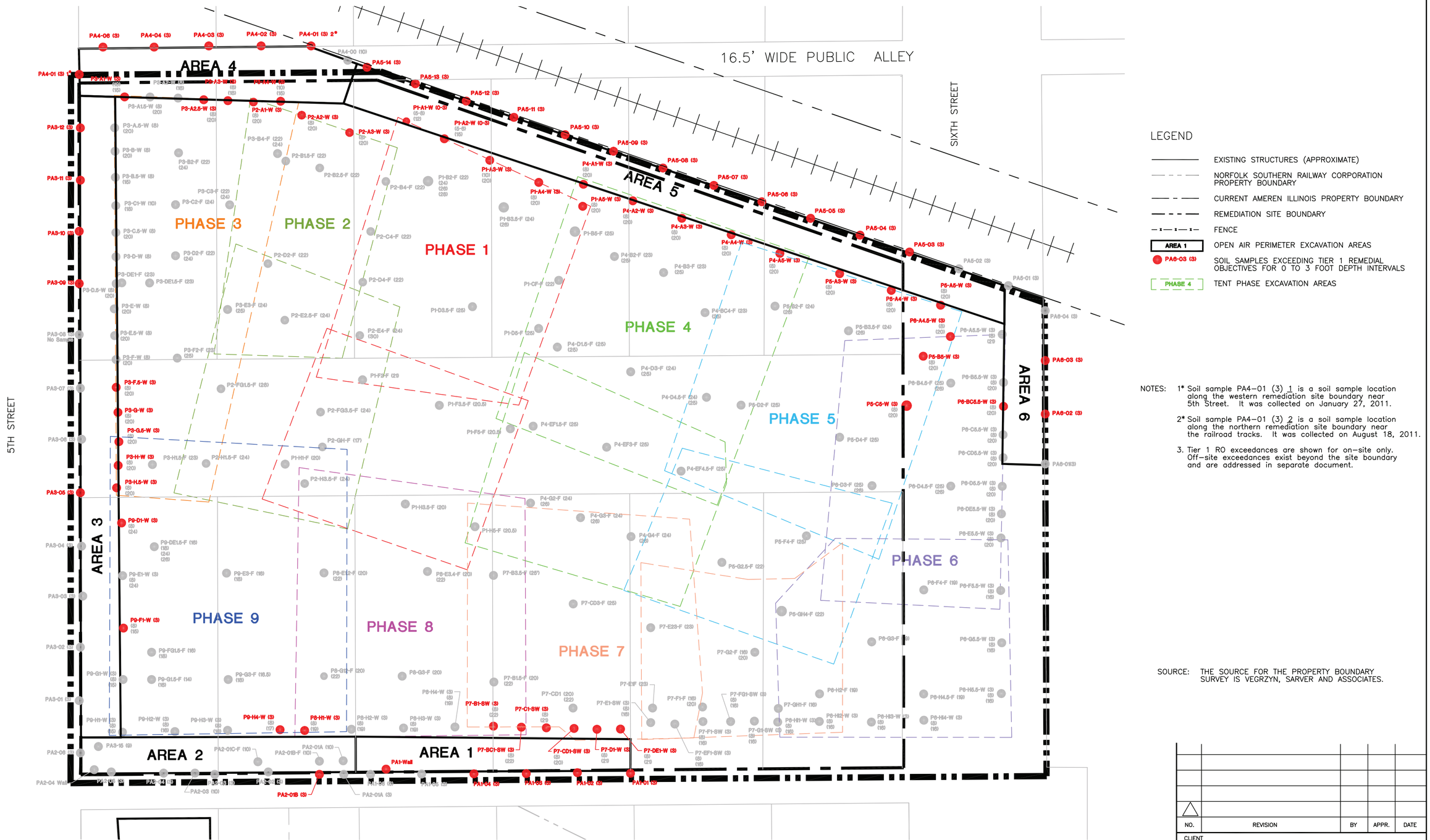
TITLE:
CONFIRMATION SAMPLE LOCATIONS WITH RESULTS THAT EXCEED SOIL ATTENUATION CAPACITY – 2016–2017
308 NORTH FIFTH STREET
FORMER AMEREN CHAMPAIGN MGP SITE

DWN: TMM	DES: MRC
CHKD:	APPD:
DATE: 7/31/18	REV:

PROJECT NO: 62412010008
AMEREN ILLINOIS
CHAMPAIGN, ILLINOIS

Figure 4-15



LEGEND

- EXISTING STRUCTURES (APPROXIMATE)
- NORFOLK SOUTHERN RAILWAY CORPORATION PROPERTY BOUNDARY
- CURRENT AMEREN ILLINOIS PROPERTY BOUNDARY
- REMEDIATION SITE BOUNDARY
- FENCE
- AREA 1 — OPEN AIR PERIMETER EXCAVATION AREAS
- PA6-03 (3) — SOIL SAMPLES EXCEEDING TIER 1 REMEDIAL OBJECTIVES FOR 0 TO 3 FOOT DEPTH INTERVALS
- PHASE 4 — TENT PHASE EXCAVATION AREAS

NOTES:

1* Soil sample PA4-01 (3) 1 is a soil sample location along the western remediation site boundary near 5th Street. It was collected on January 27, 2011.

2* Soil sample PA4-01 (3) 2 is a soil sample location along the northern remediation site boundary near the railroad tracks. It was collected on August 18, 2011.

3. Tier 1 RO exceedances are shown for on-site only. Off-site exceedances exist beyond the site boundary and are addressed in separate document.

SOURCE: THE SOURCE FOR THE PROPERTY BOUNDARY SURVEY IS VEGRZYN, SARVER AND ASSOCIATES.

0 30 FEET

N

NO.	REVISION	BY	APPR.	DATE
△				

CLIENT

AMEREN ILLINOIS

PROJECT TITLE

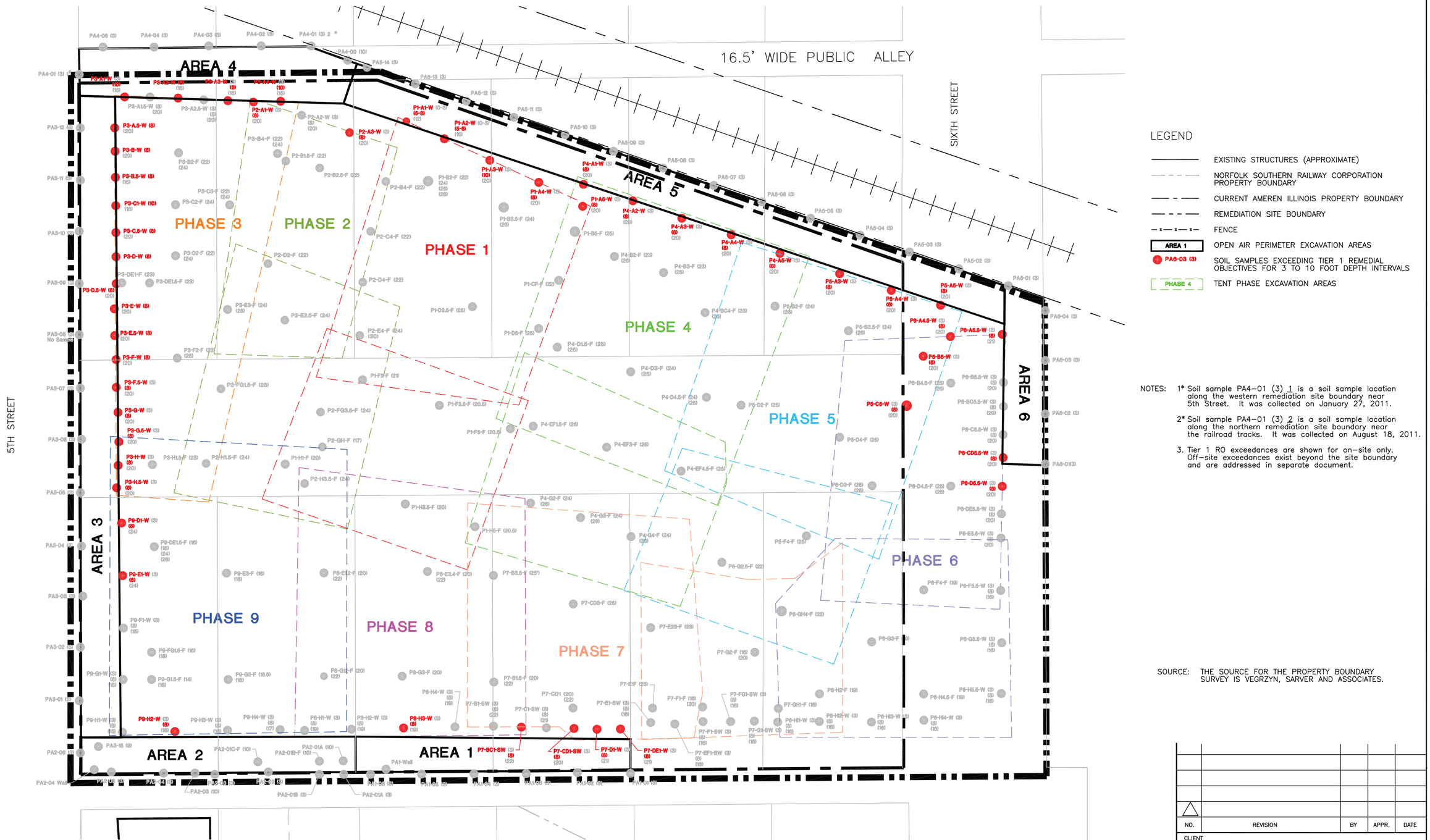
CHAMPAIGN FORMER MGP SITE

SHEET TITLE

CONFIRMATION SOIL SAMPLE LOCATIONS WITH RESULTS EXCEEDING TIER 1 REMEDIATION OBJECTIVES FOR 0-FOOT TO 3-FOOT DEPTH INTERVAL

DATE 11/7/12	DRAWN BY TMM	DRAWING NO. Figure 5.1
	DESIGNED BY LH	
PROJECT NUMBER 62412010008	CHECKED BY PTS	
	APPROVED BY MK	

COL. 624\02647Q-009



NO.	REVISION	BY	APPR.	DATE

CLIENT

AMEREN ILLINOIS

PROJECT TITLE

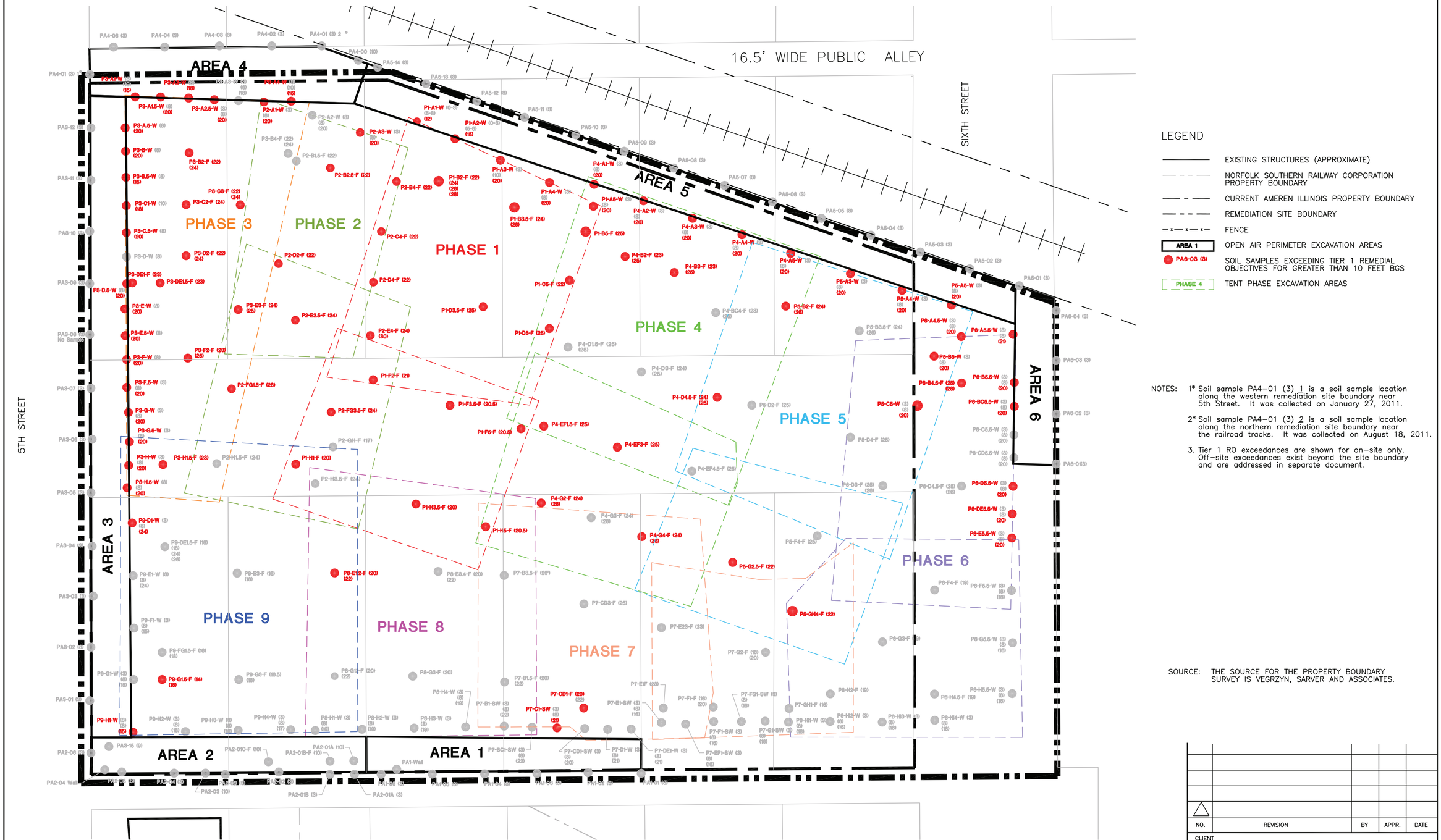
CHAMPAIGN FORMER MGP SITE

SHEET TITLE

CONFIRMATION SOIL SAMPLE LOCATIONS WITH RESULTS EXCEEDING TIER 1 REMEDIATION OBJECTIVES FOR 3-FOOT TO 10-FOOT DEPTH INTERVAL

DATE	DRAWN BY	DRAWING NO.
11/7/12	TMM	Figure 5.2
	DESIGNED BY LH	
PROJECT NUMBER 62412010008	CHECKED BY PTS	
	APPROVED BY MK	

COL.
624\02647Q-010



NO.	REVISION	BY	APPR.	DATE
△				

CLIENT

AMEREN ILLINOIS

PROJECT TITLE

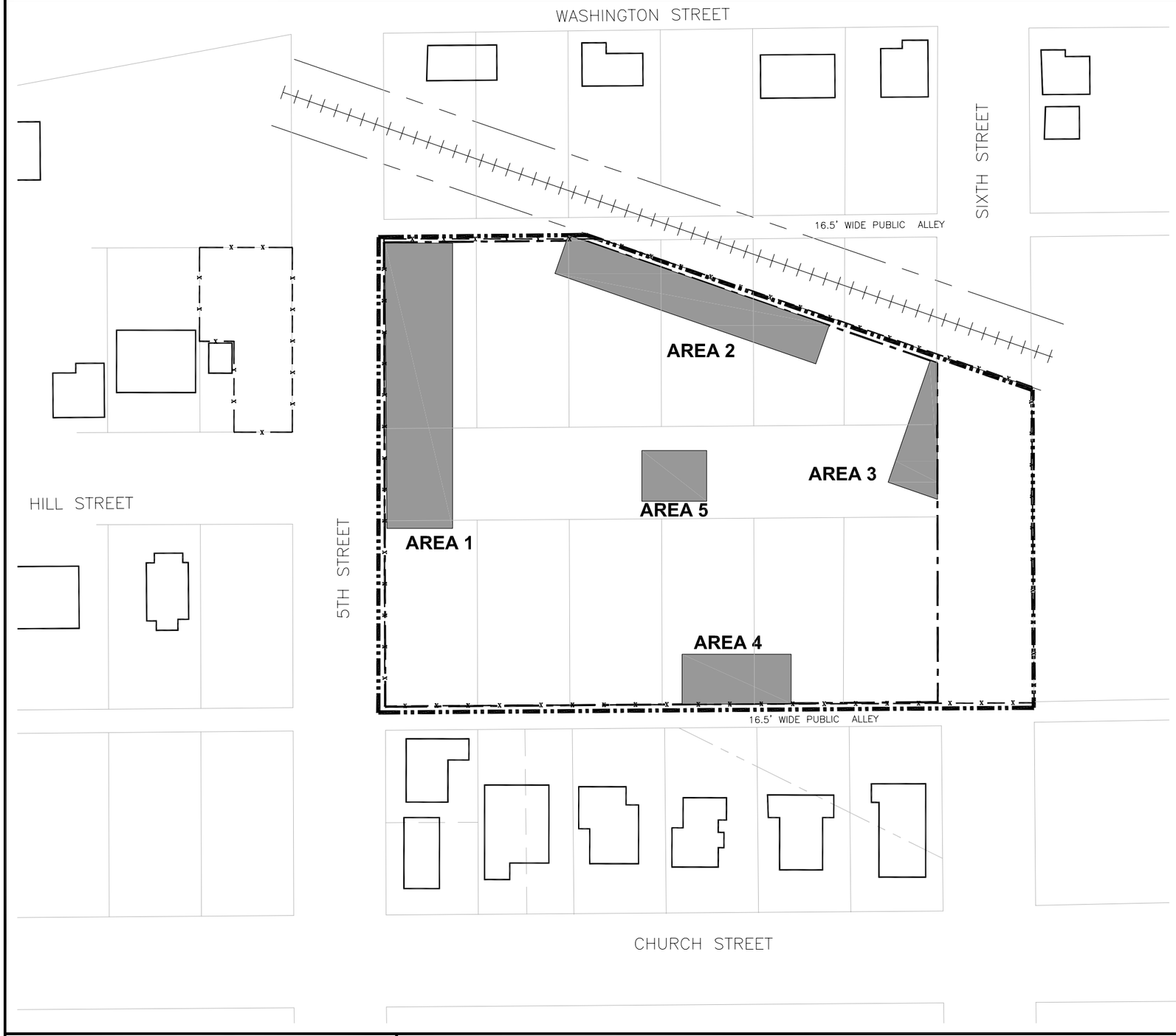
CHAMPAIGN FORMER MGP SITE

SHEET TITLE

CONFIRMATION SOIL SAMPLE LOCATIONS WITH RESULTS EXCEEDING TIER 1 REMEDIATION OBJECTIVES FOR GREATER THAN 10 FEET

DATE 11/7/12	DRAWN BY TMM	DRAWING NO. Figure 5.3
	DESIGNED BY LH	
PROJECT NUMBER 62412010008	CHECKED BY PTS	
	APPROVED BY MK	

COL.
624\026479-011



LEGEND

- EXISTING STRUCTURES (APPROXIMATE)
- CURRENT AMEREN ILLINOIS PROPERTY BOUNDARY
- REMEDIATION SITE BOUNDARY
- FENCE
- AREA OF IMPACT

SOURCE: THE SOURCE FOR THE PROPERTY BOUNDARY SURVEY IS VEGRZYN, SARVER AND ASSOCIATES.

0 80
FEET

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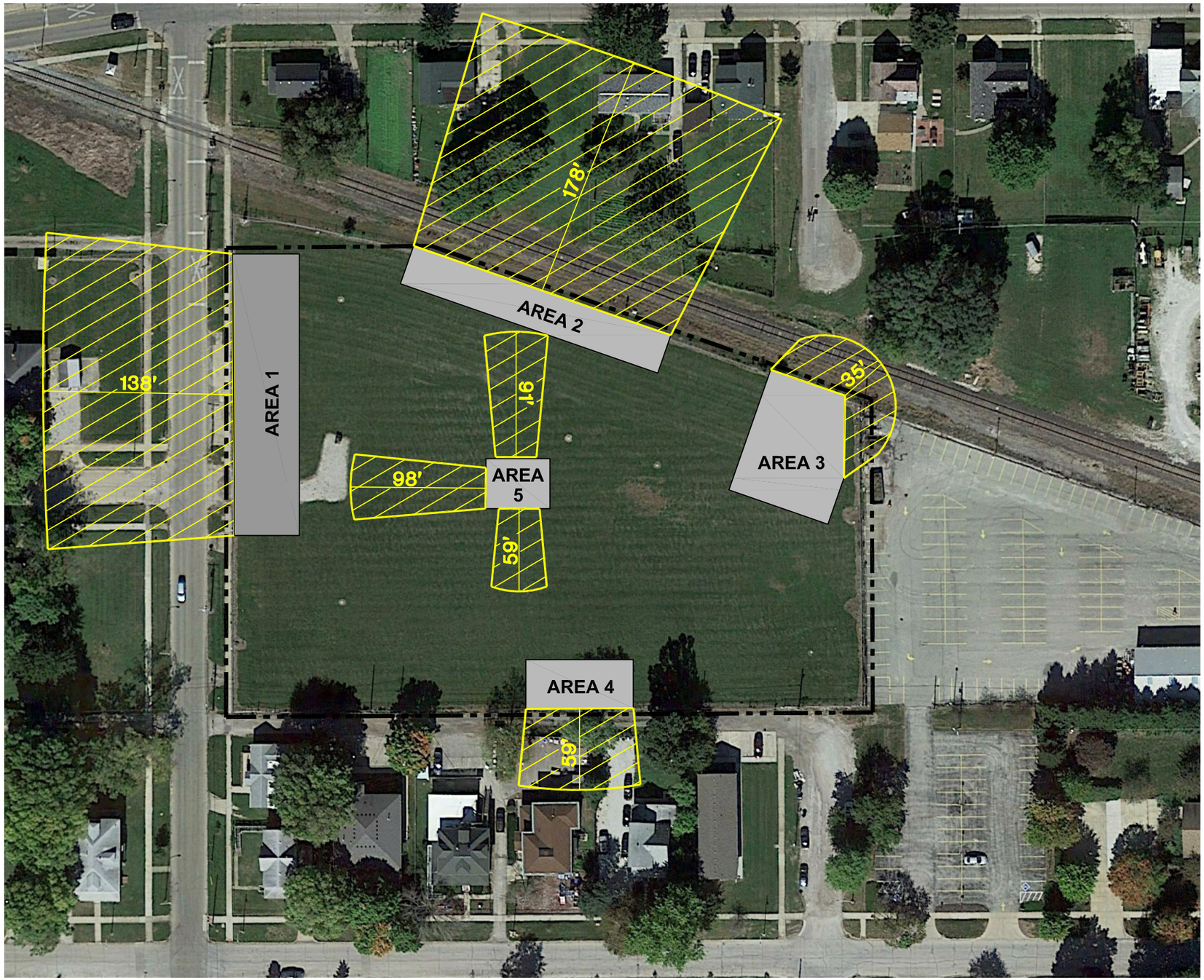
TITLE:
AREA OF IMPACT FOR TIER 2 CALCULATIONS FOR MODELED MIGRATION DISTANCES
308 NORTH FIFTH STREET
FORMER AMEREN CHAMPAIGN MGP SITE

DWN: TMM	DES: MRC
CHKD: LH	APPD: MK
DATE: 7/31/18	REV: 2

PROJECT NO: 62412010008
AMEREN ILLINOIS
CHAMPAIGN, ILLINOIS

Figure 5.4

COL. J:\624\026477-007



LEGEND

REMEDIATION SITE BOUNDARY

PROJECTED MIGRATION DISTANCE OF BENZENE IN GROUNDWATER

SOURCE: THE SOURCE FOR THE PROPERTY BOUNDARY SURVEY IS VEGRZYN, SARVER AND ASSOCIATES.

0 80
FEET

N

ZOIE LLC
A DBE Construction Firm
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TITLE:
PROJECTED MIGRATION DISTANCE OF BENZENE IN GROUNDWATER – SOIL COMPONENT OF GROUNDWATER INGESTION PATHWAY

DWN: TMM	DES: MRC	PROJECT NO: 62412010008	
CHKD: LH	APPD: MK	AMEREN ILLINOIS CHAMPAIGN, ILLINOIS	
DATE: 7/31/18	REV: 2	Figure 5.5	

COL J:\624\026477-008



LEGEND

REMEDIATION SITE BOUNDARY

PROJECTED MIGRATION DISTANCE OF NAPHTHALENE IN GROUNDWATER

SOURCE: THE SOURCE FOR THE PROPERTY BOUNDARY SURVEY IS VEGRZYN, SARVER AND ASSOCIATES.

0 80
FEET

N

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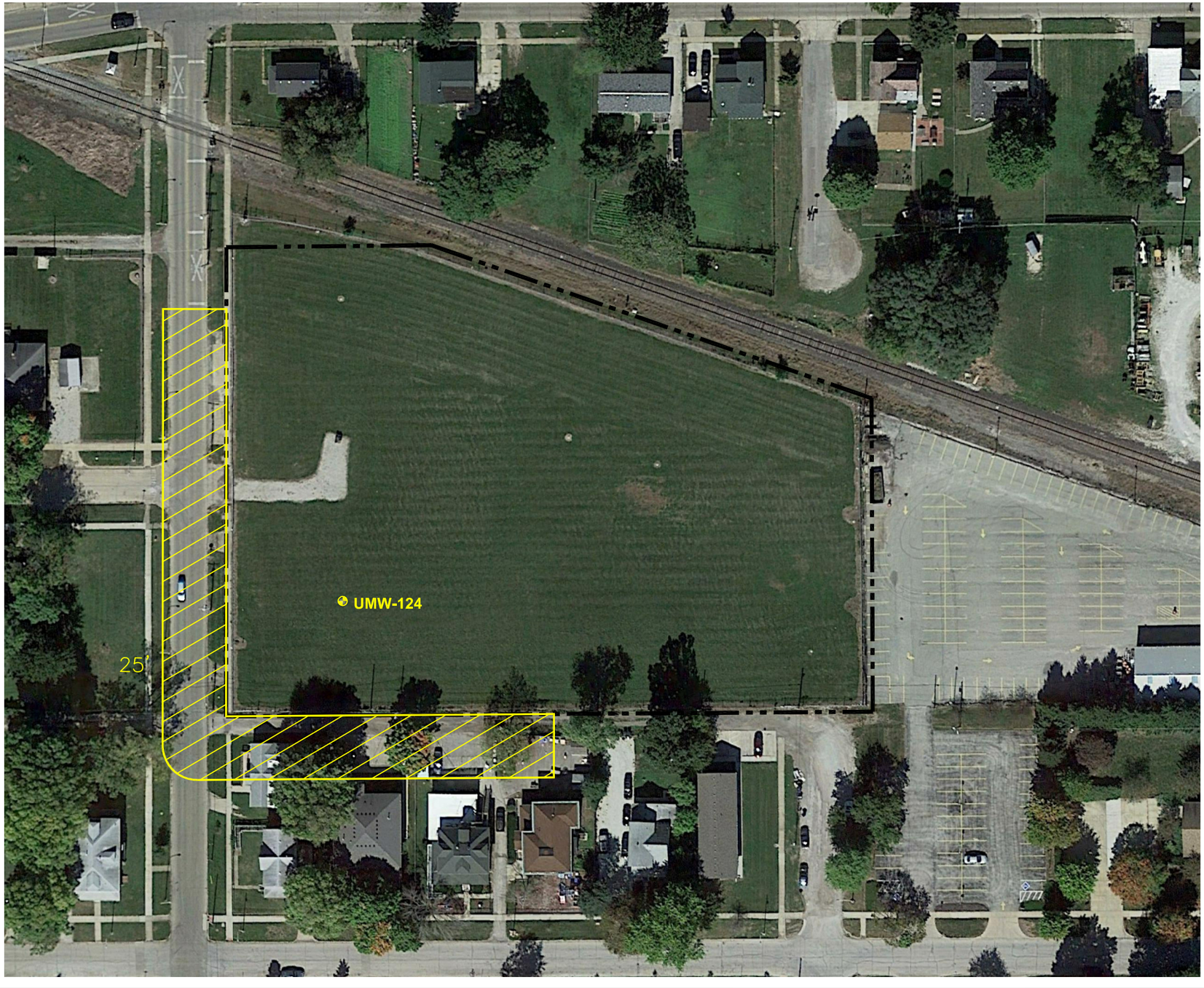
TITLE:
PROJECTED MIGRATION DISTANCE OF NAPHTHALENE IN GROUNDWATER – SOIL COMPONENT OF GROUNDWATER INGESTION PATHWAY

DWN: TMM	DES: MRC	PROJECT NO: 62412010008	
CHKD: LH	APPD: MK	AMEREN ILLINOIS CHAMPAIGN, ILLINOIS	
DATE: 7/31/18	REV: 2	Figure 5.6	

COL J:\624\026471-010



LEGEND

REMEDIATION SITE BOUNDARY

PROJECTED MIGRATION DISTANCE OF BENZENE IN GROUNDWATER

SOURCE: THE SOURCE FOR THE PROPERTY BOUNDARY SURVEY IS VEGRZYN, SARVER AND ASSOCIATES.

0 80
FEET

N

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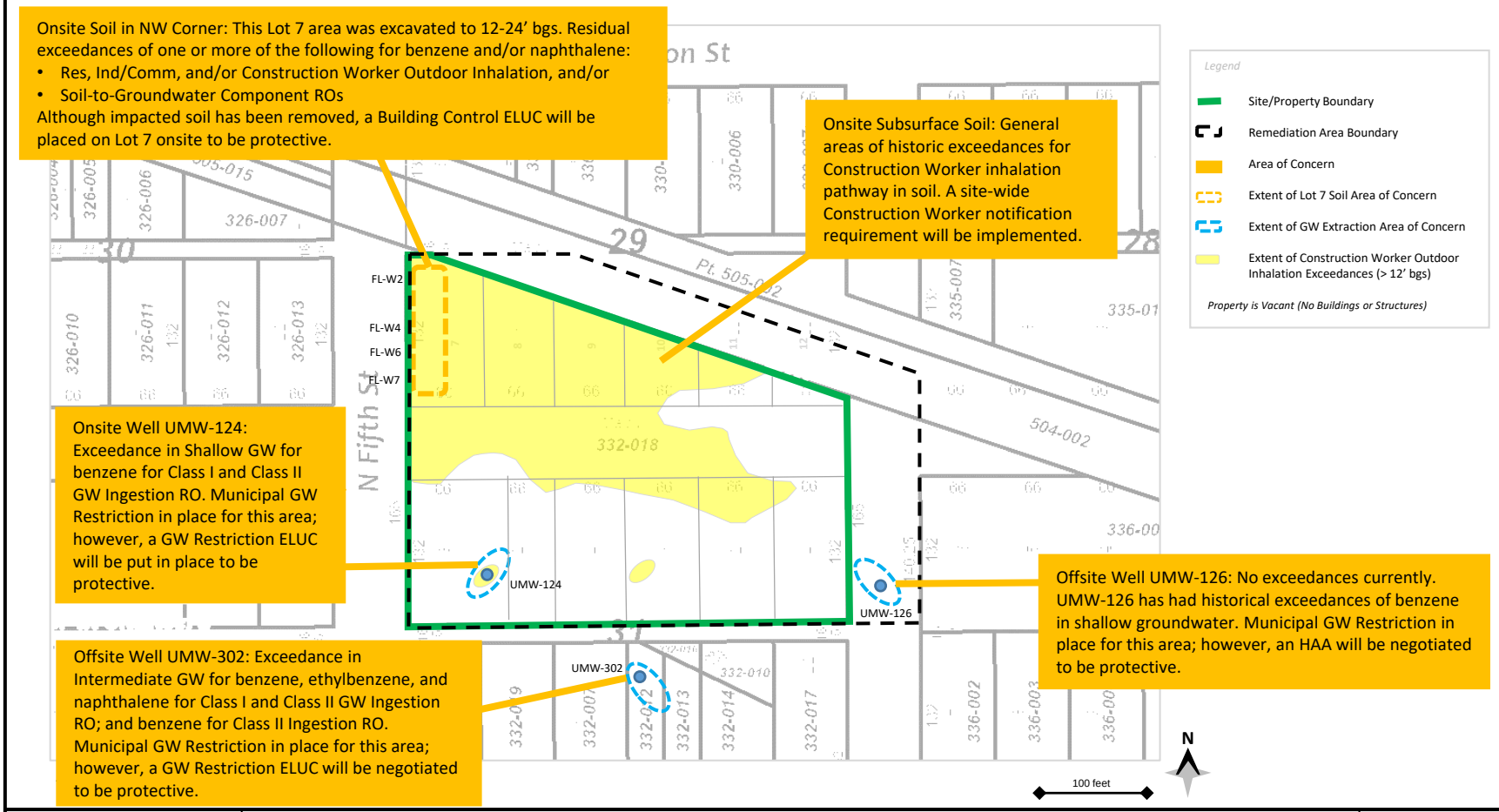
TITLE:
PROJECTED MIGRATION DISTANCE OF BENZENE IN GROUNDWATER – GROUNDWATER COMPONENT OF GROUNDWATER INGESTION PATHWAY

DWN:	DES:	PROJECT NO: 62412010008
TMM	MRC	AMEREN ILLINOIS CHAMPAIGN, ILLINOIS
CHKD: LH	APPD: MK	Figure 5.7
DATE: 7/31/18	REV: 2	

COL J:\624\02647Y-011



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Post-Remediation Areas of Concern

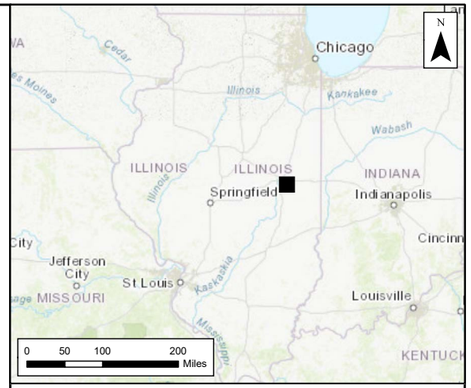
308 North Fifth Street, Champaign, IL

Figure:

5-8

DRAWN BY: Tyler Harris
FILE: M:\Projects\0496251 Ameren Champaign\Maps\RACR August 2020\Revised 20210317\Figure 6-1 Engineered Barrier Extent.mxd REVISED: 03/18/2021 , SCALE: 1:1,036 when printed at 11x17





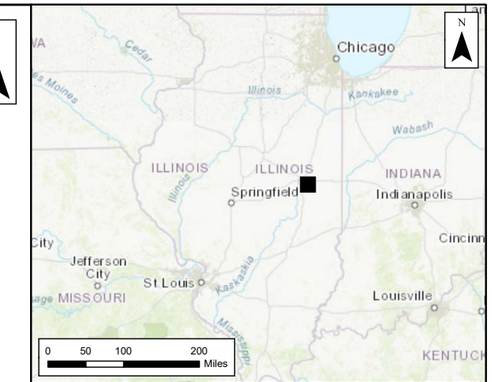
Legend

- Site/Property Boundary (Fenced)
- Area of Engineered Barrier - 3 feet
- Area of Engineered Barrier- 10 feet
- Remediation Area
- Norfolk-Southern Railroad Property and Right of Way
- Parcel Boundaries
- Railroad

Figure 6-1
Extent of Clean Soil Cover
Ameren Services
Champaign, Illinois

Environmental Resources Management
www.erm.com
ERM





Legend

- Site/Property Boundary (Fenced)
- Remediation Area
- Area of Institutional Control - Groundwater Use Restriction
- Norfolk-Southern Railroad Property and Right of Way
- Parcel Boundaries
- Railroad

Notes:

ELUC: Environmental Land Use Control

Figure 6-2
Groundwater Restriction
ELUC Extent
Ameren Services
Champaign, Illinois

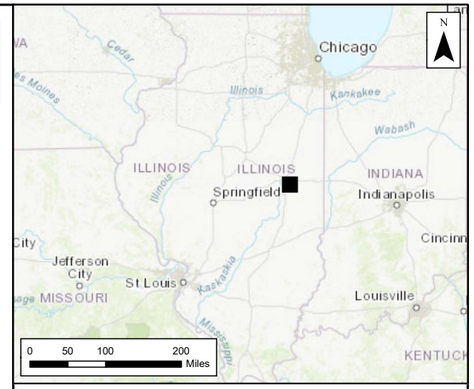
Environmental Resources Management
www.erm.com
ERM

DRAWN BY: Tyler Harris

FILE: M:\Projects\0466251_Ameren_Champaign\Maps\RACR August 2020\Revised 20210317\Figure 6-3 Non-Residential ELUC Extent.mxd, REVISED: 03/18/2021 , SCALE: 1:1,036 when printed at 11x17

DRAWN BY: Tyler Harris
FILE: M:\Projects\0466251_Ameren_Champaign\Maps\RACR August 2020\Revised 20210317\Figure 6-3 Non-Residential ELUC Extent.mxd, REVISED: 03/18/2021 , SCALE: 1:1,036 when printed at 11x17





Legend

- Site/Property Boundary (Fenced)
- Remediation Area
- Area of Institutional Control - Commercial Property Restriction
- Norfolk-Southern Railroad Property and Right of Way
- Parcel Boundaries
- Railroad

Notes:

ELUC: Environmental Land Use Control

Figure 6-3
Non-Residential ELUC Extent
Ameren Services
Champaign, Illinois

Environmental Resources Management
www.erm.com



Figure 6-4
Extent of Restrictions Upon Future Building Construction
Ameren Services
Champaign, Illinois

Environmental Resources Management
www.erm.com
ERM

DRAWN BY: Tyler Harris
FILE: M:\Projects\0466251_Ameren_Champaign\Maps\RACR August 2020\Revised 20210317\Figure 6-4 Extent of Restrictions Future Construction.mxd, REVISED: 03/18/2021 , SCALE: 1:1,036 when printed at 11x17

DRAWN BY: Tyler Harris

FILE: M:\Projects\0466251_Ameren_Champaign\Maps\RACR August 2020\Revised 20210317\Figure 6-5 Extent of Construction Worker Notification Regs.mxd, REVISED: 03/18/2021 , SCALE: 1:1,036 when printed at 11x17



Figure 6-5
Extent of Construction Worker Notification Requirements
Ameren Services
Champaign, Illinois

Environmental Resources Management
www.erm.com
ERM



SOURCE: THE SOURCE FOR THE PROPERTY BOUNDARY SURVEY IS VEGRZYN, SARVER AND ASSOCIATES.

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TITLE:
EXTENT OF HIGHWAY AUTHORITY AGREEMENT FOR EXCLUDING
SOIL INGESTION AND SOIL INHALATION AND GROUNDWATER PROHIBITION
308 NORTH FIFTH STREET – FORMER AMEREN CHAMPAIGN MGP SITE

DWN: TMM	DES: MRC	PROJECT NO: 62412010008	AMEREN ILLINOIS CHAMPAIGN, ILLINOIS
CHKD:	APPD:		
DATE: 11/14/18	REV: 2	Figure 6-6	

COL J:\624\026477-015

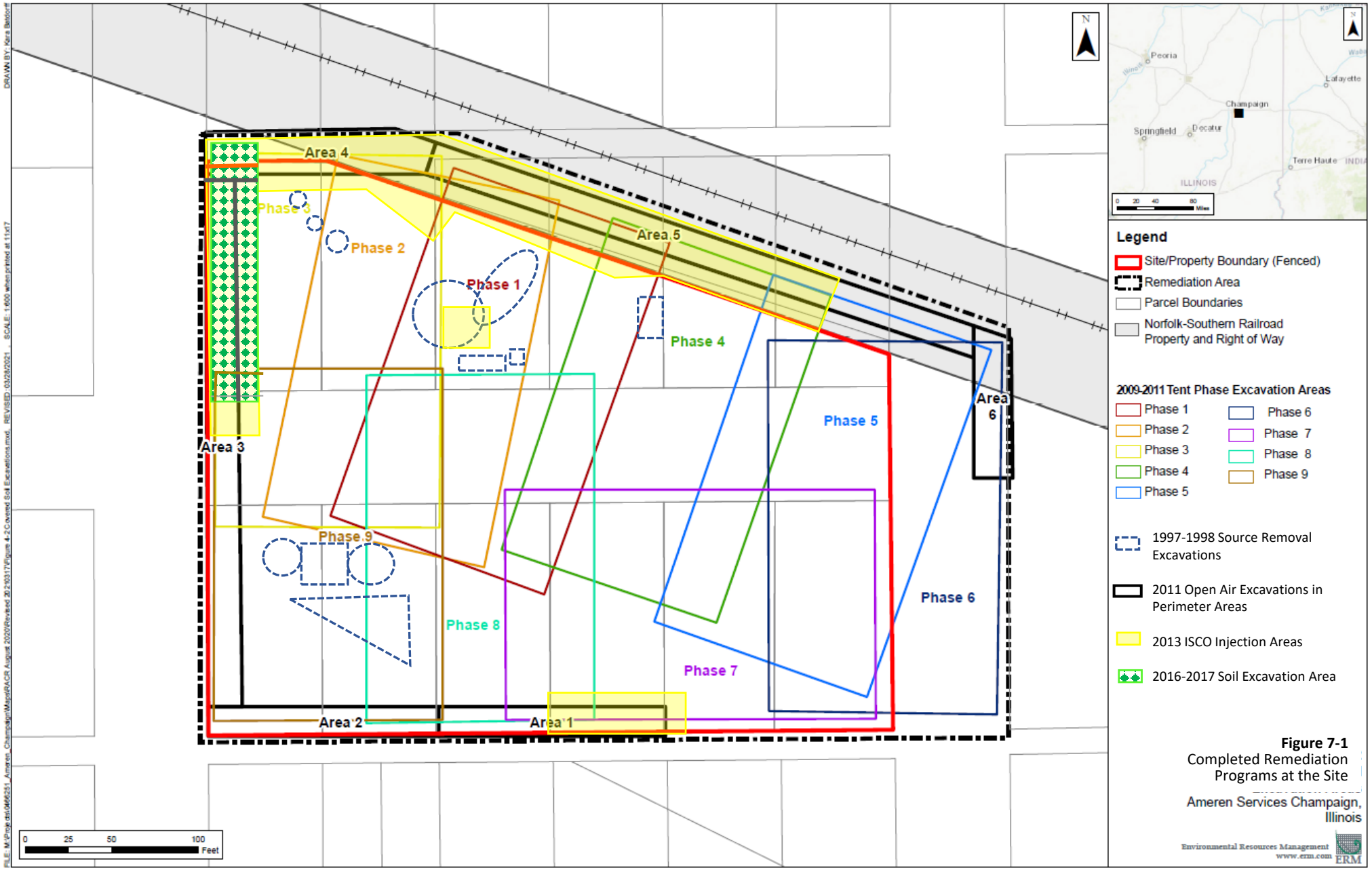

Figure 7-1
Completed Remediation Programs at the Site

Ameren Services Champaign, Illinois

Environmental Resources Management
www.erm.com



Legend

- **Property Boundary**
  - Extent of GW Use Restriction ELUC
  - Extent of Ind/Comm Use Only ELUC
  - Extent of Construction Worker Notification ELUC

  (All Lot Portions on Owned Property)
- **Owned Portion of Lots 7 and 8**
  - Extent of Building Control ELUC
- **Lots with Clean Soil Barrier**
  - Extent of Engineered Barrier

There is also a City of Champaign Ordinance (Council Bill 2007-138) prohibiting the use of groundwater in this area for potable purposes.

Source: Champaign County GIS https://www.maps.ccgisc.org/public/Default.aspx#

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Environmental Land Use Controls to be Implemented at the Site

308 North Fifth Street, Champaign, IL

Figure:

7-2

Tables

TABLE 4-1
PROJECT REMEDIATION OBJECTIVES
FOR CONSTITUENTS OF CONCERN
FORMER AMEREN CHAMPAIGN MGP SITE
CHAMPAIGN, ILLINOIS

	Tier 1 Remediation Objective							
	Ingestion			***Inhalation***			**IEPA Accepted Background Levels MSA**	**Project Remediation Objective**
	Residential	Commercial	Construction	Residential	Commercial	Construction		
Volatile Organic Compounds (mg/kg)								
Benzene	12	100	2,300	0.80	1.6	2.2	---	0.8
Ethylbenzene	7,800	200,000	20,000	400	400	58.0	---	58
Toluene	16,000	410,000	410,000	650	650	42.0	---	42
Total Xylenes	16,000	410,000	41,000	410	320	5.6	---	6
Styrene	16,000	410,000	41,000	1,500	1,500	430	---	430
Acetone	7,800	200,000	200,000	100,000	100,000	10,000	---	7,800
Methylene Chloride	85	760	12,000	13	24	34		13
Semivolatile Organic Compounds (mg/kg)								
Acenaphthene	4,700	120,000	120,000	---	---	---	0.13	4,700
Acenaphthylene	2,300 (1)	61,000 (1)	61,000 (1)	---	---	---	0.07	2300
Benzo(a)anthracene	0.9	8	170	---	---	---	1.8	0.9
Benzo(a)pyrene	0.09	0.8	17	---	---	---	2.1	0.09
Benzo(b)fluoranthene	0.9	8	170	---	---	---	2.1	0.9
Benzo(k)fluoranthene	9	78	1,700	---	---	---	1.7	9
Chrysene	88	780	17,000	---	---	---	2.7	88
Dibenzo(a,h)anthracene	0.09	0.8	17	---	---	---	0.42	0.09
Dibenzofuran	310 (1)	8,200 (1)	820 (1)	---	---	---	---	310
Fluorene	3,100	82,000	82,000	---	---	---	0.18	3,100
Indeno(1,2,3-cd)pyrene	0.9	8	170	---	---	---	1.6	0.9
Naphthalene	1,600	41,000	4,100	170	270	1.8	0.2	2
Phenanthrene	2,300 (1)	61000 (1)	61000 (1)	---	---	---	2.5	2300
2-methylnaphthalene	2,300	61,000	61,000	---	---	---	0.14	2,300
Metals (mg/kg)								
Arsenic	13	13	61	750	1,200	25,000	13	13
Chromium	230	6,100	4,100	270	420	690	16.2	230
Lead	400	800	700	---	---	---	36	400
Mercury	23	610	61	10	16	0.1	0.06	0.1
Inorganics (mg/kg)								
Cyanide	1,600	41,000	4,100	---	---	---	0.51	1,600

Notes:
(1) Non-TACO or provisional RO provided by the IEPA
--- No remediation objective has been established by the IEPA for this constituent for exposure route
mg/kg Milligrams per kilogram

Table 4-2
2009-2011 Soil Analytical Results for Excavation Walls - BTEX and PNAs
Former Ameren Champaign MGP Site

Constituent	Soil Ingestion Residential	Soil Ingestion Commercial	Soil Ingestion Construction	Soil Inhalation Residential	Soil Inhalation Commercial	Soil Inhalation Construction	Soil Component to Groundwater[3]	IEPA Accepted Background Levels for MSA	Sample Location: / Sample ID: / Sample Date: / ample Depth (feet):	P1-A1-W P1-A1-W (0-3) 6/30/2009 0-3'	P1-A1-W P1-A1-W (5-8) 6/30/2009 5-8'	P1-A1-W P1-A1-W (12) 7/14/2009 12'	P1-A2-W P1-A2-W (0-3) 6/30/2009 0-3'	P1-A2-W P1-A2-W (5-6) 6/30/2009 5-6'	P1-A2-W P1-A2-W (15) 7/6/2009 15'	P1-A3-W P1-A3-W (3) 7/7/2009 3'	P1-A3-W P1-A3-W (10) 7/7/2009 10'	P1-A3-W P1-A3-W (20) 7/7/2009 20'	P1-A4-W P1-A4-W (3) 7/7/2009 3'	P1-A4-W P1-A4-W (8) 7/7/2009 8'	P1-A4-W P1-A4-W (20) 7/7/2009 20'	P1-A5-W P1-A5-W(3) 7/15/2009 3	P1-A5-W P1-A5-W(8) 7/15/2009 8	P1-A5-W P1-A5-W(20) 7/15/2009 20	P2-A1-W P2-A1-W (3) 10/23/2009 3	P2-A1-W P2-A1-W (8) 10/23/2009 8	P2-A1-W P2-A1-W (20) 10/27/2009 20	P2-A2-W P2-A2-W (3) 10/27/2009 3
BTEX Constituents (mg/kg)																											
Benzene	12	100	2,300	0.8	1.6	2.2	0.03	---		0.303	2.42	23.9	3.96	2.47	4.96	154	0.86	9.72	0.115	1.89	8.26	1.39	1.35	44.8	15.8	3.59	0.448	0.684
Ethylbenzene	7,800	200,000	20,000	400	400	58	13	---		0.330	18.9	3.4	16.9	18.5	6.24	72.0	1.83	5.1	0.207	3.83	2.93	22.2	13.2	<0.112	6.8	8.48	2.15	0.53
Toluene	16,000	410,000	410,000	650	650	42	12	---		0.660	<5.48	30.2	<5.76	<7.340	0.66	<97.7	<1.54	14	0.047	0.410	6.36	<5.17	<4.16	4.88	10	<5.69	0.35	0.44
m,p-Xylenes	16,000	410,000	41,000	420[1]	420[1]	5.9[2]	200[2]	---		0.540	5.48	12.1	8.77	10.1	4.15	50.0	0.42	18.0	0.194	1.57	5.47	8.54	7.24	<0.112	25.5	4.4	1.41	1.1
o-Xylene	16,000	410,000	41,000	410	410	6.5	190	---		0.270	6.98	5.2	5.7	7.59	2.83	<97.7	0.53	8.01	0.120	1.0	2.8	7.77	5.42	<0.112	13	2.9	0.75	0.63
Xylenes	16,000	410,000	41,000	320	320	5.6	150	---		0.810	12.460	17.3	14.470	17.690	6.980	50.0	0.950	26.010	0.314	2.570	8.270	16.310	12.660	<0.112	38.5	7.3	2.16	1.73
PNA Constituents (mg/kg)																											
Acenaphthene	4,700	120,000	120,000	---	---	---	570	0.13		4.21	35.5	0.435	56.3	12.0	1.6	160	28	9.7	0.31	37	23	60.7	8.7	0.013	13.1	21.3	0.935	0.42
Acenaphthylene	2,300[4]	61,000[4]	61,000[4]	---	---	---	85[4]	0.07		64.8	5	2.69	7.59	1.79	0.59	17	2.2	30	0.12	3.7	26	4.63	1.01	0.003	12.8	4.58	0.421	0.61
Anthracene	23,000	610,000	610,000	---	---	---	12,000	0.4		16.1	19.3	1.06	33.2	5.86	0.97	86	12	22	0.21	17	24	26.3	3.84	0.006	11.6	9.46	0.629	0.785
Benzo(a)anthracene	0.90	8	170	---	---	---	2	1.8		72	9.08	0.567	15.3	3.26	0.48	49	6.4	11	0.22	8.2	13	12	1.65	0.007	9.11	4.97	0.353	1.08
Benzo(a)pyrene	0.09	0.80	17	---	---	---	8	2.1		166	8.38	0.583	14.2	2.94	0.38	44	5.7	10	0.3	8.4	13	11.4	1.39	0.004	7.49	4.92	0.386	0.886
Benzo(b)fluoranthene	0.90	8	170	---	---	---	5	2.1		151	6.73	0.437	11.6	2.36	0.32	39	4.6	8	0.25	6.3	9.9	8.61	1.08	<0.004	8.17	3.91	0.324	1.08
Benzo(g,h,i)perylene	2,300[4]	61,000[4]	61,000[4]	---	---	---	27,000[4]	1.7		106	2.79	0.279	4.94	0.956	0.16	21	2.6	4.4	0.18	3.6	5.7	4.86	0.595	<0.004	2.07	1.88	0.127	0.246
Benzo(k)fluoranthene	9	78	1,700	---	---	---	49	1.7		42.4	2.4	0.155	4.31	0.856	0.098	13	1.6	2.7	0.087	2.1	3.2	3.02	0.34	<0.004	3.06	1.28	0.105	0.432
Bis(2-ethylhexyl)phthalate	46	410	4,100	31,000	31,000	31,000	3,600	---		<16.6	<8.54	<0.724	<8.67	<4.38	<0.74	<55	<8.8	<19	<0.092	<9.1	<19	<8.61	<7.52	<0.075	<7.82	<4.73	<0.076	<2.4
Chrysene	88	780	17,000	---	---	---	160	2.7		70	9.37	0.598	16.1	3.38	0.45	49	6.3	12	0.24	8.5	14	13.3	1.57	0.004	9.77	5.68	0.397	1.2
Dibenzo(a,h)anthracene	0.09	0.80	17	---	---	---	2	0.42		23.3	0.786	0.062	1.38	0.261	0.043	5.5	0.65	1.1	0.044	0.92	1.4	1.16	<0.381	<0.004	1.05	0.48	0.034	<0.122
Fluoranthene	3,100	82,000	82,000	---	---	---	4,300	4.1		81.7	22	1.17	36.8	7.15	0.99	110	15	24	0.37	19	27	28.8	3.67	0.008	24.3	11.6	0.821	2.55
Fluorene	3,100	82,000	82,000	---	---	---	560	0.18		6.66	25.7	1.67	38.3	8.96	1.0	65	13	24	0.16	14	33	25.2	5.16	0.008	17.3	10.5	0.646	0.775
Indeno(1,2,3-cd)pyrene	0.90	8.00	170	---	---	---	14	1.6		78.1	2.29	0.191	4.32	0.795	0.13	17	2	3.2	0.14	2.8	4.3	3.64	0.449	<0.004	2.48	1.51	0.106	0.297
Naphthalene	1,600	41,000	4,100	170	270	1.8	12	0.2		10.8	74.8	10.2	141	26.3	11.0	340	73	170	0.38	65	160	187	33.5	0.08	44.9	58.2	1.52	1.59
Phenanthrene	2,300[4]	61,000[4]	61,000[4]	---	---	---	200[4]	2.5		17.5	68.2	3.57	104	23.2	3.4	260	40	79	0.48	54	81	77.8	13.8	0.023	43.6	37.8	1.89	2.68
Pyrene	2,300	61,000	61,000	---	---	---	4,200	3		160	30.4	1.7	47.3	9.74	1.4	150	20	35	0.49	27	39	39.9	5.22	0.012	17.2	16.4	1.21	1.86

Notes:
[1] Objective is for m-xylene
[2] Objective is for p-xylene
[3] Objectives are for Class I groundwater.
[4] Non-TACO or provisional ROs provided by the IEPA.
--- No objective has been published for this constituent by the IEPA, or the sample was not analyzed for this constituent.
Concentration exceeds one or more project remediation objective.

Table 4-2
2009-2011 Soil Analytical Results for Excavation Walls - BTEX and PNAs
Former Ameren Champaign MGP Site

Constituent	Soil Ingestion Residential	Soil Ingestion Commercial	Soil Ingestion Construction	Soil Inhalation Residential	Soil Inhalation Commercial	Soil Inhalation Construction	Soil Component to Groundwater[3]	IEPA Accepted Background Levels for MSA	Sample Location: / Sample ID: / Sample Date: / ample Depth (feet):	P2-A3-W P2-A3-W (3) 10/26/2009 3	P2-A3-W P2-A3-W (8) 10/26/2009 8	P2-A3-W P2-A3-W (20) 10/27/2009 20	P3-A1-W P3-A1-W (3) 1/12/2010 3	P3-A1-W P3-A1-W (10) 1/12/2010 10	P3-A1-W P3-A1-W (15) 1/12/2010 15	P3-A2-W P3-A2-W (8) 1/12/2010 8	P3-A2-W P3-A2-W (16) 1/12/2010 16	P3-A3-W P3-A3-W (3) 1/12/2010 3	P3-A3-W P3-A3-W (6) 1/12/2010 6	P3-A4-W P3-A4-W (3) 1/13/2010 3	P3-A4-W P3-A4-W (10) 1/13/2010 10	P3-A4-W P3-A4-W (15) 1/13/2010 15	P3-B.5-W P3-B.5-W (8) 1/14/2010 8	P3-B.5-W P3-B.5-W (15) 1/14/2010 15	P3-C1-W P3-C1-W (10) 1/14/2010 10	P3-C1-W P3-C1-W (18) 1/14/2010 18	P3-A.5-W P3-A.5-W (8) 1/20/2010 8
BTEX Constituents (mg/kg)																										
Benzene	12	100	2,300	0.8	1.6	2.2	0.03	---		<0.99	<0.908	7.04	11.7	15.7	6.91	3.62	6.3	2.26	2.62	5.61	<1	1.61	81.8	10.6	146	118	11.7
Ethylbenzene	7,800	200,000	20,000	400	400	58	13	---		3.5	10.9	13.3	2.4	6	1.94	<6.33	<0.411	1.89	1.76	1.91	2.5	<0.427	9.7	<20.5	34.6	33	<26
Toluene	16,000	410,000	410,000	650	650	42	12	---		<4.95	<4.54	5	9.99	26.6	6.72	3.3	<0.411	5.52	0.059	2	<5.02	<0.427	123	13	311	267	18
m,p-Xylenes	16,000	410,000	41,000	420[1]	420[1]	5.9[2]	200[2]	---		1	4.74	8.7	14	39.3	11.2	2.7	<0.411	13.1	0.616	2.38	1.7	<0.427	91.7	6.8	301	258	21
o-Xylene	16,000	410,000	41,000	410	410	6.5	190	---		1.3	3.5	5.2	5.6	15.5	4.18	<6.33	<0.411	5.54	0.799	1.43	<5.02	<0.427	33.1	<20.5	115	102	8.2
Xylenes	16,000	410,000	41,000	320	320	5.6	150	---		2.3	8.24	13.9	19.6	54.8	15.38	2.7	<0.411	18.64	1.415	3.81	1.7	<0.427	124.8	6.8	416	360	29.2
PNA Constituents (mg/kg)																										
Acenaphthene	4,700	120,000	120,000	---	---	---	570	0.13		31.6	40.2	2.4	6.14	2.64	0.053	0.312	<0.004	10.3	0.204	24.8	8.58	0.006	23.1	0.572	43.9	25.3	8.73
Acenaphthylene	2,300[4]	61,000[4]	61,000[4]	---	---	---	85[4]	0.07		8.18	8.53	0.89	27.7	9.05	0.326	0.054	<0.004	18.6	0.01	9.2	4.54	<0.004	96.5	1.99	209	122	25.5
Anthracene	23,000	610,000	610,000	---	---	---	12,000	0.4		14.4	18	1.42	52.1	10.7	0.077	0.083	<0.004	29.7	<0.005	26.3	5.53	0.005	90	0.708	158	93.9	32
Benzo(a)anthracene	0.90	8	170	---	---	---	2	1.8		10.2	8	0.765	145	5.34	0.05	<0.004	<0.004	19	0.014	38.9	2.95	0.006	60.5	0.213	100	53.7	15.4
Benzo(a)pyrene	0.09	0.80	17	---	---	---	8	2.1		14.8	7.3	0.818	146	3.81	0.047	<0.004	<0.004	14.7	0.023	41.3	2.59	<0.004	48.2	<0.191	79.1	39.9	11.4
Benzo(b)fluoranthene	0.90	8	170	---	---	---	5	2.1		12.1	5.77	0.688	182	4.04	0.055	<0.004	<0.004	16.6	0.025	46.3	1.97	0.004	54.9	<0.191	90.7	44.9	12.1
Benzo(g,h,i)perylene	2,300[4]	61,000[4]	61,000[4]	---	---	---	27,000[4]	1.7		7.27	2.6	0.282	83.6	1.81	0.027	<0.004	<0.004	5.53	0.032	19.8	1.07	0.004	17.7	<0.191	24	12.5	2.88
Benzo(k)fluoranthene	9	78	1,700	---	---	---	49	1.7		3.66	1.82	0.24	70	1.69	0.02	<0.004	<0.004	6.59	0.022	17.2	0.728	<0.004	21.5	<0.191	29.8	17.3	4.87
Bis(2-ethylhexyl)phthalate	46	410	4,100	31,000	31,000	31,000	3,600	---		<4.43	<4.47	<0.429	<47.1	<24.3	<0.075	<0.088	<0.076	<11.1	<0.094	<13.7	<4.12	<0.079	<23.1	<3.76	<25.7	<22.8	<9.23
Chrysene	88	780	17,000	---	---	---	160	2.7		12.7	8.79	0.874	146	4.61	0.05	<0.004	<0.004	19	0.013	40.4	2.84	0.004	58.1	<0.191	102	54.9	14.5
Dibenzo(a,h)anthracene	0.09	0.80	17	---	---	---	2	0.42		1.78	0.732	0.076	23.6	<1.23	0.008	<0.004	<0.004	2.75	0.025	5.82	0.308	<0.004	6.65	<0.191	10.8	5.64	1.24
Fluoranthene	3,100	82,000	82,000	---	---	---	4,300	4.1		20.8	18.6	1.76	321	13.3	0.135	0.024	<0.004	50.8	<0.005	95.9	6.22	0.009	184	0.409	271	147	44.1
Fluorene	3,100	82,000	82,000	---	---	---	560	0.18		13.6	19.3	1.36	21.7	12.3	0.199	0.311	<0.004	37.9	0.151	21.9	6.83	0.005	116	2.31	219	124	40.3
Indeno(1,2,3-cd)pyrene	0.90	8.00	170	---	---	---	14	1.6		5.6	2.14	0.241	83.3	1.71	0.024	<0.004	<0.004	5.99	0.031	19.5	0.843	<0.004	19	<0.191	28.4	14.5	3.25
Naphthalene	1,600	41,000	4,100	170	270	1.8	12	0.2		37.1	107	7.07	45.2	43.7	3.51	3.53	0.011	140	1.35	14.7	25.4	0.026	748	21.1	1380	582	254
Phenanthrene	2,300[4]	61,000[4]	61,000[4]	---	---	---	200[4]	2.5		50.5	69.3	5.11	161	27.5	0.234	0.324	<0.004	90.4	0.018	94.9	20.1	0.016	313	2.52	489	258	95.2
Pyrene	2,300	61,000	61,000	---	---	---	4,200	3		30.4	25.7	2.33	275	11.7	0.109	0.01	<0.004	37.5	<0.005	82.5	8.5	0.01	135	0.282	199	109	35.8

Notes:
[1] Objective is for m-xylene
[2] Objective is for p-xylene
[3] Objectives are for Class I groundwater.
[4] Non-TACO or provisional ROs provided by the IEPA.
'--- No objective has been published for this constituent by the IEPA, or the sample was not analyzed for this constituent.
Concentration exceeds one or more project remediation objective.

Table 4-2
2009-2011 Soil Analytical Results for Excavation Walls - BTEX and PNAs
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Constituent	Soil Ingestion Residential	Soil Ingestion Commercial	Soil Ingestion Construction	Soil Inhalation Residential	Soil Inhalation Commercial	Soil Inhalation Construction	Soil Component to Groundwater[3]	IEPA Accepted Background Levels for MSA	Sample Location: / Sample ID: / Sample Date: / ample Depth (feet):	P3-A.5-W P3-A.5-W (20) 1/20/2010 20	P3-B-W P3-B-W (8) 1/20/2010 8	P3-C.5-W P3-C.5-W (8) 1/20/2010 8	P3-C.5-W P3-C.5-W (20) 1/20/2010 20	P3-D-W P3-D-W (8) 1/20/2010 8	P3-D.5-W P3-D.5-W (8) 1/27/2010 8	P3-D.5-W P3-D.5-W (20) 1/27/2010 20	P3-E-W P3-E-W (8) 1/27/2010 8	P3-E-W P3-E-W (20) 1/27/2010 20	P3-E.5-W P3-E.5-W (8) 1/27/2010 8	P3-E.5-W P3-E.5-W (20) 1/27/2010 20	P3-F-W P3-F-W (8) 1/27/2010 8	P3-F-W P3-F-W (20) 1/27/2010 20	P3-A1.5-W P3-A1.5-W (8) 1/27/2010 8	P3-A1.5-W P3-A1.5-W (20) 1/27/2010 20	P3-A2.5-W P3-A2.5-W (3) 1/27/2010 3	P3-A2.5-W P3-A2.5-W (8) 1/27/2010 8	P3-A2.5-W P3-A2.5-W (20) 1/27/2010 20
BTEX Constituents (mg/kg)																											
Benzene	12	100	2,300	0.8	1.6	2.2	0.03	---		5.1	16.4	7.84	10.4	21.3	8.87	22	9.29	<0.418	222	13.4	56.3	16.1	39.7	6.86	3.59	2.27	7.16
Ethylbenzene	7,800	200,000	20,000	400	400	58	13	---		0.9	<27.2	3.9	<27.2	32	0.94	30.7	2.9	0.54	62.9	11.5	6.88	1.5	11.8	2.5	5.83	2.5	1.0
Toluene	16,000	410,000	410,000	650	650	42	12	---		<3.26	23	6.89	13	44.1	6.39	35.8	8.06	0.95	156	13	4.4	9.66	65.5	1.3	2.04	4.3	8.96
m,p-Xylenes	16,000	410,000	41,000	420[1]	420[1]	5.9[2]	200[2]	---		2.7	20	19.1	10	56.4	5.59	34.9	18.8	2.6	300	18	58.2	9.77	78.8	8.29	13.2	7.61	5.38
o-Xylene	16,000	410,000	41,000	410	410	6.5	190	---		1.0	7.7	7.79	<27.2	26	2.2	17.2	8.33	1.1	139	8.35	22.4	4.1	29.5	2.8	1.72	3.1	2.0
Xylenes	16,000	410,000	41,000	320	320	5.6	150	---		3.7	27.7	26.89	10	82.4	7.79	52.1	27.13	3.7	439	26.35	80.6	13.87	108.3	11.09	14.92	10.71	7.38
PNA Constituents (mg/kg)																											
Acenaphthene	4,700	120,000	120,000	---	---	---	570	0.13		0.096	32.6	9.65	0.678	33.7	1.26	18	2.37	2.22	2.08	2.27	3.4	1.65	1.96	<0.038	2.95	4.36	<0.037
Acenaphthylene	2,300[4]	61,000[4]	61,000[4]	---	---	---	85[4]	0.07		0.162	101	9.01	2.54	68.6	5.4	16.6	4.84	8.01	4.26	2.79	3.7	2.65	8.1	0.073	1.81	12.3	0.12
Anthracene	23,000	610,000	610,000	---	---	---	12,000	0.4		0.226	110	9.11	2.2	34.7	5.56	14.3	6.69	7.95	5.11	2.84	17.6	4.76	7.54	0.03	4.99	10.7	0.039
Benzo(a)anthracene	0.90	8	170	---	---	---	2	1.8		0.159	69.6	9.36	1.77	22.9	3.52	8.73	5.4	5.04	3.64	2.05	13.5	3.38	4.73	0.137	3.54	7.06	0.082
Benzo(a)pyrene	0.09	0.80	17	---	---	---	8	2.1		0.128	55.1	11.3	1.88	22.2	2.76	6.71	3.85	3.88	2.6	1.23	9.38	2.17	2.78	0.179	2.16	4.07	0.064
Benzo(b)fluoranthene	0.90	8	170	---	---	---	5	2.1		0.138	57.8	9.32	1.98	19.9	2.96	5.8	3.62	3.59	2.33	1.14	10.3	2.1	3.1	0.189	2.62	4.31	0.072
Benzo(g,h,i)perylene	2,300[4]	61,000[4]	61,000[4]	---	---	---	27,000[4]	1.7		0.045	15.9	5.93	0.858	9.48	1.13	3.17	1.88	1.89	1.26	<0.758	3.84	0.898	1.06	0.13	0.854	1.26	0.045
Benzo(k)fluoranthene	9	78	1,700	---	---	---	49	1.7		0.048	20.8	3.19	0.655	6.75	1.15	1.94	1.3	1.26	0.84	<0.758	3.85	0.778	1.17	0.06	0.889	1.82	<0.037
Bis(2-ethylhexyl)phthalate	46	410	4,100	31,000	31,000	31,000	3,600	---		<0.382	<12.5	<4.27	<3.85	<4.3	<1.52	<11.2	<16.5	<14.3	<16.8	<14.9	<16.7	<15.2	<17.5	<0.748	<14.3	<13.1	<0.739
Chrysene	88	780	17,000	---	---	---	160	2.7		0.153	68.5	8.83	1.69	22.4	3.22	8.2	4.07	4.2	3.05	1.26	10.8	2.3	3.78	0.095	2.96	6.51	0.053
Dibenzo(a,h)anthracene	0.09	0.80	17	---	---	---	2	0.42		<0.019	6.17	1.35	0.243	2.69	0.461	0.81	<0.839	0.57	<0.854	<0.758	1.43	<0.77	<0.888	0.034	<0.726	0.6	<0.037
Fluoranthene	3,100	82,000	82,000	---	---	---	4,300	4.1		0.413	193	20.2	4.18	51.4	10.2	20.8	12.6	12.7	7.54	4.06	34	7.39	11.6	0.171	8.91	15.6	0.114
Fluorene	3,100	82,000	82,000	---	---	---	560	0.18		0.244	151	11.1	2.16	45.9	6.51	18.9	7.69	8.17	5.63	3.28	15.7	5.1	9.27	<0.038	5.95	14.5	0.043
Indeno(1,2,3-cd)pyrene	0.90	8.00	170	---	---	---	14	1.6		0.04	16.9	4.3	0.789	7.88	1.49	3.17	2.05	2.06	1.19	<0.758	4.94	1.05	1.32	0.137	1.1	1.8	0.047
Naphthalene	1,600	41,000	4,100	170	270	1.8	12	0.2		1.17	528	124	22.4	593	34.8	150	98.7	83.6	290	44.7	204	76.3	48.6	1.39	19.2	87.4	1.68
Phenanthrene	2,300[4]	61,000[4]	61,000[4]	---	---	---	200[4]	2.5		0.758	386	37.5	6.67	112	18.6	56.6	25.5	26.1	16	9.63	61.3	14.7	21.4	0.103	15.2	26.4	0.123
Pyrene	2,300	61,000	61,000	---	---	---	4,200	3		0.406	185	22.2	3.82	62.3	7.52	25.7	12.9	12.5	8.79	4.49	25.9	6.89	8.68	0.196	6.74	11.5	0.114

Notes:
[1] Objective is for m-xylene
[2] Objective is for p-xylene
[3] Objectives are for Class I groundwater.
[4] Non-TACO or provisional ROs provided by the IEPA.
'--- No objective has been published for this constituent by the IEPA, or the sample was not analyzed for this constituent.
Concentration exceeds one or more project remediation objective.

Table 4-2
2009-2011 Soil Analytical Results for Excavation Walls - BTEX and PNAs
Former Ameren Champaign MGP Site

Constituent	Soil Ingestion Residential	Soil Ingestion Commercial	Soil Ingestion Construction	Soil Inhalation Residential	Soil Inhalation Commercial	Soil Inhalation Construction	Soil Component to Groundwater[3]	IEPA Accepted Background Levels for MSA	Sample Location: / Sample ID: / Sample Date: / ample Depth (feet):	P3-F.5-W (3) 2/3/2010 3	P3-F.5-W (8) 2/3/2010 8	P3-F.5-W (20) 2/3/2010 20	P3-G-W (3) 2/4/2010 3	P3-G-W (8) 2/4/2010 8	P3-G-W (20) 2/4/2010 20	P3-G.5-W (3) 2/4/2010 3	P3-G.5-W (8) 2/4/2010 8	P3-G.5-W (20) 2/4/2010 20	P3-H-W (3) 2/5/2010 3	P3-H-W (20) 2/5/2010 20	P3-H.5-W (3) 2/5/2010 3	P3-H.5-W (8) 2/5/2010 8	P3-H.5-W (20) 2/5/2010 20	P4-A1-W (3) 3/31/2010 3	P4-A1-W (8) 3/31/2010 8	P4-A1-W (20) 3/31/2010 20	P4-A2-W (3) 3/29/2010 3
BTEX Constituents (mg/kg)																											
Benzene	12	100	2,300	0.8	1.6	2.2	0.03	---		1.2	7.44	43.9	29.7	0.75	25.3	31.7	0.288	42.6	0.0082	28.2	0.0065	0.217	9.28	3.65	2.08	1460	7.3
Ethylbenzene	7,800	200,000	20,000	400	400	58	13	---		<5.99	<4.64	<4.08	4.6	1.0	1.8	<2.55	<0.115	<1.67	0.0024	0.31	0.0026	0.12	12.8	9.75	14.9	282	49.6
Toluene	16,000	410,000	410,000	650	650	42	12	---		<5.99	<4.64	15	31.1	<1.19	20.8	<2.55	0.029	3.28	0.0029	1.12	0.0048	0.22	3.95	<6.5	<4.84	2510	<29
m,p-Xylenes	16,000	410,000	41,000	420[1]	420[1]	5.9[2]	200[2]	---		<5.99	3.6	<4.08	16.7	<1.19	7.58	<2.55	<0.115	<1.67	0.0041	1.71	0.0056	0.29	12.5	2.4	4.2	1190	13.7
o-Xylene	16,000	410,000	41,000	410	410	6.5	190	---		<5.99	1.5	<4.08	7.45	<1.19	3.7	<2.55	<0.115	<1.67	0.0023	1.03	0.0022	0.16	6.15	<6.5	4.7	491	15.6
Xylenes	16,000	410,000	41,000	320	320	5.6	150	---		<5.99	5.1	<4.08	24.15	<1.19	11.28	<2.55	<0.115	<1.67	0.0064	2.74	0.0078	0.45	18.65	2.4	8.9	1681	29.3
PNA Constituents (mg/kg)																											
Acenaphthene	4,700	120,000	120,000	---	---	---	570	0.13		0.53	0.554	0.015	2.21	0.185	0.253	0.638	0.273	0.058	0.037	<0.004	0.345	0.74	0.45	22.4	31.9	53.8	117
Acenaphthylene	2,300[4]	61,000[4]	61,000[4]	---	---	---	85[4]	0.07		1.27	0.833	0.022	7.79	0.252	1.47	2.01	0.086	0.106	0.456	<0.004	1.0	0.554	0.14	1.43	2.03	273	6.72
Anthracene	23,000	610,000	610,000	---	---	---	12,000	0.4		1.87	1.92	0.03	5.26	0.4	0.815	1.67	0.013	0.031	0.25	<0.004	1.91	0.371	0.171	6.59	9.74	122	40.3
Benzo(a)anthracene	0.90	8	170	---	---	---	2	1.8		4.06	1.28	0.026	3.12	0.136	0.506	1.09	<0.012	0.023	1.43	0.005	11.7	0.717	0.119	3.55	5.67	75.4	19.8
Benzo(a)pyrene	0.09	0.80	17	---	---	---	8	2.1		3.56	0.963	0.02	3.05	0.108	0.414	1.03	<0.012	0.018	1.62	<0.004	13.1	0.688	0.089	3.35	5.05	72.1	17.1
Benzo(b)fluoranthene	0.90	8	170	---	---	---	5	2.1		4.58	0.978	0.02	2.52	0.098	0.348	0.852	<0.012	0.017	2.51	0.004	18.5	0.548	0.081	2.62	4.05	55.2	13.1
Benzo(g,h,i)perylene	2,300[4]	61,000[4]	61,000[4]	---	---	---	27,000[4]	1.7		1.86	0.391	0.011	1.29	0.054	0.16	0.427	<0.012	0.012	1.34	<0.004	7.52	0.229	<0.038	1.33	1.82	27.3	6.94
Benzo(k)fluoranthene	9	78	1,700	---	---	---	49	1.7		1.78	0.365	<0.011	0.822	0.034	0.11	0.294	<0.012	<0.011	0.835	<0.004	6.27	0.186	<0.038	0.85	1.3	18	4.05
Bis(2-ethylhexyl)phthalate	46	410	4,100	31,000	31,000	31,000	3,600	---		<11.2	<4.42	0.17	<2.3	<0.239	<2.22	<2.19	<0.244	<0.212	<0.762	<0.074	<1.55	<2.01	<0.755	<4.93	<4.26	<146	<9.3
Chrysene	88	780	17,000	---	---	---	160	2.7		3.78	1.08	0.019	2.95	0.122	0.426	1.03	<0.012	0.022	1.7	0.004	12.4	0.663	0.095	3.36	5.61	71.3	20
Dibenzo(a,h)anthracene	0.09	0.80	17	---	---	---	2	0.42		0.55	<0.224	<0.011	0.315	0.013	<0.113	0.11	<0.012	<0.011	0.369	<0.004	2.5	<0.102	<0.038	0.377	0.536	7.2	1.92
Fluoranthene	3,100	82,000	82,000	---	---	---	4,300	4.1		6.35	2.78	0.045	6.01	0.438	1.08	2.19	0.013	0.041	1.97	<0.004	18	1.36	0.217	7.18	13	168	43.7
Fluorene	3,100	82,000	82,000	---	---	---	560	0.18		1.59	1.88	0.036	6.31	0.475	1.03	1.6	0.06	0.047	0.113	<0.004	0.518	0.789	0.274	8.75	13.6	155	62.1
Indeno(1,2,3-cd)pyrene	0.90	8.00	170	---	---	---	14	1.6		1.82	0.358	<0.011	1.01	0.043	0.129	0.341	<0.012	<0.011	1.2	<0.004	7.38	0.198	<0.038	1.11	1.57	22.1	5.5
Naphthalene	1,600	41,000	4,100	170	270	1.8	12	0.2		10.6	26.3	0.523	52.6	0.474	11.7	15.9	0.015	15	0.338	0.044	0.386	<0.102	9.94	65.5	70	1850	330
Phenanthrene	2,300[4]	61,000[4]	61,000[4]	---	---	---	200[4]	2.5		5.61	5.77	0.106	18	1.3	2.98	5.27	0.041	0.105	0.825	0.007	6.86	3.31	0.707	23.1	40.3	449	147
Pyrene	2,300	61,000	61,000	---	---	---	4,200	3		5.77	2.64	0.051	8.16	0.51	1.45	2.77	0.013	0.056	2.18	0.004	17.1	1.96	0.322	9.79	19.5	240	62.6

Notes:
[1] Objective is for m-xylene
[2] Objective is for p-xylene
[3] Objectives are for Class I groundwater.
[4] Non-TACO or provisional ROs provided by the IEPA.
'--- No objective has been published for this constituent by the IEPA, or the sample was not analyzed for this constituent.
Concentration exceeds one or more project remediation objective.

Table 4-2
2009-2011 Soil Analytical Results for Excavation Walls - BTEX and PNAs
Former Ameren Champaign MGP Site

Constituent	Soil Ingestion Residential	Soil Ingestion Commercial	Soil Ingestion Construction	Soil Inhalation Residential	Soil Inhalation Commercial	Soil Inhalation Construction	Soil Component to Groundwater[3]	IEPA Accepted Background Levels for MSA	Sample Location: / Sample ID: / Sample Date: / ample Depth (feet):	P4-A2-W P4-A2-W (8) 3/29/2010 8	P4-A2-W P4-A2-W (20) 3/31/2010 20	P4-A3-W P4-A3-W (3) 3/29/2010 3	P4-A3-W P4-A3-W (8) 3/29/2010 8	P4-A3-W P4-A3-W (20) 3/31/2010 20	P4-A4-W P4-A4-W (3) 3/26/2010 3	P4-A4-W P4-A4-W (8) 3/26/2010 8	P4-A4-W P4-A4-W (20) 3/26/2010 20	P4-A5-W P4-A5-W (3) 3/26/2010 3	P4-A5-W P4-A5-W (8) 3/26/2010 8	P4-A5-W P4-A5-W (20) 3/31/2010 20	P5-A3-W P5-A3-W (3) 7/14/2010 3	P5-A3-W P5-A3-W (8) 7/14/2010 8	P5-A3-W P5-A3-W(20) 7/15/2010 20	P5-A4-W P5-A4-W(3) 7/14/2010 3	P5-A4-W P5-A4-W(8) 7/14/2010 8	P5-A4-W P5-A4-W(20) 7/15/2010 20	P5-A5-W P5-A5-W (3) 7/13/2010 3
BTEX Constituents (mg/kg)																										
Benzene	12	100	2,300	0.8	1.6	2.2	0.03	---		<4.67	29.7	<6.42	2.52	59	1.82	1.73	7.05	4.95	2.86	2.88	5.73	<1.05	4.8	<1.05	<0.945	4.97	<0.0919
Ethylbenzene	7,800	200,000	20,000	400	400	58	13	---		46.1	8.9	72.8	15.2	<6.59	15.7	11.3	1.7	26.7	13.5	<7.91	62.1	8.15	0.72	6.21	<4.73	5.1	0.578
Toluene	16,000	410,000	410,000	650	650	42	12	---		<23.3	52.2	<32.1	<12.5	28.3	<6.32	<6.47	6.9	<10.8	<6.52	1.8	<6.31	<5.26	0.55	1.4	<4.73	<24.6	<0.46
m,p-Xylenes	16,000	410,000	41,000	420[1]	420[1]	5.9[2]	200[2]	---		17.8	37.7	22.5	5.58	<6.59	2.4	3.65	4.4	6.05	<6.52	<7.91	14.9	1.9	1.86	2.4	<4.73	8.0	<0.46
o-Xylene	16,000	410,000	41,000	410	410	6.5	190	---		16.1	17	26.8	6.06	<6.59	4.14	4.35	2	9.25	<6.52	<7.91	23.2	3.4	0.812	4.2	1.8	<24.60	0.21
Xylenes	16,000	410,000	41,000	320	320	5.6	150	---		23.9	54.7	49.3	11.64	<6.59	6.54	8.0	6.4	15.3	<6.52	<7.91	38.1	5.3	2.672	6.6	1.8	8.0	0.21
PNA Constituents (mg/kg)																										
Acenaphthene	4,700	120,000	120,000	---	---	---	570	0.13		35.9	14.6	189	16.4	0.29	23.4	29.6	1.46	7.86	24.3	0.401	106	2.42	17.5	40.8	0.614	2.15	4.82
Acenaphthylene	2,300[4]	61,000[4]	61,000[4]	---	---	---	85[4]	0.07		3.68	101	12.3	1.01	1.18	1.87	2.41	2.79	0.499	2.1	0.096	6.42	0.283	2.8	2.76	0.433	0.385	1.98
Anthracene	23,000	610,000	610,000	---	---	---	12,000	0.4		15.6	49.6	72.1	6.38	0.759	8.58	11.9	1.85	2.73	9.97	0.247	38.5	0.896	9.55	16.7	0.443	1.2	5.35
Benzo(a)anthracene	0.90	8	170	---	---	---	2	1.8		7.66	31.7	33.9	2.96	0.486	4.8	5.99	1.1	1.27	4.91	0.164	19	0.505	4.86	8.25	0.365	0.638	3.92
Benzo(a)pyrene	0.09	0.80	17	---	---	---	8	2.1		7.26	31.9	29.5	2.45	0.466	4.37	5.21	1.03	1.07	4.26	0.164	15.3	0.399	4.42	6.96	0.419	0.544	3.67
Benzo(b)fluoranthene	0.90	8	170	---	---	---	5	2.1		5.38	22.9	22.8	1.97	0.365	4.03	4.24	0.811	0.899	3.41	0.152	12.3	0.316	3.42	5.41	0.29	0.435	2.49
Benzo(g,h,i)perylene	2,300[4]	61,000[4]	61,000[4]	---	---	---	27,000[4]	1.7		2.94	12.4	12.2	0.978	0.176	2.15	2.01	0.402	0.46	1.73	0.077	6.57	0.189	2	2.99	0.206	0.25	1.86
Benzo(k)fluoranthene	9	78	1,700	---	---	---	49	1.7		1.64	8.76	7.18	0.587	0.117	1.19	1.36	0.299	0.284	0.993	0.043	4.09	0.1	1.09	1.75	0.101	0.135	0.796
Bis(2-ethylhexyl)phthalate	46	410	4,100	31,000	31,000	31,000	3,600	---		<8.3	<75.6	<9.47	<4.28	<0.724	<2.31	<4.27	<1.88	<0.912	<4.46	<0.151	<8.98	<1.88	<7.65	<8.17	<0.395	<1.91	<4.26
Chrysene	88	780	17,000	---	---	---	160	2.7		7.77	30.5	32.2	2.88	0.455	4.96	5.8	1.04	1.24	4.93	0.165	18.3	0.47	4.82	8.15	0.353	0.602	3.85
Dibenzo(a,h)anthracene	0.09	0.80	17	---	---	---	2	0.42		0.806	<3.83	3.44	0.27	0.044	0.591	0.548	0.153	0.131	0.47	0.021	1.82	<0.096	0.487	0.792	0.048	<0.097	0.441
Fluoranthene	3,100	82,000	82,000	---	---	---	4,300	4.1		15.8	67.3	75	6.67	0.984	9.62	12.7	2.26	2.92	10.4	0.336	38.4	1.25	10.3	21.5	0.567	1.27	8.46
Fluorene	3,100	82,000	82,000	---	---	---	560	0.18		20.1	59.4	80.5	9.42	0.865	9.68	13.6	2.67	3.26	11.5	0.295	52.8	1.25	10	21.6	0.504	1.46	5.11
Indeno(1,2,3-cd)pyrene	0.90	8.00	170	---	---	---	14	1.6		2.4	9.47	9.83	0.791	<0.037	1.75	1.6	0.346	0.386	1.41	0.064	5.38	0.153	1.49	2.39	0.149	0.191	1.31
Naphthalene	1,600	41,000	4,100	170	270	1.8	12	0.2		92.7	664	544	37.1	4.41	18.8	70	12.9	16.3	62.1	0.485	287	8.59	70.3	58.2	8.47	5.66	0.613
Phenanthrene	2,300[4]	61,000[4]	61,000[4]	---	---	---	200[4]	2.5		50.1	178	240	22.4	2.77	28.8	42.4	6.83	9.85	34.6	0.772	131	3.07	32.1	55.1	1.57	3.92	17
Pyrene	2,300	61,000	61,000	---	---	---	4,200	3		22.5	98.9	110	9.96	1.49	13.8	18.3	3.4	4.01	14.9	0.48	58.3	1.39	15.5	25	0.666	1.89	10.7

Notes:
[1] Objective is for m-xylene
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2009-2011 Soil Analytical Results for Excavation Walls - BTEX and PNAs
Former Ameren Champaign MGP Site

Constituent	Soil Ingestion Residential	Soil Ingestion Commercial	Soil Ingestion Construction	Soil Inhalation Residential	Soil Inhalation Commercial	Soil Inhalation Construction	Soil Component to Groundwater[3]	IEPA Accepted Background Levels for MSA	Sample Location: / Sample ID: / Sample Date: / ample Depth (feet):	P5-A5-W P5-A5-W (8) 7/13/2010 8	P5-A5-W P5-A5-W(20) 7/15/2010 20	P5-C5-W P5-C5-W (3) 7/13/2010 3	P5-C5-W P5-C5-W (8) 7/13/2010 8	P5-C5-W P5-C5-W (20) 7/13/2010 20	P6-A4.5-W P6-A4.5-W (3) 10/12/2010 3	P6-A4.5-W P6-A4.5-W (8) 10/12/2010 8	P6-A5.5-W P6-A5.5-W (8) 10/12/2010 8	P6-A5.5-W P6-A5.5-W (21) 10/14/2010 21	P6-B5.5-W P6-B5.5-W (20) 10/14/2010 20	P6-BC5.5-W P6-BC5.5-W (20) 10/15/2010 20	P6-CD5.5-W P6-CD5.5-W (8) 10/19/2010 8	P6-D5.5-W P6-D5.5-W (8) 10/19/2010 8	P6-D5.5-W P6-D5.5-W (20) 10/20/2010 20	P6-DE5.5-W P6-DE5.5-W (20) 10/21/2010 20
BTEX Constituents (mg/kg)																								
Benzene	12	100	2,300	0.8	1.6	2.2	0.03	---		<1.11	16.2	0.0028	<0.0657	33.8	0.0566	<0.123	0.0275	3.04	6.24	<0.0182	<0.691	<0.82	<0.98	0.0705
Ethylbenzene	7,800	200,000	20,000	400	400	58	13	---		1.5	0.593	0.0016	0.655	1.8	0.561	1.5	0.499	3.95	3.5	<0.0912	1.2	3	<4.9	0.061
Toluene	16,000	410,000	410,000	650	650	42	12	---		<5.55	8.19	0.0014	<0.329	59.9	0.044	<0.616	0.032	15.8	18.4	0.037	<3.45	<4.1	<4.9	0.082
m,p-Xylenes	16,000	410,000	41,000	420[1]	420[1]	5.9[2]	200[2]	---		<5.55	1.95	0.0013	<0.329	9.9	0.052	0.16	0.246	9.55	9.51	0.02	1.5	<4.1	<4.9	0.129
o-Xylene	16,000	410,000	41,000	410	410	6.5	190	---		<5.55	0.9	<0.0051	0.15	4.57	0.216	1.54	0.777	4.44	4.48	<0.0912	2.6	1.7	<4.9	0.056
Xylenes	16,000	410,000	41,000	320	320	5.6	150	---		<5.55	2.85	0.0013	0.15	14.47	0.268	1.7	1.023	13.99	13.99	0.02	4.1	1.7	<4.9	0.185
PNA Constituents (mg/kg)																								
Acenaphthene	4,700	120,000	120,000	---	---	---	570	0.13		3.85	1.07	<0.447	4.65	0.158	17.6	3.25	0.375	7.59	0.539	0.47	1.41	0.25	7.14	0.015
Acenaphthylene	2,300[4]	61,000[4]	61,000[4]	---	---	---	85[4]	0.07		1.35	6.69	0.833	0.753	0.202	1.64	2.77	0.358	16.2	2.63	1.32	0.209	0.048	1.06	0.009
Anthracene	23,000	610,000	610,000	---	---	---	12,000	0.4		2.89	4.19	<0.447	4.23	0.183	8.84	5.49	0.297	12.7	1.81	0.78	0.708	0.051	4.09	0.006
Benzo(a)anthracene	0.90	8	170	---	---	---	2	1.8		1.99	2.37	2.46	2.39	0.149	4.11	3.73	0.144	7.36	1.04	0.56	0.435	0.032	3.52	0.008
Benzo(a)pyrene	0.09	0.80	17	---	---	---	8	2.1		2.34	2.29	2.68	2.24	0.135	3.81	3.91	0.161	6.88	0.938	0.554	2.88	0.036	3.51	0.008
Benzo(b)fluoranthene	0.90	8	170	---	---	---	5	2.1		1.8	1.72	2.66	1.55	0.112	2.96	2.75	0.124	5.09	0.729	0.457	1.98	0.041	2.96	0.008
Benzo(g,h,i)perylene	2,300[4]	61,000[4]	61,000[4]	---	---	---	27,000[4]	1.7		1.7	1.1	1.9	1.03	0.076	1.67	1.82	0.081	3.11	0.435	0.249	1.37	0.013	1.87	0.008
Benzo(k)fluoranthene	9	78	1,700	---	---	---	49	1.7		0.565	0.543	0.934	0.566	0.037	0.868	0.833	0.039	1.46	0.206	0.134	0.639	0.014	0.921	<0.004
Bis(2-ethylhexyl)phthalate	46	410	4,100	31,000	31,000	31,000	3,600	---		<8.67	<3.98	<8.81	<3.83	<0.76	<2.17	<1.88	<0.08	<11.5	<1.85	<0.375	<0.078	<0.077	<8.23	<0.075
Chrysene	88	780	17,000	---	---	---	160	2.7		1.61	2.34	2.46	2.28	0.144	4.11	3.74	0.149	6.99	0.965	0.535	0.44	0.035	3.51	0.007
Dibenzo(a,h)anthracene	0.09	0.80	17	---	---	---	2	0.42		<0.44	0.253	0.456	0.24	<0.039	0.419	0.426	0.02	0.774	0.107	0.057	0.29	<0.004	0.41	<0.004
Fluoranthene	3,100	82,000	82,000	---	---	---	4,300	4.1		4.35	4.75	3.21	5.81	0.321	9.92	7.05	0.332	15.5	2.27	1.28	0.891	0.063	5.14	0.012
Fluorene	3,100	82,000	82,000	---	---	---	560	0.18		3.27	3.96	<0.447	4.02	0.178	9.2	6.67	0.348	13.9	2.02	0.819	0.814	0.085	4.0	0.007
Indeno(1,2,3-cd)pyrene	0.90	8.00	170	---	---	---	14	1.6		1.21	0.786	1.51	0.758	0.057	1.28	1.32	0.062	2.39	0.33	0.175	0.907	0.009	1.39	0.004
Naphthalene	1,600	41,000	4,100	170	270	1.8	12	0.2		4.11	18.6	<0.447	8.16	4.15	4.57	31.7	3.78	112	15.2	5.36	33	27.8	7.83	0.151
Phenanthrene	2,300[4]	61,000[4]	61,000[4]	---	---	---	200[4]	2.5		9.43	13.5	0.658	14	0.671	29.5	17.9	1.02	42.8	6.01	3.1	17.6	0.196	14.5	0.022
Pyrene	2,300	61,000	61,000	---	---	---	4,200	3		5.47	7.27	3.47	6.99	0.376	13.6	11	0.489	24	3.37	1.75	1.2	0.088	9.28	0.017

Notes:
[1] Objective is for m-xylene
[2] Objective is for p-xylene
[3] Objectives are for Class I groundwater.
[4] Non-TACO or provisional ROs provided by the IEPA.
--- No objective has been published for this constituent by the IEPA, or the sample was not analyzed for this constituent.
Concentration exceeds one or more project remediation objective.

Table 4-2
2009-2011 Soil Analytical Results for Excavation Walls - BTEX and PNAs
Former Ameren Champaign MGP Site

Constituent	Soil Ingestion Residential	Soil Ingestion Commercial	Soil Ingestion Construction	Soil Inhalation Residential	Soil Inhalation Commercial	Soil Inhalation Construction	Soil Component to Groundwater[3]	IEPA Accepted Background Levels for MSA	Sample Location: / Sample ID: / Sample Date: / ample Depth (feet):	P6-E5.5-W (20) 10/21/2010 20	P7-B1-SW P7-B1-SW (3) 2/15/2011 3	P7-BC1-SW P7-BC1-SW (3) 2/15/2011 3	P7-BC1-SW P7-BC1-SW (8) 2/15/2011 8	P7-C1-SW P7-C1-SW (3) 2/15/2011 3	P7-C1-SW P7-C1-SW (21) 2/15/2011 21	P7-CD1-SW P7-CD1-SW (3) 2/17/2011 3	P7-CD1-SW P7-CD1-SW (8) 2/17/2011 8	P7-D1-W P7-D1-W (3) 3/2/2011 3	P7-D1-W P7-D1-W (8) 3/2/2011 8	P7-DE1-W P7-DE1-W (3) 3/2/2011 3	P7-DE1-W P7-DE1-W (8) 3/2/2011 8	P8-H1-W P8-H1-W (3) 4/6/2011 3	P8-H3-W P8-H3-W (8) 4/6/2011 8	P8-H4-W P8-H4-W (3) 4/6/2011 3	P9-D1-W P9-D1-W (8) 6/7/2011 8
BTEX Constituents (mg/kg)																									
Benzene	12	100	2,300	0.8	1.6	2.2	0.03	---		1.72	<1.12	<0.0227	<0.9	<0.886	3.72	<0.774	1.25	<0.0252	28.2	<0.0243	2.78	0.0433	0.0445	0.0498	<1.74
Ethylbenzene	7,800	200,000	20,000	400	400	58	13	---		<0.117	13.9	0.089	4.84	26	<3.86	17	16.9	0.968	63.6	0.759	4.08	0.093	<0.12	1.02	130
Toluene	16,000	410,000	410,000	650	650	42	12	---		0.313	<5.62	<0.113	<4.5	<4.43	1.1	<3.87	1.5	0.082	9.27	0.078	0.28	0.031	<0.12	0.032	3.4
m,p-Xylenes	16,000	410,000	41,000	420[1]	420[1]	5.9[2]	200[2]	---		0.034	5.6	<0.113	<4.5	4.63	<3.86	3.1	10.9	0.137	78.4	0.125	3.48	0.415	<0.12	0.11	141
o-Xylene	16,000	410,000	41,000	410	410	6.5	190	---		<0.117	8.85	0.03	1.3	10.3	<3.86	4.8	8.62	0.395	50.4	0.365	2.98	0.185	<0.12	0.527	88.2
Xylenes	16,000	410,000	41,000	320	320	5.6	150	---		0.034	14.45	0.03	1.3	14.93	<3.86	7.9	19.52	0.532	128.8	0.49	6.46	0.6	<0.12	0.637	229.2
PNA Constituents (mg/kg)																									
Acenaphthene	4,700	120,000	120,000	---	---	---	570	0.13		0.003	53.6	4.7	15.4	34.3	2.59	22.6	40.2	1.71	4.8	1.61	10.6	1.93	0.637	35.6	0.827
Acenaphthylene	2,300[4]	61,000[4]	61,000[4]	---	---	---	85[4]	0.07		0.005	8.95	1.37	3.25	3.35	0.512	2.14	5.91	2.89	2.01	2.73	3.85	<0.419	0.07	3.01	1.05
Anthracene	23,000	610,000	610,000	---	---	---	12,000	0.4		<0.004	31.2	3.83	9.43	19.5	1.32	11.1	25.4	1.17	7.1	0.981	14.8	1.03	0.36	17.6	2.09
Benzo(a)anthracene	0.90	8	170	---	---	---	2	1.8		0.003	19.5	2.66	6.54	10.7	0.833	5.57	15.3	0.421	6	0.313	8.5	0.617	0.16	8.32	0.993
Benzo(a)pyrene	0.09	0.80	17	---	---	---	8	2.1		<0.004	21.3	3.2	7.19	9.81	0.893	5.35	15.5	3.01	5.63	2.74	8.55	<0.419	0.13	7.04	0.962
Benzo(b)fluoranthene	0.90	8	170	---	---	---	5	2.1		<0.004	17.2	2.64	5.45	7.93	0.736	4.14	11.7	2.3	4.96	2.03	7.38	<0.419	0.113	5.75	0.862
Benzo(g,h,i)perylene	2,300[4]	61,000[4]	61,000[4]	---	---	---	27,000[4]	1.7		0.004	10.1	1.44	2.88	3.2	0.489	2.54	7.62	2.82	1.51	2.57	2.12	<0.419	0.055	2.35	0.282
Benzo(k)fluoranthene	9	78	1,700	---	---	---	49	1.7		<0.004	4.84	0.703	1.56	2.28	0.215	1.22	3.66	0.523	1.59	0.522	2.19	<0.419	0.041	1.78	0.29
Bis(2-ethylhexyl)phthalate	46	410	4,100	31,000	31,000	31,000	3,600	---		<0.073	<4.24	<0.849	<3.89	<7.99	<1.86	<1.95	<22.2	<2.06	<1.89	<2.1	<1.9	<8.27	<0.084	<2.07	<0.411
Chrysene	88	780	17,000	---	---	---	160	2.7		0.004	20.6	2.78	6.39	10.6	0.888	5.4	15	1.37	5.9	1.34	9	0.37	0.147	8.13	0.937
Dibenzo(a,h)anthracene	0.09	0.80	17	---	---	---	2	0.42		<0.004	2.34	0.379	0.696	0.886	0.099	0.578	1.58	0.452	0.386	0.407	0.558	<0.419	0.016	0.649	0.078
Fluoranthene	3,100	82,000	82,000	---	---	---	4,300	4.1		0.003	40.5	5.53	14.2	23.2	1.79	11.9	32.8	0.421	9.5	0.365	19.6	0.905	0.382	16.8	2.15
Fluorene	3,100	82,000	82,000	---	---	---	560	0.18		0.003	30.8	3.92	10.2	19.4	1.39	11.9	25.4	1.8	7.4	1.65	14.9	1.36	0.27	18.4	1.93
Indeno(1,2,3-cd)pyrene	0.90	8.00	170	---	---	---	14	1.6		<0.004	7.64	1.27	2.24	2.69	0.353	1.89	5.42	2.34	1.23	2.15	1.76	<0.419	0.045	1.99	0.233
Naphthalene	1,600	41,000	4,100	170	270	1.8	12	0.2		0.162	36.6	0.319	30	49.9	6.13	46.5	104	1.3	113	1.41	152	6.25	0.018	1.89	45.3
Phenanthrene	2,300[4]	61,000[4]	61,000[4]	---	---	---	200[4]	2.5		0.015	104	12.9	31.6	67.6	4.76	36.5	87.3	1.58	28.8	1.33	63.3	4.44	1.34	55	5.64
Pyrene	2,300	61,000	61,000	---	---	---	4,200	3		0.007	65.6	8.75	22.2	34.3	2.87	18.8	50.2	2	14	1.84	31.4	1.4	0.536	24.9	3.22

Notes:
[1] Objective is for m-xylene
[2] Objective is for p-xylene
[3] Objectives are for Class I groundwater.
[4] Non-TACO or provisional ROs provided by the IEPA.
--- No objective has been published for this constituent by the IEPA, or the sample was not analyzed for this constituent.
Concentration exceeds one or more project remediation objective.

Table 4-3
2009-2011 Soil Analytical Results for Excavation Walls - VOCs
Former Ameren Champaign MGP Site

Constituent	Residential	Soil Ingestion Commercial	Construction	Residential	Soil Inhalation Commercial	Construction	Soil Component to Groundwater[1]	Sample Location:	P1-A1-W	P1-A1-W	P1-A1-W	P1-A2-W	P1-A2-W	P1-A2-W	P1-A3-W	P1-A3-W	P1-A3-W	P1-A4-W	P1-A4-W	P1-A4-W
								Sample ID:	P1-A1-W (0-3)	P1-A1-W (5-8)	P1-A1-W (12)	P1-A2-W (0-3)	P1-A2-W (5-6)	P1-A2-W (15)	P1-A3-W (3)	P1-A3-W (10)	P1-A3-W (20)	P1-A4-W	P1-A4-W	P1-A4-W
								Sample Date:	6/30/2009	6/30/2009	7/14/2009	6/30/2009	6/30/2009	7/6/2009	7/7/2009	7/7/2009	7/7/2009	7/7/2009	7/7/2009	7/7/2009
								Sample Depth (feet):	0-3	5-8	12'	0-3	5-6	15'	3'	10'	20'	3'	8'	20'
Volatile Organic Compounds (mg/kg)																				
1,1,1,2-Tetrachloroethane	2,300 [2]	61,000 [2]	6,100 [2]	2,100 [2]	2,100 [2]	2,100 [2]	3.4 [2]		<0.831	<5.48	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	<0.16	<1.35	<2.38
1,1,1-Trichloroethane	---	---	---	1,200	1,200	1,200	2		<0.831	<5.48	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	<0.16	<1.35	<2.38
1,1,2,2-Tetrachloroethane	4,700 [2]	120,000 [2]	12,000 [2]	2,000 [2]	2,000 [2]	2,000 [2]	3.3 [2]		<0.831	<5.48	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	<0.16	<1.35	<2.38
1,1,2-Trichloro-1,2,2-trifluoroethane	---	---	---	---	---	---	---		<0.831	<5.48	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	<0.16	<1.35	<2.38
1,1,2-Trichloroethane	310	8,200	8,200	1,800	1,800	1,800	0.02		<0.831	<5.48	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	<0.16	<1.35	<2.38
1,1-Dichloro-2-propanone	---	---	---	---	---	---			<8.31	<54.8	<57.2	<57.6	<73.4	<21.4	<977	<15.4	<67.2	<1.6	<13.5	<23.8
1,1-Dichloroethane	7,800	200,000	200,000	1,300	1,700	130	23		<0.831	<5.48	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	<0.16	<1.35	<2.38
1,1-Dichloroethene	3,900	100,000	470	290	10,000	3	0.06		<0.831	<5.48	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	<0.16	<1.35	<2.38
1,1-Dichloropropene	---	---	---	---	---	---	---		<0.831	<5.48	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	<0.16	<1.35	<2.38
1,2,3-Trichlorobenzene	---	---	---	---	---	---	---		<0.831	<5.48	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	<0.16	<1.35	<2.38
1,2,3-Trichloropropane	0.092 [2]	0.82 [2]	18	730 [2]	730 [2]	730 [2]	0.0001 [2]		<1.66	<11	<11.4	<115	<14.7	<4.29	195	<3.08	<13.4	<0.319	<2.7	<4.76
1,2,3-Trimethylbenzene	---	---	---	---	---	---	---		220	5.0	1.7	3.6	5.3	0.80	29.0	0.35	3.1	0.14	0.47	1.2
1,2,4-Trichlorobenzene	780	20,000	2,000	3,200	3,200	920	5		<0.831	<5.48	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	<0.16	<1.35	<2.38
1,2,4-Trimethylbenzene	3,900 [2]	100,000 [2]	100,000 [2]	73 [2]	120 [2]	0.25 [2]	18 [2]		360	13.7	4.7	9.49	14.1	2.26	76.0	0.85	9.33	0.203	1.3	3.43
1,2-Dibromo-3-chloropropane	0.46	4	89	11	17	0.11	0.002		<0.831	<5.48	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	<0.16	<1.35	<2.38
1,2-Dibromoethane (EDB)	0.32	2.9	62	0.06	0.12	0.16	0.0004		<0.831	<5.48	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	<0.16	<1.35	<2.38
1,2-Dichlorobenzene	7,000	180,000	18,000	560	560	310	17		<0.831	<5.48	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	<0.16	<1.35	<2.38
1,2-Dichloroethane	7	63	1,400	0.4	0.7	0.99	0.02		<0.831	<5.48	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	<0.16	<1.35	<2.38
1,2-Dichloropropane	9	84	1,800	15	23	0.5	0.03		<0.831	<5.48	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	<0.16	<1.35	<2.38
1,3,5-Trimethylbenzene	3,900 [2]	100,000 [2]	100,000 [2]	45 [2]	72 [2]	0.15 [2]	10 [2]		<0.831	3.6	1.3	2.8	3.7	0.62	<97.7	<1.540	2.8	0.087	0.33	0.96
1,3-Dichlorobenzene	---	---	---	---	---	---	---		<0.831	<5.48	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	<0.16	<1.35	<2.38
1,3-Dichloropropane	1,600 [2]	41,000 [2]	41,000 [2]	1,000 [2]	1,000 [2]	1,000 [2]	0.83 [2]		<0.831	<5.48	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	<0.16	<1.35	<2.38
1,4-Dichlorobenzene	---	---	---	11,000	17,000	340	2		<0.831	<5.48	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	<0.16	<1.35	<2.38
1-Chlorobutane	3,100 [2]	82,000 [2]	14,000 [2]	1,200 [2]	1,200 [2]	1,200 [2]	3.1 [2]		<0.831	<5.48	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	<0.16	<1.35	<2.38
2,2-Dichloropropane	---	---	---	---	---	---	---		<0.831	<5.48	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	<0.16	<1.35	<2.38
2-Butanone (methyl ethyl ketone)	47,000 [2]	1,000,000 [2]	120,000 [2]	25,000 [2]	25,000 [2]	710 [2]	17 [2]		<8.310	<54.8	<57.2	<57.6	<73.4	<21.4	<977	<15.4	<67.2	<1.6	<13.5	<238
2-Chlorotoluene (o-chlorotoluene)	1,600 [2]	41,000 [2]	41,000 [2]	1,400 [2]	1,400 [2]	1,400 [2]	4 [2]		<0.831	<5.48	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	<0.16	<1.35	<2.38
2-Hexanone	---	---	---	---	---	---	---		<8.310	<54.8	<57.2	<57.6	<73.4	<21.4	<977	<15.4	<67.2	<1.6	<13.5	<238
2-Nitropropane	---	---	---	---	---	---	---		<8.310	<54.8	<57.2	<57.6	<73.4	<21.4	<977	<15.4	<67.2	<1.6	<13.5	<238
4-Chlorotoluene	---	---	---	---	---	---	---		<0.831	<5.48	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	<0.16	<1.35	<2.38
4-Methyl-2-pentanone (MIBK)	---	---	---	3,100 [2]	3,100 [2]	340 [2]	---		<8.310	<54.8	<57.2	<57.6	<73.4	<21.4	<977	<15.4	<67.2	<1.6	<13.5	<23.8
Acetone	70,000	---	---	100,000	100,000	100,000	25		<8.310	<54.8	<57.2	<57.6	<73.4	<21.4	<977	<15.4	<67.2	<1.6	<13.5	<23.8
Acrolein	39 [2]	1,000 [2]	1,600 [2]	0.16 [2]	0.26 [2]	0.017 [2]	0.014 [2]		<16.60	<110	<114	<115	<147	<42.9	<1950	<30.8	<134	<3.19	<27	<47.6
Acrylonitrile	1.2 [2]	11 [2]	230 [2]	0.28 [2]	0.54 [2]	0.17 [2]	0.0006 [2]		<1.660	<11	<11.4	<11.5	<14.7	<4.29	<195	<3.08	<13.4	<.319	<2.7	<4.76
Allyl chloride	---	---	---	---	---	---	---		<0.831	<5.48	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	<0.16	<1.35	<2.38
Bromobenzene	1,600 [2]	41,000 [2]	41,000 [2]	100 [2]	160 [2]	11 [2]	2.2 [2]		<0.831	<5.48	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	<0.16	<1.35	<2.38
Bromochloromethane	---	---	---	---	---	---			<0.831	<5.48	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	<0.16	<1.35	<2.38
Bromodichloromethane	10	92	2,000	3,000	3,000	3,000	0.6		<0.831	<5.48	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	<0.16	<1.35	<2.38
Bromoform	81	720	16,000	53	100	140	0.8		<0.831	<5.48	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	<0.16	<1.35	<2.38
Bromomethane (methyl bromide)	110	2,900	1,000	10	15	3.9	0.2		<1.660	<11	<11.4	<11.5	<14.7	<4.29	<195	<3.08	<13.4	<0.319	<2.7	<4.76
Carbon disulfide	7,800	200,000	20,000	720	720	9	32		<0.831	<5.48	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	<0.16	1.2	<2.38
Carbon tetrachloride	5	44	410	0.3	0.64	0.9	0.07		<0.831	<5.48	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	<0.16	<1.35	<2.38
Chlorobenzene	1,600	41,000	4,100	130	210	1.3	1		<0.831	<5.48	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	<0.16	<1.35	<2.38
Chloroethane	---	---	---	---	---	---	---		<1.660	<11	<11.4	<11.5	<14.7	<4.29	<195	<3.08	<13.4	<0.319	<2.7	<4.76
Chloroform	100	940	2,000	0.3	0.54	0.76	0.6		<0.831	<5.48	<5.720	2.8	<7.34	<2.14	<97.7	<1.540	<6.72	<0.16	<1.35	<2.38
Chloromethane (methyl chloride)	---	---	---	---	---	---	---		<1.660	<11	<11.4	<11.5	<14.7	<4.29	<195	<3.08	<13.4	<0.319	<2.7	<4.76
cis-1,2-Dichloroethene	780	20,000	20,000	1,200	1,200	1,200	0.4		<0.831	<5.48	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	<0.16	<1.35	<2.38
cis-1,3-Dichloropropene	6.4	57	1,200	1.1	2.1	0.39	0.004		<0.665	<4.38	<4.570	<4.61	<5.88	<1.72	<78.2	<1.23	<5.38	<0.128	<1.08	<1.9
Cyclohexanone	390,000 [2]	1,000,000 [2]	1,000,000 [2]	660 [2]	660 [2]	660 [2]	150 [2]		<16.60	<110	<11.4	<115	<147	<42.9	<1950	<30.8	<134	<3.19	<27	<47.6
Dibromochloromethane (chlorodibrom	1,600	41,000	41,000	1,300	1,300	1,300	0.4		<0.831	<5.48	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	<0.16	<1.35	<2.38
Dibromomethane (methylene bromide)	780 [2]	20,000 [2]	20,000 [2]	2,700 [2]	2,700 [2]	2,700 [2]	0.34 [2]		<0.831	<5.48	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	<0.16	<1.35	<2.38
Dichlorodifluoromethane	16,000 [2]	410,000 [2]	180,000 [2]	190 [2]	310 [2]	20 [2]	43 [2]		<1.660	<11	<11.4	<11.5	<14.7	<4.29	<195	<3.08	<13.4	<0.319	<2.7	<4.76
Ethyl acetate	70,000 [2]	1,000,000 [2]	1,000,000 [2]	10,000 [2]	10,000 [2]	10,000 [2]	26 [2]		<8.310	<54.8	<57.2	<57.6	<73.4	<21.4	<977	<15.4	<67.2	<1.6	<13.5	<23.8
Ethyl ether	16,000 [2]	410,000 [2]	410,000 [2]	8,800 [2]	8,800 [2]	8,800 [2]	6.1 [2]		<0.831	<5.48	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	<0.16	<1.35	<2.38
Ethyl methacrylate	---	---	---	---	---	---	---		<0.831	<5.48	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	<0.16	<1.35	<2.38
Heptane	---	---	---	---	---	---	---		<3.320	<21.90	<22.9	<23	<29.4	<8.58	<391	<6.17	<26.9	<0.639	<5.41	<9.52
Hexachlorobutadiene	---	---	---	---	---	---	---		<0.831	<5.48	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	<0.16	<1.35	<2.38

Notes:

[1] Objectives are for Class I Groundwater.

[2] Non-TACO or provisional ROs provided by the IEPA.

--- No objective has been published for this constituent by the IEPA, or the sample was not analyzed for this constituent.

Concentration exceeds one or more project remediation objective.

Table 4-3
2009-2011 Soil Analytical Results for Excavation Walls - VOCs
Former Ameren Champaign MGP Site

Constituent	Soil Ingestion Residential	Soil Ingestion Commercial	Soil Ingestion Construction	Soil Inhalation Residential	Soil Inhalation Commercial	Soil Inhalation Construction	Soil Component to Groundwater[1]	Sample Location:	P1-A1-W	P1-A1-W	P1-A1-W	P1-A2-W	P1-A2-W	P1-A2-W	P1-A3-W	P1-A3-W	P1-A3-W	P1-A4-W	P1-A4-W	P1-A4-W
								Sample ID:	P1-A1-W (0-3)	P1-A1-W (5-8)	P1-A1-W (12)	P1-A2-W (0-3)	P1-A2-W (5-6)	P1-A2-W (15)	P1-A3-W (3)	P1-A3-W (10)	P1-A3-W (20)	P1-A4-W	P1-A4-W	P1-A4-W
								Sample Date:	6/30/2009	6/30/2009	7/14/2009	6/30/2009	6/30/2009	7/6/2009	7/7/2009	7/7/2009	7/7/2009	7/7/2009	7/7/2009	7/7/2009
								Sample Depth (feet):	0-3	5-8	12'	0-3	5-6	15'	3'	10'	20'	3'	8'	20'
Hexachloroethane	78	2,000	2,000	---	---	---	0.5		<0.831	<5.48	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	<0.16	<1.35	<2.38
Iodomethane	---	---	---	---	---	---	---		<1.660	<11	<11.4	<11.5	<14.7	<4.29	<195	<3.08	<13.4	<0.319	<2.7	<4.76
Isopropylbenzene (cumene)	7,800 [2]	200,000 [2]	61,000 [2]	500 [2]	790 [2]	51 [2]	91 [2]		<0.831	2.5	<5.720	2.1	2.6	<2.14	<97.7	<1.540	<6.72	0.099	<1.35	<2.38
Methacrylonitrile	---	---	---	---	---	---	---		<8.310	<54.8	<57.2	<57.6	<73.4	<21.4	<977	<15.4	<67.2	<1.6	<13.5	<23.8
Methyl Methacrylate	---	---	---	---	---	---	---		<0.831	<5.48	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	<0.16	<1.35	<2.38
Methyl tert-butyl ether	780	20,000	2,000	8,800	8,800	140	0.32		<0.332	<2.19	<2.290	<2.3	<2.94	<0.858	<39.1	<0.617	<2.690	<0.639	<0.541	<0.952
Methylacrylate	2,300 [2]	61,000 [2]	6,100 [2]	6,500 [2]	6,500 [2]	6,500 [2]	0.89 [2]		<1.660	<11	<11.4	<11.5	<14.7	<4.29	<195	<3.08	<13.4	<0.319	<2.7	<4.76
Methylene chloride (dichloromethane)	85	760	12,000	13	24	34	0.02		<0.831	<5.48	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	<0.16	<1.35	<2.38
Naphthalene	1,600	41,000	4,100	170	270	1.8	12		13.8	422	151	256	402	59.6	1450	21.1	205	12.6	<50.9	101
n-Butylbenzene	---	---	---	---	---	---	---		<0.831	4.7	<5.720	4.6	5.0	<2.14	40.0	<0.54	<6.72	0.197	0.62	<2.38
n-Hexane	---	---	---	290 [2]	290 [2]	15 [2]	---		<3.320	<21.9	<22.9	<23	<29.4	<8.58	<391	<6.17	<26.9	<0.639	<5.41	<9.52
Nitrobenzene	39	1,000	1,000	92	140	9.4	0.1		<16.60	<110	<11.4	<115	<147	<42.9	<1950	<30.8	<134	<3.19	<27	<47.6
n-Propylbenzene	---	---	---	---	---	---	---		<0.831	<5.48	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	0.09	<1.35	<2.38
Pentachloroethane	---	---	---	---	---	---	---		<0.831	<5.48	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	<0.16	<1.35	<2.38
p-Isopropyltoluene	---	---	---	---	---	---	---		<0.831	1.3	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	0.057	<1.35	<2.38
Propionitrile	---	---	---	---	---	---	---		<8.310	<54.8	<57.2	<57.6	<73.4	<21.4	<977	<15.4	<67.2	<1.6	<13.5	<238
sec-Butylbenzene	---	---	---	---	---	---	---		<0.831	<5.48	<5.720	<5.76	<7.34	1.6	<97.7	<1.540	6.7	<0.16	<1.35	<2.38
Styrene	16,000	410,000	41,000	1,500	1,500	430	4		<0.831	<5.48	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	<0.16	<1.35	1.7
tert-Butylbenzene	---	---	---	---	---	---	---		<0.831	<5.48	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	<0.16	<1.35	<2.38
Tetrachloroethene	12	110	2,400	11	20	28	0.06		<0.831	<5.48	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	<0.16	<1.35	<2.38
Tetrahydrofuran	---	---	---	---	---	---	---		<8.310	<54.8	<57.2	<57.6	<73.4	<21.4	<977	<15.4	<67.2	<1.6	<1.35	<23.8
trans-1,2-Dichloroethene	1,600	41,000	41,000	3,100	3,100	3,100	0.7		<0.831	<5.48	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	<0.16	<1.35	<2.38
trans-1,3-Dichloropropene	6.4	57	1,200	1.1	2.1	0.39	0.004		<0.665	<4.38	<4.570	<4.61	<5.88	<1.72	<78.2	<1.23	<5.38	<0.128	<1.08	<1.9
Trichloroethene	58	520	1,200	5	8.9	12	0.06		<0.831	<5.48	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	<0.16	<1.35	<2.38
Trichlorofluoromethane	23,000 [2]	610,000 [2]	140,000 [2]	850 [2]	1,400 [2]	88 [2]	34 [2]		<0.831	<5.48	<5.720	<5.76	<7.34	<2.14	<97.7	<1.540	<6.72	<0.16	<1.35	<2.38
Vinyl acetate	78,000	1,000,000	200,000	1,000	1,600	10	170 [2]		<8.310	<54.8	<57.2	<57.6	<73.4	<21.4	<977	<15.4	<67.2	<1.6	<13.5	<23.8
Vinyl chloride	0.46	7.9	170	0.28	1.1	1.1	0.01		<0.332	<2.19	<2.290	<2.3	<2.94	<0.858	<39.1	<0.617	<2.69	<0.0639	<0.541	<0.952

Notes:

[1] Objectives are for Class I Groundwater.

[2] Non-TACO or provisional ROs provided by the IEPA.

'--- No objective has been published for this constituent by the IEPA, or the sample was not analyzed for this constituent.

Concentration exceeds one or more project remediation objective.

Table 4-3
2009-2011 Soil Analytical Results for Excavation Walls - VOCs
Former Ameren Champaign MGP Site

Constituent	Soil Ingestion Residential	Soil Ingestion Commercial	Soil Ingestion Construction	Soil Inhalation Residential	Soil Inhalation Commercial	Soil Inhalation Construction	Soil Component to Groundwater[1]	Sample Location:	P1-A5-W	P1-A5-W	P2-A1-W	P2-A1-W	P2-A1-W	P2-A2-W	P2-A2-W	P2-A3-W	P2-A3-W	P2-A3-W	P3-A1-W	P3-A1-W	P3-A1-W	P3-A2-W	P3-A3-W	P3-A3-W	P3-A4-W	P3-A4-W	P3-B.5-W
								Sample ID:	P1-A5-W(3)	P1-A5-W(8)	P2-A1-W (3)	P2-A1-W (8)	P2-A1-W (20)	P2-A2-W (3)	P2-A2-W (8)	P2-A3-W (3)	P2-A3-W (8)	P2-A3-W (20)	P3-A1-W (3)	P3-A1-W (10)	P3-A1-W (15)	P3-A2-W (8)	P3-A3-W (3)	P3-A3-W (6)	P3-A4-W (3)	P3-A4-W (10)	P3-B.5-W (8)
								Sample Date:	7/15/2009	7/15/2009	10/23/2009	10/23/2009	10/27/2009	10/27/2009	10/27/2009	10/26/2009	10/26/2009	10/27/2009	1/12/2010	1/12/2010	1/12/2010	1/12/2010	1/12/2010	1/12/2010	1/13/2010	1/13/2010	1/14/2010
								Sample Depth (feet):	3	8	3	8	20	3	8	3	8	20	3	10	15	8	3	6	3	10	8
Volatile Organic Compounds (mg/kg)																											
1,1,1,2-Tetrachloroethane	2,300 [2]	61,000 [2]	6,100 [2]	2,100 [2]	2,100 [2]	2,100 [2]	3.4 [2]		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	<0.157	<5.02	<26.1
1,1,1-Trichloroethane	---	---	---	1,200	1,200	1,200	2		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	<0.157	<5.02	<26.1
1,1,2,2-Tetrachloroethane	4,700 [2]	120,000 [2]	12,000 [2]	2,000 [2]	2,000 [2]	2,000 [2]	3.3 [2]		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	<0.157	<5.02	<26.1
1,1,2-Trichloro-1,2,2-trifluoroethane	---	---	---	---	---	---	---		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	<0.157	<5.02	<26.1
1,1,2-Trichloroethane	310	8,200	8,200	1,800	1,800	1,800	0.02		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	<0.157	<5.02	<26.1
1,1-Dichloro-2-propanone	---	---	---	---	---	---			<51.7	<41.6	<200	<56.9	<9.66	<11	<6.3	<49.5	<45.4	<97.5	<68.2	<51.2	<4.43	<63.3	<4.85	<1.37	<1.57	<50.2	<261
1,1-Dichloroethane	7,800	200,000	200,000	1,300	1,700	130	23		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	<0.157	<5.02	<26.1
1,1-Dichloroethene	3,900	100,000	470	290	10,000	3	0.06		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	<0.157	<5.02	<26.1
1,1-Dichloropropene	---	---	---	---	---	---	---		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	<0.157	<5.02	<26.1
1,2,3-Trichlorobenzene	---	---	---	---	---	---	---		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	<0.157	<5.02	<26.1
1,2,3-Trichloropropane	0.092 [2]	0.82 [2]	18	730 [2]	730 [2]	730 [2]	0.0001 [2]		<10.3	<8.33	<40.1	<11.4	<1.93	<2.2	<1.26	<9.9	<9.08	<19.5	<13.6	<10.2	<0.885	<12.7	<0.971	<0.274	<0.314	<10	<52.2
1,2,3-Trimethylbenzene	---	---	---	---	---	---	---		6.25	4.42	11	1.7	0.57	<1.1	<0.63	2.2	<4.54	3.2	2.1	6.98	1.89	<6.33	2.87	0.329	1.89	<5.02	<26.1
1,2,4-Trichlorobenzene	780	20,000	2,000	3,200	3,200	920	5		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	<0.157	<5.02	<26.1
1,2,4-Trimethylbenzene	3,900 [2]	100,000 [2]	100,000 [2]	73 [2]	120 [2]	0.25 [2]	18 [2]		16.4	12	9.2	<5.69	1.54	0.34	<0.63	1.6	2.4	2.2	2.7	6.89	2.01	<6.33	2.75	0.029	0.961	<5.02	33.8
1,2-Dibromo-3-chloropropane	0.46	4	89	11	17	0.11	0.002		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	<0.157	<5.02	<26.1
1,2-Dibromoethane (EDB)	0.32	2.9	62	0.06	0.12	0.16	0.0004		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	<0.157	<5.02	<26.1
1,2-Dichlorobenzene	7,000	180,000	18,000	560	560	310	17		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	<0.157	<5.02	<26.1
1,2-Dichloroethane	7	63	1,400	0.4	0.7	0.99	0.02		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	<0.157	<5.02	<26.1
1,2-Dichloropropane	9	84	1,800	15	23	0.5	0.03		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	<0.157	<5.02	<26.1
1,3,5-Trimethylbenzene	3,900 [2]	100,000 [2]	100,000 [2]	45 [2]	72 [2]	0.15 [2]	10 [2]		3.8	3.0	<20	<5.69	0.44	<1.1	<0.63	<4.95	1.8	<9.75	<6.82	<5.12	0.23	<6.33	<0.485	<0.137	<0.157	<5.02	12
1,3-Dichlorobenzene	---	---	---	---	---	---	---		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	<0.157	<5.02	<26.1
1,3-Dichloropropane	1,600 [2]	41,000 [2]	41,000 [2]	1,000 [2]	1,000 [2]	1,000 [2]	0.83 [2]		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	<0.157	<5.02	<26.1
1,4-Dichlorobenzene	---	---	---	11,000	17,000	340	2		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	<0.157	<5.02	<26.1
1-Chlorobutane	3,100 [2]	82,000 [2]	14,000 [2]	1,200 [2]	1,200 [2]	1,200 [2]	3.1 [2]		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	<0.157	<5.02	<26.1
2,2-Dichloropropane	---	---	---	---	---	---	---		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	<0.157	<5.02	<26.1
2-Butanone (methyl ethyl ketone)	47,000 [2]	1,000,000 [2]	120,000 [2]	25,000 [2]	25,000 [2]	710 [2]	17 [2]		<51.7	<41.6	<200	<56.9	<9.66	<11	<6.3	<49.5	<45.4	<97.5	<68.2	<51.2	<4.43	<63.3	<4.85	0.33	0.38	<50.2	<261
2-Chlorotoluene (o-chlorotoluene)	1,600 [2]	41,000 [2]	41,000 [2]	1,400 [2]	1,400 [2]	1,400 [2]	4 [2]		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	<0.157	<5.02	<26.1
2-Hexanone	---	---	---	---	---	---	---		<51.7	<41.6	<200	<56.9	<9.66	<11	<6.3	<49.5	<45.4	<97.5	<68.2	<51.2	<4.43	<63.3	<4.85	<1.37	<1.57	<50.2	<261
2-Nitropropane	---	---	---	---	---	---	---		<51.7	<41.6	<200	<56.9	<9.66	<11	<6.3	<49.5	<45.4	<97.5	<68.2	<51.2	<4.43	<63.3	<4.85	<1.37	<1.57	<50.2	<261
4-Chlorotoluene	---	---	---	---	---	---	---		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	<0.157	<5.02	<26.1
4-Methyl-2-pentanone (MIBK)	---	---	---	3,100 [2]	3,100 [2]	340 [2]	---		<51.7	<41.6	<200	<56.9	<9.66	<11	<6.3	<49.5	<45.4	<97.5	<68.2	<51.2	<4.43	<63.3	<4.85	<1.37	<1.57	<50.2	<261
Acetone	70,000	---	---	100,000	100,000	100,000	25		<51.7	<41.6	<200	<56.9	<9.66	<11	<6.3	<49.5	<45.4	<97.5	<68.2	<51.2	<4.43	<63.3	<4.85	<1.37	<1.57	<50.2	<261
Acrolein	39 [2]	1,000 [2]	1,600 [2]	0.16 [2]	0.26 [2]	0.017 [2]	0.014 [2]		<103	<83.3	<401	<114	<19.3	<22	<12.6	<99	<90.8	<195	<136	<102	<8.85	<127	<9.71	<2.74	<3.14	<100	<522
Acrylonitrile	1.2 [2]	11 [2]	230 [2]	0.28 [2]	0.54 [2]	0.17 [2]	0.0006 [2]		<10.3	<8.33	<40.1	<11.4	<1.93	<2.2	<1.26	<9.9	<9.08	<19.5	<13.6	<10.2	<0.885	<12.7	<0.971	<0.274	<0.314	<10	<52.2
Allyl chloride	---	---	---	---	---	---	---		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	<0.157	<5.02	<26.1
Bromobenzene	1,600 [2]	41,000 [2]	41,000 [2]	100 [2]	160 [2]	11 [2]	2.2 [2]		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	<0.157	<5.02	<26.1
Bromochloromethane	---	---	---	---	---	---			<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	<0.157	<5.02	<26.1
Bromodichloromethane	10	92	2,000	3,000	3,000	3,000	0.6		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	<0.157	<5.02	<26.1
Bromoform	81	720	16,000	53	100	140	0.8		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	<0.157	<5.02	<26.1
Bromomethane (methyl bromide)	110	2,900	1,000	10	15	3.9	0.2		<10.3	<8.33	<40.1	<11.4	<1.93	<2.2	<1.26	<9.9	<9.08	<19.5	<13.6	<10.2	<0.885	<12.7	<0.971	<0.274	<0.314	<10	<52.2
Carbon disulfide	7,800	200,000	20,000	720	720	9	32		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	1.14	0.515	<5.02	<26.1
Carbon tetrachloride	5	44	410	0.3	0.64	0.9	0.07		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	<0.157	<5.02	<26.1
Chlorobenzene	1,600	41,000	4,100	130	210	1.3	1		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	<0.157	<5.02	<26.1
Chloroethane	---	---	---	---	---	---	---		<10.3	<8.33	<40.1	<11.4	<1.93	<2.2	<1.26	<9.9	<9.08	<19.5	<13.6	<10.2	<0.885	<12.7	<0.971	<0.274	<0.314	<10	<52.2
Chloroform	100	940	2,000	0.3	0.54	0.76	0.6		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	<0.157	<5.02	<26.1
Chloromethane (methyl chloride)	---	---	---	---	---	---	---		<10.3	<8.33	<40.1	<11.4	<1.93	<2.2	<1.26	<9.9	<9.08	<19.5	<13.6	<10.2	<0.885	<12.7	<0.971	<0.274	<0.314	<10	<52.2
cis-1,2-Dichloroethene	780	20,000	20,000	1,200	1,200	1,200	0.4		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	<0.157	<5.02	<26.1
cis-1,3-Dichloropropene	6.4	57	1,200	1.1	2.1	0.39	0.004		<4.14	<3.33	<16	<4.55	<0.773	<0.88	<0.504	<3.96	<3.63	<7.8	<5.45	<4.09	<0.354	<5.06	<0.388	<0.11	<0.126	<4.01	<20.9
Cyclohexanone	390,000 [2]	1,000,000 [2]	1,000,000 [2]	660 [2]	660 [2]	660 [2]	150 [2]		<103	<83.3	<401	<114	<19.3	<22	<12.6	<99	<90.8	<195	<136	<102	<8.85	<127	<9.71	<2.74	<3.14	<100	<522
Dibromochloromethane (chlorodibrom	1,600	41,000	41,000	1,300	1,300	1,300	0.4		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	<0.157	<5.02	<26.1
Dibromomethane (methylene bromide)	780 [2]	20,000 [2]	20,000 [2]	2,700 [2]	2,700 [2]	2,700 [2]	0.34 [2]		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	<0.157	<5.02	<26.1
Dichlorodifluoromethane	16,000 [2]	410,000 [2]	180,000 [2]	190 [2]	310 [2]	20 [2]	43 [2]		<10.3	<8.33	<40.1	<11.4	<1.93	<2.2	<1.26	<9.9	<9.08	<19.5	<13.6	<10.2	<0.885	<12.7	<0.971	<0.274	<0.314	<10	<52.2
Ethyl acetate	70,000 [2]	1,000,000 [2]	1,000,000 [2]	10,000 [2]	10,000 [2]	10,000 [2]	26 [2]		<51.7	<41.6	<200	<56.9	<9.66	<11	<6.3	<49.5	<45.4	<97.5	<68.2	<51.2	<4.43	<63.3	<4.85	<1.37	<1.57	<50.2	<261
Ethyl ether	16,000 [2]	410,000 [2]	410,000 [2]	8,800 [2]	8,800 [2]	8,800 [2]	6.1 [2]		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	<0.157	<5.02	<26.1
Ethyl methacrylate	---	---	---	---	---	---	---		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	<0.157	<5.02	<26.1
Heptane	---	---	---	---	---	---	---		<20.7	<16.7	<80.1	<22.7	<3.86	<4.4	<2.52	<19.8	<18.2	<39	<27.3	<20.5	<1.77	<25.3	<1.94	<0.548	<0.628	<20.1	<104
Hexachlorobutadiene	---	---	---	---	---	---	---		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	<0.157	<5.02	<26.1

Notes:

[1] Objectives are for Class I Groundwater.

[2] Non-TACO or provisional ROs provided by the IEPA.

--- No objective has been published for this constituent by the IEPA, or the sample was not analyzed for this constituent.

Concentration exceeds one or more project remediation objective.

Table 4-3
2009-2011 Soil Analytical Results for Excavation Walls - VOCs
Former Ameren Champaign MGP Site

Constituent	Soil Ingestion Residential	Soil Ingestion Commercial	Soil Ingestion Construction	Soil Inhalation Residential	Soil Inhalation Commercial	Soil Inhalation Construction	Soil Component to Groundwater[1]	Sample Location:	P1-A5-W	P1-A5-W	P2-A1-W	P2-A1-W	P2-A1-W	P2-A2-W	P2-A2-W	P2-A3-W	P2-A3-W	P2-A3-W	P3-A1-W	P3-A1-W	P3-A1-W	P3-A2-W	P3-A3-W	P3-A3-W	P3-A4-W	P3-A4-W	P3-B.5-W
								Sample ID:	P1-A5-W(3)	P1-A5-W(8)	P2-A1-W (3)	P2-A1-W (8)	P2-A1-W (20)	P2-A2-W (3)	P2-A2-W (8)	P2-A3-W (3)	P2-A3-W (8)	P2-A3-W (20)	P3-A1-W (3)	P3-A1-W (10)	P3-A1-W (15)	P3-A2-W (8)	P3-A3-W (3)	P3-A3-W (6)	P3-A4-W (3)	P3-A4-W (10)	P3-B.5-W (8)
								Sample Date:	7/15/2009	7/15/2009	10/23/2009	10/23/2009	10/27/2009	10/27/2009	10/27/2009	10/26/2009	10/26/2009	10/27/2009	1/12/2010	1/12/2010	1/12/2010	1/12/2010	1/12/2010	1/12/2010	1/13/2010	1/13/2010	1/14/2010
								Sample Depth (feet):	3	8	3	8	20	3	8	3	8	20	3	10	15	8	3	6	3	10	8
Hexachloroethane	78	2,000	2,000	---	---	---	0.5		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	<0.157	<5.02	<26.1
Iodomethane	---	---	---	---	---	---	---		<10.3	<8.33	<40.1	<11.4	<1.93	<2.2	<1.26	<9.9	<9.08	<19.5	<13.6	<10.2	<0.885	<12.7	<0.971	<0.274	<0.314	<10	<52.2
Isopropylbenzene (cumene)	7,800 [2]	200,000 [2]	61,000 [2]	500 [2]	790 [2]	51 [2]	91 [2]		<2.9	<1.9	<20	<5.69	<0.966	<1.1	<0.63	1	1.9	<9.75	<6.82	<5.12	0.24	<6.33	0.19	0.169	0.936	<5.02	<26.1
Methacrylonitrile	---	---	---	---	---	---	---		<51.7	<41.6	<200	<56.9	<9.66	<11	<6.3	<49.5	<45.4	<97.5	<68.2	<51.2	<4.43	<63.3	<4.85	<1.37	<1.57	<50.2	<261
Methyl Methacrylate	---	---	---	---	---	---	---		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	<0.157	<5.02	<26.1
Methyl tert-butyl ether	780	20,000	2,000	8,800	8,800	140	0.32		<2.07	<1.67	<8.01	<2.27	<0.386	<0.44	<0.252	<1.98	<1.82	<3.9	<2.73	<2.05	<0.177	<2.53	<0.194	<0.0548	<0.0628	<2.01	<10.4
Methylacrylate	2,300 [2]	61,000 [2]	6,100 [2]	6,500 [2]	6,500 [2]	6,500 [2]	0.89 [2]		<10.3	<8.33	<40.1	<11.4	<1.93	<2.2	<1.26	<9.9	<9.08	<19.5	<13.6	<10.2	<0.885	<12.7	<0.971	<0.274	<0.314	<10	<52.2
Methylene chloride (dichloromethane)	85	760	12,000	13	24	34	0.02		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	4.4	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	<0.157	<5.02	<26.1
Naphthalene	1,600	41,000	4,100	170	270	1.8	12		357	321	500	93	33.2	28.8	13.4	116	181	181	149	357	122	32.3	218	10.8	40.2	52	906
n-Butylbenzene	---	---	---	---	---	---	---		<12.3	3.9	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	<0.157	<5.02	<26.1
n-Hexane	---	---	---	290 [2]	290 [2]	15 [2]	---		<20.7	<16.7	<80.1	<22.7	<3.86	<4.4	<2.52	<19.8	<18.2	<39	<27.3	<20.5	<1.77	<25.3	<1.94	<0.548	0.28	<20.1	<104
Nitrobenzene	39	1,000	1,000	92	140	9.4	0.1		<103	<83.3	<401	<114	<19.3	<22	<12.6	<99	<90.8	<195	<136	<102	<8.85	<127	<9.71	<2.74	<3.14	<100	<522
n-Propylbenzene	---	---	---	---	---	---	---		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	0.19	<6.33	0.24	0.048	1.22	<5.02	<26.1
Pentachloroethane	---	---	---	---	---	---	---		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	<0.157	<5.02	<26.1
p-Isopropyltoluene	---	---	---	---	---	---	---		1.3	0.92	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	<0.157	<5.02	<26.1
Propionitrile	---	---	---	---	---	---	---		<51.7	<41.6	<200	<56.9	<9.66	<11	<6.3	<49.5	<45.4	<97.5	<68.2	<51.2	<4.43	<63.3	<4.85	<1.37	<1.57	<50.2	<261
sec-Butylbenzene	---	---	---	---	---	---	---		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	0.648	<5.02	<26.1
Styrene	16,000	410,000	41,000	1,500	1,500	430	4		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	0.679	<6.33	2.11	0.03	<0.157	<5.02	<26.1
tert-Butylbenzene	---	---	---	---	---	---	---		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	<0.157	<5.02	<26.1
Tetrachloroethene	12	110	2,400	11	20	28	0.06		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	<0.157	<5.02	<26.1
Tetrahydrofuran	---	---	---	---	---	---	---		<51.7	<41.6	<200	<56.9	<9.66	<11	<6.3	<49.5	<45.4	<97.5	<68.2	<51.2	<4.43	<63.3	<4.85	<1.37	<1.57	<50.2	<261
trans-1,2-Dichloroethene	1,600	41,000	41,000	3,100	3,100	3,100	0.7		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	<0.157	<5.02	<26.1
trans-1,3-Dichloropropene	6.4	57	1,200	1.1	2.1	0.39	0.004		<4.14	<3.33	<16	<4.55	<0.773	<0.88	<0.504	<3.96	<3.63	<7.8	<5.45	<4.09	<0.354	<5.06	<0.388	<0.11	<0.126	<4.01	<20.9
Trichloroethene	58	520	1,200	5	8.9	12	0.06		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	<0.157	<5.02	<26.1
Trichlorofluoromethane	23,000 [2]	610,000 [2]	140,000 [2]	850 [2]	1,400 [2]	88 [2]	34 [2]		<5.17	<4.16	<20	<5.69	<0.966	<1.1	<0.63	<4.95	<4.54	<9.75	<6.82	<5.12	<0.443	<6.33	<0.485	<0.137	<0.157	<5.02	<26.1
Vinyl acetate	78,000	1,000,000	200,000	1,000	1,600	10	170 [2]		<51.7	<41.6	<200	<56.9	<9.66	<11	<6.3	<49.5	<45.4	<97.5	<68.2	<51.2	<4.43	<63.3	<4.85	<1.37	<1.57	<50.2	<261
Vinyl chloride	0.46	7.9	170	0.28	1.1	1.1	0.01		<2.07	<1670	<8.01	<2.27	<0.386	<0.44	<0.252	<1.98	<1.82	<3.9	<2.73	<2.05	<0.177	<2.53	<0.194	<0.0548	<0.0628	<2.01	<10.4

Notes:

[1] Objectives are for Class I Groundwater.

[2] Non-TACO or provisional ROs provided by the IEPA.

--- No objective has been published for this constituent by the IEPA, or the sample was not analyzed for this constituent.

Concentration exceeds one or more project remediation objective.

Table 4-3
2009-2011 Soil Analytical Results for Excavation Walls - VOCs
Former Ameren Champaign MGP Site

Constituent	Soil Ingestion Residential	Soil Ingestion Commercial	Soil Ingestion Construction	Soil Inhalation Residential	Soil Inhalation Commercial	Soil Inhalation Construction	Soil Component to Groundwater[1]	Sample Location:	Sample ID:	Sample Date:	Sample Depth (feet):
									P3-B.5-W	P3-C1-W	P3-C1-W
									P3-B.5-W (15)	P3-C1-W (10)	P3-C1-W (18)
									1/14/2010	1/14/2010	1/14/2010
									15	10	18
Volatile Organic Compounds (mg/kg)											
1,1,1,2-Tetrachloroethane	2,300 [2]	61,000 [2]	6,100 [2]	2,100 [2]	2,100 [2]	2,100 [2]	3.4 [2]		<20.5	<23.1	<41.6
1,1,1-Trichloroethane	---	---	---	1,200	1,200	1,200	2		<20.5	<23.1	<41.6
1,1,2,2-Tetrachloroethane	4,700 [2]	120,000 [2]	12,000 [2]	2,000 [2]	2,000 [2]	2,000 [2]	3.3 [2]		<20.5	<23.1	<41.6
1,1,2-Trichloro-1,2,2-trifluoroethane	---	---	---	---	---	---	---		<20.5	<23.1	<41.6
1,1,2-Trichloroethane	310	8,200	8,200	1,800	1,800	1,800	0.02		<20.5	<23.1	<41.6
1,1-Dichloro-2-propanone	---	---	---	---	---	---			<205	<231	<416
1,1-Dichloroethane	7,800	200,000	200,000	1,300	1,700	130	23		<20.5	<23.1	<41.6
1,1-Dichloroethene	3,900	100,000	470	290	10,000	3	0.06		<20.5	<23.1	<41.6
1,1-Dichloropropene	---	---	---	---	---	---	---		<20.5	<23.1	<41.6
1,2,3-Trichlorobenzene	---	---	---	---	---	---	---		<20.5	<23.1	<41.6
1,2,3-Trichloropropane	0.092 [2]	0.82 [2]	18	730 [2]	730 [2]	730 [2]	0.0001 [2]		<41	<46.2	<83.2
1,2,3-Trimethylbenzene	---	---	---	---	---	---	---		<20.5	41.6	41.9
1,2,4-Trichlorobenzene	780	20,000	2,000	3,200	3,200	920	5		<20.5	<23.1	<41.6
1,2,4-Trimethylbenzene	3,900 [2]	100,000 [2]	100,000 [2]	73 [2]	120 [2]	0.25 [2]	18 [2]		<20.5	137	132
1,2-Dibromo-3-chloropropane	0.46	4	89	11	17	0.11	0.002		<20.5	<23.1	<41.6
1,2-Dibromoethane (EDB)	0.32	2.9	62	0.06	0.12	0.16	0.0004		<20.5	<23.1	<41.6
1,2-Dichlorobenzene	7,000	180,000	18,000	560	560	310	17		<20.5	<23.1	<41.6
1,2-Dichloroethane	7	63	1,400	0.4	0.7	0.99	0.02		<20.5	<23.1	<41.6
1,2-Dichloropropane	9	84	1,800	15	23	0.5	0.03		<20.5	<23.1	<41.6
1,3,5-Trimethylbenzene	3,900 [2]	100,000 [2]	100,000 [2]	45 [2]	72 [2]	0.15 [2]	10 [2]		<20.5	44.4	41
1,3-Dichlorobenzene	---	---	---	---	---	---	---		<20.5	<23.1	<41.6
1,3-Dichloropropane	1,600 [2]	41,000 [2]	41,000 [2]	1,000 [2]	1,000 [2]	1,000 [2]	0.83 [2]		<20.5	<23.1	<41.6
1,4-Dichlorobenzene	---	---	---	11,000	17,000	340	2		<20.5	<23.1	<41.6
1-Chlorobutane	3,100 [2]	82,000 [2]	14,000 [2]	1,200 [2]	1,200 [2]	1,200 [2]	3.1 [2]		<20.5	<23.1	<41.6
2,2-Dichloropropane	---	---	---	---	---	---	---		<20.5	<23.1	<41.6
2-Butanone (methyl ethyl ketone)	47,000 [2]	1,000,000 [2]	120,000 [2]	25,000 [2]	25,000 [2]	710 [2]	17 [2]		<205	<231	<416
2-Chlorotoluene (o-chlorotoluene)	1,600 [2]	41,000 [2]	41,000 [2]	1,400 [2]	1,400 [2]	1,400 [2]	4 [2]		<20.5	4.8	<41.6
2-Hexanone	---	---	---	---	---	---	---		<205	<231	<416
2-Nitropropane	---	---	---	---	---	---	---		<205	<231	<416
4-Chlorotoluene	---	---	---	---	---	---	---		<20.5	<23.1	<41.6
4-Methyl-2-pentanone (MIBK)	---	---	---	3,100 [2]	3,100 [2]	340 [2]	---		<205	<231	<416
Acetone	70,000	---	---	100,000	100,000	100,000	25		<205	<231	<416
Acrolein	39 [2]	1,000 [2]	1,600 [2]	0.16 [2]	0.26 [2]	0.017 [2]	0.014 [2]		<410	<462	<832
Acrylonitrile	1.2 [2]	11 [2]	230 [2]	0.28 [2]	0.54 [2]	0.17 [2]	0.0006 [2]		<41	<46.2	<83.2
Allyl chloride	---	---	---	---	---	---	---		<20.5	<23.1	<41.6
Bromobenzene	1,600 [2]	41,000 [2]	41,000 [2]	100 [2]	160 [2]	11 [2]	2.2 [2]		<20.5	<23.1	<41.6
Bromochloromethane	---	---	---	---	---	---			<20.5	<23.1	<41.6
Bromodichloromethane	10	92	2,000	3,000	3,000	3,000	0.6		<20.5	<23.1	<41.6
Bromoform	81	720	16,000	53	100	140	0.8		<20.5	<23.1	<41.6
Bromomethane (methyl bromide)	110	2,900	1,000	10	15	3.9	0.2		<41	<46.2	<83.2
Carbon disulfide	7,800	200,000	20,000	720	720	9	32		<20.5	<23.1	<41.6
Carbon tetrachloride	5	44	410	0.3	0.64	0.9	0.07		<20.5	<23.1	<41.6
Chlorobenzene	1,600	41,000	4,100	130	210	1.3	1		<20.5	<23.1	<41.6
Chloroethane	---	---	---	---	---	---	---		<41	<46.2	<83.2
Chloroform	100	940	2,000	0.3	0.54	0.76	0.6		<20.5	<23.1	<41.6
Chloromethane (methyl chloride)	---	---	---	---	---	---	---		<41	<46.2	<83.2
cis-1,2-Dichloroethene	780	20,000	20,000	1,200	1,200	1,200	0.4		<20.5	<23.1	<41.6
cis-1,3-Dichloropropene	6.4	57	1,200	1.1	2.1	0.39	0.004		<16.4	<18.5	<33.3
Cyclohexanone	390,000 [2]	1,000,000 [2]	1,000,000 [2]	660 [2]	660 [2]	660 [2]	150 [2]		<410	<462	<832
Dibromochloromethane (chlorodibrom	1,600	41,000	41,000	1,300	1,300	1,300	0.4		<20.5	<23.1	<41.6
Dibromomethane (methylene bromide)	780 [2]	20,000 [2]	20,000 [2]	2,700 [2]	2,700 [2]	2,700 [2]	0.34 [2]		<20.5	<23.1	<41.6
Dichlorodifluoromethane	16,000 [2]	410,000 [2]	180,000 [2]	190 [2]	310 [2]	20 [2]	43 [2]		<41	<46.2	<83.2
Ethyl acetate	70,000 [2]	1,000,000 [2]	1,000,000 [2]	10,000 [2]	10,000 [2]	10,000 [2]	26 [2]		<205	<231	<416
Ethyl ether	16,000 [2]	410,000 [2]	410,000 [2]	8,800 [2]	8,800 [2]	8,800 [2]	6.1 [2]		<20.5	<23.1	<41.6
Ethyl methacrylate	---	---	---	---	---	---	---		<20.5	<23.1	<41.6
Heptane	---	---	---	---	---	---	---		<82.1	<92.3	<166
Hexachlorobutadiene	---	---	---	---	---	---	---		<20.5	<23.1	<41.6

Sample Location:	P3-A.5-W	P3-A.5-W	P3-B-W	P3-B-W	P3-B-W	P3-C.5-W	P3-C.5-W	P3-C.5-W	P3-D-W	P3-D.5-W	P3-D.5-W	P3-D.5-W	P3-E-W	P3-E-W	P3-E.5-W	P3-E.5-W	P3-F-W	P3-F-W
Sample ID:	P3-A.5-W (8)	P3-A.5-W (20)	P3-B-W (8)	P3-B-W (20)	P3-C.5-W (8)	P3-C.5-W (20)	P3-D-W (8)	P3-D.5-W (8)	P3-D.5-W (20)	P3-E-W (8)	P3-E-W (20)	P3-E.5-W (8)	P3-E.5-W (20)	P3-F-W (8)	P3-F-W (20)			
Sample Date:	1/20/2010	1/20/2010	1/20/2010	1/20/2010	1/20/2010	1/20/2010	1/20/2010	1/27/2010	1/27/2010	1/27/2010	1/27/2010	1/27/2010	1/27/2010	1/27/2010	1/27/2010			
Sample Depth (feet):	8	20	8	20	8	20	8	8	20	8	20	8	20	8	20			
1,1,1,2-Tetrachloroethane	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66			
1,1,1-Trichloroethane	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66			
1,1,2,2-Tetrachloroethane	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66			
1,1,2-Trichloro-1,2,2-trifluoroethane	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66			
1,1,2-Trichloroethane	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66			
1,1-Dichloro-2-propanone	<260	<32.6	<272	<209	<45.2	<272	<284	<45.3	<51	<42.5	<20.9	<318	<24.5	<22.8	<46.6			
1,1-Dichloroethane	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66			
1,1-Dichloroethene	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66			
1,1-Dichloropropene	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66			
1,2,3-Trichlorobenzene	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66			
1,2,3-Trichloropropane	<51.9	<6.53	<54.4	<41.8	<9.04	<54.4	<56.8	<9.06	<10.2	<8.49	<4.18	<63.6	<4.9	<4.57	<9.33			
1,2,3-Trimethylbenzene	<26	<3.26	<27.2	<20.9	4.86	<27.2	14	<4.53	9.22	4.0	0.83	56.5	3.55	7.88	1.4			
1,2,4-Trichlorobenzene	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66			
1,2,4-Trimethylbenzene	12	<3.26	8.5	<20.9	13	<27.2	34.8	2.4	24.8	11.4	2.38	159	10.1	27.5	4.4			
1,2-Dibromo-3-chloropropane	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66			
1,2-Dibromoethane (EDB)	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66			
1,2-Dichlorobenzene	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66			
1,2-Dichloroethane	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66			
1,2-Dichloropropane	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66			
1,3,5-Trimethylbenzene	<26	<3.26	<27.2	<20.9	3.2	<27.2	9.8	0.92	6.9	3.4	0.8	42.6	2.93	9.95	1.4			
1,3-Dichlorobenzene	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66			
1,3-Dichloropropane	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66			
1,4-Dichlorobenzene	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66			
1-Chlorobutane	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66			
2,2-Dichloropropane	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66			
2-Butanone (methyl ethyl ketone)	<260	<32.6	<272	<209	<45.2	<272	<284	<45.3	<51	<42.5	<20.9	<318	<24.5	<22.8	<46.6			
2-Chlorotoluene (o-chlorotoluene)	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66			
2-Hexanone	<260	<32.6	<272	<209	<45.2	<272	<284	<45.3	<51	<42.5	<20.9	<318	<24.5	<22.8	<46.6			
2-Nitropropane	<260	<32.6	<272	<209	<45.2	<272	<284	<45.3	<51	<42.5	<20.9	<318	<24.5	<22.8	<46.6			
4-Chlorotoluene	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66			
4-Methyl-2-pentanone (MIBK)	<260	<32.6	<272	<209	<45.2	<272	<284	<45.3	<51	<42.5	<20.9	<318	<24.5	<22.8	<46.6			
Acetone	<260	<32.6	<272	<209	<45.2	<272	<284	<45.3	<51	<42.5	<20.9	<318	<24.5	<22.8	<46.6			
Acrolein	<519	<65.3	<544	<418	<90.4	<544	<568	<90.6	<102	<84.9	<41.8	<636	<49	<45.7	<93.3			
Acrylonitrile	<51.9	<6.53	<54.4	<41.8	<9.04	<54.4	<56.8	<9.06	<10.2	<8.49	<4.18	<63.6	<4.9	<4.57	<9.33			
Allyl chloride	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66			
Bromobenzene	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66			
Bromochloromethane	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66			
Bromodichloromethane	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66			
Bromoform	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66			
Bromomethane (methyl bromide)	<51.9	<6.53	<54.4	<41.8	<9.04	<54.4	<56.8	<9.06	<10.2	<8.49	<4.18	<63.6	<4.9	<4.57	<9.33			
Carbon disulfide	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66			
Carbon tetrachloride	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66			
Chlorobenzene	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66			
Chloroethane	<51.9	<6.53	<54.4	<41.8	<9.04	<54.4	<56.8	<9.06	<10.2	<8.49	<4.18	<63.6	<4.9	<4.57	<9.33			
Chloroform	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66			
Chloromethane (methyl chloride)	<51.9	<6.53	<54.4	<41.8	<9.04	<54.4	<56.8	<9.06	<10.2	<8.49	<4.18	<63.6	<4.9	<4.57	<9.33			
cis-1,2-Dichloroethene	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66			
cis-1,3-Dichloropropene	<20.8	<2.61	<21.8	<16.7	<3.61	<21.7	<22.7	<3.62	<4.08	<3.4	<1.67	<25.5	<1.96	<1.83	<3.73			
Cyclohexanone	<519	<65.3	<544	<418	<90.4	<544	<568	<90.6	<102	<84.9	<41.8	<636	<49	<45.7	<93.3			
Dibromochloromethane (chlorodibrom	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66			
Dibromomethane (methylene bromide)	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66			
Dichlorodifluoromethane	<51.9	<6.53	<54.4	<41.8	<9.04	<54.4	<56.8	<9.06	<10.2	<8.49	<4.18	<63.6	<4.9	<4.57	<9.33			
Ethyl acetate	<260	<32.6	<272	<209	<45.2	<272	<284	<45.3	<51	<42.5	<20.9	<318	<24.5	<22.8	<46.6			
Ethyl ether	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66			
Ethyl methacrylate	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66			
Heptane	<104	<13.1	<109	<83.6	<18.1	<109	<114	<18.1	<20.4	<17	<8.37	<127	<9.79	<9.14	<18.7			
Hexachlorobutadiene	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66			

Notes:

[1] Objectives are for Class I Groundwater.

[2] Non-TACO or provisional ROs provided by the IEPA.

--- No objective has been published for this constituent by the IEPA, or the sample was not analyzed for this constituent.

Concentration exceeds one or more project remediation objective.

Table 4-3
2009-2011 Soil Analytical Results for Excavation Walls - VOCs
Former Ameren Champaign MGP Site

Constituent	Soil Ingestion Residential	Soil Ingestion Commercial	Soil Ingestion Construction	Soil Inhalation Residential	Soil Inhalation Commercial	Soil Inhalation Construction	Soil Component to Groundwater[1]	Sample Location:	P3-B.5-W	P3-C1-W	P3-C1-W	P3-A.5-W	P3-A.5-W	P3-B-W	P3-B-W	P3-C.5-W	P3-C.5-W	P3-D-W	P3-D.5-W	P3-D.5-W	P3-E-W	P3-E-W	P3-E.5-W	P3-E.5-W	P3-F-W	P3-F-W
								Sample ID:	P3-B.5-W (15)	P3-C1-W (10)	P3-C1-W (18)	P3-A.5-W (8)	P3-A.5-W (20)	P3-B-W (8)	P3-B-W (20)	P3-C.5-W (8)	P3-C.5-W (20)	P3-D-W (8)	P3-D.5-W (8)	P3-D.5-W (20)	P3-E-W (8)	P3-E-W (20)	P3-E.5-W (8)	P3-E.5-W (20)	P3-F-W (8)	P3-F-W (20)
								Sample Date:	1/14/2010	1/14/2010	1/14/2010	1/20/2010	1/20/2010	1/20/2010	1/20/2010	1/20/2010	1/20/2010	1/20/2010	1/27/2010	1/27/2010	1/27/2010	1/27/2010	1/27/2010	1/27/2010	1/27/2010	1/27/2010
								Sample Depth (feet):	15	10	18	8	20	8	20	8	20	8	8	20	8	20	8	20	8	20
Hexachloroethane	78	2,000	2,000	---	---	---	0.5		<20.5	<23.1	<41.6	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66
Iodomethane	---	---	---	---	---	---	---		<41	<46.2	<83.2	<51.9	<6.53	<54.4	<41.8	<9.04	<54.4	<56.8	<9.06	<10.2	<8.49	<4.18	<63.6	<4.9	<4.57	<9.33
Isopropylbenzene (cumene)	7,800 [2]	200,000 [2]	61,000 [2]	500 [2]	790 [2]	51 [2]	91 [2]		<20.5	<23.1	<41.6	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	2.7	<4.25	<2.09	<31.8	0.59	<2.28	<4.66
Methacrylonitrile	---	---	---	---	---	---	---		<205	<231	<416	<260	<32.6	<272	<209	<45.2	<272	<284	<45.3	<51	<42.5	<20.9	<318	<24.5	<22.8	<46.6
Methyl Methacrylate	---	---	---	---	---	---	---		<20.5	<23.1	<41.6	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66
Methyl tert-butyl ether	780	20,000	2,000	8,800	8,800	140	0.32		<8.21	<9.23	<16.6	<10.4	<1.31	<10.9	<8.36	<1.81	<10.9	<11.4	<1.81	<2.04	<1.7	<0.837	<12.7	<0.979	<0.914	<1.87
Methylacrylate	2,300 [2]	61,000 [2]	6,100 [2]	6,500 [2]	6,500 [2]	6,500 [2]	0.89 [2]		<41	<46.2	<83.2	<51.9	<6.53	<54.4	<41.8	<9.04	<54.4	<56.8	<9.06	<10.2	<8.49	<4.18	<63.6	<4.9	<4.57	<9.33
Methylene chloride (dichloromethane)	85	760	12,000	13	24	34	0.02		<20.5	<23.1	<41.6	5.7	0.82	5.7	<20.9	0.93	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66
Naphthalene	1,600	41,000	4,100	170	270	1.8	12		54.5	3200	1800	246	9.71	211	29	216	130	1000	44.7	549	245	60.8	4610	215	398	136
n-Butylbenzene	---	---	---	---	---	---	---		<20.5	<23.1	<41.6	<26	<3.26	<27.2	<20.9	1.4	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66
n-Hexane	---	---	---	290 [2]	290 [2]	15 [2]	---		<82.1	<92.3	<166	<104	<13.1	<109	<83.6	<18.1	<109	<114	<18.1	<20.4	<17	<8.37	<127	<9.79	<9.14	<18.7
Nitrobenzene	39	1,000	1,000	92	140	9.4	0.1		<410	<462	<832	<519	<65.3	<544	<418	<90.4	<544	<568	<90.6	<102	<84.9	<41.8	<636	<49	<45.7	<93.3
n-Propylbenzene	---	---	---	---	---	---	---		<20.5	<23.1	<41.6	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	1.6	<4.25	<2.09	12	0.73	1.0	<4.66
Pentachloroethane	---	---	---	---	---	---	---		<20.5	<23.1	<41.6	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66
p-Isopropyltoluene	---	---	---	---	---	---	---		<20.5	<23.1	<41.6	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	1.3	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66
Propionitrile	---	---	---	---	---	---	---		<205	<231	<416	<260	<32.6	<272	<209	<45.2	<272	<284	<45.3	<51	<42.5	<20.9	<318	<24.5	<22.8	<46.6
sec-Butylbenzene	---	---	---	---	---	---	---		<20.5	<23.1	<41.6	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66
Styrene	16,000	410,000	41,000	1,500	1,500	430	4		<20.5	<23.1	<41.6	<26	<3.26	<27.2	<20.9	<4.52	<27.2	7.4	<4.53	10.7	<4.25	<2.09	<31.8	1.5	<2.28	<4.66
tert-Butylbenzene	---	---	---	---	---	---	---		<20.5	<23.1	<41.6	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66
Tetrachloroethene	12	110	2,400	11	20	28	0.06		<20.5	<23.1	<41.6	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66
Tetrahydrofuran	---	---	---	---	---	---	---		<205	<231	<416	<260	<32.6	<272	<209	<45.2	<272	<284	<45.3	<51	<42.5	<20.9	<318	<24.5	<22.8	<46.6
trans-1,2-Dichloroethene	1,600	41,000	41,000	3,100	3,100	3,100	0.7		<20.5	<23.1	<41.6	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66
trans-1,3-Dichloropropene	6.4	57	1,200	1.1	2.1	0.39	0.004		<16.4	<18.5	<33.3	<20.8	<2.61	<21.8	<16.7	<3.61	<21.7	<22.7	<3.62	<4.08	<3.4	<1.67	<25.5	<1.96	<1.83	<3.73
Trichloroethene	58	520	1,200	5	8.9	12	0.06		<20.5	<23.1	<41.6	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66
Trichlorofluoromethane	23,000 [2]	610,000 [2]	140,000 [2]	850 [2]	1,400 [2]	88 [2]	34 [2]		<20.5	<23.1	<41.6	<26	<3.26	<27.2	<20.9	<4.52	<27.2	<28.4	<4.53	<5.1	<4.25	<2.09	<31.8	<2.45	<2.28	<4.66
Vinyl acetate	78,000	1,000,000	200,000	1,000	1,600	10	170 [2]		<205	<231	<416	<260	<32.6	<272	<209	<45.2	<272	<284	<45.3	<51	<42.5	<20.9	<318	<24.5	<22.8	<46.6
Vinyl chloride	0.46	7.9	170	0.28	1.1	1.1	0.01		<8.21	<9.23	<16.6	<10.4	<1.31	<10.9	<8.36	<1.81	<10.9	<11.4	<1.81	<2.04	<1.7	<0.837	<12.7	<0.979	<0.914	<1.87

Notes:

[1] Objectives are for Class I Groundwater.

[2] Non-TACO or provisional ROs provided by the IEPA.

'--- No objective has been published for this constituent by the IEPA, or the sample was not analyzed for this constituent.

Concentration exceeds one or more project remediation objective.

Table 4-3
2009-2011 Soil Analytical Results for Excavation Walls - VOCs
Former Ameren Champaign MGP Site

Constituent	Soil Ingestion Residential	Soil Ingestion Commercial	Soil Ingestion Construction	Soil Inhalation Residential	Soil Inhalation Commercial	Soil Inhalation Construction	Soil Component to Groundwater[1]	Sample Location:	P3-A1.5-W	P3-A1.5-W	P3-A2.5-W	P3-A2.5-W	P3-A2.5-W	P3-F.5-W	P3-F.5-W	P3-F.5-W	P3-G-W	P3-G-W	P3-G-W	P3-H-W	P3-H-W	P3-H.5-W	P4-A1-W	P4-A1-W	P4-A1-W	P4-A2-W
								Sample ID:	P3-A1.5-W (8)	P3-A1.5-W (20)	P3-A2.5-W (3)	P3-A2.5-W (8)	P3-A2.5-W (20)	P3-F.5-W (3)	P3-F.5-W (8)	P3-F.5-W (20)	P3-G-W (3)	P3-G-W (8)	P3-G-W (20)	P3-H-W (8)	P3-H-W (20)	P3-H.5-W (20)	P4-A1-W (3)	P4-A1-W (8)	P4-A1-W (20)	P4-A2-W (3)
								Sample Date:	1/27/2010	1/27/2010	1/27/2010	1/27/2010	1/27/2010	2/3/2010	2/3/2010	2/3/2010	2/4/2010	2/4/2010	2/4/2010	2/5/2010	2/5/2010	2/5/2010	3/31/2010	3/31/2010	3/31/2010	3/29/2010
								Sample Depth (feet):	8	20	3	8	20	3	8	20	3	8	20	8	20	20	3	8	20	3
Volatile Organic Compounds (mg/kg)																										
1,1,1,2-Tetrachloroethane	2,300 [2]	61,000 [2]	6,100 [2]	2,100 [2]	2,100 [2]	2,100 [2]	3.4 [2]		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<42.1	<29
1,1,1-Trichloroethane	---	---	---	1,200	1,200	1,200	2		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<42.1	<29
1,1,2,2-Tetrachloroethane	4,700 [2]	120,000 [2]	12,000 [2]	2,000 [2]	2,000 [2]	2,000 [2]	3.3 [2]		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<42.1	<29
1,1,2-Trichloro-1,2,2-trifluoroethane	---	---	---	---	---	---	---		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<42.1	<29
1,1,2-Trichloroethane	310	8,200	8,200	1,800	1,800	1,800	0.02		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<42.1	<29
1,1-Dichloro-2-propanone	---	---	---	---	---	---	---		<51.2	<43.3	<1.61	<53.4	<43	<59.9	<46.4	<40.8	<63.6	<11.9	<40.9	<9.24	<2.05	<38.8	<65	<48.4	<421	<290
1,1-Dichloroethane	7,800	200,000	200,000	1,300	1,700	130	23		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<42.1	<29
1,1-Dichloroethene	3,900	100,000	470	290	10,000	3	0.06		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<42.1	<29
1,1-Dichloropropene	---	---	---	---	---	---	---		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<42.1	<29
1,2,3-Trichlorobenzene	---	---	---	---	---	---	---		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<42.1	<29
1,2,3-Trichloropropane	0.092 [2]	0.82 [2]	18	730 [2]	730 [2]	730 [2]	0.0001 [2]		<10.2	<8.66	<0.322	<10.7	<8.59	<12	<9.28	<8.16	<12.7	<2.37	<8.17	<1.85	<0.41	<7.77	<13	<9.69	<84.2	<57.9
1,2,3-Trimethylbenzene	---	---	---	---	---	---	---		10.4	1.2	1.94	1.7	<4.3	<5.99	<4.64	<4.08	2.4	0.55	0.91	2.24	0.13	1.6	1.6	3.1	143	9.68
1,2,4-Trichlorobenzene	780	20,000	2,000	3,200	3,200	920	5		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<42.1	<29
1,2,4-Trimethylbenzene	3,900 [2]	100,000 [2]	100,000 [2]	73 [2]	120 [2]	0.25 [2]	18 [2]		37.5	4.2	<64.3	5.2	1.0	1.3	1.5	<4.08	2.1	<1.19	<4.09	0.7	<0.205	1.2	3.4	7.23	139	22.8
1,2-Dibromo-3-chloropropane	0.46	4	89	11	17	0.11	0.002		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<42.1	<29
1,2-Dibromoethane (EDB)	0.32	2.9	62	0.06	0.12	0.16	0.0004		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<42.1	<29
1,2-Dichlorobenzene	7,000	180,000	18,000	560	560	310	17		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<42.1	<29
1,2-Dichloroethane	7	63	1,400	0.4	0.7	0.99	0.02		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<42.1	<29
1,2-Dichloropropane	9	84	1,800	15	23	0.5	0.03		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<42.1	<29
1,3,5-Trimethylbenzene	3,900 [2]	100,000 [2]	100,000 [2]	45 [2]	72 [2]	0.15 [2]	10 [2]		11.2	1.4	2.53	1.4	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	1.8	<42.1	5.91
1,3-Dichlorobenzene	---	---	---	---	---	---	---		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<42.1	<29
1,3-Dichloropropane	1,600 [2]	41,000 [2]	41,000 [2]	1,000 [2]	1,000 [2]	1,000 [2]	0.83 [2]		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<42.1	<29
1,4-Dichlorobenzene	---	---	---	11,000	17,000	340	2		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<42.1	<29
1-Chlorobutane	3,100 [2]	82,000 [2]	14,000 [2]	1,200 [2]	1,200 [2]	1,200 [2]	3.1 [2]		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<42.1	<29
2,2-Dichloropropane	---	---	---	---	---	---	---		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<42.1	<29
2-Butanone (methyl ethyl ketone)	47,000 [2]	1,000,000 [2]	120,000 [2]	25,000 [2]	25,000 [2]	710 [2]	17 [2]		<51.2	<43.3	<1.61	<53.4	<43	<59.9	<46.4	<40.8	<63.6	<11.9	<40.9	<9.24	<2.05	<38.8	<65	<48.4	<421	<290
2-Chlorotoluene (o-chlorotoluene)	1,600 [2]	41,000 [2]	41,000 [2]	1,400 [2]	1,400 [2]	1,400 [2]	4 [2]		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<42.1	<29
2-Hexanone	---	---	---	---	---	---	---		<51.2	<43.3	<1.61	<53.4	<43	<59.9	<46.4	<40.8	<63.6	<11.9	<40.9	<9.24	<2.05	<38.8	<65	<48.4	<421	<290
2-Nitropropane	---	---	---	---	---	---	---		<51.2	<43.3	<1.61	<53.4	<43	<59.9	<46.4	<40.8	<63.6	<11.9	<40.9	<9.24	<2.05	<38.8	<65	<48.4	<421	<290
4-Chlorotoluene	---	---	---	---	---	---	---		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<42.1	<29
4-Methyl-2-pentanone (MIBK)	---	---	---	3,100 [2]	3,100 [2]	340 [2]	---		<51.2	<43.3	<1.61	<53.4	<43	<59.9	<46.4	<40.8	<63.6	<11.9	<40.9	<9.24	<2.05	<38.8	<65	<48.4	<421	<290
Acetone	70,000	---	---	100,000	100,000	100,000	25		<51.2	<43.3	<1.61	<53.4	<43	<59.9	<46.4	<40.8	<63.6	<11.9	<40.9	<9.24	<2.05	<38.8	<65	<48.4	<421	<290
Acrolein	39 [2]	1,000 [2]	1,600 [2]	0.16 [2]	0.26 [2]	0.017 [2]	0.014 [2]		<102	<86.6	<3.22	<107	<85.9	<120	<92.8	<81.6	<127	<23.7	<81.7	<18.5	<4.1	<77.7	<130	<96.9	<842	<579
Acrylonitrile	1.2 [2]	11 [2]	230 [2]	0.28 [2]	0.54 [2]	0.17 [2]	0.0006 [2]		<10.2	<8.66	<0.322	<10.7	<8.59	<12	<9.28	<8.16	<12.7	<2.37	<8.17	<1.85	<0.41	<7.77	<13	<9.69	<842	<57.9
Allyl chloride	---	---	---	---	---	---	---		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<84.2	<29
Bromobenzene	1,600 [2]	41,000 [2]	41,000 [2]	100 [2]	160 [2]	11 [2]	2.2 [2]		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<42.1	<29
Bromochloromethane	---	---	---	---	---	---	---		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<42.1	<29
Bromodichloromethane	10	92	2,000	3,000	3,000	3,000	0.6		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<42.1	<29
Bromoform	81	720	16,000	53	100	140	0.8		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<42.1	<29
Bromomethane (methyl bromide)	110	2,900	1,000	10	15	3.9	0.2		<10.2	<8.66	<0.322	<10.7	<8.59	<12	<9.28	<8.16	<12.7	<2.37	<8.17	<1.85	<0.41	<7.77	<13	<9.69	<84.2	<57.9
Carbon disulfide	7,800	200,000	20,000	720	720	9	32		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<42.1	<29
Carbon tetrachloride	5	44	410	0.3	0.64	0.9	0.07		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<42.1	<29
Chlorobenzene	1,600	41,000	4,100	130	210	1.3	1		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<42.1	<29
Chloroethane	---	---	---	---	---	---	---		<10.2	<8.66	<0.322	<10.7	<8.59	<12	<9.28	<8.16	<12.7	<2.37	<8.17	<1.85	<0.41	<7.77	<13	<9.69	<84.2	<57.9
Chloroform	100	940	2,000	0.3	0.54	0.76	0.6		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<42.1	<29
Chloromethane (methyl chloride)	---	---	---	---	---	---	---		<10.2	<8.66	<0.322	<10.7	<8.59	<12	<9.28	<8.16	<12.7	4.09	<8.17	<1.85	<0.41	<7.77	<13	<9.69	<84.2	<57.9
cis-1,2-Dichloroethene	780	20,000	20,000	1,200	1,200	1,200	0.4		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<42.1	<29
cis-1,3-Dichloropropene	6.4	57	1,200	1.1	2.1	0.39	0.004		<4.1	<3.46	<0.129	<4.27	<3.44	<4.79	<3.71	<3.27	<5.09	<0.949	<3.27	<0.739	<0.164	<3.11	<5.2	<3.88	<42.1	<23.2
Cyclohexanone	390,000 [2]	1,000,000 [2]	1,000,000 [2]	660 [2]	660 [2]	660 [2]	150 [2]		<102	<86.6	<3.22	<107	<85.9	<120	<92.8	<81.6	<127	<23.7	<81.7	<18.5	<4.1	<77.7	<130	<96.9	<842	<579
Dibromochloromethane (chlorodibrom	1,600	41,000	41,000	1,300	1,300	1,300	0.4		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<42.1	<29
Dibromomethane (methylene bromide)	780 [2]	20,000 [2]	20,000 [2]	2,700 [2]	2,700 [2]	2,700 [2]	0.34 [2]		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<42.1	<29
Dichlorodifluoromethane	16,000 [2]	410,000 [2]	180,000 [2]	190 [2]	310 [2]	20 [2]	43 [2]		<10.2	<8.66	<0.322	<10.7	<8.59	<12	<9.28	<8.16	<12.7	<2.37	<8.17	<1.85	<0.41	<7.77	<13	<9.69	<84.2	<57.9
Ethyl acetate	70,000 [2]	1,000,000 [2]	1,000,000 [2]	10,000 [2]	10,000 [2]	10,000 [2]	26 [2]		<51.2	<43.3	<1.61	<53.4	<43	<59.9	<46.4	<40.8	<63.6	<11.9	<40.9	<9.24	<2.05	<38.8	<65	<48.4	<421	<290
Ethyl ether	16,000 [2]	410,000 [2]	410,000 [2]	8,800 [2]	8,800 [2]	8,800 [2]	6.1 [2]		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<42.1	<29
Ethyl methacrylate	---	---	---	---	---	---	---		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<42.1	<29
Heptane	---	---	---	---	---	---	---		<20.5	<17.3	<0.643	<21.4	<17.2	<24	<18.6	<16.3	<25.5	<4.75	<16.3	<3.7	<0.819	<15.5	<26	<19.4	<168	<116
Hexachlorobutadiene	---	---	---	---	---	---	---		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<42.1	<29

Notes:

[1] Objectives are for Class I Groundwater.

[2] Non-TACO or provisional ROs provided by the IEPA.

--- No objective has been published for this constituent by the IEPA, or the sample was not analyzed for this constituent.

Concentration exceeds one or more project remediation objective.

Table 4-3
2009-2011 Soil Analytical Results for Excavation Walls - VOCs
Former Ameren Champaign MGP Site

Constituent	Soil Ingestion Residential	Soil Ingestion Commercial	Soil Ingestion Construction	Soil Inhalation Residential	Soil Inhalation Commercial	Soil Inhalation Construction	Soil Component to Groundwater[1]	Sample Location:	P3-A1.5-W	P3-A1.5-W	P3-A2.5-W	P3-A2.5-W	P3-A2.5-W	P3-F.5-W	P3-F.5-W	P3-F.5-W	P3-G-W	P3-G-W	P3-G-W	P3-H-W	P3-H-W	P3-H.5-W	P4-A1-W	P4-A1-W	P4-A1-W	P4-A2-W
								Sample ID:	P3-A1.5-W (8)	P3-A1.5-W (20)	P3-A2.5-W (3)	P3-A2.5-W (8)	P3-A2.5-W (20)	P3-F.5-W (3)	P3-F.5-W (8)	P3-F.5-W (20)	P3-G-W (3)	P3-G-W (8)	P3-G-W (20)	P3-H-W (8)	P3-H-W (20)	P3-H.5-W (20)	P4-A1-W (3)	P4-A1-W (8)	P4-A1-W (20)	P4-A2-W (3)
								Sample Date:	1/27/2010	1/27/2010	1/27/2010	1/27/2010	1/27/2010	2/3/2010	2/3/2010	2/3/2010	2/4/2010	2/4/2010	2/4/2010	2/5/2010	2/5/2010	2/5/2010	3/31/2010	3/31/2010	3/31/2010	3/29/2010
								Sample Depth (feet):	8	20	3	8	20	3	8	20	3	8	20	8	20	20	3	8	20	3
Hexachloroethane	78	2,000	2,000	---	---	---	0.5		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<42.1	<29
Iodomethane	---	---	---	---	---	---	---		<10.2	<8.66	<0.322	<10.7	<8.59	<12	<9.28	<8.16	<12.7	<2.37	<8.17	<1.85	<0.41	<7.77	<13	<9.69	<84.2	<57.9
Isopropylbenzene (cumene)	7,800 [2]	200,000 [2]	61,000 [2]	500 [2]	790 [2]	51 [2]	91 [2]		<5.12	<4.33	0.438	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	2.09	<0.205	<3.88	<6.5	1.6	12	<29
Methacrylonitrile	---	---	---	---	---	---	---		<51.2	<43.3	<1.61	<53.4	<43	<59.9	<46.4	<40.8	<63.6	<11.9	<40.9	<9.24	<2.05	<38.8	<65	<48.4	<421	<290
Methyl Methacrylate	---	---	---	---	---	---	---		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<42.1	<29
Methyl tert-butyl ether	780	20,000	2,000	8,800	8,800	140	0.32		<2.05	<1.73	<0.0643	<2.14	<1.72	<2.4	<1.86	<1.63	<2.55	<0.475	<1.63	<0.37	<0.0819	<1.55	<2.6	<1.94	<16.8	<11.6
Methylacrylate	2,300 [2]	61,000 [2]	6,100 [2]	6,500 [2]	6,500 [2]	6,500 [2]	0.89 [2]		<10.2	<8.66	<0.322	<10.7	<8.59	<12	<9.28	<8.16	<12.7	<2.37	<8.17	<1.85	<0.41	<7.77	<13	<9.69	<84.2	<57.9
Methylene chloride (dichloromethane)	85	760	12,000	13	24	34	0.02		<5.12	<4.33	<0.161	<5.34	<4.3	5.5	4.3	3.7	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<42.1	16.6
Naphthalene	1,600	41,000	4,100	170	270	1.8	12		615	64.8	120	110	18.3	18.2	32.9	<8.16	151	38.4	53.6	4.42	5.6	86.8	162	200	17000	610
n-Butylbenzene	---	---	---	---	---	---	---		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	5.06	<42.1	15.9
n-Hexane	---	---	---	290 [2]	290 [2]	15 [2]	---		<20.5	<17.3	2.95	<21.4	<17.2	<24	<18.6	<16.3	<25.5	<4.75	<16.3	0.5	<0.819	<15.5	<26	<19.4	<168	<116
Nitrobenzene	39	1,000	1,000	92	140	9.4	0.1		<102	<86.6	<3.22	<107	<85.9	<120	<92.8	<81.6	<127	<23.7	<81.7	<18.5	<4.1	<77.7	<130	<96.9	<842	<579
n-Propylbenzene	---	---	---	---	---	---	---		1.3	<4.33	1.21	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	1.0	<0.205	<3.88	<6.5	<4.84	24	<29
Pentachloroethane	---	---	---	---	---	---	---		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<42.1	<29
p-Isopropyltoluene	---	---	---	---	---	---	---		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<42.1	<29
Propionitrile	---	---	---	---	---	---	---		<51.2	<43.3	<1.61	<53.4	<43	<59.9	<46.4	<40.8	<63.6	<11.9	<40.9	<9.24	<2.05	<38.8	<65	<48.4	<421	<290
sec-Butylbenzene	---	---	---	---	---	---	---		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<42.1	<29
Styrene	16,000	410,000	41,000	1,500	1,500	430	4		4.8	<4.33	<0.161	<5.34	1.9	<5.99	<4.64	<4.08	8.65	<1.19	4.45	<0.924	0.771	<3.88	<6.5	<4.84	1150	<29
tert-Butylbenzene	---	---	---	---	---	---	---		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<42.1	<29
Tetrachloroethene	12	110	2,400	11	20	28	0.06		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<42.1	<29
Tetrahydrofuran	---	---	---	---	---	---	---		<51.2	<43.3	<1.61	<53.4	<43	<59.9	<46.4	<40.8	<63.6	<11.9	<40.9	<9.24	<2.05	<38.8	<65	<48.4	<421	<290
trans-1,2-Dichloroethene	1,600	41,000	41,000	3,100	3,100	3,100	0.7		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<42.1	<29
trans-1,3-Dichloropropene	6.4	57	1,200	1.1	2.1	0.39	0.004		<4.1	<3.46	<0.129	<4.27	<3.44	<4.79	<3.71	<3.27	<5.09	<0.949	<3.27	<0.739	<0.164	<3.11	<5.2	<3.88	<42.1	<23.2
Trichloroethene	58	520	1,200	5	8.9	12	0.06		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<42.1	<29
Trichlorofluoromethane	23,000 [2]	610,000 [2]	140,000 [2]	850 [2]	1,400 [2]	88 [2]	34 [2]		<5.12	<4.33	<0.161	<5.34	<4.3	<5.99	<4.64	<4.08	<6.36	<1.19	<4.09	<0.924	<0.205	<3.88	<6.5	<4.84	<42.1	<29
Vinyl acetate	78,000	1,000,000	200,000	1,000	1,600	10	170 [2]		<51.2	<43.3	<1.61	<53.4	<43	<59.9	<46.4	<40.8	<63.6	<11.9	<40.9	<9.24	<2.05	<38.8	<65	<48.4	<421	<290
Vinyl chloride	0.46	7.9	170	0.28	1.1	1.1	0.01		<2.05	<1.73	<0.0643	<2.14	<1.72	<2.4	<1.86	<1.63	<2.55	<0.475	<1.63	<0.37	<0.0819	<1.55	<2.6	<1.94	<16.8	<11.6

Notes:

[1] Objectives are for Class I Groundwater.

[2] Non-TACO or provisional ROs provided by the IEPA.

'--- No objective has been published for this constituent by the IEPA, or the sample was not analyzed for this constituent.

Concentration exceeds one or more project remediation objective.

Table 4-3
2009-2011 Soil Analytical Results for Excavation Walls - VOCs
Former Ameren Champaign MGP Site

Constituent	Soil Ingestion Residential	Soil Ingestion Commercial	Soil Ingestion Construction	Soil Inhalation Residential	Soil Inhalation Commercial	Soil Inhalation Construction	Soil Component to Groundwater[1]	Sample Location:	P4-A2-W	P4-A2-W	P4-A3-W	P4-A3-W	P4-A3-W	P4-A4-W	P4-A4-W	P4-A4-W	P4-A5-W	P4-A5-W	P4-A5-W	P5-A3-W	P5-A3-W	P5-A3-W	P5-A4-W	P5-A4-W	P5-A4-W	P5-A5-W
								Sample ID:	P4-A2-W (8)	P4-A2-W (20)	P4-A3-W (3)	P4-A3-W (8)	P4-A3-W (20)	P4-A4-W (3)	P4-A4-W (8)	P4-A4-W (20)	P4-A5-W (3)	P4-A5-W (8)	P4-A5-W (20)	P5-A3-W (3)	P5-A3-W (8)	P5-A3-W(20)	P5-A4-W(3)	P5-A4-W(8)	P5-A4-W(20)	P5-A5-W(20)
								Sample Date:	3/29/2010	3/31/2010	3/29/2010	3/29/2010	3/31/2010	3/26/2010	3/26/2010	3/26/2010	3/26/2010	3/26/2010	3/31/2010	7/14/2010	7/14/2010	7/15/2010	7/14/2010	7/14/2010	7/15/2010	7/15/2010
								Sample Depth (feet):	8	20	3	8	20	3	8	20	3	8	20	3	8	20	3	8	20	20
Volatile Organic Compounds (mg/kg)																										
1,1,1,2-Tetrachloroethane	2,300 [2]	61,000 [2]	6,100 [2]	2,100 [2]	2,100 [2]	2,100 [2]	3.4 [2]		<23.3	<33.4	<32.1	<12.5	<6.59	<6.32	<6.47	<7.22	<10.8	<6.52	<7.91	<6.31	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531
1,1,1-Trichloroethane	---	---	---	1,200	1,200	1,200	2		<23.3	<33.4	<32.1	<12.5	<6.59	<6.32	<6.47	<7.22	<10.8	<6.52	<7.91	<6.31	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531
1,1,2,2-Tetrachloroethane	4,700 [2]	120,000 [2]	12,000 [2]	2,000 [2]	2,000 [2]	2,000 [2]	3.3 [2]		<23.3	<33.4	<32.1	<12.5	<6.59	<6.32	<6.47	<7.22	<10.8	<6.52	<7.91	<6.31	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531
1,1,2-Trichloro-1,2,2-trifluoroethane	---	---	---	---	---	---	---		<23.3	<33.4	<32.1	<12.5	<6.59	<6.32	<6.47	<7.22	<10.8	<6.52	<7.91	<6.31	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531
1,1,2-Trichloroethane	310	8,200	8,200	1,800	1,800	1,800	0.02		<23.3	<33.4	<32.1	<12.5	<6.59	<6.32	<6.47	<7.22	<10.8	<6.52	<7.91	<6.31	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531
1,1-Dichloro-2-propanone	---	---	---	---	---	---	---		<233	<334	<321	<125	<65.9	<63.2	<64.7	<72.2	<108	<65.2	<79.1	<63.1	<52.6	<6.63	<52.6	<47.3	<246	<5.31
1,1-Dichloroethane	7,800	200,000	200,000	1,300	1,700	130	23		<23.3	<33.4	<32.1	<12.5	<6.59	<6.32	<6.47	<7.22	<10.8	<6.52	<7.91	<6.31	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531
1,1-Dichloroethene	3,900	100,000	470	290	10,000	3	0.06		<23.3	<33.4	<32.1	<12.5	<6.59	<6.32	<6.47	<7.22	<10.8	<6.52	<7.91	<6.31	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531
1,1-Dichloropropene	---	---	---	---	---	---	---		<23.3	<33.4	<32.1	<12.5	<6.59	<6.32	<6.47	<7.22	<10.8	<6.52	<7.91	<6.31	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531
1,2,3-Trichlorobenzene	---	---	---	---	---	---	---		<23.3	<33.4	<32.1	<12.5	<6.59	<6.32	<6.47	<7.22	<10.8	<6.52	<7.91	<6.31	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531
1,2,3-Trichloropropane	0.092 [2]	0.82 [2]	18	730 [2]	730 [2]	730 [2]	0.0001 [2]		<46.7	<66.8	<64.2	<24.9	<13.2	<12.6	<12.9	<14.4	<21.5	<13	<15.8	<12.6	<10.5	<1.33	<10.5	<9.45	<49.2	<1.06
1,2,3-Trimethylbenzene	---	---	---	---	---	---	---		10.8	<33.4	16.6	4.14	<6.59	6.72	2.79	<7.22	5.49	3.3	<7.91	15.2	3.5	0.57	4	1.3	<24.6	<0.531
1,2,4-Trichlorobenzene	780	20,000	2,000	3,200	3,200	920	5		<23.3	<33.4	<32.1	<12.5	<6.59	<6.32	<6.47	<7.22	<10.8	<6.52	<7.91	<6.31	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531
1,2,4-Trimethylbenzene	3,900 [2]	100,000 [2]	100,000 [2]	73 [2]	120 [2]	0.25 [2]	18 [2]		26.3	<33.4	40.1	9.45	<6.59	11.5	6.61	<7.22	13.5	8.18	<7.91	8.85	2	0.38	2.4	<4.73	<24.6	0.28
1,2-Dibromo-3-chloropropane	0.46	4	89	11	17	0.11	0.002		<23.3	<33.4	<32.1	<12.5	<6.59	<6.32	<6.47	<7.22	<10.8	<6.52	<7.91	<6.31	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531
1,2-Dibromoethane (EDB)	0.32	2.9	62	0.06	0.12	0.16	0.0004		<23.3	<33.4	<32.1	<12.5	<6.59	<6.32	<6.47	<7.22	<10.8	<6.52	<7.91	<6.31	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531
1,2-Dichlorobenzene	7,000	180,000	18,000	560	560	310	17		<23.3	<33.4	<32.1	<12.5	<6.59	<6.32	<6.47	<7.22	<10.8	<6.52	<7.91	<6.31	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531
1,2-Dichloroethane	7	63	1,400	0.4	0.7	0.99	0.02		<23.3	<33.4	<32.1	<12.5	<6.59	<6.32	<6.47	<7.22	<10.8	<6.52	<7.91	<6.31	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531
1,2-Dichloropropane	9	84	1,800	15	23	0.5	0.03		<23.3	<33.4	<32.1	<12.5	<6.59	<6.32	<6.47	<7.22	<10.8	<6.52	<7.91	<6.31	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531
1,3,5-Trimethylbenzene	3,900 [2]	100,000 [2]	100,000 [2]	45 [2]	72 [2]	0.15 [2]	10 [2]		6.86	<33.4	10.1	<12.5	<6.59	<6.32	1.75	<7.22	3.31	2.15	<7.91	6.3	1.2	<0.663	<5.26	<4.73	<24.6	<0.531
1,3-Dichlorobenzene	---	---	---	---	---	---	---		<23.3	<33.4	<32.1	<12.5	<6.59	<6.32	<6.47	<7.22	<10.8	<6.52	<7.91	<6.31	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531
1,3-Dichloropropane	1,600 [2]	41,000 [2]	41,000 [2]	1,000 [2]	1,000 [2]	1,000 [2]	0.83 [2]		<23.3	<33.4	<32.1	<12.5	<6.59	<6.32	<6.47	<7.22	<10.8	<6.52	<7.91	<6.31	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531
1,4-Dichlorobenzene	---	---	---	11,000	17,000	340	2		<23.3	<33.4	<32.1	<12.5	<6.59	<6.32	<6.47	<7.22	<10.8	<6.52	<7.91	<6.31	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531
1-Chlorobutane	3,100 [2]	82,000 [2]	14,000 [2]	1,200 [2]	1,200 [2]	1,200 [2]	3.1 [2]		<23.3	<33.4	<32.1	<12.5	<6.59	<6.32	<6.47	<7.22	<10.8	<6.52	<7.91	<6.31	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531
2,2-Dichloropropane	---	---	---	---	---	---	---		<23.3	<33.4	<32.1	<12.5	<6.59	<6.32	<6.47	<7.22	<10.8	<6.52	<7.91	<6.31	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531
2-Butanone (methyl ethyl ketone)	47,000 [2]	1,000,000 [2]	120,000 [2]	25,000 [2]	25,000 [2]	710 [2]	17 [2]		<233	<334	<321	<125	<65.9	<63.2	<64.7	<72.2	<108	<65.2	<79.1	<63.1	<52.6	<6.63	<52.6	<47.3	<246	<5.31
2-Chlorotoluene (o-chlorotoluene)	1,600 [2]	41,000 [2]	41,000 [2]	1,400 [2]	1,400 [2]	1,400 [2]	4 [2]		<23.3	<33.4	<32.1	<12.5	<6.59	<6.32	<6.47	<7.22	<10.8	<6.52	<7.91	<63.1	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531
2-Hexanone	---	---	---	---	---	---	---		<233	<334	<321	<125	<65.9	<63.2	<64.7	<72.2	<108	<65.2	<79.1	<63.1	<52.6	<6.63	<52.6	<47.3	<246	<5.31
2-Nitropropane	---	---	---	---	---	---	---		<233	<334	<321	<125	<65.9	<63.2	<64.7	<72.2	<108	<65.2	<79.1	<63.1	<52.6	<6.63	<52.6	<47.3	<246	<5.31
4-Chlorotoluene	---	---	---	---	---	---	---		<23.3	<33.4	<32.1	<12.5	<6.59	<6.32	<6.47	<7.22	<10.8	<6.52	<7.91	<6.31	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531
4-Methyl-2-pentanone (MIBK)	---	---	---	3,100 [2]	3,100 [2]	340 [2]	---		<233	<334	<321	<125	<65.9	<63.2	<64.7	<72.2	<108	<65.2	<79.1	<63.1	<52.6	<6.63	<52.6	<47.3	<246	<5.31
Acetone	70,000	---	---	100,000	100,000	100,000	25		<233	<334	<321	<125	<65.9	<63.2	<64.7	<72.2	<108	<65.2	<79.1	<63.1	<52.6	<6.63	<52.6	<47.3	<246	<5.31
Acrolein	39 [2]	1,000 [2]	1,600 [2]	0.16 [2]	0.26 [2]	0.017 [2]	0.014 [2]		<467	<668	<642	<249	<132	<126	<129	<144	<215	<130	<158	<126	<105	<13.3	<105	<94.5	<492	<10.6
Acrylonitrile	1.2 [2]	11 [2]	230 [2]	0.28 [2]	0.54 [2]	0.17 [2]	0.0006 [2]		<46.7	<668	<64.2	<24.9	<132	<12.6	<12.9	<144	<21.5	<13	<158	<12.6	<10.5	<1.33	<10.5	<9.45	<49.2	<1.06
Allyl chloride	---	---	---	---	---	---	---		<23.3	<66.8	<32.1	<12.5	<13.2	<6.32	<6.47	<14.4	<10.8	<6.52	<15.8	<6.31	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531
Bromobenzene	1,600 [2]	41,000 [2]	41,000 [2]	100 [2]	160 [2]	11 [2]	2.2 [2]		<23.3	<33.4	<32.1	<12.5	<6.59	<6.32	<6.47	<7.22	<10.8	<6.52	<7.91	<6.31	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531
Bromochloromethane	---	---	---	---	---	---	---		<23.3	<33.4	<32.1	<12.5	<6.59	<6.32	<6.47	<7.22	<10.8	<6.52	<7.91	<6.31	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531
Bromodichloromethane	10	92	2,000	3,000	3,000	3,000	0.6		<23.3	<33.4	<32.1	<12.5	<6.59	<6.32	<6.47	<7.22	<10.8	<6.52	<7.91	<6.31	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531
Bromoform	81	720	16,000	53	100	140	0.8		<23.3	<33.4	<32.1	<12.5	<6.59	<6.32	<6.47	<7.22	<10.8	<6.52	<7.91	<6.31	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531
Bromomethane (methyl bromide)	110	2,900	1,000	10	15	3.9	0.2		<46.7	<66.8	<64.2	<24.9	<13.2	<12.6	<12.9	<14.4	<21.5	<13	<15.8	<12.6	<10.5	<1.33	<10.5	<9.45	<49.2	<1.06
Carbon disulfide	7,800	200,000	20,000	720	720	9	32		<23.3	<33.4	<32.1	<12.5	<6.59	<6.32	<6.47	<7.22	<10.8	<6.52	<7.91	<6.31	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531
Carbon tetrachloride	5	44	410	0.3	0.64	0.9	0.07		<23.3	<33.4	<32.1	<12.5	<6.59	<6.32	<6.47	<7.22	<10.8	<6.52	<7.91	<6.31	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531
Chlorobenzene	1,600	41,000	4,100	130	210	1.3	1		<23.3	<33.4	<32.1	<12.5	<6.59	<6.32	<6.47	<7.22	<10.8	<6.52	<7.91	<6.31	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531
Chloroethane	---	---	---	---	---	---	---		<46.7	<66.8	<64.2	<24.9	<13.2	<12.6	<12.9	<14.4	<21.5	<13	<15.8	<12.6	<10.5	<1.33	<10.5	<9.45	<49.2	<1.06
Chloroform	100	940	2,000	0.3	0.54	0.76	0.6		<23.3	<33.4	<32.1	<12.5	<6.59	<6.32	<6.47	<7.22	<10.8	<6.52	<7.91	<6.31	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531
Chloromethane (methyl chloride)	---	---	---	---	---	---	---		<46.7	<66.8	<64.2	<24.9	<13.2	<12.6	<12.9	<14.4	<21.5	<13	<15.8	<12.6	<10.5	<1.33	<10.5	<9.45	<49.2	<1.06
cis-1,2-Dichloroethene	780	20,000	20,000	1,200	1,200	1,200	0.4		<23.3	<33.4	<32.1	<12.5	<6.59	<6.32	<6.47	<7.22	<10.8	<6.52	<7.91	<6.31	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531
cis-1,3-Dichloropropene	6.4	57	1,200	1.1	2.1	0.39	0.004		<18.7	<33.4	<25.7	<9.97	<6.59	<5.06	<5.18	<7.22	<8.61	<5.22	<7.91	<5.05	<4.21	<0.53	<4.21	<3.78	<19.7	0.425
Cyclohexanone	390,000 [2]	1,000,000 [2]	1,000,000 [2]	660 [2]	660 [2]	660 [2]	150 [2]		<467	<668	<642	<249	<132	<126	<129	<144	<215	<130	<158	<126	<105	<13.3	<105	<94.5	<492	<10.6
Dibromochloromethane (chlorodibrom	1,600	41,000	41,000	1,300	1,300	1,300	0.4		<23.3	<33.4	<32.1	<12.5	<6.59	<6.32	<6.47	<7.22	<10.8	<6.52	<7.91	<6.31	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531
Dibromomethane (methylene bromide)	780 [2]	20,000 [2]	20,000 [2]	2,700 [2]	2,700 [2]	2,700 [2]	0.34 [2]		<23.3	<33.4	<32.1	<12.5	<6.59	<6.32	<6.47	<7.22	<10.8	<6.52	<7.91	<6.31	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531
Dichlorodifluoromethane	16,000 [2]	410,000 [2]	180,000 [2]	190 [2]	310 [2]	20 [2]	43 [2]		<46.7	<66.8	<64.2	<24.9	<13.2	<12.6	<12.9	<14.4	<21.5	<13	<15.8	<12.6	<10.5	<1.33	<10.5	<9.45	<49.2	<1.06
Ethyl acetate	70,000 [2]	1,000,000 [2]	1,000,000 [2]	10,000 [2]	10,000 [2]	10,000 [2]	26 [2]		<233	<334	<321	<125	<65.9	<63.2	<64.7	<72.2	<108	<65.2	<79.1	<63.1	52.6	<6.63	<52.6	47.3	<246	<5.31
Ethyl ether	16,000 [2]	410,000 [2]	410,000 [2]	8,800 [2]	8,800 [2]	8,800 [2]	6.1 [2]		<23.3	<33.4	<32.1	<12.5	<6.59	<6.32	<6.47	<7.22	<10.8	<6.52	<7.91	<6.31	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531
Ethyl methacrylate	---	---	---	---	---	---	---		<23.3	<33.4	<32.1	<12.5	<6.59	<6.32	<6.47	<7.22	<10.8	<6.52	<7.91	<6.31	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531
Heptane	---	---	---	---	---	---	---		<93.4	<134	<128	<49.9	<26.4	<25.3	<25.9	<28.9	<43	<26.1	<31.6	<25.2	<21	<2.65	<21.1	<18.9	<98.3	<2.13
Hexachlorobutadiene	---	---	---	---	---	---	---		<23.3	<33.4	<32.1	<12.5	<6.59	<6.32	<6.47	<7.22	<10.8	<6.52	<7.91	<6.31	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531

Notes:

[1] Objectives are for Class I Groundwater.

[2] Non-TACO or provisional ROs provided by the IEPA.

--- No objective has been published for this constituent by the IEPA, or the sample was not analyzed for this constituent.

Concentration exceeds one or more project remediation objective.

Table 4-3
2009-2011 Soil Analytical Results for Excavation Walls - VOCs
Former Ameren Champaign MGP Site

Constituent	Soil Ingestion Residential	Soil Ingestion Commercial	Soil Ingestion Construction	Soil Inhalation Residential	Soil Inhalation Commercial	Soil Inhalation Construction	Soil Component to Groundwater[1]	Sample Location: / Sample ID: / Sample Date: / Sample Depth (feet):	P4-A2-W P4-A2-W (8) 3/29/2010 8	P4-A2-W P4-A2-W (20) 3/31/2010 20	P4-A3-W P4-A3-W (3) 3/29/2010 3	P4-A3-W P4-A3-W (8) 3/29/2010 8	P4-A3-W P4-A3-W (20) 3/31/2010 20	P4-A4-W P4-A4-W (3) 3/26/2010 3	P4-A4-W P4-A4-W (8) 3/26/2010 8	P4-A4-W P4-A4-W (20) 3/26/2010 20	P4-A5-W P4-A5-W (3) 3/26/2010 3	P4-A5-W P4-A5-W (8) 3/26/2010 8	P4-A5-W P4-A5-W (20) 3/31/2010 20	P5-A3-W P5-A3-W (3) 7/14/2010 3	P5-A3-W P5-A3-W (8) 7/14/2010 8	P5-A3-W P5-A3-W(20) 7/15/2010 20	P5-A4-W P5-A4-W(3) 7/14/2010 3	P5-A4-W P5-A4-W(8) 7/14/2010 8	P5-A4-W P5-A4-W(20) 7/15/2010 20	P5-A5-W P5-A5-W(20) 7/15/2010 20
Hexachloroethane	78	2,000	2,000	---	---	---	0.5		<23.3	<33.4	<32.1	<12.5	<6.59	<6.32	<6.47	<7.22	<10.8	<6.52	<7.91	<6.31	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531
Iodomethane	---	---	---	---	---	---	---		<46.7	<66.8	<64.2	<24.9	<13.2	<12.6	<12.9	<14.4	<21.5	<13	<15.8	<12.6	<10.5	<1.33	<10.5	<9.45	<49.2	<1.06
Isopropylbenzene (cumene)	7,800 [2]	200,000 [2]	61,000 [2]	500 [2]	790 [2]	51 [2]	91 [2]		5.46	<33.4	8.16	<12.5	<6.59	2.71	1.33	<7.22	2.97	1.59	<7.91	6.41	<1.2	<0.663	<5.26	<4.73	<24.6	<0.531
Methacrylonitrile	---	---	---	---	---	---	---		<233	<334	<321	<125	<65.9	<63.2	<64.7	<72.2	<108	<65.2	<79.1	<63.1	<52.6	<6.63	<52.6	<47.3	<246	<5.31
Methyl Methacrylate	---	---	---	---	---	---	---		<23.3	<33.4	<32.1	<12.5	<6.59	<6.32	<6.47	<7.22	<10.8	<6.52	<7.91	<6.31	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531
Methyl tert-butyl ether	780	20,000	2,000	8,800	8,800	140	0.32		<9.34	<13.4	<12.8	<4.99	<2.64	<2.53	<2.59	<2.89	<4.3	<2.61	<3.16	<2.52	<2.1	<0.265	<2.11	<1.89	<9.83	<0.213
Methylacrylate	2,300 [2]	61,000 [2]	6,100 [2]	6,500 [2]	6,500 [2]	6,500 [2]	0.89 [2]		<46.7	<66.8	<64.2	<24.9	<13.2	<12.6	<12.9	<14.4	<21.5	<13	<15.8	<12.6	<10.5	<1.33	<10.5	<9.45	<49.2	<1.06
Methylene chloride (dichloromethane)	85	760	12,000	13	24	34	0.02		13	<33.4	16.1	6.86	<6.59	1.61	1.71	<7.22	2.65	1.98	<7.91	<6.31	<5.26	0.48	<5.26	<4.73	17	0.13
Naphthalene	1,600	41,000	4,100	170	270	1.8	12		660	369	903	252	12	201	176	52.9	263	207	7.5	652	148	32.7	98.2	72.4	243	25.9
n-Butylbenzene	---	---	---	---	---	---	---		16.8	<33.4	25.6	<12.5	<6.59	10.9	<6.47	<7.22	8.58	4.85	<7.91	<6.31	<5.26	0.26	<5.26	<4.73	<24.6	<0.531
n-Hexane	---	---	---	290 [2]	290 [2]	15 [2]	---		<93.4	<134	<128	<49.9	<26.4	<25.3	<25.9	<28.9	<43	<26.1	<31.6	<25.2	<21	<2.65	<21.1	<18.9	<98.3	<2.13
Nitrobenzene	39	1,000	1,000	92	140	9.4	0.1		<467	<668	<642	<249	<132	<126	<129	<144	<215	<130	<158	<126	<105	<13.3	<105	<94.5	<492	<10.6
n-Propylbenzene	---	---	---	---	---	---	---		<23.3	<33.4	<32.1	<12.5	<6.59	<6.32	<6.47	<7.22	<10.8	<6.52	<7.91	2.6	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531
Pentachloroethane	---	---	---	---	---	---	---		<23.3	<33.4	<32.1	<12.5	<6.59	<6.32	<6.47	<7.22	<10.8	<6.52	<7.91	<6.31	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531
p-Isopropyltoluene	---	---	---	---	---	---	---		<23.3	<33.4	<32.1	<12.5	<6.59	1.81	<6.47	<7.22	<10.8	<6.52	<7.91	<6.31	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531
Propionitrile	---	---	---	---	---	---	---		<233	<334	<321	<125	<65.9	<63.2	<64.7	<72.2	<108	<65.2	<79.1	<63.1	<52.6	<6.63	<52.6	<47.3	<246	<5.31
sec-Butylbenzene	---	---	---	---	---	---	---		<23.3	<33.4	<32.1	<12.5	<6.59	<6.32	<6.47	<7.22	<10.8	<6.52	<7.91	<6.31	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531
Styrene	16,000	410,000	41,000	1,500	1,500	430	4		<23.3	<33.4	<32.1	<12.5	<6.59	<6.32	<6.47	<7.22	<10.8	<6.52	<7.91	<6.31	<5.26	0.761	<5.26	<4.73	<24.6	1.93
tert-Butylbenzene	---	---	---	---	---	---	---		<23.3	<33.4	<32.1	<12.5	<6.59	<6.32	<6.47	<7.22	<10.8	<6.52	<7.91	<6.31	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531
Tetrachloroethene	12	110	2,400	11	20	28	0.06		<23.3	<33.4	<32.1	<12.5	<6.59	<6.32	<6.47	<7.22	<10.8	<6.52	<7.91	<6.31	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531
Tetrahydrofuran	---	---	---	---	---	---	---		<233	<334	<321	<125	<65.9	<63.2	<64.7	<72.2	<108	<65.2	<79.1	<63.1	<52.6	<6.63	<52.6	<47.3	<246	<5.31
trans-1,2-Dichloroethene	1,600	41,000	41,000	3,100	3,100	3,100	0.7		<23.3	<33.4	<32.1	<12.5	<6.59	<6.32	<6.47	<7.22	<10.8	<6.52	<7.91	<6.31	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531
trans-1,3-Dichloropropene	6.4	57	1,200	1.1	2.1	0.39	0.004		<18.7	<33.4	<25.7	<9.97	<6.59	<5.06	<5.18	<7.22	<8.61	<5.22	<7.91	<5.05	2.8	<0.53	<4.21	<3.78	<19.7	<0.425
Trichloroethene	58	520	1,200	5	8.9	12	0.06		<23.3	<33.4	<32.1	<12.5	<6.59	<6.32	<6.47	<7.22	<10.8	<6.52	<7.91	<6.31	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531
Trichlorofluoromethane	23,000 [2]	610,000 [2]	140,000 [2]	850 [2]	1,400 [2]	88 [2]	34 [2]		<23.3	<33.4	<32.1	<12.5	<6.59	<6.32	<6.47	<7.22	<10.8	<6.52	<7.91	<6.31	<5.26	<0.663	<5.26	<4.73	<24.6	<0.531
Vinyl acetate	78,000	1,000,000	200,000	1,000	1,600	10	170 [2]		<233	<334	<321	<125	<65.9	<63.2	<64.7	<72.2	<108	<65.2	<79.1	<63.1	<52.6	<6.63	<52.6	<47.3	<246	<5.31
Vinyl chloride	0.46	7.9	170	0.28	1.1	1.1	0.01		<9.34	<13.4	<12.8	<4.99	<2.64	<2.53	<2.59	<2.89	<4.3	<2.61	<3.16	<2.52	<2.1	<0.265	<2.11	<1.89	<9.83	<0.213

Notes:

[1] Objectives are for Class I Groundwater.

[2] Non-TACO or provisional ROs provided by the IEPA.

'--- No objective has been published for this constituent by the IEPA, or the sample was not analyzed for this constituent.

Concentration exceeds one or more project remediation objective.

Table 4-3
2009-2011 Soil Analytical Results for Excavation Walls - VOCs
Former Ameren Champaign MGP Site

Constituent	Soil Ingestion Residential	Soil Ingestion Commercial	Soil Ingestion Construction	Soil Inhalation Residential	Soil Inhalation Commercial	Soil Inhalation Construction	Soil Component to Groundwater[1]	Sample Location:	P5-B5-W	P5-B5-W	P5-B5-W	P5-C5-W	P5-C5-W	P6-A4.5-W	P6-A4.5-W	P6-A5.5-W	P6-A5.5-W	P6-B5.5-W	P6-C5.5-W	P6-CD5.5-W	P6-CD5.5-W	P6-CD5.5-W	P6-D5.5-W	P6-D5.5-W	P7-B1-SW	P7-BC1-SW
								Sample ID:	P5-B5-W (3)	P5-B5-W (8)	P5-B5-W (20)	P5-C5-W (8)	P5-C5-W (20)	P6-A4.5-W (3)	P6-A4.5-W (8)	P6-A5.5-W (8)	P6-A5.5-W (21)	P6-B5.5-W (20)	P6-C5.5-W (20)	P6-CD5.5-W (3)	P6-CD5.5-W (8)	P6-CD5.5-W (20)	P6-D5.5-W (8)	P6-D5.5-W (20)	P7-B1-SW (3)	P7-BC1-SW (3)
								Sample Date:	7/13/2010	7/13/2010	7/13/2010	7/13/2010	7/13/2010	10/12/2010	10/12/2010	10/12/2010	10/14/2010	10/14/2010	10/18/2010	10/18/2010	10/19/2010	10/19/2010	10/19/2010	10/20/2010	2/15/2011	2/15/2011
								Sample Depth (feet):	3	8	20	8	20	3	8	8	21	20	20	3	8	20	8	20	3	3
Volatile Organic Compounds (mg/kg)																										
1,1,1,2-Tetrachloroethane	2,300 [2]	61,000 [2]	6,100 [2]	2,100 [2]	2,100 [2]	2,100 [2]	3.4 [2]		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	<0.113
1,1,1-Trichloroethane	---	---	---	1,200	1,200	1,200	2		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	<0.113
1,1,2,2-Tetrachloroethane	4,700 [2]	120,000 [2]	12,000 [2]	2,000 [2]	2,000 [2]	2,000 [2]	3.3 [2]		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	<0.113
1,1,2-Trichloro-1,2,2-trifluoroethane	---	---	---	---	---	---	---		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	<0.113
1,1,2-Trichloroethane	310	8,200	8,200	1,800	1,800	1,800	0.02		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	<0.113
1,1-Dichloro-2-propanone	---	---	---	---	---	---	---		<4.02	<1.73	<1.75	<3.29	<45.6	<1.2	<6.16	<0.513	<30.8	<38.8	<1.48	<47.8	<34.5	<4.27	<41	<49	<56.2	<1.13
1,1-Dichloroethane	7,800	200,000	200,000	1,300	1,700	130	23		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	<0.113
1,1-Dichloroethene	3,900	100,000	470	290	10,000	3	0.06		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	<0.113
1,1-Dichloropropene	---	---	---	---	---	---	---		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	<0.113
1,2,3-Trichlorobenzene	---	---	---	---	---	---	---		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	<0.113
1,2,3-Trichloropropane	0.092 [2]	0.82 [2]	18	730 [2]	730 [2]	730 [2]	0.0001 [2]		<0.804	<0.347	<0.349	<0.657	<9.11	<0.24	<1.23	<0.103	<6.15	<7.76	<0.295	<9.57	<6.91	<0.854	<8.2	<9.8	<11.2	<0.227
1,2,3-Trimethylbenzene	---	---	---	---	---	---	---		0.3	0.546	0.635	1.43	<4.56	0.345	2.84	0.9	1.1	1.2	<0.148	<4.78	1.2	0.24	<4.1	1.0	16.5	0.352
1,2,4-Trichlorobenzene	780	20,000	2,000	3,200	3,200	920	5		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	<0.113
1,2,4-Trimethylbenzene	3,900 [2]	100,000 [2]	100,000 [2]	73 [2]	120 [2]	0.25 [2]	18 [2]		0.09	0.338	0.279	0.16	<4.56	0.171	1.15	0.729	0.73	<3.88	<0.148	<4.78	<3.45	0.17	<4.1	<4.9	9.05	<0.113
1,2-Dibromo-3-chloropropane	0.46	4	89	11	17	0.11	0.002		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	<0.113
1,2-Dibromoethane (EDB)	0.32	2.9	62	0.06	0.12	0.16	0.0004		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	<0.113
1,2-Dichlorobenzene	7,000	180,000	18,000	560	560	310	17		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	<0.113
1,2-Dichloroethane	7	63	1,400	0.4	0.7	0.99	0.02		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	<0.113
1,2-Dichloropropane	9	84	1,800	15	23	0.5	0.03		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	<0.113
1,3,5-Trimethylbenzene	3,900 [2]	100,000 [2]	100,000 [2]	45 [2]	72 [2]	0.15 [2]	10 [2]		<0.402	0.13	<0.175	<0.329	<4.56	0.11	0.4	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	3.2	0.165
1,3-Dichlorobenzene	---	---	---	---	---	---	---		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	<0.113
1,3-Dichloropropane	1,600 [2]	41,000 [2]	41,000 [2]	1,000 [2]	1,000 [2]	1,000 [2]	0.83 [2]		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	<0.113
1,4-Dichlorobenzene	---	---	---	11,000	17,000	340	2		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	<0.113
1-Chlorobutane	3,100 [2]	82,000 [2]	14,000 [2]	1,200 [2]	1,200 [2]	1,200 [2]	3.1 [2]		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	<0.113
2,2-Dichloropropane	---	---	---	---	---	---	---		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	<0.113
2-Butanone (methyl ethyl ketone)	47,000 [2]	1,000,000 [2]	120,000 [2]	25,000 [2]	25,000 [2]	710 [2]	17 [2]		<4.02	<1.73	0.36	<3.29	<45.6	<1.2	<6.16	<0.513	<30.8	<38.8	<1.48	<47.8	<34.5	<4.27	<41	<49	<56.2	<1.13
2-Chlorotoluene (o-chlorotoluene)	1,600 [2]	41,000 [2]	41,000 [2]	1,400 [2]	1,400 [2]	1,400 [2]	4 [2]		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	<0.113
2-Hexanone	---	---	---	---	---	---	---		<4.02	<1.73	<1.75	<3.29	<45.6	<1.2	<6.16	<0.513	<30.8	<38.8	<1.48	<47.8	<34.5	<4.27	<41	<49	<56.2	<1.13
2-Nitropropane	---	---	---	---	---	---	---		<4.02	<1.73	<1.75	<3.29	<45.6	<1.2	<6.16	<0.513	<30.8	<38.8	<1.48	<47.8	<34.5	<4.27	<41	<49	<56.2	<1.13
4-Chlorotoluene	---	---	---	---	---	---	---		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	<0.113
4-Methyl-2-pentanone (MIBK)	---	---	---	3,100 [2]	3,100 [2]	340 [2]	---		<4.02	<1.73	<1.75	<3.29	<45.6	<1.2	<6.16	<0.513	<30.8	<38.8	<1.48	<47.8	<34.5	<4.27	<41	<49	<56.2	<1.13
Acetone	70,000	---	---	100,000	100,000	100,000	25		<4.02	<1.73	<1.75	<3.29	<45.6	<1.2	<6.16	<0.513	<30.8	<38.8	<1.48	<47.8	<34.5	<4.27	<41	<49	<56.2	<1.13
Acrolein	39 [2]	1,000 [2]	1,600 [2]	0.16 [2]	0.26 [2]	0.017 [2]	0.014 [2]		<8.04	<3.47	<3.49	<6.57	<91.1	<2.4	<12.3	<1.03	<61.5	<77.6	<2.95	<95.7	<69.1	<8.54	<82	<98	<112	<2.27
Acrylonitrile	1.2 [2]	11 [2]	230 [2]	0.28 [2]	0.54 [2]	0.17 [2]	0.0006 [2]		<0.804	<0.347	<0.349	<0.657	<9.11	<0.24	<1.23	<0.103	<6.15	<7.76	<0.295	<9.57	<6.91	<0.854	<8.2	<9.8	<11.2	<0.227
Allyl chloride	---	---	---	---	---	---	---		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	<0.113
Bromobenzene	1,600 [2]	41,000 [2]	41,000 [2]	100 [2]	160 [2]	11 [2]	2.2 [2]		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	<0.113
Bromochloromethane	---	---	---	---	---	---	---		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	<0.113
Bromodichloromethane	10	92	2,000	3,000	3,000	3,000	0.6		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	<0.113
Bromoform	81	720	16,000	53	100	140	0.8		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	<0.113
Bromomethane (methyl bromide)	110	2,900	1,000	10	15	3.9	0.2		<0.804	<0.347	<0.349	<0.657	<9.11	<0.24	<1.23	<0.103	<6.15	<7.76	<0.295	<9.57	<6.91	<0.854	<8.2	<9.8	<11.2	<0.227
Carbon disulfide	7,800	200,000	20,000	720	720	9	32		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	<0.113
Carbon tetrachloride	5	44	410	0.3	0.64	0.9	0.07		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	<0.113
Chlorobenzene	1,600	41,000	4,100	130	210	1.3	1		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	<0.113
Chloroethane	---	---	---	---	---	---	---		<0.804	<0.347	<0.349	<0.657	<9.11	<0.24	<1.23	<0.103	<6.15	<7.76	<0.295	<9.57	<6.91	<0.854	<8.2	<9.8	<11.2	<0.227
Chloroform	100	940	2,000	0.3	0.54	0.76	0.6		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	<0.113
Chloromethane (methyl chloride)	---	---	---	---	---	---	---		<0.804	<0.347	<0.349	<0.657	<9.11	<0.24	<1.23	<0.103	<6.15	<7.76	<0.295	<9.57	<6.91	<0.854	<8.2	<9.8	<11.2	<0.227
cis-1,2-Dichloroethene	780	20,000	20,000	1,200	1,200	1,200	0.4		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	<0.113
cis-1,3-Dichloropropene	6.4	57	1,200	1.1	2.1	0.39	0.004		<0.322	<0.139	<0.14	<0.263	<3.64	<0.096	<0.492	<0.041	<2.46	<3.1	<0.118	<3.83	<2.76	<0.342	<3.28	<3.92	<4.49	<0.0908
Cyclohexanone	390,000 [2]	1,000,000 [2]	1,000,000 [2]	660 [2]	660 [2]	660 [2]	150 [2]		<8.04	<3.47	<3.49	<6.57	<91.1	<2.4	<12.3	<1.03	<61.5	<77.6	<2.95	<95.7	<69.1	<8.54	<82	<98	<112	<2.27
Dibromochloromethane (chlorodibrom	1,600	41,000	41,000	1,300	1,300	1,300	0.4		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	<0.113
Dibromomethane (methylene bromide)	780 [2]	20,000 [2]	20,000 [2]	2,700 [2]	2,700 [2]	2,700 [2]	0.34 [2]		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	<0.113
Dichlorodifluoromethane	16,000 [2]	410,000 [2]	180,000 [2]	190 [2]	310 [2]	20 [2]	43 [2]		<0.804	<0.347	<0.349	<0.657	<9.11	<0.24	<1.23	<0.103	<6.15	<7.76	<0.295	<9.57	<6.91	<0.854	<8.2	<9.8	<11.2	<0.227
Ethyl acetate	70,000 [2]	1,000,000 [2]	1,000,000 [2]	10,000 [2]	10,000 [2]	10,000 [2]	26 [2]		<4.02	1.0	<1.75	<3.29	<45.6	0.44	<6.16	0.19	<30.8	<38.8	0.63	<47.8	<34.5	<4.27	<41	<49	<56.2	<1.13
Ethyl ether	16,000 [2]	410,000 [2]	410,000 [2]	8,800 [2]	8,800 [2]	8,800 [2]	6.1 [2]		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	<0.113
Ethyl methacrylate	---	---	---	---	---	---	---		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	<0.113
Heptane	---	---	---	---	---	---	---		<1.61	0.28	<0.699	<1.31	<18.2	<0.48	<2.46	<0.205	<12.3	<15.5	<0.59	<19.1	<13.8	<1.71	<16.4	<19.6	<22.5	<0.454
Hexachlorobutadiene	---	---	---	---	---	---	---		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	<0.113

Notes:

[1] Objectives are for Class I Groundwater.

[2] Non-TACO or provisional ROs provided by the IEPA.

'--- No objective has been published for this constituent by the IEPA, or the sample was not analyzed for this constituent.

Concentration exceeds one or more project remediation objective.

Table 4-3
2009-2011 Soil Analytical Results for Excavation Walls - VOCs
Former Ameren Champaign MGP Site

Constituent	Soil Ingestion Residential	Soil Ingestion Commercial	Soil Ingestion Construction	Soil Inhalation Residential	Soil Inhalation Commercial	Soil Inhalation Construction	Soil Component to Groundwater[1]	Sample Location:	P5-B5-W	P5-B5-W	P5-B5-W	P5-C5-W	P5-C5-W	P6-A4.5-W	P6-A4.5-W	P6-A5.5-W	P6-A5.5-W	P6-B5.5-W	P6-C5.5-W	P6-CD5.5-W	P6-CD5.5-W	P6-CD5.5-W	P6-D5.5-W	P6-D5.5-W	P7-B1-SW	P7-BC1-SW
								Sample ID:	P5-B5-W (3)	P5-B5-W (8)	P5-B5-W (20)	P5-C5-W (8)	P5-C5-W (20)	P6-A4.5-W (3)	P6-A4.5-W (8)	P6-A5.5-W (8)	P6-A5.5-W (21)	P6-B5.5-W (20)	P6-C5.5-W (20)	P6-CD5.5-W (3)	P6-CD5.5-W (8)	P6-CD5.5-W (20)	P6-D5.5-W (8)	P6-D5.5-W (20)	P7-B1-SW (3)	P7-BC1-SW (3)
								Sample Date:	7/13/2010	7/13/2010	7/13/2010	7/13/2010	7/13/2010	10/12/2010	10/12/2010	10/12/2010	10/14/2010	10/14/2010	10/18/2010	10/18/2010	10/19/2010	10/19/2010	10/19/2010	10/20/2010	2/15/2011	2/15/2011
								Sample Depth (feet):	3	8	20	8	20	3	8	8	21	20	20	3	8	20	8	20	3	3
Hexachloroethane	78	2,000	2,000	---	---	---	0.5		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	<0.113
Iodomethane	---	---	---	---	---	---	---		<0.804	<0.347	<0.349	<0.657	<9.11	<0.24	<1.23	<0.103	<6.15	<7.76	<0.295	<9.57	<6.91	<0.854	<8.2	<9.8	<11.2	<0.227
Isopropylbenzene (cumene)	7,800 [2]	200,000 [2]	61,000 [2]	500 [2]	790 [2]	51 [2]	91 [2]		0.29	0.13	0.078	0.483	<4.56	0.11	0.4	0.0791	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	3.3	0.148
Methacrylonitrile	---	---	---	---	---	---	---		<4.02	<1.73	<1.75	<3.29	<45.6	<1.2	<6.16	<0.513	<30.8	<38.8	<1.48	<47.8	<34.5	<4.27	<41	<49	<56.2	<1.13
Methyl Methacrylate	---	---	---	---	---	---	---		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	<0.113
Methyl tert-butyl ether	780	20,000	2,000	8,800	8,800	140	0.32		<0.161	<0.0693	<0.0699	<0.131	<1.82	<0.048	<0.246	<0.0205	<1.23	<1.55	<0.059	<1.91	<1.38	<0.171	<1.64	<1.96	<2.25	<0.0454
Methylacrylate	2,300 [2]	61,000 [2]	6,100 [2]	6,500 [2]	6,500 [2]	6,500 [2]	0.89 [2]		<0.804	<0.347	<0.349	<0.657	<9.11	<0.24	<1.23	<0.103	<6.15	<7.76	<0.295	<9.57	<6.91	<0.854	<8.2	<9.8	<11.2	<0.227
Methylene chloride (dichloromethane)	85	760	12,000	13	24	34	0.02		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	0.049	<4.78	0.84	0.13	<4.1	<4.9	<5.62	<0.113
Naphthalene	1,600	41,000	4,100	170	270	1.8	12		3.71	4.25	33.2	3.38	12.5	2.39	139	65.1	45.6	71.9	<0.295	49.5	51	13.7	29.6	78.6	200	0.342
n-Butylbenzene	---	---	---	---	---	---	---		<0.402	0.16	0.12	0.511	<4.56	<0.12	0.45	0.149	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	12.5	0.732
n-Hexane	---	---	---	290 [2]	290 [2]	15 [2]	---		<1.61	0.23	<0.699	<1.31	<18.2	<0.48	<2.46	<0.205	<12.3	<15.5	<0.59	<19.1	<13.8	<1.71	<16.4	<19.6	<22.5	<0.454
Nitrobenzene	39	1,000	1,000	92	140	9.4	0.1		<8.04	<3.47	<3.49	<6.57	<91.1	<2.4	<12.3	<1.03	<61.5	<77.6	<2.95	<95.7	<69.1	<8.54	<82	<98	<112	<2.27
n-Propylbenzene	---	---	---	---	---	---	---		0.09	0.16	0.11	0.516	<4.56	0.068	0.48	0.258	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	2.8	0.188
Pentachloroethane	---	---	---	---	---	---	---		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	<0.113
p-Isopropyltoluene	---	---	---	---	---	---	---		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	<0.113
Propionitrile	---	---	---	---	---	---	---		<4.02	<1.73	<1.75	<3.29	<45.6	<1.2	<6.16	<0.513	<30.8	<38.8	<1.48	<47.8	<34.5	<4.27	<41	<49	<56.2	<1.13
sec-Butylbenzene	---	---	---	---	---	---	---		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	0.123
Styrene	16,000	410,000	41,000	1,500	1,500	430	4		<0.402	<0.173	0.249	<0.329	12.4	<0.12	<0.616	<0.0513	5.92	5.19	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	<0.113
tert-Butylbenzene	---	---	---	---	---	---	---		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	<0.113
Tetrachloroethene	12	110	2,400	11	20	28	0.06		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	<0.113
Tetrahydrofuran	---	---	---	---	---	---	---		<4.02	<1.73	<1.75	<3.29	<45.6	<1.2	<6.16	<0.513	<30.8	<3.88	<1.48	<47.8	<34.5	<4.27	<41	<49	<56.2	<1.13
trans-1,2-Dichloroethene	1,600	41,000	41,000	3,100	3,100	3,100	0.7		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	<0.113
trans-1,3-Dichloropropene	6.4	57	1,200	1.1	2.1	0.39	0.004		<0.322	<0.139	<0.14	<0.263	<3.64	<0.096	<0.492	<0.041	<2.46	<3.1	<0.118	<3.83	<2.76	<0.342	<3.28	<3.92	<4.49	<0.0908
Trichloroethene	58	520	1,200	5	8.9	12	0.06		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	<0.113
Trichlorofluoromethane	23,000 [2]	610,000 [2]	140,000 [2]	850 [2]	1,400 [2]	88 [2]	34 [2]		<0.402	<0.173	<0.175	<0.329	<4.56	<0.12	<0.616	<0.0513	<3.08	<3.88	<0.148	<4.78	<3.45	<0.427	<4.1	<4.9	<5.62	<0.113
Vinyl acetate	78,000	1,000,000	200,000	1,000	1,600	10	170 [2]		<4.02	<1.73	<1.75	<3.29	<45.6	<1.2	<6.16	<0.513	<30.8	<38.8	<1.48	<47.8	<34.5	<4.27	<41	<49	<56.2	<1.13
Vinyl chloride	0.46	7.9	170	0.28	1.1	1.1	0.01		<0.161	<0.0693	<0.0699	<0.131	<1.82	<0.048	<0.246	<0.0205	<1.23	<1.55	<0.059	<1.91	<1.38	<0.171	<1.64	<1.96	<2.25	<0.0454

Notes:

[1] Objectives are for Class I Groundwater.

[2] Non-TACO or provisional ROs provided by the IEPA.

'--- No objective has been published for this constituent by the IEPA, or the sample was not analyzed for this constituent.

Concentration exceeds one or more project remediation objective.

Table 4-3
2009-2011 Soil Analytical Results for Excavation Walls - VOCs
Former Ameren Champaign MGP Site

Constituent	Residential	Soil Ingestion Commercial	Construction	Residential	Soil Inhalation Commercial	Construction	Soil Component to Groundwater[1]	Sample Location:	P7-BC1-SW	P7-C1-SW	P7-C1-SW	P7-CD1-SW	P7-CD1-SW	P7-D1-W	P7-DE1-W	P7-DE1-W	P8-H1-W	P8-H4-W	P9-D1-W	P9-H1-W	P9-H2-W
								Sample ID:	P7-BC1-SW (8)	P7-C1-SW (3)	P7-C1-SW (21)	P7-CD1-SW (3)	P7-CD1-SW (8)	P7-D1-W (8)	P7-DE1-W (3)	P7-DE1-W (8)	P8-H1-W (3)	P8-H4-W (3)	P9-D1-W (8)	P9-H1-W (15)	P9-H2-W (8)
								Sample Date:	2/15/2011	2/15/2011	2/15/2011	2/17/2011	2/17/2011	3/2/2011	3/2/2011	3/2/2011	4/6/2011	4/6/2011	6/7/2011	5/25/2011	5/18/2011
								Sample Depth (feet):	8	3	21	3	8	8	3	8	3	3	8	15	8
Volatile Organic Compounds (mg/kg)																					
1,1,1,2-Tetrachloroethane	2,300 [2]	61,000 [2]	6,100 [2]	2,100 [2]	2,100 [2]	2,100 [2]	3.4 [2]		<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	<0.121	<0.377	<0.148	<0.13	<8.71	<0.0996	<0.22
1,1,1-Trichloroethane	---	---	---	1,200	1,200	1,200	2		<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	<0.121	<0.377	<0.148	<0.13	<8.71	<0.0996	<0.22
1,1,2,2-Tetrachloroethane	4,700 [2]	120,000 [2]	12,000 [2]	2,000 [2]	2,000 [2]	2,000 [2]	3.3 [2]		<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	<0.121	<0.377	<0.148	<0.13	<8.71	<0.0996	<0.22
1,1,2-Trichloro-1,2,2-trifluoroethane	---	---	---	---	---	---	---		<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	<0.121	<0.377	<0.148	<0.13	<8.71	<0.0996	<0.22
1,1,2-Trichloroethane	310	8,200	8,200	1,800	1,800	1,800	0.02		<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	<0.121	<0.377	<0.148	<0.13	<8.71	<0.0996	<0.22
1,1-Dichloro-2-propanone	---	---	---	---	---	---			<45	<44.3	<38.6	<38.7	<46.5	<37.9	<1.21	<3.77	<1.48	<1.3	<87.1	<0.996	<2.2
1,1-Dichloroethane	7,800	200,000	200,000	1,300	1,700	130	23		<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	<0.121	<0.377	<0.148	<0.13	<8.71	<0.0996	<0.22
1,1-Dichloroethene	3,900	100,000	470	290	10,000	3	0.06		<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	<0.121	<0.377	<0.148	<0.13	<8.71	<0.0996	<0.22
1,1-Dichloropropene	---	---	---	---	---	---	---		<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	<0.121	<0.377	<0.148	<0.13	<8.71	<0.0996	<0.22
1,2,3-Trichlorobenzene	---	---	---	---	---	---	---		<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	<0.121	<0.377	<0.148	<0.13	<8.71	<0.0996	<0.22
1,2,3-Trichloropropane	0.092 [2]	0.82 [2]	18	730 [2]	730 [2]	730 [2]	0.0001 [2]		<9	<8.86	<7.73	<7.74	<9.29	<7.58	<0.243	<0.755	<0.296	<0.261	<17.4	<0.199	<0.44
1,2,3-Trimethylbenzene	---	---	---	---	---	---	---		2.5	15.2	<3.86	8.18	7.6	25.5	1.86	1.46	2.11	2.57	38.1	0.224	1.1
1,2,4-Trichlorobenzene	780	20,000	2,000	3,200	3,200	920	5		<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	<0.121	<0.377	<0.148	<0.13	<8.71	<0.0996	<0.22
1,2,4-Trimethylbenzene	3,900 [2]	100,000 [2]	100,000 [2]	73 [2]	120 [2]	0.25 [2]	18 [2]		1.1	9.88	<3.86	5.19	5.19	65	1.19	1.03	1.11	1.06	28	0.077	<0.22
1,2-Dibromo-3-chloropropane	0.46	4	89	11	17	0.11	0.002		<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	<0.121	<0.377	<0.148	<0.13	<8.71	<0.0996	<0.22
1,2-Dibromoethane (EDB)	0.32	2.9	62	0.06	0.12	0.16	0.0004		<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	<0.121	<0.377	<0.148	<0.13	<8.71	<0.0996	<0.22
1,2-Dichlorobenzene	7,000	180,000	18,000	560	560	310	17		<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	<0.121	<0.377	<0.148	<0.13	<8.71	<0.0996	<0.22
1,2-Dichloroethane	7	63	1,400	0.4	0.7	0.99	0.02		<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	<0.121	<0.377	<0.148	<0.13	<8.71	<0.0996	<0.22
1,2-Dichloropropane	9	84	1,800	15	23	0.5	0.03		<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	<0.121	<0.377	<0.148	<0.13	<8.71	<0.0996	<0.22
1,3,5-Trimethylbenzene	3,900 [2]	100,000 [2]	100,000 [2]	45 [2]	72 [2]	0.15 [2]	10 [2]		0.94	<4	<3.86	2.4	2.5	17.3	0.321	<0.377	<0.148	<0.13	15.3	0.048	0.823
1,3-Dichlorobenzene	---	---	---	---	---	---	---		<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	<0.121	<0.377	<0.148	<0.13	<8.71	<0.0996	<0.22
1,3-Dichloropropane	1,600 [2]	41,000 [2]	41,000 [2]	1,000 [2]	1,000 [2]	1,000 [2]	0.83 [2]		<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	<0.121	<0.377	<0.148	<0.13	<8.71	<0.0996	<0.22
1,4-Dichlorobenzene	---	---	---	11,000	17,000	340	2		<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	<0.121	<0.377	<0.148	<0.13	<8.71	<0.0996	<0.22
1-Chlorobutane	3,100 [2]	82,000 [2]	14,000 [2]	1,200 [2]	1,200 [2]	1,200 [2]	3.1 [2]		<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	<0.121	<0.377	<0.148	<0.13	<8.71	<0.0996	<0.22
2,2-Dichloropropane	---	---	---	---	---	---	---		<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	<0.121	<0.377	<0.148	<0.13	<8.71	<0.0996	<0.22
2-Butanone (methyl ethyl ketone)	47,000 [2]	1,000,000 [2]	120,000 [2]	25,000 [2]	25,000 [2]	710 [2]	17 [2]		<45	<44.3	<38.6	<38.7	<46.5	<37.9	<1.21	<3.77	<1.48	<1.3	<87.1	<0.996	<2.2
2-Chlorotoluene (o-chlorotoluene)	1,600 [2]	41,000 [2]	41,000 [2]	1,400 [2]	1,400 [2]	1,400 [2]	4 [2]		<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	<0.121	<0.377	<0.148	<0.13	<8.71	<0.0996	<0.22
2-Hexanone	---	---	---	---	---	---	---		<45	<44.3	<38.6	<38.7	<46.5	<37.9	<1.21	<3.77	<1.48	<1.3	<87.1	<0.996	<2.2
2-Nitropropane	---	---	---	---	---	---	---		<45	<44.3	<38.6	<38.7	<46.5	<37.9	<1.21	<3.77	<1.48	<1.3	<87.1	<0.996	<2.2
4-Chlorotoluene	---	---	---	---	---	---	---		<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	<0.121	<0.377	<0.148	<0.13	<8.71	<0.0996	<0.22
4-Methyl-2-pentanone (MIBK)	---	---	---	3,100 [2]	3,100 [2]	340 [2]	---		<45	<44.3	<38.6	<38.7	<46.5	<37.9	<1.21	<3.77	<1.48	<1.3	<87.1	<0.996	<2.2
Acetone	70,000	---	---	100,000	100,000	100,000	25		<45	<44.3	<38.6	<38.7	<46.5	<37.9	<1.21	<3.77	<1.48	<1.3	<87.1	0.35	<2.2
Acrolein	39 [2]	1,000 [2]	1,600 [2]	0.16 [2]	0.26 [2]	0.017 [2]	0.014 [2]		<90	<88.6	<77.3	<77.4	<92.9	<75.8	<2.43	<7.55	<2.96	<2.61	<174	<1.99	<4.4
Acrylonitrile	1.2 [2]	11 [2]	230 [2]	0.28 [2]	0.54 [2]	0.17 [2]	0.0006 [2]		<9	<8.86	<7.73	<7.74	<9.29	<7.58	<0.243	<0.755	<0.296	<0.261	<17.4	<0.199	<0.44
Allyl chloride	---	---	---	---	---	---	---		<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	<0.121	<0.377	<0.148	<0.13	<8.71	<0.0996	<0.22
Bromobenzene	1,600 [2]	41,000 [2]	41,000 [2]	100 [2]	160 [2]	11 [2]	2.2 [2]		<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	<0.121	<0.377	<0.148	<0.13	<8.71	<0.0996	<0.22
Bromochloromethane	---	---	---	---	---	---			<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	<0.121	<0.377	<0.148	<0.13	<8.71	<0.0996	<0.22
Bromodichloromethane	10	92	2,000	3,000	3,000	3,000	0.6		<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	<0.121	<0.377	<0.148	<0.13	<8.71	<0.0996	<0.22
Bromoform	81	720	16,000	53	100	140	0.8		<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	<0.121	<0.377	<0.148	<0.13	<8.71	<0.0996	<0.22
Bromomethane (methyl bromide)	110	2,900	1,000	10	15	3.9	0.2		<9	<8.86	<7.73	<7.74	<9.29	<7.58	<0.243	<0.755	<0.296	<0.261	<17.4	<0.199	<0.44
Carbon disulfide	7,800	200,000	20,000	720	720	9	32		<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	<0.121	<0.377	<0.148	<0.13	<8.71	<0.0996	<0.22
Carbon tetrachloride	5	44	410	0.3	0.64	0.9	0.07		<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	<0.121	<0.377	<0.148	<0.13	<8.71	<0.0996	<0.22
Chlorobenzene	1,600	41,000	4,100	130	210	1.3	1		<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	<0.121	<0.377	<0.148	<0.13	<8.71	<0.0996	<0.22
Chloroethane	---	---	---	---	---	---	---		<9	<8.86	<7.73	7.74	<9.29	<7.58	<0.243	<0.755	<0.296	<0.261	<17.4	<0.199	<0.44
Chloroform	100	940	2,000	0.3	0.54	0.76	0.6		<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	<0.121	<0.377	<0.148	<0.13	<8.71	<0.0996	<0.22
Chloromethane (methyl chloride)	---	---	---	---	---	---	---		<9	<8.86	<7.73	<7.74	<9.29	<7.58	<0.243	<0.755	<0.296	<0.261	<17.4	<0.199	<0.44
cis-1,2-Dichloroethene	780	20,000	20,000	1,200	1,200	1,200	0.4		<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	<0.121	<0.377	<0.148	<0.13	<8.71	<0.0996	<0.22
cis-1,3-Dichloropropene	6.4	57	1,200	1.1	2.1	0.39	0.004		<3.6	<3.54	<3.09	<3.1	<3.72	<3.03	<0.0971	<0.302	<0.119	<0.104	<6.96	<0.0796	<0.176
Cyclohexanone	390,000 [2]	1,000,000 [2]	1,000,000 [2]	660 [2]	660 [2]	660 [2]	150 [2]		<90	<88.6	<77.3	<77.4	<92.9	<75.8	<2.43	<7.55	<2.96	<2.61	<174	<1.99	<4.4
Dibromochloromethane (chlorodibrom	1,600	41,000	41,000	1,300	1,300	1,300	0.4		<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	<0.121	<0.377	<0.148	<0.13	<8.71	<0.0996	<0.22
Dibromomethane (methylene bromide)	780 [2]	20,000 [2]	20,000 [2]	2,700 [2]	2,700 [2]	2,700 [2]	0.34 [2]		<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	<0.121	<0.377	<0.148	<0.13	<8.71	<0.0996	<0.22
Dichlorodifluoromethane	16,000 [2]	410,000 [2]	180,000 [2]	190 [2]	310 [2]	20 [2]	43 [2]		<9	<8.86	<7.73	<7.74	<9.29	<7.58	<0.243	<0.755	<0.296	<0.261	<17.4	<0.199	<0.44
Ethyl acetate	70,000 [2]	1,000,000 [2]	1,000,000 [2]	10,000 [2]	10,000 [2]	10,000 [2]	26 [2]		<45	<44.3	<38.6	<38.7	<46.5	<37.9	0.56	<3.77	0.68	0.54	<87.1	<0.996	<2.2
Ethyl ether	16,000 [2]	410,000 [2]	410,000 [2]	8,800 [2]	8,800 [2]	8,800 [2]	6.1 [2]		<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	<0.121	<0.377	<0.148	<0.13	<8.71	<0.0996	<0.22
Ethyl methacrylate	---	---	---	---	---	---	---		<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	<0.121	<0.377	<0.148	<0.13	<8.71	<0.0996	<0.22
Heptane	---	---	---	---	---	---	---		<18	<17.7	<15.5	<15.5	<18.6	<15.2	<0.486	<1.51	0.25	<0.522	<34.8	<0.398	<0.31
Hexachlorobutadiene	---	---	---	---	---	---	---		<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	<0.121	<0.377	<0.148	<0.13	<8.71	<0.0996	<0.22

Notes:

[1] Objectives are for Class I Groundwater.

[2] Non-TACO or provisional ROs provided by the IEPA.

'--- No objective has been published for this constituent by the IEPA, or the sample was not analyzed for this constituent.

Concentration exceeds one or more project remediation objective.

Table 4-3
2009-2011 Soil Analytical Results for Excavation Walls - VOCs
Former Ameren Champaign MGP Site

Constituent	Soil Ingestion Residential	Soil Ingestion Commercial	Soil Ingestion Construction	Soil Inhalation Residential	Soil Inhalation Commercial	Soil Inhalation Construction	Soil Component to Groundwater[1]	Sample Location: / Sample ID: / Sample Date: / Sample Depth (feet):	P7-BC1-SW P7-BC1-SW (8) 2/15/2011 8	P7-C1-SW P7-C1-SW (3) 2/15/2011 3	P7-C1-SW P7-C1-SW (21) 2/15/2011 21	P7-CD1-SW P7-CD1-SW (3) 2/17/2011 3	P7-CD1-SW P7-CD1-SW (8) 2/17/2011 8	P7-D1-W P7-D1-W (8) 3/2/2011 8	P7-DE1-W P7-DE1-W (3) 3/2/2011 3	P7-DE1-W P7-DE1-W (8) 3/2/2011 8	P8-H1-W P8-H1-W (3) 4/6/2011 3	P8-H4-W P8-H4-W (3) 4/6/2011 3	P9-D1-W P9-D1-W (8) 6/7/2011 8	P9-H1-W P9-H1-W (15) 5/25/2011 15	P9-H2-W P9-H2-W (8) 5/18/2011 8
Hexachloroethane	78	2,000	2,000	---	---	---	0.5		<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	<0.121	<0.377	<0.148	<0.13	<8.71	<0.0996	<0.22
Iodomethane	---	---	---	---	---	---	---		<9	<8.86	<7.73	<7.74	<9.29	<7.58	<0.243	<0.755	<0.296	<0.261	<17.4	<0.199	<0.44
Isopropylbenzene (cumene)	7,800 [2]	200,000 [2]	61,000 [2]	500 [2]	790 [2]	51 [2]	91 [2]		0.98	4.43	<3.86	2.5	<2.7	<6.2	0.189	0.35	1.03	0.489	15.9	<0.053	0.826
Methacrylonitrile	---	---	---	---	---	---	---		<45	<44.3	<38.6	<38.7	<46.5	<37.9	<1.21	<3.77	<1.48	<1.3	<87.1	<0.996	<2.2
Methyl Methacrylate	---	---	---	---	---	---	---		<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	<0.121	<0.377	<0.148	<0.13	<8.71	<0.0996	<0.22
Methyl tert-butyl ether	780	20,000	2,000	8,800	8,800	140	0.32		<1.8	<1.77	<1.55	<1.55	<1.86	<1.52	<0.0486	<0.151	<0.0593	<0.0522	<3.48	<0.0398	<0.088
Methylacrylate	2,300 [2]	61,000 [2]	6,100 [2]	6,500 [2]	6,500 [2]	6,500 [2]	0.89 [2]		<9	<8.86	<7.73	<7.74	<9.29	<7.58	<0.243	<0.755	<0.296	<0.261	<17.4	<0.199	<0.44
Methylene chloride (dichloromethane)	85	760	12,000	13	24	34	0.02		<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	<0.121	0.083	<0.148	<0.13	<8.71	<0.0996	<0.22
Naphthalene	1,600	41,000	4,100	170	270	1.8	12		71.3	110	2.6	98.5	370	2150	0.685	113	13.1	3.01	668	3.33	0.778
n-Butylbenzene	---	---	---	---	---	---	---		<4.5	<4.43	<3.86	0.8	1	4.81	1.19	0.22	2.92	1.19	<8.71	<0.0996	3.11
n-Hexane	---	---	---	290 [2]	290 [2]	15 [2]	---		<18	<17.7	<15.5	<15.5	<18.6	<15.2	<0.486	<1.51	<0.593	<0.522	<34.8	<0.398	0.088
Nitrobenzene	39	1,000	1,000	92	140	9.4	0.1		<90	<88.6	<77.3	<77.4	<92.9	<75.8	<2.43	<7.55	<2.96	<2.61	<174	<1.99	<4.4
n-Propylbenzene	---	---	---	---	---	---	---		<4.5	2.5	<3.86	1.4	1.5	5.61	0.254	0.33	0.796	0.367	12.6	0.037	0.992
Pentachloroethane	---	---	---	---	---	---	---		<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	<0.121	<0.377	<0.148	<0.13	<8.71	<0.0996	<0.22
p-Isopropyltoluene	---	---	---	---	---	---	---		<4.5	<4.43	<3.86	2.5	<4.65	2.8	0.422	<0.377	<0.148	<0.13	<8.71	<0.0996	<0.22
Propionitrile	---	---	---	---	---	---	---		<45	<44.3	<38.6	<38.7	<46.5	<37.9	<1.21	<3.77	<1.48	<1.3	<87.1	<0.996	<2.2
sec-Butylbenzene	---	---	---	---	---	---	---		<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	0.335	<0.377	0.459	0.136	<8.71	<0.0996	0.496
Styrene	16,000	410,000	41,000	1,500	1,500	430	4		<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	<0.121	<0.377	<0.148	<0.13	<8.71	<0.0996	<0.22
tert-Butylbenzene	---	---	---	---	---	---	---		<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	<0.121	<0.377	<0.148	<0.13	<8.71	<0.0996	<0.22
Tetrachloroethene	12	110	2,400	11	20	28	0.06		<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	<0.121	<0.377	<0.148	<0.13	<8.71	<0.0996	<0.22
Tetrahydrofuran	---	---	---	---	---	---	---		<45	<44.3	<38.6	<38.7	<46.5	<37.9	<1.21	<3.77	<1.48	<1.3	<87.1	<0.996	<2.2
trans-1,2-Dichloroethene	1,600	41,000	41,000	3,100	3,100	3,100	0.7		<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	<0.121	<0.377	<0.148	<0.13	<8.71	<0.0996	<0.22
trans-1,3-Dichloropropene	6.4	57	1,200	1.1	2.1	0.39	0.004		<3.6	<3.54	<3.09	<3.1	<3.72	<3.03	<0.0971	<0.302	<0.119	<0.104	<6.96	<0.0796	<0.176
Trichloroethene	58	520	1,200	5	8.9	12	0.06		<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	<0.121	<0.377	<0.148	<0.13	<8.71	<0.0996	<0.22
Trichlorofluoromethane	23,000 [2]	610,000 [2]	140,000 [2]	850 [2]	1,400 [2]	88 [2]	34 [2]		<4.5	<4.43	<3.86	<3.87	<4.65	<3.79	<0.121	<0.377	<0.148	<0.13	<8.71	<0.0996	<0.22
Vinyl acetate	78,000	1,000,000	200,000	1,000	1,600	10	170 [2]		<45	<44.3	<38.6	<38.7	<46.5	<37.9	<1.21	<3.77	<1.48	<1.3	<87.1	<0.996	<2.2
Vinyl chloride	0.46	7.9	170	0.28	1.1	1.1	0.01		<1.8	<1.77	<1.55	<1.55	<1.86	<1.52	<0.0486	<0.151	<0.0593	<0.0522	<3.48	<0.0398	<0.088

Notes:

[1] Objectives are for Class I Groundwater.

[2] Non-TACO or provisional ROs provided by the IEPA.

--- No objective has been published for this constituent by the IEPA, or the sample was not analyzed for this constituent.

Concentration exceeds one or more project remediation objective.

Table 4-4
2009-2011 Soil Analytical Results for Excavation Walls - SVOCs
Former Ameren Champaign MGP Site

Constituent	Soil Ingestion Residential	Soil Ingestion Commercial	Soil Ingestion Construction	Soil Inhalation Residential	Soil Inhalation Commercial	Soil Inhalation Construction	Soil Component to Groundwater[1]	Sample Location:	P1-A2-W	P1-A3-W	P1-A3-W	P1-A4-W	P2-A1-W	P3-B.5-W	P3-B.5-W	P3-C1-W	P3-C1-W	P3-A.5-W	P3-A.5-W	P3-B-W	P3-B-W	P3-C.5-W	P3-D-W	P3-E.5-W	P3-A1.5-W
								Sample ID:	P1-A2-W (0-3)	P1-A3-W (3)	P1-A3-W (20)	P1-A4-W (20)	P2-A1-W (3)	P3-B.5-W (8)	P3-B.5-W (15)	P3-C1-W (10)	P3-C1-W (18)	P3-A.5-W (8)	P3-A.5-W (20)	P3-B-W (8)	P3-B-W (20)	P3-C.5-W (20)	P3-D-W (8)	P3-E.5-W (8)	P3-A1.5-W (8)
								Sample Date:	6/30/2009	7/7/2009	7/7/2009	7/7/2009	10/23/2009	1/14/2010	1/14/2010	1/14/2010	1/14/2010	1/20/2010	1/20/2010	1/20/2010	1/20/2010	1/20/2010	1/20/2010	1/27/2010	1/27/2010
								Sample Depth (feet):	0-3	3'	20'	20'	3	8	15	10	18	8	20	8	20	20	8	8	8
Semivolatile Organic Compounds (mg/kg)																									
1,2,4-Trichlorobenzene	780	20,000	2,000	3,200	3,200	920	5		<32.4	<41.2	<5.73	<5.67	<11.7	<17.3	<14	<48	<42.6	<17.2	<14.3	<23.3	<14.4	<14.4	<16	<31.4	<32.6
1,2-Dichlorobenzene	7,000	180,000	18,000	560	560	310	17		<32.4	<41.2	<5.73	<5.67	<11.7	<17.3	<14	<48	<42.6	<17.2	<14.3	<23.3	<14.4	<14.4	<16	<31.4	<32.6
1,2-Diphenylhydrazine	---	---	---	---	---	---	---		<54.4	<69.3	<9.62	<9.52	<19.6	<29	<23.5	<80.6	<71.6	<28.9	<24	<39.1	<24.2	<24.1	<26.9	<52.7	<54.8
1,3-Dichlorobenzene	---	---	---	---	---	---	---		<32.4	<41.2	<5.73	<5.67	<11.7	<17.3	<14	<48	<42.6	<17.2	<14.3	<23.3	<14.4	<14.4	<16	<31.4	<32.6
1,4-Dichlorobenzene	---	---	---	11,000	17,000	340	2		<32.4	<41.2	<5.73	5.67	<11.7	<17.3	<14	<48	<42.6	<17.2	<14.3	<23.3	<14.4	<14.4	<16	<31.4	<32.6
2,4,5-Trichlorophenol	7,800	200,000	200,000	200	---	---	130		<22.6	<28.9	<4.01	<3.97	<8.17	<12.1	<9.81	<33.6	<29.8	<12.1	<9.99	<16.3	<10.1	<10.1	<11.2	<22	<22.8
2,4,6-Trichlorophenol	58	520	11,000	200	390	540	0.09		<22.6	<28.9	<4.01	<3.97	<8.17	<12.1	<9.81	<33.6	<29.8	<12.1	<9.99	<16.3	<10.1	<10.1	<11.2	<22	<22.8
2,4-Dichlorophenol	230	6,100	610	---	---	---	0.86		<32.4	<41.2	<5.73	<5.67	<11.7	<17.3	<14	<48	<42.6	<17.2	<14.3	<23.3	<14.4	<14.4	<16	<31.4	<32.6
2,4-Dimethylphenol	1,600	41,000	41,000	---	---	---	9		<32.4	<41.2	<5.73	<5.67	<11.7	70.7	22.3	46	209	24.4	5	43.9	9.8	6.6	<16	<31.4	9.9
2,4-Dinitrophenol	160	4,100	410	---	---	---	0.2		<64.7	<82.5	<11.5	11.3	<23.4	<34.5	<28	<95.9	<85.2	<34.4	<28.5	<46.5	<28.8	<28.7	<32.1	<62.8	<65.3
2,4-Dinitrotoluene	0.9	8.4	180	---	---	---	0.0008		<22.6	<28.9	<4.01	3.97	<8.17	<12.1	<9.81	<33.6	<29.8	<12.1	<9.99	<16.3	<10.1	<10.1	<11.2	<22	<22.8
2,6-Dinitrotoluene	0.9	8.4	180	---	---	---	0.0007		<22.6	<28.9	<4.01	<3.97	<8.17	<12.1	<9.81	<33.6	<29.8	<12.1	<9.99	<16.3	<10.1	<10.1	<11.2	<22	<22.8
2-Chloronaphthalene (beta-chloronaphthalene)	6,300 [2]	160,000 [2]	160,000 [2]	---	---	---	49 [2]		<22.6	<28.9	<4.01	<3.97	<8.17	<12.1	<9.81	<33.6	<29.8	<12.1	<9.99	<16.3	<10.1	<10.1	<11.2	<22	<22.8
2-Chlorophenol	390	10,000	10,000	53,000	53,000	53,000	4		<32.4	<41.2	<5.73	<5.67	<11.7	<17.3	<14	<48	<42.6	<17.2	<14.3	<23.3	<14.4	<14.4	<16	<31.4	<32.6
2-Methoxy-4-methylphenol	---	---	---	---	---	---	---		<42.1	<53.6	<7.44	<7.37	<15.2	<22.4	<18.2	<62.3	<55.4	<22.4	<18.6	<30.2	<18.7	<18.7	<20.9	<40.8	<42.4
2-Methylnaphthalene	310 [2]	8,200 [2]	820 [2]	---	---	---	7.2 [2]		93.4	207	84.8	81.3	21.4	194	6.4	367	232	85.5	<9.99	210	<10.1	4.6	315	84	23.9
2-Nitroaniline	230 [2]	6,100 [2]	610 [2]	35 [2]	56 [2]	3.6 [2]	0.14 [2]		<64.7	<82.5	<11.5	<11.3	<23.4	<34.5	<28	<95.9	<85.2	<34.4	<28.5	<46.5	<28.8	<28.7	<32.1	<62.8	<65.3
2-Nitrophenol	---	---	---	---	---	---	---		<22.6	<28.9	<4.01	<3.97	<8.17	<12.1	<9.81	<33.6	<29.8	<12.1	<9.99	<16.3	<10.1	<10.1	<11.2	<22	<22.8
3,3´-Dichlorobenzidine	1	13	280	---	---	---	0.007		<22.6	<28.9	<4.01	<3.97	<8.17	<12.1	<9.81	<33.6	<29.8	<12.1	<9.99	<16.3	<10.1	<10.1	<11.2	<22	<22.8
3-Nitroaniline	23 [2]	610 [2]	61 [2]	250 [2]	400 [2]	26 [2]	0.01 [2]		<64.7	<82.5	<11.5	<11.3	<23.4	<34.5	<28	<95.9	<85.2	<34.4	<28.5	<46.5	<28.8	<28.7	<32.1	<62.8	<65.3
4,6-Dinitro-2-methylphenol	7.8	200	820	---	---	---	0.0031		<64.7	<82.5	<11.5	<11.3	<23.4	<34.5	<28	<95.9	<85.2	<34.4	<28.5	<46.5	<28.8	<28.7	<32.1	<62.8	<65.3
4-Bromophenyl phenyl ether	---	---	---	---	---	---	---		<22.6	<28.9	<4.01	<3.97	<8.17	<12.1	<9.81	<33.6	<29.8	<12.1	<9.99	<16.3	<10.1	<10.1	<11.2	<22	<22.8
4-Chloro-3-methylphenol	---	---	---	---	---	---	---		<32.4	<41.2	<5.73	<5.67	<11.7	<17.3	<14	<48	<42.6	<17.2	<14.3	<23.3	<14.4	<14.4	<16	<31.4	<32.6
4-Chloroaniline (p-chloroaniline)	310	8,200	820	---	---	---	0.7		<32.4	<41.2	<5.73	<5.67	<11.7	<17.3	<14	<48	<42.6	<17.2	<14.3	<23.3	<14.4	<14.4	<16	<31.4	<32.6
4-Chlorophenyl phenyl ether	---	---	---	---	---	---	---		<22.6	<28.9	<4.01	<3.97	<8.17	<12.1	<9.81	<33.6	<29.8	<12.1	<9.99	<16.3	<10.1	<10.1	<11.2	<22	<22.8
4-Nitroaniline (p-nitroaniline)	230 [2]	6,100 [2]	610 [2]	1,000 [2]	1,600 [2]	110 [2]	0.1 [2]		<32.4	<41.2	<5.73	<5.67	<11.7	<17.3	<14	<48	<42.6	<17.2	<14.3	<23.3	<14.4	<14.4	<16	<31.4	<32.6
4-Nitrophenol	630 [2]	16,000 [2]	16,000 [2]	---	---	---	0.24 [2]		<22.6	<28.9	<4.01	<3.97	<8.17	<12.1	<9.81	<33.6	<29.8	<12.1	<9.99	<16.3	<10.1	<10.1	<11.2	<22	<22.8
Aniline	110 [2]	1,000 [2]	1,400 [2]	81 [2]	130 [2]	8.4 [2]	0.063 [2]		<32.4	<41.2	<5.73	<5.67	<11.7	<17.3	<14	<48	<42.6	<17.2	<14.3	<23.3	<14.4	<14.4	<16	<31.4	<32.6
Azobenzene	---	---	---	---	---	---	---		<22.6	<28.9	<4.01	<3.97	<8.17	<12.1	<9.81	<33.6	<29.8	<12.1	<9.99	<16.3	<10.1	<10.1	<11.2	<22	<22.8
Benzidine	0.003 [2]	0.02 [2]	0.54 [2]	0.009 [2]	0.02 [2]	0.02 [2]	0.0000022		<68.3	<87.1	<12.1	<12	<24.7	<36.5	<29.6	<101	<90	<36.4	<30.1	<49.1	<30.4	<30.3	<33.9	<66.3	<68.9
Benzoic acid	310,000	1,000,000	820,000	---	---	---	400		<97.1	<124	<17.2	<17	<35	<51.8	<42	<144	<128	<51.7	<42.8	<69.8	<43.2	<43.1	<48.1	<94.2	<97.9
Benzyl alcohol	39,000	1,000,000	200,000	6,100	6,100	6,100	15		<32.4	<41.2	<5.73	<5.67	<11.7	<17.3	<14	<48	<42.6	<17.2	<14.3	<23.3	<14.4	<14.4	<16	<31.4	<32.6
Bis(2-chloroethoxy)methane	---	---	---	---	---	---	---		<22.6	<28.9	<4.01	<3.97	<8.17	<12.1	<9.81	<33.6	<29.8	<12.1	<9.99	<16.3	<10.1	<10.1	<11.2	<22	<22.8
Bis(2-chloroethyl)ether	0.6	5	75	0.2	0.47	0.66	0.0004		<32.4	<41.2	<5.73	<5.67	<11.7	<17.3	<14	<48	<42.6	<17.2	<14.3	<23.3	<14.4	<14.4	<16	<31.4	<32.6
Bis(2-chloroisopropyl)ether	3,100 [2]	82,000 [2]	8,200 [2]	1,300 [2]	1,300 [2]	1,300 [2]	2.4 [2]		<22.6	<28.9	<4.01	<3.97	<8.17	<12.1	<9.81	<33.6	<29.8	<12.1	<9.99	<16.3	<10.1	<10.1	<11.2	<22	<22.8
Butyl benzyl phthalate	16,000	410,000	410,000	930	930	930	930		<22.6	<28.9	<4.01	<3.97	<8.17	<12.1	<9.81	<33.6	<29.8	<12.1	<9.99	<16.3	<10.1	<10.1	<11.2	<22	<22.8
Carbazole	32	290	6,200	---	---	---	0.6		<32.4	<41.2	<5.73	<5.67	3.6	46.7	<14	61	31	12	<14.3	23.7	<14.4	<14.4	6.2	<31.4	<32.6
Dibenzofuran	160 [2]	4,100 [2]	4,100 [2]	---	---	---	6.1 [2]		<22.6	14	3.9	4.35	16.6	114	<9.81	163	87.3	27.7	<9.99	64.1	<10.1	<10.1	16.3	<22	8.8
Diethyl phthalate	63,000	1,000,000	1,000,000	2,000	2,000	2,000	470		<32.4	<41.2	<5.73	<5.67	<11.7	<17.3	<14	<48	<42.6	<17.2	<14.3	<23.3	<14.4	<14.4	<16	<31.4	<32.6
Dimethyl phthalate	---	---	---	---	---	---	---		<22.6	<28.9	<4.01	<3.97	<8.17	<12.1	<9.81	<33.6	<29.8	<12.1	<9.99	<16.3	<10.1	<10.1	<11.2	<22	<22.8
Di-n-butyl phthalate	7,800	200,000	200,000	2,300	2,300	2,300	2,300		<22.6	<28.9	<4.01	<3.97	<8.17	<12.1	<9.81	<33.6	<29.8	<12.1	<9.99	<16.3	<10.1	<10.1	<11.2	<22	<22.8
Di-n-octyl phthalate	1,600	41,000	4,100	10,000	10,000	10,000	10,000		<22.6	<28.9	<4.01	<3.97	<8.17	<12.1	<9.81	<33.6	<29.8	<12.1	<9.99	<16.3	<10.1	<10.1	<11.2	<22	<22.8
Hexachlorobenzene	0.4	4	78	1	1.8	2.6	2		<22.6	<28.9	<4.01	<3.97	<8.17	<12.1	<9.81	<33.6	<29.8	<12.1	<9.99	<16.3	<10.1	<10.1	<11.2	<22	<22.8
Hexachlorobutadiene	---	---	---	---	---	---	---		<32.4	<41.2	<5.73	<5.67	<11.7	<17.3	<14	<48	<42.6	<17.2	<14.3	<23.3	<14.4	<14.4	<16	<31.4	<32.6
Hexachlorocyclopentadiene	550	14,000	14,000	10	16	1.1	400		<22.6	<28.9	<4.01	<3.97	<8.17	<12.1	<9.81	<33.6	<29.8	<12.1	<9.99	<16.3	<10.1	<10.1	<11.2	<22	<22.8
Hexachloroethane	78	2,000	2,000	---	---	---	0.5		<32.4	<41.2	<5.73	<5.67	<11.7	<17.3	<14	<48	<42.6	<17.2	<14.3	<23.3	<14.4	<14.4	<16	<31.4	<32.6
Isophorone	15,600	410,000	410,000	4,600	4,600	4,600	8		<22.6	<28.9	<4.01	<3.97	<8.17	<12.1	<9.81	<33.6	<29.8	<12.1	<9.99	<16.3	<10.1	<10.1	<11.2	<22	<22.8
m,p-Cresol	390 [3]	10,000 [3]	1,000 [3]	8,100 [4]	8,100 [4]	8,100 [4]	0.2 [3]		<32.4	<41.2	<5.73	<5.67	<11.7	37.7	60.8	<48	305	32.2	5	50.3	37	3.6	<16	<31.4	12
Nitrobenzene	39	1,000	1,000	92	140	9.4	0.1		<32.4	<41.2	<5.73	<5.67	<11.7	<17.3	<14	<48	<42.6	<17.2	<14.3	<23.3	<14.4	<14.4	<16	<31.4	<32.6
N-Nitrosodimethylamine	0.013	0.11	1.6	0.012	0.023	0.032	0.0000067		<32.4	<41.2	<5.73	<5.67	<11.7	<17.3	<14	<48	<42.6	<17.2	<14.3	<23.3	<14.4	<14.4	<16	<31.4	<32.6
N-Nitroso-di-n-propylamine	0.09	0.8	18	---	---	---	0.00005		<32.4	<41.2	<5.73	<5.67	<11.7	<17.3	<14	<48	<42.6	<17.2	<14.3	<23.3	<14.4	<14.4	<16	<31.4	<32.6
N-Nitrosodiphenylamine	130	1,200	25,000	---	---	---	1		<32.4	<41.2	<5.73	<5.67	<11.7	<17.3	<14	<48	<42.6	<17.2	<14.3	<23.3	<14.4	<14.4	<16	<31.4	<32.6
o-Cresol	3,900	100,000	100,000	---	---	---	15		<32.4	<41.2	<5.73	<5.67	<11.7	17	22	<48	107	14	<14.3	22	15.4	<14.4	<16	<31.4	<32.6
Pentachlorophenol	3	24	520	---	---	---	0.03		<129	<165	<22.9	22.7	<46.7	<69.1	<56.1	<192	<170	<68.9	<57.1	<93.1	<57.6	<57.5	<64.2	<126	<131
Phenol	23,000	610,000	61,000	---	---	---	100		<22.6	<28.9	<4.01	<3.97	<8.17	9.2	35	<33.6	61.8	22.7	4.5	30	33.7	<10.1	<11.2	<22	<22.8
Pyridine	78 [4,]	2,000 [4,]	2,000 [4,]	200,000 [4,]	200,000 [4,]	200,000 [4,]	0.032 [4,]		<32.4	<41.2	<5.73	<5.67	<11.7	<17.3	<14	<48	<42.6	<17.2	<14.3	<23.3	<14.4	<14.4	<16	<31.4	<32.6

Notes:

[1] Objectives are for Class I Groundwater.

[2] Non-TACO or provisional ROs provided by the IEPA.

[3] Objective is for p-cresol.

[4] Objective is for m-cresol.

--- No objective has been published for this constituent by the IEPA, or the sample was not analyzed for this constituent.

Concentration exceeds one or more project remediation objective.

*Note: Hatched columns represent areas that have been removed during remediation.

Table 4-4
2009-2011 Soil Analytical Results for Excavation Walls - SVOCs
Former Ameren Champaign MGP Site

Constituent	Soil Ingestion Residential	Soil Ingestion Commercial	Soil Ingestion Construction	Soil Inhalation Residential	Soil Inhalation Commercial	Soil Inhalation Construction	Soil Component to Groundwater[1]	Sample Location:	P3-A1.5-W	P3-A2.5-W	P4-A1-W	P4-A2-W	P4-A2-W	P4-A3-W	P5-A3-W	P7-B1-SW
								Sample ID:	P3-A1.5-W (20)	P3-A2.5-W (20)	P4-A1-W (20)	P4-A2-W (3)	P4-A2-W (20)	P4-A3-W (3)	P5-A3-W (3)	P7-B1-SW (3)
								Sample Date:	1/27/2010	1/27/2010	3/31/2010	3/29/2010	3/31/2010	3/29/2010	7/14/2010	2/15/2011
								Sample Depth (feet):	20	20	20	3	20	3	3	3
Semivolatile Organic Compounds (mg/kg)																
1,2,4-Trichlorobenzene	780	20,000	2,000	3,200	3,200	920	5		<2.79	<0.551	<27.2	<34.7	<14.1	<35.3	<6.7	<15.8
1,2-Dichlorobenzene	7,000	180,000	18,000	560	560	310	17		<2.79	<0.551	<27.2	<34.7	<14.1	<35.3	<6.7	<15.8
1,2-Diphenylhydrazine	---	---	---	---	---	---	---		<4.69	<0.926	<45.7	<58.3	<23.7	<59.4	<11.3	<26.6
1,3-Dichlorobenzene	---	---	---	---	---	---	---		<2.79	<0.551	<27.2	<34.7	<14.1	<35.3	<6.7	<15.8
1,4-Dichlorobenzene	---	---	---	11,000	17,000	340	2		<2.79	<0.551	<27.2	<34.7	<14.1	<35.3	<6.7	<15.8
2,4,5-Trichlorophenol	7,800	200,000	200,000	200	---	---	130		<1.95	<0.386	<19	<24.3	<9.87	<24.7	<4.69	<11.1
2,4,6-Trichlorophenol	58	520	11,000	200	390	540	0.09		<1.95	<0.386	<19	<24.3	<9.87	<24.7	<4.69	<11.1
2,4-Dichlorophenol	230	6,100	610	---	---	---	0.86		<2.79	<0.551	<27.2	<34.7	<14.1	<35.3	<6.7	<15.8
2,4-Dimethylphenol	1,600	41,000	41,000	---	---	---	9		4.75	1.75	<27.2	<34.7	<14.1	<35.3	<6.7	<15.8
2,4-Dinitrophenol	160	4,100	410	---	---	---	0.2		<5.58	<1.1	<54.4	<69.4	<28.2	<70.7	<13.4	<31.7
2,4-Dinitrotoluene	0.9	8.4	180	---	---	---	0.0008		<1.95	<0.386	<19	<24.3	<9.87	<24.7	<4.69	<11.1
2,6-Dinitrotoluene	0.9	8.4	180	---	---	---	0.0007		<1.95	<0.386	<19	<24.3	<9.87	<24.7	<4.69	<11.1
2-Chloronaphthalene (beta-chloronaphthalene)	6,300 [2]	160,000 [2]	160,000 [2]	---	---	---	49 [2]		<1.95	<0.386	<19	<24.3	<9.87	<24.7	<4.69	<11.1
2-Chlorophenol	390	10,000	10,000	53,000	53,000	53,000	4		<2.79	<0.551	<27.2	<34.7	<14.1	<35.3	<6.7	<15.8
2-Methoxy-4-methylphenol	---	---	---	---	---	---	---		<3.63	<0.717	<35.4	<45.1	<18.3	<45.9	<8.72	<20.6
2-Methylnaphthalene	310 [2]	8,200 [2]	820 [2]	---	---	---	7.2 [2]		<1.95	0.28	589	175	169	338	197	7.7
2-Nitroaniline	230 [2]	6,100 [2]	610 [2]	35 [2]	56 [2]	3.6 [2]	0.14 [2]		<5.58	<1.1	<54.4	<69.4	<28.2	<70.7	<13.4	<31.7
2-Nitrophenol	---	---	---	---	---	---	---		<1.95	<0.386	<19	<24.3	<9.87	<24.7	<4.69	<11.1
3,3´-Dichlorobenzidine	1	13	280	---	---	---	0.007		<1.95	<0.386	<190	<24.3	<9.87	<24.7	<4.69	<11.1
3-Nitroaniline	23 [2]	610 [2]	61 [2]	250 [2]	400 [2]	26 [2]	0.01 [2]		<5.58	<1.1	<54.4	<69.4	<28.2	<70.7	<13.4	<31.7
4,6-Dinitro-2-methylphenol	7.8	200	820	---	---	---	0.0031		<5.58	<1.1	<54.4	<69.4	<28.2	<70.7	<13.4	<31.7
4-Bromophenyl phenyl ether	---	---	---	---	---	---	---		<1.95	<0.386	<19	<24.3	<9.87	<24.7	<4.69	<11.1
4-Chloro-3-methylphenol	---	---	---	---	---	---	---		<2.79	<0.551	<27.2	<34.7	<14.1	<35.3	<6.7	<15.8
4-Chloroaniline (p-chloroaniline)	310	8,200	820	---	---	---	0.7		<2.79	<0.551	<27.2	<34.7	<14.1	<35.3	<6.7	<15.8
4-Chlorophenyl phenyl ether	---	---	---	---	---	---	---		<1.95	<0.386	<19	<24.3	<9.87	<24.7	<4.69	<11.1
4-Nitroaniline (p-nitroaniline)	230 [2]	6,100 [2]	610 [2]	1,000 [2]	1,600 [2]	110 [2]	0.1 [2]		<2.79	<0.551	<27.2	<34.7	<14.1	<35.3	<6.7	<15.8
4-Nitrophenol	630 [2]	16,000 [2]	16,000 [2]	---	---	---	0.24 [2]		<1.95	<0.386	<19	<24.3	<9.87	<24.7	<4.69	<11.1
Aniline	110 [2]	1,000 [2]	1,400 [2]	81 [2]	130 [2]	8.4 [2]	0.063 [2]		<2.79	<0.551	<27.2	<34.7	<14.1	<35.3	<6.7	<15.8
Azobenzene	---	---	---	---	---	---	---		<1.95	<0.386	<19	<24.3	<9.87	<24.7	<4.69	<11.1
Benzidine	0.003 [2]	0.02 [2]	0.54 [2]	0.009 [2]	0.02 [2]	0.02 [2]	0.0000022		<5.89	<1.16	<575	<73.3	<29.8	<74.6	<14.2	---
Benzoic acid	310,000	1,000,000	820,000	---	---	---	400		<8.37	<1.65	<81.6	<104	<42.3	<106	<20.1	<47.5
Benzyl alcohol	39,000	1,000,000	200,000	6,100	6,100	6,100	15		<2.79	<0.551	<27.2	<34.7	<14.1	<35.3	<6.7	<15.8
Bis(2-chloroethoxy)methane	---	---	---	---	---	---	---		<1.95	<0.386	<19	<24.3	<9.87	<24.7	<4.69	<11.1
Bis(2-chloroethyl)ether	0.6	5	75	0.2	0.47	0.66	0.0004		<2.79	<0.551	<27.2	<34.7	<14.1	<35.3	<6.7	<15.8
Bis(2-chloroisopropyl)ether	3,100 [2]	82,000 [2]	8,200 [2]	1,300 [2]	1,300 [2]	1,300 [2]	2.4 [2]		<1.95	<0.386	<19	<24.3	<9.87	<24.7	<4.69	<11.1
Butyl benzyl phthalate	16,000	410,000	410,000	930	930	930	930		<1.95	<0.386	<19	<24.3	<9.87	<24.7	<4.69	<11.1
Carbazole	32	290	6,200	---	---	---	0.6		<2.79	<0.551	<27.2	<34.7	<14.1	<35.3	<6.7	<15.8
Dibenzofuran	160 [2]	4,100 [2]	4,100 [2]	---	---	---	6.1 [2]		<1.95	<0.386	24.8	<24.3	6.9	12	9.76	7.2
Diethyl phthalate	63,000	1,000,000	1,000,000	2,000	2,000	2,000	470		<2.79	<0.551	<27.2	<34.7	<14.1	<35.3	<6.7	<15.8
Dimethyl phthalate	---	---	---	---	---	---	---		<1.95	<0.386	<19	<24.3	<9.87	<24.7	<4.69	<11.1
Di-n-butyl phthalate	7,800	200,000	200,000	2,300	2,300	2,300	2,300		<1.95	<0.386	<19	<24.3	<9.87	<24.7	<4.69	<11.1
Di-n-octyl phthalate	1,600	41,000	4,100	10,000	10,000	10,000	10,000		<1.95	<0.386	<19	<24.3	<9.87	<24.7	<4.69	<11.1
Hexachlorobenzene	0.4	4	78	1	1.8	2.6	2		<1.95	<0.386	<19	<24.3	<9.87	<24.7	<4.69	<11.1
Hexachlorobutadiene	---	---	---	---	---	---	---		<2.79	<0.551	<27.2	<34.7	<14.1	<35.3	<6.7	<15.8
Hexachlorocyclopentadiene	550	14,000	14,000	10	16	1.1	400		<1.95	<0.386	<19	<24.3	<9.87	<24.7	<4.69	<11.1
Hexachloroethane	78	2,000	2,000	---	---	---	0.5		<2.79	<0.551	<27.2	<34.7	<14.1	<35.3	<6.7	<15.8
Isophorone	15,600	410,000	410,000	4,600	4,600	4,600	8		<1.95	<0.386	<19	<24.3	<9.87	<24.7	<4.69	<11.1
m,p-Cresol	390 [3]	10,000 [3]	1,000 [3]	8,100 [4]	8,100 [4]	8,100 [4]	0.2 [3]		0.88	0.35	<27.2	<34.7	<14.1	<35.3	<6.7	<15.8
Nitrobenzene	39	1,000	1,000	92	140	9.4	0.1		<2.79	<0.551	<27.2	<34.7	<14.1	<35.3	<6.7	<15.8
N-Nitrosodimethylamine	0.013	0.11	1.6	0.012	0.023	0.032	0.0000067		<2.79	<0.551	<27.2	<34.7	<14.1	<35.3	<6.7	<15.8
N-Nitroso-di-n-propylamine	0.09	0.8	18	---	---	---	0.00005		<2.79	<0.551	<27.2	<34.7	<14.1	<35.3	<6.7	<15.8
N-Nitrosodiphenylamine	130	1,200	25,000	---	---	---	1		<2.79	<0.551	<27.2	<34.7	<14.1	<35.3	<6.7	<15.8
o-Cresol	3,900	100,000	100,000	---	---	---	15		<2.79	0.22	<27.2	<34.7	<14.1	<35.3	<6.7	<15.8
Pentachlorophenol	3	24	520	---	---	---	0.03		<11.2	<2.21	<109	<139	<56.4	<141	<26.8	<63.3
Phenol	23,000	610,000	61,000	---	---	---	100		<1.95	<0.386	<19	<24.3	<9.87	<24.7	<4.69	<11.1
Pyridine	78 [4,*]	2,000 [4,*]	2,000 [4,*]	200,000 [4,*]	200,000 [4,*]	200,000 [4,*]	0.032 [4,*]		<2.79	<0.551	<27.2	<34.7	<14.1	<35.3	<6.7	<15.8

Notes:

[1] Objectives are for Class I Groundwater.

[2] Non-TACO or provisional ROs provided by the IEPA.

[3] Objective is for p-cresol.

[4] Objective is for m-cresol.

* --- No objective has been published for this constituent by the IEPA, or the sample was not analyzed for this constituent.

Concentration exceeds one or more project remediation objective.

*Note: Hatched columns represent areas that have been removed during remediation.

Table 4-5
2009-2011 Soil Analytical Results for Excavation Walls - Inorganics
Former Ameren Champaign MGP Site

Constituent	Soil Ingestion Residential	Soil Ingestion Commercial	Soil Ingestion Construction	Soil Inhalation Residential	Soil Inhalation Commercial	Soil Inhalation Construction	Soil Component to Groundwater[1]	IEPA Accepted Background Levels for non-MSA	Location: / Sample ID: / Sample Date: / Depth (feet):	P1-A4-W P1-A4-W 7/7/2009 3'	P2-A2-W P2-A2-W (3) 10/27/2009 3	P9-D1-W P9-D1-W (3) 6/7/2011 3	P9-E1-W P9-E1-W (8) 6/7/2011 8	P9-F1-W P9-F1-W (3) 5/25/2011 3	P9-H4-W P9-H4W (3) 5/18/2011 3
Metals (mg/kg)															
Mercury	23	610	61	10	16	0.10	6.4	0.06		0.048	0.044	0.045	0.012	0.052	0.062
Selenium	390	10,000	1,000	---	---	---	3.3	0.48		3.78	7.02	<0.588	<0.545	<0.566	<0.566
Arsenic	13.0	13.0	61.0	750	1,200	25,000	30	13		<1.3	2.4	14	8.06	14.1	15.3
Barium	5,500	140,000	14,000	690,000	910,000	870,000	1,800	110		92.5	94.5	208	89.1	180	159
Cadmium	78	2,000	200	1,800	2,800	59,000	59	0.6		0.83	0.66	0.33	<0.2	<0.2	0.2
Chromium	230	6,100	4,100	270	420	690	32	16.2		19.9	19.1	25.5	34.3	28	26
Lead	400	800	700	---	---	---	107	36		19.8	29.6	15.4	16.1	17	19.8
Silver	390	10,000	1,000	---	---	---	39	0.55		<0.52	<0.52	<0.55	<0.55	<0.54	<0.54
Cyanide (Amenable)	1,600	41,000	4,100	---	---	---	40	0.51		Interference	Interference	<0.731	1.05	13	9.8
Cyanide (Total)										4.14	9.3	2.41	2.16	29	37

Notes:

'[1] Objectives are for Class I Groundwater.

'--- No objective has been published for this constituent by the IEPA, or the sample was not analyzed for this constituent.

Concentration exceeds one or more project remediation objective.

Table 4-6
2009-2011 Soil Analytical Results for Excavation Floors - BTEX and PNAs
Former Ameren Champaign MGP Site

Constituent	Residential	Soil Ingestion Commercial	Construction	Residential	Soil Inhalation Commercial	Construction	Soil Component Groundwater	IEPA Accepted Background Levels for MSA	Sample Location: / Sample ID: / Sample Date: / ample Depth (feet):	P1-B2-F P1-B2-F(28) 7/16/2009 28'	P1-D3.5-F P1-D3.5-F(25) 7/30/2009 25'	P1-D5-F P1-D5-F(25) 7/30/2009 25'	P1-F3.5-F P1-F3.5-F(20.5) 7/31/2009 20.5'	P1-H1-F P1-H1-F (20) 8/19/2009 20'	P1-F2-F P1-F2-F (21) 9/9/2009 21	P1-F5-F P1-F5-F (20) 9/11/2009 20	P1-H3.5-F P1-H3.5-F (20) 9/10/2009 20	P1-H5-F P1-H5-F (20.5) 9/10/2009 20.5	P2-B2.5-F P2-B2.5-F (22) 10/27/2009 22	P2-B4-F P2-B4-F (22) 10/30/2009 22	P2-C4-F P2-C4-F (22) 10/30/2009 22	P2-D2-F P2-D2-F (22) 10/30/2009 22	P2-D4-F P2-D4-F (22) 10/30/2009 22	P2-FG-1.5-F P2-FG-1.5-F (28) 11/19/2009 28	P2-FG-3.5-F P2-FG-3.5-F (24) 11/19/2009 24
BTEX Constituents (mg/kg)																									
Benzene	12	100	2,300	0.8	1.6	2.2	0.03	---		30.2	5.39	20.9	3.02	18.6	16.1	41.0	2.58	14.4	5.62	76.4	14.5	35.8	133	8.37	21.9
Ethylbenzene	7,800	200,000	20,000	400	400	58	13	---		<0.846	4	2.7	1.3	11.1	1.1	5.11	3.23	6.95	6.64	3.91	0.96	<26.300	19	0.19	0.275
Toluene	16,000	410,000	410,000	650	650	42	12	---		<0.846	6.4	30.7	3.9	11.3	19	2.6	2.1	1.9	6.35	10.5	5.86	41.5	186	10.1	16
m,p-Xylenes	16,000	410,000	41,000	420[1]	420[1]	5.9[2]	200[2]	---		<0.846	6.77	3.6	4.1	---	3.69	11.9	5.74	4.9	6.64	6.78	3.82	25	105	0.956	1.44
o-Xylene	16,000	410,000	41,000	410	410	6.5	190	---		<0.846	3.4	1.9	2.4	---	1.9	9.27	2.9	5.73	3.32	3.04	1.8	11	45.4	0.55	0.788
Xylenes	16,000	410,000	41,000	320	320	5.6	150	---		<0.846	10.17	5.5	6.5	18.7	5.59	21.17	8.64	10.63	9.96	9.82	5.62	36	150.4	1.506	2.228
PNA Constituents (mg/kg)																									
Acenaphthene	4,700	120,000	120,000	---	---	---	570	0.13		1.42	1.83	0.302	6	0.324	1.22	0.008	0.023	2.83	0.924	0.061	1.1	3.49	5.78	0.006	0.005
Acenaphthylene	2,300[4]	61,000[4]	61,000[4]	---	---	---	85[4]	0.07		1.48	1.63	0.063	21.1	0.162	7.96	0.038	0.059	0.478	0.765	0.367	8.99	34.8	60.3	0.071	0.025
Anthracene	23,000	610,000	610,000	---	---	---	12,000	0.4		1.36	1.6	0.148	15.1	0.265	4.09	0.019	0.029	1.53	0.651	0.131	3.34	11.3	19.5	0.041	0.017
Benzo(a)anthracene	0.90	8	170	---	---	---	2	1.8		0.756	1.16	0.101	10.1	0.089	2.99	0.015	0.02	0.942	0.394	0.11	1.89	6.98	13.1	0.03	0.014
Benzo(a)pyrene	0.09	0.80	17	---	---	---	8	2.1		0.686	1.18	0.105	11.3	0.075	3.12	0.015	0.018	0.845	0.391	0.094	2.1	7.1	14.4	0.028	0.011
Benzo(b)fluoranthene	0.90	8	170	---	---	---	5	2.1		0.549	0.996	0.096	8.4	0.07	2.27	0.012	0.015	0.668	0.31	0.071	1.51	5.83	11.2	0.022	0.009
Benzo(g,h,i)perylene	2,300[4]	61,000[4]	61,000[4]	---	---	---	27,000[4]	1.7		0.238	0.599	0.056	4.77	0.035	1.42	0.009	0.009	0.377	0.137	0.037	0.82	2.67	5.84	0.012	0.006
Benzo(k)fluoranthene	9	78	1,700	---	---	---	49	1.7		0.194	0.382	0.032	2.79	0.021	0.757	0.004	0.005	0.227	0.096	0.026	0.522	1.99	3.8	0.007	<0.004
Bis(2-ethylhexyl)phthalate	46	410	4,100	31,000	31,000	31,000	3,600	---		<0.371	<0.752	<0.075	<7.62	<0.077	<7.46	<0.073	<0.076	<1.87	<0.372	<0.375	<1.95	<7.8	<7.54	<0.074	<0.074
Chrysene	88	780	17,000	---	---	---	160	2.7		0.848	1.29	0.108	11.3	0.094	3.04	0.017	0.021	0.949	0.455	0.091	2.18	7.82	14.1	0.031	0.011
Dibenzo(a,h)anthracene	0.09	0.80	17	---	---	---	2	0.42		0.073	0.14	0.014	1.1	0.009	<0.378	<0.004	<0.004	0.093	0.036	<0.019	0.189	0.667	1.32	<0.004	<0.004
Fluoranthene	3,100	82,000	82,000	---	---	---	4,300	4.1		1.78	2.52	0.212	19.4	0.225	5.68	0.028	0.042	2.11	0.841	0.174	3.99	17	32.4	0.064	0.023
Fluorene	3,100	82,000	82,000	---	---	---	560	0.18		1.58	1.97	0.174	16.6	0.241	4.62	0.021	0.048	1.67	0.688	0.158	3.85	14.9	26.2	0.041	0.015
Indeno(1,2,3-cd)pyrene	0.90	8.00	170	---	---	---	14	1.6		0.226	0.476	0.044	3.56	0.031	1.03	0.006	0.007	0.295	0.11	0.028	0.617	2.23	4.54	0.009	0.004
Naphthalene	1,600	41,000	4,100	170	270	1.8	12	0.2		4.53	12.4	0.66	136	8.82	36.5	0.548	0.608	20.2	5.31	1.46	30.2	134	223	0.106	0.103
Phenanthrene	2,300[4]	61,000[4]	61,000[4]	---	---	---	200[4]	2.5		4.83	6.45	0.557	53.9	0.702	14.8	0.066	0.107	5.63	2.49	0.509	12.8	52	98.2	0.172	0.062
Pyrene	2,300	61,000	61,000	---	---	---	4,200	3		2.55	3.63	0.3	30.2	0.296	8.17	0.043	0.061	2.91	1.24	0.258	5.88	23.3	44.3	0.095	0.034

Notes:
[1] Objective is for m-xylene
[2] Objective is for p-xylene
[3] Objectives are for Class I groundwater.
[4] Non-TACO or provisional ROs provided by the IEPA.
--- No objective has been published for this constituent by the IEPA, or the sample was not analyzed for this constituent.
Concentration exceeds one or more project remediation objective.

Table 4-6
2009-2011 Soil Analytical Results for Excavation Floors - BTEX and PNAs
Former Ameren Champaign MGP Site

Constituent	Residential	Soil Ingestion Commercial	Construction	Residential	Soil Inhalation Commercial	Construction	Soil Component Groundwater	IEPA Accepted Background Levels for MSA	Sample Location: Sample ID: Sample Date: ample Depth (feet):	P2-E2.5-F P2-E2.5-F (24) 11/25/2009 24	P2-E4-F P2-E4-F (24) 11/25/2009 24	P3-B2-F P3-B2-F (22) 1/13/2010 22	P3-B2-F P3-B2-F (24) 1/13/2010 24	P3-C2-F P3-C2-F (24) 1/26/2010 24	P3-C3-F P3-C3-F (22) 1/25/2010 22	P3-C3-F P3-C3-F (24) 1/26/2010 24	P3-D2-F P3-D2-F (22) 1/25/2010 22	P3-D2-F P3-D2-F (24) 1/26/2010 24	P3-DE1.5-F P3-DE1.5-F (23) 1/29/2010 23	P3-DE1-F P3-DE1-F (23) 1/29/2010 23	P3-E3-F P3-E3-F (24) 1/28/2010 24	P3-E3-F P3-E3-F (25) 2/4/2010 25	P3-F2-F P3-F2-F (23) 2/3/2010 23	P3-F2-F P3-F2-F (25) 2/3/2010 25
BTEX Constituents (mg/kg)																								
Benzene	12	100	2,300	0.8	1.6	2.2	0.03	---		21.8	10.7	2.97	0.0773	2.45	8.7	0.0765	17.8	26.4	6.32	29.2	11.7	27.6	32.3	23
Ethylbenzene	7,800	200,000	20,000	400	400	58	13	---		1.2	3.4	0.59	0.0015	0.16	<4.04	<0.161	2.6	1.85	<7.88	<7.5	5.39	0.036	2.2	<0.531
Toluene	16,000	410,000	410,000	650	650	42	12	---		26.4	10.9	4.2	0.0969	2.26	<4.04	<0.161	26	3.98	<7.88	2.2	17.1	0.595	25.8	3.68
m,p-Xylenes	16,000	410,000	41,000	420[1]	420[1]	5.9[2]	200[2]	---		6.2	5.86	5.03	0.0037	1.08	<4.04	<0.161	21.7	3.79	<7.88	<7.5	11.7	0.111	11.6	<0.531
o-Xylene	16,000	410,000	41,000	410	410	6.5	190	---		3.1	2.4	1.7	0.0019	0.446	<4.04	<0.161	8.34	1.77	<7.88	<7.5	5.84	0.076	5.33	<0.531
Xylenes	16,000	410,000	41,000	320	320	5.6	150	---		9.3	8.26	6.73	0.0056	1.526	<4.04	<0.161	30.04	5.56	<7.88	<7.5	17.54	0.187	16.93	<0.531
PNA Constituents (mg/kg)																								
Acenaphthene	4,700	120,000	120,000	---	---	---	570	0.13		0.034	0.328	0.024	<0.004	0.038	0.015	<0.004	1.62	<0.004	<0.007	0.03	2.59	<0.011	0.524	<0.011
Acenaphthylene	2,300[4]	61,000[4]	61,000[4]	---	---	---	85[4]	0.07		0.285	1.87	0.239	<0.004	0.374	0.043	<0.004	8.47	<0.004	<0.007	0.032	10.6	0.028	3.39	<0.011
Anthracene	23,000	610,000	610,000	---	---	---	12,000	0.4		0.129	0.823	0.016	<0.004	0.367	0.051	<0.004	6.82	<0.004	<0.007	0.032	5.06	0.015	1.7	<0.011
Benzo(a)anthracene	0.90	8	170	---	---	---	2	1.8		0.114	0.52	0.005	0.004	0.248	0.035	0.004	4.49	<0.004	<0.007	0.021	2.67	0.015	0.995	<0.011
Benzo(a)pyrene	0.09	0.80	17	---	---	---	8	2.1		0.105	0.513	<0.004	<0.004	0.17	0.028	<0.004	3.99	<0.004	<0.007	0.016	2.37	<0.011	0.902	<0.011
Benzo(b)fluoranthene	0.90	8	170	---	---	---	5	2.1		0.075	0.38	<0.004	<0.004	0.195	0.032	<0.004	4.38	<0.004	<0.007	0.015	1.85	<0.011	0.75	<0.011
Benzo(g,h,i)perylene	2,300[4]	61,000[4]	61,000[4]	---	---	---	27,000[4]	1.7		0.047	0.213	<0.004	<0.004	0.066	0.015	0.006	1.94	<0.004	<0.007	0.01	0.967	<0.011	0.403	<0.011
Benzo(k)fluoranthene	9	78	1,700	---	---	---	49	1.7		0.024	0.125	<0.004	<0.004	0.074	0.012	<0.004	1.63	<0.004	<0.007	<0.007	0.578	<0.011	0.233	<0.011
Bis(2-ethylhexyl)phthalate	46	410	4,100	31,000	31,000	31,000	3,600	---		<0.369	<0.745	<0.074	<0.074	<0.75	<0.074	<0.073	<3.76	<0.074	<0.144	<0.14	<1.48	<0.215	<2.24	<0.219
Chrysene	88	780	17,000	---	---	---	160	2.7		0.096	0.565	0.004	<0.004	0.225	0.035	<0.004	4.3	<0.004	<0.007	0.02	2.58	0.01	0.937	<0.011
Dibenzo(a,h)anthracene	0.09	0.80	17	---	---	---	2	0.42		<0.019	0.053	<0.004	<0.004	<0.038	0.004	<0.004	0.536	<0.004	<0.007	<0.007	0.232	<0.011	<0.114	<0.011
Fluoranthene	3,100	82,000	82,000	---	---	---	4,300	4.1		0.21	1.1	0.009	0.005	0.628	0.092	0.004	13.1	<0.004	<0.007	0.048	6.36	0.023	2.06	<0.011
Fluorene	3,100	82,000	82,000	---	---	---	560	0.18		0.147	0.977	0.084	0.004	0.463	0.054	<0.004	7.11	<0.004	<0.007	0.037	8.68	0.019	2.14	<0.011
Indeno(1,2,3-cd)pyrene	0.90	8.00	170	---	---	---	14	1.6		0.034	0.162	<0.004	<0.004	0.065	0.012	<0.004	1.76	<0.004	<0.007	<0.007	0.742	<0.011	0.308	<0.011
Naphthalene	1,600	41,000	4,100	170	270	1.8	12	0.2		2.32	5.9	2.99	0.019	1.65	0.168	0.025	56	0.396	0.041	0.363	52.4	0.147	26	0.019
Phenanthrene	2,300[4]	61,000[4]	61,000[4]	---	---	---	200[4]	2.5		0.547	3.27	0.056	0.009	1.12	0.175	0.009	20.8	0.003	0.008	0.13	20.2	0.062	5.96	<0.011
Pyrene	2,300	61,000	61,000	---	---	---	4,200	3		0.307	1.61	0.006	0.004	0.47	0.075	0.005	10.3	<0.004	<0.007	0.054	9.07	0.029	2.74	<0.011

Notes:
[1] Objective is for m-xylene
[2] Objective is for p-xylene
[3] Objectives are for Class I groundwater.
[4] Non-TACO or provisional ROs provided by the IEPA.
--- No objective has been published for this constituent by the IEPA, or the sample was not analyzed for this constituent.
Concentration exceeds one or more project remediation objective.

Table 4-6
2009-2011 Soil Analytical Results for Excavation Floors - BTEX and PNAs
Former Ameren Champaign MGP Site

Constituent	Soil Ingestion Residential	Soil Ingestion Commercial	Soil Ingestion Construction	Soil Inhalation Residential	Soil Inhalation Commercial	Soil Inhalation Construction	Soil Component Groundwater	IEPA Accepted Background Levels for MSA	Sample Location: / Sample ID: / Sample Date: / ample Depth (feet):	P3-H1.5-F P3-H1.5-F (23) 2/3/2010 23	P4-B2-F P4-B2-F (23) 4/2/2010 23	P4-B3-F P4-B3-F (23) 4/2/2010 23	P4-B2-F P4-B2-F (25) 4/7/2010 25	P4-B3-F P4-B3-F (25) 4/7/2010 25	P4-D4.5-F P4-D4.5-F (25) 4/12/2010 25	P4-EF1.5-F P4-EF1.5-F (25) 4/12/2010 25	P4-EF3-F P4-EF3-F (25) 4/12/2010 25	P4-G2-F P4-G2-F(26) 5/20/2010 26	P4-G4-F P4-G4-F(24) 5/20/2010 24	P4-G4-F P4-G4-F(26) 5/20/2010 26	P5-B2-F P5-B2-F(26) 7/16/2010 26	P6-B4.5-F P6-B4.5-F (25) 10/15/2010 25	P7-CD1-F P7-CD1-F (20) 2/17/2011 20	P8-E1.2-F P8-E1.2-F (20) 4/11/2011 20
BTEX Constituents (mg/kg)																								
Benzene	12	100	2,300	0.8	1.6	2.2	0.03	---		3.05	114	42.7	91.5	0.728	26.2	0.372	0.2	0.142	7.7	1.39	19.9	0.38	<0.0202	1.34
Ethylbenzene	7,800	200,000	20,000	400	400	58	13	---		<0.106	<3.63	<2.22	<40.9	0.44	<3.71	0.031	0.18	<0.237	1.62	0.064	<2.080	0.514	0.136	0.181
Toluene	16,000	410,000	410,000	650	650	42	12	---		0.024	<3.63	<2.22	<40.9	2.67	1.1	0.139	0.098	0.057	9.16	0.11	5.06	2.12	0.033	0.421
m,p-Xylenes	16,000	410,000	41,000	420[1]	420[1]	5.9[2]	200[2]	---		<0.106	<3.63	<2.22	---	---	<3.71	0.07	0.19	0.12	3.05	0.066	<2.080	2.45	0.062	0.12
o-Xylene	16,000	410,000	41,000	410	410	6.5	190	---		<0.106	<3.63	<2.22	---	---	<3.71	0.03	0.1	0.066	1.77	0.038	<2.080	1.03	0.053	0.324
Xylenes	16,000	410,000	41,000	320	320	5.6	150	---		<0.106	<3.63	<2.22	<40.9	3.53	<3.71	0.10	0.29	0.186	4.82	0.104	<2.080	3.48	0.115	0.444
PNA Constituents (mg/kg)																								
Acenaphthene	4,700	120,000	120,000	---	---	---	570	0.13		<0.011	0.011	0.012	<0.004	0.921	0.007	0.12	0.016	0.053	<0.004	0.017	0.22	0.042	1.36	0.038
Acenaphthylene	2,300[4]	61,000[4]	61,000[4]	---	---	---	85[4]	0.07		<0.011	0.01	0.025	<0.004	4.49	0.005	0.505	0.004	0.256	<0.004	0.021	0.487	0.034	0.316	0.131
Anthracene	23,000	610,000	610,000	---	---	---	12,000	0.4		<0.011	0.011	0.013	<0.004	2.62	0.003	0.369	0.008	0.212	<0.004	0.021	0.433	0.048	0.82	0.017
Benzo(a)anthracene	0.90	8	170	---	---	---	2	1.8		<0.011	0.009	0.01	<0.004	1.51	0.004	0.227	0.006	0.134	0.004	0.02	0.318	0.031	0.481	0.015
Benzo(a)pyrene	0.09	0.80	17	---	---	---	8	2.1		<0.011	0.007	0.008	<0.004	1.56	<0.004	0.207	0.005	0.124	<0.004	0.02	0.261	0.026	0.517	0.011
Benzo(b)fluoranthene	0.90	8	170	---	---	---	5	2.1		<0.011	0.006	0.007	<0.004	1.15	<0.004	0.164	0.004	0.099	<0.004	0.021	0.207	0.021	0.428	0.009
Benzo(g,h,i)perylene	2,300[4]	61,000[4]	61,000[4]	---	---	---	27,000[4]	1.7		<0.011	0.005	0.005	<0.004	0.659	<0.004	0.088	0.004	0.061	<0.004	0.016	0.147	0.016	0.265	0.007
Benzo(k)fluoranthene	9	78	1,700	---	---	---	49	1.7		<0.011	<0.004	<0.004	<0.004	0.364	<0.004	0.062	<0.004	0.034	<0.004	0.006	<0.097	<0.007	0.133	<0.004
Bis(2-ethylhexyl)phthalate	46	410	4,100	31,000	31,000	31,000	3,600	---		<0.221	<0.074	<0.075	<0.074	<1.86	<0.073	<0.725	<0.075	<0.075	<0.074	<0.074	<1.91	<0.145	<0.371	<0.076
Chrysene	88	780	17,000	---	---	---	160	2.7		<0.011	0.007	0.008	<0.004	1.52	<0.004	0.215	0.006	0.129	<0.004	0.017	0.234	0.026	0.508	0.012
Dibenzo(a,h)anthracene	0.09	0.80	17	---	---	---	2	0.42		<0.011	<0.004	<0.004	<0.004	0.151	<0.004	<0.037	<0.004	0.015	<0.004	0.003	<0.097	<0.007	0.057	<0.004
Fluoranthene	3,100	82,000	82,000	---	---	---	4,300	4.1		<0.011	0.016	0.018	<0.004	3.28	0.004	0.489	0.01	0.271	0.005	0.036	0.536	0.063	1.01	0.024
Fluorene	3,100	82,000	82,000	---	---	---	560	0.18		<0.011	0.012	0.018	<0.004	2.77	0.006	0.4	0.011	0.204	<0.004	0.02	0.521	0.047	0.84	0.038
Indeno(1,2,3-cd)pyrene	0.90	8.00	170	---	---	---	14	1.6		<0.011	<0.004	<0.004	<0.004	0.482	<0.004	0.067	<0.004	0.046	<0.004	0.011	0.105	0.009	0.196	0.004
Naphthalene	1,600	41,000	4,100	170	270	1.8	12	0.2		0.029	0.312	0.417	0.045	20.7	0.1	1.23	0.114	1.17	0.135	0.297	2.94	0.21	3.19	2.3
Phenanthrene	2,300[4]	61,000[4]	61,000[4]	---	---	---	200[4]	2.5		<0.011	0.042	0.05	0.007	8.92	0.015	1.27	0.033	0.722	0.011	0.081	1.51	0.174	2.82	0.07
Pyrene	2,300	61,000	61,000	---	---	---	4,200	3		<0.011	0.021	0.025	<0.004	5.08	0.006	0.69	0.015	0.395	0.007	0.052	0.829	0.089	1.65	0.038

Notes:
[1] Objective is for m-xylene
[2] Objective is for p-xylene
[3] Objectives are for Class I groundwater.
[4] Non-TACO or provisional ROs provided by the IEPA.
--- No objective has been published for this constituent by the IEPA, or the sample was not analyzed for this constituent.
Concentration exceeds one or more project remediation objective.

Table 4-6
2009-2011 Soil Analytical Results for Excavation Floors - BTEX and PNAs
Former Ameren Champaign MGP Site

Constituent	Soil Ingestion Residential	Soil Ingestion Commercial	Soil Ingestion Construction	Soil Inhalation Residential	Soil Inhalation Commercial	Soil Inhalation Construction	Soil Component Groundwater	IEPA Accepted Background Levels for MSA	Sample Location: Sample ID: Sample Date: ample Depth (feet):	P8-E1.2-F P8-E1.2-F (22) 4/15/2011 22
BTEX Constituents (mg/kg)										
Benzene	12	100	2,300	0.8	1.6	2.2	0.03	---		0.0014
Ethylbenzene	7,800	200,000	20,000	400	400	58	13	---		<0.0039
Toluene	16,000	410,000	410,000	650	650	42	12	---		0.001J
m,p-Xylenes	16,000	410,000	41,000	420[(1)]	420[(1)]	5.9[(2)]	200[(2)]	---		0.008J
o-Xylene	16,000	410,000	41,000	410	410	6.5	190	---		<0.0039
Xylenes	16,000	410,000	41,000	320	320	5.6	150	---		0.008J
PNA Constituents (mg/kg)										
Acenaphthene	4,700	120,000	120,000	---	---	---	570	0.13		0.009
Acenaphthylene	2,300[(4)]	61,000[(4)]	61,000[(4)]	---	---	---	85[(4)]	0.07		0.009
Anthracene	23,000	610,000	610,000	---	---	---	12,000	0.4		0.007
Benzo(a)anthracene	0.90	8	170	---	---	---	2	1.8		0.01
Benzo(a)pyrene	0.09	0.80	17	---	---	---	8	2.1		0.006
Benzo(b)fluoranthene	0.90	8	170	---	---	---	5	2.1		0.007
Benzo(g,h,i)perylene	2,300[(4)]	61,000[(4)]	61,000[(4)]	---	---	---	27,000[(4)]	1.7		0.006
Benzo(k)fluoranthene	9	78	1,700	---	---	---	49	1.7		<0.004
Bis(2-ethylhexyl)phthalate	46	410	4,100	31,000	31,000	31,000	3,600	---		<0.075
Chrysene	88	780	17,000	---	---	---	160	2.7		0.007
Dibenzo(a,h)anthracene	0.09	0.80	17	---	---	---	2	0.42		<0.004
Fluoranthene	3,100	82,000	82,000	---	---	---	4,300	4.1		0.014
Fluorene	3,100	82,000	82,000	---	---	---	560	0.18		0.008
Indeno(1,2,3-cd)pyrene	0.90	8.00	170	---	---	---	14	1.6		0.003J
Naphthalene	1,600	41,000	4,100	170	270	1.8	12	0.2		0.033
Phenanthrene	2,300[(4)]	61,000[(4)]	61,000[(4)]	---	---	---	200[(4)]	2.5		0.022
Pyrene	2,300	61,000	61,000	---	---	---	4,200	3		0.021

Notes:
[(1)] Objective is for m-xylene
[(2)] Objective is for p-xylene
[(3)] Objectives are for Class I groundwater.
[(4)] Non-TACO or provisional ROs provided by the IEPA.
'--- No objective has been published for this constituent by the IEPA, or the sample was not analyzed for this constituent.
Concentration exceeds one or more project remediation objective.

Table 4-7
2009-2011 Soil Analytical Results for Excavation Floors - VOCs
Former Ameren Champaign MGP Site

Constituent	Soil Ingestion Residential	Soil Ingestion Commercial	Soil Ingestion Construction	Soil Inhalation Residential	Soil Inhalation Commercial	Soil Inhalation Construction	Soil Component to Groundwater[1]	Sample Location:	Sample ID:	Sample Date:	Sample Depth (feet):
								P1-B2-F	P1-B2-F(28)	7/16/2009	28'
								P1-B3.5	P1-B3.5(26)	7/16/2009	26'
								P1-B5-F	P1-B5-F(25)	7/15/2009	25'
								P1-C5-F	P1-C5-F (22)	7/23/2009	22'
								P1-D3.5-F	P1-D3.5-F(25)	7/30/2009	25'
								P1-D5-F	P1-D5-F(25)	7/30/2009	25'
								P1-F3.5-F	P1-F3.5-F(20.5)	7/31/2009	20.5'
								P1-F2-F	P1-F2-F (21)	9/9/2009	21
								P1-F5-F	P1-F5-F (20)	9/11/2009	20
								P1-H3.5-F	P1-H3.5-F (20)	9/10/2009	20
								P1-H5-F	P1-H5-F (20.5)	9/10/2009	20.5
								P2-B2.5-F	P2-B2.5-F (22)	10/27/2009	22
								P2-B4-F	P2-B4-F (22)	10/30/2009	22
								P2-C4-F	P2-C4-F (22)	10/30/2009	22
Volatile Organic Compounds (mg/kg)											
1,1,1,2-Tetrachloroethane	2,300 [Z]	61,000 [Z]	6,100 [Z]	2,100 [Z]	2,100 [Z]	2,100 [Z]	3.4 [Z]	<0.846	<0.145	<0.115	<3.8
1,1,1-Trichloroethane	---	---	---	1,200	1,200	1,200	2	<0.846	<0.145	<0.115	<3.8
1,1,2,2-Tetrachloroethane	4,700 [Z]	120,000 [Z]	12,000 [Z]	2,000 [Z]	2,000 [Z]	2,000 [Z]	3.3 [Z]	<0.846	<0.145	<0.115	<3.8
1,1,2-Trichloro-1,2,2-trifluoroethane	---	---	---	---	---	---	---	<0.846	<0.145	<0.115	<3.8
1,1,2-Trichloroethane	310	8,200	8,200	1,800	1,800	1,800	0.02	<0.846	<0.145	<0.115	<3.8
1,1-Dichloro-2-propanone	---	---	---	---	---	---		<8.46	<1.45	<1.15	<38.3
1,1-Dichloroethane	7,800	200,000	200,000	1,300	1,700	130	23	<0.846	<0.145	<0.115	<3.8
1,1-Dichloroethene	3,900	100,000	470	290	10,000	3	0.06	<0.846	<0.145	<0.115	<3.8
1,1-Dichloropropene	---	---	---	---	---	---	---	<0.846	<0.145	<0.115	<3.8
1,2,3-Trichlorobenzene	---	---	---	---	---	---	---	<0.846	<0.145	<0.115	<3.8
1,2,3-Trichloropropane	0.092 [Z]	0.82 [Z]	18	730 [Z]	730 [Z]	730 [Z]	0.0001 [Z]	<1.69	<0.29	<0.23	<7.7
1,2,3-Trimethylbenzene	---	---	---	---	---	---	---	<0.846	<0.145	<0.115	3.9
1,2,4-Trichlorobenzene	780	20,000	2,000	3,200	3,200	920	5	<0.846	<0.145	<0.115	<3.8
1,2,4-Trimethylbenzene	3,900 [Z]	100,000 [Z]	100,000 [Z]	73 [Z]	120 [Z]	0.25 [Z]	18 [Z]	<0.846	<0.145	<0.115	10.2
1,2-Dibromo-3-chloropropane	0.46	4	89	11	17	0.11	0.002	<0.846	<0.145	<0.115	<3.8
1,2-Dibromoethane (EDB)	0.32	2.9	62	0.06	0.12	0.16	0.0004	<0.846	<0.145	<0.115	<3.8
1,2-Dichlorobenzene	7,000	180,000	18,000	560	560	310	17	<0.846	<0.145	<0.115	<3.8
1,2-Dichloroethane	7	63	1,400	0.4	0.7	0.99	0.02	<0.846	<0.145	<0.115	<3.8
1,2-Dichloropropane	9	84	1,800	15	23	0.5	0.03	<0.846	<0.145	<0.115	<3.8
1,3,5-Trimethylbenzene	3,900 [Z]	100,000 [Z]	100,000 [Z]	45 [Z]	72 [Z]	0.15 [Z]	10 [Z]	<0.846	<0.145	<0.115	3.2
1,3-Dichlorobenzene	---	---	---	---	---	---	---	<0.846	<0.145	<0.115	<3.8
1,3-Dichloropropane	1,600 [Z]	41,000 [Z]	41,000 [Z]	1,000 [Z]	1,000 [Z]	1,000 [Z]	0.83 [Z]	<0.846	<0.145	<0.115	<3.8
1,4-Dichlorobenzene	---	---	---	11,000	17,000	340	2	<0.846	<0.145	<0.115	<3.8
1-Chlorobutane	3,100 [Z]	82,000 [Z]	14,000 [Z]	1,200 [Z]	1,200 [Z]	1,200 [Z]	3.1 [Z]	<0.846	<0.145	<0.115	<3.8
2,2-Dichloropropane	---	---	---	---	---	---	---	<0.846	<0.145	<0.115	<3.8
2-Butanone (methyl ethyl ketone)	47,000 [Z]	1,000,000 [Z]	120,000 [Z]	25,000 [Z]	25,000 [Z]	710 [Z]	17 [Z]	<8.46	0.39	0.28	<38.3
2-Chlorotoluene (o-chlorotoluene)	1,600 [Z]	41,000 [Z]	41,000 [Z]	1,400 [Z]	1,400 [Z]	1,400 [Z]	4 [Z]	<0.846	<0.145	<0.115	<3.8
2-Hexanone	---	---	---	---	---	---	---	<8.46	<1.45	<1.15	<38.3
2-Nitropropane	---	---	---	---	---	---	---	<8.46	<1.45	<1.15	<38.3
4-Chlorotoluene	---	---	---	---	---	---	---	<0.846	<0.145	<0.115	<3.8
4-Methyl-2-pentanone (MIBK)	---	---	---	3,100 [Z]	3,100 [Z]	340 [Z]	---	<8.46	<1.45	<1.15	<38.3
Acetone	70,000	---	---	100,000	100,000	100,000	25	<8.46	<1.45	<1.15	27
Acrolein	39 [Z]	1,000 [Z]	1,600 [Z]	0.16 [Z]	0.26 [Z]	0.017 [Z]	0.014 [Z]	<16.9	<2.9	<2.3	<76.5
Acrylonitrile	1.2 [Z]	11 [Z]	230 [Z]	0.28 [Z]	0.54 [Z]	0.17 [Z]	0.0006 [Z]	<1.69	<0.29	<0.23	<7.7
Allyl chloride	---	---	---	---	---	---	---	<0.846	<0.145	<0.115	<3.8
Bromobenzene	1,600 [Z]	41,000 [Z]	41,000 [Z]	100 [Z]	160 [Z]	11 [Z]	2.2 [Z]	<0.846	<0.145	<0.115	<3.8
Bromochloromethane	---	---	---	---	---	---		<0.846	<0.145	<0.115	<3.8
Bromodichloromethane	10	92	2,000	3,000	3,000	3,000	0.6	<0.846	<0.145	<0.115	<3.8
Bromoform	81	720	16,000	53	100	140	0.8	<0.846	<0.145	<0.115	<3.8
Bromomethane (methyl bromide)	110	2,900	1,000	10	15	3.9	0.2	<1.69	<0.29	<0.23	<7.7
Carbon disulfide	7,800	200,000	20,000	720	720	9	32	<0.846	<0.145	<0.115	<3.8
Carbon tetrachloride	5	44	410	0.3	0.64	0.9	0.07	<0.846	<0.145	<0.115	<3.8
Chlorobenzene	1,600	41,000	4,100	130	210	1.3	1	<0.846	<0.145	<0.115	<3.8
Chloroethane	---	---	---	---	---	---	---	<1.69	<0.29	<0.23	<7.7
Chloroform	100	940	2,000	0.3	0.54	0.76	0.6	<0.846	<0.145	<0.115	<3.8

Constituent	P1-B2-F	P1-B3.5	P1-B5-F	P1-C5-F	P1-D3.5-F	P1-D5-F	P1-F3.5-F	P1-F2-F	P1-F5-F	P1-H3.5-F	P1-H5-F	P2-B2.5-F	P2-B4-F	P2-C4-F
1,1,1,2-Tetrachloroethane	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.0	<2.14	<2.97	<1.86
1,1,1-Trichloroethane	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.0	<2.14	<2.97	<1.86
1,1,2,2-Tetrachloroethane	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.0	<2.14	<2.97	<1.86
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.0	<2.14	<2.97	<1.86
1,1,2-Trichloroethane	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.0	<2.14	<2.97	<1.86
1,1-Dichloro-2-propanone	<8.46	<1.45	<1.15	<38.3	<42	<50.9	<62.9	<32.3	<35.1	<30.3	<50.0	<21.4	<29.7	<18.6
1,1-Dichloroethane	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.0	<2.14	<2.97	<1.86
1,1-Dichloroethene	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.0	<2.14	<2.97	<1.86
1,1-Dichloropropene	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.0	<2.14	<2.97	<1.86
1,2,3-Trichlorobenzene	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.0	<2.14	<2.97	<1.86
1,2,3-Trichloropropane	<1.69	<0.29	<0.23	<7.7	<8.4	<10.2	<12.6	<6.46	<7.02	<6.06	<10.0	<4.27	<5.94	<3.72
1,2,3-Trimethylbenzene	<0.846	<0.145	<0.115	3.9	1.9	<5.09	<6.29	<3.23	3.76	1.6	<5.0	<2.14	0.86	<1.86
1,2,4-Trichlorobenzene	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.0	<2.14	<2.97	<1.86
1,2,4-Trimethylbenzene	<0.846	<0.145	<0.115	10.2	5.29	<5.09	<1.7	1.40	10.80	4.6	1.1	5.36	2.1	2.05
1,2-Dibromo-3-chloropropane	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.0	<2.14	<2.97	<1.86
1,2-Dibromoethane (EDB)	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.0	<2.14	<2.97	<1.86
1,2-Dichlorobenzene	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.0	<2.14	<2.97	<1.86
1,2-Dichloroethane	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.0	<2.14	<2.97	<1.86
1,2-Dichloropropane	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.0	<2.14	<2.97	<1.86
1,3,5-Trimethylbenzene	<0.846	<0.145	<0.115	3.2	1.5	<5.09	<6.29	<3.23	3.3	1.4	<5.0	1.4	<2.97	0.55
1,3-Dichlorobenzene	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.0	<2.14	<2.97	<1.86
1,3-Dichloropropane	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.0	<2.14	<2.97	<1.86
1,4-Dichlorobenzene	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.0	<2.14	<2.97	<1.86
1-Chlorobutane	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.0	<2.14	<2.97	<1.86
2,2-Dichloropropane	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.0	<2.14	<2.97	<1.86
2-Butanone (methyl ethyl ketone)	<8.46	0.39	0.28	<38.3	<42	<50.9	<62.9	<32.3	<35.1	<30.3	<50.0	<21.4	<29.7	<18.6
2-Chlorotoluene (o-chlorotoluene)	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.0	<2.14	<2.97	<1.86
2-Hexanone	<8.46	<1.45	<1.15	<38.3	<42	<50.9	<62.9	<32.3	<35.1	<30.3	<50.0	<21.4	<29.7	<18.6
2-Nitropropane	<8.46	<1.45	<1.15	<38.3	<42	<50.9	<62.9	<32.3	<35.1	<30.3	<50.0	<21.4	<29.7	<18.6
4-Chlorotoluene	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.0	<2.14	<2.97	<1.86
4-Methyl-2-pentanone (MIBK)	<8.46	<1.45	<1.15	<38.3	<42	<50.9	<62.9	<32.3	<35.1	<30.3	<50.0	<21.4	<29.7	<18.6
Acetone	<8.46	<1.45	<1.15	27	<42	<50.9	<62.9	<32.3	<35.1	<30.3	<50.0	<21.4	<29.7	<18.6
Acrolein	<16.9	<2.9	<2.3	<76.5	<84	<102	<126	<64.6	<70.2	<60.6	<100	<42.7	<59.4	<37.2
Acrylonitrile	<1.69	<0.29	<0.23	<7.7	<8.4	<10.2	<12.6	<6.46	<7.02	<6.06	<10.0	<4.27	<5.94	<3.72
Allyl chloride	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.0	<2.14	<2.97	<1.86
Bromobenzene	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.0	<2.14	<2.97	<1.86
Bromochloromethane	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.0	<2.14	<2.97	<1.86
Bromodichloromethane	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.0	<2.14	<2.97	<1.86
Bromoform	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.0	<2.14	<2.97	<1.86
Bromomethane (methyl bromide)	<1.69	<0.29	<0.23	<7.7	<8.4	<10.2	<12.6	<6.46	<7.02	<6.06	<10.0	<4.27	<5.94	<3.72
Carbon disulfide	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.000	<2.14	<2.97	<1.86
Carbon tetrachloride	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.000	<2.14	<2.97	<1.86
Chlorobenzene	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.000	<2.14	<2.97	<1.86
Chloroethane	<1.69	<0.29	<0.23	<7.7	<8.4	<10.2	<12.6	<6.46	<7.02	<6.06	<10.0	<4.27	<5.94	<3.72
Chloroform	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.000	<2.14	<2.97	<1.86

Notes:

[1] Objectives are for Class I Groundwater.

[2] Non-TACO or provisional ROs provided by the IEPA.

'--- No objective has been published for this constituent by the IEPA, or the sample was not analyzed for this constituent.

Concentration exceeds one or more project remediation objective.

Concentration exceeds one or more project remediation objectives.

Table 4-7
2009-2011 Soil Analytical Results for Excavation Floors - VOCs
Former Ameren Champaign MGP Site

Constituent	Soil Ingestion Residential	Soil Ingestion Commercial	Soil Ingestion Construction	Soil Inhalation Residential	Soil Inhalation Commercial	Soil Inhalation Construction	Soil Component to Groundwater[1]	Sample Location:	Sample ID:	Sample Date:	Sample Depth (feet):
								P1-B2-F	P1-B2-F(28)	7/16/2009	28'
								P1-B3.5	P1-B3.5(26)	7/16/2009	26'
								P1-B5-F	P1-B5-F(25)	7/15/2009	25'
								P1-C5-F	P1-C5-F (22)	7/23/2009	22'
								P1-D3.5-F	P1-D3.5-F(25)	7/30/2009	25'
								P1-D5-F	P1-D5-F(25)	7/30/2009	25'
								P1-F3.5-F	P1-F3.5-F(20.5)	7/31/2009	20.5'
								P1-F2-F	P1-F2-F (21)	9/9/2009	21
								P1-F5-F	P1-F5-F (20)	9/11/2009	20
								P1-H3.5-F	P1-H3.5-F (20)	9/10/2009	20
								P1-H5-F	P1-H5-F (20.5)	9/10/2009	20.5
								P2-B2.5-F	P2-B2.5-F (22)	10/27/2009	22
								P2-B4-F	P2-B4-F (22)	10/30/2009	22
								P2-C4-F	P2-C4-F (22)	10/30/2009	22
Chloromethane (methyl chloride)	---	---	---	---	---	---	---	<1.69	<0.29	<0.23	<7.7	<8.4	<10.2	<12.6	<6.46	<7.02	<6.06	<10.0	<4.27	<5.94	<3.72
cis-1,2-Dichloroethene	780	20,000	20,000	1,200	1,200	1,200	0.4	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.0	<2.14	<2.97	<1.86
cis-1,3-Dichloropropene	6.4	57	1,200	1.1	2.1	0.39	0.004	<0.677	<0.116	<0.0918	<3.1	<3.36	<4.07	<5.03	<2.58	<2.81	<2.42	<4.0	<1.71	<2.38	<1.49
Cyclohexanone	390,000 [2]	1,000,000 [2]	1,000,000 [2]	660 [2]	660 [2]	660 [2]	150 [2]	<16.9	<2.9	<2.3	<76.5	<84	<102	<126	<64.6	<70.2	<60.6	<100	<42.7	<59.4	<37.2
Dibromochloromethane (chlorodibromomethane)	1,600	41,000	41,000	1,300	1,300	1,300	0.4	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.0	<2.14	<2.97	<1.86
Dibromomethane (methylene bromide)	780 [2]	20,000 [2]	20,000 [2]	2,700 [2]	2,700 [2]	2,700 [2]	0.34 [2]	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.0	<2.14	<2.97	<1.86
Dichlorodifluoromethane	16,000 [2]	410,000 [2]	180,000 [2]	190 [2]	310 [2]	20 [2]	43 [2]	<1.69	<0.29	<0.23	<7.7	<8.4	<10.2	<12.6	<6.46	<7.02	<6.06	<10.0	<4.27	<5.94	<3.72
Ethyl acetate	70,000 [2]	1,000,000 [2]	1,000,000 [2]	10,000 [2]	10,000 [2]	10,000 [2]	26 [2]	<8.46	<0.145	<1.15	<38.3	<42	<50.9	<62.9	<32.3	<35.1	<30.3	<50.0	<21.4	<29.7	<18.6
Ethyl ether	16,000 [2]	410,000 [2]	410,000 [2]	8,800 [2]	8,800 [2]	8,800 [2]	6.1 [2]	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.0	<2.14	<2.97	<1.86
Ethyl methacrylate	---	---	---	---	---	---	---	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.0	<2.14	<2.97	<1.86
Heptane	---	---	---	---	---	---	---	<3.39	<0.579	<0.459	2.7	<16.8	<20.4	<25.2	<12.9	<14.0	<12.1	<20.0	<8.55	<11.9	<7.44
Hexachlorobutadiene	---	---	---	---	---	---	---	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.0	<2.14	<2.97	<1.86
Hexachloroethane	78	2,000	2,000	---	---	---	0.5	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.0	<2.14	<2.97	<1.86
Iodomethane	---	---	---	---	---	---	---	<1.69	<0.29	<0.23	<7.7	<8.4	<10.2	<12.6	<6.46	<7.02	<6.06	<10.0	<4.27	<5.94	<3.72
Isopropylbenzene (cumene)	7,800 [2]	200,000 [2]	61,000 [2]	500 [2]	790 [2]	51 [2]	91 [2]	<0.846	<0.145	<0115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.0	0.53	<2.97	<1.86
Methacrylonitrile	---	---	---	---	---	---	---	<8.46	<1.45	<1.15	<38.3	<42	<50.9	<62.9	<32.3	<35.1	<30.3	<50.0	<21.4	<29.7	<18.6
Methyl Methacrylate	---	---	---	---	---	---	---	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.0	<2.14	<2.97	<1.86
Methyl tert-butyl ether	780	20,000	2,000	8,800	8,800	140	0.32	<0.339	<0.0579	<0.0459	<1.5	<1.68	<2.04	<2.52	<1.29	<1.4	<1.21	<2.0	<0.855	<1.19	<0.744
Methylacrylate	2,300 [2]	61,000 [2]	6,100 [2]	6,500 [2]	6,500 [2]	6,500 [2]	0.89 [2]	<1.69	<0.29	<0.23	<7.7	<8.4	<10.2	<12.6	<6.46	<7.02	<6.06	<10.0	<4.27	<5.94	<3.72
Methylene chloride (dichloromethane)	85	760	12,000	13	24	34	0.02	0.19	0.043	0.036	0.9	<4.2	<5.09	1.3	<3.23	<3.51	<3.03	<5.0	0.46	<2.97	<1.86
Naphthalene	1,600	41,000	4,100	170	270	1.8	12	1.69	0.326	<0.23	186	<128	26.5	28.6	30.90	204	54.30	20.60	126	62.5	49.6
n-Butylbenzene	---	---	---	---	---	---	---	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.0	<2.14	<2.97	<1.86
n-Hexane	---	---	---	290 [2]	290 [2]	15 [2]	---	<3.39	<0.579	<0.459	4.8	<16.8	<20.4	<25.2	<12.9	<14.0	<12.1	<20.0	<8.55	<11.9	<7.44
Nitrobenzene	39	1,000	1,000	92	140	9.4	0.1	<16.9	<2.9	<2.3	<76.5	<84	<102	<126	<64.6	<70.2	<60.6	<100	<42.7	<59.4	<37.2
n-Propylbenzene	---	---	---	---	---	---	---	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	0.74	<3.03	<5.0	0.44	<2.97	<1.86
Pentachloroethane	---	---	---	---	---	---	---	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.0	<2.14	<2.97	<1.86
p-Isopropyltoluene	---	---	---	---	---	---	---	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.0	<2.14	<2.97	<1.86
Propionitrile	---	---	---	---	---	---	---	<8.46	<1.45	<0.115	<3.8	<42	<50.9	<6.29	<32.3	<35.1	<30.3	<50.0	<21.4	<29.7	<18.6
sec-Butylbenzene	---	---	---	---	---	---	---	<0.846	<0.145	<0.115	<38.3	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.0	<2.14	<2.97	<1.86
Styrene	16,000	410,000	41,000	1,500	1,500	430	4	<0.846	<0.145	<0.115	1.9	3.6	<5.09	<6.29	<3.23	4.63	<3.03	<5.0	<2.14	<2.97	3.36
tert-Butylbenzene	---	---	---	---	---	---	---	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.0	<2.14	<2.97	<1.86
Tetrachloroethene	12	110	2,400	11	20	28	0.06	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.0	<2.14	<2.97	<1.86
Tetrahydrofuran	---	---	---	---	---	---	---	<8.46	<1.45	<1.15	<38.3	<42	<50.9	<62.9	<32.3	<35.1	<30.3	<50.0	<21.4	<29.7	<18.6
trans-1,2-Dichloroethene	1,600	41,000	41,000	3,100	3,100	3,100	0.7	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.0	<2.14	<2.97	<1.86
trans-1,3-Dichloropropene	6.4	57	1,200	1.1	2.1	0.39	0.004	<0.677	<0.116	<0.0918	<3.1	<3.36	<4.07	<5.03	<2.58	<2.81	<2.42	<4.0	<1.71	<2.38	<1.49
Trichloroethene	58	520	1,200	5	8.9	12	0.06	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.0	<2.14	<2.97	<1.86
Trichlorofluoromethane	23,000 [2]	610,000 [2]	140,000 [2]	850 [2]	1,400 [2]	88 [2]	34 [2]	<0.846	<0.145	<0.115	<3.8	<4.2	<5.09	<6.29	<3.23	<3.51	<3.03	<5.0	<2.14	<2.97	<1.86
Vinyl acetate	78,000	1,000,000	200,000	1,000	1,600	10	170 [2]	<8.46	<1.45	<1.15	<38.3	<42	<50.9	<62.9	<32.3	<35.1	<30.3	<50.0	<21.4	<29.7	<18.6
Vinyl chloride	0.46	7.9	170	0.28	1.1	1.1	0.01	<0.339	<0.0579	<0.0459	<1.5	<1.68	<2.04	<2.52	<1.29	<1.400	<1.21	<2.0	<0.855	<1.19	<0.744

Notes:

'(1) Objectives are for Class I Groundwater.

'(2) Non-TACO or provisional ROs provided by the IEPA.

'--- No objective has been published for this constituent by the IEPA, or the sample was not analyzed for this constituent.

Concentration exceeds one or more project remediation objective.

Concentration exceeds one or more project remediation objectives.

Table 4-7
2009-2011 Soil Analytical Results for Excavation Floors - VOCs
Former Ameren Champaign MGP Site

Constituent	Soil Ingestion Residential	Soil Ingestion Commercial	Soil Ingestion Construction	Soil Inhalation Residential	Soil Inhalation Commercial	Soil Inhalation Construction	Soil Component to Groundwater[1]	Sample Location:	P2-D2-F	P2-D4-F	P2-FG-3.5-F	P2-E2.5-F	P2-E4-F	P3-C2-F	P3-D2-F	P3-D2-F	P3-DE1.5-F	P3-E3-F	P3-F2-F	P4-B2-F	P4-B3-F	P4-EF3-F
								Sample ID:	P2-D2-F (22)	P2-D4-F (22)	P2-FG-3.5-F (24)	P2-E2.5-F (24)	P2-E4-F (24)	P3-C2-F (24)	P3-D2-F (22)	P3-D2-F (24)	P3-DE1.5-F (23)	P3-E3-F (24)	P3-F2-F (23)	P4-B2-F (25)	P4-B3-F (25)	P4-EF3-F (25)
								Sample Date:	10/30/2009	10/30/2009	11/19/2009	11/25/2009	11/25/2009	1/26/2010	1/25/2010	1/26/2010	1/29/2010	1/28/2010	2/3/2010	4/7/2010	4/7/2010	4/12/2010
								Sample Depth (feet):	22	22	24	24	24	24	22	24	23	24	23	25	25	25
Volatile Organic Compounds (mg/kg)																						
1,1,1,2-Tetrachloroethane	2,300 [Z]	61,000 [Z]	6,100 [Z]	2,100 [Z]	2,100 [Z]	2,100 [Z]	3.4 [Z]		<26.3	<44.9	<0.11	<3.66	<4.42	<0.362	<5.08	<0.391	<7.88	<4.31	<3.3	<40.9	<1.64	<0.22
1,1,1-Trichloroethane	---	---	---	1,200	1,200	1,200	2		<26.3	<44.9	<0.11	<3.66	<4.42	<0.362	<5.08	<0.391	<7.88	<4.31	<3.3	<40.9	<1.64	<0.22
1,1,2,2-Tetrachloroethane	4,700 [Z]	120,000 [Z]	12,000 [Z]	2,000 [Z]	2,000 [Z]	2,000 [Z]	3.3 [Z]		<26.3	<44.9	<0.11	<3.66	<4.42	<0.362	<5.08	<0.391	<7.88	<4.31	<3.3	<40.9	<1.64	<0.22
1,1,2-Trichloro-1,2,2-trifluoroethane	---	---	---	---	---	---	---		<26.3	<44.9	<0.11	<3.66	<4.42	<0.362	<5.08	<0.391	<7.88	<4.31	<3.3	<40.9	<1.64	<0.22
1,1,2-Trichloroethane	310	8,200	8,200	1,800	1,800	1,800	0.02		<26.3	<44.9	<0.11	<3.66	<4.42	<0.362	<5.08	<0.391	<7.88	<4.31	<3.3	<40.9	<1.64	<0.22
1,1-Dichloro-2-propanone	---	---	---	---	---	---			<263	<449	<1.1	<36.6	<44.2	<3.62	<50.8	<3.91	<78.8	<43.1	<33	<409	<16.4	<2.2
1,1-Dichloroethane	7,800	200,000	200,000	1,300	1,700	130	23		<26.3	<44.9	<0.11	<3.66	<4.42	<0.362	<5.08	<0.391	<7.88	<4.31	<3.3	<40.9	<1.64	<0.22
1,1-Dichloroethene	3,900	100,000	470	290	10,000	3	0.06		<26.3	<44.9	<0.11	<3.66	<4.42	<0.362	<5.08	<0.391	<7.88	<4.31	<3.3	<40.9	<1.64	<0.22
1,1-Dichloropropene	---	---	---	---	---	---	---		<26.3	<44.9	<0.11	<3.66	<4.42	<0.362	<5.08	<0.391	<7.88	<4.31	<3.3	<40.9	<1.64	<0.22
1,2,3-Trichlorobenzene	---	---	---	---	---	---	---		<26.3	<44.9	<0.11	<3.66	<4.42	<0.362	<5.08	<0.391	<7.88	<4.31	<3.3	<40.9	<1.64	<0.22
1,2,3-Trichloropropane	0.092 [Z]	0.82 [Z]	18	730 [Z]	730 [Z]	730 [Z]	0.0001 [Z]		<52.6	<89.8	<0.219	<7.32	<8.83	<0.724	<10.2	<0.783	<15.8	<8.61	<6.59	<81.8	<3.28	<0.44
1,2,3-Trimethylbenzene	---	---	---	---	---	---	---		<26.3	<44.9	<0.11	<3.66	<4.42	0.17	3	0.26	<7.88	3.2	1.8	10	0.67	0.082
1,2,4-Trichlorobenzene	780	20,000	2,000	3,200	3,200	920	5		<26.3	<44.9	<0.11	<3.66	<4.42	<0.362	<5.08	<0.391	<7.88	<4.31	<3.3	<40.9	<1.64	<0.22
1,2,4-Trimethylbenzene	3,900 [Z]	100,000 [Z]	100,000 [Z]	73 [Z]	120 [Z]	0.25 [Z]	18 [Z]		13	55	0.067	<3.66	<4.42	0.526	10	0.878	<7.88	2.2	1.4	<40.9	0.5	0.054
1,2-Dibromo-3-chloropropane	0.46	4	89	11	17	0.11	0.002		<26.3	<44.9	<0.11	<3.66	<4.42	<0.362	<5.08	<0.391	<7.88	<4.31	<3.3	<40.9	<1.64	<0.22
1,2-Dibromoethane (EDB)	0.32	2.9	62	0.06	0.12	0.16	0.0004		<26.3	<44.9	<0.11	<3.66	<4.42	<0.362	<5.08	<0.391	<7.88	<4.31	<3.3	<40.9	<1.64	<0.22
1,2-Dichlorobenzene	7,000	180,000	18,000	560	560	310	17		<26.3	<44.9	<0.11	<3.66	<4.42	<0.362	<5.08	<0.391	<7.88	<4.31	<3.3	<40.9	<1.64	<0.22
1,2-Dichloroethane	7	63	1,400	0.4	0.7	0.99	0.02		<26.3	<44.9	<0.11	<3.66	<4.42	<0.362	<5.08	<0.391	<7.88	<4.31	<3.3	<40.9	<1.64	<0.22
1,2-Dichloropropane	9	84	1,800	15	23	0.5	0.03		<26.3	<44.9	<0.11	<3.66	<4.42	<0.362	<5.08	<0.391	<7.88	<4.31	<3.3	<40.9	<1.64	<0.22
1,3,5-Trimethylbenzene	3,900 [Z]	100,000 [Z]	100,000 [Z]	45 [Z]	72 [Z]	0.15 [Z]	10 [Z]		<26.3	15	<0.11	<3.66	<4.42	0.16	3.5	0.24	<7.88	<4.31	<3.3	<40.9	<1.64	<0.22
1,3-Dichlorobenzene	---	---	---	---	---	---	---		<26.3	<44.9	<0.11	<3.66	<4.42	<0.362	<5.08	<0.391	<7.88	<4.31	<3.3	<40.9	<1.64	<0.22
1,3-Dichloropropane	1,600 [Z]	41,000 [Z]	41,000 [Z]	1,000 [Z]	1,000 [Z]	1,000 [Z]	0.83 [Z]		<26.3	<44.9	<0.11	<3.66	<4.42	<0.362	<5.08	<0.391	<7.88	<4.31	<3.3	<40.9	<1.64	<0.22
1,4-Dichlorobenzene	---	---	---	11,000	17,000	340	2		<26.3	<44.9	<0.11	<3.66	<4.42	<0.362	<5.08	<0.391	<7.88	<4.31	<3.3	<40.9	<1.64	<0.22
1-Chlorobutane	3,100 [Z]	82,000 [Z]	14,000 [Z]	1,200 [Z]	1,200 [Z]	1,200 [Z]	3.1 [Z]		<26.3	<44.9	<0.11	<3.66	<4.42	<0.362	<5.08	<0.391	<7.88	<4.31	<3.3	<40.9	<1.64	<0.22
2,2-Dichloropropane	---	---	---	---	---	---	---		<26.3	<44.9	<0.11	<3.66	<4.42	<0.362	<5.08	<0.391	<7.88	<4.31	<3.3	<40.9	<1.64	<0.22
2-Butanone (methyl ethyl ketone)	47,000 [Z]	1,000,000 [Z]	120,000 [Z]	25,000 [Z]	25,000 [Z]	710 [Z]	17 [Z]		<263	<449	<1.1	<36.6	<44.2	<3.62	<50.8	<3.91	<78.8	<43.1	<33	<409	<16.4	<2.2
2-Chlorotoluene (o-chlorotoluene)	1,600 [Z]	41,000 [Z]	41,000 [Z]	1,400 [Z]	1,400 [Z]	1,400 [Z]	4 [Z]		<26.3	<44.9	<0.11	<3.66	<4.42	<0.362	<5.08	<0.391	<7.88	<4.31	<3.3	<40.9	<1.64	<0.22
2-Hexanone	---	---	---	---	---	---	---		<263	<449	<1.1	<36.6	<44.2	<3.62	<50.8	<3.91	<78.8	<43.1	<33	<409	<16.4	<2.2
2-Nitropropane	---	---	---	---	---	---	---		<263	<449	<1.1	<36.6	<44.2	<3.62	<50.8	<3.91	<78.8	<43.1	<33	<409	<16.4	<2.2
4-Chlorotoluene	---	---	---	---	---	---	---		<26.3	<44.9	<0.11	<3.66	<4.42	<0.362	<5.08	<0.391	<7.88	<4.31	<3.3	<40.9	<1.64	<0.22
4-Methyl-2-pentanone (MIBK)	---	---	---	3,100 [Z]	3,100 [Z]	340 [Z]	---		<263	<449	<1.1	<36.6	<44.2	<3.62	<50.8	<3.91	<78.8	<43.1	<33	<409	<16.4	<2.2
Acetone	70,000	---	---	100,000	100,000	100,000	25		<263	<449	<1.1	<36.6	<44.2	<3.62	<50.8	<3.91	<78.8	<43.1	<33	<409	<16.4	<2.2
Acrolein	39 [Z]	1,000 [Z]	1,600 [Z]	0.16 [Z]	0.26 [Z]	0.017 [Z]	0.014 [Z]		<526	<898	<2.19	<73.2	<88.3	<7.24	<102	<7.83	<158	<86.1	<65.9	<818	<32.8	<4.4
Acrylonitrile	1.2 [Z]	11 [Z]	230 [Z]	0.28 [Z]	0.54 [Z]	0.17 [Z]	0.0006 [Z]		<52.6	<89.8	<0.219	<7.32	<8.83	<0.724	<10.2	<0.783	<158	<8.61	<65.9	<818	<3.28	<0.44
Allyl chloride	---	---	---	---	---	---	---		<26.3	<44.9	<0.11	<3.66	<4.42	<0.362	<5.08	<0.391	<15.8	<4.31	<6.59	<40.9	<1.64	<0.22
Bromobenzene	1,600 [Z]	41,000 [Z]	41,000 [Z]	100 [Z]	160 [Z]	11 [Z]	2.2 [Z]		<26.3	<44.9	<0.11	<3.66	<4.42	<0.362	<5.08	<0.391	<7.88	<4.31	<3.3	<40.9	<1.64	<0.22
Bromochloromethane	---	---	---	---	---	---			<26.3	<44.9	<0.11	<3.66	<4.42	<0.362	<5.08	<0.391	<7.88	<4.31	<3.3	<40.9	<1.64	<0.22
Bromodichloromethane	10	92	2,000	3,000	3,000	3,000	0.6		<26.3	<44.9	<0.11	<3.66	<4.42	<0.362	<5.08	<0.391	<7.88	<4.31	<3.3	<40.9	<1.64	<0.22
Bromoform	81	720	16,000	53	100	140	0.8		<26.3	<44.9	<0.11	<3.66	<4.42	<0.362	<5.08	<0.391	<7.88	<4.31	<3.3	<40.9	<1.64	<0.22
Bromomethane (methyl bromide)	110	2,900	1,000	10	15	3.9	0.2		<52.6	<89.8	<0.219	<7.32	<8.83	<0.724	<10.2	<0.783	<15.8	<8.61	<6.59	<81.8	<3.28	<0.44
Carbon disulfide	7,800	200,000	20,000	720	720	9	32		<26.3	<44.9	<0.11	<3.66	<4.42	<0.362	<5.08	<0.391	<7.88	<4.31	<3.3	<40.9	<1.64	<0.22
Carbon tetrachloride	5	44	410	0.3	0.64	0.9	0.07		<26.3	<44.9	<0.11	<3.66	<4.42	<0.362	<5.08	<0.391	<7.88	<4.31	<3.3	<40.9	<1.64	<0.22
Chlorobenzene	1,600	41,000	4,100	130	210	1.3	1		<26.3	<44.9	<0.11	<3.66	<4.42	<0.362	<5.08	<0.391	<7.88	<4.31	<3.3	<40.9	<1.64	<0.22
Chloroethane	---	---	---	---	---	---	---		<52.6	<89.8	<0.219	<7.32	<8.83	<0.724	<10.2	<0.783	<15.8	<8.61	<6.59	<81.8	<3.28	<0.44
Chloroform	100	940	2,000	0.3	0.54	0.76	0.6		<26.3	<44.9	<0.11	<3.66	<4.42	<0.362	<5.08	<0.391	<7.88	<4.31	<3.3	<40.9	<1.64	<0.22

Notes:

[1] Objectives are for Class I Groundwater.

[2] Non-TACO or provisional ROs provided by the IEPA.

--- No objective has been published for this constituent by the IEPA, or the sample was not analyzed for this constituent.

Concentration exceeds one or more project remediation objective.

Concentration exceeds one or more project remediation objectives.

Table 4-7
2009-2011 Soil Analytical Results for Excavation Floors - VOCs
Former Ameren Champaign MGP Site

Constituent	Soil Ingestion Residential	Soil Ingestion Commercial	Soil Ingestion Construction	Soil Inhalation Residential	Soil Inhalation Commercial	Soil Inhalation Construction	Soil Component to Groundwater[1]	Sample Location:	Sample ID:	Sample Date:	Sample Depth (feet):
								P2-D2-F	P2-D4-F	P2-FG-3.5-F	P2-E2.5-F
								P2-D2-F (22)	P2-D4-F (22)	P2-FG-3.5-F (24)	P2-E2.5-F (24)
								10/30/2009	10/30/2009	11/19/2009	11/25/2009
								22	22	24	24
Chloromethane (methyl chloride)	---	---	---	---	---	---	---	<52.6	<89.8	<0.219	<7.32
cis-1,2-Dichloroethene	780	20,000	20,000	1,200	1,200	1,200	0.4	<26.3	<44.9	<0.11	<3.66
cis-1,3-Dichloropropene	6.4	57	1,200	1.1	2.1	0.39	0.004	<21	<35.9	<0.11	<3.66
Cyclohexanone	390,000 [2]	1,000,000 [2]	1,000,000 [2]	660 [2]	660 [2]	660 [2]	150 [2]	<526	<898	<2.19	<73.2
Dibromochloromethane (chlorodibromomethane)	1,600	41,000	41,000	1,300	1,300	1,300	0.4	<26.3	<44.9	<0.11	<3.66
Dibromomethane (methylene bromide)	780 [2]	20,000 [2]	20,000 [2]	2,700 [2]	2,700 [2]	2,700 [2]	0.34 [2]	<26.3	<44.9	<0.11	<3.66
Dichlorodifluoromethane	16,000 [2]	410,000 [2]	180,000 [2]	190 [2]	310 [2]	20 [2]	43 [2]	<52.6	<89.8	<0.219	<7.32
Ethyl acetate	70,000 [2]	1,000,000 [2]	1,000,000 [2]	10,000 [2]	10,000 [2]	10,000 [2]	26 [2]	<263	<449	<1.1	<36.6
Ethyl ether	16,000 [2]	410,000 [2]	410,000 [2]	8,800 [2]	8,800 [2]	8,800 [2]	6.1 [2]	<26.3	<44.9	<0.11	<3.66
Ethyl methacrylate	---	---	---	---	---	---	---	<26.3	<44.9	<0.11	<3.66
Heptane	---	---	---	---	---	---	---	<105	<180	<0.439	<14.6
Hexachlorobutadiene	---	---	---	---	---	---	---	<26.3	<44.9	<0.11	<3.66
Hexachloroethane	78	2,000	2,000	---	---	---	0.5	<26.3	<44.9	<0.11	<3.66
Iodomethane	---	---	---	---	---	---	---	<52.6	<89.8	<0.219	<7.32
Isopropylbenzene (cumene)	7,800 [2]	200,000 [2]	61,000 [2]	500 [2]	790 [2]	51 [2]	91 [2]	<26.3	<44.9	<0.11	<3.66
Methacrylonitrile	---	---	---	---	---	---	---	<263	<449	<1.1	<36.6
Methyl Methacrylate	---	---	---	---	---	---	---	<26.3	<44.9	<0.11	<3.66
Methyl tert-butyl ether	780	20,000	2,000	8,800	8,800	140	0.32	<10.5	<18	<0.0439	<1.46
Methylacrylate	2,300 [2]	61,000 [2]	6,100 [2]	6,500 [2]	6,500 [2]	6,500 [2]	0.89 [2]	<52.6	<89.8	<0.219	<7.32
Methylene chloride (dichloromethane)	85	760	12,000	13	24	34	0.02	<26.3	<44.9	<0.11	<3.66
Naphthalene	1,600	41,000	4,100	170	270	1.8	12	430	1560	14	12
n-Butylbenzene	---	---	---	---	---	---	---	<26.3	<44.9	<0.11	<3.66
n-Hexane	---	---	---	290 [2]	290 [2]	15 [2]	---	<105	<180	<0.439	<14.6
Nitrobenzene	39	1,000	1,000	92	140	9.4	0.1	<526	<898	<2.19	<73.2
n-Propylbenzene	---	---	---	---	---	---	---	<26.3	<44.9	<0.11	<3.66
Pentachloroethane	---	---	---	---	---	---	---	<26.3	<44.9	<0.11	<3.66
p-Isopropyltoluene	---	---	---	---	---	---	---	<26.3	<44.9	<0.11	<3.66
Propionitrile	---	---	---	---	---	---	---	<263	<449	<1.1	<36.6
sec-Butylbenzene	---	---	---	---	---	---	---	<26.3	<44.9	<0.11	<3.66
Styrene	16,000	410,000	41,000	1,500	1,500	430	4	<26.3	<44.9	2.04	8.4
tert-Butylbenzene	---	---	---	---	---	---	---	<26.3	<44.9	<0.11	<3.66
Tetrachloroethene	12	110	2,400	11	20	28	0.06	<26.3	<44.9	<0.11	<3.66
Tetrahydrofuran	---	---	---	---	---	---	---	<263	<449	<1.1	<36.6
trans-1,2-Dichloroethene	1,600	41,000	41,000	3,100	3,100	3,100	0.7	<26.3	<44.9	<0.11	<3.66
trans-1,3-Dichloropropene	6.4	57	1,200	1.1	2.1	0.39	0.004	<21	<35.9	<0.11	<3.66
Trichloroethene	58	520	1,200	5	8.9	12	0.06	<26.3	<44.9	<0.11	<3.66
Trichlorofluoromethane	23,000 [2]	610,000 [2]	140,000 [2]	850 [2]	1,400 [2]	88 [2]	34 [2]	<26.3	<44.9	<0.11	<3.66
Vinyl acetate	78,000	1,000,000	200,000	1,000	1,600	10	170 [2]	<263	<449	<1.1	<36.6
Vinyl chloride	0.46	7.9	170	0.28	1.1	1.1	0.01	<10.5	<18	<0.0439	<1.46

Constituent	Sample Location:	Sample ID:	Sample Date:	Sample Depth (feet):
	P2-E4-F	P3-C2-F	P3-D2-F	P3-D2-F
	P2-E4-F (24)	P3-C2-F (24)	P3-D2-F (22)	P3-D2-F (24)
	11/25/2009	1/26/2010	1/25/2010	1/26/2010
	24	24	22	24
Chloromethane (methyl chloride)	<8.83	<0.724	<10.2	<0.783
cis-1,2-Dichloroethene	<4.42	<0.362	<5.08	<0.391
cis-1,3-Dichloropropene	<4.42	<0.289	<4.06	<0.313
Cyclohexanone	<88.3	<7.24	<102	<7.83
Dibromochloromethane (chlorodibromomethane)	<4.42	<0.362	<5.08	<0.391
Dibromomethane (methylene bromide)	<4.42	<0.362	<5.08	<0.391
Dichlorodifluoromethane	<8.83	<0.724	<10.2	<0.783
Ethyl acetate	<44.2	<3.62	<50.8	<3.91
Ethyl ether	<4.42	<0.362	<5.08	<0.391
Ethyl methacrylate	<4.42	<0.362	<5.08	<0.391
Heptane	<17.7	<1.45	<20.3	<1.57
Hexachlorobutadiene	<4.42	<0.362	<5.08	<0.391
Hexachloroethane	<4.42	<0.362	<5.08	<0.391
Iodomethane	<8.83	<0.724	<10.2	<0.783
Isopropylbenzene (cumene)	<4.42	<0.362	<5.08	0.14
Methacrylonitrile	<44.2	<3.62	<50.8	<3.91
Methyl Methacrylate	<4.42	<0.362	<5.08	<0.391
Methyl tert-butyl ether	<1.77	<0.145	<2.03	<0.157
Methylacrylate	<8.83	<0.724	<10.2	<0.783
Methylene chloride (dichloromethane)	<4.42	<0.362	<5.08	<0.391
Naphthalene	83.5	9.5	249	26.1
n-Butylbenzene	<4.42	<0.362	<5.08	<0.391
n-Hexane	<17.7	<1.45	<20.3	<1.57
Nitrobenzene	<88.3	<7.24	<102	<7.83
n-Propylbenzene	<4.42	<0.362	<5.08	<0.391
Pentachloroethane	<4.42	<0.362	<5.08	<0.391
p-Isopropyltoluene	<4.42	<0.362	<5.08	<0.391
Propionitrile	<44.2	<3.62	<50.8	<3.91
sec-Butylbenzene	<4.42	<0.362	<5.08	<0.391
Styrene	2.7	<0.362	5.28	<0.391
tert-Butylbenzene	<4.42	<0.362	<5.08	<0.391
Tetrachloroethene	<4.42	<0.362	<5.08	<0.391
Tetrahydrofuran	<44.2	<3.62	<50.8	<3.91
trans-1,2-Dichloroethene	<4.42	<0.362	<5.08	<0.391
trans-1,3-Dichloropropene	<4.42	<0.289	<4.06	<0.313
Trichloroethene	<4.42	<0.362	<5.08	<0.391
Trichlorofluoromethane	<4.42	<0.362	<5.08	<0.391
Vinyl acetate	<44.2	<3.62	<50.8	<3.91
Vinyl chloride	<1.77	<0.145	<2.03	<0.157

Constituent	Sample Location:	Sample ID:	Sample Date:	Sample Depth (feet):
	P3-DE1.5-F	P3-E3-F	P3-F2-F	P4-B2-F
	P3-DE1.5-F (23)	P3-E3-F (24)	P3-F2-F (23)	P4-B2-F (25)
	1/29/2010	1/28/2010	2/3/2010	4/7/2010
	23	24	23	25
Chloromethane (methyl chloride)	<15.8	<8.61	<6.59	<81.8
cis-1,2-Dichloroethene	<7.88	<4.31	<3.3	<40.9
cis-1,3-Dichloropropene	<7.88	<4.31	<3.3	<40.9
Cyclohexanone	<158	<86.1	<65.9	<818
Dibromochloromethane (chlorodibromomethane)	<7.88	<4.31	<3.3	<40.9
Dibromomethane (methylene bromide)	<7.88	<4.31	<3.3	<40.9
Dichlorodifluoromethane	<15.8	<8.61	<6.59	<81.8
Ethyl acetate	<78.8	<43.1	<33	<409
Ethyl ether	<7.88	<4.31	<3.3	<40.9
Ethyl methacrylate	<7.88	<4.31	<3.3	<40.9
Heptane	<31.5	<17.2	<13.2	<164
Hexachlorobutadiene	<7.88	<4.31	<3.3	<40.9
Hexachloroethane	<7.88	<4.31	<3.3	<40.9
Iodomethane	<15.8	<8.61	<6.59	<81.8
Isopropylbenzene (cumene)	<7.88	<4.31	<3.3	<40.9
Methacrylonitrile	<78.8	<43.1	<33	<409
Methyl Methacrylate	<7.88	<4.31	<3.3	<40.9
Methyl tert-butyl ether	<3.15	<1.72	<1.32	<16.4
Methylacrylate	<15.8	<8.61	<6.59	<81.8
Methylene chloride (dichloromethane)	<7.88	<4.31	0.67	<40.9
Naphthalene	4.5	405	116	99.2
n-Butylbenzene	<7.88	<4.31	<3.3	<40.9
n-Hexane	<31.5	<17.2	<13.2	<164
Nitrobenzene	<158	<86.1	<65.9	<818
n-Propylbenzene	<7.88	<4.31	<3.3	<40.9
Pentachloroethane	<7.88	<4.31	<3.3	<40.9
p-Isopropyltoluene	<7.88	<4.31	<3.3	<40.9
Propionitrile	<78.8	<43.1	<33	<409
sec-Butylbenzene	<7.88	<4.31	<3.3	<40.9
Styrene	<7.88	8.22	5.81	<40.9
tert-Butylbenzene	<7.88	<4.31	<3.3	<40.9
Tetrachloroethene	<7.88	<4.31	<3.3	<40.9
Tetrahydrofuran	<78.8	<43.1	<33	<409
trans-1,2-Dichloroethene	<7.88	<4.31	<3.3	<40.9
trans-1,3-Dichloropropene	<7.88	<4.31	<3.3	<40.9
Trichloroethene	<7.88	<4.31	<3.3	<40.9
Trichlorofluoromethane	<7.88	<4.31	<3.3	<40.9
Vinyl acetate	<78.8	<43.1	<33	<409
Vinyl chloride	<3.15	<1.72	<1.32	<16.4

Constituent	Sample Location:	Sample ID:	Sample Date:	Sample Depth (feet):
	P4-B3-F	P4-EF3-F		
	P4-B3-F (25)	P4-EF3-F (25)		
	4/7/2010	4/12/2010		
	25	25		
Chloromethane (methyl chloride)	<3.28	<0.44		
cis-1,2-Dichloroethene	<1.64	<0.22		
cis-1,3-Dichloropropene	<1.64	<0.22		
Cyclohexanone	<32.8	<4.4		
Dibromochloromethane (chlorodibromomethane)	<1.64	<0.22		
Dibromomethane (methylene bromide)	<1.64	<0.22		
Dichlorodifluoromethane	<3.28	<0.44		
Ethyl acetate	<16.4	1.1		
Ethyl ether	<1.64	<0.22		
Ethyl methacrylate	<1.64	<0.22		
Heptane	<6.56	<0.879		
Hexachlorobutadiene	<1.64	<0.22		
Hexachloroethane	<1.64	<0.22		
Iodomethane	<3.28	<0.44		
Isopropylbenzene (cumene)	<1.64	<0.22		
Methacrylonitrile	<16.4	<2.2		
Methyl Methacrylate	<1.64	<0.22		
Methyl tert-butyl ether	<0.656	<0.0879		
Methylacrylate	<3.28	<0.44		
Methylene chloride (dichloromethane)	<1.64	<0.22		
Naphthalene	38.1	6.38		
n-Butylbenzene	<1.64	<0.22		
n-Hexane	<6.56	<0.879		
Nitrobenzene	<32.8	<4.4		
n-Propylbenzene	<1.64	<0.22		
Pentachloroethane	<1.64	<0.22		
p-Isopropyltoluene	<1.64	<0.22		
Propionitrile	<16.4	<2.2		
sec-Butylbenzene	<1.64	<0.22		
Styrene	3.07	<0.22		
tert-Butylbenzene	<1.64	<0.22		
Tetrachloroethene	<1.64	<0.22		
Tetrahydrofuran	<16.4	<2.2		
trans-1,2-Dichloroethene	<1.64	<0.22		
trans-1,3-Dichloropropene	<1.64	<0.22		
Trichloroethene	<1.64	<0.22		
Trichlorofluoromethane	<1.64	<0.22		
Vinyl acetate	<16.4	<2.2		
Vinyl chloride	<0.656	<0.0879		

Notes:

[1] Objectives are for Class I Groundwater.

[2] Non-TACO or provisional ROs provided by the IEPA.

'--- No objective has been published for this constituent by the IEPA, or the sample was not analyzed for this constituent.

Concentration exceeds one or more project remediation objective.

Concentration exceeds one or more project remediation objectives.

Table 4-7
2009-2011 Soil Analytical Results for Excavation Floors - VOCs
Former Ameren Champaign MGP Site

Constituent	Soil Ingestion Residential	Soil Ingestion Commercial	Soil Ingestion Construction	Soil Inhalation Residential	Soil Inhalation Commercial	Soil Inhalation Construction	Soil Component to Groundwater[1]	Sample Location:	Sample ID:	Sample Date:	Sample Depth (feet):							
									P4-G2-F	P5-B2-F	P5-B2-F	P5-GH4-F	P5-G2.5-F	P6-B4.5-F	P9-G1.5-F	P9-DE1.5-F
									P4-G2-F(26)	P5-B2-F(24)	P5-B2-F(26)	P5-GH4-F(22)	P5-G2.5-F (22)	P6-B4.5-F (25)	P9-G1.5-F (14)	P9-DE1.5-F (16)
									5/20/2010	7/16/2010	7/16/2010	8/27/2010	9/3/2010	10/15/2010	5/13/2011	6/1/2011
									26	24	26	22	22	25	14	16
Volatile Organic Compounds (mg/kg)																
1,1,1,2-Tetrachloroethane	2,300 [Z]	61,000 [Z]	6,100 [Z]	2,100 [Z]	2,100 [Z]	2,100 [Z]	3.4 [Z]		<0.237	<7.92	<2.08	<0.137	<0.119	<0.106	<0.103	<0.371
1,1,1-Trichloroethane	---	---	---	1,200	1,200	1,200	2		<0.237	<7.92	<2.08	<0.137	<0.119	<0.106	<0.103	<0.371
1,1,2,2-Tetrachloroethane	4,700 [Z]	120,000 [Z]	12,000 [Z]	2,000 [Z]	2,000 [Z]	2,000 [Z]	3.3 [Z]		<0.237	<7.92	<2.08	<0.137	<0.119	<0.106	<0.103	<0.371
1,1,2-Trichloro-1,2,2-trifluoroethane	---	---	---	---	---	---	---		<0.237	<7.92	<2.08	<0.137	<0.119	<0.106	<0.103	<0.371
1,1,2-Trichloroethane	310	8,200	8,200	1,800	1,800	1,800	0.02		<0.237	<7.92	<2.08	<0.137	<0.119	<0.106	<0.103	<0.371
1,1-Dichloro-2-propanone	---	---	---	---	---	---			<2.37	<79.2	<20.8	<1.37	<1.19	<1.06	<1.03	<3.71
1,1-Dichloroethane	7,800	200,000	200,000	1,300	1,700	130	23		<0.237	<7.92	<2.08	<0.137	<0.119	<0.106	<0.103	<0.371
1,1-Dichloroethene	3,900	100,000	470	290	10,000	3	0.06		<0.237	<7.92	<2.08	<0.137	<0.119	<0.106	<0.103	<0.371
1,1-Dichloropropene	---	---	---	---	---	---	---		<0.237	<7.92	<2.08	<0.137	<0.119	<0.106	<0.103	<0.371
1,2,3-Trichlorobenzene	---	---	---	---	---	---	---		<0.237	<7.92	<2.08	<0.137	<0.119	<0.106	<0.103	<0.371
1,2,3-Trichloropropane	0.092 [Z]	0.82 [Z]	18	730 [Z]	730 [Z]	730 [Z]	0.0001 [Z]		<0.473	<15.8	<4.15	<0.275	<0.238	<0.211	<0.207	<0.743
1,2,3-Trimethylbenzene	---	---	---	---	---	---	---		0.09	<7.92	<2.08	<0.137	<0.119	0.488	0.384	0.33
1,2,4-Trichlorobenzene	780	20,000	2,000	3,200	3,200	920	5		<0.237	<7.92	<2.08	<0.137	<0.119	<0.106	<0.103	<0.371
1,2,4-Trimethylbenzene	3,900 [Z]	100,000 [Z]	100,000 [Z]	73 [Z]	120 [Z]	0.25 [Z]	18 [Z]		0.052	<7.92	<2.08	<0.137	<0.119	1.33	0.179	0.434
1,2-Dibromo-3-chloropropane	0.46	4	89	11	17	0.11	0.002		<0.237	<7.92	<2.08	<0.137	<0.119	<0.106	<0.103	<0.371
1,2-Dibromoethane (EDB)	0.32	2.9	62	0.06	0.12	0.16	0.0004		<0.237	<7.92	<2.08	<0.137	<0.119	<0.106	<0.103	<0.371
1,2-Dichlorobenzene	7,000	180,000	18,000	560	560	310	17		<0.237	<7.92	<2.08	<0.137	<0.119	<0.106	<0.103	<0.371
1,2-Dichloroethane	7	63	1,400	0.4	0.7	0.99	0.02		<0.237	<7.92	<2.08	<0.137	<0.119	<0.106	<0.103	<0.371
1,2-Dichloropropane	9	84	1,800	15	23	0.5	0.03		<0.237	<7.92	<2.08	<0.137	<0.119	<0.106	<0.103	<0.371
1,3,5-Trimethylbenzene	3,900 [Z]	100,000 [Z]	100,000 [Z]	45 [Z]	72 [Z]	0.15 [Z]	10 [Z]		<0.237	<7.92	<2.08	<0.137	<0.119	0.385	<0.103	<0.371
1,3-Dichlorobenzene	---	---	---	---	---	---	---		<0.237	<7.92	<2.08	<0.137	<0.119	<0.106	<0.103	<0.371
1,3-Dichloropropane	1,600 [Z]	41,000 [Z]	41,000 [Z]	1,000 [Z]	1,000 [Z]	1,000 [Z]	0.83 [Z]		<0.237	<7.92	<2.08	<0.137	<0.119	<0.106	<0.103	<0.371
1,4-Dichlorobenzene	---	---	---	11,000	17,000	340	2		<0.237	<7.92	<2.08	<0.137	<0.119	<0.106	<0.103	<0.371
1-Chlorobutane	3,100 [Z]	82,000 [Z]	14,000 [Z]	1,200 [Z]	1,200 [Z]	1,200 [Z]	3.1 [Z]		<0.237	<7.92	<2.08	<0.137	<0.119	<0.106	<0.103	<0.371
2,2-Dichloropropane	---	---	---	---	---	---	---		<0.237	<7.92	<2.08	<0.137	<0.119	<0.106	<0.103	<0.371
2-Butanone (methyl ethyl ketone)	47,000 [Z]	1,000,000 [Z]	120,000 [Z]	25,000 [Z]	25,000 [Z]	710 [Z]	17 [Z]		<2.37	<79.2	<20.8	<1.37	<1.19	<1.06	<1.03	<3.71
2-Chlorotoluene (o-chlorotoluene)	1,600 [Z]	41,000 [Z]	41,000 [Z]	1,400 [Z]	1,400 [Z]	1,400 [Z]	4 [Z]		<0.237	<7.92	<2.08	<0.137	<0.119	<0.106	<0.103	<0.371
2-Hexanone	---	---	---	---	---	---	---		<2.37	<79.2	<20.8	<1.37	<1.19	<1.06	<1.03	<3.71
2-Nitropropane	---	---	---	---	---	---	---		<2.37	<79.2	<20.8	<1.37	<1.19	<1.06	<1.03	<3.71
4-Chlorotoluene	---	---	---	---	---	---	---		<0.237	<7.92	<2.08	<0.137	<0.119	<0.106	<0.103	<0.371
4-Methyl-2-pentanone (MIBK)	---	---	---	3,100 [Z]	3,100 [Z]	340 [Z]	---		<2.37	<79.2	<2.08	<1.37	<1.19	<1.06	<1.03	<3.71
Acetone	70,000	---	---	100,000	100,000	100,000	25		<2.37	<79.2	<20.8	0.28	<1.19	0.22	<1.03	<3.71
Acrolein	39 [Z]	1,000 [Z]	1,600 [Z]	0.16 [Z]	0.26 [Z]	0.017 [Z]	0.014 [Z]		<4.73	<158	<41.5	<2.75	<2.38	<2.11	<2.07	<7.43
Acrylonitrile	1.2 [Z]	11 [Z]	230 [Z]	0.28 [Z]	0.54 [Z]	0.17 [Z]	0.0006 [Z]		<4.73	<158	<41.5	<.275	<.238	<0.211	<0.207	<0.743
Allyl chloride	---	---	---	---	---	---	---		<0.473	<15.8	<41.5	<0.137	<0.119	<0.106	<0.103	<0.371
Bromobenzene	1,600 [Z]	41,000 [Z]	41,000 [Z]	100 [Z]	160 [Z]	11 [Z]	2.2 [Z]		<0.237	<7.92	<2.08	<0.137	<0.119	<0.106	<0.103	<0.371
Bromochloromethane	---	---	---	---	---	---			<0.237	<7.92	<2.08	<0.137	<0.119	<0.106	<0.103	<0.371
Bromodichloromethane	10	92	2,000	3,000	3,000	3,000	0.6		<0.237	<7.92	<2.08	<0.137	<0.119	<0.106	<0.103	<0.371
Bromoform	81	720	16,000	53	100	140	0.8		<0.237	<7.92	<2.08	<0.137	<0.119	<0.106	<0.103	<0.371
Bromomethane (methyl bromide)	110	2,900	1,000	10	15	3.9	0.2		<0.473	<15.8	<4.15	<0.275	<0.238	<0.211	<0.207	<0.743
Carbon disulfide	7,800	200,000	20,000	720	720	9	32		<0.237	<7.92	<2.08	<0.137	<0.119	<0.106	<0.103	<0.371
Carbon tetrachloride	5	44	410	0.3	0.64	0.9	0.07		<0.237	<7.92	<2.08	<0.137	<0.119	<0.106	<0.103	<0.371
Chlorobenzene	1,600	41,000	4,100	130	210	1.3	1		<0.237	<7.92	<2.08	<0.137	<0.119	<0.106	<0.103	<0.371
Chloroethane	---	---	---	---	---	---	---		<0.473	<15.8	<4.15	<0.275	<0.238	<0.211	<0.207	<0.743
Chloroform	100	940	2,000	0.3	0.54	0.76	0.6		<0.237	<7.92	<2.08	<0.137	<0.119	<0.106	<0.103	<0.371

Notes:

[1] Objectives are for Class I Groundwater.

[2] Non-TACO or provisional ROs provided by the IEPA.

--- No objective has been published for this constituent by the IEPA, or the sample was not analyzed for this constituent.

Concentration exceeds one or more project remediation objective.

Concentration exceeds one or more project remediation objectives.

Table 4-7
2009-2011 Soil Analytical Results for Excavation Floors - VOCs
Former Ameren Champaign MGP Site

Constituent	Soil Ingestion Residential	Soil Ingestion Commercial	Soil Ingestion Construction	Soil Inhalation Residential	Soil Inhalation Commercial	Soil Inhalation Construction	Soil Component to Groundwater[1]	Sample Location:	Sample ID:	Sample Date:	Sample Depth (feet):
								P4-G2-F	P5-B2-F	P5-B2-F	P5-GH4-F
								P4-G2-F(26)	P5-B2-F(24)	P5-B2-F(26)	P5-GH4-F(22)
								5/20/2010	7/16/2010	7/16/2010	8/27/2010
								26	24	26	22
Chloromethane (methyl chloride)	---	---	---	---	---	---	---	<0.473	<15.8	<4.15	<0.275
cis-1,2-Dichloroethene	780	20,000	20,000	1,200	1,200	1,200	0.4	<0.237	<7.92	<2.08	<0.137
cis-1,3-Dichloropropene	6.4	57	1,200	1.1	2.1	0.39	0.004	<0.237	<7.92	<2.08	<0.137
Cyclohexanone	390,000 [2]	1,000,000 [2]	1,000,000 [2]	660 [2]	660 [2]	660 [2]	150 [2]	<4.73	<158	<41.5	<2.75
Dibromochloromethane (chlorodibromomethane)	1,600	41,000	41,000	1,300	1,300	1,300	0.4	<0.237	<7.92	<2.08	<0.137
Dibromomethane (methylene bromide)	780 [2]	20,000 [2]	20,000 [2]	2,700 [2]	2,700 [2]	2,700 [2]	0.34 [2]	<0.237	<7.92	<2.08	<0.137
Dichlorodifluoromethane	16,000 [2]	410,000 [2]	180,000 [2]	190 [2]	310 [2]	20 [2]	43 [2]	<0.473	<15.8	<4.15	<0.275
Ethyl acetate	70,000 [2]	1,000,000 [2]	1,000,000 [2]	10,000 [2]	10,000 [2]	10,000 [2]	26 [2]	1.1	<79.2	<20.8	0.83
Ethyl ether	16,000 [2]	410,000 [2]	410,000 [2]	8,800 [2]	8,800 [2]	8,800 [2]	6.1 [2]	<0.237	<7.92	<2.08	<0.137
Ethyl methacrylate	---	---	---	---	---	---	---	<0.237	<7.92	<2.08	<0.137
Heptane	---	---	---	---	---	---	---	<0.947	<31.7	<8.31	<0.549
Hexachlorobutadiene	---	---	---	---	---	---	---	<0.237	<7.92	<2.08	<0.137
Hexachloroethane	78	2,000	2,000	---	---	---	0.5	<0.237	<7.92	<2.08	<0.137
Iodomethane	---	---	---	---	---	---	---	<0.473	<15.8	<4.15	<0.275
Isopropylbenzene (cumene)	7,800 [2]	200,000 [2]	61,000 [2]	500 [2]	790 [2]	51 [2]	91 [2]	<0.237	<7.92	<2.08	<0.137
Methacrylonitrile	---	---	---	---	---	---	---	<2.37	<79.2	<20.8	<1.37
Methyl Methacrylate	---	---	---	---	---	---	---	<0.237	<7.92	<2.08	<0.137
Methyl tert-butyl ether	780	20,000	2,000	8,800	8,800	140	0.32	<0.0947	<3.17	<0.831	<0.0549
Methylacrylate	2,300 [2]	61,000 [2]	6,100 [2]	6,500 [2]	6,500 [2]	6,500 [2]	0.89 [2]	<0.473	<15.8	<4.15	<0.275
Methylene chloride (dichloromethane)	85	760	12,000	13	24	34	0.02	<0.237	1.9	0.53	0.048
Naphthalene	1,600	41,000	4,100	170	270	1.8	12	9.01	<15.8	<4.15	<0.275
n-Butylbenzene	---	---	---	---	---	---	---	<0.237	<7.92	<2.08	<0.137
n-Hexane	---	---	---	290 [2]	290 [2]	15 [2]	---	<0.947	<31.7	<8.31	<0.549
Nitrobenzene	39	1,000	1,000	92	140	9.4	0.1	<4.73	<158	<41.5	<2.75
n-Propylbenzene	---	---	---	---	---	---	---	<0.237	<7.92	<2.08	<0.137
Pentachloroethane	---	---	---	---	---	---	---	<0.237	<7.92	<2.08	<0.137
p-Isopropyltoluene	---	---	---	---	---	---	---	<0.237	<7.92	<2.08	<0.137
Propionitrile	---	---	---	---	---	---	---	<2.37	<79.2	<20.8	<1.37
sec-Butylbenzene	---	---	---	---	---	---	---	<0.237	<7.92	<2.08	<0.137
Styrene	16,000	410,000	41,000	1,500	1,500	430	4	0.048	<7.92	<2.08	<0.137
tert-Butylbenzene	---	---	---	---	---	---	---	<0.237	<7.92	<2.08	<0.137
Tetrachloroethene	12	110	2,400	11	20	28	0.06	<0.237	<7.92	<2.08	<0.137
Tetrahydrofuran	---	---	---	---	---	---	---	<0.237	<79.2	<20.8	<1.37
trans-1,2-Dichloroethene	1,600	41,000	41,000	3,100	3,100	3,100	0.7	<0.237	<7.92	<2.08	<0.137
trans-1,3-Dichloropropene	6.4	57	1,200	1.1	2.1	0.39	0.004	<0.237	<7.92	<2.08	<0.137
Trichloroethene	58	520	1,200	5	8.9	12	0.06	<0.237	<7.92	<2.08	<0.137
Trichlorofluoromethane	23,000 [2]	610,000 [2]	140,000 [2]	850 [2]	1,400 [2]	88 [2]	34 [2]	<0.237	<7.92	<2.08	<0.137
Vinyl acetate	78,000	1,000,000	200,000	1,000	1,600	10	170 [2]	<2.37	<79.2	<20.8	<1.37
Vinyl chloride	0.46	7.9	170	0.28	1.1	1.1	0.01	<0.0947	<3.17	<0.831	<0.0549

Constituent	Sample Location:	Sample ID:	Sample Date:	Sample Depth (feet):
	P5-G2.5-F	P6-B4.5-F	P9-G1.5-F	P9-DE1.5-F
	P5-G2.5-F (22)	P6-B4.5-F (25)	P9-G1.5-F (14)	P9-DE1.5-F (16)
	9/3/2010	10/15/2010	5/13/2011	6/1/2011
	22	25	14	16
Chloromethane (methyl chloride)	<0.238	<0.211	<0.207	<0.743
cis-1,2-Dichloroethene	<0.119	<0.106	<0.103	<0.371
cis-1,3-Dichloropropene	<0.119	<0.106	<0.0828	<0.297
Cyclohexanone	<2.38	<0.211	<2.07	<7.43
Dibromochloromethane (chlorodibromomethane)	<0.119	<0.106	<0.103	<0.371
Dibromomethane (methylene bromide)	<0.119	<0.106	<0.103	<0.371
Dichlorodifluoromethane	<0.238	<0.211	<0.207	<0.743
Ethyl acetate	700	0.73	<1.03	<3.71
Ethyl ether	<0.119	<0.106	<0.103	<0.371
Ethyl methacrylate	<0.119	<0.106	<0.103	<0.371
Heptane	<0.476	<0.422	<0.414	<1.49
Hexachlorobutadiene	<0.119	<0.106	<0.103	<0.371
Hexachloroethane	<0.119	<0.106	<0.103	<0.371
Iodomethane	<0.238	<0.211	<0.207	<0.743
Isopropylbenzene (cumene)	<0.119	0.021	<0.103	<0.371
Methacrylonitrile	<1.19	<1.06	<1.03	<3.71
Methyl Methacrylate	<0.119	<0.106	<0.103	<0.371
Methyl tert-butyl ether	<.0476	<0.0422	<0.0414	<0.149
Methylacrylate	<0.238	<0.211	<0.207	<0.743
Methylene chloride (dichloromethane)	<0.119	<0.106	<0.103	<0.371
Naphthalene	<0.238	28.3	3.89	5.24
n-Butylbenzene	<0.119	<0.106	<0.103	<0.371
n-Hexane	<0.476	<0.422	<0.414	<1.49
Nitrobenzene	<2.38	<2.11	<2.07	<7.43
n-Propylbenzene	<0.119	0.095	<0.103	<0.371
Pentachloroethane	<0.119	<0.106	<0.103	<0.371
p-Isopropyltoluene	<0.119	<0.106	<0.103	<0.371
Propionitrile	<1.19	<1.06	<1.03	<3.71
sec-Butylbenzene	<0.119	<0.106	<0.103	<0.371
Styrene	<0.119	1.46	<0.103	<0.371
tert-Butylbenzene	<0.119	<0.106	<0.103	<0.371
Tetrachloroethene	<0.119	<0.106	<0.103	<0.371
Tetrahydrofuran	<1.19	<1.06	<1.03	<3.71
trans-1,2-Dichloroethene	<0.119	<0.106	<0.103	<0.371
trans-1,3-Dichloropropene	<0.119	<0.106	<0.0828	<0.297
Trichloroethene	<0.119	<0.106	<0.103	<0.371
Trichlorofluoromethane	<0.119	<0.106	<0.103	<0.371
Vinyl acetate	<1.19	<1.06	<1.03	<3.71
Vinyl chloride	<0.0476	<0.0422	<0.0414	<0.149

Notes:

[1] Objectives are for Class I Groundwater.

[2] Non-TACO or provisional ROs provided by the IEPA.

--- No objective has been published for this constituent by the IEPA, or the sample was not analyzed for this constituent.

Concentration exceeds one or more project remediation objective.

Concentration exceeds one or more project remediation objectives.

Table 4-8
2009-2011 Soil Analytical Results for Excavation Floors - SVOCs
Former Ameren Champaign MGP Site

Constituent	Soil Ingestion Residential	Soil Ingestion Commercial	Soil Ingestion Construction	Soil Inhalation Residential	Soil Inhalation Commercial	Soil Inhalation Construction	Soil Component to Groundwater[1]	Sample Location:	P1-D3.5-F	P1-D5-F	P1-F3.5-F	P1-H5-F	P2-B4-F	P2-C4-F	P2-D2-F	P2-D4-F	P2-E2.5-F	P3-C2-F	P3-C3-F	P3-C3-F	P3-D2-F	P3-DE1.5-F	P3-DE1-F	P3-E3-F	P3-F2-F	P4-B3-F
								Sample ID:	P1-D3.5-F(25)	P1-D5-F(25)	P1-F3.5-F(20.5)	P1-H5-F (20.5)	P2-B4-F (22)	P2-C4-F (22)	P2-D2-F (22)	P2-D4-F (22)	P2-E2.5-F (24)	P3-C2-F (24)	P3-C3-F (22)	P3-C3-F (24)	P3-D2-F (22)	P3-DE1.5-F (23)	P3-DE1-F (23)	P3-E3-F (24)	P3-F2-F (23)	P4-B3-F (25)
								Sample Date:	7/30/2009	7/30/2009	7/31/2009	9/10/2009	10/30/2009	10/30/2009	10/30/2009	10/30/2009	11/25/2009	1/26/2010	1/25/2010	1/26/2010	1/25/2010	1/29/2010	1/29/2010	1/28/2010	2/3/2010	4/7/2010
								Sample Depth (feet):	25'	25'	20.5'	20.5	22	22	22	22	24	24	22	24	22	23	23	24	23	25
Semivolatile Organic Compounds (mg/kg)																										
1,2,4-Trichlorobenzene	780	20,000	2,000	3,200	3,200	920	5		<5.61	<0.558	<11.6	<0.559	<0.56	<2.91	<5.82	<5.63	<2.76	<5.6	<5.56	<0.546	<5.61	<10.7	<10.4	<5.51	<1.68	<2.77
1,2-Dichlorobenzene	7,000	180,000	18,000	560	560	310	17		<5.61	<0.558	<11.6	<0.559	<0.56	<2.91	<5.82	<5.63	<2.76	<5.6	<5.56	<0.546	<5.61	<10.7	<10.4	<5.51	<1.68	<2.77
1,2-Diphenylhydrazine	---	---	---	---	---	---	---		<9.43	<0.937	<19.5	<0.94	<0.94	<4.88	<9.77	<9.45	<4.63	<9.41	<9.33	<0.917	<9.42	<18	<17.5	<9.25	<2.81	<4.66
1,3-Dichlorobenzene	---	---	---	---	---	---	---		<5.61	<0.558	<11.6	<0.559	<0.56	<2.91	<5.82	<5.63	<2.76	<5.6	<5.56	<0.546	<5.61	<10.7	<10.4	<5.51	<1.68	<2.77
1,4-Dichlorobenzene	---	---	---	11,000	17,000	340	2		<5.61	<0.558	<11.6	<0.559	<0.56	<2.91	<5.82	<5.63	<2.76	<5.6	<5.56	<0.546	<5.61	<10.7	<10.4	<5.51	<1.68	<2.77
2,4,5-Trichlorophenol	7,800	200,000	200,000	---	---	---	130		<3.93	<0.39	<8.12	<0.392	<0.392	<2.03	<4.07	<3.94	<1.93	<3.92	<3.89	<0.382	<3.92	<7.51	<7.31	<3.86	<1.17	<1.94
2,4,6-Trichlorophenol	58	520	11,000	200	390	540	0.09		<3.93	<0.39	<8.12	<0.392	<0.392	<2.03	<4.07	<3.94	<1.93	<3.92	<3.89	<0.382	<3.92	<7.51	<7.31	<3.86	<1.17	<1.94
2,4-Dichlorophenol	230	6,100	610	---	---	---	0.86		<5.61	<0.558	<11.6	<0.559	<0.56	<2.91	<5.82	<5.63	<2.76	<5.6	<5.56	<0.546	<5.61	<10.7	<10.4	<5.51	<1.68	<2.77
2,4-Dimethylphenol	1,600	41,000	41,000	---	---	---	9		<5.61	<0.558	<11.6	<0.559	0.21	<2.91	1.8	2.5	<2.76	<5.6	3.1	<0.546	2.5	<10.7	5.3	<5.51	0.73	<2.77
2,4-Dinitrophenol	160	4,100	410	---	---	---	0.2		<11.2	<1.12	<23.2	<1.12	<1.12	<5.81	<11.6	<11.3	<5.51	<11.2	<11.1	<1.09	<11.2	<21.5	<20.9	<11	<3.35	<5.55
2,4-Dinitrotoluene	0.9	8.4	180	---	---	---	0.0008		<3.93	<0.39	<8.12	<0.392	<0.392	<2.03	<4.07	<3.94	<1.93	<3.92	<3.89	<0.382	<3.92	<7.51	<7.31	<3.86	<1.17	<1.94
2,6-Dinitrotoluene	0.9	8.4	180	---	---	---	0.0007		<3.93	<0.39	<8.12	<0.392	<0.392	<2.03	<4.07	<3.94	<1.93	<3.92	<3.89	<0.382	<3.92	<7.51	<7.31	<3.86	<1.17	<1.94
2-Chloronaphthalene (beta-chloronaphthalene	6,300 [2]	160,000 [2]	160,000 [2]	---	---	---	49 [2]		<3.93	<0.39	<8.12	<0.392	<0.392	<2.03	<4.07	<3.94	<1.93	<3.92	<3.89	<0.382	<3.92	<7.51	<7.31	<3.86	<1.17	<1.94
2-Chlorophenol	390	10,000	10,000	53,000	53,000	53,000	4		<5.61	<0.558	<11.6	<0.559	<0.56	<2.91	<5.82	<5.63	<2.76	<5.6	<5.56	<0.546	<5.61	<10.7	<10.4	<5.51	<1.68	<2.77
2-Methoxy-4-methylphenol	---	---	---	---	---	---	---		<7.29	<0.725	<15.1	<0.727	<0.728	<3.78	<7.56	<7.31	<3.58	<7.28	<7.22	<0.709	<7.29	<14	<13.6	<7.16	<2.18	<3.61
2-Methylnaphthalene	310 [2]	8,200 [2]	820 [2]	---	---	---	7.2 [2]		7.46	0.446	54.5	10.9	0.749	14.9	40.5	92.3	<1.93	<3.92	<3.89	<0.382	16.9	<7.51	<7.31	36	16.4	11.3
2-Nitroaniline	230 [2]	6,100 [2]	610 [2]	35 [2]	56 [2]	3.6 [2]	0.14 [2]		<11.2	<1.12	<23.2	<1.12	<1.12	<5.81	<11.6	<11.3	<5.51	<11.2	<11.1	<1.09	<11.2	<21.5	<20.9	<11	<3.35	<5.55
2-Nitrophenol	---	---	---	---	---	---	---		<3.93	<0.39	<8.12	<0.392	<0.392	<2.03	<4.07	<3.94	<1.93	<3.92	<3.89	<0.382	<3.92	<7.51	<7.31	<3.86	<1.17	<1.94
3,3´-Dichlorobenzidine	1	13	280	---	---	---	0.007		<3.93	<0.39	<8.12	<0.392	<0.392	<2.03	<4.07	<3.94	<1.93	<3.92	<3.89	<0.382	<3.92	<7.51	<7.31	<3.86	<1.17	<1.94
3-Nitroaniline	23 [2]	610 [2]	61 [2]	250 [2]	400 [2]	26 [2]	0.01 [2]		<11.2	<1.12	23.2	<1.12	<1.12	<5.81	<11.6	<11.3	<5.51	<11.2	<11.1	<1.09	<11.2	<21.5	<20.9	<11	<3.35	<5.55
4,6-Dinitro-2-methylphenol	7.8	200	820	---	---	---	0.0031		<11.2	<1.12	23.2	<1.12	<1.12	<5.81	<11.6	<11.3	<5.51	<11.2	<11.1	<1.09	<11.2	<21.5	<20.9	<11	<3.35	<5.55
4-Bromophenyl phenyl ether	---	---	---	---	---	---	---		<3.93	<0.39	<8.12	<0.392	<0.392	<2.03	<4.07	<3.94	<1.93	<3.92	<3.89	<0.382	<3.92	<7.51	<7.31	<3.86	<1.17	<1.94
4-Chloro-3-methylphenol	---	---	---	---	---	---	---		<5.61	<0.558	<11.6	<0.559	<0.56	<2.91	<5.82	<5.63	<2.76	<5.6	<5.56	<0.546	<5.61	<10.7	<10.4	<5.51	<1.68	<2.77
4-Chloroaniline (p-chloroaniline)	310	8,200	820	---	---	---	0.7		<5.61	<0.558	<11.6	<0.559	<0.56	<2.91	<5.82	4.8	<2.76	<5.6	<5.56	<0.546	<5.61	<10.7	<10.4	<5.51	<1.68	<2.77
4-Chlorophenyl phenyl ether	---	---	---	---	---	---	---		<3.93	<0.39	<8.12	<0.392	<0.392	<2.03	<4.07	<3.94	<1.93	<3.92	<3.89	<0.382	<3.92	<7.51	<7.31	<3.86	<1.17	<1.94
4-Nitroaniline (p-nitroaniline)	230 [2]	6,100 [2]	610 [2]	1,000 [2]	1,600 [2]	110 [2]	0.1 [2]		<5.61	<0.558	<11.6	<0.559	<0.56	<2.91	<5.82	<5.63	<2.76	<5.6	<5.56	<0.546	<5.61	<10.7	<10.4	<5.51	<1.68	<2.77
4-Nitrophenol	630 [2]	16,000 [2]	16,000 [2]	---	---	---	0.24 [2]		<3.93	<0.39	<8.12	<0.392	<0.392	<2.03	<4.07	<3.94	<1.93	<3.92	<3.89	<0.382	<3.92	<7.51	<7.31	<3.86	<1.17	<1.94
Aniline	110 [2]	1,000 [2]	1,400 [2]	81 [2]	130 [2]	8.4 [2]	0.063 [2]		<5.61	<0.558	<11.6	<0.559	<0.56	<2.91	<5.82	<5.63	<2.76	<5.6	<5.56	<0.546	<5.61	<10.7	<10.4	<5.51	<1.68	<2.77
Azobenzene	---	---	---	---	---	---	---		<3.93	<0.39	<8.12	<0.392	<0.392	<2.03	<4.07	<3.94	<1.93	<3.92	<3.89	<0.382	<3.92	<7.51	<7.31	<3.86	<1.17	<1.94
Benzidine	0.003 [2]	0.02 [2]	0.54 [2]	0.009 [2]	0.02 [2]	0.02 [2]	0.0000022		<11.9	<1.18	24.5	<1.18	<1.18	<6.14	<12.3	<11.9	---	<11.8	<11.7	<1.15	<11.8	<22.7	<22.1	<11.6	<3.54	<5.86
Benzoic acid	310,000	1,000,000	820,000	---	---	---	400		<16.8	<1.67	34.8	<1.68	<1.68	<8.72	<17.5	<16.9	<8.27	<16.8	<16.7	<1.64	<16.8	<32.2	<31.3	<16.5	<5.03	<8.32
Benzyl alcohol	39,000 [2]	1,000,000 [2]	200,000 [2]	6,100 [2]	6,100 [2]	6,100 [2]	15 [2]		<5.61	<0.558	<11.6	<0.559	<0.56	<2.91	<5.82	<5.63	<2.76	<5.6	<5.56	<0.546	<5.61	<10.7	<10.4	<5.51	<1.68	<2.77
Bis(2-chloroethoxy)methane	---	---	---	---	---	---	---		<3.93	<0.39	<8.12	<0.392	<0.392	<2.03	<4.07	<3.94	<1.93	<3.92	<3.89	<0.382	<3.92	<7.51	<7.31	<3.86	<1.17	<1.94
Bis(2-chloroethyl)ether	0.6	5	75	0.2	0.47	0.66	0.0004		<5.61	<0.558	<11.6	<0.559	<0.56	<2.91	<5.82	<5.63	<2.76	<5.6	<5.56	<0.546	<5.61	<10.7	<10.4	<5.51	<1.68	<2.77
Bis(2-chloroisopropyl)ether	3,100 [2]	82,000 [2]	8,200 [2]	1,300 [2]	1,300 [2]	1,300 [2]	2.4 [2]		<3.93	<0.39	<8.12	<0.392	<0.392	<2.03	<4.07	<3.94	<1.93	<3.92	<3.89	<0.382	<3.92	<7.51	<7.31	<3.86	<1.17	<1.94
Butyl benzyl phthalate	16,000	410,000	410,000	930	930	930	930		<3.93	<0.39	<8.12	<0.392	<0.392	<2.03	<4.07	<3.94	<1.93	<3.92	<3.89	<0.382	<3.92	<7.51	<7.31	<3.86	<1.17	<1.94
Carbazole	32	290	6,200	---	---	---	0.6		<5.61	<0.558	<11.6	<0.559	<0.56	<2.91	2.2	2.8	<2.76	<5.6	<5.56	<0.546	3.5	<10.7	<10.4	<5.51	<1.68	<2.77
Dibenzofuran	160 [2]	4,100 [2]	4,100 [2]	---	---	---	6.1 [2]		<3.93	<0.39	<8.12	0.41	<0.392	1.1	5.06	8.5	<1.93	<3.92	<3.89	<0.382	6.98	<7.51	<7.31	2.1	0.78	<1.94
Diethyl phthalate	63,000	1,000,000	1,000,000	2,000	2,000	2,000	470		<5.61	<0.558	<11.6	<0.559	<0.56	<2.91	<5.82	<5.63	<2.76	<5.6	<5.56	<0.546	<5.61	<10.7	<10.4	<5.51	<1.68	<2.77
Dimethyl phthalate	---	---	---	---	---	---	---		<3.93	<0.39	<8.12	<0.392	<0.392	<2.03	<4.07	<3.94	<1.93	<3.92	<3.89	<0.382	<3.92	<7.51	<7.31	<3.86	<1.17	<1.94
Di-n-butyl phthalate	7,800	200,000	200,000	2,300	2,300	2,300	2,300		<3.93	<0.39	<8.12	<0.392	<0.392	<2.03	<4.07	<3.94	<1.93	<3.92	<3.89	<0.382	<3.92	<7.51	<7.31	<3.86	<1.17	<1.94
Di-n-octyl phthalate	1,600	41,000	4,100	10,000	10,000	10,000	10,000		<3.93	<0.39	<8.12	<0.392	<0.392	<2.03	<4.07	<3.94	<1.93	<3.92	<3.89	<0.382	<3.92	<7.51	<7.31	<3.86	<1.17	<1.94
Hexachlorobenzene	0.4	4	78	1	1.8	2.6	2		<3.93	<0.39	<8.12	<0.392	<0.392	<2.03	<4.07	<3.94	<1.93	<3.92	<3.89	<0.382	<3.92	<7.51	<7.31	<3.86	<1.17	<1.94
Hexachlorobutadiene	---	---	---	---	---	---	---		<5.61	<0.558	<11.6	<0.559	<0.56	<2.91	<5.82	<5.63	<2.76	<5.6	<5.56	<0.546	<5.61	<10.7	<10.4	<5.51	<1.68	<2.77
Hexachlorocyclopentadiene	550	14,000	14,000	10	16	1.1	400		<3.93	<0.39	<8.12	<0.392	<0.392	<2.03	<4.07	<3.94	<1.93	<3.92	<3.89	<0.382	<3.92	<7.51	<7.31	<3.86	<1.17	<1.94
Hexachloroethane	78	2,000	2,000	---	---	---	0.5		<5.61	<0.558	<11.6	<0.559	<0.56	<2.91	<5.82	<5.63	<2.76	<5.6	<5.56	<0.546	<5.61	<10.7	<10.4	<5.51	<1.68	<2.77
Isophorone	15,600	410,000	410,000	4,600	4,600	4,600	8		<3.93	<0.39	<8.12	<0.392	<0.392	<2.03	<4.07	<3.94	<1.93	<3.92	<3.89	<0.382	<3.92	<7.51	<7.31	<3.86	<1.17	<1.94
m,p-Cresol	390 [3]	10,000 [3]	1,000 [3]	8,100 [4]	8,100 [4]	8,100 [4]	0.2 [3]		<5.61	<0.558	<11.6	<0.559	1.02	<2.91	5.87	3.9	2.91	3.2	5.72	2.47	<5.61	6	6.7	<5.51	3.69	<2.77
Nitrobenzene	39	1,000	1,000	92	140	9.4	0.1		<5.61	<0.558	<11.6	<0.559	<0.56	<2.91	<5.82	<5.63	<2.76	<5.6	<5.56	<0.546	<5.61	<10.7	<10.4	<5.51	<1.68	<2.77
N-Nitrosodimethylamine	0.013 [2]	0.11 [2]	1.6 [2]	0.012 [2]	0.023 [2]	0.032 [2]	0.0000067 [2]		<5.61	<0.558	<11.6	<0.559	<0.56	<2.91	<5.82	<5.63	<2.76	<5.6	<5.56	<0.546	<5.61	<10.7	<10.4	<5.51	<1.68	<2.77
N-Nitroso-di-n-propylamine	0.09	0.8	18	---	---	---	0.00005		<5.61	<0.558	<11.6	<0.559	<0.56	<2.91	<5.82	<5.63	<2.76	<5.6	<5.56	<0.546	<5.61	<10.7	<10.4	<5.51	<1.68	<2.77
N-Nitrosodiphenylamine	130	1,200	25,000	---	---	---	1		<5.61	<0.558	<11.6	<0.559	<0.56	<2.91	<5.82	<5.63	<2.76	<5.6	<5.56	<0.546	<5.61	<10.7	<10.4	<5.51	<1.68	<2.77
o-Cresol	3,900	100,000	100,000	---	---	---	15		<5.61	<0.558	<11.6	<0.559	0.798	<2.91	2.4	2	1.3	<5.6	3.6	2.23	<5.61	3.8	3.9	<5.51	3.67	<2.77
Pentachlorophenol	3	24	520	---	---	---	0.03		<22.4	2.23	<46.4	<2.24	<2.24	<11.6	<23.3	<22.5	<11	<22.4	<22.2	<2.18	<22.4	<42.9	<41.8	<22	<6.7	<11.1
Phenol	23,000	610,000	61,000	---	---	---	100		<3.93	<0.39	<8.12	<0.392	0.36	<2.03	6.04	2.6	0.67	<3.92	<3.89	0.19	<3.92	<7.51	<7.31	<3.86	1.35	<1.94
Pyridine	78 [4]	2,000 [4]	2,000 [4]	200,000 [4]	200,000 [4]	200,000 [4]	0.032 [4]		<5.61	<0.558	<11.6	<0.559	<0.56	<2.91	<5.82	<5.63	<2.76	<5.6	<5.56	<0.546	<5.61	<10.7	<10.4	<5.51	<1.68	<2.77

Notes:

[1] Objectives are for Class I Groundwater.

[2] Non-TACO or provisional ROs provided by the IEPA.

[3] Objective is for p-cresol.

[4] Objective is for m-cresol.

[---] No objective has been published for this constituent by the IEPA, or the sample was not analyzed for this constituent.

Concentration exceeds one or more project remediation objective.

Table 4-9
2009-2011 Soil Analytical Results for Excavation Floors - Inorganics
Former Ameren Champaign MGP Site

Constituent	Soil Ingestion Residential	Soil Ingestion Commercial	Soil Ingestion Construction	Soil Inhalation Residential	Soil Inhalation Commercial	Soil Inhalation Construction	Soil Component to Groundwater[(1)]	IEPA Accepted Background Levels for non-MSA	Location: Sample ID: Sample Date: Depth (feet):	P6-B4.5-F P6-B4.5-F (25) 10/15/2010 25	P6-D4.5-F P6-D4.5-F(25) 10/20/2010 25
RCRA Metals (mg/kg)											
Mercury	23	610	61	10	16	0.10	6.4	0.06		0.01	0.006
Selenium	390	10,000	1,000	---	---	---	3.3	0.48		<4.0	<0.545
Arsenic	13.0	13.0	61.0	750	1,200	25,000	30	13		14.3	2.6
Barium	5,500	140,000	14,000	690,000	910,000	870,000	1,800	110		15.6	73.4
Cadmium	78	2,000	200	1,800	2,800	59,000	59	0.6		0.34	0.17
Chromium	230	6,100	4,100	270	420	690	32	16.2		11.3	41.4
Lead	400	800	700	---	---	---	107	36		10.9	7.67
Silver	390	10,000	1,000	---	---	---	39	0.55		0.65	0.67
Cyanide (Amenable)	1,600	41,000	4,100	---	---	---	40	0.51		<0.555	<0.555
Cyanide (Total)	---	---	---	---	---	---	---	---		<0.55	<0.56

Notes:

[(1)] Objectives are for Class I Groundwater.

Concentration exceeds one or more project remediation objective.

Table 4-10
2011 Soil Analytical Results for Perimeter Areas - BTEX and PNAs
Former Ameren Champaign MGP Site

Constituent	Soil Ingestion Residential	Soil Ingestion Commercial	Soil Ingestion Construction	Soil Inhalation Residential	Soil Inhalation Commercial	Soil Inhalation Construction	Soil Component to Groundwater[3]	IEPA Accepted Background Levels for MSA	Sample Location: / Sample ID: / Sample Date: / ample Depth (feet):	PA1-01 PA1-01 (3) 6/9/2011 3	PA1-02 PA1-02 (3) 6/9/2011 3	PA1-03 PA1-03 (3) 6/9/2011 3	PA3-05 PA3-05 7/29/2011 3	PA3-09 PA3-09 7/28/2011 3	PA3-10 PA3-10 7/27/2011 3	PA3-11 PA3-11 7/27/2011 3	PA3-12 PA3-12 7/27/2011 3	PA4-00 PA4-00 (10) 8/23/2011 10	PA4-01[5] PA4-01 7/27/2011 3	PA4-01[6] PA4-01 (3) 8/18/2011 3	PA4-02 PA4-02 (3) 8/18/2011 3	PA4-03 PA4-03 (3) 8/17/2011 3
BTEX Constituents (mg/kg)																						
Benzene	12	100	2,300	0.8	1.6	2.2	0.03	---		<0.0009	0.020	0.025	0.0044	0.0978	0.0188	<0.029	0.0548	<0.841	1.29	<0.537	1.2	4.9
Ethylbenzene	7,800	200,000	20,000	400	400	58	13	---		0.004	0.006	<0.005	---	---	---	---	---	---	---	1.9	1.3	5.1
Toluene	16,000	410,000	410,000	650	650	42	12	---		0.001	0.015	0.005	---	---	---	---	---	---	---	<2.68	<3.33	4
m,p-Xylenes	16,000	410,000	41,000	420[1]	420[1]	5.9[2]	200[2]	---		0.003	0.008	<0.005	---	---	---	---	---	---	---	---	---	---
o-Xylene	16,000	410,000	41,000	410	410	6.5	190	---		0.001	0.004	<0.005	---	---	---	---	---	---	---	---	---	---
Xylenes	16,000	410,000	41,000	320	320	5.6	150	---		0.004	0.012	<0.005	<0.005	0.009	0.0039	<0.145	0.034	<4.21	2.38	0.78	3.57	25.8
PNA Constituents (mg/kg)																						
Acenaphthene	4,700	120,000	120,000	---	---	---	570	0.13		<2.09	<0.107	<0.217	<0.043	3.09	0.85	<0.11	<0.112	7.07	<0.217	5.8	20.1	12.6
Acenaphthylene	2,300[4]	61,000[4]	61,000[4]	---	---	---	85[4]	0.07		33.60	1.380	8.16	0.584	13.7	21.70	0.55	0.32	15.6	3.45	4.39	1.91	<0.261
Anthracene	23,000	610,000	610,000	---	---	---	12,000	0.4		4.92	0.293	0.831	0.226	6.9	3.25	0.51	0.30	11.8	1.92	5.93	16.9	12.4
Benzo(a)anthracene	0.90	8	170	---	---	---	2	1.8		16.20	<0.107	9.18	1.240	17	11.70	3.92	2.18	5.74	14.60	14	10.9	7.7
Benzo(a)pyrene	0.09	0.80	17	---	---	---	8	2.1		76.60	0.575	27.60	1.380	23.7	24.60	4.89	2.33	5.01	21.60	18.7	7.18	4.35
Benzo(b)fluoranthene	0.90	8	170	---	---	---	5	2.1		62.50	1.940	24.20	2.310	24.4	24.20	16.20	6.43	3.9	26.90	20.7	9.08	5.17
Benzo(g,h,i)perylene	2,300[4]	61,000[4]	61,000[4]	---	---	---	27,000[4]	1.7		36.50	1.130	18.40	1.090	12.5	16.40	6.76	3.62	1.86	13.40	13.4	2.1	1.56
Benzo(k)fluoranthene	9	78	1,700	---	---	---	49	1.7		20.10	0.554	7.86	0.784	7.71	8.69	5.67	2.13	1.28	9.81	7.88	3.09	2.03
Bis(2-ethylhexyl)phthalate	46	410	4,100	31,000	31,000	31,000	3,600	---		<41.2	<2.1	<4.28	<0.856	<9.01	<8.96	<2.18	<2.2	<2.12	<4.29	<12.8	<5.12	<5.15
Chrysene	88	780	17,000	---	---	---	160	2.7		25.0	<0.107	11.90	1.440	16.8	12.70	6.18	3.16	5.37	15.10	12.5	11	6.89
Dibenzo(a,h)anthracene	0.09	0.80	17	---	---	---	2	0.42		7.37	0.429	4.35	0.324	3.45	4.55	2.48	1.05	0.528	3.43	2.67	0.772	0.443
Fluoranthene	3,100	82,000	82,000	---	---	---	4,300	4.1		7.17	<0.107	5.86	1.600	28.9	9.05	2.32	2.91	12.8	18.80	18.1	37.6	22.7
Fluorene	3,100	82,000	82,000	---	---	---	560	0.18		<2.09	<0.107	0.597	0.068	4.48	1.87	<0.11	<0.112	17.3	0.36	4.66	25.3	17
Indeno(1,2,3-cd)pyrene	0.90	8.00	170	---	---	---	14	1.6		28.1	1.520	14.90	0.993	10.7	13.90	7.07	3.28	1.55	12.70	10.1	2.31	1.69
Naphthalene	1,600	41,000	4,100	170	270	1.8	12	0.2		14.7	<0.107	0.746	0.119	7.08	0.71	0.25	<0.112	38	1.49	9.97	5.97	8.56
Phenanthrene	2,300[4]	61,000[4]	61,000[4]	---	---	---	200[4]	2.5		4.5	<0.107	0.789	0.741	20.6	5.35	0.52	1.02	38.8	4.05	18.4	37.1	23.3
Pyrene	2,300	61,000	61,000	---	---	---	4,200	3		30.7	0.199	16.200	1.890	39.8	17.40	2.78	3.21	17.3	21.40	19.6	33	19.7

Notes:

[1] Objective is for m-xylene

[2] Objective is for p-xylene

[3] Objectives are for Class I groundwater.

[4] Non-TACO or provisional ROs provided by the IEPA.

[5] Soil sample PA4-01 (3) is a soil sample location along the western remediation site boundary near 5th Street.

[6] Soil sample PA4-01 (3) is a soil sample location along the northern remediation site boundary near the railroad tracks.

'--- No objective has been published for this constituent by the IEPA, or the sample was not analyzed for this constituent.

Concentration exceeds one or more project remediation objective.

Table 4-10
2011 Soil Analytical Results for Perimeter Areas - BTEX and PNAs
Former Ameren Champaign MGP Site

Constituent	Soil Ingestion Residential	Soil Ingestion Commercial	Soil Ingestion Construction	Soil Inhalation Residential	Soil Inhalation Commercial	Soil Inhalation Construction	Soil Component to Groundwater[3]	IEPA Accepted Background Levels for MSA	Sample Location: / Sample ID: / Sample Date: / ample Depth (feet):	PA4-04 PA4-04 (3) 8/17/2011 3	PA4-06 PA4-06 (3) 8/17/2011 3	PA5-3 PA5-3 (3) 8/10/2011 3	PA5-08 PA5-08 (3) 8/23/2011 3	PA5-09 PA5-09 (3) 8/22/2011 3	PA5-10 PA5-10 (3) 8/22/2011 3	PA5-11 PA5-11 (3) 8/19/2011 3	PA5-12 PA5-12 (3) 8/19/2011 3	PA5-13 PA5-13 (3) 8/18/2011 3	PA5-14 PA5-14 (3) 8/18/2011 3	PA6-2 PA6-2 (3) 8/9/2011 3	PA6-3 PA6-3 (3) 8/9/2011 3
BTEX Constituents (mg/kg)																					
Benzene	12	100	2,300	0.8	1.6	2.2	0.03	---		32.2	0.604	<0.0014	4.14	<1.85	2.55	1.84	6.86	32.6	<0.0167	---	---
Ethylbenzene	7,800	200,000	20,000	400	400	58	13	---		5.2	<1.51	<0.007	32.2	8.1	4.1	1.57	2.09	15	<0.0833	---	---
Toluene	16,000	410,000	410,000	650	650	42	12	---		8.3	0.85	<0.008	---	---	---	1.12	6.28	12.7	0.028	---	---
m,p-Xylenes	16,000	410,000	41,000	420[1]	420[1]	5.9[2]	200[2]	---		---	---	<0.009	---	---	---	0.837	3.35	10.2	0.022	---	---
o-Xylene	16,000	410,000	41,000	410	410	6.5	190	---		---	---	<0.010	---	---	---	0.38	1.3	7.65	<0.0833	---	---
Xylenes	16,000	410,000	41,000	320	320	5.6	150	---		23	1.1	<0.007	25.3	5.3	4.1	1.217	4.65	17.85	0.022	---	---
PNA Constituents (mg/kg)																					
Acenaphthene	4,700	120,000	120,000	---	---	---	570	0.13		30.3	<13.6	<0.11	65.7	80.3	49.1	100	442	625	<1.16	<0.114	1.07
Acenaphthylene	2,300[4]	61,000[4]	61,000[4]	---	---	---	85[4]	0.07		8.15	37.2	3.35	8.78	8.01	7.51	34.2	129	74.6	7.71	4.57	20.9
Anthracene	23,000	610,000	610,000	---	---	---	12,000	0.4		58.6	19.2	0.487	40	46.5	26.6	53.4	337	328	1.93	0.447	8.43
Benzo(a)anthracene	0.90	8	170	---	---	---	2	1.8		74.2	48.4	0.746	22.2	25.8	28.7	60.5	280	230	10.8	0.916	20.9
Benzo(a)pyrene	0.09	0.80	17	---	---	---	8	2.1		69.7	83.8	4.08	19.5	20.6	29.6	73.3	303	209	27	5.67	49.9
Benzo(b)fluoranthene	0.90	8	170	---	---	---	5	2.1		84	184	3.12	15.7	16.5	27.8	70.4	302	212	24.6	4.17	49.2
Benzo(g,h,i)perylene	2,300[4]	61,000[4]	61,000[4]	---	---	---	27,000[4]	1.7		31.2	93.3	3	9.19	6.79	12.2	52	146	91.8	23.4	4.75	28.3
Benzo(k)fluoranthene	9	78	1,700	---	---	---	49	1.7		34.3	78.7	0.973	5.28	5.96	9.04	26.8	111	81.2	8.84	1.13	14.4
Bis(2-ethylhexyl)phthalate	46	410	4,100	31,000	31,000	31,000	3,600	---		<54.1	<269	<2.17	<6.89	<6.62	<6.54	<52.8	<161	<133	<22.8	<2.25	<9.74
Chrysene	88	780	17,000	---	---	---	160	2.7		70.3	39	1.2	20.9	24.4	28.1	61.2	281	226	12.6	1.69	26.8
Dibenzo(a,h)anthracene	0.09	0.80	17	---	---	---	2	0.42		8.2	31.9	0.476	2.57	1.91	3.32	8.41	32.9	21.8	3.63	0.805	5.62
Fluoranthene	3,100	82,000	82,000	---	---	---	4,300	4.1		187	59.8	0.584	46.2	55.7	58.9	117	625	515	13.3	1.08	42.7
Fluorene	3,100	82,000	82,000	---	---	---	560	0.18		47.3	<13.6	0.324	41.8	51.3	29.1	59.9	324	382	<1.16	0.425	4.6
Indeno(1,2,3-cd)pyrene	0.90	8.00	170	---	---	---	14	1.6		29.8	104	2.54	7.58	6.03	10.9	42.8	119	75.9	15.8	3.32	24.4
Naphthalene	1,600	41,000	4,100	170	270	1.8	12	0.2		22.3	18.6	0.357	25.2	32.1	19.2	56.8	768	670	1.59	<0.114	2.42
Phenanthrene	2,300[4]	61,000[4]	61,000[4]	---	---	---	200[4]	2.5		151	28.3	0.216	78.4	143	75.4	144	969	914	2.49	<0.114	30.5
Pyrene	2,300	61,000	61,000	---	---	---	4,200	3		155	73.1	1.83	67.4	78.5	81.7	173	726	639	22.7	3.16	49.1

Notes:

[1] Objective is for m-xylene

[2] Objective is for p-xylene

[3] Objectives are for Class I groundwater.

[4] Non-TACO or provisional ROs provided by the IEPA.

[5] Soil sample PA4-01 (3) is a soil sample location along the western remediation site boundary near 5th Street.

[6] Soil sample PA4-01 (3) is a soil sample location along the northern remediation site boundary near the railroad tracks.

'--- No objective has been published for this constituent by the IEPA, or the sample was not analyzed for this constituent.

Concentration exceeds one or more project remediation objective.

Table 4-11
2011 Soil Analytical Results for Perimeter Areas - VOCs
Former Ameren Champaign MGP Site

Constituent	Soil Ingestion Residential	Soil Ingestion Commercial	Soil Ingestion Construction	Soil Inhalation Residential	Soil Inhalation Commercial	Soil Inhalation Construction	Soil Component to Groundwater[1]	Sample Location:	PA1-Wall	PA2-01A-F	PA5-5	PA5-6	PA5-11	PA5-12	PA5-13
								Sample ID:	PA1-Wall (3)	PA2-01A (10)	PA5-5(3)	PA5-6(3)	PA5-11(3)	PA5-12(3)	PA5-13(3)
								Sample Date:	8/16/2011	8/16/2011	8/10/2011	8/10/2011	8/19/2011	8/19/2011	8/18/2011
								Sample Depth (feet):	3	10	3	3	3	3	3
Volatile Organic Compounds (mg/kg)															
1,1,1,2-Tetrachloroethane	2,300[2]	61,000[2]	6,100[2]	2,100[2]	2,100[2]	2,100[2]	3.4[2]		<0.27	<0.0515	<0.177	<0.162	<0.077	<1.77	<2.5
1,1,1-Trichloroethane	---	---	---	1,200	1,200	1,200	2		<0.27	<0.0515	<0.177	<0.162	<0.077	<1.77	<2.5
1,1,2,2-Tetrachloroethane	4,700[2]	120,000[2]	12,000[2]	2,000[2]	2,000[2]	2,000[2]	3.3[2]		<0.27	<0.0515	<0.177	<0.162	<0.077	<1.77	<2.5
1,1,2-Trichloro-1,2,2-trifluoroethane	---	---	---	---	---	---	---		<0.27	<0.0515	<0.177	<0.162	<0.077	<1.77	<2.5
1,1,2-Trichloroethane	310	8,200	8,200	1,800	1,800	1,800	0.02		<0.27	<0.0515	<0.177	<0.162	<0.077	<1.77	<2.5
1,1-Dichloro-2-propanone	---	---	---	---	---	---			<2.7	<0.515	<1.77	<1.62	<0.77	<17.7	<25
1,1-Dichloroethane	7,800	200,000	200,000	1,300	1,700	130	23		<0.27	<0.0515	<0.177	<0.162	<0.077	<1.77	<2.5
1,1-Dichloroethene	3,900	100,000	470	290	10,000	3	0.06		<0.27	<0.0515	<0.177	<0.162	<0.077	<1.77	<2.5
1,1-Dichloropropene	---	---	---	---	---	---	---		<0.27	<0.0515	<0.177	<0.162	<0.077	<1.77	<2.5
1,2,3-Trichlorobenzene	---	---	---	---	---	---	---		<0.27	<0.0515	<0.177	<0.162	<0.077	<1.77	<2.5
1,2,3-Trichloropropane	0.092[2]	0.82[2]	18	730[2]	730[2]	730[2]	0.0001[2]		<0.539	<0.103	<0.355	<0.324	<0.154	<3.55	<5.01
1,2,3-Trimethylbenzene	---	---	---	---	---	---	---		<0.27	<0.0515	<0.177	<0.162	0.329	0.87	14.5
1,2,4-Trichlorobenzene	780	20,000	2,000	3,200	3,200	920	5		<0.27	<0.0515	<0.177	<0.162	<0.077	<1.77	<2.5
1,2,4-Trimethylbenzene	3,900[2]	100,000[2]	100,000[2]	73[2]	120[2]	0.25[2]	18[2]		<0.27	<0.0515	<0.177	<0.162	0.705	1.4	7.09
1,2-Dibromo-3-chloropropane	0.46	4	89	11	17	0.11	0.002		<0.27	<0.0515	<0.177	<0.162	<0.077	<1.77	<2.5
1,2-Dibromoethane (EDB)	0.32	2.9	62	0.06	0.12	0.16	0.0004		<0.27	<0.0515	<0.177	<0.162	<0.077	<1.77	<2.5
1,2-Dichlorobenzene	7,000	180,000	18,000	560	560	310	17		<0.27	<0.0515	<0.177	<0.162	<0.077	<1.77	<2.5
1,2-Dichloroethane	7	63	1,400	0.4	0.7	0.99	0.02		<0.27	<0.0515	<0.177	<0.162	<0.077	<1.77	<2.5
1,2-Dichloropropane	9	84	1,800	15	23	0.5	0.03		<0.27	<0.0515	<0.177	<0.162	<0.077	<1.77	<2.5
1,3,5-Trimethylbenzene	3,900[2]	100,000[2]	100,000[2]	45[2]	72[2]	0.15[2]	10[2]		<0.27	<0.0515	<0.177	<0.162	0.239	0.62	7.83
1,3-Dichlorobenzene	---	---	---	---	---	---	---		<0.27	<0.0515	<0.177	<0.162	<0.077	<1.77	<2.5
1,3-Dichloropropane	1,600[2]	41,000[2]	41,000[2]	1,000[2]	1,000[2]	1,000[2]	0.83[2]		<0.27	<0.0515	<0.177	<0.162	<0.077	<1.77	<2.5
1,4-Dichlorobenzene	---	---	---	11,000	17,000	340	2		<0.27	<0.0515	<0.177	<0.162	<0.077	<1.77	<2.5
1-Chlorobutane	3,100[2]	82,000[2]	14,000[2]	1,200[2]	1,200[2]	1,200[2]	3.1[2]		<0.27	<0.0515	<0.177	<0.162	<0.077	<1.77	<2.5
2,2-Dichloropropane	---	---	---	---	---	---	---		<0.27	<0.0515	<0.177	<0.162	<0.077	<1.77	<2.5
2-Butanone (methyl ethyl ketone)	47,000[2]	1,000,000[2]	120,000[2]	25,000[2]	25,000[2]	710[2]	17[2]		<2.7	<0.515	<1.77	<1.62	<0.77	<17.7	<25
2-Chlorotoluene (o-chlorotoluene)	1,600[2]	41,000[2]	41,000[2]	1,400[2]	1,400[2]	1,400[2]	4[2]		<0.27	<0.0515	<0.177	<0.162	<0.077	<1.77	<2.5
2-Hexanone	---	---	---	---	---	---	---		<2.7	<0.515	<1.77	<1.62	<0.77	<17.7	<25
2-Nitropropane	---	---	---	---	---	---	---		<2.7	<0.515	<1.77	<1.62	<0.77	<17.7	<25
4-Chlorotoluene	---	---	---	---	---	---	---		<0.27	<0.0515	<0.177	<0.162	<0.077	<1.77	<2.5
4-Methyl-2-pentanone (MIBK)	---	---	---	3,100[2]	3,100[2]	340[2]	---		<2.7	<0.515	<1.77	<1.62	<0.77	<17.7	<25
Acetone	70,000	---	---	100,000	100,000	100,000	25		<2.7	<0.515	<1.77	<1.62	<0.77	<17.7	<25
Acrolein	39[2]	1,000[2]	1,600[2]	0.16[2]	0.26[2]	0.017[2]	0.014[2]		<5.39	<1.03	<3.55	<3.24	<1.54	<35.5	<50.1
Acrylonitrile	1.2[2]	11[2]	230[2]	0.28[2]	0.54[2]	0.17[2]	0.0006[2]		<0.539	<0.103	<0.355	<0.324	<0.154	<3.55	<5.01
Allyl chloride	---	---	---	---	---	---	---		<0.27	<0.0515	<0.177	<0.162	<0.077	<1.77	<2.5
Bromobenzene	1,600[2]	41,000[2]	41,000[2]	100[2]	160[2]	11[2]	2.2[2]		<0.27	<0.0515	<0.177	<0.162	<0.077	<1.77	<2.5
Bromochloromethane	---	---	---	---	---	---			<0.27	<0.0515	<0.177	<0.162	<0.077	<1.77	<2.5
Bromodichloromethane	10	92	2,000	3,000	3,000	3,000	0.6		<0.27	<0.0515	<0.177	<0.162	<0.077	<1.77	<2.5
Bromoform	81	720	16,000	53	100	140	0.8		<0.27	<0.0515	<0.177	<0.162	<0.077	<1.77	<2.5
Bromomethane (methyl bromide)	110	2,900	1,000	10	15	3.9	0.2		<0.539	<0.103	<0.355	<0.324	<0.154	<3.55	<5.01
Carbon disulfide	7,800	200,000	20,000	720	720	9	32		<0.27	<0.0515	<0.177	<0.162	<0.077	<1.77	<2.5
Carbon tetrachloride	5	44	410	0.3	0.64	0.9	0.07		<0.27	<0.0515	<0.177	<0.162	<0.077	<1.77	<2.5
Chlorobenzene	1,600	41,000	4,100	130	210	1.3	1		<0.27	<0.0515	<0.177	<0.162	<0.077	<1.77	<2.5
Chloroethane	---	---	---	---	---	---	---		<0.539	<0.103	<0.355	<0.324	<0.154	<3.55	<5.01
Chloroform	100	940	2,000	0.3	0.54	0.76	0.6		<0.27	<0.0515	<0.177	<0.162	<0.077	<1.77	<2.5
Chloromethane (methyl chloride)	---	---	---	---	---	---	---		<0.539	<0.103	<0.355	<0.324	<0.154	<3.55	<5.01
cis-1,2-Dichloroethene	780	20,000	20,000	1,200	1,200	1,200	0.4		<0.27	<0.0515	<0.177	<0.162	<0.077	<1.77	<2.5
cis-1,3-Dichloropropene	6.4	57	1,200	1.1	2.1	0.39	0.004		<0.216	<0.0412	<0.142	<0.13	<0.0616	<1.42	<2
Cyclohexanone	390,000[2]	1,000,000[2]	1,000,000[2]	660[2]	660[2]	660[2]	150[2]		<5.39	<1.03	<3.55	<3.24	<1.54	<35.5	<50.1
Dibromochloromethane (chlorodibro	1,600	41,000	41,000	1,300	1,300	1,300	0.4		<0.27	<0.0515	<0.177	<0.162	<0.077	<1.77	<2.5
Dibromomethane (methylene bromid	780[2]	20,000[2]	20,000[2]	2,700[2]	2,700[2]	2,700[2]	0.34[2]		<0.27	<0.0515	<0.177	<0.162	<0.077	<1.77	<2.5
Dichlorodifluoromethane	16,000[2]	410,000[2]	180,000[2]	190[2]	310[2]	20[2]	43[2]		<0.539	<0.103	<0.355	<0.324	<0.154	<3.55	<5.01
Ethyl acetate	70,000[2]	1,000,000[2]	1,000,000[2]	10,000[2]	10,000[2]	10,000[2]	26[2]		<2.7	<0.515	2.36	1.5	<0.77	<17.7	<25
Ethyl ether	16,000[2]	410,000[2]	410,000[2]	8,800[2]	8,800[2]	8,800[2]	6.1[2]		<0.27	<0.0515	<0.177	<0.162	<0.077	<1.77	<2.5
Ethyl methacrylate	---	---	---	---	---	---	---		<0.27	<0.0515	<0.177	<0.162	<0.077	<1.77	<2.5
Heptane	---	---	---	---	---	---	---		<1.08	<0.206	<0.709	<0.648	<0.308	<7.1	<10
Hexachlorobutadiene	---	---	---	---	---	---	---		<0.27	<0.0515	<0.177	<0.162	<0.077	<1.77	<2.5

Notes:

[1] Objectives are for Class I Groundwater.

[2] Non-TACO or provisional ROs provided by the IEPA.

--- No objective has been published for this constituent by the IEPA, or the sample was not analyzed for this constituent.

Concentration exceeds one or more project remediation objective.

Table 4-11
2011 Soil Analytical Results for Perimeter Areas - VOCs
Former Ameren Champaign MGP Site

Constituent	Soil Ingestion Residential	Soil Ingestion Commercial	Soil Ingestion Construction	Soil Inhalation Residential	Soil Inhalation Commercial	Soil Inhalation Construction	Soil Component to Groundwater[1]	Sample Location:	PA1-Wall	PA2-01A-F	PA5-5	PA5-6	PA5-11	PA5-12	PA5-13
								Sample ID:	PA1-Wall (3)	PA2-01A (10)	PA5-5(3)	PA5-6(3)	PA5-11(3)	PA5-12(3)	PA5-13(3)
								Sample Date:	8/16/2011	8/16/2011	8/10/2011	8/10/2011	8/19/2011	8/19/2011	8/18/2011
								Sample Depth (feet):	3	10	3	3	3	3	3
Hexachloroethane	78	2,000	2,000	---	---	---	0.5		<0.27	<0.0515	<0.177	<0.162	<0.077	<1.77	<2.5
Iodomethane	---	---	---	---	---	---	---		<0.539	<0.103	<0.355	<0.324	<0.154	<3.55	<5.01
Isopropylbenzene (cumene)	7,800[2]	200,000[2]	61,000[2]	500[2]	790[2]	51[2]	91[2]		0.1	0.027	<0.177	<0.162	0.0853	<1.77	<2.5
Methacrylonitrile	---	---	---	---	---	---	---		<2.7	<0.515	<1.77	<1.62	<0.77	<17.7	<25
Methyl Methacrylate	---	---	---	---	---	---	---		<0.27	<0.0515	<0.177	<0.162	<0.077	<1.77	<2.5
Methyl tert-butyl ether	780	20,000	2,000	8,800	8,800	140	0.32		<0.108	<0.0206	<0.0709	<0.0648	<0.0308	<0.71	<1
Methylacrylate	2,300[2]	61,000[2]	6,100[2]	6,500[2]	6,500[2]	6,500[2]	0.89[2]		<0.539	<0.103	<0.355	<0.324	<0.154	<3.55	<5.01
Methylene chloride (dichloromethane)	85	760	12,000	13	24	34	0.02		0.12	0.037	0.055	0.034	0.054	<1.77	<2.5
Naphthalene	1,600	41,000	4,100	170	270	1.8	12		0.24	<0.103	<0.355	<0.324	2.43	84.9	127
n-Butylbenzene	---	---	---	---	---	---	---		<0.27	0.023	<0.177	<0.162	0.0902	0.61	6.71
n-Hexane	---	---	---	290[2]	290[2]	15[2]	---		<1.08	<0.206	<0.709	<0.648	0.047	<7.1	<10
Nitrobenzene	39	1,000	1,000	92	140	9.4	0.1		<5.39	<1.03	<3.55	<3.24	<1.54	<35.5	<50.1
n-Propylbenzene	---	---	---	---	---	---	---		<0.27	<0.0515	<0.177	<0.162	0.116	<1.77	<2.5
Pentachloroethane	---	---	---	---	---	---	---		<0.27	<0.0515	<0.177	<0.162	<0.077	<1.77	<2.5
p-Isopropyltoluene	---	---	---	---	---	---	---		<0.27	<0.0515	<0.177	<0.162	0.069	<1.77	<2.5
Propionitrile	---	---	---	---	---	---	---		<2.7	<0.515	<1.77	<1.62	<0.77	<17.7	<25
sec-Butylbenzene	---	---	---	---	---	---	---		<0.27	<0.0515	<0.177	<0.162	<0.077	<1.77	5.1
Styrene	16,000	410,000	41,000	1,500	1,500	430	4		<0.27	<0.0515	<0.177	<0.162	<0.077	<1.77	<2.5
tert-Butylbenzene	---	---	---	---	---	---	---		<0.27	<0.0515	<0.177	<0.162	<0.077	<1.77	<2.5
Tetrachloroethene	12	110	2,400	11	20	28	0.06		<0.27	<0.0515	<0.177	<0.162	<0.077	<1.77	<2.5
Tetrahydrofuran	---	---	---	---	---	---	---		<2.7	<0.515	<1.77	<1.62	<0.77	<17.7	<25
trans-1,2-Dichloroethene	1,600	41,000	41,000	3,100	3,100	3,100	0.7		<0.27	<0.0515	<0.177	<0.162	<0.077	<1.77	<2.5
trans-1,3-Dichloropropene	6.4	57	1,200	1.1	2.1	0.39	0.004		<0.216	<0.0412	<0.142	<0.13	<0.0616	<1.42	<2
Trichloroethene	58	520	1,200	5	8.9	12	0.06		<0.27	<0.0515	<0.177	<0.162	<0.077	<1.77	<2.5
Trichlorofluoromethane	23,000[2]	610,000[2]	140,000[2]	850[2]	1,400[2]	88[2]	34[2]		<0.27	<0.0515	<0.177	<0.162	<0.077	<1.77	<2.5
Vinyl acetate	78,000	1,000,000	200,000	1,000	1,600	10	170[2]		<2.7	<0.515	<1.77	<1.62	<0.77	<17.7	<25
Vinyl chloride	0.46	7.9	170	0.28	1.1	1.1	0.01		<0.108	<0.0206	<0.0709	<0.0648	<0.0308	<0.71	<1

Notes:

[1] Objectives are for Class I Groundwater.

[2] Non-TACO or provisional ROs provided by the IEPA.

'--- No objective has been published for this constituent by the IEPA, or the sample was not analyzed for this constituent.

Concentration exceeds one or more project remediation objective.

Table 4-12
2011 Soil Analytical Results for Perimeter Areas - SVOCs
Former Ameren Champaign MGP Site

Constituent	Soil Ingestion Residential	Soil Ingestion Commercial	Soil Ingestion Construction	Soil Inhalation Residential	Soil Inhalation Commercial	Soil Inhalation Construction	Soil Component to Groundwater[1]	Sample Location:	Sample ID:	Sample Date:	Sample Depth (feet):
								PA4-00	PA4-00 (10)	8/23/2011	10
								PA4-02	PA4-02 (3)	8/18/2011	3
								PA4-03	PA4-03 (3)	8/17/2011	3
								PA4-04	PA4-04 (3)	8/17/2011	3
								PA5-08	PA5-08 (3)	8/23/2011	3
								PA5-09	PA5-09 (3)	8/22/2011	3
								PA5-11	PA5-11 (3)	8/19/2011	3
								PA5-12	PA5-12 (3)	8/19/2011	3
								PA5-13	PA5-13 (3)	8/18/2011	3
Semivolatile Organic Compounds (mg/kg)											
1,2,4-Trichlorobenzene	780	20,000	2,000	3,200	3,200	920	5	---	<3.82	<3.84	<40.3	---	---	---	---	---
1,2-Dichlorobenzene	7,000	180,000	18,000	560	560	310	17	---	<3.82	<3.84	<40.3	---	---	---	---	---
1,2-Diphenylhydrazine	---	---	---	---	---	---	---	---	<6.42	<6.46	<67.8	---	---	---	---	---
1,3-Dichlorobenzene	---	---	---	---	---	---	---	---	<3.82	<3.84	<40.3	---	---	---	---	---
1,4-Dichlorobenzene	---	---	---	11,000	17,000	340	2	---	<3.82	<3.84	<40.3	---	---	---	---	---
2,4,5-Trichlorophenol	7,800	200,000	200,000	200	---	---	130	---	<2.67	<2.69	<28.2	---	---	---	---	---
2,4,6-Trichlorophenol	58	520	11,000	200	390	540	0.09	---	<2.67	<2.69	<28.2	---	---	---	---	---
2,4-Dichlorophenol	230	6,100	610	---	---	---	0.86	---	<3.82	<3.84	<40.3	---	---	---	---	---
2,4-Dimethylphenol	1,600	41,000	41,000	---	---	---	9	---	<3.82	<3.84	<40.3	---	---	---	---	---
2,4-Dinitrophenol	160	4,100	410	---	---	---	0.2	---	<7.64	<7.69	<80.7	---	---	---	---	---
2,4-Dinitrotoluene	0.9	8.4	180	---	---	---	0.0008	---	<2.67	<2.69	<28.2	---	---	---	---	---
2,6-Dinitrotoluene	0.9	8.4	180	---	---	---	0.0007	---	<2.67	<2.69	<28.2	---	---	---	---	---
2-Chloronaphthalene (beta-chloronaphthalene)	6,300 [2]	160,000 [2]	160,000 [2]	---	---	---	49 [2]	---	<2.67	<2.69	<28.2	---	---	---	---	---
2-Chlorophenol	390	10,000	10,000	53,000	53,000	53,000	4	---	<3.82	<3.84	<40.3	---	---	---	---	---
2-Methoxy-4-methylphenol	---	---	---	---	---	---	---	---	<4.97	<5	<52.4	---	---	---	---	---
2-Methylnaphthalene	310 [2]	8,200 [2]	820 [2]	---	---	---	7.2 [2]	10.4	3.02	4.7	6.45	12.1	20.7	15.8	357	293
2-Nitroaniline	230 [2]	6,100 [2]	610 [2]	35 [2]	56 [2]	3.6 [2]	0.14 [2]	---	<7.64	<7.69	<80.7	---	---	---	---	---
2-Nitrophenol	---	---	---	---	---	---	---	---	<2.67	<2.69	<28.2	---	---	---	---	---
3,3´-Dichlorobenzidine	1	13	280	---	---	---	0.007	---	<2.67	<2.69	<28.2	---	---	---	---	---
3-Nitroaniline	23 [2]	610 [2]	61 [2]	250 [2]	400 [2]	26 [2]	0.01 [2]	---	<7.64	<7.69	<80.7	---	---	---	---	---
4,6-Dinitro-2-methylphenol	7.8	200	820	---	---	---	0.0031	---	<7.64	<7.69	<80.7	---	---	---	---	---
4-Bromophenyl phenyl ether	---	---	---	---	---	---	---	---	<2.67	<2.69	<28.2	---	---	---	---	---
4-Chloro-3-methylphenol	---	---	---	---	---	---	---	---	<3.82	<3.84	<40.3	---	---	---	---	---
4-Chloroaniline (p-chloroaniline)	310	8,200	820	---	---	---	0.7	---	<3.82	<3.84	<40.3	---	---	---	---	---
4-Chlorophenyl phenyl ether	---	---	---	---	---	---	---	---	<2.67	<2.69	<28.2	---	---	---	---	---
4-Nitroaniline (p-nitroaniline)	230 [2]	6,100 [2]	610 [2]	1,000 [2]	1,600 [2]	110 [2]	0.1 [2]	---	<3.82	<3.84	<40.3	---	---	---	---	---
4-Nitrophenol	630 [2]	16,000 [2]	16,000 [2]	---	---	---	0.24 [2]	---	<2.67	<2.69	<28.2	---	---	---	---	---
Aniline	110 [2]	1,000 [2]	1,400 [2]	81 [2]	130 [2]	8.4 [2]	0.063 [2]	---	<3.82	<3.84	<40.3	---	---	---	---	---
Azobenzene	---	---	---	---	---	---	---	---	<2.67	<2.69	<28.2	---	---	---	---	---
Benzoic acid	310,000	1,000,000	820,000	---	---	---	400	---	<11.5	<11.5	<121	---	---	---	---	---
Benzyl alcohol	39,000	1,000,000	200,000	6,100	6,100	6,100	15	---	<3.82	<3.84	<40.3	---	---	---	---	---
Bis(2-chloroethoxy)methane	---	---	---	---	---	---	---	---	<2.67	<2.69	<28.2	---	---	---	---	---
Bis(2-chloroethyl)ether	0.6	5	75	0.2	0.47	0.66	0.0004	---	<3.82	<3.84	<40.3	---	---	---	---	---
Bis(2-chloroisopropyl)ether	3,100 [2]	82,000 [2]	8,200 [2]	1,300 [2]	1,300 [2]	1,300 [2]	2.4 [2]	---	<2.67	<2.69	<28.2	---	---	---	---	---
Butyl benzyl phthalate	16,000	410,000	410,000	930	930	930	930	---	<2.67	<2.69	<28.2	---	---	---	---	---
Carbazole	32	290	6,200	---	---	---	0.6	---	<3.82	<3.84	12	---	---	---	---	---
Dibenzofuran	160 [2]	4,100 [2]	4,100 [2]	---	---	---	6.1 [2]	---	11.8	7.79	33.6	---	---	<69	66	53
Diethyl phthalate	63,000	1,000,000	1,000,000	2,000	2,000	2,000	470	---	<3.82	<3.84	<40.3	---	---	---	---	---
Dimethyl phthalate	---	---	---	---	---	---	---	---	<2.67	<2.69	<28.2	---	---	---	---	---
Di-n-butyl phthalate	7,800	200,000	200,000	2,300	2,300	2,300	2,300	---	<2.67	<2.69	<28.2	---	---	---	---	---
Di-n-octyl phthalate	1,600	41,000	4,100	10,000	10,000	10,000	10,000	---	<2.67	<2.69	<28.2	---	---	---	---	---
Hexachlorobenzene	0.4	4	78	1	1.8	2.6	2	---	<2.67	<2.69	<28.2	---	---	---	---	---
Hexachlorobutadiene	---	---	---	---	---	---	---	---	<3.82	<3.84	<40.3	---	---	---	---	---
Hexachlorocyclopentadiene	550	14,000	14,000	10	16	1.1	400	---	<2.67	<2.69	<28.2	---	---	---	---	---
Hexachloroethane	78	2,000	2,000	---	---	---	0.5	---	<3.82	<3.84	<40.3	---	---	---	---	---
Isophorone	15,600	410,000	410,000	4,600	4,600	4,600	8	---	<2.67	<2.69	<28.2	---	---	---	---	---
m,p-Cresol	390 [3]	10,000 [3]	1,000 [3]	8,100 [4]	8,100 [4]	8,100 [4]	0.2 [3]	---	<3.82	<3.84	<40.3	---	---	---	---	---
Nitrobenzene	39	1,000	1,000	92	140	9.4	0.1	---	<3.82	<3.84	<40.3	---	---	---	---	---
N-Nitrosodimethylamine	0.013	0.11	1.6	0.012	0.023	0.032	0.0000067	---	<3.82	<3.84	<40.3	---	---	---	---	---
N-Nitroso-di-n-propylamine	0.09	0.8	18	---	---	---	0.00005	---	<3.82	<3.84	<40.3	---	---	---	---	---
N-Nitrosodiphenylamine	130	1,200	25,000	---	---	---	1	---	<3.82	<3.84	<40.3	---	---	---	---	---
o-Cresol	3,900	100,000	100,000	---	---	---	15	---	<3.82	<3.84	<40.3	---	---	---	---	---
Pentachlorophenol	3	24	520	---	---	---	0.03	---	<15.3	<15.4	<161	---	---	---	---	---
Phenol	23,000	610,000	61,000	---	---	---	100	---	<2.67	<2.69	<28.2	---	---	---	---	---
Pyridine	78 [2]	2,000 [2]	2,000 [2]	200,000 [2]	200,000 [2]	200,000 [2]	0.032 [2]	---	<3.82	<3.84	<40.3	---	---	---	---	---

Notes:

[1] Objectives are for Class I Groundwater.

[2] Non-TACO or provisional ROs provided by the IEPA.

[3] Objective is for p-cresol.

[4] Objective is for m-cresol.

'--- No objective has been published for this constituent by the IEPA, or the sample was not analyzed for this constituent.

Concentration exceeds one or more project remediation objective.

*Note: Hatched columns represent areas that have been removed during remediation.

Table 4-13
2011 Soil Analytical Results for Perimeter Areas - Inorganics
Former Ameren Champaign MGP Site

	Soil Ingestion			Soil Inhalation			Soil	IEPA Accepted	Location:	PA1-02	PA1-03	PA1-04	PA1-Wall	PA2-01B	PA5-11	PA5-12	PA5-14	PA6-3
							Component	Background	Sample ID:	PA1-02 (3)	PA1-03 (3)	PA1-04 (3)	PA1-Wall (3)	PA2-01B (3)	PA5-11 (3)	PA5-12 (3)	PA5-14 (3)	PA6-3(3)
							Component	Levels	Sample Date:	6/9/2011	6/9/2011	6/9/2011	8/16/2011	8/3/2011	8/19/2011	8/19/2011	8/18/2011	8/9/2011
Constituent	Residential	Commercial	Construction	Residential	Commercial	Construction	to Groundwater[1)]	for non-MSA	Depth (feet):	3	3	3	3	3	3	3	3	3
Metals (mg/kg)																		
Mercury	23	610	61	10	16	0.10	6.4	0.06		0.105	0.105	0.186	0.027	8.47	0.129	0.414	0.27	---
Selenium	390	10,000	1,000	---	---	---	3.3	0.48		0.604	0.56	0.41	<0.577	<0.588	<0.556	2	1.71	0.46
Arsenic	13.0	13.0	61.0	750	1,200	25,000	30	13		10.8	16.2	9.66	14	7.02	---	---	---	40.3
Barium	5,500	140,000	14,000	690,000	910,000	870,000	1,800	110		84.9	108	136	194	154	---	---	---	---
Cadmium	78	2,000	200	1,800	2,800	59,000	59	0.6		0.69	1.26	0.21	0.45	1.16	---	---	---	---
Chromium	230	6,100	4,100	270	420	690	32	16.2		16.2	19.7	22	21.1	18.7	---	---	---	---
Lead	400	800	700	---	---	---	107	36		41.3	54.2	55.9	15.3	89.9	---	---	---	---
Silver	390	10,000	1,000	---	---	---	39	0.55		<0.51	<0.51	<0.55	<0.55	<0.55	---	---	---	---
Cyanide (Amenable)	1,600	41,000	4,100	---	---	---	40	0.51		17	9.22	1.8	---	<3.38	---	---	---	---
Cyanide (Total)										39.8	13.5	5.35	2.51	22.6	---	---	---	---

Notes:

[1)] Objectives are for Class I Groundwater.

'--- No objective has been published for this constituent by the IEPA, or the sample was not analyzed for this constituent.

Concentration exceeds one or more project remediation objective.

Table 4-14
Evaluation of Soil Attenuation
Former Ameren Champaign MGP Site

Sample Identification	Total Organic Compounds Using 50% of Detection Limit [1] (mg/kg)	Total Petroleum Hydrocarbons [2] (mg/kg)	Site-Specific Soil f_{oc} [3] (mg/kg)
P1-F5-F(20)	746.78	---	10,400
P1-H5-F(20.5)	752.03	---	10,400
P1-H3.5-F(20)	472.96	---	10,400
P1-F2-F(21)	747.64	---	10,400
P1-H1-F (20)	70.87	---	10,400
P1-F3.5-F(20.5)	1,586.11	---	10,400
P1-D5-F(25)	746.59	---	10,400
P1-D3.5-F(25)	898.74	---	10,400
P1-C5-F(22)	18.66	---	10,400
P1-B5-F (25)	47.92	---	10,400
P1-B3.5-F (26)	51.54	---	10,400
P1-B3.5-F (24)	95.97	---	10,400
P1-B2-F (28)	199.48	---	10,400
P1-B2-F (26)	590.84	---	10,400
P1-B2-F (24-25)	762.99	---	10,400
P1-B2-F (22)	1,306.44	---	10,400
P2-B1.5-F(22)	18.44	---	10,400
P2-B2.5-F(22)	526.98	---	10,400
P2-B4-F(22)	966.42	28.97	10,400
P2-C4-F(22)	1036.04	333.70	10,400
P2-D2-F(22)	8842.31	1509.90	10,400
P2-D4-F(22)	16911.42	3359.00	10,400
P2-H1.5-F (24)	28.33	11.18	10,400
P2-H3.5-F (24)	74.27	10.68	10,400
P2-FG-1.5-F (28)	213.88	10.96	10,400
P2-FG-3.5-F (24)	150.85	24.00	10,400
P2-GH-F(17)	151.03	60.80	10,400
P2-E2.5-F (24)	1057.87	27.19	10,400
P2-E4-F (24)	1297.42	28.53	10,400
P2-E4-F (30)	29.21	11.14	10,400
P3-B2-F(22)	618.24	47.44	10,400
P3-B2-F(24)	29.32	11.04	10,400
P3-B4-F(22)	28.81	11.08	10,400
P3-B4-F(24)	28.78	11.10	10,400

Notes:

--- Not measured.

(1) Total Organic Compounds is the sum of the detected compounds and 50% of the detection limit for non-detected compounds for PNAs (8270 SIMS), SVOCs (8270), and VOCs (8260).

(2) Total Petroleum Hydrocarbons (OA-2) by 3550B, 8015B for diesel, kerosene, mineral spirits, and motor oil and 50% of the detection limit for non-detected compounds.

(3) The foc value for the 0 to 3 foot depth interval was obtained from soil boring B-817 at 2' - 3' bgs. The foc value for the greater than 10 foot depth interval was obtained from soil boring B-851 from 19' - 20' bgs.

Exceeds Site-Specific foc.

Table 4-14
Evaluation of Soil Attenuation
Former Ameren Champaign MGP Site

Sample Identification	Total Organic Compounds Using 50% of Detection Limit [1] (mg/kg)	Total Petroleum Hydrocarbons [2] (mg/kg)	Site-Specific Soil f_{oc} [3] (mg/kg)
P3-C3-F(22)	946.90	44.32	10,400
P3-D2-F(22)	5321.48	1467.00	10,400
P3-C2-F(24)	474.01	200.62	10,400
P3-D2-F(24)	381.63	35.96	10,400
P3-C3-F(24)	80.26	22.55	10,400
P3-E3-F(24)	2494.33	682.50	10,400
P3-E3-F(25)	154.91	33.21	10,400
P3-DE1.5-F(23)	2271.16	52.91	10,400
P3-DE1-F(23)	1759.44	103.47	10,400
P3-F2-F(23)	29.21	648.60	10,400
P3-F2-F(25)	241.39	41.95	10,400
P3-H.1.5-F(23)	110.65	32.20	10,400
P4-B2-F(23)	1898.64	11.08	10,400
P4-B3-F(23)	603.97	11.30	10,400
P4-BC4-F(23)	52.67	31.82	10,400
P4-B2-F(25)	10,009.40	18.74	10,400
P4-B3-F(25)	1068.51	485.80	10,400
P4-BC4-F(25)	44.48	18.71	10,400
P4-D1.5-F (25)	28.26	10.88	10,400
P4-D3-F (25)	36.03	18.37	10,400
P4-D4.5-F (25)	981.10	49.71	10,400
P4-EF1.5-F (25)	71.52	26.10	10,400
P4-EF3-F (25)	87.30	11.12	10,400
P4-EF4.5-F (25)	56.64	17.15	10,400
P4-G4-F(24)	148.32	---	10,400
P4-G4-F(26)	74.16	---	10,400
P4-G3-F(24)	133.23	---	10,400
P4-G3-F(26)	85.79	---	10,400
P4-G2-F(24)	50.29	---	10,400
P4-G2-F(26)	121.90	---	10,400
P4-A1-W (20)	73,138.55	14,690	10,400
P5-B3.5-F(24)	32.04	14.06	10,400
P5-B3.5-F(26)	29.90	11.32	10,400
P5-B2-F(24)	2005.29	26.29	10,400
P5-B2-F(26)	683.06	133.29	10,400
P5-D2-F(25)	44.97	26.85	10,400
P5-D4-F(25)	45.81	22.57	10,400
P6-B4.5-F (25)	191.03	53.90	10,400
P6-D3-F(25)	107.30	66.71	10,400

Notes:

--- Not measured.

(1) Total Organic Compounds is the sum of the detected compounds and 50% of the detection limit for non-detected compounds for PNAs (8270 SIMS), SVOCs (8270), and VOCs (8260).

(2) Total Petroleum Hydrocarbons (OA-2) by 3550B, 8015B for diesel, kerosene, mineral spirits, and motor oil and 50% of the detection limit for non-detected compounds.

(3) The foc value for the 0 to 3 foot depth interval was obtained from soil boring B-817 at 2' - 3' bgs. The foc value for the greater than 10 foot depth interval was obtained from soil boring B-851 from 19' - 20' bgs.

Exceeds Site-Specific foc.

Table 4-14
Evaluation of Soil Attenuation
Former Ameren Champaign MGP Site

Sample Identification	Total Organic Compounds Using 50% of Detection Limit [1] (mg/kg)	Total Petroleum Hydrocarbons [2] (mg/kg)	Site-Specific Soil f_{oc} [3] (mg/kg)
P5-D2-F(25)	44.97	26.85	10,400
P5-D4-F(25)	45.81	22.57	10,400
P6-B4.5-F (25)	191.03	53.90	10,400
P6-D3-F(25)	107.30	66.71	10,400
P6-D3-F(26)	85.31	43.47	10,400
P6-D4.5-F(25)	76.55	35.99	10,400
P6-D4.5-F(26)	88.86	53.99	10,400
P7-GH1-F (16)	65.96	26.95	10,400
P7-G2-F (20)	64.47	27.08	10,400
P7-G2-F (16)	28.00	11.08	10,400
P7-F1-F (16)	56.56	17.47	10,400
P7-F1-F (20)	31.05	14.01	10,400
P7-B1.5-F (20)	50.38	<5.61	10,400
P7-B1.5-F (22)	50.25	<5.69	10,400
P7-B3.5-F (25)	65.05	16.15	10,400
P7-CD1-F (20)	70.65	<11.0	10,400
P7-CD1-F (22)	44.13	6.79	10,400
P7-CD3-F (25)	72.59	26.00	10,400
P7-E1-F (23)	48.06	15.53	10,400
P7-E23-F (23)	44.84	6.70	10,400
P8-G12-F (20 ft)	58.57	5.70	10,400
P8-G12-F (22 ft)	28.37	<5.54	10,400
P8-G3-F (20 ft)	55.70	6.81	10,400
P8-E1.2-F (20 ft)	67.36	12.30	10,400
P8-E3.4-F (20 ft)	53.49	<5.57	10,400
P8-E3.4-F (22 ft)	32.64	7.25	10,400
P8-E1.2-F (22 ft)	32.90	7.21	10,400
P9-G1.5-F (14 ft)	62.87	<5.63	10,400
P9-G1.5-F (16 ft)	47.37	<5.64	10,400
P9-G3-F (16.5)	44.46	<5.63	10,400
P9-G3-F (18)	45.25	<5.64	10,400
P9-FG 1.5-F (16)	40.24	16.80	10,400
P9-FG 1.5-F (18)	40.59	<5.62	10,400
P9-E3-F (16)	64.34	23.48	10,400
P9-E3-F (18)	32.49	7.09	10,400
P9-DE1.5-F (16)	289.64	16.80	10,400
P9-DE1.5-F (18)	132.35	6.15	10,400
P9-DE1.5-F (24)	243.59	5.64	10,400
P9-DE 1.5-F (26)	33.23	7.17	10,400
PA5-08 (3)	---	33,535	23,200
PA5-09 (3)	---	20,990	23,200
PA5-10 (3)	---	12,980	23,200

Notes:

--- Not measured.

(1) Total Organic Compounds is the sum of the detected compounds and 50% of the detection limit for non-detected compounds for PNAs (8270 SIMS), SVOCs (8270), and VOCs (8260).

(2) Total Petroleum Hydrocarbons (OA-2) by 3550B, 8015B for diesel, kerosene, mineral spirits, and motor oil and 50% of the detection limit for non-detected compounds.

(3) The foc value for the 0 to 3 foot depth interval was obtained from soil boring B-817 at 2' - 3' bgs. The foc value for the greater than 10 foot depth interval was obtained from soil boring B-851 from 19' - 20' bgs.

Exceeds Site-Specific foc.

Table 4-15

Post-ISCO Soil Confirmation Sample Analytical Results
First, Second, and Third Injection Events
Comparison to Tier 1
Remediation Objectives for Inhalation for Residential Property Use
Champaign MGP

	Tier 1 Remediation Objectives		Sample ID:	CS-01 (5-6 ft)	CS-01 (7.5-8.5 ft)	CS-02 (5-6 ft)					CS-02 (7-8 ft)				
			Event:	1st Event	1st Event	1st Event	2nd Event	3rd Event	(Re-sample)	(Re-sample)	1st Event	2nd Event	3rd Event	(Re-sample)	(Re-sample)
	Residential Inhalation	Units	Date:	5/23/2013	5/23/2013	5/23/2013	7/1/2013	8/21/2013	9/20/2013	2/18/2014	5/23/2013	7/1/2013	8/21/2013	9/20/13	2/18/2014
BTEX (8260/5035)															
Benzene	0.8	mg/kg		0.0037	0.0057	< 8.24	< 45	93.7	6.97	2.38	< 138	< 51.1	338	52	80.5
Ethylbenzene	400	mg/kg		0.0009 J	0.0024 J	< 41.2	< 225	---	---	---	< 690	55 J	251	25	---
Toluene	650	mg/kg		0.0027 J	0.0065	< 41.2	< 225	---	---	---	< 690	< 256	63.5	9.8 J	---
Xylenes	320	mg/kg		0.003 J	0.0061	< 41.2	< 225	---	---	---	170 J	< 256	1550	196	---
PNA (8270 SIM)															
Naphthalene	170	mg/kg		0.006	0.005	10.6	168	---	---	---	1750	455	340	1010	485
TPH (OA-1, OA-2)															
Gasoline Range Organics	---	mg/kg		---	---	---	---	---	---	<95.2	---	---	---	---	1470
Diesel	---	mg/kg		---	---	---	---	---	---	372	---	---	---	---	711
Kerosene	---	mg/kg		---	---	---	---	---	---	<318	---	---	---	---	<153
Mineral Spirits	---	mg/kg		---	---	---	---	---	---	<318	---	---	---	---	<153
Motor Oil	---	mg/kg		---	---	---	---	---	---	652	---	---	---	---	236
Total Petroleum Hydrocarbons	5,000 (1)	mg/kg		---	---	---	---	---	---	1,389.60	---	---	---	---	2,570

Notes:

(1) The TPH is the sum of gasoline range and diesel range organic compounds. For non detect values, 50% of the detection limit was used to calculate the sum.

J Analyte detected below quantitation limits.

S Spike recovery outside recovery limits.

Unknown hydrocarbon.

R RPD outside accepted recovery limits.

H Holding times exceeded.

Constituent exceeds Tier 1 Remediation Objective.

Table 4-15

Post-ISCO Soil Confirmation Sample Analytical Results
First, Second, and Third Injection Events
Comparison to Tier 1
Remediation Objectives for Inhalation for Residential Property Use
Champaign MGP

	Tier 1 Remediation Objectives		Sample ID:	CS-03 (5-6 ft)					CS-03 (9-10 ft)					CS-04 (5-6 ft)			
			Event:	1st Event	2nd Event	3rd Event	(Re-sample)	(Re-sample)	1st Event	2nd Event	3rd Event	(Re-sample)	(Re-sample)	1st Event	2nd Event	3rd Event	(Re-sample)
	Residential Inhalation	Units	Date:	5/23/2013	7/1/2013	8/21/2013	9/20/13	2/18/2014	5/23/2013	7/1/2013	8/21/2013	9/20/13	2/18/2014	5/23/2013	7/1/2013	8/21/2013	2/18/2014
BTEX (8260/5035)																	
Benzene	0.8	mg/kg		< 36.4	44.3	392	47	13.7	33.3	54	92.8	27.3	176	0.9	3.83	22.5	0.126
Ethylbenzene	400	mg/kg		< 182	< 84.6	---	---	---	< 153	< 97.5	---	---	---	0.427	< 9.58	---	---
Toluene	650	mg/kg		42 J	72 J	---	---	---	57 J	76 J	---	---	---	0.04 J	< 9.58	---	---
Xylenes	320	mg/kg		45 J	86.8	---	---	---	50 J	94 J	---	---	---	0.407	2.7 J	---	---
PNA (8270 SIM)																	
Naphthalene	170	mg/kg		1710	840	410	1030	502	213	985	583	563	1570	1.55	35.6 S	---	---
TPH (OA-1, OA-2)																	
Gasoline Range Organics	---	mg/kg		---	---	---	---	1130	---	---	---	---	3180	---	---	---	67.9
Diesel	---	mg/kg		---	---	---	---	2450	---	---	---	---	12,700	---	---	---	<28
Kerosene	---	mg/kg		---	---	---	---	<319	---	---	---	---	<6,060	---	---	---	<28
Mineral Spirits	---	mg/kg		---	---	---	---	<319	---	---	---	---	<6,060	---	---	---	<28
Motor Oil	---	mg/kg		---	---	---	---	802	---	---	---	---	6870	---	---	---	<28
Total Petroleum Hydrocarbons	5,000 [1]	mg/kg		---	---	---	---	4,701	---	---	---	---	28,810	---	---	---	123.9

Notes:

(1) The TPH is the sum of gasoline range and diesel range organic compounds. For non detect values, 50% of the detection limit was used to calculate the sum.

J Analyte detected below quantitation limits.

S Spike recovery outside recovery limits.

Unknown hydrocarbon.

R RPD outside accepted recovery limits.

H Holding times exceeded.

Constituent exceeds Tier 1 Remediation Objective.

Table 4-15

Post-ISCO Soil Confirmation Sample Analytical Results
First, Second, and Third Injection Events
Comparison to Tier 1
Remediation Objectives for Inhalation for Residential Property Use
Champaign MGP

	Tier 1 Remediation Objectives		Sample ID:	CS-04 (8-9 ft)					CS-05 (4.5-5.5 ft)		CS-05 (9-10 ft)				CS-06 (5-6 ft)	CS-06 (9-10 ft)		
			Event:	1st Event	2nd Event	3rd Event	(Re-sample)	(Re-sample)			1st Event	2nd Event	3rd Event	(Re-sample)	1st Event	1st Event	2nd Event	3rd Event
	Residential Inhalation	Units	Date:	5/23/2013	7/1/2013	8/21/2013	9/20/13	2/18/2014	5/23/2013	7/1/2013	5/23/2013	7/1/2013	8/21/2013	2/18/2014	5/24/2013	5/24/2013	7/1/2013	8/21/2013
BTEX (8260/5035)																		
Benzene	0.8	mg/kg		< 47.5	< 17.3	803	5.24	10.1	7.54	0.002	< 189	64.8	10.5	54.2	0.168	< 48.8	< 46.1	0.177
Ethylbenzene	400	mg/kg		< 238	< 86.3	---	---	---	2.3 J	0.0011 J	< 943	<231	7.8 J	---	0.235	< 244	< 231	---
Toluene	650	mg/kg		< 238	22 J	---	---	---	< 10.4	0.0047 J	< 943	120 J	7.3 J	---	0.032 J	< 244	< 231	---
Xylenes	320	mg/kg		< 238	59 J	---	---	---	3.2 J	0.0091	< 943	110 J	6.9 J	---	0.44	82 J	< 231	---
PNA (8270 SIM)																		
Naphthalene	170	mg/kg		300	1260	238	191	---	4.09	31.9	511	355	292	951	0.73	1450	21.5	1.17
TPH (OA-1, OA-2)																		
Gasoline Range Organics	---	mg/kg		---	---	---	---	266	---	---	---	---	---	1280	---	---	---	---
Diesel	---	mg/kg		---	---	---	---	765	---	---	---	---	---	31,400	---	---	---	---
Kerosene	---	mg/kg		---	---	---	---	<333	---	---	---	---	---	<7,160	---	---	---	---
Mineral Spirits	---	mg/kg		---	---	---	---	<333	---	---	---	---	---	<7,160	---	---	---	---
Motor Oil	---	mg/kg		---	---	---	---	520	---	---	---	---	---	15,200	---	---	---	---
Total Petroleum Hydrocarbons	5,000 (1)	mg/kg		---	---	---	---	1,884	---	---	---	---	---	55,040	---	---	---	---

Notes:

(1) The TPH is the sum of gasoline range and diesel range organic compounds. For non detect values, 50% of the detection limit was used to calculate the sum.

J Analyte detected below quantitation limits.

S Spike recovery outside recovery limits.

Unknown hydrocarbon.

R RPD outside accepted recovery limits.

H Holding times exceeded.

Constituent exceeds Tier 1 Remediation Objective.

Table 4-15

Post-ISCO Soil Confirmation Sample Analytical Results
First, Second, and Third Injection Events
Comparison to Tier 1
Remediation Objectives for Inhalation for Residential Property Use
Champaign MGP

	Tier 1 Remediation Objectives		Sample ID:	CS-07 (5-6 ft)			CS-07 (7.5-8.5 ft)			CS-08 (4.5-5.5 ft)		CS-08 (8.5-9.5 ft)	CS-09 (5-6 ft)	CS-09 (8-9 ft)	CS-10 (5-6 ft)		CS-10 (8.5-9.5 ft)
			Event:	1st Event	2nd Event	3rd Event	1st Event	2nd Event	3rd Event	1st Event	2nd Event	1st Event	1st Event	1st Event	1st Event	2nd Event	1st Event
	Residential Inhalation	Units	Date:	5/24/2013	7/1/2013	8/21/2013	5/24/2013	7/1/2013	8/21/2013	5/24/2013	7/1/2013	5/24/2013	5/24/2013	5/24/2013	5/24/2013	7/1/2013	5/24/2013
BTEX (8260/5035)																	
Benzene	0.8	mg/kg		19.9	36.5	1.12	2.87	2.52	1.31	3.13	0.313	0.734	< 0.027	< 0.192	4.12	0.594	0.426
Ethylbenzene	400	mg/kg		12	12.7	---	2.24	< 8.76	---	1.67	0.07 J	4.6	0.138	16.5	10	3.71	3.99
Toluene	650	mg/kg		1.08	< 12.7	---	0.43	< 8.76	---	0.5	0.11 J	0.242	< 0.135	0.31 J	0.677	< 0.475	0.11
Xylenes	320	mg/kg		9.73	14.3	---	3.36	< 8.76	---	2.96	0.307	2.1	0.039 J	13.2	3.24	1.44	2.82
PNA (8270 SIM)																	
Naphthalene	170	mg/kg		17	13.2	---	94	8.27	---	47.4	21.1	7.81	0.059	69.1	1.8	1.67	15.2
TPH (OA-1, OA-2)																	
Gasoline Range Organics	---	mg/kg		---	---	---	---	---	---	---	---	---	---	---	---	---	---
Diesel	---	mg/kg		---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kerosene	---	mg/kg		---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mineral Spirits	---	mg/kg		---	---	---	---	---	---	---	---	---	---	---	---	---	---
Motor Oil	---	mg/kg		---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total Petroleum Hydrocarbons	5,000 (1)	mg/kg		---	---	---	---	---	---	---	---	---	---	---	---	---	---

Notes:

(1) The TPH is the sum of gasoline range and diesel range organic compounds. For non detect values, 50% of the detection limit was used to calculate the sum.

J Analyte detected below quantitation limits.

S Spike recovery outside recovery limits.

Unknown hydrocarbon.

R RPD outside accepted recovery limits.

H Holding times exceeded.

Constituent exceeds Tier 1 Remediation Objective.

Table 4-15

Post-ISCO Soil Confirmation Sample Analytical Results
First, Second, and Third Injection Events
Comparison to Tier 1
Remediation Objectives for Inhalation for Residential Property Use
Champaign MGP

	Tier 1 Remediation Objectives		Sample ID:	CS-11 (5-6 ft)	CS-11-(8-9 ft)	CS-12 (4-5 ft)			CS-12 (9-10 ft)			CS-13 (5-6 ft)			CS-13 (9-10 ft)		
			Event:	1st Event	1st Event	1st Event	2nd Event	3rd Event	1st Event	2nd Event	3rd Event	1st Event	2nd Event	3rd Event	1st Event	2nd Event	3rd Event
	Residential Inhalation	Units	Date:	5/24/2013	5/24/2013	5/24/2013	7/1/2013	8/21/2013	5/24/2013	7/1/2013	8/21/2013	5/28/2013	7/1/2013	8/21/2013	5/28/2013	7/1/2013	8/21/2013
BTEX (8260/5035)																	
Benzene	0.8	mg/kg		0.307	< 0.482	2.43	2.03	1.25	1.89	4.59	1.3	2.31	2.72	1.84	< 1.84	1.13	0.868
Ethylbenzene	400	mg/kg		1.58	2.1 J	15	12	---	12.8	20.8	---	24.6	36.7	---	7.6 J	18.4	---
Toluene	650	mg/kg		0.176	< 2.41	< 2.22	< 2.36	---	< 3.79	< 9.55	---	< 9.86	0.14 J	---	9.19	0.11 J	---
Xylenes	320	mg/kg		1.66	1.8 J	4.47	3.67	---	7.31	13.9	---	13.6	16.9	---	4.6 J	9.77	---
PNA (8270 SIM)																	
Naphthalene	170	mg/kg		128	12.7	83.4	54.4	---	79	305	13	111	221	57.5	90	31.1	---
TPH (OA-1, OA-2)																	
Gasoline Range Organics	---	mg/kg		---	---	---	---	---	---	---	---	---	---	---	---	---	---
Diesel	---	mg/kg		---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kerosene	---	mg/kg		---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mineral Spirits	---	mg/kg		---	---	---	---	---	---	---	---	---	---	---	---	---	---
Motor Oil	---	mg/kg		---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total Petroleum Hydrocarbons	5,000 (1)	mg/kg		---	---	---	---	---	---	---	---	---	---	---	---	---	---

Notes:

(1) The TPH is the sum of gasoline range and diesel range organic compounds. For non detect values, 50% of the detection limit was used to calculate the sum.
J Analyte detected below quantitation limits.
S Spike recovery outside recovery limits.
Unknown hydrocarbon.
R RPD outside accepted recovery limits.
H Holding times exceeded.
Constituent exceeds Tier 1 Remediation Objective.

Table 4-15

Post-ISCO Soil Confirmation Sample Analytical Results
First, Second, and Third Injection Events
Comparison to Tier 1
Remediation Objectives for Inhalation for Residential Property Use
Champaign MGP

	Tier 1 Remediation Objectives		Sample ID:	CS-14 (3-5 ft)			CS-14 (7.5-8.5 ft)	CS-14 (20-22 ft)			CS-15 (5-6 ft)	CS-15 (8-9 ft)		CS-15 (20-22 ft)		
			Event:	1st Event	2nd Event	3rd Event	1st Event	1st Event	2nd Event	3rd Event	1st Event	1st Event	2nd Event	1st Event	2nd Event	3rd Event
	Residential Inhalation	Units	Date:	5/28/2013	7/2/2013	8/21/2013	5/28/2013	5/28/2013	7/2/2013	8/21/2013	5/28/2013	5/28/2013	7/2/2013	5/28/2013	7/2/2013	8/21/2013
BTEX (8260/5035)																
Benzene	0.8	mg/kg		2.12	1.39	1.2	0.101	< 0.842	2.99	< 0.256	0.712	0.456	0.19	28	0.804	1.59
Ethylbenzene	400	mg/kg		17.8	12.3	11.9	6.05	7.75	29.5	3.07	13.7	15.6	2.48	15.4	2	5.03
Toluene	650	mg/kg		< 1.24	0.031 J	< 1.24	0.049 J	< 4.21	< 2.16	< 1.28	< 2.6	< 0.61	0.099 J	57.9	0.066 J	< 1.02
Xylenes	320	mg/kg		4.96	4.39	3.2	2.22	3.6 J	15.8	1.59	5.6	7.03	1.25	59.3	1.24	0.81 J
PNA (8270 SIM)																
Naphthalene	170	mg/kg		142	207	25.9	12.8	35.3	41.4	6.01	114	200	12.2	194	9.14 S	8.49
TPH (OA-1, OA-2)																
Gasoline Range Organics	---	mg/kg		---	340	354	---	< 842	595	100 J	---	---	---	1000 J	32.8	< 205
Diesel	---	mg/kg		---	4840 S#	1230 #	---	443 #	388 #	209 #	---	---	---	4410 #	235 #	180 #
Kerosene	---	mg/kg		---	343	< 64	---	< 55.1	< 28.3	< 62	---	---	---	< 298	< 28.5	< 54.4
Mineral Spirits	---	mg/kg		---	343	< 64	---	< 55.1	< 28.3	< 62	---	---	---	< 298	< 28.5	< 54.4
Motor Oil	---	mg/kg		---	343	212 #	---	176 #	50.8 #	65.2 #	---	---	---	1270 #	< 28.5	< 54.4
Total Petroleum Hydrocarbons	5,000 (1)	mg/kg		---	6,209	1,860	---	1,095.10	1,062.10	436.2	---	---	---	6,978	310.55	364.1

Notes:

(1) The TPH is the sum of gasoline range and diesel range organic compounds. For non detect values, 50% of the detection limit was used to calculate the sum.
J Analyte detected below quantitation limits.
S Spike recovery outside recovery limits.
Unknown hydrocarbon.
R RPD outside accepted recovery limits.
H Holding times exceeded.
Constituent exceeds Tier 1 Remediation Objective.

Table 4-15
Post-ISCO Soil Confirmation Sample Analytical Results
First, Second, and Third Injection Events
Comparison to Tier 1
Remediation Objectives for Inhalation for Residential Property Use
Champaign MGP

	Tier 1 Remediation Objectives		Sample ID:	CS-16 (4-5 ft)			CS-16 (7-8 ft)		CS-17 (5-6 ft)			CS-17 (7-8 ft)	CS-18 (3.5-4.5 ft)		
			Event:	1st Event	2nd Event	3rd Event	1st Event	2nd Event	1st Event	2nd Event	3rd Event	1st Event	1st Event	2nd Event	3rd Event
	Residential Inhalation	Units	Date:	5/28/2013	7/2/2013	8/21/2013	5/28/2013	7/2/2013	5/28/2013	7/2/2013	8/21/2013	5/28/2013	5/28/2013	7/2/2013	8/21/2013
BTEX (8260/5035)															
Benzene	0.8	mg/kg		3.36	< 1.82	0.892	1.02	0.156	5.65	4.65	1.13	0.499	< 5.28	3.9	0.996
Ethylbenzene	400	mg/kg		17.3	26	---	25.5	2.83	32.1	30.1	---	10.2	36.3	51.9	---
Toluene	650	mg/kg		0.11 J	< 9.11	---	0.15 J	< 0.11	< 10.8	< 0.906	---	0.119	< 26.4	< 2.61	---
Xylenes	320	mg/kg		16.3	16.8	---	15.2	1.44	19.9	18.8	---	4.42	22 J	29.5	---
PNA (8270 SIM)															
Naphthalene	170	mg/kg		137	74.5	---	48.7	40.1	124	99	---	2.85	417	249	166
TPH (OA-1, OA-2)															
Gasoline Range Organics	---	mg/kg		---	---	---	---	---	---	---	---	---	---	---	---
Diesel	---	mg/kg		---	---	---	---	---	---	---	---	---	---	---	---
Kerosene	---	mg/kg		---	---	---	---	---	---	---	---	---	---	---	---
Mineral Spirits	---	mg/kg		---	---	---	---	---	---	---	---	---	---	---	---
Motor Oil	---	mg/kg		---	---	---	---	---	---	---	---	---	---	---	---
Total Petroleum Hydrocarbons	5,000 (1)	mg/kg		---	---	---	---	---	---	---	---	---	---	---	---

Notes:

(1) The TPH is the sum of gasoline range and diesel range organic compounds. For non detect values, 50% of the detection limit was used to calculate the sum.

J Analyte detected below quantitation limits.

S Spike recovery outside recovery limits.

Unknown hydrocarbon.

R RPD outside accepted recovery limits.

H Holding times exceeded.

Constituent exceeds Tier 1 Remediation Objective.

Table 4-15

Post-ISCO Soil Confirmation Sample Analytical Results
First, Second, and Third Injection Events
Comparison to Tier 1
Remediation Objectives for Inhalation for Residential Property Use
Champaign MGP

	Tier 1 Remediation Objectives		Sample ID:	CS-18 (7-8 ft)		CS-19 (22.0 - 24.0)			CS-20 (22-24 ft)			CS-21 (5-6 ft)	CS-21 (9-10 ft)	CS-22 (5-6 ft)	CS-22 (7-8 ft)	CS-23 (5-6 ft)
			Event:	1st Event	2nd Event	1st Event	2nd Event	3rd Event	1st Event	2nd Event	3rd Event	1st Event	1st Event	1st Event	1st Event	1st Event
	Residential Inhalation	Units	Date:	5/28/2013	7/2/2013	5/28/2013	7/2/2013	8/21/2013	5/28/2013	7/2/2013	8/21/2013	5/28/2013	5/28/2013	5/28/2013	5/28/2013	5/28/2013
BTEX (8260/5035)																
Benzene	0.8	mg/kg		< 1.77	0.665	< 3.58	6.72	3.68	21.1	4.33	12.9 H	< 0.0221	< 0.17	< 0.0213	< 0.0958	< 0.0779
Ethylbenzene	400	mg/kg		11.8	16.8	9.8 J	3.48	---	62.9	0.852	1.3	0.563	0.59 J	0.1 J	0.33 J	1.2
Toluene	650	mg/kg		< 8.84	< 0.967	4.0 J	11.1	---	13 J	2.63	15.1 H	0.096 J	< 0.851	< 0.107	< 0.479	0.099 J
Xylenes	320	mg/kg		7.8 J	8.69	12.0 J	10.6	---	53.8	1.96	8.48	0.112	0.26 J	0.11 J	0.11 J	1.01
PNA (8270 SIM)																
Naphthalene	170	mg/kg		95.9	28.4	66.8	49.4	1.35	156	1.17	12.7 S	0.305 S	36.5	0.634	0.344	2.38
TPH (OA-1, OA-2)																
Gasoline Range Organics	---	mg/kg		---	---	< 3580	< 188	< 178	< 4370	38	117	---	---	---	---	---
Diesel	---	mg/kg		---	---	1370 S#	478 #	< 578	1570 #	< 60.6	54.5 SR#	---	---	---	---	---
Kerosene	---	mg/kg		---	---	< 143	< 142	< 578	< 155	< 60.6	< 51.5	---	---	---	---	---
Mineral Spirits	---	mg/kg		---	---	< 143	< 142	< 578	< 155	< 60.6	< 51.5	---	---	---	---	---
Motor Oil	---	mg/kg		---	---	542 #	< 142	791 #	611 #	< 60.6	< 51.5	---	---	---	---	---
Total Petroleum Hydrocarbons	5,000 (1)	mg/kg		---	---	3,845	785	1,747	4,521	159.2	248.75	---	---	---	---	---

Notes:

(1) The TPH is the sum of gasoline range and diesel range organic compounds. For non detect values, 50% of the detection limit was used to calculate the sum.

J Analyte detected below quantitation limits.

S Spike recovery outside recovery limits.

Unknown hydrocarbon.

R RPD outside accepted recovery limits.

H Holding times exceeded.

Constituent exceeds Tier 1 Remediation Objective.

Table 4-15

Post-ISCO Soil Confirmation Sample Analytical Results
First, Second, and Third Injection Events
Comparison to Tier 1
Remediation Objectives for Inhalation for Residential Property Use
Champaign MGP

	Tier 1 Remediation Objectives		Sample ID:	CS-23 (9-10 ft)		
			Event:	1st Event	2nd Event	3rd Event
	Residential Inhalation	Units	Date:	5/28/2013	7/2/2013	8/21/2013
BTEX (8260/5035)						
Benzene	0.8	mg/kg		7.27	0.37	0.113
Ethylbenzene	400	mg/kg		66.9	5.02	---
Toluene	650	mg/kg		< 17.2	< 0.925	---
Xylenes	320	mg/kg		32.5	2.39	---
PNA (8270 SIM)						
Naphthalene	170	mg/kg		6.59	227	15.4
TPH (OA-1, OA-2)						
Gasoline Range Organics	---	mg/kg		---	---	---
Diesel	---	mg/kg		---	---	---
Kerosene	---	mg/kg		---	---	---
Mineral Spirits	---	mg/kg		---	---	---
Motor Oil	---	mg/kg		---	---	---
Total Petroleum Hydrocarbons	5,000 (1)	mg/kg		---	---	---

Notes:

(1) The TPH is the sum of gasoline range and diesel range organic compounds. For non detect values, 50% of the detection limit was used to calculate the sum.

J Analyte detected below quantitation limits.

S Spike recovery outside recovery limits.

Unknown hydrocarbon.

R RPD outside accepted recovery limits.

H Holding times exceeded.

Constituent exceeds Tier 1 Remediation Objective.

Table 4-16

CONFIRMATION SOIL SAMPLE ANALYTICAL RESULTS - ORGANIC CONSTITUENTS
2017 RESIDUAL REMEDIATION EXCAVATION FLOOR AND SIDEWALL SAMPLES
FORMER AMEREN CHAMPAIGN MGP SITE
CHAMPAIGN, ILLINOIS

	Tier 1 Remediation Objective																					
		Soil Ingestion			Soil Inhalation (outdoor air)			Soil Component to Groundwater[2]	Sample Location:	FL-RES-REM-W2			FL-RES-REM-W2			FL-RES-REM-W6			SW-RES-REM-W2			SW-RES-REM-W3		
									Sample Identification:	FL-RES-REM-W2 (12)			FL-RES-REM-W2 (14)			FL-RES-REM-W6 (14)			SW-RES-REM-W2 (10)			SW-RES-REM-W3 (10)		
Constituent (mg/kg)	Residential	Commercial	Construction	Residential	Commercial	Construction		Sample Date:	1/26/2017			1/26/2017			1/31/2017			1/31/2017			1/31/2017		
								Sample Depth (feet):	12 ft			14 ft			14 ft			10 ft			10 ft		
Semivolatile Organic Compounds (SVOCs)																							
2,4-Dimethylphenol	1,600	41,000	41,000	---	---	---	9		2.45		S	---			<	**15.9**		<	**17.6**		<	**37.2**	
2-Methylnaphthalene	310 [3]	8200 [2]	820 [2]	---	---	---	1.9 [3]		**2.47**			---			<	**29.9**		<	**12.3**		<	**144**	
Carbazole	32	290	6,200	---	---	---	0.6		< **1.18**			---			<	**15.9**		<	**17.6**		<	**37.2**	
Dibenzofuran	160 [3]	4100 [3]	4100 [3]	---	---	---	6.10		< 0.823			---			<	**11.1**			**47.6**			**87**	
Acenaphthene	4,700	120,000	120,000	---	---	---	570		0.177			---				1.58			10.3			17.9	
Acenaphthylene	2,300[3]	61,000[3]	61,000[3]	---	---	---	85 [3]		0.197			---				3.48	SR		4.75			38.3	
Anthracene	23,000	610,000	610,000	---	---	---	12,000		0.156			---				6.51	SR		9.64			27.4	
Benzo(a)anthracene [3]	1.8	8	170	---	---	---	2		0.092			---				**4.5**	SR		**24.2**			**44.4**	
Benzo(a)pyrene [3]	2.1	2.1	17	---	---	---	8		0.055			---				**3.91**	SR		**18.1**			**40.4**	
Benzo(b)fluoranthene [3]	2.1	8	170	---	---	---	5		0.07			---				**4.27**	SR		**24**			**61.5**	
Benzo(g,h,i)perylene	2,300[3]	61,000[3]	61,000[3]	---	---	---	27,000 [3]		0.016			---				1.96	R		3.13			4.93	
Benzo(k)fluoranthene	9	78	1,700	---	---	---	49		0.025			---				1.61			8.15			**21.2**	
Chrysene	88	780	17,000	---	---	---	160		0.081			---				3.67	SR		22.3			41.4	
Dibenzo(a,h)anthracene [3]	0.42	0.8	17	---	---	---	2.0		< 0.008			---			<	**0.541**			**1.41**			**2.69**	
Fluoranthene	3,100	82,000	82,000	---	---	---	4,300		0.208			---				9.91	SR		87.6			104	
Fluorene	3,100	82,000	82,000	---	---	---	560		0.653			---				6.89	S		43.6			77.4	
Indeno(1,2,3-cd)pyrene [3]	1.6	8	170	---	---	---	14		0.016			---				**1.63**	R		**3.82**			**6.71**	
Naphthalene	1,600	41,000	4,100	170	270	1.8	12		**8.98**		S	---				**90.6**	SR		**26**			**307**	
Phenanthrene	2,300[3]	61,000[3]	61,000[3]	---	---	---	200 [3]		0.65			---				21.7	SR		168			184	
Pyrene	2,300	61,000	61,000	---	---	---	42,000		0.157			---				8.88	SR		54.8			72.3	
Total Petroleum Hydrocarbons (TPH)																							
Diesel									---			< 114		S		667	S#		2540	#H		5070	#
Kerosene									---			421		#	<	55		<	312	H	<	1290	
Mineral Spirits									---			< 114			<	55		<	312	H	<	1290	
Motor Oil									---			< 114				372	#		1500	#H		2750	#
Volatile Organic Compounds (VOCs)																							
1,2,3-Trimethylbenzene	---	---	---	---	---	---	---		0.997			---				2.22			4.18			2.62	
1,2,4-Trimethylbenzene	---	---	---	85 [3]	140 [3]	0.87 [3]	---		**3.25**			---				**7.23**			**12.6**			**8.01**	
1,3,5-Trimethylbenzene	2,300 [3]	100,000 [3]	100,000 [3]	45 [3]	72 [3]	0.15	51 [3]		**1.01**			---				**2.67**			**4.18**			**2.49**	
Benzene	12	100	2300	0.8	1.6	2.2	0.03		**6.63**			---				**13.4**			**2.75**			**1.25**	
Ethylbenzene	7800	200000	20000	400	400	58	13		1.26			---				1.76			3.08			1.48	
m,p-Xylenes	16,000 [4]	410,000 [4]	41,000 [4]	410 [4]	420 [4]	5.9 [5]	200 [5]		**9.47**			---				**14.4**			**12.1**			**9.8**	
Naphthalene	1600	41000	4100	170	270	1.8	12		**41.4**			---				**137**			**253**			**162**	
o-Xylene	16000	410000	41000	410	410	6.5	190		3.71			---				5.44			6.32			4.03	
Styrene	16000	410000	41000	1500	1500	430	4		1.02			---			<	0.677			0.67			0.756	
Toluene	16000	410000	410000	650	650	42	12		**13.3**			---				**16.5**			2.41			2.54	

--- Remediation objective for exposure pathway has not been established by the IEPA or sample has not been analyzed for this constituent.
<5.1 Constituent not detected at the reporting limit indicated.
(1) Remediation objective for inhalation of indoor air exposure routes is preliminary and from Draft IAC 742.
(2) Tier 1 remediation objective for Class I groundwater.
(3) Non-TACO remediation objective published by the IEPA.
(4) Value for m-xylene used.
(5) Value for p-xylene used.

Notes:
1. Remediation objectives from IAC Section 742 or obtained through IEPA as non-TACO remediation objectives.
2. Samples analyzed by TekLab, Inc. of Collinsville, Illinois
3. Background values from IAC Section 742 Appendix A Table H used in place of traditional ROs

Table 4-16

CONFIRMATION SOIL SAMPLE ANALYTICAL RESULTS - ORGANIC CONSTITUENTS
2017 RESIDUAL REMEDIATION EXCAVATION FLOOR AND SIDEWALL SAMPLES
FORMER AMEREN CHAMPAIGN MGP SITE
CHAMPAIGN, ILLINOIS

	Tier 1 Remediation Objective							Sample Location:	SW-RES-REM-W4	SW-RES-REM-W4	SW-RES-REM-W2	SW-RES-REM-W3	FL-RES-REM-W4
		Soil Ingestion			Soil Inhalation (outdoor air)			Soil	Sample Identification:	SW-RES-REM-W4 (10)	SW-RES-REM-W4 (2)	SW-RES-REM-W2 (2)	SW-RES-REM-W3 (2)	FL-RES-REM-W4 (12)
								Component	Sample Date:	1/31/2017	1/31/2017	2/1/2017	2/1/2017	1/31/2017
Constituent (mg/kg)	Residential	Commercial	Construction	Residential	Commercial	Construction		to Groundwater[2]	Sample Depth (feet):	10 ft	2 ft	2 ft	2 ft	12 ft
Semivolatile Organic Compounds (SVOCs)														
2,4-Dimethylphenol	1,600	41,000	41,000	---	---	---	9			< **167**	< 6.05	< 3.1	< **19.5**	< **11.3** S
2-Methylnaphthalene	310 [3]	8200 [2]	820 [2]	---	---	---	1.9 [3]			< **524**	< **4.24**	< **2.17**	< **13.7**	**64.2**
Carbazole	32	290	6,200	---	---	---	0.6			< **167**	< **6.05**	< **3.1**	< **19.5**	< **11.3**
Dibenzofuran	160 [3]	4100 [3]	4100 [3]	---	---	---	6.10			**283**	< 4.24	< 2.17	< **13.7**	**23.4**
Acenaphthene	4,700	120,000	120,000	---	---	---	570			88.4	< 0.041	< 0.105	< 0.133	7.48 S
Acenaphthylene	2,300[3]	61,000[3]	61,000[3]	---	---	---	85 [3]			**116**	0.373	< 0.105	0.299	14.4 S
Anthracene	23,000	610,000	610,000	---	---	---	12,000			221	0.168	< 0.105	0.273	15.6 S
Benzo(a)anthracene [3]	1.8	8	170	---	---	---	2			**218**	1.06	0.695	1.03	**10.7** S
Benzo(a)pyrene [3]	2.1	2.1	17	---	---	---	8			**159**	1.37	0.628 S	1.09	**6.54** S
Benzo(b)fluoranthene [3]	2.1	8	170	---	---	---	5			**210**	2.08	1.05 S	1.91	**8.25** S
Benzo(g,h,i)perylene	2,300[3]	61,000[3]	61,000[3]	---	---	---	27,000 [3]			30.4	0.498	0.377	0.539	1.12 S
Benzo(k)fluoranthene	9	78	1,700	---	---	---	49			**75.4**	0.687	0.375	0.604	2.55 S
Chrysene	88	780	17,000	---	---	---	160			**180**	1.05	0.718	1.09	9.96 S
Dibenzo(a,h)anthracene [3]	0.42	0.8	17	---	---	---	2.0			**17**	0.155	0.129	0.143	**0.612** S
Fluoranthene	3,100	82,000	82,000	---	---	---	4,300			486	1.39	0.649	1.57	22 S
Fluorene	3,100	82,000	82,000	---	---	---	560			358	0.122	< 0.105	< 0.133	36.3 S
Indeno(1,2,3-cd)pyrene [3]	1.6	8	170	---	---	---	14			**37.4**	0.468	0.382	0.475	1.36 S
Naphthalene	1,600	41,000	4,100	170	270	1.8	12			**1190**	0.291	< 0.105	0.285	**114** S
Phenanthrene	2,300[3]	61,000[3]	61,000[3]	---	---	---	200 [3]			**889**	0.681	0.212	1.07	41.6 S
Pyrene	2,300	61,000	61,000	---	---	---	42,000			345	1.6	0.658	1.33	16.3 S
Total Petroleum Hydrocarbons (TPH)														
Diesel										17100 #	---	---	---	1950 S#
Kerosene										< 4200	---	---	---	< 112
Mineral Spirits										< 4200	---	---	---	< 112
Motor Oil										8580 #	---	---	---	1040 #
Volatile Organic Compounds (VOCs)														
1,2,3-Trimethylbenzene	---	---	---	---	---	---	---			40.5	< 0.141	< 0.124	< 0.163	7.74
1,2,4-Trimethylbenzene	---	---	---	85 [3]	140 [3]	0.87 [3]	---			**127**	0.166	< 0.124	< 0.163	**23.8**
1,3,5-Trimethylbenzene	2,300 [3]	100,000 [3]	100,000 [3]	45 [3]	72 [3]	0.15	51 [3]			**43.9**	< 0.141	< 0.124	< **0.163**	**7.13**
Benzene	12	100	2300	0.8	1.6	2.2	0.03			**6.91**	< 0.0282	< 0.0248	< **0.0326**	**16**
Ethylbenzene	7800	200000	20000	400	400	58	13			**23.4**	< 0.141	< 0.124	< 0.163	6.02
m,p-Xylenes	16,000 [4]	410,000 [4]	41,000 [4]	410 [4]	420 [4]	5.9 [5]	200 [5]			**148**	0.191	< 0.124	< 0.163	**45.4**
Naphthalene	1600	41000	4100	170	270	1.8	12			**2280**	**2.24**	< 0.248	0.427	**284**
o-Xylene	16000	410000	41000	410	410	6.5	190			**62.6**	< 0.141	< 0.124	< 0.163	**17.7**
Styrene	16000	410000	41000	1500	1500	430	4			**13**	< 0.141	< 0.124	< 0.163	**10.2**
Toluene	16000	410000	410000	650	650	42	12			**56.8**	< 0.141	< 0.124	< 0.163	**45.1**

---	Remediation objective for exposure pathway has not been established by the IEPA or sample has not been analyzed for this constituent.
<5.1	Constituent not detected at the reporting limit indicated.
(1)	Remediation objective for inhalation of indoor air exposure routes is preliminary and from Draft IAC 742.
(2)	Tier 1 remediation objective for Class I groundwater.
(3)	Non-TACO remediation objective published by the IEPA.
(4)	Value for m-xylene used.
(5)	Value for p-xylene used.

Notes:

1. Remediation objectives from IAC Section 742 or obtained through IEPA as non-TACO remediation objectives.
2. Samples analyzed by TekLab, Inc. of Collinsville, Illinois
3. Background values from IAC Section 742 Appendix A Table H used in place of traditional ROs

Table 4-16

CONFIRMATION SOIL SAMPLE ANALYTICAL RESULTS - ORGANIC CONSTITUENTS
2017 RESIDUAL REMEDIATION EXCAVATION FLOOR AND SIDEWALL SAMPLES
FORMER AMEREN CHAMPAIGN MGP SITE
CHAMPAIGN, ILLINOIS

	Tier 1 Remediation Objective																				
		Soil Ingestion			Soil Inhalation (outdoor air)			Soil Component to Groundwater[2]	Sample Location:	SW-RES-REM-W7		SW-RES-REM-W6		SW-RES-REM-W5		SW-RES-REM-W6		FL-RES-REM-W7	
									Sample Identification:	SW-RES-REM-W7 (10)		SW-RES-REM-W6 (10)		SW-RES-REM-W5 (10)		SW-RES-REM-W6 (3)		FL-RES-REM-W7 (15)	
									Sample Date:	2/6/2017		2/6/2017		2/6/2017		2/2/2017		2/2/2017	
Constituent (mg/kg)	Residential	Commercial	Construction	Residential	Commercial	Construction		Sample Depth (feet):	10 ft		10 ft		10 ft		3 ft		15 ft	
Semivolatile Organic Compounds (SVOCs)																		
2,4-Dimethylphenol	1,600	41,000	41,000	---	---	---	9		< 3.8		< **17.3**		< **18**		< 1.26		1.92	
2-Methylnaphthalene	310 [3]	8200 [2]	820 [2]	---	---	---	1.9 [3]		< **2.66**		**331**		**80.2**		< 0.883		< 0.772	
Carbazole	32	290	6,200	---	---	---	0.6		< **3.8**		< **17.3**		< **18**		< **1.26**		< **1.1**	
Dibenzofuran	160 [3]	4100 [3]	4100 [3]	---	---	---	6.10		< 2.66		**22.2**		< **12.6**		< 0.883		< 0.772	
Acenaphthene	4,700	120,000	120,000	---	---	---	570		0.456		56.7		2.63		< 0.009		< 0.007	
Acenaphthylene	2,300[3]	61,000[3]	61,000[3]	---	---	---	85 [3]		2.77	S	18.3		20.7		0.164		0.013	
Anthracene	23,000	610,000	610,000	---	---	---	12,000		0.6	S	46.7		15		0.069		0.019	
Benzo(a)anthracene [3]	1.8	8	170	---	---	---	2		1.5	S	**19.9**		**6.01**		0.899		< 0.022	
Benzo(a)pyrene [3]	2.1	2.1	17	---	---	---	8		1.78	S	**24.5**		**5.95**		1.29		0.01	
Benzo(b)fluoranthene [3]	2.1	8	170	---	---	---	5		1.17	S	**22.8**		**5.49**		1.64		0.012	
Benzo(g,h,i)perylene	2,300[3]	61,000[3]	61,000[3]	---	---	---	27,000 [3]		0.439		7.38		1.76		0.471		< 0.007	
Benzo(k)fluoranthene	9	78	1,700	---	---	---	49		0.369		7.15		1.49		0.533		< 0.007	
Chrysene	88	780	17,000	---	---	---	160		1.17	S	22.3		4.92		0.857		0.013	
Dibenzo(a,h)anthracene [3]	0.42	0.8	17	---	---	---	2.0		0.112		**1.75**		**0.425**		0.154		< 0.007	
Fluoranthene	3,100	82,000	82,000	---	---	---	4,300		2.14	S	56.2		12.7		0.974		0.029	
Fluorene	3,100	82,000	82,000	---	---	---	560		1.92	S	64.5		19.7		0.019		0.021	
Indeno(1,2,3-cd)pyrene [3]	1.6	8	170	---	---	---	14		0.361		**6.06**		1.49		0.504		< 0.007	
Naphthalene	1,600	41,000	4,100	170	270	1.8	12		0.11		**618**		**226**		0.039		**3.2**	S
Phenanthrene	2,300[3]	61,000[3]	61,000[3]	---	---	---	200 [3]		0.094		142		37.5		0.24		0.058	
Pyrene	2,300	61,000	61,000	---	---	---	42,000		3.44	S	71.3		17.4		0.945		0.028	
Total Petroleum Hydrocarbons (TPH)																		
Diesel									11.5	#	6530	#	844	S#	---		42.9	#
Kerosene									< 6.15		< 749		< 178		---		< 11	
Mineral Spirits									< 6.15		< 749		< 178		---		< 11	
Motor Oil									< 6.15		2070	#	< 178		---		< 11	
Volatile Organic Compounds (VOCs)																		
1,2,3-Trimethylbenzene	---	---	---	---	---	---	---		< 0.449		58.1		< 25.4		< 0.0044		< 0.682	
1,2,4-Trimethylbenzene	---	---	---	85 [3]	140 [3]	0.87 [3]	---		< 0.449		**158**		< **25.4**		< 0.0044		**0.992**	
1,3,5-Trimethylbenzene	2,300 [3]	100,000 [3]	100,000 [3]	45 [3]	72 [3]	0.15	51 [3]		< **0.449**		**45.6**		< **25.4**		< 0.0044		< **0.682**	
Benzene	12	100	2300	0.8	1.6	2.2	0.03		< **0.0898**		**40.3**		< **5.08**		0.0048		**36**	
Ethylbenzene	7800	200000	20000	400	400	58	13		< 0.449		**60.9**		< **25.4**		< 0.0044		1.09	
m,p-Xylenes	16,000 [4]	410,000 [4]	41,000 [4]	410 [4]	420 [4]	5.9 [5]	200 [5]		< 0.449		**271**		**31.9**		< 0.0044		3.92	
Naphthalene	1600	41000	4100	170	270	1.8	12		1.27		**3400**		**839**		< 0.0088		**20.5**	
o-Xylene	16000	410000	41000	410	410	6.5	190		< 0.449		**125**		< **25.4**		< 0.0044		3.56	
Styrene	16000	410000	41000	1500	1500	430	4		< 0.449		< **44.2**		< **25.4**		< 0.0044		< 0.682	
Toluene	16000	410000	410000	650	650	42	12		< 0.449		< **44.2**		< **25.4**		< 0.0044		8.25	

--- Remediation objective for exposure pathway has not been established by the IEPA or sample has not been analyzed for this constituent.
<5.1 Constituent not detected at the reporting limit indicated.
(1) Remediation objective for inhalation of indoor air exposure routes is preliminary and from Draft IAC 742.
(2) Tier 1 remediation objective for Class I groundwater.
(3) Non-TACO remediation objective published by the IEPA.
(4) Value for m-xylene used.
(5) Value for p-xylene used.

Notes:
1. Remediation objectives from IAC Section 742 or obtained through IEPA as non-TACO remediation objectives.
2. Samples analyzed by TekLab, Inc. of Collinsville, Illinois
3. Background values from IAC Section 742 Appendix A Table H used in place of traditional ROs

Table 4-16

CONFIRMATION SOIL SAMPLE ANALYTICAL RESULTS - ORGANIC CONSTITUENTS
2017 RESIDUAL REMEDIATION EXCAVATION FLOOR AND SIDEWALL SAMPLES
FORMER AMEREN CHAMPAIGN MGP SITE
CHAMPAIGN, ILLINOIS

	Tier 1 Remediation Objective							Sample Location:	SW-RES-REM-W6	SW-RES-REM-W5
		Soil Ingestion			Soil Inhalation (outdoor air)		Soil Component	Sample Identification:	SW-RES-REM-W6 (3)	SW-RES-REM-W5 (3)
								Sample Date:	2/6/2017	2/6/2017
Constituent (mg/kg)	Residential	Commercial	Construction	Residential	Commercial	Construction	to Groundwater[2]	Sample Depth (feet):	3 ft	3 ft
Semivolatile Organic Compounds (SVOCs)										
2,4-Dimethylphenol	1,600	41,000	41,000	---	---	---	9		< 0.644	< **32.2**
2-Methylnaphthalene	310 [3]	8200 [2]	820 [2]	---	---	---	1.9 [3]		< 0.451	< **22.5**
Carbazole	32	290	6,200	---	---	---	0.6		< **0.644**	< **32.2**
Dibenzofuran	160 [3]	4100 [3]	4100 [3]	---	---	---	6.10		< 0.451	< **22.5**
Acenaphthene	4,700	120,000	120,000	---	---	---	570		< 0.004	3.17
Acenaphthylene	2,300[3]	61,000[3]	61,000[3]	---	---	---	85 [3]		< 0.004	8.03
Anthracene	23,000	610,000	610,000	---	---	---	12,000		< 0.004	3.25
Benzo(a)anthracene [3]	1.8	8	170	---	---	---	2		< 0.013	**6.63**
Benzo(a)pyrene [3]	2.1	2.1	17	---	---	---	8		< 0.004	**15**
Benzo(b)fluoranthene [3]	2.1	8	170	---	---	---	5		< 0.004	**19.1**
Benzo(g,h,i)perylene	2,300[3]	61,000[3]	61,000[3]	---	---	---	27,000 [3]		< 0.004	4.58
Benzo(k)fluoranthene	9	78	1,700	---	---	---	49		< 0.004	4.45
Chrysene	88	780	17,000	---	---	---	160		< 0.004	8.67
Dibenzo(a,h)anthracene [3]	0.42	0.8	17	---	---	---	2.0		< 0.004	**1.61**
Fluoranthene	3,100	82,000	82,000	---	---	---	4,300		< 0.004	17
Fluorene	3,100	82,000	82,000	---	---	---	560		< 0.004	1.79
Indeno(1,2,3-cd)pyrene [3]	1.6	8	170	---	---	---	14		< 0.004	**4.5**
Naphthalene	1,600	41,000	4,100	170	270	1.8	12		0.012	**3.04**
Phenanthrene	2,300[3]	61,000[3]	61,000[3]	---	---	---	200 [3]		< 0.004	10.9
Pyrene	2,300	61,000	61,000	---	---	---	42,000		< 0.004	23.7
Total Petroleum Hydrocarbons (TPH)										
Diesel									---	---
Kerosene									---	---
Mineral Spirits									---	---
Motor Oil									---	---
Volatile Organic Compounds (VOCs)										
1,2,3-Trimethylbenzene	---	---	---	---	---	---	---		< 0.159	< 0.149
1,2,4-Trimethylbenzene	---	---	---	85 [3]	140 [3]	0.87 [3]	---		< 0.159	< 0.149
1,3,5-Trimethylbenzene	2,300 [3]	100,000 [3]	100,000 [3]	45 [3]	72 [3]	0.15	51 [3]		< **0.159**	< 0.149
Benzene	12	100	2300	0.8	1.6	2.2	0.03		< **0.0318**	< 0.0298
Ethylbenzene	7800	200000	20000	400	400	58	13		< 0.159	< 0.149
m,p-Xylenes	16,000 [4]	410,000 [4]	41,000 [4]	410 [4]	420 [4]	5.9 [5]	200 [5]		< 0.159	< 0.149
Naphthalene	1600	41000	4100	170	270	1.8	12		< 0.318	0.679
o-Xylene	16000	410000	41000	410	410	6.5	190		< 0.159	< 0.149
Styrene	16000	410000	41000	1500	1500	430	4		< 0.159	< 0.149
Toluene	16000	410000	410000	650	650	42	12		< 0.159	< 0.149

--- Remediation objective for exposure pathway has not been established by the IEPA or sample has not been analyzed for this constituent.

<5.1 Constituent not detected at the reporting limit indicated.

(1) Remediation objective for inhalation of indoor air exposure routes is preliminary and from Draft IAC 742.

(2) Tier 1 remediation objective for Class I groundwater.

(3) Non-TACO remediation objective published by the IEPA.

(4) Value for m-xylene used.

(5) Value for p-xylene used.

Notes:

1. Remediation objectives from IAC Section 742 or obtained through IEPA as non-TACO remediation objectives.
2. Samples analyzed by TekLab, Inc. of Collinsville, Illinois
3. Background values from IAC Section 742 Appendix A Table H used in place of traditional ROs

Table 4-16

CONFIRMATION SOIL SAMPLE ANALYTICAL RESULTS - INORGANIC CONSTITUENTS
2017 RESIDUAL REMEDIATION EXCAVATION FLOOR AND SIDEWALL SAMPLES
FORMER AMEREN CHAMPAIGN MGP SITE
CHAMPAIGN, ILLINOIS

	Tier 1 Remediation Objective						Sample Location:	FL-RES-REM-01	FL-RES-REM-W6	SW-RES-REM-W2	SW-RES-REM-W3	SW-RES-REM-W4	SW-RES-REM-W4
							Sample Identification:	IFL-RES-REM-01 (12)	IFL-RES-REM-W6 (14)	ISW-RES-REM-W2 (10)	ISW-RES-REM-W3 (10)	ISW-RES-REM-W4 (10)	ISW-RES-REM-W4 (2)
	Soil Ingestion			Soil Inhalation (outdoor air)			Sample Date:	1/26/2017	1/31/2017	1/31/2017	1/31/2017	1/31/2017	1/31/2017
Constituent (mg/kg)	Residential	Commercial	Construction	Residential	Commercial	Construction	Sample Depth (feet):	12 ft	14 ft	10 ft	10 ft	10 ft	2 ft
Cyanide, Amenable to Chlorination	1600	41000	4100	---	---	---		Interference	Interference	Interference	Interference	0.86	Interference
Cyanide	1600	41000	4100	---	---	---		< 0.25	< 0.19	1.31	0.86	2.26	4.81
pH (1:1)								---	---	---	---	---	---
Mercury	23	610	61	10	16	0.1		0.023	0.011	0.063	0.048	0.047	**0.699**
Arsenic	13	13	61	750	1,200	25,000		3.75	5.51	**13.1**	7.12	6.44	10.6
Barium	5,500	140,000	14,000	690,000	910,000	870,000		44.1	14.7	130	123	55.6	123
Cadmium	78	2,000	200	1,800	2,800	59,000		< 0.19	< 0.2	0.38	0.38	0.33	0.89
Chromium	230	6100	4100	270	420	690		19.3	19.6	18.8	15.7	8.95	18.8
Lead	400	800	700	---	---	---		11.5	9.22	13.5	14.7	10.8	102
Silver	390.0	10,000	1,000	---	---	---		< 0.47	< 0.5	< 0.5	< 0.5	< 0.46	< 0.46
Selenium	390.0	10,000.0	1,000	---	---	---		< 0.94	< 0.91	< 1	< 1	< 0.93	< 0.93
Percent Moisture								12.3	9	21.5	24.2	12.3	18.4

1.3	Exceeds Tier 1 remediation objective.
< 0.001	Not detected at the detection limit identified.
---	Remediation objective for exposure pathway has not been established by the IEPA or sample has not been analyzed for this constituent.

Notes:

1. Remediation objectives from IAC Section 742 or obtained through IEPA as non-TACO remediation objectives.
2. Samples analyzed by TekLab, Inc. of Collinsville, Illinois
3. The metropolitan statistical area RO for soil ingestion for Arsenic is 13.0 mg/kg, as defined in Section 742, Appendix A, Table G

Table 4-16

CONFIRMATION SOIL SAMPLE ANALYTICAL RESULTS - INORGANIC CONSTITUENTS
2017 RESIDUAL REMEDIATION EXCAVATION FLOOR AND SIDEWALL SAMPLES
FORMER AMEREN CHAMPAIGN MGP SITE
CHAMPAIGN, ILLINOIS

	Tier 1 Remediation Objective						Sample Location:	SW-RES-REM-W2	SW-RES-REM-W3	FL-RES-REM-W4	SW-RES-REM-W6	FL-RES-REM-W7	SW-RES-REM-W7
							Sample Identification:	ISW-RES-REM-W2 (2)	ISW-RES-REM-W3 (2)	IFL-RES-REM-W4 (12)	SW-RES-REM-W6 (3)	FL-RES-REM-W7 (15)	SW-RES-REM-W7 (10)
	Soil Ingestion			Soil Inhalation (outdoor air)			Sample Date:	2/1/2017	2/1/2017	1/31/2017	1/31/2017	2/2/2017	2/6/2017
Constituent (mg/kg)	Residential	Commercial	Construction	Residential	Commercial	Construction	Sample Depth (feet):	2 ft	2 ft	12 ft	3 ft	15 ft	10 ft
Cyanide, Amenable to Chlorination	1600	41000	4100	---	---	---		Interference	2.11	Interference	< 1.59	Interference	Interference
Cyanide	1600	41000	4100	---	---	---		0.96	2.11	< 0.27	5.64 S	0.28	0.82
pH (1:1)								---	---	---	---	---	8.12
Mercury	23	610	61	10	16	0.1		0.04	**0.302**	< 0.011	**0.155**	< 0.011	< 0.013
Arsenic	13	13	61	750	1,200	25,000		9.07	**25.2**	5.27	10.9	5.84	7.74
Barium	5,500	140,000	14,000	690,000	910,000	870,000		130	94.6	30.9	110	20.3	54.8
Cadmium	78	2,000	200	1,800	2,800	59,000		0.57	1.38	< 0.19	0.56	< 0.2	0.21
Chromium	230	6100	4100	270	420	690		17.4	12.6	13.8	17.2	20.2	17.4
Lead	400	800	700	---	---	---		32.8	95.8	8.58	55.4	10.2	12.1
Silver	390.0	10,000	1,000	---	---	---		< 0.45	< 0.47	< 0.47	< 0.49	< 0.5	< 0.48
Selenium	390.0	10,000.0	1,000	---	---	---		< 0.91	1.08	< 0.94	< 1	< 1	< 0.96
Percent Moisture								19.9	31.2	12.2	21.4	10.1	20.9

1.3	Exceeds Tier 1 remediation objective.
< 0.001	Not detected at the detection limit identified.
---	Remediation objective for exposure pathway has not been established by the IEPA or sample has not been analyzed for this constituent.

Notes:

1. Remediation objectives from IAC Section 742 or obtained through IEPA as non-TACO remediation objectives.
2. Samples analyzed by TekLab, Inc. of Collinsville, Illinois
3. The metropolitan statistical area RO for soil ingestion for Arsenic is 13.0 mg/kg, as defined in Section 742, Appendix A, Table G

Table 4-16

CONFIRMATION SOIL SAMPLE ANALYTICAL RESULTS - INORGANIC CONSTITUENTS
2017 RESIDUAL REMEDIATION EXCAVATION FLOOR AND SIDEWALL SAMPLES
FORMER AMEREN CHAMPAIGN MGP SITE
CHAMPAIGN, ILLINOIS

	Tier 1 Remediation Objective						Sample Location:	SW-RES-REM-W6	FL-RES-REM-W6	SW-RES-REM-W5	FL-RES-REM-W5
							Sample Identification:	SW-RES-REM-W6 (10)	FL-RES-REM-W6 (3)	SW-RES-REM-W5 (10)	FL-RES-REM-W5 (3)
	Soil Ingestion			Soil Inhalation (outdoor air)			Sample Date:	2/6/2017	2/6/2017	2/6/2017	2/6/2018
Constituent (mg/kg)	Residential	Commercial	Construction	Residential	Commercial	Construction	Sample Depth (feet):	10 ft	3 ft	10 ft	3 ft
Cyanide, Amenable to Chlorination	1600	41000	4100	---	---	---		Interference	Interference	Interference	9.35
Cyanide	1600	41000	4100	---	---	---		< 0.28	0.80	1.86	9.35
pH (1:1)								8.46	8.10	7.99	7.28
Mercury	23	610	61	10	16	0.1		0.063	0.045	0.015	0.099
Arsenic	13	13	61	750	1,200	25,000		5.61	10.9	7.39	6.00
Barium	5,500	140,000	14,000	690,000	910,000	870,000		10.3	148	69.1	97.0
Cadmium	78	2,000	200	1,800	2,800	59,000		< 0.20	0.24	0.39	0.20
Chromium	230	6100	4100	270	420	690		5.82	24.0	13.0	13.6
Lead	400	800	700	---	---	---		9.85	17.2	12.4	11.1
Silver	390.0	10,000	1,000	---	---	---		< 0.49	< 0.49	< 0.5	< 0.48
Selenium	390.0	10,000.0	1,000	---	---	---		< 0.98	< 0.98	< 1.00	< 0.96
Percent Moisture								16.0	22.3	19.9	23.0

1.3	Exceeds Tier 1 remediation objective.
< 0.001	Not detected at the detection limit identified.
---	Remediation objective for exposure pathway has not been established by the IEPA or sample has not been analyzed for this constituent.

Notes:

1. Remediation objectives from IAC Section 742 or obtained through IEPA as non-TACO remediation objectives.
2. Samples analyzed by TekLab, Inc. of Collinsville, Illinois
3. The metropolitan statistical area RO for soil ingestion for Arsenic is 13.0 mg/kg, as defined in Section 742, Appendix A, Table G

Table 5-1
CONSTITUENTS FOR FOCUSED NO FURTHER ACTION
FORMER AMEREN CHAMPAIGN MGP SITE
CHAMPAIGN, ILLINOIS

VOCs	CAS Number
Benzene	71-43-2
Ethylbenzene	100-41-4
Xylenes (total)	1330-20-7
Toluene	108-88-3

PNAs	CAS Number
Acenaphthene	83-32-9
Acenaphthylene	208-96-8
Anthracene	120-12-7
Benzo(a)anthracene	56-55-3
Benzo(a)pyrene	50-32-8
Benzo(b)fluoranthene	205-99-2
Benzo(g,h,i)perylene	191-24-2
Benzo(k)fluoranthene	207-08-9
Chrysene	218-01-9
Dibenzo(a,h)anthracene	53-70-3
Fluoranthene	206-44-0
Fluorene	86-73-7
Indeno(1,2,3-cd)pyrene	193-39-5
Naphthalene	91-20-9
Phenanthrene	85-01-8
Pyrene	129-00-0

Other SVOCs	CAS Number
2-Methylnaphthalene	91-57-6

RCRA Metals	CAS Number
Arsenic	7440-38-2
Barium	7440-39-3
Cadmium	7440-43-9
Chromium	7440-47-3
Lead	7439-92-1
Mercury	7439-97-6
Selenium	7782-49-2
Silver	7440-22-4

Cyanide	
Cyanide	57-12-5

Notes:

1. VOCs are volatile organic compounds
2. SVOCs are semivolatile organic compounds
3. PNAs are polynuclear aromatic compounds
4. Resource Conservation and Recovery Act (RCRA)
5. Chemical Abstracts Service (CAS) chemical substance registry number

Table 5-2
Input Parameters
Post-Remediation and Post-ISCO Tier 2 Calculations
Soil Inhalation Exposure Pathway (Outdoor Air)
Soil Component to Groundwater Ingestion Pathway
Groundwater Ingestion Pathway

Parameter	Value	Units	Source
Site Specific Information			
Fraction organic carbon f_{oc}	0.00473	gm/gm	(3 to 10 feet) Average foc from B-806 (8.5-9.5), B-814 (7.0-8.0), and B-817 (8.0-9.0)
Soil bulk density ρ_b	1.7	gm/cm^3	Default Value (TACO 742 Appendix C, Table B)
Soil particle density ρ_s	2.65	gm/cm^4	Default Value (TACO 742 Appendix C, Table B)
Air-filled soil porosity θ_a	0.13	unitless	Default Value for Clay (TACO 742 Appendix C, Table B)
Water-filled porosity θ_w	0.3	unitless	Default Value for Clay (TACO 742 Appendix C, Table B)
Total soil porosity η	0.43	unitless	Default Value (TACO 742 Appendix C, Table B)
Aquifer hydraulic conductivity K	0.000031	cm/sec	Site specific value from 2011 hydraulic conductivity testing; geometric mean value
Hydraulic gradient *i*	0.02 to 0.036	unitless	Site specific value December 2017 groundwater contours
Saturated hydraulic conductivity K_s	8	m/yr	(TACO parameter from Appendix C Table K, silty clay)
Exponential parameter 1/(2b=3)	0.042	unitless	(TACO parameter from Appendix C Table K, silty clay)

Table 5-2

Input Parameters
Post-Remediation and Post-ISCO Tier 2 Calculations
Soil Inhalation Exposure Pathway (Outdoor Air)
Soil Component to Groundwater Ingestion Pathway
Groundwater Ingestion Pathway

Parameter	Value	Units	Source
Benzene Specific Input Parameters			
Organic Carbon Partition Coefficient K_{oc}	50	cm^3/g	Default Value (TACO 742 Appendix C, Table E)
Henry's Constant H'	0.23	l/gm	Default Value (TACO 742 Appendix C, Table E)
Solubility S	1800	mg/l	Default Value (TACO 742 Appendix C, Table E)
Diffusivity in Air D^i	0.088	cm^2/sec	Default Value (TACO 742 Appendix C, Table E)
Diffusivity in Water D_w	1.02E-05	cm^2/sec	Default Value (TACO 742 Appendix C, Table E)
Degradation Constant λ	0.0009	day^{-1}	Default Value (TACO 742 Appendix C, Table E)
Groundwater Objective (Class II) Gw_{obj}	0.025	mg/l	Default Value (TACO 742 Appendix B, Table E)
Inhalation Unit Risk Factor	7.80E-06	$(ug/m^3)^{-1}$	Integrated Risk Information System (IRIS) EPA Database
Naphthalene Specific Input Parameters			
Organic Carbon Partition Coefficient K_{oc}	500	cm^3/g	Default Value (TACO 742 Appendix C, Table E)
Henry's Constant H'	0.0197	l/gm	Default Value (TACO 742 Appendix C, Table E)
Solubility S	31	mg/l	Default Value (TACO 742 Appendix C, Table E)
Diffusivity in Air D^i	0.059	cm^2/sec	Default Value (TACO 742 Appendix C, Table E)
Diffusivity in Water D_w	7.50E-06	cm^2/sec	Default Value (TACO 742 Appendix C, Table E)
Degradation Constant λ	0.0027	day^{-1}	Default Value (TACO 742 Appendix C, Table E)
Groundwater Objective (Class II) Gw_{obj}	0.22	mg/l	Default Value (TACO 742 Appendix B, Table E)
Inhalation Unit Risk Factor	0.003	$(ug/m^3)^{-1}$	Integrated Risk Information System (IRIS) EPA Database

Table 5-2

Input Parameters

Post-Remediation and Post-ISCO Tier 2 Calculations

Soil Inhalation Exposure Pathway (Outdoor Air)

Soil Component to Groundwater Ingestion Pathway

Groundwater Ingestion Pathway

Parameter	Value	Units	Source
Benzo(a)pyrene Specific Input Parameters			
Organic Carbon Partition Coefficient K_{oc}	790000	cm^3/g	Default Value (TACO 742 Appendix C, Table E)
Henry's Constant H'	0.000045	l/gm	Default Value (TACO 742 Appendix C, Table E)
Solubility S	0.0016	mg/l	Default Value (TACO 742 Appendix C, Table E)
Degradation Constant λ	0.00065	day^{-1}	Default Value (TACO 742 Appendix C, Table E)
Groundwater Objective (Class II) Gw_{obj}	0.002	mg/l	Default Value (TACO 742 Appendix B, Table E)
Benzo(a)anthracene Specific Input Parameters			
Organic Carbon Partition Coefficient K_{oc}	400000	cm^3/g	Default Value (TACO 742 Appendix C, Table E)
Henry's Constant H'	0.000139	l/gm	Default Value (TACO 742 Appendix C, Table E)
Solubility S	0.0094	mg/l	Default Value (TACO 742 Appendix C, Table E)
Degradation Constant λ	0.00051	day^{-1}	Default Value (TACO 742 Appendix C, Table E)
Groundwater Objective (Class II) Gw_{obj}	0.0005	mg/l	Default Value (TACO 742 Appendix B, Table E)
Benzo(b)fluoranthene Specific Input Parameters			
Organic Carbon Partition Coefficient K_{oc}	1050000	cm^3/g	Default Value (TACO 742 Appendix C, Table E)
Henry's Constant H'	0.00455	l/gm	Default Value (TACO 742 Appendix C, Table E)
Solubility S	0.0015	mg/l	Default Value (TACO 742 Appendix C, Table E)
Degradation Constant λ	0.00057	day^{-1}	Default Value (TACO 742 Appendix C, Table E)
Groundwater Objective (Class II) Gw_{obj}	0.0005	mg/l	Default Value (TACO 742 Appendix B, Table E)

Table 5-2

Input Parameters
Post-Remediation and Post-ISCO Tier 2 Calculations
Soil Inhalation Exposure Pathway (Outdoor Air)
Soil Component to Groundwater Ingestion Pathway
Groundwater Ingestion Pathway

Parameter	Value	Units	Source
Dibenzo(a,h)anthracene Specific Input Parameters			
Organic Carbon Partition Coefficient K_{oc}	2500000	cm^3/g	Default Value (TACO 742 Appendix C, Table E)
Henry's Constant H'	6.10E-07	l/gm	Default Value (TACO 742 Appendix C, Table E)
Solubility S	0.0025	mg/l	Default Value (TACO 742 Appendix C, Table E)
Degradation Constant λ	0.00037	day^{-1}	Default Value (TACO 742 Appendix C, Table E)
Groundwater Objective (Class II) Gw_{obj}	0.00005	mg/l	Default Value (TACO 742 Appendix B, Table E)
Indeno(1,2,3-cd)pyrene Specific Input Parameters			
Organic Carbon Partition Coefficient K_{oc}	3100000	cm^3/g	Default Value (TACO 742 Appendix C, Table E)
Henry's Constant H'	6.56E-05	l/gm	Default Value (TACO 742 Appendix C, Table E)
Solubility S	0.000022	mg/l	Default Value (TACO 742 Appendix C, Table E)
Degradation Constant λ	0.00047	day^{-1}	Default Value (TACO 742 Appendix C, Table E)
Groundwater Objective (Class II) Gw_{obj}	0.0005	mg/l	Default Value (TACO 742 Appendix B, Table E)
Ethylbenzene Specific Input Parameters			
Organic Carbon Partition Coefficient K_{oc}	320	cm^3/g	Default Value (TACO 742 Appendix C, Table E)
Henry's Constant H'	0.324	l/gm	Default Value (TACO 742 Appendix C, Table E)
Solubility S	170	mg/l	Default Value (TACO 742 Appendix C, Table E)
Degradation Constant λ	0.003	day^{-1}	Default Value (TACO 742 Appendix C, Table E)
Groundwater Objective (Class II) Gw_{obj}	1	mg/l	Default Value (TACO 742 Appendix B, Table E)

Table 5-2

Input Parameters
Post-Remediation and Post-ISCO Tier 2 Calculations
Soil Inhalation Exposure Pathway (Outdoor Air)
Soil Component to Groundwater Ingestion Pathway
Groundwater Ingestion Pathway

Parameter	Value	Units	Source
Toluene Specific Input Parameters			
Organic Carbon Partition Coefficient K_{oc}	158	cm^3/g	Default Value (TACO 742 Appendix C, Table E)
Henry's Constant H'	0.271	l/gm	Default Value (TACO 742 Appendix C, Table E)
Solubility S	530	mg/l	Default Value (TACO 742 Appendix C, Table E)
Degradation Constant λ	0.011	day^{-1}	Default Value (TACO 742 Appendix C, Table E)
Groundwater Objective (Class II) Gw_{obj}	2.50	mg/l	Default Value (TACO 742 Appendix B, Table E)
Total Xylenes Specific Input Parameters			
Organic Carbon Partition Coefficient K_{oc}	398	cm^3/g	Default Value (TACO 742 Appendix C, Table E)
Henry's Constant H'	0.271	l/gm	Default Value (TACO 742 Appendix C, Table E)
Solubility S	11	mg/l	Default Value (TACO 742 Appendix C, Table E)
Degradation Constant λ	0.0019	day^{-1}	Default Value (TACO 742 Appendix C, Table E)
Groundwater Objective (Class II) Gw_{obj}	10	mg/l	Default Value (TACO 742 Appendix B, Table E)

Table 5-3

Projected Migration Distances of Constituents in Groundwater from Soil Impact Exceeding Tier 1 ROs
Former Ameren Champaign MGP Site

Area of Remediation Site [1]	Constituent	Sample Location	Soil Concentration (mg/kg)	Projected Migration Distance (feet)
Area 1 - Northwest Boundary				
	Benzene	P3-C1-W	118	138
	Ethylbenzene	P3-C1-W	33	9
	Toluene	P3-C1-W	267	5
	Xylenes	P3-C1-W	360	14
	Benzo(a)anthracene	P3-C1-W	53.7	79
	Benzo(a)pyrene	P3-C1-W	39.9	21
	Benzo(b)fluorathene	P3-C1-W	44.9	99
	Dibenzo(a,h)anthracene	P3-C1-W	5.64	52
	Indeno(1,2,3-cd)pyrene	P3-C1-W	14.5	58
	Naphthalene	P3-C1-W	582	31
Area 2 - North Boundary				
	Benzene	P4-A1-W	1460	178
	Ethylbenzene	P4-A1-W	282	17
	Toluene	P4-A1-W	2510	7
	Xylenes	P4-A1-W	1681	21
	Benzo(a)anthracene	P4-A1-W	75.4	79
	Benzo(a)pyrene	P4-A1-W	72.1	26
	Benzo(b)fluorathene	P4-A1-W	55.2	94
	Dibenzo(a,h)anthracene	P4-A1-W	7.2	52
	Indeno(1,2,3-cd)pyrene	P4-A1-W	22.1	61
	Naphthalene	P4-A1-W	1850	52
Area 3 - North Boundary				
	Benzene	P5-C5-W	33.8	35
	Toluene	P5-C5-W	59.9	1
	Benzo(a)anthracene	P6-A5.5-W	7.36	11
	Benzo(b)fluorathene	P6-A5.5-W	5.09	16
	Naphthalene	P6-A5.5-W	112	11
Area 4 - South Center Boundary				
	Benzene	P7-D1-W	28.2	59
	Benzo(a)anthracene	P7-CD1-SW	15.3	27
	Benzo(a)pyrene	P7-CD1-SW	15.5	4
	Benzo(b)fluorathene	P7-CD1-SW	11.7	36
	Naphthalene	P7-DE1-W	152	21

[1] Reference Figure 11-1, 11-2, 11-3, 11-4 and 11-5 for additional information.

Table 5-3

Projected Migration Distances of Constituents in Groundwater from Soil Impact Exceeding Tier 1 ROs
Former Ameren Champaign MGP Site

Area of Remediation Site [1]	Constituent	Sample Location	Soil Concentration (mg/kg)	Projected Migration Distance (feet)
Area 5 - Center of Site (North Flow Direction)				
	Benzene	P1-F5-F	41	91
	Benzo(a)anthracene	P1-F3.5-F	10.1	34
	Benzo(a)pyrene	P1-F3.5-F	11.3	3
	Benzo(b)fluorathene	P1-F3.5-F	8.4	48
	Naphthalene	P1-F3.5-F	136	20
Area 5 - Center of Site (South Flow Direction)				
	Benzene	P1-F5-F	41	60
	Benzo(a)anthracene	P1-F3.5-F	10.1	22
	Benzo(a)pyrene	P1-F3.5-F	11.3	2
	Benzo(b)fluorathene	P1-F3.5-F	8.4	32
	Naphthalene	P1-F3.5-F	136	30
Area 5 - Center of Site (West Flow Direction)				
	Benzene	P1-F5-F	41	98
	Benzo(a)anthracene	P1-F3.5-F	10.1	36
	Benzo(a)pyrene	P1-F3.5-F	11.3	3
	Benzo(b)fluorathene	P1-F3.5-F	8.4	51
	Naphthalene	P1-F3.5-F	136	36

[1] Reference Figure 11-1, 11-2, 11-3, 11-4 and 11-5 for additional information.

Appendix A Property Information

Appendix A1 Champaign County Tax Record

Appendix A2 City of Champaign GIS Zoning Map

Appendix A3 Property Boundary Survey

Appendix A4 Champaign County Assessor's Parcel and Lot Map

Appendix A5 Property Deed

Appendix A1
Parcel Details for 308 North Fifth Street, Champaign IL

Notice

Payments postmarked on or before September 1 or received in our office in that period will not be assessed late penalties.

Thank you for your patience as we work diligently to simultaneously finish posting the large volume of payments as we answer your calls.

Notice

To view current assessment information, use the Tax Year dropdown to select the current year.

Property Information

Parcel Number 46-21-07-332-018	**Site Address** 308 N FIFTH ST CHAMPAIGN, IL 61820	**Owner Name & Address** ILLINOIS POWER COMPANY, AMEREN SERVICES 1901 CHOUTEAU AV PO BOX 66149 ST LOUIS, MO, 63166-6149
Tax Year 2020 (Payable 2021)		
Sale Status None		
Property Class 0050 - Vac Commercial Lots-Land	**Tax Code** 4602 -	**Tax Status** Taxable
Net Taxable Value 0	**Tax Rate** Unavailable	**Total Tax** Unavailable
Township City of Champaign	**Acres** 0.0000	**Mailing Address**

Legal Description
Lots 1, 2, 3 Assessor's Plat of Lt 8 of Sub of S. Pt. Lot 1 Sec. 7-19-9, and Lts 4-6 of Seminary Plat and Lots 1, 2, 3 Block 31; Lots pt 7, pt 8, pt 9, pt 10, pt 11, pt 12 Block 29 Seminary Add and other land

No Billing Information

No Drainage / Special District Information

Payment History

Tax Year	Total Billed	Total Paid	Amount Unpaid
2019	$133.20	$133.20	$0.00
2018	$130.48	$130.48	$0.00
2017	$131.02	$131.02	$0.00

Show 17 More

Assessments

Level	Homesite	Dwelling	Farm Land	Farm Building	Mineral	Total
Department of Revenue	1,500	0	0	0	0	1,500
Board of Review Equalized	1,500	0	0	0	0	1,500
Board of Review	1,500	0	0	0	0	1,500
S of A Equalized	1,500	0	0	0	0	1,500
Supervisor of Assessments	1,470	0	0	0	0	1,470
Township Assessor	1,470	0	0	0	0	1,470
Prior Year Equalized	1,470	0	0	0	0	1,470

****** Values not final. May be subject to change.**

No Exemptions

No Taxing Bodies Information

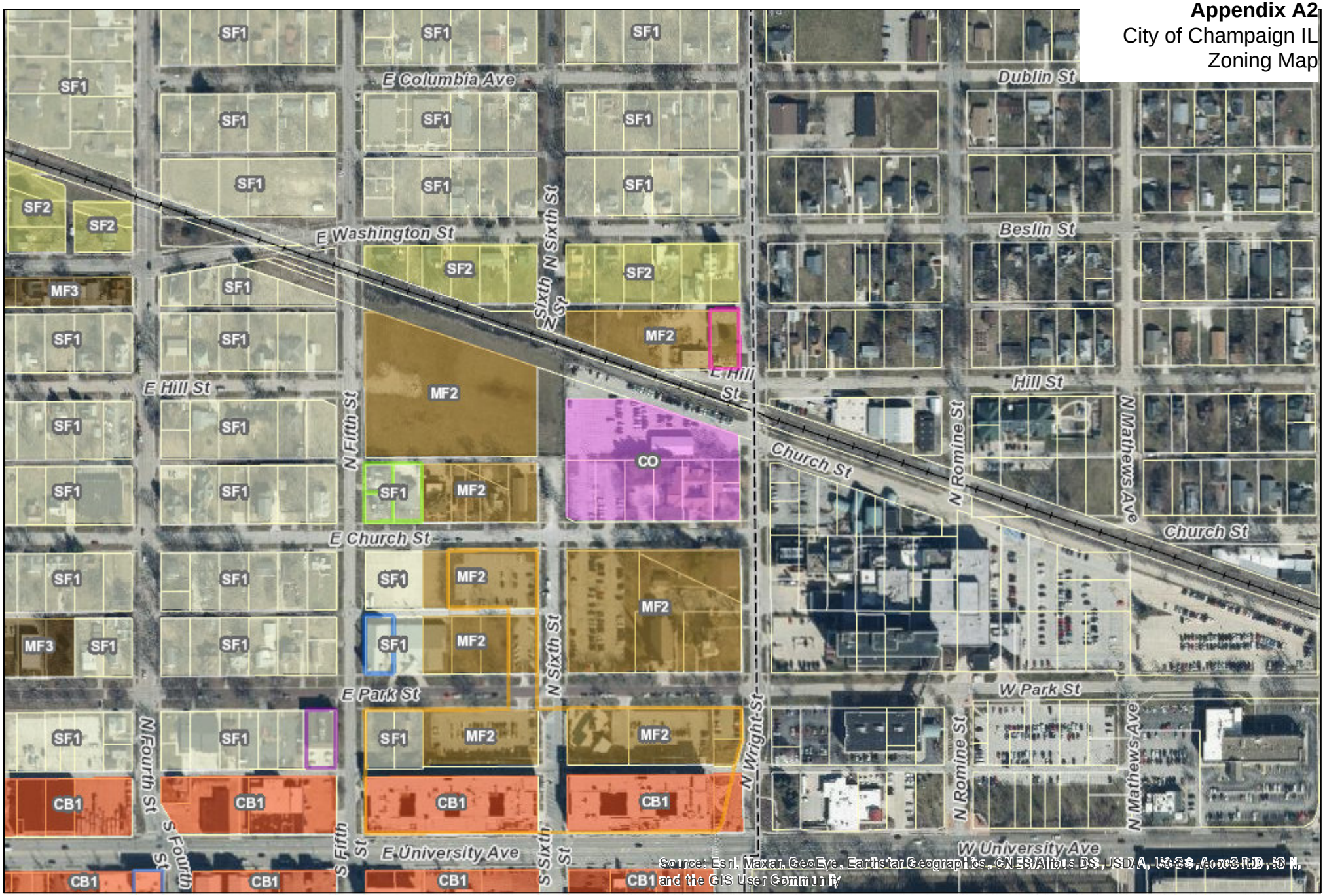
No Redemptions

No Forfeiture Information

No Farmland Information

No Sales History Information

Appendix A2
City of Champaign IL
Zoning Map



City of CHAMPAIGN

1 in = 376 ft

0 0.1 0.2

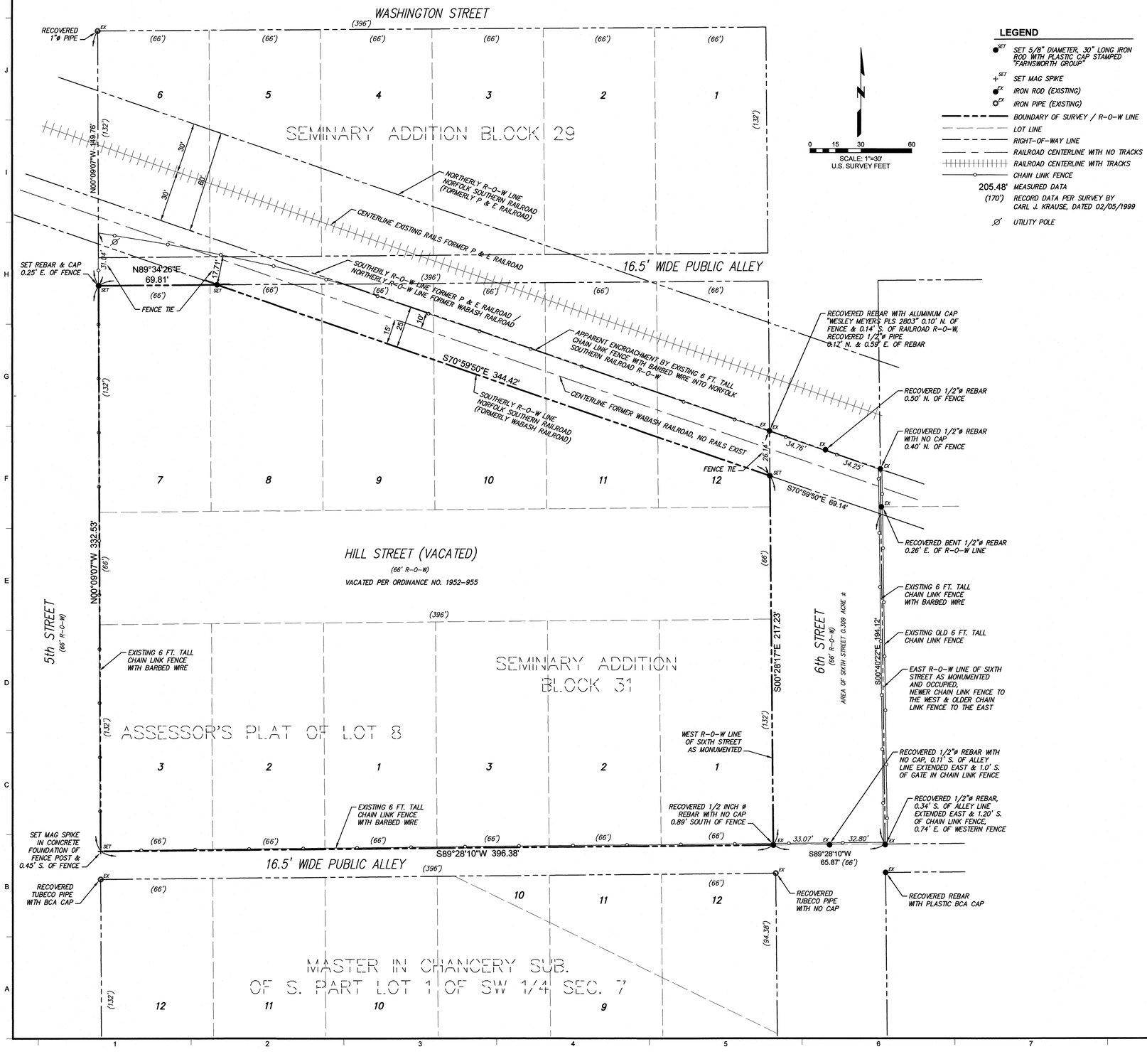
mi

N

Appendix A2
City of Champaign IL
Zoning Map

PLAT OF SURVEY

PART OF THE SW 1/4, OF SEC. 7, T. 19 N, R. 9 E, OF THE 3RD PM, CITY OF CHAMPAIGN, CHAMPAIGN COUNTY, ILLINOIS



LEGEND

- SET 5/8" DIAMETER, 30" LONG IRON ROD WITH PLASTIC CAP STAMPED "FARNSWORTH GROUP"
- SET MAG SPIKE
- IRON ROD (EXISTING)
- IRON PIPE (EXISTING)
- BOUNDARY OF SURVEY / R-O-W LINE
- LOT LINE
- RIGHT-OF-WAY LINE
- RAILROAD CENTERLINE WITH NO TRACKS
- RAILROAD CENTERLINE WITH TRACKS
- CHAIN LINK FENCE
- 205.48' MEASURED DATA
- (170') RECORD DATA PER SURVEY BY CARL J. KRAUSE, DATED 02/05/1999
- UTILITY POLE

SCALE: 1"=30'
U.S. SURVEY FEET

SURVEY NOTES:

1. THIS BOUNDARY SURVEY IS OF THE FORMER ILLINOIS POWER COMPANY MANUFACTURED GAS PLANT LOCATED AT 308 NORTH FIFTH STREET IN CHAMPAIGN, ILLINOIS AND IS A PARTIAL RETRACEMENT OF A BOUNDARY SURVEY BY WESLEY J. MEYERS, ILLINOIS PROFESSIONAL LAND SURVEYOR NO. 2803, DATED AUGUST 23, 2004.
2. ALL MEASUREMENTS ARE HORIZONTAL DISTANCES IN FEET AND DECIMAL PARTS THEREOF.
3. THE BOUNDARY CORNER MONUMENTS FOR THIS SURVEY ARE FOUND OR SET AS SHOWN.
4. BEARING SHOWN ARE BASED UPON THE ILLINOIS STATE PLANE COORDINATE SYSTEM, NAD 83 (2011 ADJUSTMENT) EAST ZONE.
5. ALL SURFACE AND SUBSURFACE IMPROVEMENTS ON THE PROPERTY SURVEYED ARE NOT NECESSARILY KNOWN OR SHOWN.
6. FIELD WORK FOR THIS SURVEY WAS COMPLETED ON MAY 2, 2019.

REFERENCES USED IN CONJUNCTION WITH THIS SURVEY:

THE FOLLOWING DEEDS WERE ACQUIRED IN THE COURSE OF PERFORMING THIS SURVEY. THEY ARE PROVIDED FOR REFERENCE ONLY AND ARE NOT INTENDED TO BE A COMPLETE AND CHRONOLOGICAL CHAIN OF TITLE OR A CONSTITUTE A TITLE COMMITMENT FOR THE PROPERTY SURVEYED:

1. QUIT CLAIM DEED RECORDED AS DOCUMENT NO. 90-R14709. AMERICAN LEGION POST NO. 559 TO ILLINOIS POWER COMPANY, NOW AMEREN ILLINOIS.
2. QUIT CLAIM DEED RECORDED IN BOOK 1211, PAGE 449, ILLINOIS POWER COMPANY TO AMERICAN LEGION POST 559.
3. DEED RECORD 32, PAGE 291. BUSEY'S TO DANVILLE, URBANA, BLOOMINGTON, & PEKIN RAILROAD. FORMERLY P & E RAILROAD, NOW NORFOLK SOUTHERN RAILROAD.
4. DEED RECORD 22, PAGE 239. HARRIS TO DANVILLE, URBANA, BLOOMINGTON & PEKIN RAILROAD. FORMERLY P & E RAILROAD, NOW NORFOLK SOUTHERN RAILROAD.
5. DEED BOOK 110, PAGE 105. HARRIS TO CHAMPAIGN RAILWAY, GAS & ELECTRIC COMPANY. FORMERLY P & E. RAILROAD, NOW NORFOLK SOUTHERN RAILROAD.
6. DEED BOOK 111, PAGE 48. CLARY & GRIDLEY TO P & E RAILROAD, NOW NORFOLK SOUTHERN.
7. DEED BOOK 204, PAGE 294. WABASH RAILROAD TO ILLINOIS POWER COMPANY, NOW AMEREN ILLINOIS.
8. DEED BOOK 204, PAGE 282. P & E RAILROAD TO ILLINOIS POWER COMPANY, NOW AMEREN ILLINOIS.
9. QUIT CLAIM DEED RECORDED IN DEED BOOK 69, PAGE 608. CHAMPAIGN AND URBANA GAS, LIGHT AND COKE COMPANY TO JAMES A. HOW, TRUSTEE. PRESUMED TO BE TRUSTEE FOR WABASH RAILROAD.
10. DEED RECORD 38, PAGE 472. WRIGHT AND HARRIS TO INDIANAPOLIS, BLOOMINGTON AND WESTERN RAILWAY COMPANY.
11. DEED RECORD 11, PAGE 597. STOUGHTON TO DANVILLE, INDIANA , BLOOMINGTON AND PEKIN RAILROAD.
12. QUIT CLAIM DEED RECORDED IN DEED BOOK 111, PAGE 70. BLACK AND LINDLEY TO PEORIA & EASTERN RAILWAY. NOW NORFOLK SOUTHERN RAILROAD.
13. DEED BOOK 62, PAGE 44. HARRIS TO CHAMPAIGN & SOUTHEASTERN RAILWAY COMPANY.
14. DEED BOOK 59, PAGE 431. WRIGHT TO CHAMPAIGN & SOUTHEASTERN RAILWAY COMPANY.

RAILROAD MAPS AND REFERENCES:

15. WABASH RAILROAD STATION MAP STATION 17854+21.5 TO STATION 17902+98, MAP-IL-C, S-2C, DATED JUNE 13, 1949.
16. WABASH RAILROAD LAND SCHEDULE (INTERSTATE COMMERCE COMMISSION DIVISION OF VALUATION - LANDS OWNED OR USED FOR PURPOSES OF A COMMON CARRIER) STATION 17286+02 TO STATION 17902+98, SHEET 14 OF 21 MAP NO. S-23C, DATE COMPILED 6-8-1921, WITH REVISED DATE OF 7-25-23.
17. PEORIA & EASTERN RAILROAD TRACK MAP STATION 13567+20 TO STATION 13612+80, MAP V19-19, DATED JUNE 30, 1915.
18. PEORIA & EASTERN RAILROAD LAND SCHEDULE (INTERSTATE COMMERCE COMMISSION DIVISION OF VALUATION - LANDS OWNED OR USED FOR PURPOSES OF A COMMON CARRIER) VALUATION SECTION 19, SHEET 30 OF 112 MAP NO. PART OF 19, COMPILED SEPTEMBER, 1915.

OTHER REFERENCES:

19. PLAT OF SEMINARY ADDITION RECORDED IN DEED RECORD Y, PAGE 208 IN THE OFFICE OF THE CHAMPAIGN COUNTY RECORDER.
20. ASSESSOR'S PLAT OF THE SUBDIVISION OF LOT 8 IN M.W. BUSEY'S SUBDIVISION OF PART OF LOT 1 OF THE SOUTHWEST QUARTER OF SECTION 7, TOWNSHIP 19 NORTH, RANGE 9 EAST OF THE THIRD PRINCIPAL MERIDIAN, AND LOTS 4, 5, AND 6 IN BLOCK 31 OF SEMINARY ADDITION RECORDED IN DEED RECORD 35, PAGE 66 IN THE OFFICE OF THE CHAMPAIGN COUNTY RECORDER.
21. PLAT OF SURVEY BY WESLEY J. MEYERS, ILLINOIS PROFESSIONAL LAND SURVEYOR NO. 2803, FOR PHILIP SERVICES CORPORATION, DATED AUGUST 23, 2004 OF PART OF BLOCK 29 AND 31 IN SEMINARY ADDITION AND PART OF ASSESSOR'S PLAT OF SUBDIVISION OF LOT 8 IN M.W. BUSEY'S SUBDIVISION OF LOT 1 OF THE SOUTHWEST QUARTER OF SECTION 7.
22. PLAT OF SURVEY BY THOMAS B. BERNS, ILLINOIS PROFESSIONAL LAND SURVEYOR NO. 2006, DATED FEBRUARY 19, 1981 OF PART OF LOT 7 IN BLOCK 28 AND LOTS 1-6 AND IN BLOCK 32 OF SEMINARY ADDITION AND PARTS OF SIXTH STREET AND VACATED HILL STREET.
23. CITY OF CHAMPAIGN ORDINANCE NO. 1952-955, VACATING HILL STREET BETWEEN FIFTH STREET AND SIXTH STREET RECORDED AS DOCUMENT NO. 93R37137 IN THE OFFICE OF THE RECORDER OF CHAMPAIGN COUNTY, ILLINOIS.

SURVEYOR'S CERTIFICATION:

I, WESLEY J. MEYERS, ILLINOIS PROFESSIONAL LAND SURVEYOR 2803, DO HEREBY STATE THAT AT THE REQUEST OF TIMOTHY MATHIS, REAL ESTATE AGENT FOR AMEREN SERVICES, I HAVE CAUSED A SURVEY TO BE MADE AND A PLAT TO BE DRAWN UNDER MY DIRECT SUPERVISION OF THE FOLLOWING DESCRIBED PROPERTY:

LOTS 7, 8, 9, 10, 11, AND 12 IN BLOCK 29 (EXCEPT RAILROAD RIGHT OF WAY) OF SEMINARY ADDITION TO URBANA, NOW A PART OF THE CITY OF CHAMPAIGN LYING SOUTH OF THE RAILROAD RIGHT OF WAY;

AND LOTS 1, 2, AND 3 IN BLOCK 31 OF SEMINARY ADDITION TO URBANA, NOW A PART OF THE CITY OF CHAMPAIGN;

AND A STRIP OF LAND 66 FEET IN WIDTH KNOWN AS VACATED HILL STREET LYING BETWEEN SAID BLOCKS 29 AND 31;

AND LOTS 1, 2, AND 3 OF ASSESSOR'S PLAT OF SUBDIVISION OF LOT 8 IN M.W. BUSEY'S SUBDIVISION OF THE SOUTH PART OF LOT 1 OF THE SOUTH WEST QUARTER OF SECTION 7, TOWNSHIP 19 NORTH, RANGE 9 EAST OF THE THIRD PRINCIPAL MERIDIAN, AND LOTS 4, 5, AND 6 IN BLOCK 31 OF SEMINARY ADDITION TO URBANA, NOW A PART OF THE CITY OF CHAMPAIGN, AS PER PLAT RECORDED IN DEED RECORD 35, AT PAGE 66;

ALL SITUATED IN THE CITY OF CHAMPAIGN, COUNTY OF CHAMPAIGN, AND STATE OF ILLINOIS.

TOTAL AREA 2.588 ACRES, MORE OR LESS.

FARNSWORTH GROUP, INC.
2211 WEST BRADLEY AVENUE
CHAMPAIGN, ILLINOIS 61821

BY: Wesley J. Meyers
WESLEY J. MEYERS
ILLINOIS PROFESSIONAL LAND SURVEYOR 2803

WESLEY J. MEYERS 2803 PROFESSIONAL LAND SURVEYOR STATE OF ILLINOIS CHAMPAIGN, IL

DATE: 5-03-2019
EXP. DATE: 11-30-2020

THIS PROFESSIONAL SERVICE CONFORMS TO THE CURRENT ILLINOIS MINIMUM STANDARDS FOR A BOUNDARY AND TOPOGRAPHIC SURVEY.

DESIGN FIRM REGISTRATION NO. 184-001856

Farnsworth GROUP
2211 WEST BRADLEY AVENUE
CHAMPAIGN, ILLINOIS 61821
(217) 352-7408 / info@f-w.com
www.f-w.com
Engineers | Architects | Surveyors | Scientists

ISSUE:

#	DATE:	DESCRIPTION:

PROJECT:
AMEREN MGP SITE SURVEY

CITY OF CHAMPAIGN,
CHAMPAIGN COUNTY, ILLINOIS

DATE:	05/03/2019
DESIGNED:	
DRAWN:	SDS
REVIEWED:	CEW
FIELD BOOK NO.:	147

SHEET TITLE:

BOUNDARY SURVEY

SHEET NUMBER:

1

PROJECT NO.: 0190425.00

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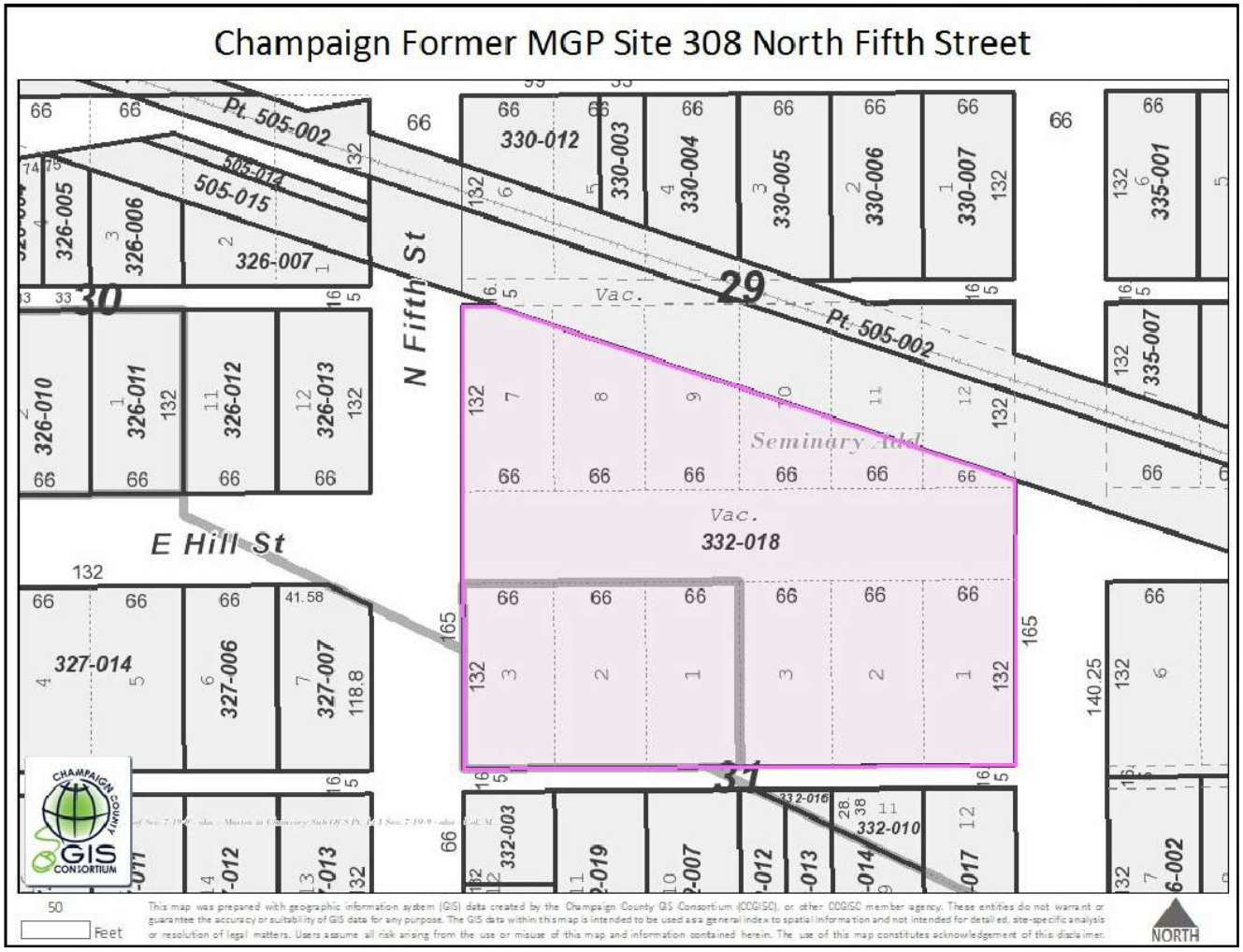

NOT TO SCALE

N

TITLE: PARCEL INFORMATION MAP FROM CHAMPAIGN COUNTY ASSESSORS OFFICE 308 NORTH FIFTH STREET FORMER AMEREN CHAMPAIGN MGP SITE	DWN: TMM CHKD: DATE: 11/14/18	DES: MRC APPD: REV: 0	PROJECT NO: 62412010008 AMEREN ILLINOIS CHAMPAIGN, ILLINOIS Appendix A4

ZOIE LLC A SMBE Construction Firm
Helping You Reach Your Goal

COL. 624\02647U-005

UNOFFICIAL COPY

1200
300
1500

Appendix A5
Property
Deed

CHICAGO TITLE INSURANCE CO.

Associated – Champaign Office • Chicago Title Insurance Company
201 North Neil – Champaign, Illinois 61820 – Phone 356-0501

QUIT CLAIM DEED

DOCUMENT NO. _____
For Recorder's Certificate Only

90R14709

DOC # _____
CHAMPAIGN COUNTY, ILL
1699 0951

'90 JUL 31 PM 3 23

RECORDER

THE GRANTOR, WILLIAM F. EARNEST AMERICAN LEGION POST #559, a not-for-profit corporation,

of the City of Champaign, in the County of Champaign, and State of Illinois, for and in consideration of Ten Dollars ($10.00) and other good and valuable consideration in hand paid, CONVEY and QUIT CLAIM to the GRANTEE, ILLINOIS POWER COMPANY, a corporation,

of the City of Monticello, County of Piatt, and State of Illinois, all interest in the following described real estate:

LOTS 7, 8, 9, 10, 11 AND 12 IN BLOCK 29 (EXCEPT RAILROAD RIGHT OF WAY) OF SEMINARY ADDITION TO URBANA, NOW A PART OF THE CITY OF CHAMPAIGN LYING SOUTH OF THE RAILROAD RIGHT OF WAY;

AND LOTS 1, 2 AND 3 IN BLOCK 31 OF SEMINARY ADDITION TO URBANA, NOW A PART OF THE CITY OF CHAMPAIGN;

AND A STRIP OF LAND 66 FEET IN WIDTH KNOWN AS VACATED HILL STREET LYING BETWEEN SAID BLOCKS 29 AND 31;

AND LOTS 1, 2 AND 3 OF ASSESSOR'S PLAT OF SUBDIVISION OF LOT 8 IN M. W. BUSEY'S SUBDIVISION OF SOUTH PART OF LOT 1 OF THE SOUTH WEST QUARTER OF SECTION 7, TOWNSHIP 19 NORTH, RANGE 9 EAST OF THE THIRD PRINCIPAL MERIDIAN, AND LOTS 4, 5, AND 6 IN BLOCK 31 OF SEMINARY ADDITION TO URBANA, NOW A PART OF THE CITY OF CHAMPAIGN, AS PER PLAT RECORDED IN DEED RECORD 35 AT PAGE 66;

ALL SITUATED IN THE CITY OF CHAMPAIGN, COUNTY OF CHAMPAIGN, AND STATE OF ILLINOIS.

STATE OF ILLINOIS
REAL ESTATE TRANSFER TAX
JUL 31 1990
REVENUE

CHAMPAIGN COUNTY
JUL 31 1990

(Commonly referred to as 308 N. Fifth Street, Champaign, Illinois)

P.I.N. 46-21-07-332-018

STAMPS 60.00

Subject to: (1) Real estate taxes for the year 19 90 and subsequent years;
(2) Covenants, conditions, restrictions and easements apparent or of record;
(3) All applicable zoning laws and ordinances;

This deed is executed by the authority of the corporation's Board of Directors and in accordance with applicable corporate by-laws.

situated in the County of Champaign and State of Illinois hereby releasing and waiving all rights under and by virtue of the Homestead Exemption Laws of the State of Illinois.

Dated this 17th day of July, 19 90.

WILLIAM F. EARNEST AMERICAN LEGION POST # 559

By: _____ ATTEST: _____
MARSHALL WISE, PRESIDENT OF BOARD OF DIRECTORS — WILLIAM KENT, SECRETARY OF BOARD OF DIRECTORS

STATE OF ILLINOIS } SS
CHAMPAIGN COUNTY }

I, the undersigned, a Notary Public in and for said County, and State aforesaid, DO HEREBY CERTIFY, that MARSHALL WISE and WILLIAM KENT, as said officers, personally known to be corporate President and Secretary respectively and, personally known to me to be the same persons whose names are subscribed to the foregoing instrument, appeared before me this day in person and acknowledged that they signed, sealed and delivered the said instrument as their free and voluntary act, for the uses and purposes therein set forth, including the waiver of the right of homestead.

(SEAL)

" OFFICIAL SEAL "
DAN J. WOOLSEY
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES 11/21/90

Given under my hand and Notarial Seal, this 17th day of July, A.D. 19 90.

_____ Notary Public

Deed Prepared By:	Send Tax Bill To:
Paul C. Hendren Miller & Hendren P.O. Box 987 Champaign, IL. 61824-0987	Illinois Power Company ~~% Norman D. Lienemann~~ TAX DEPT F-08 500 S. 27th Street Decatur, IL. 62525

Exempt under provisions of Paragraph _____, Section 4, Real Estate Transfer Tax Act.

Date _____ Signature _____
Buyer, Seller or Representative

Appendix B 2013 ISCO Remediation Interim Report

IN-SITU CHEMICAL OXIDATION REMEDIATION PROGRAM INTERIM REPORT

SITE:

CHAMPAIGN FORMER MGP SITE
CHAMPAIGN, ILLINOIS

JUNE 18, 2013

PREPARED FOR:

PSC INDUSTRIAL OUTSOURCING, LP
210 WEST SAND BANK ROAD
COLUMBIA, ILLINOIS 62236

PROJECT NO. 901144

PREPARED BY:

IN-SITU OXIDATIVE TECHNOLOGIES, INC.
6452 FIG STREET, SUITE C
ARVADA, COLORADO 80004

WWW.INSITUOXIDATION.COM

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1.0 INTRODUCTION

In-Situ Oxidative Technologies, Inc. (ISOTEC) was retained by PSC Industrial Outsourcing, LP (PSC) to conduct an in-situ chemical oxidation (ISCO) remediation program at the former Manufactured Gas Plant (MGP) located at 308 N. 5th Street, in Champaign, Illinois (**Figure 1**). In this report the former Champaign MGP site is also identified as the "site".

The purpose of the ISCO remediation program is to address the perimeter of the site where concentrations of organic constituents of concern (COCs) exceed Tier 1 Remedial Objectives (ROs) for the soil inhalation exposure pathway in the upper 10 feet of soil. The remediation technology chosen for the site was ISOTEC's proprietary modified Fenton's reagent (MFR) technology.

This *In-Situ Chemical Oxidation Remediation Program Interim Report* describes the field activities completed by ISOTEC during the first injection event of the remediation program. The field activities conducted by ISOTEC to date occurred during one injection event (Phase 2A) between April 29 and May 15, 2013. The field activities were performed in accordance with the *In-Situ Chemical Oxidation Work Plan* that was prepared by PSC and submitted to the Illinois Environmental Protection Agency (IEPA) in March 2013.

1.1 SITE-SPECIFIC CHARACTERISTICS

The ISCO treatment area occupies approximately 35,000 square feet of the 2.5 acre site and encompasses the western and northern portion of the site perimeter. The extent of the treatment area was determined from post-excavation soil confirmation sample analytical data.

According to data provided by PSC, the remediation site has vadose and saturated zone soils impacted by inorganics, metals, volatile aromatics and polycylic aromatic hydrocarbons (PAHs). The primary COCs at the site are benzene, toluene, ethylbenzene, and xylenes (BTEX) and naphthalene.

The treatment interval for the ISCO remediation program is from 3 to 10 feet. Two additional treatment intervals, 20 to 25 feet bgs and 36 to 44 feet bgs, were identified by PSC at three limited areas within the designated ISCO remediation treatment area. The first area is located along the northern perimeter and has exceedances in soils from 3 to 10 feet bgs and 20 to 25 feet bgs. The second area is located in the middle portion of the site and has soil exceedances present from 20 to 25 feet bgs. The third area is located along the southern perimeter of the site and has soil exceedances from 3 to 10 feet bgs and potential groundwater exceedances present at approximately 36 to 44 feet bgs. The ISCO treatment areas are illustrated on **Figure 1**.

Review of lithologic logs for soil borings advanced across the site indicate that the subsurface soils consist of fill material from grade surface to depths of 3 to 4 feet bgs.

This surficial fill unit along the perimeter of the site is underlain by a clay and silty-clay unit to a depth of approximately 16 to 20 feet bgs. Below this unit is a weathered till unit present from 16 feet bgs to a maximum depth explored of 33 feet bgs. This weathered till unit is comprised of silty-clay and sandy-clay with some gravel and fine-grained sand. According to PSC, depth to groundwater ranges from 2 to 10 feet bgs.

1.2 ISCO REMEDIATION PROGRAM OBJECTIVES

The objective of the ISCO remediation program is to reduce benzene, ethylbenzene, toluene, xylenes and naphthalene concentrations in the upper 10 feet of soil to their respective Tier 1 ROs for the soil inhalation exposure pathway.

The Tier 1 ROs for the soil inhalation pathway are:

- Benzene - 0.8 mg/kg
- Ethylbenzene - 400 mg/kg
- Toluene - 650 mg/kg
- Xylenes - 320 mg/kg
- Naphthalene - 170 mg/kg

Based on post-excavation soil confirmation data and past experience, it was determined that multiple injection events would be required to reach the remediation program objective.

1.3 ISCO REMEDIATION PROGRAM DESIGN

ISOTEC proposed to utilize neutral pH chelated iron catalyst and stabilized 8% hydrogen peroxide to implement an MFR ISCO program. ISOTEC was to utilize direct-push technology (DPT) to introduce reagents into the subsurface at the site. The ISCO program was designed to address vadose zone and saturated zone soils within the treatment areas specified by PSC (**Figure 1**).

The design was based upon data supplied by PSC and had several potentially limiting factors to implementation success. Limiting factors at the site included the presence of previous investigative penetrations and the fact that the majority of the target treatment interval is shallow vadose zone soils (3 to 10 feet bgs). These factors, in unison, presented potential problems for the injection of modified Fenton's reagent. The presence of previous penetrations in the treatment area may provide vertical conduits through which produced gas can travel to the surface. Surfacing was a significant issue during the Phase 1 2009 ISCO pilot test and would most certainly occur during Phase 2. Chemical oxidation remediation is a dissolved phase/saturated zone technology. Since the majority of the Phase 2 target treatment interval is shallow vadose zone soils, ISOTEC would have to attempt to saturate the vadose zone soils with reagent in order to achieve the project objectives, which would most likely result in varying amounts of surfacing. In order to achieve project success, the site's limiting factors were taken into account when the injection program was designed.

Based on review of site data provided by PSC, ISOTEC anticipated that two full-scale injection applications and one reduced application would be required. ISOTEC assumed that the full-scale ISCO remediation program would be designated Phase 2 and that each injection event would be given the following alphabetical designations:

- Phase 2A – First Injection Event (Entire Treatment Area)
- Phase 2B – Second Injection Event (Entire Treatment Area)
- Phase 2C – Third Injection Event (50% of the Treatment Area)

During Phase 2A, also referred to as "first event", temporary injection screens were to be installed at approximately 120 injection locations within the on-site perimeter treatment areas. Two separate direct-push rods were to be installed at each location; one screen deployed from approximately 3 to 6 feet bgs to target the upper shallow vadose zone soils and the second screen deployed from approximately 6 to 10 feet bgs to target the lower shallow vadose/saturated zone soils.

The injection locations within the on-site perimeter ISCO treatment areas would be spaced approximately 15 feet apart based on an anticipated 7.5-foot radius of influence (ROI). The actual spacing for the locations may vary due to underground utilities, above-ground impediments and other associated field conditions. The injection locations were to be placed on a triangular grid-like pattern across the treatment area. The subsequent injection event locations (Phase 2B and Phase 2C) would be shifted laterally from the First event locations.

The effectiveness of the remediation program was to be determined by comparing the concentrations of soil samples collected prior to injection activities with the concentrations of soil samples collected during post-injection sampling events. The post-injection soil samples were to be collected from the 3 to 6 feet bgs interval and the 6 to 10 feet bgs interval at multiple selected locations within the treatment area(s). The post injection performance soil samples would be collected at locations immediately adjacent to the baseline boring locations and from the same associated depth intervals. This would allow for the most direct comparison possible of concentration reductions as a result of the injection application. In the event that a specific post-injection soil sample reports all of the target COC concentrations at or below the Tier 1 ROs for the soil inhalation exposure pathway, that specific boring location and/or depth interval would no longer be sampled and injections in the immediate vicinity of the boring(s) and/or depth interval(s) would be eliminated from the subsequent injection applications. These soil sampling and evaluation procedures would be repeated following each of the injection applications.

2.0 ISCO REMEDIATION PROGRAM

To date, ISOTEC has conducted one injection event (Phase 2A) at the site from April 29 to May 15, 2013. Field operations completed by ISOTEC during the Phase 2A injection event included equipment mobilization and demobilization, temporary injection screen installations and abandonments, reagent preparation, and reagent injections. ISOTEC injected reagents into target treatment intervals within the ISCO treatment areas at 98 injection locations through 203 injection screens. The Phase 2A injection locations are shown on **Figure 2**.

It is important to note that the actual number of locations was reduced from the design scope of approximately 120 to 98 because once the locations were marked with survey flags across the site, it became apparent that multiple locations were actually within the excavation limits. Those locations situated within the excavation limits were eliminated from Phase 2A.

One, two or three injection screens were installed at each of the 98 injection locations during the first event. For identification purposes, each injection screen was labeled with an injection event identifier ("1I" for the Phase 2A injection event), followed by an injection location number, and ending in an injection interval identifier ("A", "B", "C" or "D"). The "A" designation indicates a 3 to 6 feet bgs screen, the "B" designation indicates a 6 to 10 feet bgs screen, the "C" designation indicates a 20 to 25 feet bgs screen, and the "D" designation indicates a 36 to 44 feet bgs screen.

2.1 FIELD METHODS

ISOTEC injection screens were installed with a DPT drill rig operated by Bulldog Drilling at specific locations across the treatment area. At each location, ISOTEC injection screens were used to deliver reagents to the target treatment interval(s). In general, Bulldog Drilling advanced a direct-push rod with an expendable point to a predetermined depth at each injection location. A specially designed injection screen was then placed in each rod. The direct-push rods were retracted to expose the preferred length of injection screen. ISOTEC reagents were injected through each rod and injection screen into the subsurface. The following sections detail the injection screen installation and abandonment (**Section 2.1.1**), reagent preparation procedures (**Section 2.1.2**), and injection method during the injection event (**Section 2.1.3**).

2.1.1 Injection Screen Installation and Abandonment

Temporary injection screens installed with direct-push technology (DPT) were used to deliver ISOTEC's modified Fenton's reagents into the target treatment depth intervals. The equipment and tooling provided by Bulldog Drilling included a track-mounted AMS drill rig, 1.25-inch and 1.5-inch diameter direct-push drill rods, extension rods used to deploy and retrieve the injection screens, and decontamination equipment. Tooling provided by ISOTEC included specialized 0.5-inch diameter injection screens designed to pass through the center of the drill rods, specialized point holders designed to hold the

injection screens in place within the target injection interval, and 1-inch expendable drive points.

Bulldog Drilling (Bulldog) began each screen installation by advancing drill rods to a desired depth at each injection location. Once the proper depth was reached, an injection screen was lowered through the center of the rods to the bottom of the rod string and then held in place with extension rods. The rod string was then slowly retracted until the entire length of injection screen was exposed across the specific target treatment interval. ISOTEC reagents were then injected through the newly installed temporary injection screen and into the subsurface. A direct-push injection screen schematic illustrating the A- and B-screen installation is included as **Figure 3**.

Following daily injection activities, ISOTEC oversaw the proper abandonment of each injection location by Bulldog. After removing the rod string, each borehole was abandoned by slowing hand pouring 3/8-inch bentonite chips from the bottom of the borehole to approximately 6-inches bgs. The bentonite was hydrated and the borehole was then completed with a concrete patch.

2.1.2 Reagent Preparation

ISOTEC reagents consist of a neutral pH chelated ferrous iron solution (catalyst) and dilute stabilized hydrogen peroxide (oxidizer). During Phase 2A, ISOTEC utilized an oxidizer concentration of 8%. Hydrogen peroxide at a concentration of 30% was shipped directly to the site immediately prior to field injection activities and stored in DOT-approved 55-gallon drums. The 30% hydrogen peroxide was diluted to an 8% concentration in 300-gallon polyethylene bulk tanks with water obtained from a fire hydrant located in the southwest corner of the site. ISOTEC's proprietary catalyst is a pH buffered (pH of approximately 7) ferrous iron complex. The catalyst components were shipped to the site in dry form and mixed with water in 300-gallon polyethylene bulk tanks. A reagent mixing schematic is included as **Figure 4**.

2.1.3 Injection Method

The injections were accomplished using air-operated double-diaphragm pumps, flow meters, polyvinyl chloride (PVC) reinforced tubing, cam-lock valves & fittings, and steel wellhead assemblies. The wellhead assemblies, with pressure gauges and relief valves, were attached to the uppermost drill rod at each injection screen location. The wellhead assemblies were attached with PVC reinforced tubing to an air-operated diaphragm pump and from the pump to either the oxidizer, catalyst or water tanks with additional PVC tubing. Oxidizer, catalyst and water were conveyed through the PVC tubing using a pneumatic diaphragm pump with air supplied by a portable air compressor.

In general, the injection process was similar for each injection screen. First, water was injected, followed by catalyst, a second water flush to clear the injection equipment of catalyst, then the oxidizer, and a final water flush to clear the injection equipment of oxidizer. An injection method schematic detailing the injection process is included as **Figure 5**.

Reagent volumes, flow rates, and injection pressures were monitored at regular intervals and recorded in a field log during the injection process at each injection screen. Reagent volumes and flow rates were measured with battery-operated turbine flow meters/totalizers. Injection pressures were measured with pressure gauges attached to the wellhead assemblies.

2.2 PHASE 2A INJECTION FIELD ACTIVITIES

During the Phase 2A injection event, ISOTEC attempted to inject catalyst and oxidizer into 203 injection screens installed at 98 locations (1I-1 through 1I-108). As previously noted, screens were not installed at some locations because the locations were within the excavation limits. These locations included 1I-42, 1I-64, 1I-65, 1I-66, 1I-76, 1I-77, 1I-85, 1I-86 and 1I-87, and combined for a total of 21 screens not installed. At locations where multiple injection screens were required in order to target separate treatment intervals, the individual screens were installed in separate boreholes spaced approximately two feet apart. The majority of the Phase 2A injection locations utilized two injection screens; the A-screen deployed from 3 to 6 feet bgs and the B-screen deployed from 6 to 10 feet bgs. In addition to using two screens to deliver reagents across the 3 to 10 feet bgs interval, six injection locations (1I-73, 1I-74, 1I-75, 1I-79, 1I-80, and 1I-81) utilized a third injection screen that was deployed from 20 to 25 feet bgs. Injection locations 1I-104 through 1I-106 also used a third screen, deployed from 36 to 44 feet bgs. Injection locations 1I-94, 1I-95, 1I-96 and 1I-97 utilized only one injection screen deployed from 20 to 25 feet bgs.

ISOTEC was able to inject 9,664 gallons of reagent (catalyst and oxidizer) into the 203 injection screens (95 A-screens, 95 B-screens, 10 C-screens and 3 D-screens) installed during the Phase 2A injection event. Surfacing of reagent occurred at 40% of the A-screens, 27% of the B-screens and 10% of the C-screens. Surfacing is described as the migration of gasses, groundwater or reagent to the ground surface through natural or man-made conduits in the subsurface. When surfacing occurred, the injection process at the screen observed to be surfacing was stopped and no further injection activities were attempted at that particular injection screen location. Surfacing did not occur while injecting into the D-screens.

The average volume of total reagent (oxidizer and catalyst) injected into the A-screens (3 to 6 feet bgs) was approximately 41 gallons per screen. The average volume of total reagent injected into the B-screens (6 to 10 feet bgs) was approximately 49 gallons per screen. The average volume of total reagent injected into the C-screens (20 to 25 feet bgs) was approximately 83 gallons per screen. The average volume of total reagent injected into the D-screens (36 to 44 feet bgs) was 100 gallons per screen.

Reagent flow rates ranged from approximately 1.8 to 2.8 gallons per minute (gpm). Injection pressures ranged from approximately 0 to 30 pounds per square inch (psi) during injection activities. A summary of the volumes injected at each location during the first event is presented in **Table 1**.

3.0 SOIL ANALYTICAL RESULTS

Confirmation soil samples were collected by PSC following the first injection event (Post-Phase 2A) to evaluate the effectiveness of the first injection event. Confirmation soil samples were collected at sample locations CS-01 through CS-23 within the ISCO treatment areas (**Figure 1**). Samples were collected from specific depths within the 3 to 6 feet bgs interval and 6 to 10 feet bgs interval at boring locations CS-01 through CS-18, and CS-21 through CS-23. Soil samples were collected from a specific depth interval within the 20 to 25 feet bgs interval at boring locations CS-15, CS-16, CS-19 and CS-20 as stated in the *In-Situ Chemical Oxidation Work Plan*. A total of 46 samples were collected during the Post-Phase 2A sampling event.

Soil confirmation samples were collected using a DPT drill rig operated by Bulldog Drilling. Samples were collected using macrocore samplers with acetate liners, and drilling implements were decontaminated between samples. An onsite geologist selected the sample depths within the target intervals based upon field observations and PID readings. The geologist wore a new pair of clean nitrile gloves to collect each sample to avoid cross contamination. The soil confirmation samples were placed into laboratory provided containers and labeled according to sample location, depth, date, time, and analytical method upon collection. The samples were placed into coolers with ice and delivered to Teklab, Inc. for analysis under proper chain of custody procedures.

For identification purposes, each confirmation soil boring location (CS) was labeled with an injection event identifier ("A" for the Phase 2A injection event), followed by the boring location number, and ending in the sample collection depth.

For comparison purposes, PSC will also collect confirmation soil samples from the same specific depth interval at soil boring locations CS-01 through CS-23 after the Phase 2B injection event (CSB-01 through CSB-23) and Phase 2C injection event (CSC-01 through CSC-23).

The soil samples were analyzed for the four BTEX compounds using SW-846 Method 8260 and naphthalene using SW-846 Method 8270 SIM. The COCs at the site that exceed the Tier 1 Remediation Objectives are benzene and naphthalene. Therefore, the subsequent discussion is focused on these compounds. The soil analytical data is presented in **Section 3.1**. Since baseline soil samples were not collected, the Post-Phase 2A soil analytical data will be used for comparison purposes with the subsequent Phase 2B and Phase 2C sampling event analytical data.

The soil sample collection dates and analytical data for benzene are included in **Table 2**. The soil sample collection dates and analytical data for naphthalene are included in **Table 3**. It is important to note that since samples were not collected prior to the Phase 2A injection event, percentage reductions will not be discussed.

3.1 POST-PHASE 2A SAMPLING EVENT: MAY 23, 24 AND 28, 2013

3.1.1 Benzene

3.1.1.1 3 to 6 feet bgs

The average Post-Phase 2A benzene soil concentration in the 3 to 6 feet bgs interval was approximately 4.9 milligrams per kilogram (mg/kg). Post-Phase 2A benzene concentrations above varying detection limits (due to dilution) ranged from 0.0037 mg/kg at CSA-01 (5.0-6.0) to 19.9 mg/kg at CSA-07 (5.0-6.0).

Eight of the 21 confirmation soil locations sampled at this depth were below the Tier 1 ROs: CSA-01(5.0-6.0), CSA-06(5.0-6.0), CSA-09(5.0-6.0), CSA-11(5.0-6.0), CSA-15(5.0-6.0), CSA-21(5.0-6.0), CSA-22(5.0-6.0) and CSA-23(5.0-6.0).

3.1.1.2 6 to 10 feet bgs

The average Post-Phase 2A soil benzene concentration in the 6 to 10 feet bgs interval was approximately 22.7 mg/kg. Reported Post-Phase 2A benzene concentrations above detection limits ranged from 0.0057 mg/kg at CSA-01 (7.5-8.5) to 33.3 mg/kg at CSA-03 (9.0-10.0).

Ten of the 21 confirmation soil locations sampled at this depth were below the Tier 1 ROs: CSA-01(7.5-8.5), CSA-08(8.5-9.5), CSA-09(8.0-9.0), CSA-10(8.5-9.5), CSA-11(8.0-9.0), CSA-14(7.5-8.5), CSA-15(8.0-9.0), CSA-17(7.0-8.0), CSA-21(9.0-10.0) and CSA-22(7.0-8.0).

3.1.1.3 20 to 25 feet bgs

The average Post-Phase 2A soil benzene concentration in the 20 to 25 feet bgs interval was approximately 13.4 mg/kg. Post-Phase 2A soil benzene concentrations in the four samples collected from the 20 to 25 feet bgs interval were reported at <0.842 mg/kg at CSA-14 (20.5-21.5), 28 mg/kg at CSA-15 (20.5-21.5), <3.58 mg/kg at CSA-19 (22.5-23.5) and 21.1 mg/kg at CSA-20 (9.0-10.0).

3.1.2 Naphthalene

3.1.2.1 3 to 6 feet bgs

The average naphthalene soil benzene concentration in the 3 to 6 feet bgs interval was approximately 145.4 mg/kg. Post-Phase 2A naphthalene soil concentrations above detection limits ranged from 0.006 mg/kg at CSA-01 (5.0-6.0) to 1,710 mg/kg at CSA-03 (5.0-6.0).

Nineteen of the 21 confirmation soil locations sampled at this depth were below the Tier 1 ROs: CSA-01(5.0-6.0), CSA-02(5.0-6.0), CSA-04(5.0-6.0), CSA-05(4.5-5.5), CSA-06(5.0-6.0), CSA-07(5.0-6.0), CSA-08(4.5-5.5), CSA-09(5.0-6.0), CSA-10(5.0-6.0), CSA-11(5.0-6.0), CSA-12(4.0-5.0), CSA-13(5.0-6.0), CSA-14(4.0-5.0), CSA-15(5.0-6.0), CSA-16(4.0-5.0), CSA-17(5.0-6.0), CSA-21(5.0-6.0), CSA-22(5.0-6.0), and CSA-23(5.0-6.0).

3.1.2.2 6 to 10 feet bgs

The average naphthalene soil concentration in the 6 to 10 feet bgs interval was approximately 237.9 mg/kg. Post-Phase 2A naphthalene soil concentrations ranged from 0.005 mg/kg at CSA-01 (7.5-8.5) to 1,750 mg/kg at CSA-02 (7.0-8.0).

Fifteen of the 21 confirmation soil locations sampled at this depth were below the Tier 1 ROs CSA-01(7.5-8.5), CSA-04(5.0-6.0), CSA-07(7.5-8.5), CSA-08(8.5-9.5), CSA-09(8.0-9.0), CSA-10(8.5-9.5), CSA-11(8.0-9.0), CSA-12(9.0-10.0), CSA-13(9.0-10.0), CSA-14(7.5-8.5), CSA-16(7.0-8.0), CSA-17(7.0-8.0), , CSA-21(9.0-10.0), CSA-22(7.0-8.0), and CSA-23(9.0-10.0).

3.1.2.3 20 to 25 feet bgs

The average Post-Phase 2A naphthalene soil concentration in the 20 to 25 feet bgs interval was approximately 113 mg/kg. Reported Post-Phase 2A naphthalene soil concentrations collected from the 20 to 25 feet bgs interval were reported at 35.3 mg/kg at CSA-14 (20.5-21.5), 194 mg/kg at CSA-15 (20.5-21.5), 66.8 mg/kg at CSA-19 (22.5-23.5) and 156 mg/kg at CSA-20 (22.0-23.0).

4.0 CONCLUSIONS

The objective of the ISCO remediation program using ISOTEC's Fenton's-based oxidation process is to reduce COCs in soil to below Tier 1 ROs for the soil inhalation pathway in the upper 10 feet of soil.

To achieve this goal, ISOTEC estimated that three separate injection mobilizations would be required. To date, ISOTEC has completed one of the three injection events at the site.

As stated in **Section 1.3** above, the effectiveness, and therefore progress, of the remediation program was to be determined by comparing the concentrations of soil samples collected prior to injection activities with the concentrations of soil samples collected during post-injection sampling events. If a specific post-injection soil sample reports all of the target COC concentrations at or below the Tier 1 ROs for the soil inhalation exposure pathway, that specific boring location and/or depth interval would no longer be sampled and injections in the immediate vicinity of the boring(s) and/or depth interval(s) would be eliminated from the subsequent injection applications.

4.1 ISCO PARAMETER AND EFFECTIVENESS

The effectiveness of the ISCO remediation program, and therefore the parameters (volumes, concentrations, rates, pressures and ROI) used, can be evaluated by changes in benzene and naphthalene in soil concentrations collected from the 23 confirmation soil boring locations.

Since baseline data is incomplete, the effectiveness of the Phase 2A injection event is difficult to measure. However, review of the Post-Phase 2A analytical data indicates benzene and naphthalene on soil across the 3 to 10 feet bgs interval at several areas of the treatment area currently meets the Tier 1 ROs. Specifically, the soil samples collected from the 3 to 6 feet bgs and 6 to 10 feet bgs intervals at confirmation sample locations CSA-01, CSA-09, CSA-11, CSA-21 and CSA-22 did not report benzene and naphthalene concentrations above the Tier 1 ROs.

The Post-Phase 2A analytical data also indicated that specific intervals at various confirmation soil boring locations met the Tier 1 ROs. Specifically, the 3 to 6 feet bgs interval at boring locations CSA-06, CSA-15 and CSA-23 did not report benzene and naphthalene concentrations above 0.8 mg/kg and 170 mg/kg, respectively. The 6 to 10 feet bgs interval at boring locations CSA-08, CSA-10, CSA-14 and CSA-17 also met the Tier 1 ROs.

4.2 RECOMMENDATIONS

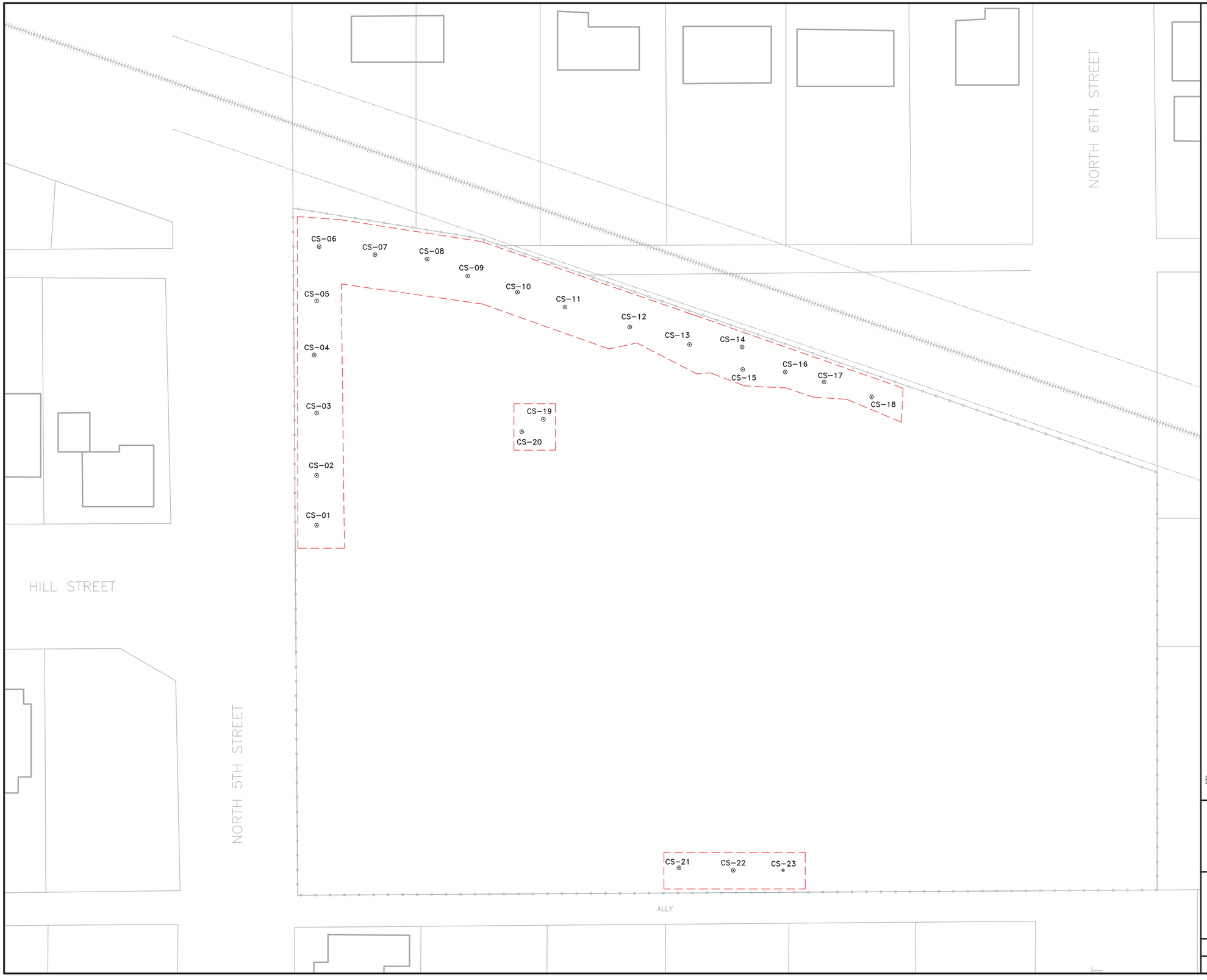
Based on the results of the Phase 2A injection event, ISOTEC recommends continuing with the original injection design for the remediation program. ISOTEC recommends no changes to the ISCO parameters for the next injection event as they appear to be sufficient for contaminant mass reduction at the site.

Based on the IEPA approved *In-Situ Chemical Oxidation Work Plan* prepared by PSC, ISOTEC recommends eliminating the Phase 2B injection locations that are adjacent to the confirmation soil boring locations that met Tier 1 ROs. Specifically, ISOTEC recommends:

- Eliminating both the 3 to 6 feet bgs interval screens (A-screen) and 6 to 10 feet bgs interval screens (B-screen) at those Phase 2B injection locations surrounding soil confirmation boring locations CSA-01, CSA-09, CSA-11, CSA-21 and CSA-22;
- Eliminating the A-screens from the Phase 2B injection locations surrounding CSA-06, CSA-15 and CSA-23; and
- Eliminating the B-screens from the Phase 2B injection locations surrounding CSA-08 CSA-10, CSA-14 and CSA-17.

The proposed Phase 2B injection plan is shown on **Figure 6**.

FIGURES



LEGEND

- Existing Structure
- Fence/Remediation Site Boundary
- ISCO Treatment Area
- CS-05 Confirmation Soil Sample Location

N

0 30 60

1 INCH = 60 FEET

Base map provided by PSC Industrial Outsourcing, LP.

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SITE MAP
ISCO REMEDIATION PROGRAM
Former Champaign MGP Site
Champaign, Illinois

DRAWN BY: TE	DATE: 6/10/2013	FIGURE 1
CHECKED BY: SH	PROJECT NO: 901144	



LEGEND

- Existing Structure
- Fence/Remediation Site Boundary
- ISCO Treatment Area
- CS-05 — Confirmation Soil Sample Location
- Conceptual Radius of Influence (7.5 feet)

Phase 2A Injection Locations

- Two Screens Installed (A, B)
- Three Screens Installed (A, B, C)
- One Screen Installed (C)
- Three Screens Installed (A, B, D)
- Excavation Area/Screens Not Installed

Injection Screen Intervals

A	3 to 6 feet bgs
B	6 to 10 feet bgs
C	20 to 25 feet bgs
D	36 to 44 feet bgs

N

0 30 60

1 INCH = 60 FEET

Base map provided by PSC Industrial Outsourcing, LP.

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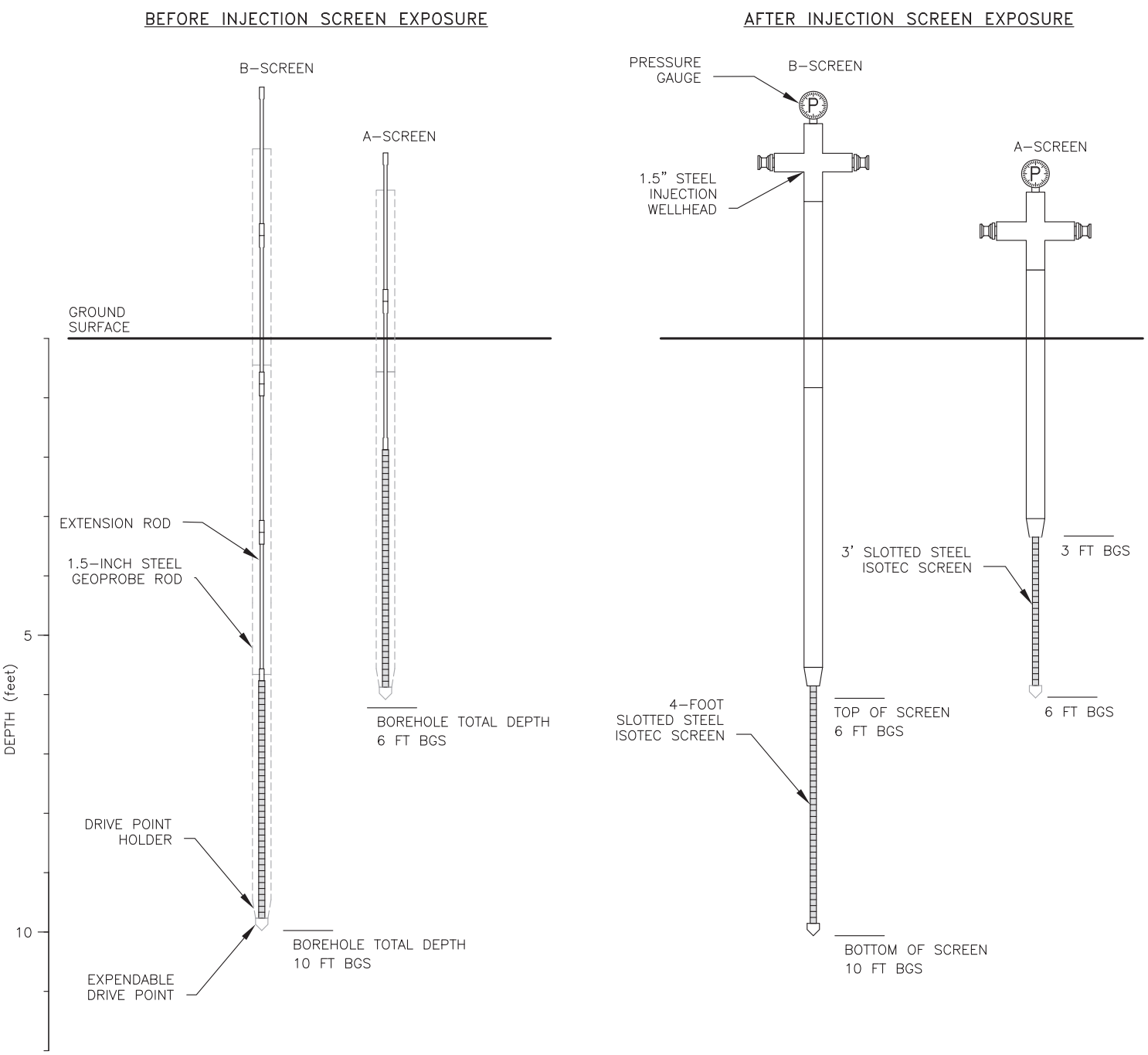
PHASE 2A INJECTION LOCATION MAP
ISCO REMEDIATION PROGRAM
Former Champaign MGP Site
Champaign, Illinois

DRAWN BY: TE	DATE: 6/10/2013	FIGURE 2
CHECKED BY: SH	PROJECT NO: 901144	



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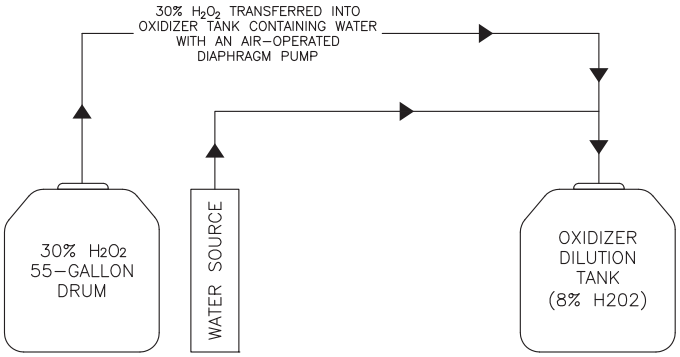
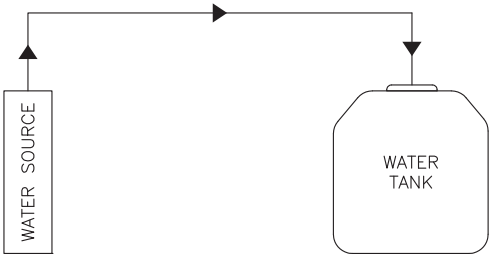
DIRECT–PUSH INJECTION SCHEMATIC
ISCO REMEDIATION PROGRAM
Former Champaign MGP Site
Champaign, Illinois

DRAWN BY: KH	DATE: 5/21/2013	FIGURE 3
CHECKED BY: SH	PROJECT NO: 901144	

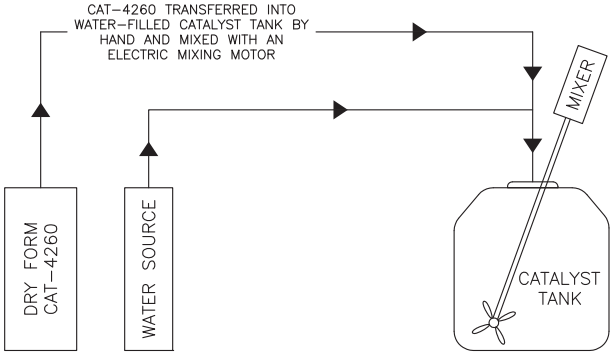
OXIDIZER TANK POCEDURES



WATER TANK PROCEDURES



CATALYST TANK PROCEDURES



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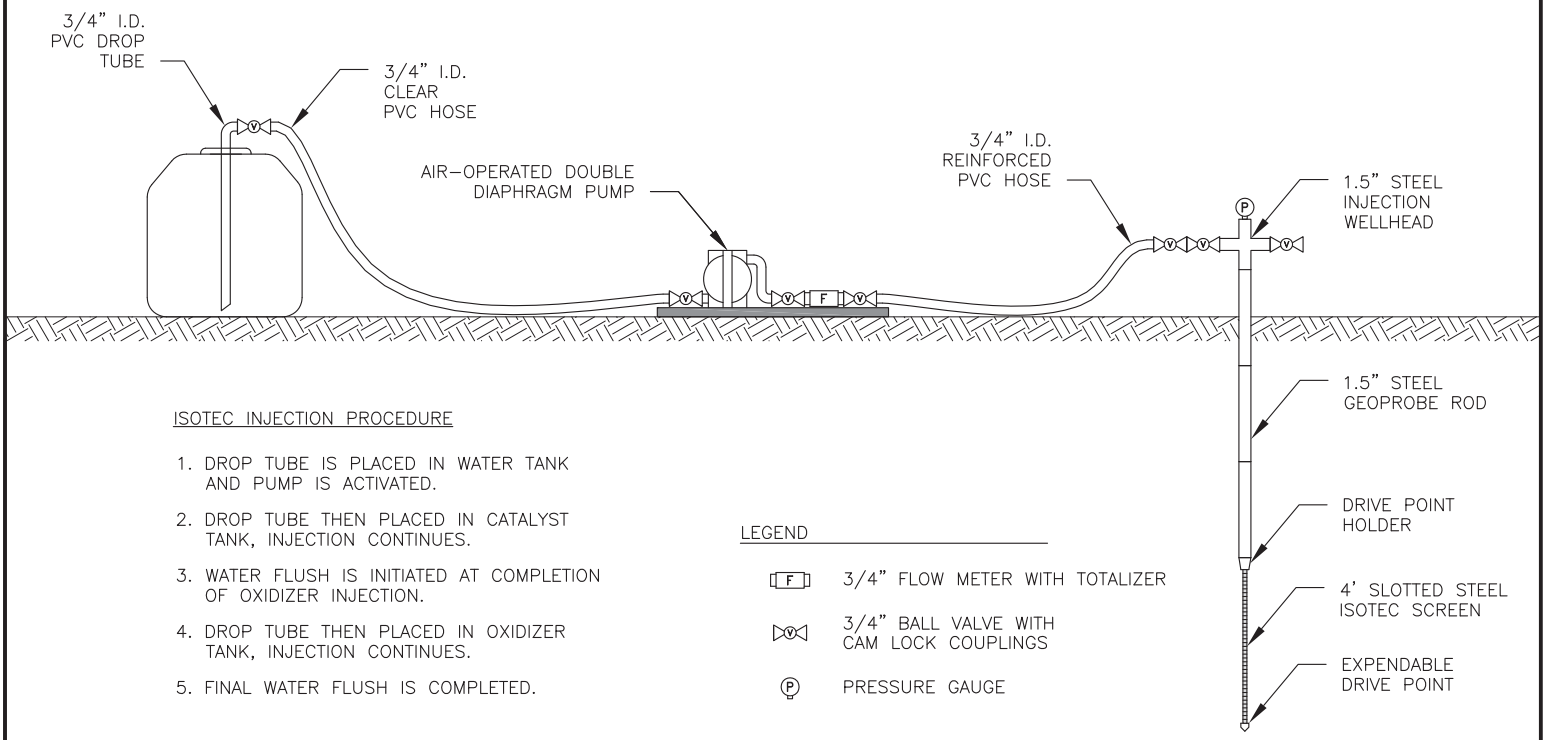
REAGENT MIXING SCHEMATIC
ISCO REMEDIATION PROGRAM
Former Champaign MGP Site
Champaign, Illinois

DRAWN BY: KH	DATE: 5/21/2013	FIGURE 4
CHECKED BY: SH	PROJECT NO: 901144	

REAGENT INJECTION DIAGRAM



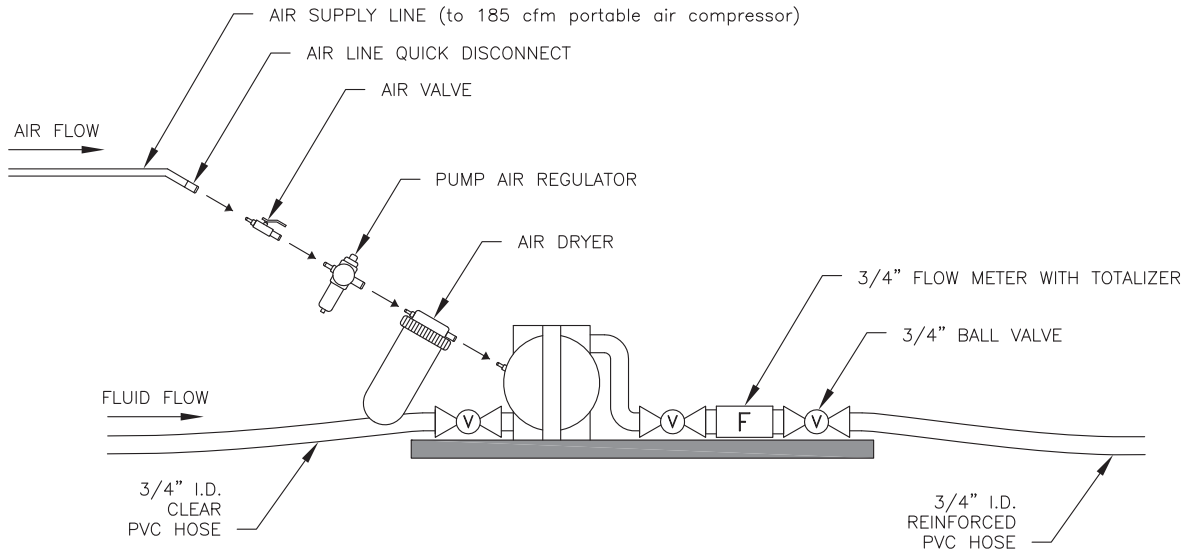
ISOTEC INJECTION PROCEDURE

1. DROP TUBE IS PLACED IN WATER TANK AND PUMP IS ACTIVATED.
2. DROP TUBE THEN PLACED IN CATALYST TANK, INJECTION CONTINUES.
3. WATER FLUSH IS INITIATED AT COMPLETION OF OXIDIZER INJECTION.
4. DROP TUBE THEN PLACED IN OXIDIZER TANK, INJECTION CONTINUES.
5. FINAL WATER FLUSH IS COMPLETED.

LEGEND

- F — 3/4" FLOW METER WITH TOTALIZER
- V — 3/4" BALL VALVE WITH CAM LOCK COUPLINGS
- P — PRESSURE GAUGE

INJECTION PUMP INSTALLATION



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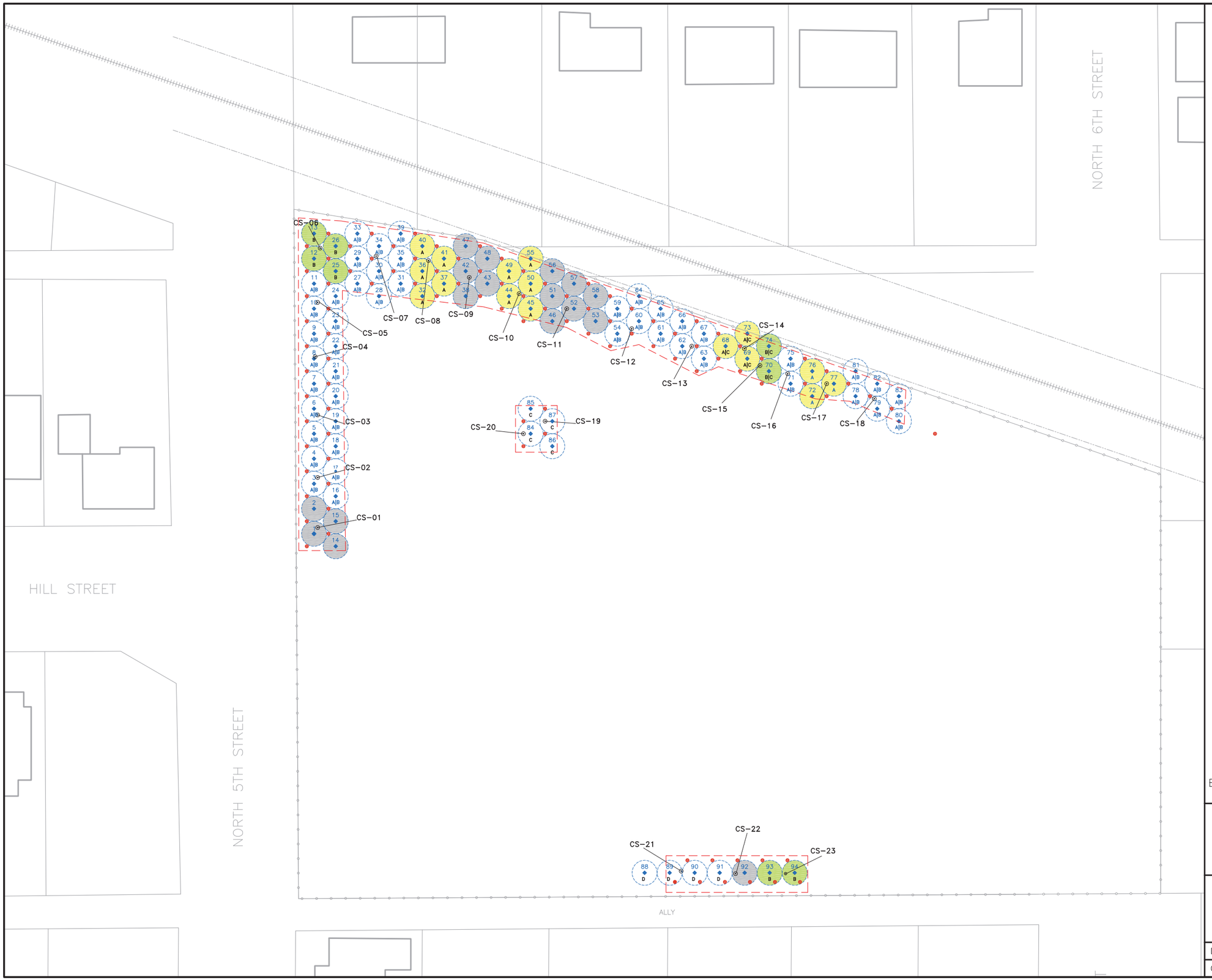
INJECTION METHOD SCHEMATIC
ISCO REMEDIATION PROGRAM
Former Champaign MGP Site
Champaign, Illinois

DRAWN BY: KH	DATE: 5/21/2013	FIGURE 5
CHECKED BY: SH	PROJECT NO: 901144	



LEGEND

- Existing Structure
- Fence/Remediation Site Boundary
- ISCO Treatment Area
- CS-05 Confirmation Soil Sample Location
- Phase 2A Injection Locations
- Conceptual Radius of Influence (7.5 feet)

Phase 2B Injection Locations

- Phase 2B Injection Location
- 4 No Screens Eliminated
- 50 A-Screen Eliminated
- 37 B-Screen Eliminated
- 15 A-Screen and B-Screen Eliminated

Injection Screen Intervals

A	3 to 6 feet bgs
B	6 to 10 feet bgs
C	20 to 25 feet bgs
D	36 to 44 feet bgs

N

0 30 60

1 INCH = 60 FEET

Base map provided by PSC Industrial Outsourcing, LP.

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PROPOSED PHASE 2B INJECTION LOCATION PLAN
ISCO REMEDIATION PROGRAM
Former Champaign MGP Site
Champaign, Illinois

DRAWN BY: TE	DATE: 6/10/2013	FIGURE 6
CHECKED BY: SH	PROJECT NO: 901144	

TABLES

TABLE 1
PHASE 2A INJECTION SUMMARY

ISCO Remediation Program
Former Champaign MGP Site
Champaign, Illinois 61820

Injection Location	Injection Date	Injection Interval	H2O2 (gallons)	Catalyst (gallons)	Surfaced	Surface Distance (feet)	Surface Direction
1I-1A	05/16/13	3-6	25	25			
1I-1B	05/16/13	6-10	25	25			
1I-2A	05/03/13	3-6	20	25	TRUE	7	W
1I-2B	05/03/13	6-10	25	25			
1I-3A	05/14/13	3-6	25	25			
1I-3B	05/14/13	6-10	25	25			
1I-4A	05/02/13	3-6	25	25			
1I-4B	05/02/13	6-10	25	25			
1I-5A	05/06/13	3-6	25	25			
1I-5B	05/06/13	6-10	25	25			
1I-6A	05/03/13	3-6	25	25			
1I-6B	05/03/13	6-10	20	25	TRUE	12	E
1I-7A	05/05/13	3-6	25	25			
1I-7B	05/05/13	6-10	25	25			
1I-8A	05/15/13	3-6	0	0	TRUE	0	
1I-8B	05/15/13	6-10	17	25	TRUE	0	
1I-9A	05/03/13	3-6	25	25			
1I-9B	05/03/13	6-10	12	25	TRUE	0	
1I-10A	05/05/13	3-6	25	25			
1I-10B	05/05/13	6-10	25	25			
1I-11A	05/15/13	3-6	25	25			
1I-11B	05/15/13	6-10	25	25			
1I-12A	05/03/13	3-6	2	25	TRUE	0	
1I-12B	05/03/13	6-10	25	25			
1I-13A	05/05/13	3-6	0	1	TRUE	9	SE
1I-13B	05/05/13	6-10	25	25	TRUE	9	SE
1I-14A	05/06/13	3-6	25	25			
1I-14B	05/06/13	6-10	25	25			
1I-15A	05/07/13	3-6	25	25			
1I-15B	05/07/13	6-10	25	25			
1I-16A	05/05/13	3-6	25	25			
1I-16B	05/05/13	6-10	25	25			
1I-17A	05/08/13	3-6	25	25			
1I-17B	05/08/13	6-10	25	25			
1I-18A	05/04/13	3-6	25	25			

TABLE 1
PHASE 2A INJECTION SUMMARY

ISCO Remediation Program
Former Champaign MGP Site
Champaign, Illinois 61820

Injection Location	Injection Date	Injection Interval	H2O2 (gallons)	Catalyst (gallons)	Surfaced	Surface Distance (feet)	Surface Direction
1I-18B	05/04/13	6-10	25	25			
1I-19A	05/07/13	3-6	25	25			
1I-19B	05/07/13	6-10	25	25			
1I-20A	05/02/13	3-6	25	25			
1I-20B	05/02/13	6-10	25	25			
1I-21A	05/04/13	3-6	25	25			
1I-21B	05/04/13	6-10	25	25			
1I-22A	05/07/13	3-6	25	25			
1I-22B	05/07/13	6-10	25	25			
1I-23A	05/02/13	3-6	25	25			
1I-23B	05/02/13	6-10	25	25			
1I-24A	05/04/13	3-6	25	25			
1I-24B	05/04/13	6-10	25	25			
1I-25A	05/14/13	3-6	24	25	TRUE	10	S
1I-25B	05/14/13	6-10	25	25			
1I-26A	05/02/13	3-6	25	25			
1I-26B	05/02/13	6-10	25	25			
1I-27A	05/16/13	3-6	25	25			
1I-27B	05/16/13	6-10	25	25			
1I-28A	05/05/13	3-6	25	25			
1I-28B	05/05/13	6-10	25	25			
1I-29A	05/06/13	3-6	25	25			
1I-29B	05/06/13	6-10	25	25	TRUE	18	SW
1I-30A	05/08/13	3-6	25	25	TRUE	12	S
1I-30B	05/08/13	6-10	25	25			
1I-31A	05/15/13	3-6	25	25			
1I-31B	05/15/13	6-10	25	25			
1I-32A	05/06/13	3-6	25	25	TRUE	4	E
1I-32B	05/06/13	6-10	25	25			
1I-33A	05/16/13	3-6	25	25			
1I-33B	05/16/13	6-10	25	25			
1I-34A	05/04/13	3-6	25	25			
1I-34B	05/04/13	6-10	25	25			
1I-35A	05/01/13	3-6	0	0	TRUE	11	SE
1I-35B	05/01/13	6-10	20	25	TRUE	11	SE

TABLE 1
PHASE 2A INJECTION SUMMARY

ISCO Remediation Program
Former Champaign MGP Site
Champaign, Illinois 61820

Injection Location	Injection Date	Injection Interval	H2O2 (gallons)	Catalyst (gallons)	Surfaced	Surface Distance (feet)	Surface Direction
1I-36A	05/14/13	3-6	0	4	TRUE	20	SW
1I-36B	05/14/13	6-10	25	25			
1I-37A	05/01/13	3-6	25	25			
1I-37B	05/01/13	6-10	25	25			
1I-38A	05/04/13	3-6	25	25			
1I-38B	05/04/13	6-10	25	25			
1I-39A	05/01/13	3-6	25	25	TRUE	30	SE
1I-39B	05/01/13	6-10	25	25			
1I-40A	05/07/13	3-6	25	25			
1I-40B	05/07/13	6-10	25	25			
1I-41A	05/01/13	3-6	0	12	TRUE	9	NE
1I-41B	05/01/13	6-10	25	25			
1I-42A	Injection location 1I-42 was eliminated because the location was within the excavation limits.						
1I-42B	Injection location 1I-42 was eliminated because the location was within the excavation limits.						
1I-43A	05/03/13	3-6	25	25			
1I-43B	05/03/13	6-10	25	25			
1I-44A	05/05/13	3-6	8	25	TRUE	12	SW
1I-44B	05/05/13	6-10	25	25	TRUE	12	SW
1I-45A	05/15/13	3-6	0	25	TRUE	20	E
1I-45B	05/15/13	6-10	25	25			
1I-46A	05/02/13	3-6	5	25	TRUE	21	21
1I-46B	05/02/13	6-10	25	25			
1I-47A	05/05/13	3-6	25	25			
1I-47B	05/05/13	6-10	25	25			
1I-48A	05/15/13	3-6	15	25	TRUE	6	N
1I-48B	05/15/13	6-10	25	25	TRUE	6	N
1I-49A	05/02/13	3-6	0	10	TRUE	15	E
1I-49B	05/02/13	6-10	25	25	TRUE	15	E
1I-50A	05/05/13	3-6	25	25	TRUE	12	SE
1I-50B	05/05/13	6-10	10	25	TRUE	3	W
1I-51A	05/15/13	3-6	25	25	TRUE	16	S
1I-51B	05/15/13	6-10	25	25			
1I-52A	05/03/13	3-6	6	25	TRUE	4	N
1I-52B	05/02/13	6-10	5	25	TRUE	4	N
1I-53A	05/06/13	3-6	15	25	TRUE	12	SE

TABLE 1
PHASE 2A INJECTION SUMMARY

ISCO Remediation Program
Former Champaign MGP Site
Champaign, Illinois 61820

Injection Location	Injection Date	Injection Interval	H2O2 (gallons)	Catalyst (gallons)	Surfaced	Surface Distance (feet)	Surface Direction
1I-53B	05/06/13	6-10	14	25	TRUE	12	SE
1I-54A	05/14/13	3-6	0	15	TRUE	15	SE
1I-54B	05/14/13	6-10	17	25	TRUE	15	SE
1I-55A	05/01/13	3-6	25	25			
1I-55B	05/01/13	6-10	25	25			
1I-56A	05/06/13	3-6	15	25			
1I-56B	05/06/13	6-10	25	25			
1I-57A	05/01/13	3-6	0	25	TRUE	12	SW
1I-57B	05/01/13	6-10	25	25	TRUE	12	SW
1I-58A	05/08/13	3-6	15	25	TRUE	22	W
1I-58B	05/08/13	6-10	12	25	TRUE	22	W
1I-59A	05/01/13	3-6	0	10	TRUE	15	SW
1I-59B	05/01/13	6-10	25	25	TRUE	15	SW
1I-60A	05/07/13	3-6	25	25			
1I-60B	05/07/13	6-10	15	25	TRUE	30	W
1I-61A	05/01/13	3-6	25	25	TRUE	9	E
1I-61B	05/01/13	6-10	25	25			
1I-62A	05/08/13	3-6	0	16	TRUE	14	SE
1I-62B	05/08/13	6-10	15	30	TRUE	14	SE
1I-63A	05/02/13	3-6	15	25	TRUE	1	W
1I-63B	05/01/13	6-10	25	25			
1I-64A							
1I-64B							
1I-64C	Injection location 1I-64 was eliminated because the location was within the excavation limits.						
1I-65A	Injection location 1I-65 was eliminated because the location was within the excavation limits.						
1I-65B	Injection location 1I-65 was eliminated because the location was within the excavation limits.						
1I-65C	Injection location 1I-65 was eliminated because the location was within the excavation limits.						
1I-66A	Injection location 1I-66 was eliminated because the location was within the excavation limits.						
1I-66B	Injection location 1I-66 was eliminated because the location was within the excavation limits.						
1I-66C	Injection location 1I-66 was eliminated because the location was within the excavation limits.						
1I-67A	05/04/13	3-6	25	25			
1I-67B	05/04/13	6-10	25	25			
1I-68A	05/06/13	3-6	25	25			
1I-68B	05/06/13	6-10	25	25			
1I-69A	05/14/13	3-6	25	25			

TABLE 1
PHASE 2A INJECTION SUMMARY

ISCO Remediation Program
Former Champaign MGP Site
Champaign, Illinois 61820

Injection Location	Injection Date	Injection Interval	H2O2 (gallons)	Catalyst (gallons)	Surfaced	Surface Distance (feet)	Surface Direction
1I-69B	05/14/13	6-10	25	25			
1I-70A	05/04/13	3-6	25	25			
1I-70B	05/04/13	6-10	25	25			
1I-71A	05/06/13	3-6	15	25	TRUE	6	N
1I-71B	05/06/13	6-10	25	25			
1I-72A	05/15/13	3-6	0	20	TRUE	10	S
1I-72A	05/14/13	3-6	25	25			
1I-72B	05/14/13	6-10	25	25			
1I-72B	05/15/13	6-10	25	25			
1I-73A	05/04/13	3-6	25	25			
1I-73B	05/04/13	6-10	25	25			
1I-73C	05/04/13	20-25	25	25			
1I-74A	05/06/13	3-6	5	25			
1I-74B	05/06/13	6-10	25	25			
1I-74C	05/06/13	20-25	25	25			
1I-75A	05/14/13	3-6	5	25			
1I-75B	05/14/13	6-10	3	25			
1I-75C	05/14/13	20-25	50	25	TRUE	18	W
1I-76A	Injection location 1I-76 was eliminated because the location was within the excavation limits.						
1I-76B	Injection location 1I-76 was eliminated because the location was within the excavation limits.						
1I-77A	Injection location 1I-77 was eliminated because the location was within the excavation limits.						
1I-77B	Injection location 1I-77 was eliminated because the location was within the excavation limits.						
1I-78A	05/03/13	3-6	10	25	TRUE	10	SW
1I-78B	05/03/13	6-10	20	25	TRUE	10	SW
1I-79A	05/05/13	3-6	25	25	TRUE	4	SE
1I-79B	05/05/13	6-10	25	25			
1I-79C	05/16/13	20-25	50	50			
1I-80A	05/07/13	3-6	25	25			
1I-80B	05/07/13	6-10	25	25			
1I-80C	05/07/13	20-25	50	50			
1I-81A	05/03/13	3-6	25	25			
1I-81B	05/02/13	6-10	0	25			
1I-81B	05/03/13	6-10	25	25			
1I-81C	05/15/13	20-25	50	50			
1I-82A	05/05/13	3-6	25	25			

TABLE 1
PHASE 2A INJECTION SUMMARY

ISCO Remediation Program
Former Champaign MGP Site
Champaign, Illinois 61820

Injection Location	Injection Date	Injection Interval	H2O2 (gallons)	Catalyst (gallons)	Surfaced	Surface Distance (feet)	Surface Direction
1I-82B	05/05/13	6-10	25	25			
1I-83A	05/07/13	3-6	3	25			
1I-83B	05/07/13	6-10	25	25			
1I-84A	05/03/13	3-6	8	25			
1I-84B	05/02/13	6-10	0	25			
1I-84B	05/03/13	6-10	25	25			
1I-85A	Injection location 1I-85 was eliminated because the location was within the excavation limits.						
1I-85B	Injection location 1I-85 was eliminated because the location was within the excavation limits.						
1I-86A	Injection location 1I-86 was eliminated because the location was within the excavation limits.						
1I-86B	Injection location 1I-86 was eliminated because the location was within the excavation limits.						
1I-87A	Injection location 1I-87 was eliminated because the location was within the excavation limits.						
1I-87B	Injection location 1I-87 was eliminated because the location was within the excavation limits.						
1I-88A	05/03/13	3-6	0	15	TRUE	12	SW
1I-88B	05/03/13	6-10	25	25			
1I-89A	05/04/13	3-6	15	25	TRUE	23	SW
1I-89B	05/04/13	6-10	15	25	TRUE	23	SW
1I-90A	05/06/13	3-6	25	25			
1I-90B	05/06/13	6-10	25	25			
1I-91A	05/03/13	3-6	21	25	TRUE	2	NW
1I-91B	05/03/13	6-10	20	25	TRUE	9	S
1I-92A	05/04/13	3-6	25	25			
1I-92B	05/04/13	6-10	25	25			
1I-93A	05/03/13	3-6	0	0			
1I-93B	05/03/13	6-10	15	25			
1I-94C	05/14/13	20-25	50	50			
1I-95C	05/16/13	20-25	50	50			
1I-96C	05/15/13	20-25	50	50			
1I-97C	05/03/13	20-25	25	25			
1I-98A	05/08/13	3-6	6	25			
1I-98B	05/08/13	6-10	25	25			
1I-99A	05/14/13	3-6	5	25			
1I-99B	05/14/13	6-10	10	25			
1I-100A	05/07/13	3-6	0	0			
1I-100B	05/07/13	6-10	25	25			
1I-101A	05/08/13	3-6	6	25			

TABLE 1
PHASE 2A INJECTION SUMMARY

ISCO Remediation Program
Former Champaign MGP Site
Champaign, Illinois 61820

Injection Location	Injection Date	Injection Interval	H2O2 (gallons)	Catalyst (gallons)	Surfaced	Surface Distance (feet)	Surface Direction
1I-101B	05/08/13	6-10	25	25			
1I-102A	05/16/13	3-6	25	25	TRUE	9	S
1I-102B	05/16/13	6-10	25	25			
1I-103A	05/07/13	3-6	25	25	TRUE	6	SE
1I-103B	05/07/13	6-10	25	25			
1I-104A	05/15/13	3-6	25	25			
1I-104B	05/15/13	6-10	25	25			
1I-104D	05/15/13	36-44	50	50			
1I-105A	05/16/13	3-6	25	25			
1I-105B	05/15/13	6-10	25	25			
1I-105D	05/16/13	36-44	50	50			
1I-106A	05/15/13	3-6	25	25			
1I-106B	05/15/13	6-10	25	25			
1I-106D	05/15/13	36-44	50	50			
1I-107A	05/14/13	3-6	12	25	TRUE	2	E
1I-107B	05/14/13	6-10	25	25			
1I-108A	05/07/13	3-6	15	25	TRUE	3	NW
1I-108B	05/07/13	6-10	25	25			
TOTAL			**4,481**	**5,183**			

Table 2
BENZENE CONCENTRATIONS IN SOIL

ISCO Program Sample Locations
Former Champaign MGP Site
Champaign, Illinois 61820

Soil Sample Location ID	Sample Collection Depth (feet bgs)	Post-Phase 2A Injection	Post-Phase 2B Injection		Post-Phase 2C Injection		
		5/23/2013 (mg/kg)	<date> (mg/kg)	vs Post-Phase 2A	<date> (mg/kg)	vs Post-Phase 2A	vs Post-Phase 2B
CSA-01	5.0-6.0	0.0037		-		-	-
	7.5-8.5	0.0057		-		-	-
CSA-02	5.0-6.0	< **8.24**		-		-	-
	7.0-8.0	< **138**		-		-	-
CSA-03	5.0-6.0	< **36.4**		-		-	-
	9.0-10.0	**33.3**		-		-	-
CSA-04	5.0-6.0	**0.9**		-		-	-
	8.0-9.0	< **47.5**		-		-	-
CSA-05	4.5-5.5	**7.54**		-		-	-
	9.0-10.0	< **189**		-		-	-
CSA-06	5.0-6.0	0.168		-		-	-
	9.0-10.0	< **48.8**		-		-	-
CSA-07	5.0-6.0	**19.9**		-		-	-
	7.5-8.5	**2.87**		-		-	-
CSA-08	4.5-5.5	**3.13**		-		-	-
	8.5-9.5	0.734		-		-	-
CSA-09	5.0-6.0	< 0.027		-		-	-
	8.0-9.0	< 0.192		-		-	-
CSA-10	5.0-6.0	**4.12**		-		-	-
	8.5-9.5	0.426		-		-	-
CSA-11	5.0-6.0	0.307		-		-	-
	8.0-9.0	< 0.482		-		-	-
CSA-12	4.0-5.0	**2.43**		-		-	-
	9.0-10.0	**1.89**		-		-	-
CSA-13	5.0-6.0	**2.31**		-		-	-
	9.0-10.0	< **1.84**		-		-	-
CSA-14	4.0-5.0	**2.12**		-		-	-
	7.5-8.5	0.101		-		-	
	20.5-21.5	< **0.842**		-		-	-
CSA-15	5.0-6.0	0.712		-		-	-
	8.0-9.0	0.456		-		-	
	20.5-21.5	**28**		-		-	-

Table 2
BENZENE CONCENTRATIONS IN SOIL

ISCO Program Sample Locations
Former Champaign MGP Site
Champaign, Illinois 61820

Soil Sample Location ID	Sample Collection Depth (feet bgs)	Post-Phase 2A Injection	Post-Phase 2B Injection		Post-Phase 2C Injection		
		5/23/2013 (mg/kg)	<date> (mg/kg)	vs Post-Phase 2A	<date> (mg/kg)	vs Post-Phase 2A	vs Post-Phase 2B
CSA-16	4.0-5.0	**3.36**		-		-	-
	7.0-8.0	**1.02**		-		-	-
CSA-17	5.0-6.0	**5.65**		-		-	-
	7.0-8.0	0.499		-		-	-
CSA-18	3.5-4.5	< **5.28**		-		-	-
	7.0-8.0	< **1.77**		-		-	-
CSA-19	22.5-23.5	< **3.58**		-		-	-
CSA-20	22.0-23.0	**21.1**		-		-	-
CSA-21	5.0-6.0	< 0.0221		-		-	-
	9.0-10.0	< 0.17		-		-	-
CSA-22	5.0-6.0	< 0.0213		-		-	-
	7.0-8.0	< 0.0958		-		-	-
CSA-23	5.0-6.0	< 0.0779		-		-	-
	9.0-10.0	**7.27**		-		-	-
Average - 3.0-6.0 ft.		**4.9**	#DIV/0!	**-**	#DIV/0!	**-**	**-**
Average - 6-10 ft		**22.7**	#DIV/0!	**-**	#DIV/0!	**-**	**-**
Average - 20-25 ft		**13.4**	#DIV/0!	**-**	#DIV/0!	**-**	**-**

NOTES

mg/kg = Miilligrams per kilogram

ND = Not detected above detection limit

21.1 = Value in bold (RED) exceeds Tier 1 Remediation Objectives for Benzene of 0.8 mg/kg.

Table 3
NAPHTHALENE CONCENTRATIONS IN SOIL

ISCO Program Sample Locations
Former Champaign MGP Site
Champaign, Illinois 61820

Soil Sample Location ID	Sample Collection Depth (feet bgs)	Post-Phase 2A Injection	Post-Phase 2B Injection		Post-Phase 2C Injection		
		5/23/2013 (mg/kg)	<date> (mg/kg)	vs Post-Phase 2A	<date> (mg/kg)	vs Post-Phase 2A	vs Post-Phase 2B
CSA-01	5.0-6.0	0.006		-		-	-
	7.5-8.5	0.005		-		-	-
CSA-02	5.0-6.0	10.6		-		-	-
	7.0-8.0	**1,750**		-		-	-
CSA-03	5.0-6.0	**1,710**		-		-	-
	9.0-10.0	**213**		-		-	-
CSA-04	5.0-6.0	1.55		-		-	-
	8.0-9.0	**300**		-		-	-
CSA-05	4.5-5.5	4.09		-		-	-
	9.0-10.0	**511**		-		-	-
CSA-06	5.0-6.0	0.73		-		-	-
	9.0-10.0	**1,450**		-		-	-
CSA-07	5.0-6.0	17		-		-	-
	7.5-8.5	94		-		-	-
CSA-08	4.5-5.5	47.4		-		-	-
	8.5-9.5	7.81		-		-	-
CSA-09	5.0-6.0	0.059		-		-	-
	8.0-9.0	69.1		-		-	-
CSA-10	5.0-6.0	1.8		-		-	-
	8.5-9.5	15.2		-		-	-
CSA-11	5.0-6.0	128		-		-	-
	8.0-9.0	12.7		-		-	-
CSA-12	4.0-5.0	83.4		-		-	-
	9.0-10.0	79		-		-	-
CSA-13	5.0-6.0	111		-		-	-
	9.0-10.0	90		-		-	-
CSA-14	4.0-5.0	142		-		-	-
	7.5-8.5	12.8		-		-	
	20.5-21.5	35.3		-		-	-
CSA-15	5.0-6.0	114		-		-	-
	8.0-9.0	**200**		-		-	
	20.5-21.5	**194**		-		-	-

Table 3
NAPHTHALENE CONCENTRATIONS IN SOIL

ISCO Program Sample Locations
Former Champaign MGP Site
Champaign, Illinois 61820

Soil Sample Location ID	Sample Collection Depth (feet bgs)	Post-Phase 2A Injection	Post-Phase 2B Injection		Post-Phase 2C Injection		
		5/23/2013 (mg/kg)	<date> (mg/kg)	vs Post-Phase 2A	<date> (mg/kg)	vs Post-Phase 2A	vs Post-Phase 2B
CSA-16	4.0-5.0	137		-		-	-
	7.0-8.0	48.7		-		-	-
CSA-17	5.0-6.0	124		-		-	-
	7.0-8.0	2.85		-		-	-
CSA-18	3.5-4.5	**417**		-		-	-
	7.0-8.0	95.9		-		-	-
CSA-19	22.5-23.5	66.8		-		-	-
CSA-20	22.0-23.0	156		-		-	-
CSA-21	5.0-6.0	0.305		-		-	-
	9.0-10.0	36.5		-		-	-
CSA-22	5.0-6.0	0.634		-		-	-
	7.0-8.0	0.344		-		-	-
CSA-23	5.0-6.0	2.38		-		-	-
	9.0-10.0	6.59		-		-	-
Average - 3.0-6.0 ft.		**145.4**	#DIV/0!	**-**	#DIV/0!	**-**	**-**
Average - 6-10 ft		**237.9**	#DIV/0!	**-**	#DIV/0!	**-**	**-**
Average - 20-25 ft		**113.0**	#DIV/0!	**-**	#DIV/0!	**-**	**-**

NOTES

mg/kg = Miilligrams per kilogram

ND = Not detected above detection limit

194 = Value in bold (RED) exceeds Tier 1 Remediation Objectives for Naphthalene of 170 mg/kg.

IN-SITU CHEMICAL OXIDATION REMEDIATION PROGRAM INTERIM REPORT – PHASE 2B

SITE:

CHAMPAIGN FORMER MGP SITE
CHAMPAIGN, ILLINOIS

JULY 24, 2013

PREPARED FOR:

PSC INDUSTRIAL OUTSOURCING, LP
210 WEST SAND BANK ROAD
COLUMBIA, ILLINOIS 62236

PROJECT NO. 901144

PREPARED BY:

IN-SITU OXIDATIVE TECHNOLOGIES, INC.
6452 FIG STREET, SUITE C
ARVADA, COLORADO 80004

WWW.INSITUOXIDATION.COM

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1.0 INTRODUCTION

In-Situ Oxidative Technologies, Inc. (ISOTEC) was retained by PSC Industrial Outsourcing, LP (PSC) to conduct an in-situ chemical oxidation (ISCO) remediation program at the former Manufactured Gas Plant (MGP) located at 308 N. 5th Street, in Champaign, Illinois (**Figure 1**). In this report the former Champaign MGP site is also identified as the "site".

The purpose of the ISCO remediation program is to address the perimeter of the site where concentrations of organic constituents of concern (COCs) exceed Tier 1 Remedial Objectives (ROs) for the soil inhalation exposure pathway in the upper 10 feet of soil. The remediation technology chosen for the site was ISOTEC's proprietary modified Fenton's reagent (MFR) technology.

The field activities conducted by ISOTEC to date have occurred during two injection events (Phase 2A and Phase 2B) between April 29 and June 26, 2013. Field operations completed by ISOTEC during the Phase 2A injection event were detailed in the *In-Situ Chemical Oxidation Remediation Program Interim Report- Phase 2A*, dated June 18, 2013.

This *In-Situ Chemical Oxidation Remediation Program Interim Report- Phase 2B* describes the field activities completed by ISOTEC during the second injection event (Phase 2B) of the remediation program. The field activities were performed in accordance with the *In-Situ Chemical Oxidation Work Plan* that was prepared by PSC and submitted to the Illinois Environmental Protection Agency (IEPA) in March 2013.

1.1 SITE-SPECIFIC CHARACTERISTICS

The ISCO treatment area occupies approximately 35,000 square feet of the 2.5 acre site and encompasses the western and northern portion of the site perimeter. The extent of the treatment area was determined from post-excavation soil confirmation sample analytical data.

According to data provided by PSC, the remediation site has vadose and saturated zone soils impacted by inorganics, metals, volatile aromatics and polycylic aromatic hydrocarbons (PAHs). The primary COCs at the site are benzene, toluene, ethylbenzene, and xylenes (BTEX) and naphthalene.

The treatment interval for the ISCO remediation program is from 3 to 10 feet. Two additional treatment intervals, 20 to 25 feet bgs and 36 to 44 feet bgs, were identified by PSC at three limited areas within the designated ISCO remediation treatment area. The first area is located along the northern perimeter and has exceedances in soils from 3 to 10 feet bgs and 20 to 25 feet bgs. The second area is located in the middle portion of the site and has soil exceedances present from 20 to 25 feet bgs. The third area is located along the southern perimeter of the site and has soil exceedances from 3 to 10 feet bgs

and potential groundwater exceedances present at approximately 36 to 44 feet bgs. The ISCO treatment areas are illustrated on **Figure 1**.

Review of lithologic logs for soil borings advanced across the site indicate that the subsurface soils consist of fill material from grade surface to depths of 3 to 4 feet bgs. This surficial fill unit along the perimeter of the site is underlain by a clay and silty-clay unit to a depth of approximately 16 to 20 feet bgs. Below this unit is a weathered till unit present from 16 feet bgs to a maximum depth explored of 33 feet bgs. This weathered till unit is comprised of silty-clay and sandy-clay with some gravel and fine-grained sand. According to PSC, depth to groundwater ranges from 2 to 10 feet bgs.

1.2 ISCO REMEDIATION PROGRAM OBJECTIVES

The objective of the ISCO remediation program is to reduce benzene, ethylbenzene, toluene, xylenes and naphthalene concentrations in the upper 10 feet of soil to their respective Tier 1 ROs for the soil inhalation exposure pathway.

The Tier 1 ROs for the soil inhalation pathway are:

- Benzene - 0.8 mg/kg
- Ethylbenzene - 400 mg/kg
- Toluene - 650 mg/kg
- Xylenes - 320 mg/kg
- Naphthalene - 170 mg/kg

Based on post-excavation soil confirmation data and past experience, it was determined that multiple injection events would be required to reach the remediation program objective.

1.3 ISCO REMEDIATION PROGRAM DESIGN

ISOTEC proposed to utilize neutral pH chelated iron catalyst and stabilized 8% hydrogen peroxide to implement an MFR ISCO program. ISOTEC was to utilize direct-push technology (DPT) to introduce reagents into the subsurface at the site. The ISCO program was designed to address vadose zone and saturated zone soils within the treatment areas specified by PSC (**Figure 1**).

The design was based upon data supplied by PSC and had several potentially limiting factors to implementation success. Limiting factors at the site included the presence of previous investigative penetrations and the fact that the majority of the target treatment interval is shallow vadose zone soils (3 to 10 feet bgs). These factors, in unison, presented potential problems for the injection of modified Fenton's reagent. The presence of previous penetrations in the treatment area may provide vertical conduits through which produced gas can travel to the surface. Surfacing was a significant issue during the Phase 1 2009 ISCO pilot test and would most certainly occur during Phase 2. Chemical oxidation remediation is a dissolved phase/saturated zone technology. Since the majority of the Phase 2 target treatment interval is shallow vadose zone soils,

ISOTEC would have to attempt to saturate the vadose zone soils with reagent in order to achieve the project objectives, which would most likely result in varying amounts of surfacing. In order to achieve project success, the site's limiting factors were taken into account when the injection program was designed.

Based on review of site data provided by PSC, ISOTEC anticipated that two full-scale injection applications and one reduced application would be required. ISOTEC assumed that the full-scale ISCO remediation program would be designated Phase 2 and that each injection event would be given the following alphabetical designations:

- Phase 2A – First Injection Event (Entire Treatment Area)
- Phase 2B – Second Injection Event (Entire Treatment Area)
- Phase 2C – Third Injection Event (50% of the Treatment Area)

During Phase 2A, also referred to as "first event", temporary injection screens were to be installed at approximately 120 injection locations within the on-site perimeter treatment areas. Two separate direct-push rods were to be installed at each location; one screen deployed from approximately 3 to 6 feet bgs to target the upper shallow vadose zone soils and the second screen deployed from approximately 6 to 10 feet bgs to target the lower shallow vadose/saturated zone soils.

The injection locations within the on-site perimeter ISCO treatment areas would be spaced approximately 15 feet apart based on an anticipated 7.5-foot radius of influence (ROI). The actual spacing for the locations may vary due to underground utilities, above-ground impediments and other associated field conditions. The injection locations were to be placed on a triangular grid-like pattern across the treatment area. The subsequent injection event locations (Phase 2B and Phase 2C) would be shifted laterally from the First event locations.

The effectiveness of the remediation program was to be determined by comparing the concentrations of soil samples collected prior to injection activities with the concentrations of soil samples collected during post-injection sampling events. The post-injection soil samples were to be collected from the 3 to 6 feet bgs interval and the 6 to 10 feet bgs interval at multiple selected locations within the treatment area(s). The post injection performance soil samples would be collected at locations immediately adjacent to the baseline boring locations and from the same associated depth intervals. This would allow for the most direct comparison possible of concentration reductions as a result of the injection application. In the event that a specific post-injection soil sample reports all of the target COC concentrations at or below the Tier 1 ROs for the soil inhalation exposure pathway, that specific boring location and/or depth interval would no longer be sampled and injections in the immediate vicinity of the boring(s) and/or depth interval(s) would be eliminated from the subsequent injection applications. These soil sampling and evaluation procedures would be repeated following each of the injection applications.

2.0 ISCO REMEDIATION PROGRAM

To date, ISOTEC has conducted two injection events at the site from April 29 to June 26, 2013. Specifically, Phase 2A was conducted from April 29 to May 15, 2013 and Phase 2B was conducted from June 19 through 26, 2013.

Field operations completed by ISOTEC during the Phase 2B injection event included equipment mobilization and demobilization, temporary injection screen installations and abandonments, reagent preparation, and reagent injections. ISOTEC injected reagents into target treatment intervals within the ISCO treatment areas at 72 injection locations through 128 injection screens. The Phase 2B injection locations are shown on **Figure 2**.

It is important to note that a total of 94 injection locations (2I-1 through 2I-94) are identified on the Phase 2B Injection Location Map (**Figure 2**). As detailed in the *In-Situ Chemical Oxidation Remediation Program Interim Report- Phase 2A*, dated June 18, 2013, multiple injection locations were eliminated due to their proximity to confirmation soil sample locations that reported benzene and/or naphthalene concentrations in soil below Tier 1 RO's. The Phase 2B injection locations that were eliminated are illustrated on **Figure 2** and include: 2I-1, 2I-2, 2I-14, 2I-15, 2I-38, 2I-42, 2I-43, 2I-46, 2I-47, 2I-48, 2I-51, 2I-52, 2I-53, 2I-56, 2I-57, 2I-58 and 2I-92. Additionally, injection locations 2I-12, 2I-24, 2I-26 and 2I-27 were not injected into due to the occurrence of surfacing in the immediate vicinity of confirmation soil boring location CS-06.

ISOTEC utilized either one or two injection screens to deliver reagents across the target treatment interval(s) at each of the 72 injection locations during the second event. For identification purposes, each injection screen was labeled with an injection event identifier ("2I" for the Phase 2B injection event), followed by an injection location number, and ending in an injection interval identifier ("A", "B", "C" or "D"). The "A" designation indicates a 3 to 6 feet bgs screen, the "B" designation indicates a 6 to 10 feet bgs screen, the "C" designation indicates a 20 to 25 feet bgs screen, and the "D" designation indicates a 36 to 44 feet bgs screen.

2.1 FIELD METHODS

ISOTEC injection screens were installed with a DPT drill rig operated by Bulldog Drilling at specific locations across the treatment area. At each location, ISOTEC injection screens were used to deliver reagents to the target treatment interval(s). In general, Bulldog Drilling advanced a direct-push rod with an expendable point to a predetermined depth at each injection location. A specially designed injection screen was then placed in each rod. The direct-push rods were retracted to expose the preferred length of injection screen. ISOTEC reagents were injected through each rod and injection screen into the subsurface. The following sections detail the injection screen installation and abandonment (**Section 2.1.1**), reagent preparation procedures (**Section 2.1.2**), and injection method during the injection event (**Section 2.1.3**).

2.1.1 Injection Screen Installation and Abandonment

Temporary injection screens installed with direct-push technology (DPT) were used to deliver ISOTEC's modified Fenton's reagents into the target treatment depth intervals. The equipment and tooling provided by Bulldog Drilling included a track-mounted AMS drill rig, 1.25-inch and 1.5-inch diameter direct-push drill rods, extension rods used to deploy and retrieve the injection screens, and decontamination equipment. Tooling provided by ISOTEC included specialized 0.5-inch diameter injection screens designed to pass through the center of the drill rods, specialized point holders designed to hold the injection screens in place within the target injection interval, and 1-inch expendable drive points.

Bulldog Drilling (Bulldog) began each screen installation by advancing drill rods to a desired depth at each injection location. Once the proper depth was reached, an injection screen was lowered through the center of the rods to the bottom of the rod string and then held in place with extension rods. The rod string was then slowly retracted until the entire length of injection screen was exposed across the specific target treatment interval. ISOTEC reagents were then injected through the newly installed temporary injection screen and into the subsurface. A direct-push injection screen schematic illustrating the A- and B-screen installation is included as **Figure 3**.

Following daily injection activities, ISOTEC oversaw the proper abandonment of each injection location by Bulldog. After removing the rod string, each borehole was abandoned by slowing hand pouring 3/8-inch bentonite chips from the bottom of the borehole to approximately 6-inches bgs. The bentonite was hydrated and the borehole was then completed with a concrete patch.

2.1.2 Reagent Preparation

ISOTEC reagents consist of a neutral pH chelated ferrous iron solution (catalyst) and dilute stabilized hydrogen peroxide (oxidizer). During Phase 2B, ISOTEC utilized an oxidizer concentration of 8%. Hydrogen peroxide at a concentration of 30% was shipped directly to the site immediately prior to field injection activities and stored in DOT-approved 55-gallon drums. The 30% hydrogen peroxide was diluted to an 8% concentration in 300-gallon polyethylene bulk tanks with water obtained from a fire hydrant located in the southwest corner of the site. ISOTEC's proprietary catalyst is a pH buffered (pH of approximately 7) ferrous iron complex. The catalyst components were shipped to the site in dry form and mixed with water in 300-gallon polyethylene bulk tanks. A reagent mixing schematic is included as **Figure 4**.

2.1.3 Injection Method

The injections were accomplished using air-operated double-diaphragm pumps, flow meters, polyvinyl chloride (PVC) reinforced tubing, cam-lock valves & fittings, and steel wellhead assemblies. The wellhead assemblies, with pressure gauges and relief valves, were attached to the uppermost drill rod at each injection screen location. The wellhead assemblies were attached with PVC reinforced tubing to an air-operated diaphragm pump

and from the pump to either the oxidizer, catalyst or water tanks with additional PVC tubing. Oxidizer, catalyst and water were conveyed through the PVC tubing using a pneumatic diaphragm pump with air supplied by a portable air compressor.

In general, the injection process was similar for each injection screen. First, water was injected, followed by catalyst, a second water flush to clear the injection equipment of catalyst, then the oxidizer, and a final water flush to clear the injection equipment of oxidizer. An injection method schematic detailing the injection process is included as **Figure 5**.

Reagent volumes, flow rates, and injection pressures were monitored at regular intervals and recorded in a field log during the injection process at each injection screen. Reagent volumes and flow rates were measured with battery-operated turbine flow meters/totalizers. Injection pressures were measured with pressure gauges attached to the wellhead assemblies.

2.2 PHASE 2B INJECTION FIELD ACTIVITIES

During the Phase 2B injection event, ISOTEC attempted to inject catalyst and oxidizer into 128 injection screens installed at 72 locations (2I-2 through 2I-13, 2I-16 through 2I-23, 2I-25, 2I-29 through 2I-37, 2I-39 through 2I-41, 2I-44, 2I-45, 2I-49, 2I-50, 2I-54, 2I-55, 2I-59 through 2I-91, 2I-93 and 2I-94). At locations where multiple injection screens were required in order to target separate treatment intervals, the individual screens were installed in separate boreholes spaced approximately two feet apart. The majority of the Phase 2B injection locations utilized two injection screens; the A-screen deployed from 3 to 6 feet bgs and the B-screen deployed from 6 to 10 feet bgs. In addition to utilizing either an A-screen or a B-screen, five injection locations (2I-68, 2I-69, 2I-70, 2I-73, and 2I-74) utilized a second injection screen that was deployed from 20 to 25 feet bgs (C-screen). Injection locations 2I-84 through 2I-87 utilized only one injection screen deployed from 20 to 25 feet bgs (D-screen). Injection locations 2I-88 through 2I-91 utilized only one injection screen deployed from 36 to 44 feet bgs .

ISOTEC was able to inject 8,175 gallons of reagent (catalyst and oxidizer) into the 128 injection screens (61 A-screens, 53 B-screens, 6 C-screens and 4 D-screens) installed during the Phase 2B injection event. Surfacing of reagent occurred at approximately 55% of the A-screens, approximately 52% of the B-screens and 56% of the C-screens. Surfacing is described as the migration of gasses, groundwater or reagent to the ground surface through natural or man-made conduits in the subsurface. When surfacing occurred, the injection process at the screen observed to be surfacing was stopped and no further injection activities were attempted at that particular injection screen location. Surfacing did not occur while injecting into the D-screens.

The average volume of total reagent (oxidizer and catalyst) injected into the A-screens was approximately 47 gallons per screen. The average volume of total reagent injected into the B-screens was approximately 58 gallons per screen. The average volume of total

reagent injected into the C-screens was approximately 87 gallons per screen. The average volume of total reagent injected into the D-screens was 315 gallons per screen.

Reagent flow rates ranged from approximately 1.8 to 2.8 gallons per minute (gpm). Injection pressures ranged from approximately 0 to 30 pounds per square inch (psi) during injection activities. A summary of the volumes injected at each location during the first event is presented in **Table 1**.

3.0 SOIL ANALYTICAL RESULTS

As detailed in the *In-Situ Chemical Oxidation Remediation Program Interim Report-Phase 2A*, dated June 18, 2013, the Post-Phase 2A analytical data indicated benzene and naphthalene on soil across the 3 to 10 feet bgs interval at several areas of the treatment area met the Tier 1 ROs. Specifically, the soil samples collected from the 3 to 6 feet bgs and 6 to 10 feet bgs intervals at confirmation sample locations CSA-01, CSA-09, CSA-11, CSA-21 and CSA-22 did not report benzene and naphthalene concentrations above the Tier 1 ROs. The Post-Phase 2A analytical data also indicated that specific intervals at various confirmation soil boring locations met the Tier 1 ROs. Specifically, the 3 to 6 feet bgs interval at boring locations CSA-06, CSA-15 and CSA-23 did not report benzene and naphthalene concentrations above Tier 1 ROs. The 6 to 10 feet bgs interval at boring locations CSA-08, CSA-10, CSA-14 and CSA-17 also met the Tier 1 ROs. As a result, confirmation soil borings were not collected from the locations and/or specific intervals during the Post-Phase 2B confirmation sampling event.

A total of 29 samples were collected by PSC from 18 confirmation soil boring locations during the Post-Phase 2B sampling event. Post-Phase 2B confirmation soil samples were collected at sample locations CSB-02 through CSB-08, CSB-10, CSB-12 through CSB-20 and CSB-23 within the ISCO treatment areas (**Figure 1**). Samples were collected from specific depths within the 3 to 6 feet bgs interval and 6 to 10 feet bgs interval at boring locations CSB-02 through CSB-05, CSB-07, CSB-12, CSB-13, CSB-16 and CSB-18. Samples were collected from specific depths only within the 3 to 6 feet bgs interval at boring locations CSB-06, CSB-08, CSB-10 and CSB-17. Samples were collected from specific depths only within the 6 to 10 feet bgs interval at boring locations CSB-06 and CSB-23. Samples were collected from specific depths within the 3 to 6 feet bgs interval and 20 to 25 feet bgs interval at boring location CSB-14. Samples were collected from specific depths within the 6 to 10 feet bgs interval and 20 to 25 feet bgs interval at boring location CSB-15. Soil samples were collected from a specific depth interval within the 20 to 25 feet bgs interval at boring locations CSB-19 and CSB-20.

Soil confirmation samples were collected using a DPT drill rig operated by Bulldog Drilling. Samples were collected using macrocore samplers with acetate liners, and drilling implements were decontaminated between samples. An onsite geologist selected the sample depths within the target intervals based upon field observations and PID readings. The geologist wore a new pair of clean nitrile gloves to collect each sample to avoid cross contamination. The soil confirmation samples were placed into laboratory provided containers and labeled according to sample location, depth, date, time, and analytical method upon collection. The samples were placed into coolers with ice and delivered to Teklab, Inc. for analysis under proper chain of custody procedures.

The soil samples were analyzed for the four BTEX compounds using SW-846 Method 8260 and naphthalene using SW-846 Method 8270 SIM. The COCs at the site that exceed the Tier 1 Remediation Objectives are benzene and naphthalene. Therefore, the subsequent discussion is focused on these compounds. The soil analytical data is

presented in **Section 3.1**. Since baseline soil samples were not collected, the Post-Phase 2A soil analytical data will be used for comparison purposes with the Phase 2B sampling event analytical data.

The soil sample collection dates and analytical data for benzene are included in **Table 2**. The soil sample collection dates and analytical data for naphthalene are included in **Table 3**.

3.1 POST-PHASE 2B SAMPLING EVENT: JULY 1 AND 2, 2013

3.1.1 Benzene

3.1.1.1 3 to 6 feet bgs

The average Post-Phase 2B benzene soil concentration in the 3 to 6 feet bgs interval was approximately 11.3 milligrams per kilogram (mg/kg). Post-Phase 2B benzene concentrations above varying detection limits (due to dilution) ranged from 0.002 mg/kg at CSB-05 (4.5-5.5) to 44.3 mg/kg at CSB-03 (5.0-6.0).

Three of the 13 Post-Phase 2B confirmation soil locations sampled at this depth were below the Tier 1 ROs: CSB-05 (4.5-5.5), CSB-08 (4.5-5.5) and CSB-10 (5.0-6.0).

3.1.1.2 6 to 10 feet bgs

The average Post-Phase 2B soil benzene concentration in the 6 to 10 feet bgs interval was approximately 20.3 mg/kg. Reported Post-Phase 2B benzene concentrations above detection limits ranged from 0.156 mg/kg at CSB-16 (7.0-8.0) to 64.8 mg/kg at CSB-05 (9.0-10.0).

Four of the 12 confirmation soil locations sampled at this depth were below the Tier 1 ROs: CSB-15 (8.0-9.0), CSB-16 (7.0-8.0), CSB-18 (7.0-8.0) and CSB-23 (9.0-10.0).

3.1.1.3 20 to 25 feet bgs

The average Post-Phase 2B soil benzene concentration in the 20 to 25 feet bgs interval was approximately 3.7 mg/kg. Post-Phase 2B soil benzene concentrations in the four samples collected from the 20 to 25 feet bgs interval were reported at 2.99 mg/kg at CSB-14 (20.5-21.5), 0.804 mg/kg at CSB-15 (20.5-21.5), 6.72 mg/kg at CSB-19 (22.5-23.5) and 4.33 mg/kg at CSB-20 (9.0-10.0).

3.1.2 Naphthalene

3.1.2.1 3 to 6 feet bgs

The average naphthalene soil benzene concentration in the 3 to 6 feet bgs interval was approximately 155.1 mg/kg. Post-Phase 2B naphthalene soil concentrations above detection limits ranged from 1.67 mg/kg at CSB-10 (5.0-6.0) to 840 mg/kg at CSB-03 (5.0-6.0).

Nine of the 13 confirmation soil locations sampled at this depth were below the Tier 1 ROs: CSB-02 (5.0-6.0), CSB-04 (5.0-6.0), CSB-05 (4.5-5.5), CSB-07 (5.0-6.0), CSB-08 (4.5-5.5), CSB-10 (5.0-6.0), CSB-12 (4.0-5.0), CSB-16 (4.0-5.0) and CSB-17 (5.0-6.0).

3.1.2.2 6 to 10 feet bgs

The average Post-Phase 2B naphthalene soil concentration in the 6 to 10 feet bgs interval was approximately 310.7 mg/kg. Post-Phase 2B naphthalene soil concentrations ranged from 8.27 mg/kg at CSB-07 (7.5-8.5) to 1,260 mg/kg at CSB-04 (8.0-9.0).

Six of the 12 confirmation soil locations sampled at this depth were below the Tier 1 ROs CSB-06 (9.0-10.0), CSB-07 (7.5-8.5), CSB-13 (9.0-10.0), CSB-15 (8.0-9.0), CSB-16 (7.0-8.0) and CSB-18 (7.0-8.0).

3.1.2.3 20 to 25 feet bgs

The average Post-Phase 2B naphthalene soil concentration in the 20 to 25 feet bgs interval was approximately 25.3 mg/kg. Reported Post-Phase 2B naphthalene soil concentrations collected from the 20 to 25 feet bgs interval were reported at 41.4 mg/kg at CSB-14 (20.5-21.5), 9.14 mg/kg at CSB-15 (20.5-21.5), 49.48 mg/kg at CSB-19 (22.5-23.5) and 1.17 mg/kg at CSA-20 (22.0-23.0).

All four confirmation soil boring at this depth were below Tier 1 ROs.

4.0 CONCLUSIONS

The objective of the ISCO remediation program using ISOTEC's Fenton's-based oxidation process is to reduce COCs in soil to below Tier 1 ROs for the soil inhalation pathway in the upper 10 feet of soil.

To achieve this goal, ISOTEC estimated that three separate injection mobilizations would be required. To date, ISOTEC has completed two of the three injection events at the site.

As stated in **Section 1.3** above, the effectiveness, and therefore progress, of the remediation program was to be determined by comparing the concentrations of soil samples collected prior to injection activities with the concentrations of soil samples collected during post-injection sampling events. If a specific post-injection soil sample reports all of the target COC concentrations at or below the Tier 1 ROs for the soil inhalation exposure pathway, that specific boring location and/or depth interval would no longer be sampled and injections in the immediate vicinity of the boring(s) and/or depth interval(s) would be eliminated from the subsequent injection applications.

4.1 ISCO PARAMETERS AND EFFECTIVENESS

The effectiveness of the ISCO remediation program, and therefore the parameters (volumes, concentrations, rates, pressures and ROI) used, can be evaluated by changes in benzene and naphthalene in soil concentrations collected from the 18 Post-Phase 2B confirmation soil boring locations.

Review of the Post-Phase 2B analytical data indicates that the ISOTEC process continues to be effective at reducing benzene and naphthalene concentrations in soil to below the Tier 1 ROs. Specifically, the 3 to 6 feet bgs interval at boring locations CS-05, CS-08 and CSA-10 did not report benzene and naphthalene concentrations above 0.8 mg/kg and 170 mg/kg, respectively. The 6 to 10 feet bgs interval at boring locations CS-15, CS-16 and CS-18 also met the Tier 1 ROs. The 20 to 25 feet bgs interval at boring location CS-15 also reported benzene and naphthalene concentrations that meet the Tier 1 ROs.

4.2 RECOMMENDATIONS

Based on the results of the Phase 2B injection event, ISOTEC recommends continuing with the original injection design for the remediation program. ISOTEC recommends no changes to the ISCO parameters for the next injection event as they appear to be sufficient for contaminant mass reduction at the site.

Based on the IEPA approved *In-Situ Chemical Oxidation Work Plan* prepared by PSC, ISOTEC recommends the continued elimination of those injection locations that are adjacent to the confirmation soil boring locations that currently meet Tier 1 ROs. Specifically, in addition those locations and/or screened intervals eliminated as a result of the Phase 2A injection event, ISOTEC recommends:

- Eliminating the A-screens from the Phase 2C injection locations surrounding CS-05, CS-08 and CS-10; and

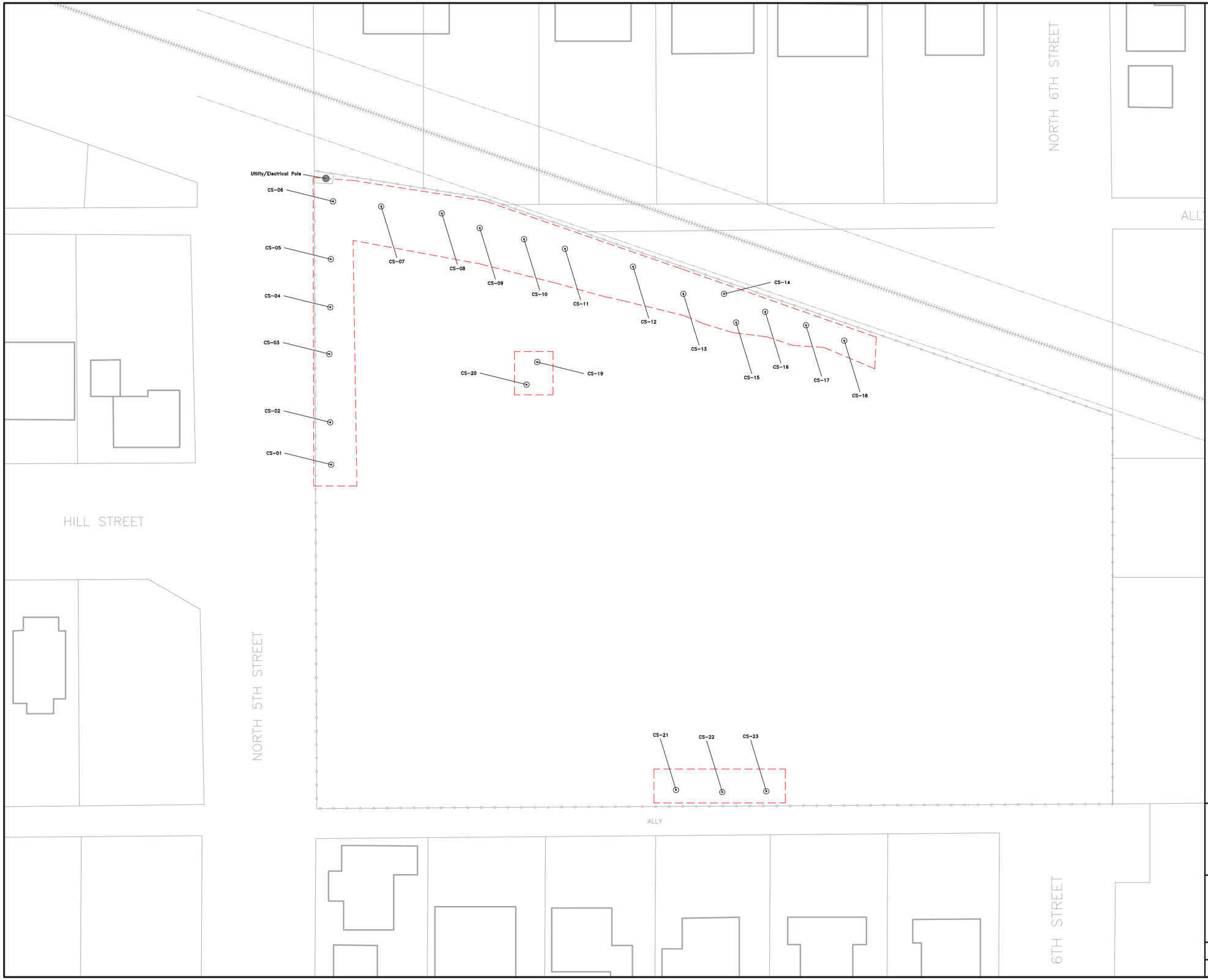
- Eliminating the B-screens from the Phase 2C injection locations surrounding CS-15, CS-16 and CS-18; and
- Eliminating the C-screens from the Phase 2C injection locations surrounding CSA-15.

As a result of eliminated screened interval and/or intervals based on the Post-Phase 2A and Post-Phase 2B analytical data, the scope of work for the Phase 2C injection event includes:

- Injections into the A-screens and B-screens at those injection locations surrounding confirmation soil borings CS-02, CS-03, CS-04, CS-12 and CS-13; and
- Injections into the B-screens only at those locations surrounding CS-05, CS-06, CS-07 and CS-23; and
- Injections into the C-screens at the injection locations surrounding CS-14, CS-19 and CS-20; and
- Injections into the D-screens at the four locations in the vicinity of CS-21.

The proposed Phase 2C injection locations are shown on **Figure 6**.

FIGURES



LEGEND

- Existing Structure
- Fence/Remediation Site Boundary
- Approximate Extent of ISCO Treatment Area
- Confirmation Soil Sample Location

N

0 30 60

1 INCH = 60 FEET

Base map provided by PSC Industrial Outsourcing, LP.

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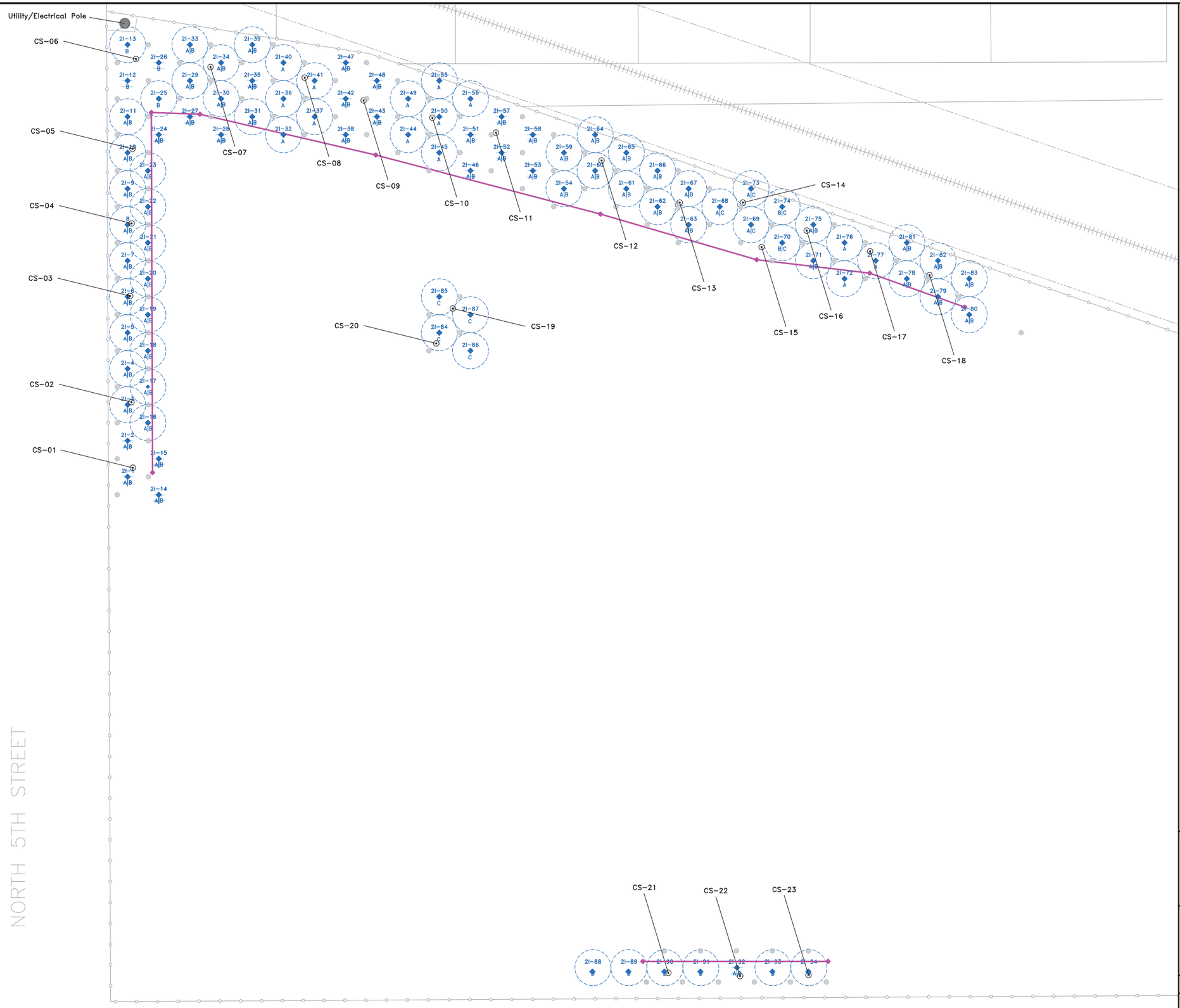
SITE MAP
ISCO REMEDIATION PROGRAM
Former Champaign MGP Site
Champaign, Illinois

DRAWN BY: TE	DATE: 7/23/2013	FIGURE 1
CHECKED BY: SH	PROJECT NO: 901144	



LEGEND

- Existing Structure
- Fence/Remediation Site Boundary
- Approximate Extent of Excavation Limits
- Confirmation Soil Sample Location

Injection Locations

- Phase 2A Injection Location
- 2I-8 A|B — Phase 2B Injection Location
- 2I-58 A|B — Phase 2B Locations Eliminated

Injection Intervals

A	3 to 6 feet bgs
B	6 to 10 feet bgs
C	20 to 25 feet bgs
D	36 to 44 feet bgs

N

0 20 40

1 INCH = 40 FEET

Base map provided by PSC Industrial Outsourcing, LP.

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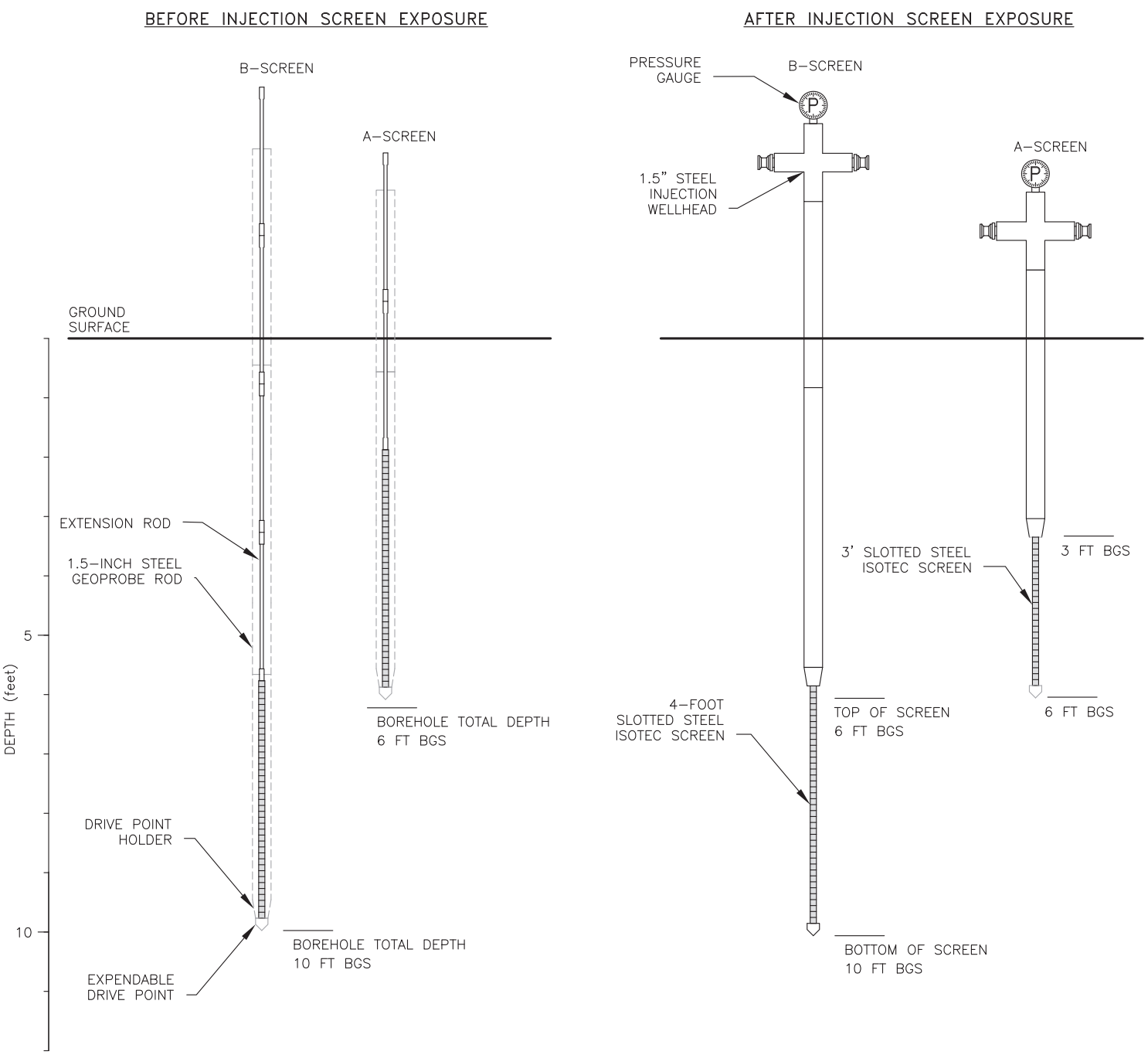
PHASE 2B INJECTION LOCATION MAP
ISCO REMEDIATION PROGRAM
Former Champaign MGP Site
Champaign, Illinois

DRAWN BY: TE	DATE: 7/23/2013	FIGURE 2
CHECKED BY: SH	PROJECT NO: 901144	



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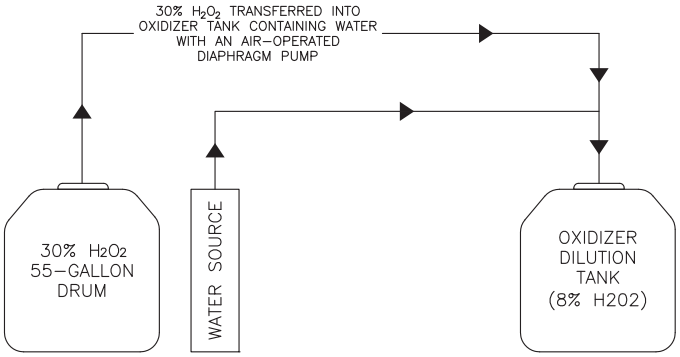
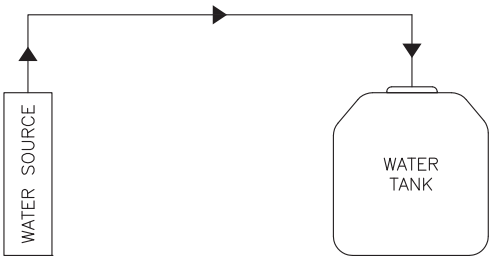
DIRECT–PUSH INJECTION SCHEMATIC
ISCO REMEDIATION PROGRAM
Former Champaign MGP Site
Champaign, Illinois

DRAWN BY: KH	DATE: 5/21/2013	FIGURE 3
CHECKED BY: SH	PROJECT NO: 901144	

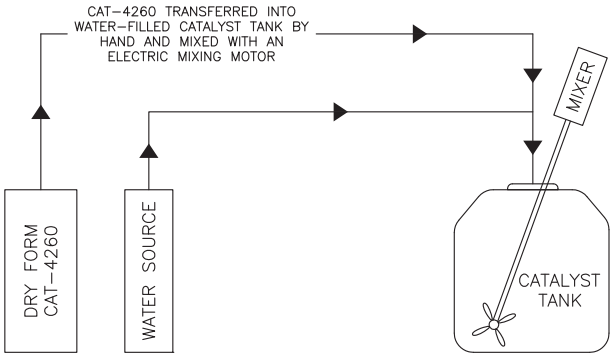
OXIDIZER TANK POCEDURES



WATER TANK PROCEDURES



CATALYST TANK PROCEDURES



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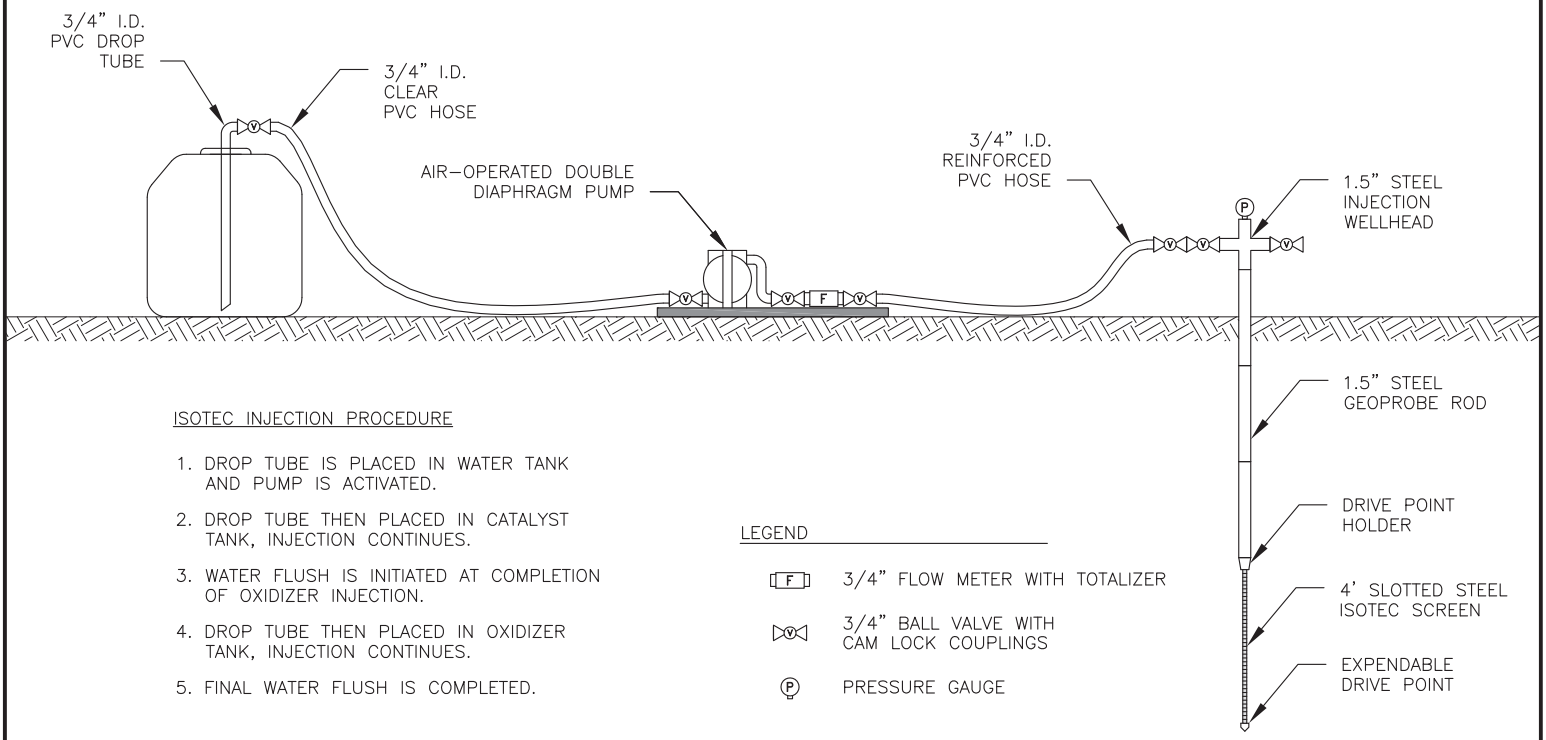
REAGENT MIXING SCHEMATIC
ISCO REMEDIATION PROGRAM
Former Champaign MGP Site
Champaign, Illinois

DRAWN BY: KH	DATE: 5/21/2013	FIGURE 4
CHECKED BY: SH	PROJECT NO: 901144	

REAGENT INJECTION DIAGRAM



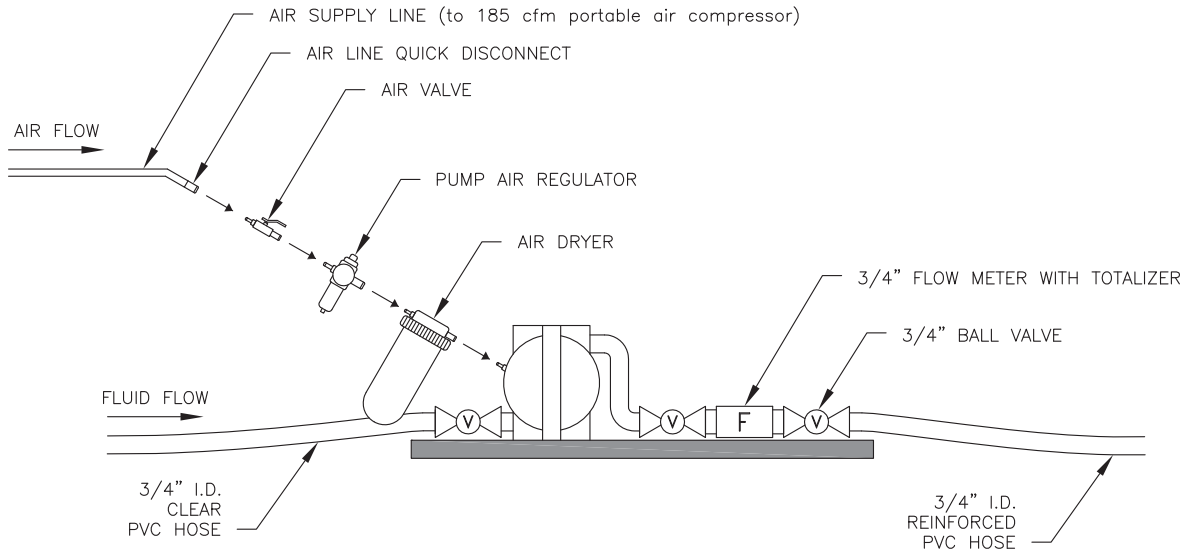
ISOTEC INJECTION PROCEDURE

1. DROP TUBE IS PLACED IN WATER TANK AND PUMP IS ACTIVATED.
2. DROP TUBE THEN PLACED IN CATALYST TANK, INJECTION CONTINUES.
3. WATER FLUSH IS INITIATED AT COMPLETION OF OXIDIZER INJECTION.
4. DROP TUBE THEN PLACED IN OXIDIZER TANK, INJECTION CONTINUES.
5. FINAL WATER FLUSH IS COMPLETED.

LEGEND

- F — 3/4" FLOW METER WITH TOTALIZER
- 3/4" BALL VALVE WITH CAM LOCK COUPLINGS
- P — PRESSURE GAUGE

INJECTION PUMP INSTALLATION



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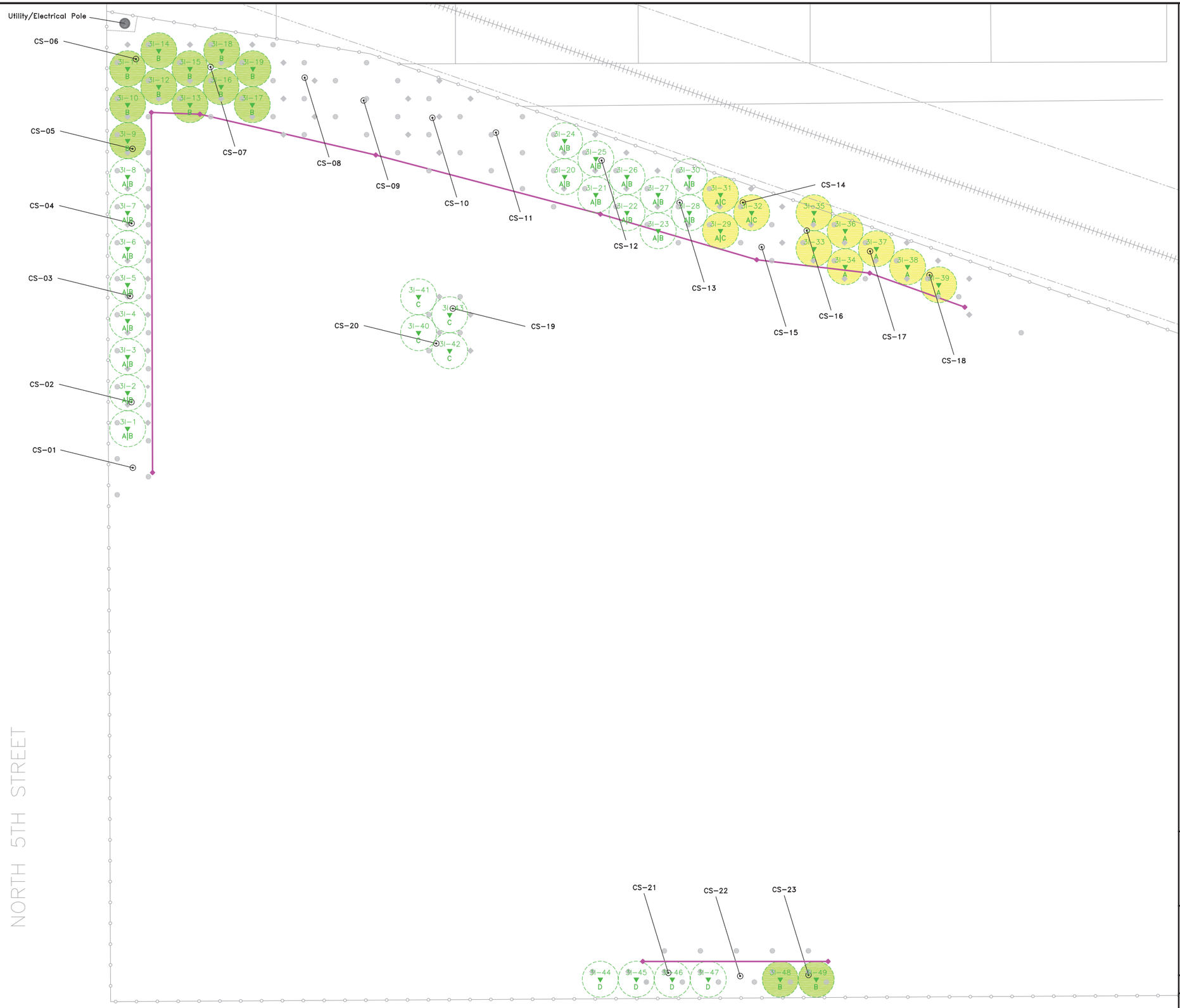
INJECTION METHOD SCHEMATIC
ISCO REMEDIATION PROGRAM
Former Champaign MGP Site
Champaign, Illinois

DRAWN BY: KH	DATE: 5/21/2013	FIGURE 5
CHECKED BY: SH	PROJECT NO: 901144	



LEGEND

- Existing Structure
- Fence/Remediation Site Boundary
- Approximate Extent of Excavation Limits
- Confirmation Soil Sample Location

Injection Locations

- Phase 2A Injection Location
- Phase 2B Injection Location
- Proposed Phase 2C Injection Location

Phase 2C Injection Locations

- Phase 2C Injection Location
- No Screens Eliminated
- A–Screen Eliminated
- B–Screen Eliminated

Injection Screen Intervals

A	3 to 6 feet bgs
B	6 to 10 feet bgs
C	20 to 25 feet bgs
D	36 to 44 feet bgs

N

0 20 40

1 INCH = 40 FEET

Base map provided by PSC Industrial Outsourcing, LP.

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PROPOSED PHASE 2C INJECTION LOCATION MAP
ISCO REMEDIATION PROGRAM
Former Champaign MGP Site
Champaign, Illinois

DRAWN BY: TE	DATE: 7/23/2013	FIGURE 6
CHECKED BY: SH	PROJECT NO: 901144	

TABLES

Table 1
PHASE 2B INJECTION LOG

ISCO Remediation Program
Former Champaign MGP Site
Champaign, Illinois 61820

Inj. Date	Injection Point	Injection Interval (feet bgs)	ISOTEC REAGENT			FIELD OBSERVATIONS		
			H_2O_2 (gallons)	Catalyst (gallons)	Total (gallons)	Rate (gpm)	Pressure (psi)	Notes (surfacing, refusal, pressure or flow rate changes, etc.)
6/19/13	2I-4A	3-6	25	25	50	2.0	0-30	
	2I-4B	6-10	25	25	50	2.0-3.0	10-15	
	2I-7A	3-6	20	25	45	2.0-3.0	0-12	Surfaced along annulus
	2I-7B	6-10	25	25	50	2.0-3.0	10-15	
	2I-10A	3-6	25	25	50	2.0-3.0	0-2	
	2I-10B	6-10	40	40	80	2.0-3.0	0-15	
	2I-13B	6-10	15	25	40	2.0-3.0	0-5	Surfaced 25 ft east
	2I-16A	3-6	30	30	60	2.0-3.0	0-5	
	2I-16B	6-10	30	30	60	2.0-3.0	0-5	
	2I-30A	3-6	30	30	60	2.0-3.0	0-20	
	2I-30B	6-10	25	25	50	2.0-3.0	0-10	
	2I-40A	3-6	25	25	50	2.0-3.0	0-15	
	2I-44A	3-6	25	25	50	2.0-3.0	5-20	
	2I-60A	3-6	15	25	40	2.0-3.0	0-5	Surfaced 12 ft south
	2I-60B	6-10	33	40	73	2.0-3.0	5-20	Surfaced 12 ft south
	2I-63A	3-6	2	25	27	2.0-3.0	50-80	Injection discontinued due to high pressure
	2I-63B	6-10	25	25	50	2.0-3.0	10-30	
	2I-73A	3-6	11	25	36	2.0-3.0	5-15	Surfaced 1 ft north
	2I-73C	20-25	50	50	100	2.0-3.0	0-30	
	2I-76A	3-6	12	25	37	2.0	0-15	Surfaced 12 ft southwest
	2I-79A	3-6	0	0	0	-	80	Injection discontinued due to high pressure
	2I-79B	6-10	25	25	50	2.0-3.0	0-5	Surfaced 13 ft southwest
6/20/13	2I-10A	3-6	30	30	60	2.0-3.0	0-5	
	2I-10B	6-10	15	15	30	3.0	0-15	
	2I-19A	3-6	30	30	60	2.0-3.0	0-10	
	2I-19B	6-10	30	30	60	2.0-3.0	5-15	
	2I-22A	3-6	7	15	22	3.0	5-10	Surfaced 12 ft south
	2I-22B	6-10	30	30	60	3.0	15-25	Surfaced 12 ft south
	2I-25B	6-10	25	25	50	3.0	5-15	
	2I-34B	6-10	30	30	60	3.0	5-15	Surfaced 24 ft east

Table 1
PHASE 2B INJECTION LOG

ISCO Remediation Program
Former Champaign MGP Site
Champaign, Illinois 61820

Inj. Date	Injection Point	Injection Interval (feet bgs)	ISOTEC REAGENT			FIELD OBSERVATIONS		
			H_2O_2 (gallons)	Catalyst (gallons)	Total (gallons)	Rate (gpm)	Pressure (psi)	Notes (surfacing, refusal, pressure or flow rate changes, etc.)
	2I-37A	3-6	30	30	60	3.0	0-10	Surfaced 18 ft south
	2I-55A	3-6	30	30	60	3.0	0-5	
	2I-56A	3-6	30	30	60	3.0	2-4	
	2I-65A	3-6	15	15	30	3.0	10-15	Surfaced 30 ft south
	2I-65B	6-10	15	30	45	3.0	0-5	Surfaced 30 ft south
	2I-68A	3-6	15	15	30	3.0	12-14	Surfaced at CS-14
	2I-68C	20-25	0	5	5	3.0	0-5	Surfaced at CS-14
	2I-71A	3-6	0	0	0	-	-	Injection discontinued due to high pressure
	2I-71B	6-10	0	0	0	-	-	Injection discontinued due to high pressure
	2I-81A	3-6	30	30	60	3.0	5-10	Surfaced 11 ft west
	2I-81B	6-10	30	30	60	3.0	5-17	Surfaced 11 ft west
	2I-85C	20-25	50	50	100	3.0	15-40	
6/21/13	2I-17A	3-6	45	45	90	2.0-3.0	05	
	2I-17B	6-10	45	45	90	2.0-3.0	0-15	
	2I-20A	3-6	45	45	90	2.0-3.0	5-20	
	2I-20B	6-10	45	45	90	2.0-3.0	0-10	
	2I-23A	3-6	45	45	90	2.0-3.0	0-5	
	2I-23B	6-10	45	45	90	2.0-3.0	0-5	
	2I-34A	3-6	0	7	7	3.0	0-5	Surfaced 12 ft southwest
	2I-34B	6-10	15	15	30	2.0-3.0	0-5	Surfaced 12 ft southwest
	2I-45A	3-6	15	15	30	2.0-3.0	0-5	Surfaced 15 ft northwest
	2I-54A	3-6	0	13	13	3.0	0-2	Surfaced 10 ft southeast
	2I-54B	6-10	13	15	28	2.0-3.0	0-5	Surfaced 10 ft southeast
	2I-68A	3-6	15	15	30	2.0-3.0	0-5	Surfaced 9 ft southwest
	2I-68C	20-25	0	15	15	3.0	0-5	Surfaced 9 ft southwest
	2I-75A	3-6	30	30	60	2.0-3.0	0-5	
	2I-75B	6-10	30	30	60	2.0-3.0	10-15	
	2I-78A	3-6	45	45	90	2.0-3.0	0-30	Surfaced 6 ft southeast
	2I-78B	6-10	45	45	90	2.0-3.0	0-15	
	2I-88D	36-44	150	150	300	4.0-5.0	0-5	

Table 1
PHASE 2B INJECTION LOG

ISCO Remediation Program
Former Champaign MGP Site
Champaign, Illinois 61820

Inj. Date	Injection Point	Injection Interval (feet bgs)	ISOTEC REAGENT			FIELD OBSERVATIONS		
			H_2O_2 (gallons)	Catalyst (gallons)	Total (gallons)	Rate (gpm)	Pressure (psi)	Notes (surfacing, refusal, pressure or flow rate changes, etc.)
	2I-90D	36-44	150	150	300	3.0-4.5	0-5	
	2I-93B	6-10	15	15	30	2.0-3.0	10-12	Surfaced 3 ft east
6/22/13	2I-3B	6-10	30	30	60	2.0-3.0	5-15	
	2I-5A	3-6	15	15	30	2.0-3.0	4-6	
	2I-5B	6-10	30	30	60	2.0-3.0	0-15	
	2I-8A	3-6	11	15	26	2.0-3.0	0-5	Surfaced 5 ft south
	2I-8B	6-10	30	30	60	2.0-3.0	0-10	
	2I-33B	6-10	30	30	60	2.0-3.0	0-5	
	2I-36A	3-6	28	30	58	2.0-3.0	8-30	Surfaced 14 ft south
	2I-49A	3-6	15	15	30	2.0-3.0	8-12	Surfaced 6 ft northwest
	2I-64B	6-10	30	30	60	2.0-3.0	5-12	
	2I-67B	6-10	25	30	55	2.0-3.0	2-24	Surfaced 12 ft west
	2I-72A	3-6	30	30	60	2.0-3.0	0-10	
	2I-74B	6-10	30	30	60	2.0-3.0	2-4	
	2I-75B	6-10	15	15	30	2.0-3.0	10-12	Surfaced 12 ft south
	2I-83B	6-10	15	15	30	2.0-3.0	0-5	
	2I-86C	20-25	50	50	100	2.5-3.0	10-30	
6/23/13	2I-3A	3-6	45	45	90	2.0-3.0	0-15	
	2I-3B	6-10	30	30	60	2.0-3.0	0-10	
	2I-5A	3-6	15	15	30	2.0-3.0	0-10	
	2I-8B	6-10	15	15	30	2.0-3.0	0-5	
	2I-11A	3-6	30	30	60	2.0-3.0	0-5	
	2I-11B	6-10	45	45	90	2.0-3.0	0-5	
	2I-31A	3-6	30	30	60	2.0-3.0	2-50	
	2I-31B	6-10	30	30	60	2.0-3.0	0-20	
	2I-33A	3-6	15	30	45	2.0-3.0	0-10	Surfaced 3 ft southeast
	2I-39B	6-10	10	15	25	2.0-3.0	2-4	Surfaced 25 ft west
	2I-50A	3-6	13	15	28	2.0-3.0	5-10	Surfaced 8 ft southwest
	2I-61A	3-6	15	15	30	2.0-3.0	0-5	Surfaced 15 ft north
	2I-61B	6-10	30	30	60	2.0-3.0	2-10	

Table 1
PHASE 2B INJECTION LOG

ISCO Remediation Program
Former Champaign MGP Site
Champaign, Illinois 61820

Inj. Date	Injection Point	Injection Interval (feet bgs)	ISOTEC REAGENT			FIELD OBSERVATIONS		
			H_2O_2 (gallons)	Catalyst (gallons)	Total (gallons)	Rate (gpm)	Pressure (psi)	Notes (surfacing, refusal, pressure or flow rate changes, etc.)
	2I-64A	3-6	15	15	30	2.0-3.0	2-12	
	2I-67A	3-6	15	15	30	2.0-3.0	10-12	
	2I-74C	20-25	50	50	100	2.0-3.0	5-25	Surfaced 12 ft south
	2I-75A	3-6	15	15	30	2.0-3.0	0-2	
	2I-82A	3-6	0	4	4	3.0	0-5	Surfaced 1 ft north
	2I-82B	6-10	15	15	30	2.0-3.0	2-4	Surfaced 1 ft north
	2I-83A	3-6	30	30	60	2.0-3.0	10-14	
	2I-83B	6-10	15	15	30	2.0-3.0	5-10	
	2I-84C	20-25	50	50	100	2.0-3.0	5-10	
6/24/13	2I-6A	3-6	45	45	90	2.5-3.0	0-10	
	2I-6B	6-10	15	15	30	2.0-3.0	5-10	Surfaced 2 ft north
	2I-9A	3-6	10	15	25	2.5-3.0	0-5	Surfaced 12 ft south
	2I-9B	6-10	15	15	30	2.0	10-14	Surfaced 12 ft south
	2I-11A	3-6	15	15	30	2.0-3.0	0-5	
	2I-29B	6-10	30	30	60	2.0-3.0	0-6	Surfaced 30 ft west
	2I-32A	3-6	30	30	60	2.0-3.0	0-19	Surfaced 12 ft south
	2I-55B	6-10	15	15	30	2.5-3.0	0-5	Surfaced 2 ft north
	2I-59A	3-6	30	30	60	2.5-3.0	0-5	
	2I-59B	6-10	30	30	60	2.0-3.0	10-15	
	2I-62A	3-6	0	6	6	3.0	-	Surfaced 6 ft south
	2I-62B	6-10	15	15	30	3.0	10-20	Surfaced 6 ft south
	2I-70B	6-10	15	15	30	2.0-3.0	0-15	Surfaced 6 ft northwest
	2I-70C	20-25	50	50	100	2.5	10-30	
	2I-77A	3-6	15	15	30	2.0-3.0	15-20	Surfaced 20 ft west
	2I-80A	3-6	15	15	30	2.5-3.0	20-22	Surfaced 8 ft south
	2I-80B	6-10	30	30	60	2.0-3.0	0-5	
	2I-87C	20-25	50	50	100	3.5	10-25	
6/25/13	2I-18A	3-6	15	15	30	3.0	0-5	Surfaced 7 ft northwest
	2I-18B	6-10	30	30	60	2.5-3.0	2-10	
	2I-21A	3-6	15	15	30	2.5-3.0	5-12	Surfaced 2 ft west

Table 1
PHASE 2B INJECTION LOG

ISCO Remediation Program
Former Champaign MGP Site
Champaign, Illinois 61820

Inj. Date	Injection Point	Injection Interval (feet bgs)	ISOTEC REAGENT			FIELD OBSERVATIONS		
			H_2O_2 (gallons)	Catalyst (gallons)	Total (gallons)	Rate (gpm)	Pressure (psi)	Notes (surfacing, refusal, pressure or flow rate changes, etc.)
	2I-21B	6-10	29	30	59	2.5-3.0	0-5	Surfaced 2 ft west
	2I-35A	3-6	4	15	19	3.0	2-4	Surfaced 20 ft southwest
	2I-35B	6-10	15	15	30	2.5-3.0	10-12	Surfaced 18 ft southwest
	2I-41A	3-6	15	15	30	2.5-3.0	2-4	Surfaced 8 ft west
	2I-66A	3-6	0	15	15	3.0	5-10	Surfaced 6 ft north
	2I-66B	6-10	30	30	60	2.5-3.0	10-15	Surfaced 6 ft northwest
	2I-69B	6-10	30	30	60	2.5-3.0	2-15	Surfaced 12 ft west
	2I-69C	20-25	30	25	55	2.5-3.0	5-20	Surfaced 4 ft east
	2I-89D	36-44	150	150	300	4.0-5.0	0	
	2I-91D	36-44	150	150	300	4.0-5.0	0	
	2I-94B	6-10	4	15	19	2.5-3.0	14-15	Surfaced along annulus
6/26/13	2I-6B-R	6-10	59	60	119	2.5-3.0	5-20	Surfaced 24 ft northeast
	2I-50A-R	3-6	45	45	90	2.0-3.0	0-5	Surfaced 12 ft west
	2I-60A-R	3-6	15	15	30	2.5-3.0	0-5	Surfaced 12 ft south
	2I-68C-R	20-25	75	75	150	2.5-3.0	2-10	Surfaced 6 ft southwest
	2I-69B	6-10	15	15	30	2.0-3.0	2-4	Surfaced 15 ft east
	2I-69C	20-25	0	9	9	3.0	-	Surfaced 10 and 25 ft west
	2I-71A-R	3-6	30	30	60	3.0	15-20	
	2I-71B-R	6-10	30	45	75	2.5-3.0	0-2	Surfaced 8 ft south
	2I-77A-R	3-6	15	15	30	2.5-3.0	2-4	Surfaced 18 ft west
	2I-79A-R	3-6	30	30	60	3.0	2-22	
	2I-89D	34-44	35	25	60	5.0	0	
	2I-94B-R	6-10	15	15	30	2.5-3.0	2-4	Surfaced 3 ft east
PHASE 2B REAGENT TOTAL			**3,966**	**4,209**	**8,175**			

Table 2
BENZENE CONCENTRATIONS IN SOIL
WITH PERCENTAGE REDUCTIONS

ISCO Program Sample Locations
Former Champaign MGP Site
Champaign, Illinois 61820

Soil Sample Location ID	Sample Collection Depth (feet bgs)	Post-Phase 2A Injection	Post-Phase 2B Injection		Post-Phase 2C Injection		
		5/23/2013 (mg/kg)	7/2/2013 (mg/kg)	vs Post-Phase 2A	<date> (mg/kg)	vs Post-Phase 2A	vs Post-Phase 2B
CSA-01	5.0-6.0	0.0037	NS			-	-
	7.5-8.5	0.0057	NS			-	-
CSA-02	5.0-6.0	< **8.24**	< **45**	---		-	-
	7.0-8.0	< **138**	< **51.1**	63%		-	-
CSA-03	5.0-6.0	< **36.4**	**44.3**	---		-	-
	9.0-10.0	**33.3**	**54**	---		-	-
CSA-04	5.0-6.0	**0.9**	**3.83**	---		-	-
	8.0-9.0	< **47.5**	< **17.3**	64%		-	-
CSA-05	4.5-5.5	**7.54**	0.002	100%		-	-
	9.0-10.0	< **189**	**64.8**	66%		-	-
CSA-06	5.0-6.0	0.168	NS			-	-
	9.0-10.0	< **48.8**	< **46.1**	6%		-	-
CSA-07	5.0-6.0	**19.9**	**36.5**	---		-	-
	7.5-8.5	**2.87**	**2.52**	12%		-	-
CSA-08	4.5-5.5	**3.13**	0.313	90%		-	-
	8.5-9.5	0.734	NS			-	-
CSA-09	5.0-6.0	< 0.027	NS			-	-
	8.0-9.0	< 0.192	NS			-	-
CSA-10	5.0-6.0	**4.12**	0.594	86%		-	-
	8.5-9.5	0.426	NS			-	-
CSA-11	5.0-6.0	0.307	NS			-	-
	8.0-9.0	< 0.482	NS			-	-
CSA-12	4.0-5.0	**2.43**	**2.03**	16%		-	-
	9.0-10.0	**1.89**	**4.59**	---		-	-
CSA-13	5.0-6.0	**2.31**	**2.72**	---		-	-
	9.0-10.0	< **1.84**	**1.13**	39%		-	-
CSA-14	4.0-5.0	**2.12**	**1.39**	34%		-	-
	7.5-8.5	0.101	NS			-	
	20.5-21.5	< **0.842**	**2.99**	---		-	-
CSA-15	5.0-6.0	0.712	NS			-	-
	8.0-9.0	0.456	0.19	58%		-	
	20.5-21.5	**28**	0.804	97%		-	-

Table 2
BENZENE CONCENTRATIONS IN SOIL
WITH PERCENTAGE REDUCTIONS

ISCO Program Sample Locations
Former Champaign MGP Site
Champaign, Illinois 61820

Soil Sample Location ID	Sample Collection Depth (feet bgs)	Post-Phase 2A Injection	Post-Phase 2B Injection		Post-Phase 2C Injection		
		5/23/2013 (mg/kg)	7/2/2013 (mg/kg)	vs Post-Phase 2A	<date> (mg/kg)	vs Post-Phase 2A	vs Post-Phase 2B
CSA-16	4.0-5.0	**3.36**	< **1.82**	46%		-	-
	7.0-8.0	**1.02**	0.156	85%		-	-
CSA-17	5.0-6.0	**5.65**	**4.65**	18%		-	-
	7.0-8.0	0.499	NS			-	-
CSA-18	3.5-4.5	< **5.28**	**3.9**	26%		-	-
	7.0-8.0	< **1.77**	0.665	62%		-	-
CSA-19	22.5-23.5	< **3.58**	**6.72**	---		-	-
CSA-20	22.0-23.0	**21.1**	**4.33**	79%		-	-
CSA-21	5.0-6.0	< 0.0221	NS			-	-
	9.0-10.0	< 0.17	NS			-	-
CSA-22	5.0-6.0	< 0.0213	NS			-	-
	7.0-8.0	< 0.0958	NS			-	-
CSA-23	5.0-6.0	< 0.0779	NS			-	-
	9.0-10.0	**7.27**	0.37	95%		-	-
Average - 3.0-6.0 ft.		**4.9**	**11.311**	**---**	#DIV/0!	**-**	**-**
Average - 6-10 ft		**22.7**	**20.2**	**11%**	#DIV/0!	**-**	**-**
Average - 20-25 ft		**13.4**	**3.7**	**72%**	#DIV/0!	**-**	**-**

NOTES

mg/kg = Miilligrams per kilogram

21.1 = Value in bold (RED) exceeds Tier 1 Remediation Objectives for Benzene of 0.8 mg/kg.

Table 3
NAPHTHALENE CONCENTRATIONS IN SOIL
WITH PERCENTAGE REDUCTIONS

ISCO Program Sample Locations
Former Champaign MGP Site
Champaign, Illinois 61820

Soil Sample Location ID	Sample Collection Depth (feet bgs)	Post-Phase 2A Injection	Post-Phase 2B Injection		Post-Phase 2C Injection		
		5/23/2013 (mg/kg)	7/2/2013 (mg/kg)	vs Post-Phase 2A	<date> (mg/kg)	vs Post-Phase 2A	vs Post-Phase 2B
CSA-01	5.0-6.0	0.006	NS			-	-
	7.5-8.5	0.005	NS			-	-
CSA-02	5.0-6.0	10.6	168	---		-	-
	7.0-8.0	**1,750**	**455**	74%		-	-
CSA-03	5.0-6.0	**1,710**	**840**	51%		-	-
	9.0-10.0	**213**	**985**	---		-	-
CSA-04	5.0-6.0	1.55	35.6	---		-	-
	8.0-9.0	**300**	**1,260**	---		-	-
CSA-05	4.5-5.5	4.09	31.9	---		-	-
	9.0-10.0	**511**	**355**	31%		-	-
CSA-06	5.0-6.0	0.73	NS			-	-
	9.0-10.0	**1,450**	21.5	99%		-	-
CSA-07	5.0-6.0	17	13.2	22%		-	-
	7.5-8.5	94	8.27	91%		-	-
CSA-08	4.5-5.5	47.4	21.1	55%		-	-
	8.5-9.5	7.81	NS			-	-
CSA-09	5.0-6.0	0.059	NS			-	-
	8.0-9.0	69.1	NS			-	-
CSA-10	5.0-6.0	1.8	1.67	7%		-	-
	8.5-9.5	15.2	NS			-	-
CSA-11	5.0-6.0	128	NS			-	-
	8.0-9.0	12.7	NS			-	-
CSA-12	4.0-5.0	83.4	54.4	35%		-	-
	9.0-10.0	79	**305**	---		-	-
CSA-13	5.0-6.0	111	**221**	---		-	-
	9.0-10.0	90	31.1	65%		-	-
CSA-14	4.0-5.0	142	**207**	---		-	-
	7.5-8.5	12.8	NS			-	
	20.5-21.5	35.3	41.4	---		-	-
CSA-15	5.0-6.0	114	NS			-	-
	8.0-9.0	**200**	12.2	94%		-	
	20.5-21.5	**194**	9.14	95%		-	-

Table 3
NAPHTHALENE CONCENTRATIONS IN SOIL
WITH PERCENTAGE REDUCTIONS

ISCO Program Sample Locations
Former Champaign MGP Site
Champaign, Illinois 61820

Soil Sample Location ID	Sample Collection Depth (feet bgs)	Post-Phase 2A Injection	Post-Phase 2B Injection		Post-Phase 2C Injection		
		5/23/2013 (mg/kg)	7/2/2013 (mg/kg)	vs Post-Phase 2A	<date> (mg/kg)	vs Post-Phase 2A	vs Post-Phase 2B
CSA-16	4.0-5.0	137	74.5	46%		-	-
	7.0-8.0	48.7	40.1	18%		-	-
CSA-17	5.0-6.0	124	99	20%		-	-
	7.0-8.0	2.85	NS			-	-
CSA-18	3.5-4.5	**417**	**249**	40%		-	-
	7.0-8.0	95.9	28.4	70%		-	-
CSA-19	22.5-23.5	66.8	49.4	26%		-	-
CSA-20	22.0-23.0	156	1.17	99%		-	-
CSA-21	5.0-6.0	0.305	NS			-	-
	9.0-10.0	36.5	NS			-	-
CSA-22	5.0-6.0	0.634	NS			-	-
	7.0-8.0	0.344	NS			-	-
CSA-23	5.0-6.0	2.38	NS			-	-
	9.0-10.0	6.59	**227**	---		-	-
Average - 3.0-6.0 ft.		**145.4**	**155.1**	**---**	#DIV/0!	**-**	**-**
Average - 6-10 ft		**237.9**	**310.7**	**---**	#DIV/0!	**-**	**-**
Average - 20-25 ft		**113.0**	**25.3**	**78%**	#DIV/0!	**-**	**-**

NOTES

mg/kg = Miilligrams per kilogram

194 = Value in bold (RED) exceeds Tier 1 Remediation Objectives for Naphthalene of 170 mg/kg.

NS = Not Sampled. Sample depth interval reported Post-Phase 2A naphthalene concentrations in soil below Tier 1 RO's.

IN-SITU CHEMICAL OXIDATION INJECTION PROGRAM FINAL REPORT

SITE:

CHAMPAIGN FORMER MGP SITE
CHAMPAIGN, ILLINOIS

JANUARY 10, 2014

PREPARED FOR:

PSC INDUSTRIAL OUTSOURCING, LP
210 WEST SAND BANK ROAD
COLUMBIA, ILLINOIS 62236

PROJECT NO. 901144

PREPARED BY:

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1.0 INTRODUCTION

In-Situ Oxidative Technologies, Inc. (ISOTEC) was retained by PSC Industrial Outsourcing, LP (PSC) to conduct an in-situ chemical oxidation (ISCO) injection program at the former Manufactured Gas Plant (MGP) located at 308 N. 5th Street, in Champaign, Illinois (**Figure 1**). In this report the former Champaign MGP site is also identified as the "site".

The purpose of the ISCO injection program was to address the perimeter of the site where concentrations of organic constituents of concern (COCs) exceeded Tier 1 Remedial Objectives (ROs) for the soil inhalation exposure pathway in the upper 10 feet of soil. The remediation technology chosen for the site was ISOTEC's proprietary modified Fenton's Reagent (MFR) technology.

The field activities conducted by ISOTEC to date have occurred during three separate injection events (Phase 2A, Phase 2B and Phase 2C) between April 29 and August 20, 2013. Field operations completed by ISOTEC during the Phase 2A injection event were detailed in the *In-Situ Chemical Oxidation Remediation Program Interim Report- Phase 2A*, dated June 18, 2013. Field operations completed by ISOTEC during the Phase 2B injection event were detailed in the *In-Situ Chemical Oxidation Remediation Program Interim Report- Phase 2B*, dated July 24, 2013. The field activities were performed in accordance with the *In-Situ Chemical Oxidation Work Plan* that was prepared by PSC and submitted to the Illinois Environmental Protection Agency (IEPA) in March 2013.

This *In-Situ Chemical Oxidation Injection Program Final Report* describes the field activities completed by ISOTEC during all three injection events.

1.1 SITE-SPECIFIC CHARACTERISTICS

The original ISCO treatment area occupied approximately 35,000 square feet (sq. ft.) of the 2.5 acre site and encompassed the western and northern portion of the site perimeter. The extent of the treatment area was determined from post-excavation soil confirmation sample analytical data.

According to data provided by PSC, the remediation site had vadose and saturated zone soils impacted by inorganics, metals, volatile aromatics and polycylic aromatic hydrocarbons (PAHs). The primary COCs at the site were benzene, toluene, ethylbenzene, and xylenes (BTEX) and naphthalene.

The treatment interval for the ISCO injection program was from 3 to 10 feet below ground surface (bgs). Two additional treatment intervals, 20 to 25 feet bgs and 36 to 44 feet bgs, were identified by PSC at three limited areas within the designated ISCO injection treatment area. The first area was located along the northern perimeter and had exceedances in soils from 3 to 10 feet bgs and 20 to 25 feet bgs. The second area was located in the middle portion of the site and had soil exceedances present from 20 to 25 feet bgs. The third area was located along the southern perimeter of the site and had soil

exceedances from 3 to 10 feet bgs and potential groundwater exceedances present at approximately 36 to 44 feet bgs. Injection locations utilized during the injection program are shown on **Figure 2** (Phase 2A), **Figure 3** (Phase 2B) and **Figure 3** (Phase 2C).

Review of lithologic logs for soil borings advanced across the site indicated that the subsurface soils consist of fill material from grade surface to depths of 3 to 4 feet bgs. This surficial fill unit along the perimeter of the site is underlain by a clay and silty-clay unit to a depth of approximately 16 to 20 feet bgs. Below this unit is a weathered till unit present from 16 feet bgs to a maximum depth explored of 33 feet bgs. This weathered till unit is comprised of silty-clay and sandy-clay with some gravel and fine-grained sand. According to PSC, depth to groundwater ranges from 2 to 10 feet bgs.

1.2 ISCO INJECTION PROGRAM OBJECTIVES

The objective of the ISCO injection program was to reduce benzene, ethylbenzene, toluene, xylenes and naphthalene concentrations in the upper 10 feet of soil to their respective Tier 1 ROs for the soil inhalation exposure pathway.

The Tier 1 ROs for the soil inhalation pathway are:

- Benzene - 0.8 mg/kg
- Ethylbenzene - 400 mg/kg
- Toluene - 650 mg/kg
- Xylenes - 320 mg/kg
- Naphthalene - 170 mg/kg

Based on post-excavation soil confirmation data and past experience, it was determined that multiple injection events would be required to reach the injection program objective.

1.3 ISCO REMEDIATION PROGRAM DESIGN

ISOTEC proposed to utilize neutral-pH, chelated iron catalyst and stabilized 8% hydrogen peroxide to implement an MFR ISCO program. ISOTEC was to utilize direct-push technology (DPT) to introduce reagents into the subsurface at the site. The ISCO program was designed to address vadose zone and saturated zone soils within the treatment areas specified by PSC (**Figure 2**).

The design was based upon data supplied by PSC and had several potentially limiting factors to implementation success. Limiting factors at the site included the presence of previous investigative penetrations and the fact that the majority of the target treatment interval is shallow vadose zone soils (3 to 10 feet bgs). These factors, in unison, presented potential problems for the injection of modified Fenton's reagent. The presence of previous penetrations in the treatment area may provide vertical conduits through which produced gas can travel to the surface. Surfacing was a significant issue during the Phase 1 2009 ISCO pilot test and was expected during Phase 2. Chemical oxidation remediation is a dissolved phase/saturated zone technology. Since the majority of the Phase 2 target treatment interval is shallow vadose zone soils, ISOTEC would have

to attempt to saturate the vadose zone soils with reagent in order to achieve the project objectives, which would most likely result in varying amounts of surfacing. In order to achieve project success, the site's limiting factors were taken into account when the injection program was designed.

Based on review of site data provided by PSC, ISOTEC anticipated that two full-scale injection applications and one reduced application would be required. ISOTEC assumed that the full-scale ISCO remediation program would be designated Phase 2 and that each injection event would be given the following alphabetical designations:

- Phase 2A – First Injection Event (Entire Treatment Area)
- Phase 2B – Second Injection Event (Entire Treatment Area)
- Phase 2C – Third Injection Event (50% of the Treatment Area)

During Phase 2A, also referred to as the "first event", temporary injection screens were to be installed at approximately 120 injection locations within the on-site perimeter treatment areas. Two screen installations were to be completed at each location; one screen deployed from approximately 3 to 6 feet bgs to target the upper shallow vadose zone soils and the second screen deployed from approximately 6 to 10 feet bgs to target the lower shallow vadose/saturated zone soils.

The injection locations within the on-site perimeter ISCO treatment areas would be spaced approximately 15 feet apart based on an anticipated 7.5-foot radius of influence (ROI). The actual spacing for the locations were to likely vary due to underground utilities, above-ground impediments and other associated field conditions. The injection locations were to be placed on a triangular grid-like pattern across the treatment areas. The subsequent injection event locations (Phase 2B and Phase 2C) would be shifted laterally from the first event locations.

The effectiveness of the injection program was to be determined by comparing the concentrations of soil samples collected by PSC prior to injection activities with the concentrations of soil samples collected by PSC during post-injection sampling events. The post-injection soil samples were to be collected from the 3 to 6 feet bgs interval and the 6 to 10 feet bgs interval at multiple selected locations within the treatment area(s). The post injection performance soil samples would be collected at locations immediately adjacent to the baseline boring locations and from the same associated depth intervals. This would allow for the most direct comparison possible of concentration reductions as a result of the injection application. In the event that a specific post-injection soil sample reported all of the target COC concentrations at or below the Tier 1 ROs for the soil inhalation exposure pathway, that specific boring location and/or depth interval would no longer be sampled and injections in the immediate vicinity of the boring(s) and/or depth interval(s) would be eliminated from the subsequent injection applications. These soil sampling and evaluation procedures would be repeated following each of the injection applications.

2.0 ISCO INJECTION PROGRAM

ISOTEC conducted three injection events at the site from April 29 to August 20, 2013. Specifically, Phase 2A was conducted from April 29 to May 15, 2013, Phase 2B was conducted from June 19 through 26, 2013 and Phase 2C was conducted from August 14 through 20, 2013. Over the course of the three events, ISOTEC injected 23,041 gallons of reagent (oxidizer and catalyst) through 411 injection screens installed at 219 injection locations. For identification purposes, each injection screen was labeled with an injection event identifier ("1I" for the Phase 2A injection event, "2I" for the Phase 2B injection event and "3I" for the Phase 2C injection event), followed by an injection location number and finally an injection interval identifier ("A", "B", "C" or "D"). The "A" designation indicates a 3 to 6 feet bgs screen, the "B" designation indicates a 6 to 10 feet bgs screen, the "C" designation indicates a 20 to 25 feet bgs screen, and the "D" designation indicates a 36 to 44 feet bgs screen. According to this method the injection screen labeled "2I-31B" indicates a screen installed from 6 to 10 feet bgs at location 31 during the Phase 2B injection event. A total of 192 "A" screens, 183 "B" screens, 25 "C" screens and 11 "D" screens were installed during the injection program. Phase 2A, Phase 2B and Phase 2C injection locations are shown on **Figure 2**, **Figure 3** and **Figure 4**, respectively.

2.1 FIELD METHODS

Field operations completed by ISOTEC during each injection event included equipment mobilization and demobilization, temporary injection screen installations and abandonments, reagent preparation, and reagent injections. The following sections describe in detail the field methods, procedures, and equipment utilized by ISOTEC during implementation of each injection event.

2.1.1 Injection Screen Installation and Abandonment

Temporary injection screens installed with direct-push technology (DPT) were used to deliver ISOTEC's modified Fenton's reagents into the target depth intervals. The injection screens were installed with a DPT drill rig operated by Bulldog Drilling (Bulldog). The equipment and tooling provided by Bulldog included a track-mounted AMS drill rig, 1.25-inch and 1.5-inch diameter direct-push drill rods, extension rods used to deploy injection screens, and decontamination equipment. Tooling provided by ISOTEC included specialized 0.5-inch diameter injection screens designed to pass through the center of the drill rods, specialized point holders designed to hold the injection screens in place within the target injection interval, and 1-inch expendable drive points.

Bulldog began each screen installation by advancing drill rods to the desired depth at each injection location. Once the proper depth was reached, an injection screen was lowered through the center of the rods to the bottom of the rod string and held in place with extension rods. The rod string was then slowly retracted until the desired length of injection screen was exposed across the specific target treatment interval. A direct-push

injection screen schematic illustrating the A- and B-screen installation (3 to 6 and 6 to 10 feet bgs) is included as **Figure 5**.

Following daily injection activities, ISOTEC oversaw the proper abandonment of each injection location by Bulldog. After removing the rod string, each borehole was abandoned by slowing hand pouring 3/8-inch bentonite chips from the bottom of the borehole to approximately 6-inches bgs. The bentonite was hydrated and the borehole was then completed with a concrete patch.

2.1.2 Reagent Preparation

ISOTEC reagents consist of a neutral-pH, chelated ferrous iron solution (catalyst) and dilute stabilized hydrogen peroxide (oxidizer). During each phase of the injection program, ISOTEC utilized an oxidizer concentration of 8%. Hydrogen peroxide at a concentration of 30% was shipped directly to the site immediately prior to field injection activities and stored in DOT-approved 55-gallon drums. The 30% hydrogen peroxide was diluted to an 8% concentration in 300-gallon polyethylene bulk tanks with water obtained from a fire hydrant located in the southwest corner of the site. ISOTEC's proprietary catalyst is a pH buffered (pH of approximately 7) ferrous iron complex. The catalyst components were shipped to the site in dry form and mixed with water in 300-gallon polyethylene bulk tanks. A reagent mixing schematic is included as **Figure 6**.

2.1.3 Injection Method

The injections were accomplished using air-operated double-diaphragm pumps, flow meters, polyvinyl chloride (PVC) reinforced tubing, cam-lock valves & fittings, and steel wellhead assemblies. The wellhead assemblies, with pressure gauges and relief valves, were attached to the uppermost drill rod at each injection screen location. The wellhead assemblies were attached with PVC reinforced tubing to an air-operated diaphragm pump and from the pump to either the oxidizer, catalyst or water tanks with additional PVC tubing. Oxidizer, catalyst and water were conveyed through the PVC tubing using a pneumatic diaphragm pump with air supplied from a portable air compressor.

In general, the injection process was similar for each injection screen. First, water was injected, followed by catalyst, a second water flush to clear the injection equipment of catalyst, then the oxidizer, and a final water flush to clear the injection equipment of oxidizer. An injection method schematic detailing the injection process is included as **Figure 7**.

Reagent volumes, flow rates, and injection pressures were monitored at regular intervals and recorded in a field log during the injection process at each injection screen. Reagent volumes and flow rates were measured with battery-operated turbine flow meters/totalizers. Injection pressures were measured with pressure gauges attached to the wellhead assemblies.

2.2 PHASE 2A INJECTION EVENT FIELD ACTIVITIES

During the Phase 2A injection event, ISOTEC attempted to inject catalyst and oxidizer into 203 injection screens installed at 99 locations (**Figure 2**). As previously noted, screens were not installed at some locations because the locations were within the excavation limits. These locations included 1I-42, 1I-64, 1I-65, 1I-66, 1I-76, 1I-77, 1I-85, 1I-86 and 1I-87, and combined for a total of 21 screens not installed. The Phase 2A treatment area occupied approximately 22,500 sq. ft. At locations where multiple injection screens were required in order to target separate treatment intervals, the individual screens were installed in separate boreholes spaced approximately two feet apart. The majority of the Phase 2A injection locations utilized two injection screens; the A-screen deployed from 3 to 6 feet bgs and the B-screen deployed from 6 to 10 feet bgs. In addition to using two screens to deliver reagents across the 3 to 10 feet bgs interval, six injection locations (1I-73, 1I-74, 1I-75, 1I-79, 1I-80, and 1I-81) utilized an injection screen that was deployed from 20 to 25 feet bgs. Injection locations 1I-104 through 1I-106 also had a screen deployed from 36 to 44 feet bgs. Injection locations 1I-94, 1I-95, 1I-96 and 1I-97 utilized only one injection screen deployed from 20 to 25 feet bgs.

ISOTEC was able to inject 9,664 gallons of reagent (catalyst and oxidizer) into the 203 injection screens (95 A-screens, 95 B-screens, 10 C-screens and 3 D-screens) installed during the Phase 2A injection event. Surfacing of reagent occurred at 40% of the A-screens, 27% of the B-screens and 10% of the C-screens. Surfacing is described as the migration of gasses, groundwater and/or reagent to the ground surface through natural or man-made conduits in the subsurface. When surfacing occurred, the injection process at the screen observed to be surfacing was stopped and no further injection activities were attempted at that particular injection screen location. Surfacing did not occur while injecting into the D-screens.

The average volume of reagent (oxidizer and catalyst) injected into the A-screens (3 to 6 feet bgs) was approximately 41 gallons per screen. The average volume of total reagent injected into the B-screens (6 to 10 feet bgs) was approximately 49 gallons per screen. The average volume of total reagent injected into the C-screens (20 to 25 feet bgs) was approximately 83 gallons per screen. The average volume of total reagent injected into the D-screens (36 to 44 feet bgs) was 100 gallons per screen.

Reagent flow rates ranged from approximately 1.8 to 2.8 gallons per minute (gpm). Injection pressures ranged from approximately 0 to 30 pounds per square inch (psi) during injection activities. A summary of the volumes injected at each location during the first event is presented in **Table 1**.

2.3 PHASE 2B INJECTION EVENT FIELD ACTIVITIES

Post-Phase 2A soil confirmation sampling data provided by PSC showed that several sampling intervals and locations met the Tier 1 ROs for the injection program. Injection locations immediately adjacent to these intervals and/or sampling locations were omitted

from the Phase 2B injection event. As a result, the Phase 2B treatment area was reduced from the first event size of approximately 22,500 to approximately12,750 sq. ft.

During the Phase 2B injection event, ISOTEC attempted to inject catalyst and oxidizer into 128 injection screens installed at 72 locations (2I-2 through 2I-13, 2I-16 through 2I-23, 2I-25, 2I-29 through 2I-37, 2I-39 through 2I-41, 2I-44, 2I-45, 2I-49, 2I-50, 2I-54, 2I-55, 2I-59 through 2I-91, 2I-93 and 2I-94, **Figure 3**). At locations where multiple injection screens were required in order to target separate treatment intervals, the individual screens were installed in separate boreholes spaced approximately two feet apart. The majority of the Phase 2B injection locations utilized two injection screens; the A-screen deployed from 3 to 6 feet bgs and the B-screen deployed from 6 to 10 feet bgs. In addition to utilizing either an A-screen or a B-screen, five injection locations (2I-68, 2I-69, 2I-70, 2I-73, and 2I-74) utilized an injection screen that was deployed from 20 to 25 feet bgs (C-screen). Injection locations 2I-84 through 2I-87 utilized only one injection screen deployed from 20-25 feet bgs (C-screen). Injection locations 2I-88 through 2I-91 utilized only one injection screen deployed from 36 to 44 feet bgs (D-screen).

ISOTEC was able to inject 8,175 gallons of reagent (catalyst and oxidizer) into the 128 injection screens (61 A-screens, 53 B-screens, 10 C-screens and 4 D-screens) installed during the Phase 2B injection event. Surfacing of reagent occurred at approximately 56% of the A-screens, approximately 55% of the B-screens and 60% of the C-screens. When surfacing occurred, the injection process at the screen observed to be surfacing was stopped and no further injection activities were attempted at that particular injection screen location. Surfacing did not occur while injecting into the D-screens. It is important to note that in some instances a "redo" screen was installed at locations where surfacing occurred after relatively little reagent was injected. These screens were installed within 5 feet of the original location and were designated with an "-R" at the end of the screen identifier (i.e. 2I-50A-R). A total of 9 "redo" screens were installed during Phase 2B.

The average volume of total reagent (oxidizer and catalyst) injected into the A-screens was approximately 47 gallons per screen. The average volume of total reagent injected into the B-screens was approximately 59 gallons per screen. The average volume of total reagent injected into the C-screens was approximately 93 gallons per screen. The average volume of total reagent injected into the D-screens was 315 gallons per screen.

Reagent flow rates ranged from approximately 1.8 to 2.8 gallons per minute (gpm). Injection pressures ranged from approximately 0 to 30 pounds per square inch (psi) during injection activities. A summary of the volumes injected at each location during the second event is presented in **Table 2**.

2.4 PHASE 2C INJECTION EVENT FIELD ACTIVITIES

Post-Phase 2B soil confirmation sampling showed that additional sampling intervals and locations met the Tier 1 ROs for the injection program. Injection locations immediately

adjacent to these intervals and/or sampling locations as well as those that had previously met Tier 1 ROs were omitted from the Phase 2C injection event. The reduced Phase 2C treatment area covered approximately 8,650 sq. ft.

During the Phase 2C injection event, ISOTEC attempted to inject catalyst and oxidizer into 84 injection screens installed at 49 locations (3I-1 through 3I-49, **Figure 4**). At locations where multiple injection screens were required in order to target separate treatment intervals, the individual screens were installed in separate boreholes spaced approximately two feet apart. The majority of the Phase 2C injection locations utilized two injection screens; the A-screen deployed from 3 to 6 feet bgs and the B-screen deployed from 6 to 10 feet bgs. In addition to utilizing either an A-screen or a B-screen, seven injection locations (3I-29, 3I-31, 3I-32 and 3I-40 through 3I-43) utilized an injection screen that was deployed from 20 to 25 feet bgs (C-screen). Injection locations 3I-44 through 3I-47 utilized only one injection screen deployed from 36 to 44 feet bgs (D-screen).

ISOTEC was able to inject 5,202 gallons of reagent (catalyst and oxidizer) into the 84 injection screens (36 A-screens, 35 B-screens, 9 C-screens and 4 D-screens) installed during the Phase 2C injection event. Surfacing of reagent occurred at approximately 69% of the A-screens, approximately 66% of the B-screens and 44% of the C-screens. When surfacing occurred, the injection process at the screen observed to be surfacing was stopped and no further injection activities were attempted at that particular injection screen location. Surfacing did not occur while injecting into the D-screens. It is important to note that in some instances a "redo" screen was installed at locations where surfacing occurred after relatively little reagent was injected. These screens were installed within 5 feet of the original location and were designated with an "-R" at the end of the screen identifier (i.e. 3I-18B-R). A total of 14 "redo" screens were installed during Phase 2C.

The average volume of total reagent (oxidizer and catalyst) injected into the A-screens was approximately 36 gallons per screen. The average volume of total reagent injected into the B-screens was approximately 44 gallons per screen. The average volume of total reagent injected into the C-screens was approximately 119 gallons per screen. The average volume of total reagent injected into the D-screens was 325 gallons per screen.

Reagent flow rates ranged from approximately 2 to 4 gallons per minute (gpm). Injection pressures ranged from approximately 0 to 80 pounds per square inch (psi) during injection activities. A summary of the volumes injected at each location during the third event is presented in **Table 3**.

3.0 CONCLUSIONS

The objective of the ISCO injection program was to reduce COCs in soil to below Tier 1 ROs for the soil inhalation pathway in the upper 10 feet of soil. To achieve this goal, ISOTEC estimated that three separate injection mobilizations would be required. To date, ISOTEC has completed three injection events at the site.

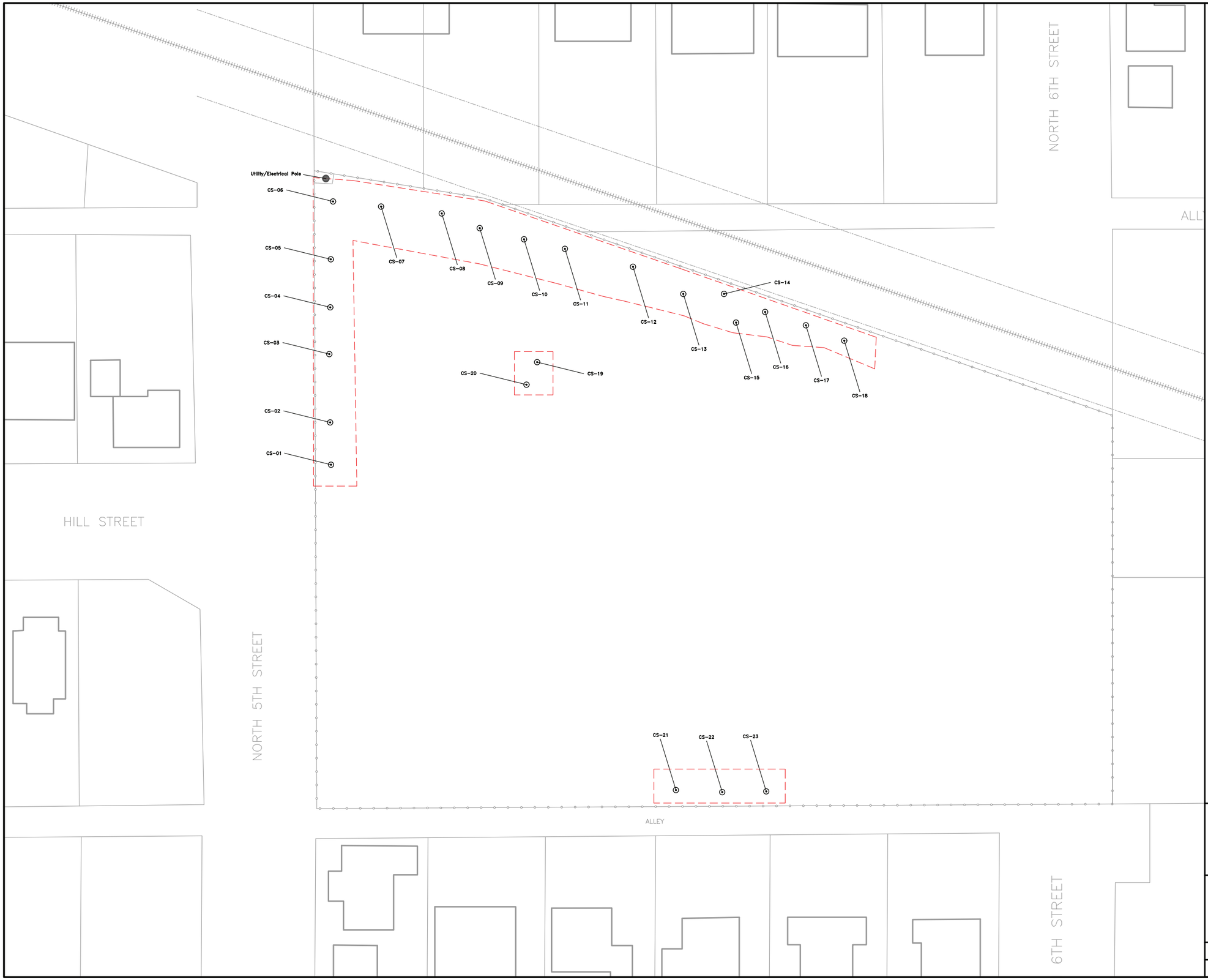
As stated in **Section 1.3**, the effectiveness of the injection program was to be determined by comparing the concentrations of soil samples collected prior to injection activities with the concentrations of soil samples collected during post-injection sampling events. If a specific post-injection soil sample reports all of the target COC concentrations at or below the Tier 1 ROs for the soil inhalation exposure pathway, that specific boring location and/or depth interval would no longer be sampled and injections in the immediate vicinity of the boring(s) and/or depth interval(s) would be eliminated from the subsequent injection applications.

During the Post-Phase 2A sampling event a total of 46 samples were taken from 23 confirmation soil sampling locations. During the Post-Phase 2B and Post-Phase 2C sampling events these numbers were reduced to 29 samples taken from 18 locations and 23 samples taken from 16 locations, respectively.

Post-injection event sampling results translate directly to the size of the treatment area for the subsequent injection event. During Phase 2A, the treatment area for the A and B intervals (3 to 6 and 6 to 10 feet bgs) covered approximately 22,500 sq. ft. During Phase 2B, injections took place across an area that was approximately 12,750 sq. ft., a treatment area reduction of 43%. The third injection event (Phase 2C) treatment area covered approximately 8,650 sq. ft.; which represents 32% reduction when compared to Phase 2B, and an overall ISCO treatment area reduction of 62% when compared to the first event (Phase 2A). Following the third event, the upper 10 feet treatment area was reduced to approximately 7,950 sq. ft., a reduction of 65% when compared to baseline.

Comparison of the number of sampling locations and size of the ISCO treatment area before injections to the post-third injection event (Phase 2C) site conditions indicates that the ISOTEC process was effective at reducing COC concentrations in the upper 10 feet of soil across approximately 65% of the ISCO treatment area.

FIGURES



LEGEND

- Existing Structure
- Fence/Remediation Site Boundary
- Approximate Extent of ISCO Treatment Area
- Confirmation Soil Sample Location

N

0 30 60

1 INCH = 60 FEET

Base map provided by PSC Industrial Outsourcing, LP.

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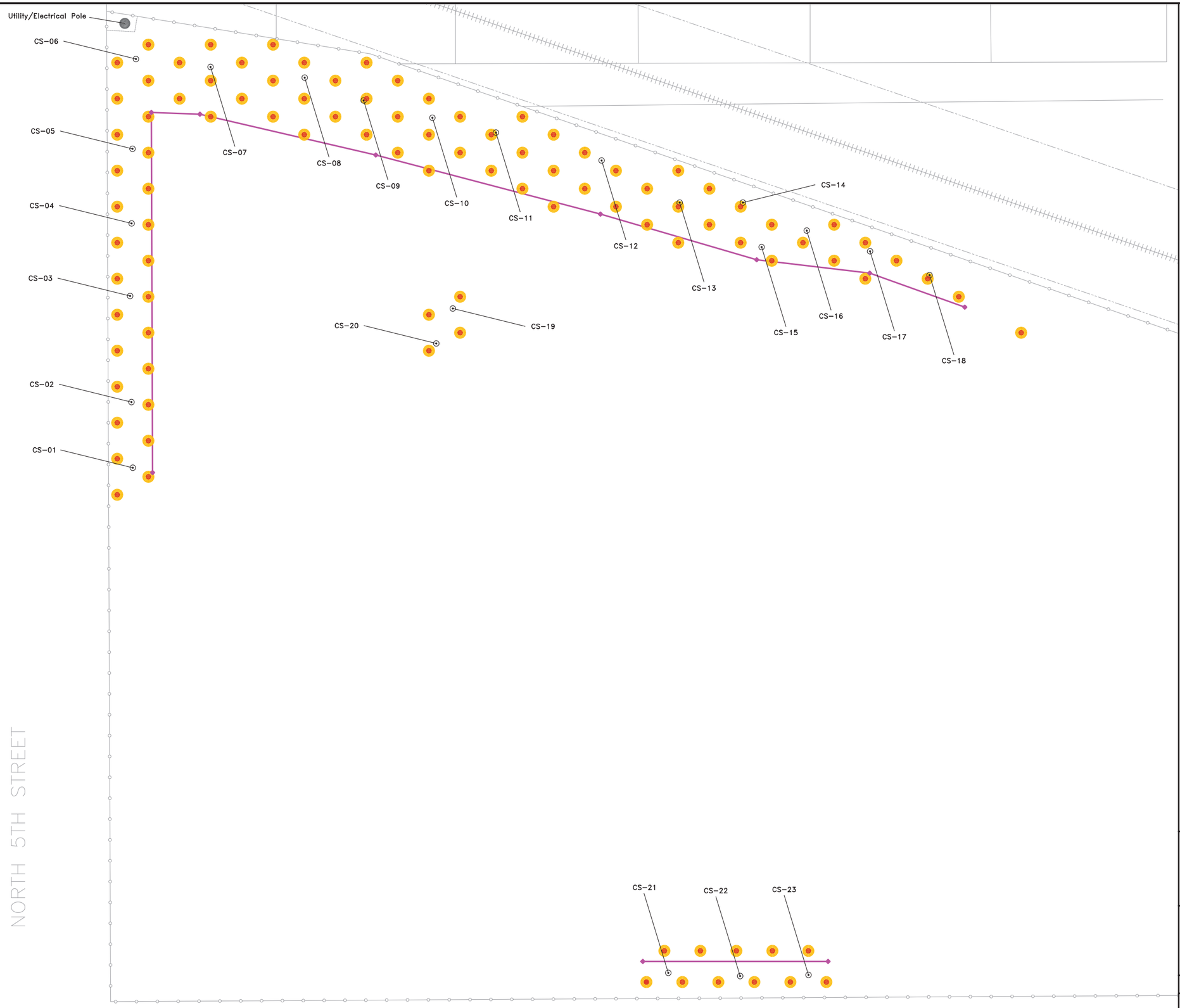
SITE MAP
ISCO INJECTION PROGRAM
Former Champaign MGP Site
Champaign, Illinois

DRAWN BY: TE	DATE: 7/23/2013	FIGURE 1
CHECKED BY: SH	PROJECT NO: 901144	



LEGEND

- Existing Structure
- Fence/Remediation Site Boundary
- Approximate Extent of Excavation Limits
- Confirmation Soil Sample Location

Injection Locations

- Phase 2A Injection Location

Injection Screen Intervals

A	3 to 6 feet bgs
B	6 to 10 feet bgs
C	20 to 25 feet bgs
D	36 to 44 feet bgs

N

0 20 40

1 INCH = 40 FEET

Base map provided by PSC Industrial Outsourcing, LP.

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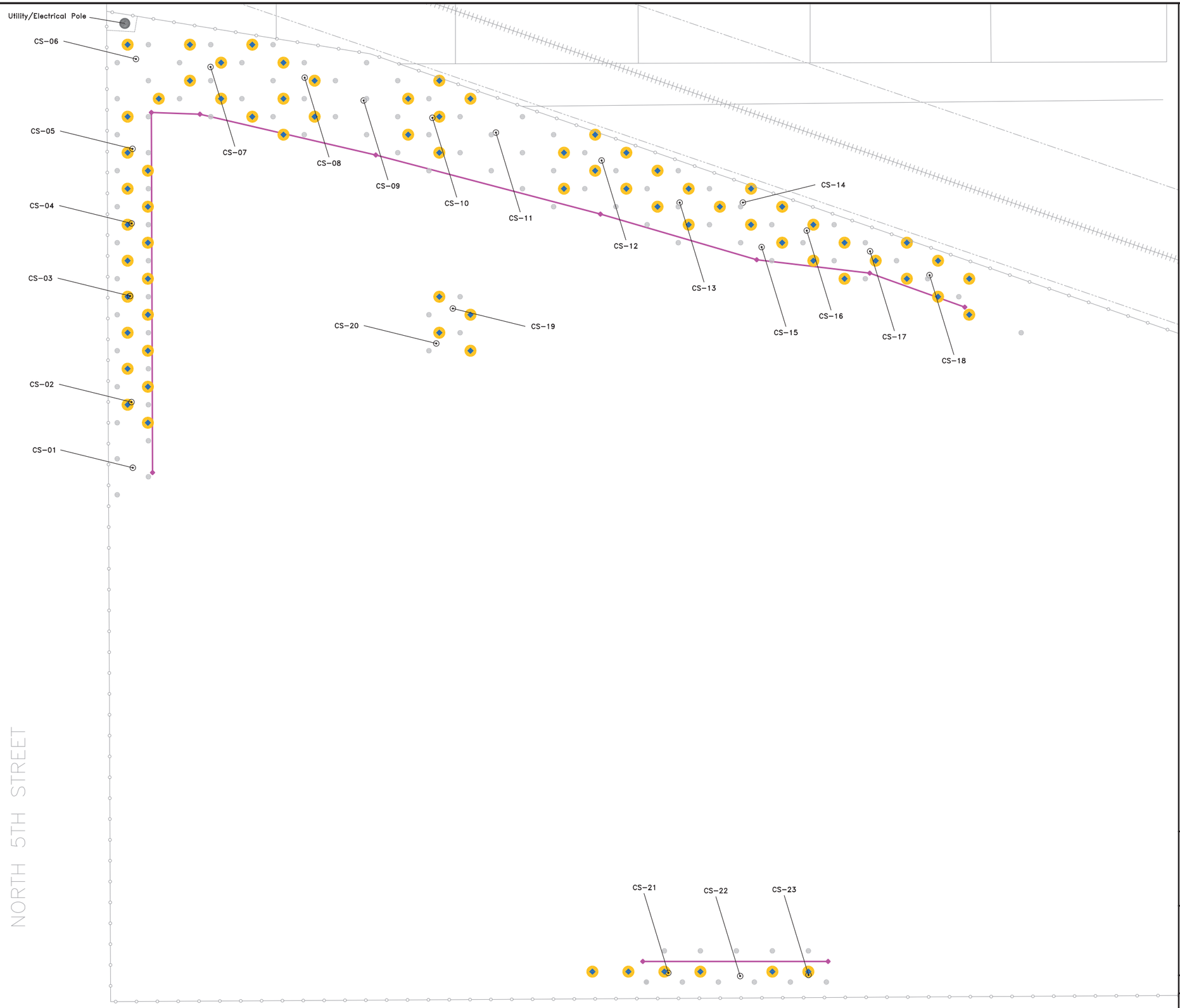
PHASE 2A INJECTION LOCATION MAP
ISCO INJECTION PROGRAM
Former Champaign MGP Site
Champaign, Illinois

DRAWN BY: TE	DATE: 9/26/2013	FIGURE 2
CHECKED BY: SH	PROJECT NO: 901144	



LEGEND

- Existing Structure
- Fence/Remediation Site Boundary
- Approximate Extent of Excavation Limits
- Confirmation Soil Sample Location

Injection Locations

- Phase 2A Injection Location
- Phase 2B Injection Location

Injection Screen Intervals

A	3 to 6 feet bgs
B	6 to 10 feet bgs
C	20 to 25 feet bgs
D	36 to 44 feet bgs

N

0 20 40

1 INCH = 40 FEET

Base map provided by PSC Industrial Outsourcing, LP.

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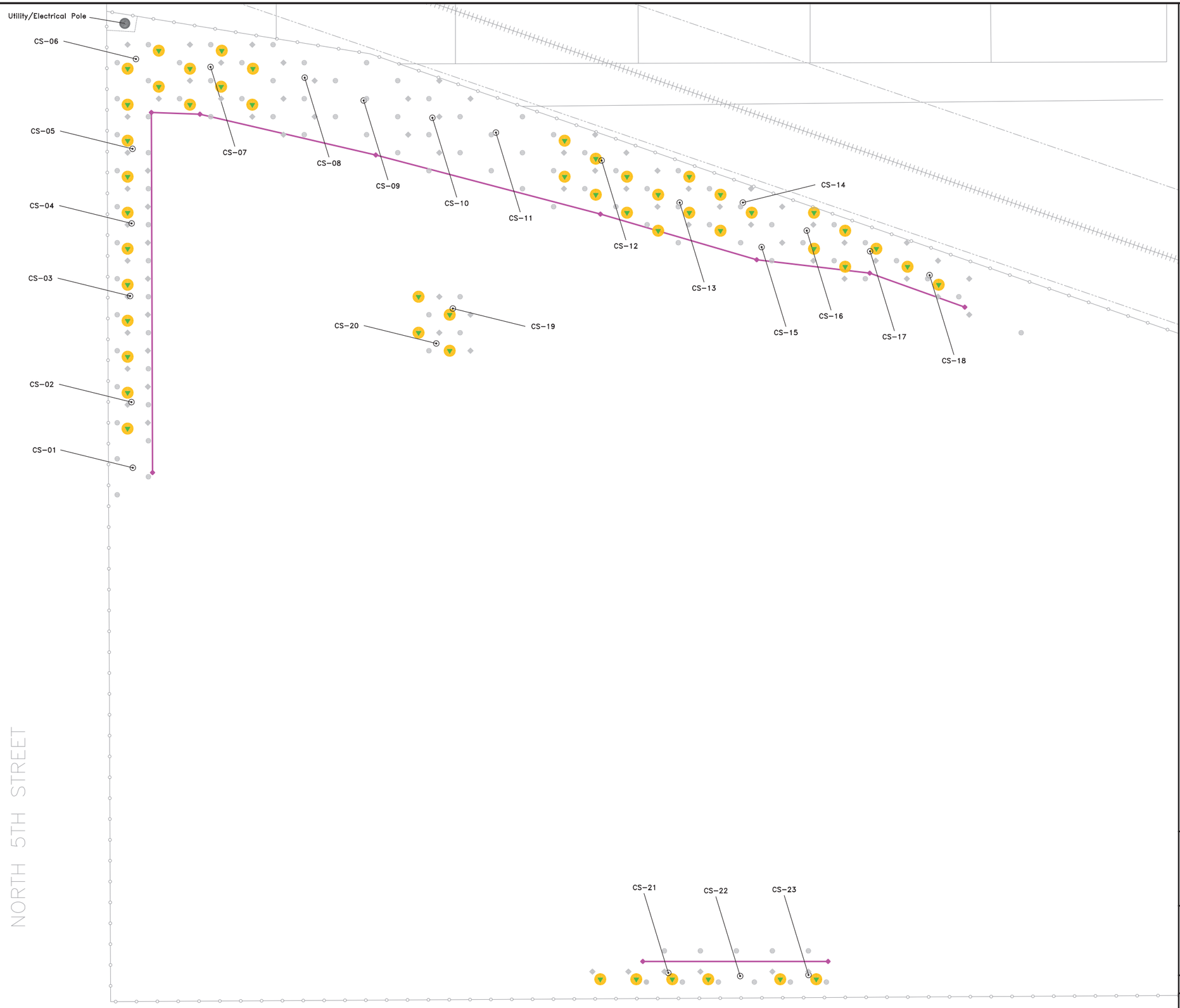
PHASE 2B INJECTION LOCATION MAP
ISCO INJECTION PROGRAM
Former Champaign MGP Site
Champaign, Illinois

DRAWN BY: TE	DATE: 9/26/2013	FIGURE 3
CHECKED BY: SH	PROJECT NO: 901144	



LEGEND

- Existing Structure
- Fence/Remediation Site Boundary
- Approximate Extent of Excavation Limits
- Confirmation Soil Sample Location

Injection Locations

- Phase 2A Injection Location
- Phase 2B Injection Location
- Phase 2C Injection Location

Injection Screen Intervals

A	3 to 6 feet bgs
B	6 to 10 feet bgs
C	20 to 25 feet bgs
D	36 to 44 feet bgs

N

0 20 40

1 INCH = 40 FEET

Base map provided by PSC Industrial Outsourcing, LP.

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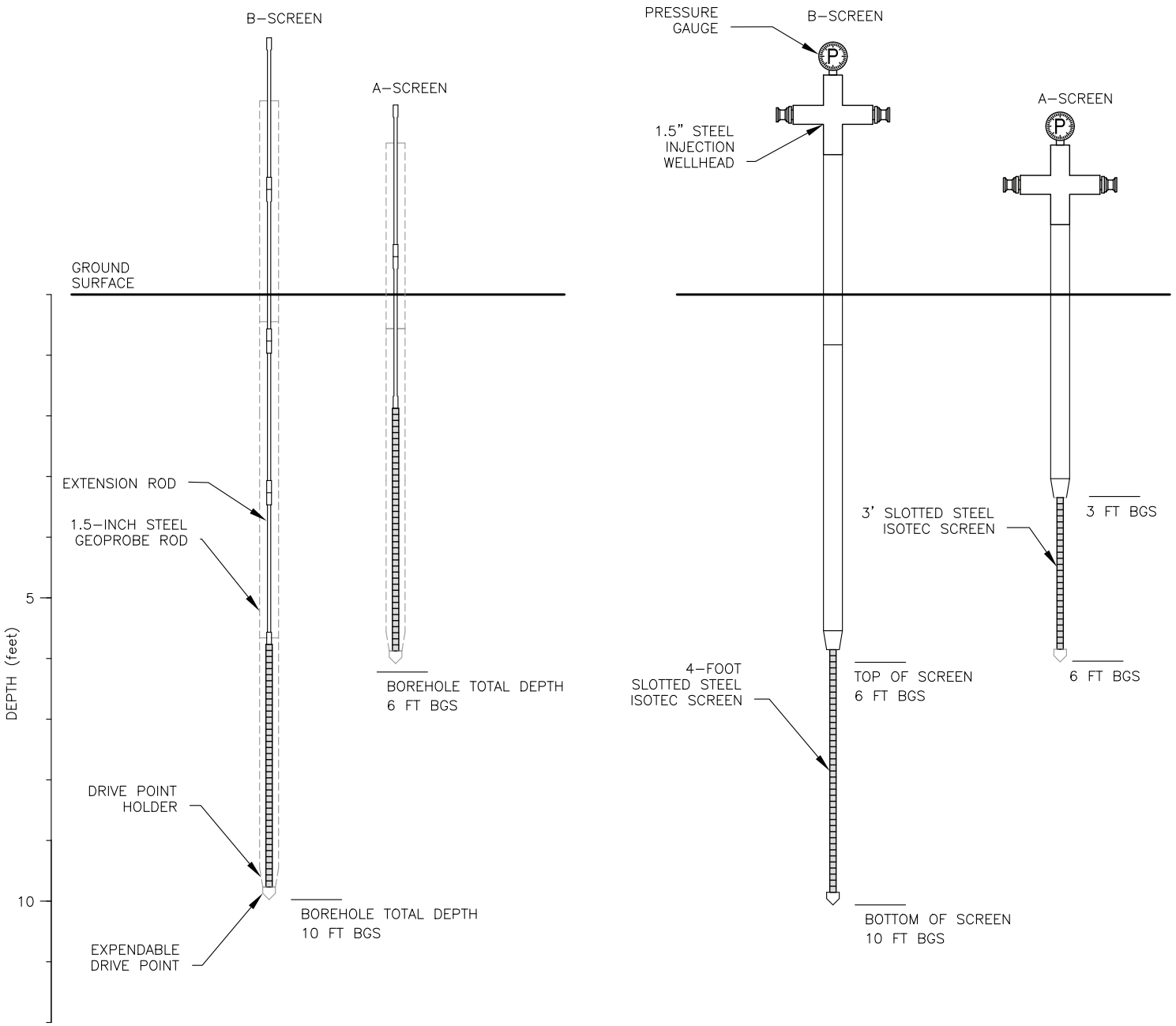
PHASE 2C INJECTION LOCATION MAP
ISCO INJECTION PROGRAM
Former Champaign MGP Site
Champaign, Illinois

DRAWN BY: TE	DATE: 9/26/2013	FIGURE 4
CHECKED BY: SH	PROJECT NO: 901144	



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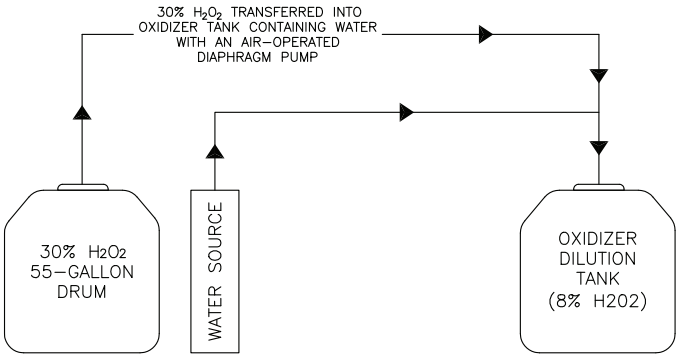
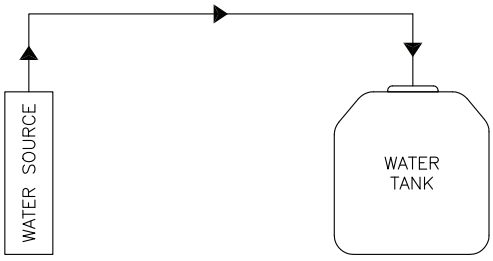
DIRECT–PUSH INJECTION SCHEMATIC
"A" AND "B" INTERVALS
ISCO INJECTION PROGRAM
Former Champaign MGP Site
Champaign, Illinois

DRAWN BY: KH	DATE: 5/21/2013	FIGURE 5
CHECKED BY: SH	PROJECT NO: 901144	

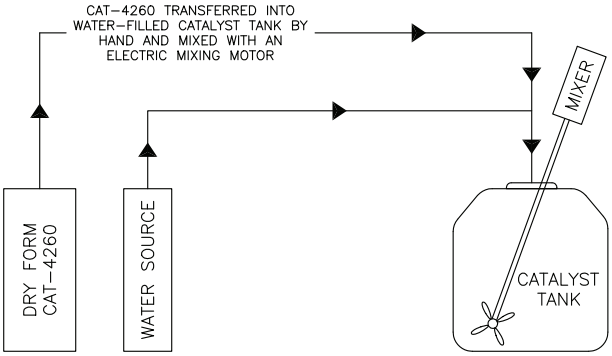
OXIDIZER TANK POCEDURES



WATER TANK PROCEDURES



CATALYST TANK PROCEDURES



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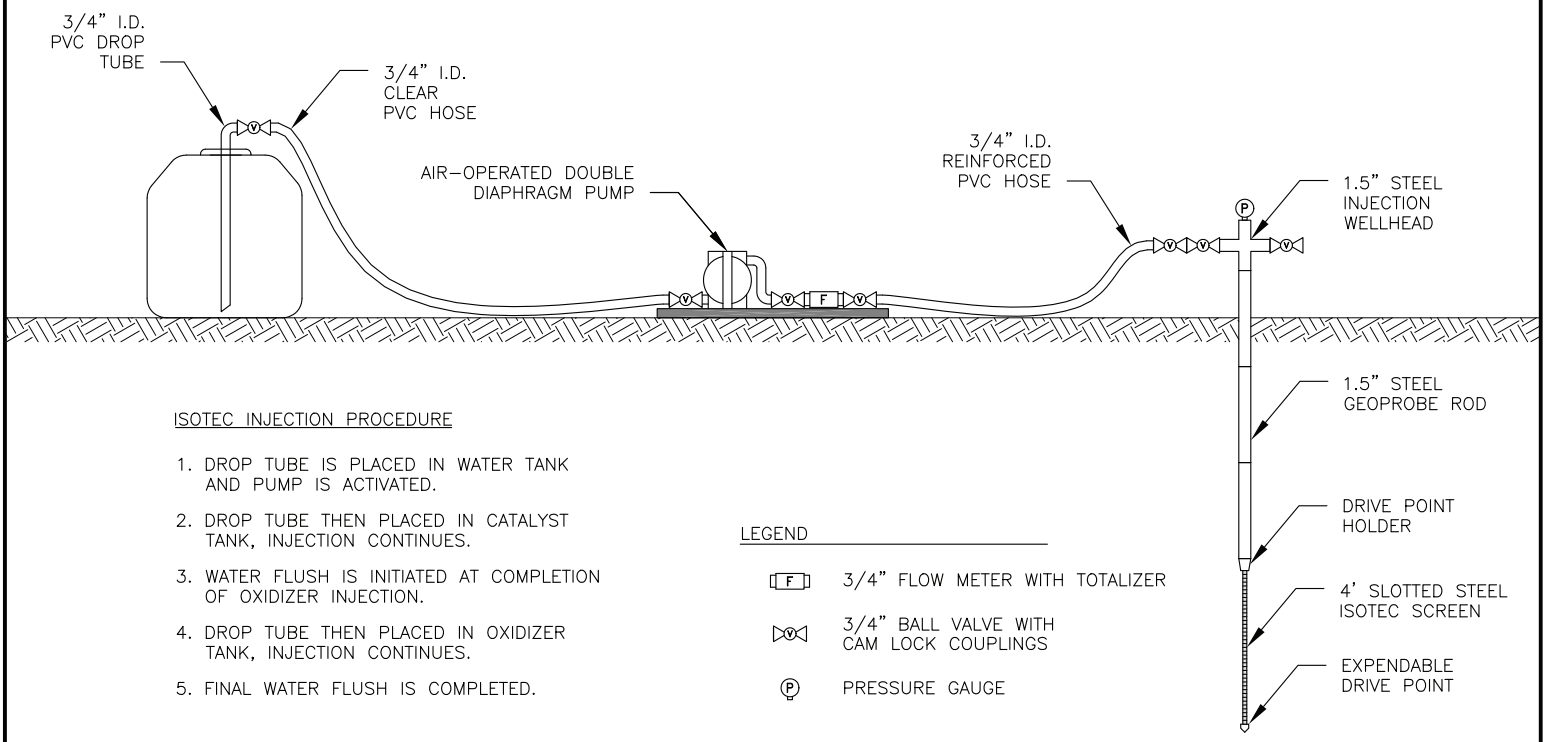
REAGENT MIXING SCHEMATIC
ISCO INJECTION PROGRAM
Former Champaign MGP Site
Champaign, Illinois

DRAWN BY: KH	DATE: 5/21/2013	FIGURE 6
CHECKED BY: SH	PROJECT NO: 901144	

REAGENT INJECTION DIAGRAM



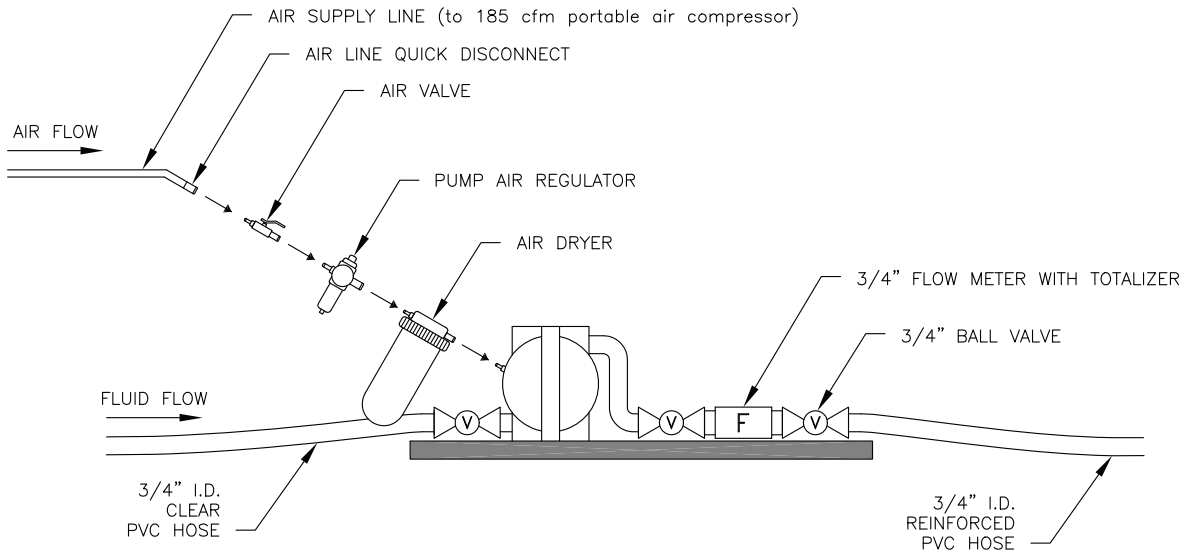
ISOTEC INJECTION PROCEDURE

1. DROP TUBE IS PLACED IN WATER TANK AND PUMP IS ACTIVATED.
2. DROP TUBE THEN PLACED IN CATALYST TANK, INJECTION CONTINUES.
3. WATER FLUSH IS INITIATED AT COMPLETION OF OXIDIZER INJECTION.
4. DROP TUBE THEN PLACED IN OXIDIZER TANK, INJECTION CONTINUES.
5. FINAL WATER FLUSH IS COMPLETED.

LEGEND

- F — 3/4" FLOW METER WITH TOTALIZER
- V — 3/4" BALL VALVE WITH CAM LOCK COUPLINGS
- P — PRESSURE GAUGE

INJECTION PUMP INSTALLATION



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INJECTION METHOD SCHEMATIC
ISCO INJECTION PROGRAM
Former Champaign MGP Site
Champaign, Illinois

DRAWN BY: KH	DATE: 5/21/2013	FIGURE 7
CHECKED BY: SH	PROJECT NO: 901144	

TABLES

Table 1
PHASE 2A INJECTION LOG

ISCO Injection Program
Former Champaign MGP Site
Champaign, Illinois 61820

Inj. Date	Injection Point	Injection Interval (feet bgs)	ISOTEC REAGENT			FIELD OBSERVATIONS		
			H_2O_2 (gallons)	Catalyst (gallons)	Total (gallons)	Rate (gpm)	Pressure (psi)	Notes (surfacing, refusal, pressure or flow rate changes, etc.)
5/1/13	1I-35A	3-6	0	0	0	-	-	Surfaced 11 ft southeast
	1I-35B	6-10	20	25	45	2.0	5-10	Surfaced 11 ft southeast
	1I-37A	3-6	25	25	50	2.0	0-35	
	1I-37B	6-10	25	25	50	2.0	0-25	
	1I-39A	3-6	25	25	50	2.0	0-5	Surfaced 30 ft southeast
	1I-39B	6-10	25	25	50	2.0	0-5	
	1I-41A	3-6	0	12	12	2.0	0-5	Surfaced 9 ft northeast
	1I-41B	6-10	25	25	50	2.0	5-15	
	1I-55A	3-6	25	25	50	2.0	0-10	
	1I-55B	6-10	25	25	50	2.0	5-15	
	1I-57A	3-6	0	25	25	2.0	0-5	Surfaced 12 ft southwest
	1I-57B	6-10	25	25	50	2.0	5-10	Surfaced 12 ft southwest
	1I-59A	3-6	0	10	10	2.0	0-5	Surfaced 15 ft southwest
	1I-59B	6-10	25	25	50	2.0	0-10	Surfaced 15 ft southwest
	1I-61A	3-6	25	25	50	2.0	10-12	Surfaced 9 ft east
	1I-61B	6-10	25	25	50	2.0	10-15	
	1I-63B	6-10	25	25	50	2.0	15-35	
5/2/13	1I-4A	3-6	25	25	50	2.0	0-5	
	1I-4B	6-10	25	25	50	2.0	5-10	
	1I-20A	3-6	25	25	50	2.0	0-5	
	1I-20B	6-10	25	25	50	2.0	0-5	
	1I-23A	3-6	25	25	50	2.0	10-15	
	1I-23B	6-10	25	25	50	2.0	0-10	
	1I-26A	3-6	25	25	50	2.0	0-5	
	1I-26B	6-10	25	25	50	2.0	5-10	
	1I-46A	3-6	5	25	30	2.0	0-5	Surfaced 21 ft southwest
	1I-46B	6-10	25	25	50	2.0	15-20	
	1I-49A	3-6	0	10	10	2.0	0-5	Surfaced 15 ft east
	1I-49B	6-10	25	25	50	2.0	10-20	Surfaced 15 ft east
	1I-52B	6-10	5	25	30	2.0	0-5	Surfaced 4 ft north
	1I-63A	3-6	15	25	40	2.0	5-25	Surfaced 1 ft west
	1I-81B	6-10	0	25	25	2.0	0-5	
	1I-84B	6-10	0	25	25	2.0	5-10	
5/3/13	1I-2A	3-6	20	25	45	2.0	5-10	Surfaced 7 ft west
	1I-2B	6-10	25	25	50	2.0	10-15	
	1I-6A	3-6	25	25	50	2.0	0-5	
	1I-6B	6-10	20	25	45	2.0	5-15	Surfaced 12 ft east
	1I-9A	3-6	25	25	50	2.0	0-5	

Table 1
PHASE 2A INJECTION LOG

ISCO Injection Program
Former Champaign MGP Site
Champaign, Illinois 61820

Inj. Date	Injection Point	Injection Interval (feet bgs)	ISOTEC REAGENT			FIELD OBSERVATIONS		
			H_2O_2 (gallons)	Catalyst (gallons)	Total (gallons)	Rate (gpm)	Pressure (psi)	Notes (surfacing, refusal, pressure or flow rate changes, etc.)
	1I-9B	6-10	12	25	37	2.0	10-15	Surfaced along annulus
	1I-12A	3-6	2	25	27	2.0	10-12	Surfaced along annulus
	1I-12B	6-10	25	25	50	2.0	5-10	
	1I-43A	3-6	25	25	50	2.0	10-15	
	1I-43B	6-10	25	25	50	2.0	10-20	
	1I-52A	3-6	6	25	31	2.0	5-10	Surfaced 4 ft north
	1I-78A	3-6	10	25	35	2.0	0-5	Surfaced 10 ft southwest
	1I-78B	6-10	20	25	45	2.0	10-20	Surfaced 10 ft southwest
	1I-81A	3-6	25	25	50	2.0	10-15	
	1I-81B	6-10	25	25	50	2.0	0-15	
	1I-84A	3-6	8	25	33	2.0	20-60	Injection stopped due to high pressure
	1I-84B	6-10	25	25	50	2.0	5-10	
	1I-88A	3-6	0	15	15	2.0	0	Surfaced 12 ft southwest
	1I-88B	6-10	25	25	50	2.0	0-5	
	1I-91A	3-6	21	25	46	2.0	0-12	Surfaced 2 ft northwest
	1I-91B	6-10	20	25	45	2.0	10-20	Surfaced 9 ft south
	1I-93A	3-6	0	0	0	-	-	Injection stopped due to high pressure
	1I-93B	6-10	15	25	40	2.0	10-50	Injection stopped due to high pressure
	1I-97C	20-25	25	25	50	2.0	10-25	
5/4/13	1I-18A	3-6	25	25	50	2.0	5-15	
	1I-18B	6-10	25	25	50	2.0	10-15	
	1I-21A	3-6	25	25	50	2.0	10-25	
	1I-21B	6-10	25	25	50	2.0	0-10	
	1I-24A	3-6	25	25	50	2.0	0-5	
	1I-24B	6-10	25	25	50	2.0	0-5	
	1I-34A	3-6	25	25	50	2.0	0-5	
	1I-34B	6-10	25	25	50	2.0	10-15	
	1I-38A	3-6	25	25	50	2.0	0-5	
	1I-38B	6-10	25	25	50	2.0	0-5	
	1I-67A	3-6	25	25	50	2.0	0-5	
	1I-67B	6-10	25	25	50	2.0	10-15	
	1I-70A	3-6	25	25	50	2.0	5-12	
	1I-70B	6-10	25	25	50	2.0	2-10	
	1I-73A	3-6	25	25	50	2.0	5-60	
	1I-73B	6-10	25	25	50	2.0	5-15	
	1I-73C	20-25	25	25	50	2.0	5-15	
	1I-89A	3-6	15	25	40	2.0	0-5	Surfaced 23 ft southwest
	1I-89B	6-10	15	25	40	2.0	10-35	Surfaced 23 ft southwest

Table 1
PHASE 2A INJECTION LOG

ISCO Injection Program
Former Champaign MGP Site
Champaign, Illinois 61820

Inj. Date	Injection Point	Injection Interval (feet bgs)	ISOTEC REAGENT			FIELD OBSERVATIONS		
			H_2O_2 (gallons)	Catalyst (gallons)	Total (gallons)	Rate (gpm)	Pressure (psi)	Notes (surfacing, refusal, pressure or flow rate changes, etc.)
	1I-92A	3-6	25	25	50	2.0	15-22	
	1I-92B	6-10	25	25	50	2.0	0-12	
5/5/13	1I-7A	3-6	25	25	50	2.0	0-25	
	1I-7B	6-10	25	25	50	2.0	10-20	
	1I-10A	3-6	25	25	50	2.0	0-5	
	1I-10B	6-10	25	25	50	2.0	10-15	
	1I-13A	3-6	0	1	1	2.0	0-5	Surfaced 9 ft southeast
	1I-13B	6-10	25	25	50	2.0	2-15	Surfaced 9 ft southeast
	1I-16A	3-6	25	25	50	2.0	0-10	
	1I-16B	6-10	25	25	50	2.0	0-30	
	1I-28A	3-6	25	25	50	2.0	0-15	
	1I-28B	6-10	25	25	50	2.0	20-25	
	1I-44A	3-6	8	25	33	2.0	15-20	Surfaced 12 ft southwest
	1I-44B	6-10	25	25	50	2.0	0-15	Surfaced 12 ft southwest
	1I-47A	3-6	25	25	50	2.0	0-15	
	1I-47B	6-10	25	25	50	2.0	20-25	
	1I-50A	3-6	25	25	50	2.0	0-5	Surfaced 12 ft southeast
	1I-50B	6-10	10	25	35	2.0	10-15	Surfaced 3 ft west
	1I-79A	3-6	25	25	50	2.0	0-5	Surfaced 4 ft southeast
	1I-79B	6-10	25	25	50	2.0	15-20	
	1I-82A	3-6	25	25	50	2.0	0-15	
	1I-82B	6-10	25	25	50	2.0	0-5	
5/6/13	1I-5A	3-6	25	25	50	2.0	5-10	
	1I-5B	6-10	25	25	50	2.0	5-10	
	1I-14A	3-6	25	25	50	2.0	10.20	
	1I-14B	6-10	25	25	50	2.0	5-20	
	1I-29A	3-6	25	25	50	2.0	5-15	
	1I-29B	6-10	25	25	50	2.0	5-15	Surfaced 18 ft southwest
	1I-32A	3-6	25	25	50	2.0	5-20	Surfaced 4 ft east
	1I-32B	6-10	25	25	50	2.0	5-45	
	1I-53A	3-6	15	25	40	2.0	5-10	Surfaced 12 ft southeast
	1I-53B	6-10	14	25	39	2.0	5-15	Surfaced 12 ft southeast
	1I-56A	3-6	15	25	40	2.0	0-10	
	1I-56B	6-10	25	25	50	2.0	0-5	
	1I-68A	3-6	25	25	50	2.0	10-15	
	1I-68B	6-10	25	25	50	2.0	0-10	
	1I-71A	3-6	15	25	40	2.0	0-10	Surfaced 6 ft north
	1I-71B	6-10	25	25	50	2.0	10-20	

Table 1
PHASE 2A INJECTION LOG

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Former Champaign MGP Site
Champaign, Illinois 61820

Inj. Date	Injection Point	Injection Interval (feet bgs)	ISOTEC REAGENT			FIELD OBSERVATIONS		
			H_2O_2 (gallons)	Catalyst (gallons)	Total (gallons)	Rate (gpm)	Pressure (psi)	Notes (surfacing, refusal, pressure or flow rate changes, etc.)
	1I-74A	3-6	5	25	30	2.0	10-80	Injection stopped due to high pressure
	1I-74B	6-10	25	25	50	2.0	30-50	
	1I-74C	20-25	25	25	50	2.0	10-40	
	1I-90A	3-6	25	25	50	2.0	5-10	
	1I-90B	6-10	25	25	50	2.0	0-10	
5/7/13	1I-15A	3-6	25	25	50	2.0	5-15	
	1I-15B	6-10	25	25	50	2.0	10-35	
	1I-19A	3-6	25	25	50	2.0	0-30	
	1I-19B	6-10	25	25	50	2.0	0-10	
	1I-22A	3-6	25	25	50	2.0	0-15	
	1I-22B	6-10	25	25	50	2.0	0-10	
	1I-40A	3-6	25	25	50	2.0	0-15	
	1I-40B	6-10	25	25	50	2.0	0-15	
	1I-60A	3-6	25	25	50	2.0	0-5	
	1I-60B	6-10	15	25	40	2.0	10-12	Surfaced 30 ft west
	1I-80A	3-6	25	25	50	2.0	0-15	
	1I-80B	6-10	25	25	50	2.0	0-20	
	1I-80C	20-25	50	50	100	2.0	20-50	
	1I-83A	3-6	3	25	28	2.0	50-80	Injection stopped due to high pressure
	1I-83B	6-10	25	25	50	2.0	10-35	
	1I-100A	3-6	0	0	0	2.0	0-80	Injection stopped due to high pressure
	1I-100B	6-10	25	25	50	2.0	0-5	
	1I-103A	3-6	25	25	50	2.0	5-15	Surfaced 6 ft southeast
	1I-103B	6-10	25	25	50	2.0	0-5	
	1I-108A	3-6	15	25	40	2.0	0-5	Surfaced 3 ft northwest
	1I-108B	6-10	25	25	50	2.0	0-8	
5/8/13	1I-17A	3-6	25	25	50	2.0	0-20	
	1I-17B	6-10	25	25	50	2.0	15-20	
	1I-30A	3-6	25	25	50	2.0	0-10	Surfaced 12 ft south
	1I-30B	6-10	25	25	50	2.0	5-10	
	1I-58A	3-6	15	25	40	2.0	0-10	Surfaced 22 ft west
	1I-58B	6-10	12	25	37	2.0	5-10	Surfaced 22 ft west
	1I-62A	3-6	0	16	16	2.0	0-5	Surfaced 14 ft southeast
	1I-62B	6-10	15	30	45	2.0	0-12	Surfaced 14 ft southeast
	1I-98A	3-6	6	25	31	2.0	0-80	Injection stopped due to high pressure
	1I-98B	6-10	25	25	50	2.0	0-30	
	1I-101A	3-6	6	25	31	2.0	0-80	Injection stopped due to high pressure
	1I-101B	6-10	25	25	50	2.0	0-15	

Table 1
PHASE 2A INJECTION LOG

ISCO Injection Program
Former Champaign MGP Site
Champaign, Illinois 61820

Inj. Date	Injection Point	Injection Interval (feet bgs)	ISOTEC REAGENT			FIELD OBSERVATIONS		
			H_2O_2 (gallons)	Catalyst (gallons)	Total (gallons)	Rate (gpm)	Pressure (psi)	Notes (surfacing, refusal, pressure or flow rate changes, etc.)
5/14/13	1I-3A	3-6	25	25	50	2.0	0-10	
	1I-3B	6-10	25	25	50	2.0	5-15	
	1I-25A	3-6	24	25	49	2.0	20-25	Surfaced 10 ft south
	1I-25B	6-10	25	25	50	2.0	5-20	
	1I-36A	3-6	0	4	4	2.0	-	Surfaced 20 ft southwest
	1I-36B	6-10	25	25	50	2.0	5-10	
	1I-54A	3-6	0	15	15	2.0	5-10	Surfaced 15 ft southeast
	1I-54B	6-10	17	25	42	2.0	10-20	Surfaced 15 ft southeast
	1I-69A	3-6	25	25	50	2.0	5-20	
	1I-69B	6-10	25	25	50	2.0	0-5	
	1I-72A	3-6	25	25	50	2.0	0-5	
	1I-72B	6-10	25	25	50	2.0	0-5	
	1I-75A	3-6	5	25	30	2.0	40-80	Injection stopped due to high pressure
	1I-75B	6-10	3	25	28	2.0	0-80	Injection stopped due to high pressure
	1I-75C	20-25	50	25	75	2.0	20-30	Surfaced 18 ft west
	1I-94C	20-25	50	50	100	2.0	5-35	
	1I-99A	3-6	5	25	30	2.0	45-80	Injection stopped due to high pressure
	1I-99B	6-10	10	25	35	2.0	0-80	Injection stopped due to high pressure
	1I-107A	3-6	12	25	37	2.0	0-5	Surfaced 2 ft east
	1I-107B	6-10	25	25	50	2.0	0-5	
5/15/13	1I-8A	3-6	0	0	0	2.0	-	Surfaced along annulus
	1I-8B	6-10	17	25	42	2.0	0-10	Surfaced along annulus
	1I-11A	3-6	25	25	50	2.0	5-10	
	1I-11B	6-10	25	25	50	2.0	0-10	
	1I-31A	3-6	25	25	50	2.0	0-5	
	1I-31B	6-10	25	25	50	2.0	0-10	
	1I-45A	3-6	0	25	25	2.0	5-10	Surfaced 20 ft east
	1I-45B	6-10	25	25	50	2.0	5-15	
	1I-48A	3-6	15	25	40	2.0	15-25	Surfaced 6 ft north
	1I-48B	6-10	25	25	50	2.0	5-10	Surfaced 6 ft north
	1I-51A	3-6	25	25	50	2.0	10-15	Surfaced 16 ft south
	1I-51B	6-10	25	25	50	2.0	10-25	
	1I-72A	3-6	0	20	20	2.0	-	Surfaced 10 ft south
	1I-72B	6-10	25	25	50	2.0	5-10	
	1I-81C	20-25	50	50	100	2.0	0-25	
	1I-96C	20-25	50	50	100	2.0	10-20	
	1I-104A	3-6	25	25	50	2.0-3.0	4	
	1I-104B	6-10	25	25	50	2.0	0-5	

Table 1
PHASE 2A INJECTION LOG

ISCO Injection Program
Former Champaign MGP Site
Champaign, Illinois 61820

Inj. Date	Injection Point	Injection Interval (feet bgs)	ISOTEC REAGENT			FIELD OBSERVATIONS		
			H_2O_2 (gallons)	Catalyst (gallons)	Total (gallons)	Rate (gpm)	Pressure (psi)	Notes (surfacing, refusal, pressure or flow rate changes, etc.)
	1I-104D	36-44	50	50	100	3.0	4	
	1I-105B	6-10	25	25	50	2.0	0-5	
	1I-106A	3-6	25	25	50	2.0	0-2	
	1I-106B	6-10	25	25	50	2.0	0-5	
	1I-106D	36-44	50	50	100	3.0-3.2	0-5	
5/16/13	1I-1A	3-6	25	25	50	2.0	0-5	
	1I-1B	6-10	25	25	50	2.0	5-10	
	1I-27A	3-6	25	25	50	2.0	0-15	
	1I-27B	6-10	25	25	50	2.0	0-15	
	1I-33A	3-6	25	25	50	2.0	0-15	
	1I-33B	6-10	25	25	50	1.5-2.0	10-30	
	1I-79C	20-25	50	50	100	2.0	5-45	
	1I-95C	20-25	50	50	100	2.0	0	
	1I-102A	3-6	25	25	50	2.0	0-2	Surfaced 9 ft south
	1I-102B	6-10	25	25	50	2.0	5-10	
	1I-105A	3-6	25	25	50	2.0	8-10	
	1I-105D	36-44	50	50	100	3.2	0-5	
PHASE 2A REAGENT TOTAL			**4,481**	**5,183**	**9,664**			

Table 2
PHASE 2B INJECTION LOG

ISCO Injection Program
Former Champaign MGP Site
Champaign, Illinois 61820

Inj. Date	Injection Point	Injection Interval (feet bgs)	ISOTEC REAGENT			FIELD OBSERVATIONS		
			H_2O_2 (gallons)	Catalyst (gallons)	Total (gallons)	Rate (gpm)	Pressure (psi)	Notes (surfacing, refusal, pressure or flow rate changes, etc.)
6/19/13	2I-4A	3-6	25	25	50	2.0	0-30	
	2I-4B	6-10	25	25	50	2.0-3.0	10-15	
	2I-7A	3-6	20	25	45	2.0-3.0	0-12	Surfaced along annulus
	2I-7B	6-10	25	25	50	2.0-3.0	10-15	
	2I-10A	3-6	25	25	50	2.0-3.0	0-2	
	2I-10B	6-10	40	40	80	2.0-3.0	0-15	
	2I-13B	6-10	15	25	40	2.0-3.0	0-5	Surfaced 25 ft east
	2I-16A	3-6	30	30	60	2.0-3.0	0-5	
	2I-16B	6-10	30	30	60	2.0-3.0	0-5	
	2I-30A	3-6	30	30	60	2.0-3.0	0-20	
	2I-30B	6-10	25	25	50	2.0-3.0	0-10	
	2I-40A	3-6	25	25	50	2.0-3.0	0-15	
	2I-44A	3-6	25	25	50	2.0-3.0	5-20	
	2I-60A	3-6	15	25	40	2.0-3.0	0-5	Surfaced 12 ft south
	2I-60B	6-10	33	40	73	2.0-3.0	5-20	Surfaced 12 ft south
	2I-63A	3-6	2	25	27	2.0-3.0	50-80	Injection stopped due to high pressure
	2I-63B	6-10	25	25	50	2.0-3.0	10-30	
	2I-73A	3-6	11	25	36	2.0-3.0	5-15	Surfaced 1 ft north
	2I-73C	20-25	50	50	100	2.0-3.0	0-30	
	2I-76A	3-6	12	25	37	2.0	0-15	Surfaced 12 ft southwest
	2I-79A	3-6	0	0	0	-	80	Injection stopped due to high pressure
	2I-79B	6-10	25	25	50	2.0-3.0	0-5	Surfaced 13 ft southwest
6/20/13	2I-10A	3-6	30	30	60	2.0-3.0	0-5	
	2I-10B	6-10	15	15	30	3.0	0-15	
	2I-19A	3-6	30	30	60	2.0-3.0	0-10	
	2I-19B	6-10	30	30	60	2.0-3.0	5-15	
	2I-22A	3-6	7	15	22	3.0	5-10	Surfaced 12 ft south
	2I-22B	6-10	30	30	60	3.0	15-25	Surfaced 12 ft south
	2I-25B	6-10	25	25	50	3.0	5-15	
	2I-34B	6-10	30	30	60	3.0	5-15	Surfaced 24 ft east
	2I-37A	3-6	30	30	60	3.0	0-10	Surfaced 18 ft south
	2I-55A	3-6	30	30	60	3.0	0-5	
	2I-56A	3-6	30	30	60	3.0	2-4	
	2I-65A	3-6	15	15	30	3.0	10-15	Surfaced 30 ft south
	2I-65B	6-10	15	30	45	3.0	0-5	Surfaced 30 ft south
	2I-68A	3-6	15	15	30	3.0	12-14	Surfaced at CS-14
	2I-68C	20-25	0	5	5	3.0	0-5	Surfaced at CS-14
	2I-71A	3-6	0	0	0	-	-	Injection stopped due to high pressure

Table 2
PHASE 2B INJECTION LOG

ISCO Injection Program
Former Champaign MGP Site
Champaign, Illinois 61820

Inj. Date	Injection Point	Injection Interval (feet bgs)	ISOTEC REAGENT			FIELD OBSERVATIONS		
			H_2O_2 (gallons)	Catalyst (gallons)	Total (gallons)	Rate (gpm)	Pressure (psi)	Notes (surfacing, refusal, pressure or flow rate changes, etc.)
	2I-71B	6-10	0	0	0	-	-	Injection stopped due to high pressure
	2I-81A	3-6	30	30	60	3.0	5-10	Surfaced 11 ft west
	2I-81B	6-10	30	30	60	3.0	5-17	Surfaced 11 ft west
	2I-85C	20-25	50	50	100	3.0	15-40	
6/21/13	2I-17A	3-6	45	45	90	2.0-3.0	05	
	2I-17B	6-10	45	45	90	2.0-3.0	0-15	
	2I-20A	3-6	45	45	90	2.0-3.0	5-20	
	2I-20B	6-10	45	45	90	2.0-3.0	0-10	
	2I-23A	3-6	45	45	90	2.0-3.0	0-5	
	2I-23B	6-10	45	45	90	2.0-3.0	0-5	
	2I-34A	3-6	0	7	7	3.0	0-5	Surfaced 12 ft southwest
	2I-34B	6-10	15	15	30	2.0-3.0	0-5	Surfaced 12 ft southwest
	2I-45A	3-6	15	15	30	2.0-3.0	0-5	Surfaced 15 ft northwest
	2I-54A	3-6	0	13	13	3.0	0-2	Surfaced 10 ft southeast
	2I-54B	6-10	13	15	28	2.0-3.0	0-5	Surfaced 10 ft southeast
	2I-68A	3-6	15	15	30	2.0-3.0	0-5	Surfaced 9 ft southwest
	2I-68C	20-25	0	15	15	3.0	0-5	Surfaced 9 ft southwest
	2I-75A	3-6	30	30	60	2.0-3.0	0-5	
	2I-75B	6-10	30	30	60	2.0-3.0	10-15	
	2I-78A	3-6	45	45	90	2.0-3.0	0-30	Surfaced 6 ft southeast
	2I-78B	6-10	45	45	90	2.0-3.0	0-15	
	2I-88D	36-44	150	150	300	4.0-5.0	0-5	
	2I-90D	36-44	150	150	300	3.0-4.5	0-5	
	2I-93B	6-10	15	15	30	2.0-3.0	10-12	Surfaced 3 ft east
6/22/13	2I-3B	6-10	30	30	60	2.0-3.0	5-15	
	2I-5A	3-6	15	15	30	2.0-3.0	4-6	
	2I-5B	6-10	30	30	60	2.0-3.0	0-15	
	2I-8A	3-6	11	15	26	2.0-3.0	0-5	Surfaced 5 ft south
	2I-8B	6-10	30	30	60	2.0-3.0	0-10	
	2I-33B	6-10	30	30	60	2.0-3.0	0-5	
	2I-36A	3-6	28	30	58	2.0-3.0	8-30	Surfaced 14 ft south
	2I-49A	3-6	15	15	30	2.0-3.0	8-12	Surfaced 6 ft northwest
	2I-64B	6-10	30	30	60	2.0-3.0	5-12	
	2I-67B	6-10	25	30	55	2.0-3.0	2-24	Surfaced 12 ft west
	2I-72A	3-6	30	30	60	2.0-3.0	0-10	
	2I-74B	6-10	30	30	60	2.0-3.0	2-4	
	2I-75B	6-10	15	15	30	2.0-3.0	10-12	Surfaced 12 ft south
	2I-83B	6-10	15	15	30	2.0-3.0	0-5	

Table 2
PHASE 2B INJECTION LOG

ISCO Injection Program
Former Champaign MGP Site
Champaign, Illinois 61820

Inj. Date	Injection Point	Injection Interval (feet bgs)	ISOTEC REAGENT			FIELD OBSERVATIONS		
			H_2O_2 (gallons)	Catalyst (gallons)	Total (gallons)	Rate (gpm)	Pressure (psi)	Notes (surfacing, refusal, pressure or flow rate changes, etc.)
	2I-86C	20-25	50	50	100	2.5-3.0	10-30	
6/23/13	2I-3A	3-6	45	45	90	2.0-3.0	0-15	
	2I-3B	6-10	30	30	60	2.0-3.0	0-10	
	2I-5A	3-6	15	15	30	2.0-3.0	0-10	
	2I-8B	6-10	15	15	30	2.0-3.0	0-5	
	2I-11A	3-6	30	30	60	2.0-3.0	0-5	
	2I-11B	6-10	45	45	90	2.0-3.0	0-5	
	2I-31A	3-6	30	30	60	2.0-3.0	2-50	
	2I-31B	6-10	30	30	60	2.0-3.0	0-20	
	2I-33A	3-6	15	30	45	2.0-3.0	0-10	Surfaced 3 ft southeast
	2I-39B	6-10	10	15	25	2.0-3.0	2-4	Surfaced 25 ft west
	2I-50A	3-6	13	15	28	2.0-3.0	5-10	Surfaced 8 ft southwest
	2I-61A	3-6	15	15	30	2.0-3.0	0-5	Surfaced 15 ft north
	2I-61B	6-10	30	30	60	2.0-3.0	2-10	
	2I-64A	3-6	15	15	30	2.0-3.0	2-12	
	2I-67A	3-6	15	15	30	2.0-3.0	10-12	
	2I-74C	20-25	50	50	100	2.0-3.0	5-25	Surfaced 12 ft south
	2I-75A	3-6	15	15	30	2.0-3.0	0-2	
	2I-82A	3-6	0	4	4	3.0	0-5	Surfaced 1 ft north
	2I-82B	6-10	15	15	30	2.0-3.0	2-4	Surfaced 1 ft north
	2I-83A	3-6	30	30	60	2.0-3.0	10-14	
	2I-83B	6-10	15	15	30	2.0-3.0	5-10	
	2I-84C	20-25	50	50	100	2.0-3.0	5-10	
6/24/13	2I-6A	3-6	45	45	90	2.5-3.0	0-10	
	2I-6B	6-10	15	15	30	2.0-3.0	5-10	Surfaced 2 ft north
	2I-9A	3-6	10	15	25	2.5-3.0	0-5	Surfaced 12 ft south
	2I-9B	6-10	15	15	30	2.0	10-14	Surfaced 12 ft south
	2I-11A	3-6	15	15	30	2.0-3.0	0-5	
	2I-29B	6-10	30	30	60	2.0-3.0	0-6	Surfaced 30 ft west
	2I-32A	3-6	30	30	60	2.0-3.0	0-19	Surfaced 12 ft south
	2I-55B	6-10	15	15	30	2.5-3.0	0-5	Surfaced 2 ft north
	2I-59A	3-6	30	30	60	2.5-3.0	0-5	
	2I-59B	6-10	30	30	60	2.0-3.0	10-15	
	2I-62A	3-6	0	6	6	3.0	-	Surfaced 6 ft south
	2I-62B	6-10	15	15	30	3.0	10-20	Surfaced 6 ft south
	2I-70B	6-10	15	15	30	2.0-3.0	0-15	Surfaced 6 ft northwest
	2I-70C	20-25	50	50	100	2.5	10-30	
	2I-77A	3-6	15	15	30	2.0-3.0	15-20	Surfaced 20 ft west

Table 2
PHASE 2B INJECTION LOG

ISCO Injection Program
Former Champaign MGP Site
Champaign, Illinois 61820

Inj. Date	Injection Point	Injection Interval (feet bgs)	ISOTEC REAGENT			FIELD OBSERVATIONS		
			H_2O_2 (gallons)	Catalyst (gallons)	Total (gallons)	Rate (gpm)	Pressure (psi)	Notes (surfacing, refusal, pressure or flow rate changes, etc.)
	2I-80A	3-6	15	15	30	2.5-3.0	20-22	Surfaced 8 ft south
	2I-80B	6-10	30	30	60	2.0-3.0	0-5	
	2I-87C	20-25	50	50	100	3.5	10-25	
6/25/13	2I-18A	3-6	15	15	30	3.0	0-5	Surfaced 7 ft northwest
	2I-18B	6-10	30	30	60	2.5-3.0	2-10	
	2I-21A	3-6	15	15	30	2.5-3.0	5-12	Surfaced 2 ft west
	2I-21B	6-10	29	30	59	2.5-3.0	0-5	Surfaced 2 ft west
	2I-35A	3-6	4	15	19	3.0	2-4	Surfaced 20 ft southwest
	2I-35B	6-10	15	15	30	2.5-3.0	10-12	Surfaced 18 ft southwest
	2I-41A	3-6	15	15	30	2.5-3.0	2-4	Surfaced 8 ft west
	2I-66A	3-6	0	15	15	3.0	5-10	Surfaced 6 ft north
	2I-66B	6-10	30	30	60	2.5-3.0	10-15	Surfaced 6 ft northwest
	2I-69B	6-10	30	30	60	2.5-3.0	2-15	Surfaced 12 ft west
	2I-69C	20-25	30	25	55	2.5-3.0	5-20	Surfaced 4 ft east
	2I-89D	36-44	150	150	300	4.0-5.0	0	
	2I-91D	36-44	150	150	300	4.0-5.0	0	
	2I-94B	6-10	4	15	19	2.5-3.0	14-15	Surfaced along annulus
6/26/13	2I-6B-R	6-10	59	60	119	2.5-3.0	5-20	Surfaced 24 ft northeast
	2I-50A-R	3-6	45	45	90	2.0-3.0	0-5	Surfaced 12 ft west
	2I-60A-R	3-6	15	15	30	2.5-3.0	0-5	Surfaced 12 ft south
	2I-68C-R	20-25	75	75	150	2.5-3.0	2-10	Surfaced 6 ft southwest
	2I-69B	6-10	15	15	30	2.0-3.0	2-4	Surfaced 15 ft east
	2I-69C	20-25	0	9	9	3.0	-	Surfaced 10 and 25 ft west
	2I-71A-R	3-6	30	30	60	3.0	15-20	
	2I-71B-R	6-10	30	45	75	2.5-3.0	0-2	Surfaced 8 ft south
	2I-77A-R	3-6	15	15	30	2.5-3.0	2-4	Surfaced 18 ft west
	2I-79A-R	3-6	30	30	60	3.0	2-22	
	2I-89D	34-44	35	25	60	5.0	0	
	2I-94B-R	6-10	15	15	30	2.5-3.0	2-4	Surfaced 3 ft east
PHASE 2B REAGENT TOTAL			**3,966**	**4,209**	**8,175**			

Table 3
PHASE 2C INJECTION LOG

ISCO Injection Program
Former Champaign MGP Site
Champaign, Illinois 61820

Inj. Date	Injection Point	Injection Interval (feet bgs)	ISOTEC REAGENT			FIELD OBSERVATIONS		
			H_2O_2 (gallons)	Catalyst (gallons)	Total (gallons)	Rate (gpm)	Pressure (psi)	Notes (surfacing, refusal, pressure or flow rate changes, etc.)
8/14/13	3I-1A	3-6	30	30	60	2.0-3.0	0-5	
	3I-1B	6-10	30	30	60	2.0-3.0	0-5	
	3I-4A	3-6	30	30	60	2.0-3.0	0-5	
	3I-4B	6-10	30	30	60	2.0-3.0	0-10	
	3I-7A	3-6	13	15	28	2.0-3.0	0-5	Surfaced 12 feet southeast
	3I-7B	6-10	30	30	60	2.0-3.0	0-5	
	3I-28A	3-6	7	15	22	2.0-3.0	15-80	Injection stopped due to high pressure
	3I-28B	6-10	15	15	30	2.0-3.0	5-10	Surfaced 12 feet southeast
	3I-34A	3-6	2	15	17	2.0-3.0	0-80	Injection stopped due to high pressure
	3I-34A-R	3-6	30	30	60	2.0-3.0	0-5	Surfaced 20 feet southwest
	3I-40C	20-25	50	50	100	2.0-3.0	0-5	
8/15/13	3I-2A	3-6	30	30	60	2.0-3.0	0-10	
	3I-2B	6-10	30	30	60	2.0-3.0	0-5	
	3I-5A	3-6	25	30	55	2.0-3.0	0-5	Surfaced 2 feet southwest
	3I-5B	6-10	25	30	55	2.0-3.0	0-10	Surfaced 17 feet northeast
	3I-7B	6-10	15	15	30	2.0-3.0	0-5	
	3I-22A	3-6	15	15	30	2.0-3.0	0-5	Surfaced 9 feet east
	3I-22B	6-10	30	30	60	2.0-3.0	0-20	Surfaced 5 and 9 feet northeast
	3I-29A	3-6	30	30	60	2.0-3.0	0-20	
	3I-29C	20-25	25	40	65	2.0-3.0	0-10	Surfaced 9 feet west
	3I-36A	3-6	18	30	48	2.0-3.0	0-10	Surfaced 12 feet south
	3I-38A	3-6	30	30	60	2.0-3.0	0-10	Surfaced 15 feet northeast
	3I-41C	20-25	50	50	100	2.0-3.0	5-20	
8/16/13	3I-8A	3-6	30	30	60	2.0-3.0	0-5	
	3I-8B	6-10	30	30	60	2.0-3.0	0-20	
	3I-17B	6-10	30	30	60	2.0-3.0	0-5	
	3I-21A	3-6	10	15	25	2.0-3.0	0-5	Surfaced 5 feet south
	3I-21B	6-10	24	15	39	2.0-3.0	5-10	Surfaced 5 feet south
	3I-23A	3-6	0	9	9	2.0-3.0	10-15	Surfaced 7 feet southwest
	3I-23B	6-10	13	15	28	2.0-3.0	0-5	Surfaced 7 feet southwest
	3I-24A	3-6	30	30	60	2.0-3.0	0-5	
	3I-24B	6-10	30	30	60	2.0-3.0	0-5	
	3I-30A	3-6	15	15	30	2.0-3.0	0-10	
	3I-30B	6-10	15	15	30	2.0-3.0	0-15	Surfaced 20 feet east
	3I-32A	3-6	2	15	17	2.0-3.0	0-5	Surfaced 11 feet southeast
	3I-32C	20-25	28	25	53	2.0-3.0	20-30	Surfaced 9 feet southeast
	3I-42C	20-25	50	50	100	2.0-3.0	0-15	

Table 3
PHASE 2C INJECTION LOG

ISCO Injection Program
Former Champaign MGP Site
Champaign, Illinois 61820

Inj. Date	Injection Point	Injection Interval (feet bgs)	ISOTEC REAGENT			FIELD OBSERVATIONS		
			H_2O_2 (gallons)	Catalyst (gallons)	Total (gallons)	Rate (gpm)	Pressure (psi)	Notes (surfacing, refusal, pressure or flow rate changes, etc.)
8/17/13	3I-9B	6-10	30	30	60	2.0-3.0	0-15	
	3I-16B	6-10	10	13	23	2.0-3.0	10-20	Surfaced 8 feet south
	3I-20A	3-6	1	15	16	2.0-3.0	0-5	Surfaced 12 feet southwest
	3I-20B	6-10	13	15	28	2.0-3.0	0-5	Surfaced 15 feet southwest
	3I-26A	3-6	10	15	25	2.0-3.0	0-5	Surfaced 17 feet southwest
	3I-26B	6-10	15	15	30	2.0-3.0	0-5	Surfaced 20 feet southwest
	3I-30A	3-6	15	15	30	2.0-3.0	0-5	
	3I-35A	3-6	30	30	60	2.0-3.0	0-5	Surfaced 1 foot north
	3I-37A	3-6	5	10	15	2.0-3.0	0-5	Surfaced at historic probe hole
	3I-39A	3-6	10	10	20	2.0-3.0	10-16	
	3I-42C	20-25	25	25	50	2.0-3.0	0-5	
	3I-44D	36-44	150	150	300	3.0-4.0	0-5	
	3I-46D	36-44	150	150	300	3.0-4.0	0-5	
	3I-49B	6-10	15	25	40	2.0-3.0	0-5	Surfaced 2 feet north
8/18/13	3I-9B	6-10	15	15	30	2.0-3.0	0-5	
	3I-12B	6-10	20	20	40	2.0-3.0	0-5	
	3I-19B	6-10	20	20	40	2.0-3.0	0-5	Surfaced 20 feet southwest
	3I-25A	3-6	10	10	20	2.0-3.0	0-5	Surfaced 15 feet south
	3I-25B	6-10	18	30	48	2.0-3.0	5-10	Surfaced 15 and 20 feet south
	3I-27A	3-6	10	10	20	2.0-3.0	0-5	Surfaced 15 feet northwest
	3I-27B	6-10	10	10	20	2.0-3.0	0-15	Surfaced 17 feet northwest
	3I-31A	3-6	10	10	20	2.0-3.0	0-5	Surfaced 12 feet southwest
	3I-31C	20-25	23	25	48	2.0-3.0	10-30	Surfaced 12 feet southwest
	3I-37A	3-6	10	20	30	2.0-3.0	0-5	Surfaced 18 feet southwest
	3I-39A	3-6	12	10	22	2.0-3.0	0-12	Surfaced 10 feet southwest
	3I-45D	36-44	150	150	300	3.0-4.0	0-5	
	3I-47D	36-44	150	150	300	3.0-4.0	0-5	
	3I-48B	6-10	30	30	60	2.0-3.0	0-15	
	3I-49B	6-10	10	4	14	2.0-3.0	0-5	Surfaced 2 feet north
8/19/13	3I-3A	3-6	20	20	40	2.0-3.0	0-15	
	3I-3B	6-10	10	20	30	2.0-3.0	0-20	Surfaced 6 feet southeast
	3I-6A	3-6	18	20	38	2.0-3.0	0-5	Surfaced 6 feet north
	3I-6B	6-10	30	30	60	2.0-3.0	0-5	
	3I-10B	6-10	15	15	30	2.0-3.0	0-15	
	3I-13B	6-10	20	20	40	2.0-3.0	0-22	
	3I-14B	6-10	15	15	30	2.0-3.0	0-5	Surfaced 5 feet northwest
	3I-18B	6-10	10	10	20	2.0-3.0	2-5	Surfaced 12 feet south
	3I-32C-R	20-25	27	25	52	2.0-3.0	10-15	Surfaced 15 feet southwest

Table 3
PHASE 2C INJECTION LOG

ISCO Injection Program
Former Champaign MGP Site
Champaign, Illinois 61820

Inj. Date	Injection Point	Injection Interval (feet bgs)	ISOTEC REAGENT			FIELD OBSERVATIONS		
			H_2O_2 (gallons)	Catalyst (gallons)	Total (gallons)	Rate (gpm)	Pressure (psi)	Notes (surfacing, refusal, pressure or flow rate changes, etc.)
	3I-33A	3-6	10	10	20	2.0-3.0	5-10	Surfaced 15 feet south
	3I-43C	20-25	150	150	300	2.0-3.0	0-35	
8/20/13	3I-5A-R	3-6	10	10	20	2.0-3.0	0-5	Surfaced 10 feet southwest
	3I-5B-R	6-10	20	20	40	2.0-3.0	0-10	Surfaced 19 feet northeast
	3I-7A-R	3-6	30	30	60	2.0-3.0	0-5	
	3I-7B-R	6-10	20	20	40	2.0-3.0	0-10	Surfaced 8 feet south
	3I-11B	6-10	10	10	20	2.0-3.0	0-5	Surfaced 12 feet south
	3I-15B	6-10	10	10	20	2.0-3.0	0-5	Surfaced 12 feet south
	3I-18B-R	6-10	15	15	30	2.0-3.0	0-5	Surfaced 12 feet south
	3I-27A-R	3-6	10	10	20	2.0-3.0	0-5	
	3I-27B-R	6-10	20	20	40	2.0-3.0	0-5	Surfaced 18 feet southwest
	3I-31A-R	3-6	10	10	20	2.0-3.0	0-5	Surfaced 12 feet southwest
	3I-35A-R	3-6	10	2	12	2.0-3.0	0-5	Surfaced 1 foot north
	3I-37A-R	3-6	10	10	20	2.0-3.0	10-22	Surfaced 18 feet southwest
	3I-39A-R	3-6	10	10	20	2.0-3.0	0-5	Surfaced 10 feet southwest
	3I-42C-R	20-25	100	100	200	2.0-3.0	5-20	
	3I-47D	36-44	50	50	100	2.0-3.0	0-5	
PHASE 2C REAGENT TOTAL			**2,534**	**2,668**	**5,202**			

Appendix C Laboratory Analytical Result Datasheets for Backfill Soil Confirmation Samples – 2017 Additional Remedial Actions

February 06, 2017

Michael Crutcher
PSC Industrial Outsourcing, LP
210 West Sand Bank Road
Columbia, IL 62236-0230
TEL: (618) 281-7173
FAX: (618) 281-5120

RE: Champaign Residual IRM 624-1610-0001 / J0055 **WorkOrder:** 17011479

Dear Michael Crutcher:

TEKLAB, INC received 1 sample on 1/27/2017 8:30:00 AM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Michael L. Austin
Project Manager
(618)344-1004 ex 16
MAustin@teklabinc.com

Client: PSC Industrial Outsourcing, LP
Work Order: 17011479
Client Project: Champaign Residual IRM 624-1610-0001 / J0055
Report Date: 06-Feb-17

This reporting package includes the following:

Cover Letter	1
Report Contents	2
Definitions	3
Case Narrative	4
Laboratory Results	5
Sample Summary	6
Dates Report	7
Quality Control Results	8
Receiving Check List	12
Chain of Custody	Appended

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011479

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 06-Feb-17

Abbr Definition

CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilutions factors.
DNI	Did not ignite
DUP	Laboratory duplicate is an aliquot of a sample taken from the same container under laboratory conditions for independent processing and analysis independently of the original aliquot.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample, spiked with verified known amounts of analytes, is analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system. The acceptable recovery range is in the QC Package (provided upon request).
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MBLK	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	Method detection limit means the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero.
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions. The acceptable recovery range is listed in the QC Package (provided upon request).
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TIC	Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
TNTC	Too numerous to count (> 200 CFU)

Qualifiers

# - Unknown hydrocarbon	B - Analyte detected in associated Method Blank
E - Value above quantitation range	H - Holding times exceeded
I - Associated internal standard was outside method criteria	M - Manual Integration used to determine area response
ND - Not Detected at the Reporting Limit	R - RPD outside accepted recovery limits
S - Spike Recovery outside recovery limits	T - TIC(Tentatively identified compound)
X - Value exceeds Maximum Contaminant Level	

Case Narrative

http://www.teklabinc.com/

Client: PSC Industrial Outsourcing, LP
Work Order: 17011479
Client Project: Champaign Residual IRM 624-1610-0001 / J0055
Report Date: 06-Feb-17

Cooler Receipt Temp: 5.82 °C

Locations and Accreditations

	Collinsville	Springfield	Kansas City	Collinsville Air
Address	5445 Horseshoe Lake Road	3920 Pintail Dr	8421 Nieman Road	5445 Horseshoe Lake Road
	Collinsville, IL 62234-7425	Springfield, IL 62711-9415	Lenexa, KS 66214	Collinsville, IL 62234-7425
Phone	(618) 344-1004	(217) 698-1004	(913) 541-1998	(618) 344-1004
Fax	(618) 344-1005	(217) 698-1005	(913) 541-1998	(618) 344-1005
Email	jhriley@teklabinc.com	KKlostermann@teklabinc.com	Ryoungstrom@teklabinc.com	EHurley@teklabinc.com

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2018	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2017	Collinsville
Louisiana	LDEQ	166493	NELAP	6/30/2017	Collinsville
Louisiana	LDEQ	166578	NELAP	6/30/2017	Collinsville
Texas	TCEQ	T104704515-12-1	NELAP	7/31/2017	Collinsville
Arkansas	ADEQ	88-0966		3/14/2017	Collinsville
Illinois	IDPH	17584		5/31/2017	Collinsville
Kentucky	KDEP	98006		12/31/2017	Collinsville
Kentucky	UST	0073		1/31/2018	Collinsville
Missouri	MDNR	00930		5/31/2017	Collinsville
Missouri	MDNR	930		1/31/2018	Collinsville
Oklahoma	ODEQ	9978		8/31/2017	Collinsville

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011479

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 06-Feb-17

Lab ID: 17011479-001 **Client Sample ID:** IFL-RES-REM-01 (12)

Matrix: SOLID **Collection Date:** 01/26/2017 14:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**12.3**	%	1	02/01/2017 19:47	R228698
SW-846 9012A								
Cyanide, Amenable to Chlorination		0.26		**Interference**	mg/Kg-dry	1	01/30/2017 0:00	126586
SW-846 9012A (TOTAL)								
Cyanide	NELAP	0.25		**< 0.25**	mg/Kg-dry	1	02/01/2017 14:00	126634
SW-846 3050B, 6010B, METALS BY ICP								
Arsenic	NELAP	2.36		**3.75**	mg/Kg-dry	1	02/02/2017 11:37	126625
Barium	NELAP	0.24		**44.1**	mg/Kg-dry	1	02/02/2017 11:37	126625
Cadmium	NELAP	0.19		**< 0.19**	mg/Kg-dry	1	02/02/2017 11:37	126625
Chromium	NELAP	0.50		**19.3**	mg/Kg-dry	1	02/03/2017 12:18	126728
Lead	NELAP	1.42		**11.5**	mg/Kg-dry	1	02/02/2017 11:37	126625
Silver	NELAP	0.47		**< 0.47**	mg/Kg-dry	1	02/02/2017 11:37	126625
SW-846 3050B, 6020A, METALS BY ICPMS								
Selenium	NELAP	0.94		**< 0.94**	mg/Kg-dry	10	02/03/2017 23:07	126631
SW-846 7471B								
Mercury	NELAP	0.011		**0.023**	mg/Kg-dry	1	02/01/2017 10:33	126581

Client: PSC Industrial Outsourcing, LP
Work Order: 17011479
Client Project: Champaign Residual IRM 624-1610-0001 / J0055
Report Date: 06-Feb-17

Lab Sample ID	Client Sample ID	Matrix	Fractions	Collection Date
17011479-001	IFL-RES-REM-01 (12)	Solid	1	01/26/2017 14:00

Client: PSC Industrial Outsourcing, LP
Work Order: 17011479
Client Project: Champaign Residual IRM 624-1610-0001 / J0055
Report Date: 06-Feb-17

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
17011479-001A	IFL-RES-REM-01 (12)	01/26/2017 14:00	01/27/2017 8:30		
	EPA SW846 3550C, 5035A, ASTM D2974				02/01/2017 19:47
	SW-846 3050B, 6010B, Metals by ICP			01/31/2017 17:55	02/02/2017 11:37
	SW-846 3050B, 6010B, Metals by ICP			02/02/2017 17:52	02/03/2017 12:18
	SW-846 3050B, 6020A, Metals by ICPMS			01/31/2017 19:18	02/03/2017 23:07
	SW-846 7471B			01/30/2017 15:50	02/01/2017 10:33
	SW-846 9012A			01/27/2017 18:30	01/30/2017 0:00
	SW-846 9012A (Total)			01/31/2017 19:15	02/01/2017 14:00

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011479

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 06-Feb-17

EPA SW846 3550C, 5035A, ASTM D2974

Batch R228698 **SampType:** LCS Units **%**

SampID: LCS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	02/01/2017

Batch R228698 **SampType:** LCSQC Units **%**

SampID: LCSQC

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	02/01/2017

SW-846 9012A (TOTAL)

Batch 126634 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK 170131 TCN3

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cyanide	0.25		**< 0.25**						02/01/2017

Batch 126634 **SampType:** LCS Units **mg/Kg**

SampID: LCS 170131 TCN2

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cyanide	0.25		**1.35**	1.250	0	108.1	85	115	02/01/2017

Batch 126634 **SampType:** MS Units **mg/Kg-dry**

SampID: 17011479-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cyanide	0.27		**1.81**	1.370	0.2169	116.1	75	125	02/01/2017

Batch 126634 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **15**

SampID: 17011479-001AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Cyanide	0.26		**1.82**	1.319	0.2169	121.8	1.808	0.89	02/01/2017

SW-846 3050B, 6010B, METALS BY ICP

Batch 126625 **SampType:** MBLK Units **mg/Kg-dry**

SampID: MBLK-126625

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	2.50		**< 2.50**	2.500	0	0	-100	100	02/01/2017
Barium	0.25		**< 0.25**	0.2500	0	0	-100	100	02/01/2017
Cadmium	0.20		**< 0.20**	0.2000	0	0	-100	100	02/01/2017
Chromium	0.50		**< 0.50**	0.5000	0	0	-100	100	02/01/2017
Lead	1.50		**< 1.50**	1.500	0	0	-100	100	02/01/2017
Silver	0.50		**< 0.50**	0.5000	0	0	-100	100	02/01/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011479

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 06-Feb-17

SW-846 3050B, 6010B, METALS BY ICP

Batch 126625 **SampType:** LCS Units **mg/Kg-dry**

SampID: LCS-126625

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	2.50		**45.4**	50.00	0	90.9	85	115	02/01/2017
Barium	0.25		**205**	200.0	0	102.4	85	115	02/01/2017
Cadmium	0.20		**4.90**	5.000	0	98.0	85	115	02/01/2017
Chromium	0.50		**20.0**	20.00	0	99.8	85	115	02/01/2017
Lead	1.50		**50.7**	50.00	0	101.3	85	115	02/01/2017
Silver	0.50		**4.93**	5.000	0	98.6	85	115	02/01/2017

Batch 126625 **SampType:** MS Units **mg/Kg-dry**

SampID: 17011479-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	2.50		**50.8**	50.00	3.745	94.0	75	125	02/02/2017
Barium	0.25		**264**	200.0	44.09	109.7	75	125	02/02/2017
Cadmium	0.20		**4.74**	5.000	0	94.8	75	125	02/02/2017
Lead	1.50		**63.6**	50.00	11.49	104.1	75	125	02/02/2017
Silver	0.50		**4.94**	5.000	0	98.8	75	125	02/02/2017

Batch 126625 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **20**

SampID: 17011479-001AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Arsenic	2.45		**50.9**	49.02	3.745	96.1	50.75	0.24	02/02/2017
Barium	0.25		**271**	196.1	44.09	115.6	263.5	2.69	02/02/2017
Cadmium	0.20		**4.71**	4.902	0	96.0	4.740	0.72	02/02/2017
Lead	1.47		**66.6**	49.02	11.49	112.4	63.55	4.70	02/02/2017
Silver	0.49		**4.92**	4.902	0	100.4	4.940	0.37	02/02/2017

Batch 126728 **SampType:** MBLK Units **mg/Kg-dry**

SampID: MBLK-126728

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	2.50		**< 2.50**	2.500	0	0	-100	100	02/03/2017
Barium	0.25		**< 0.25**	0.2500	0	0	-100	100	02/03/2017
Cadmium	0.20		**< 0.20**	0.2000	0	0	-100	100	02/03/2017
Chromium	0.50		**< 0.50**	0.5000	0	0	-100	100	02/03/2017
Lead	1.50		**< 1.50**	1.500	0	0	-100	100	02/03/2017
Silver	0.50		**< 0.50**	0.5000	0	0	-100	100	02/03/2017

Batch 126728 **SampType:** LCS Units **mg/Kg-dry**

SampID: LCS-126728

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	2.50		**46.2**	50.00	0	92.5	85	115	02/03/2017
Barium	0.25		**206**	200.0	0	102.8	85	115	02/03/2017
Cadmium	0.20		**4.99**	5.000	0	99.8	85	115	02/03/2017
Chromium	0.50		**19.9**	20.00	0	99.6	85	115	02/03/2017
Lead	1.50		**51.1**	50.00	0	102.1	85	115	02/03/2017
Silver	0.50		**4.90**	5.000	0	98.0	85	115	02/03/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011479

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 06-Feb-17

SW-846 3050B, 6010B, METALS BY ICP

Batch 126728 **SampType:** MS Units **mg/Kg-dry**

SampID: 17011479-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chromium	0.49		**39.3**	19.61	19.31	101.8	75	125	02/03/2017

Batch 126728 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **20**

SampID: 17011479-001AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Chromium	0.49		**38.9**	19.61	19.31	100.1	39.27	0.85	02/03/2017

SW-846 3050B, 6020A, METALS BY ICPMS

Batch 126631 **SampType:** MBLK Units **mg/Kg-dry**

SampID: MBLK-126631

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Selenium	1.00		**< 1.00**	1.000	0	0	-100	100	02/03/2017

Batch 126631 **SampType:** LCS Units **mg/Kg-dry**

SampID: LCS-126631

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Selenium	1.00		**49.8**	50.00	0	99.5	80	120	02/03/2017

Batch 126631 **SampType:** MS Units **mg/Kg-dry**

SampID: 17011479-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Selenium	1.00		**46.9**	50.00	0	93.8	75	125	02/03/2017

Batch 126631 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **20**

SampID: 17011479-001AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Selenium	0.98		**47.5**	49.02	0	96.8	46.92	1.17	02/03/2017

SW-846 7471B

Batch 126581 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK-126581

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.010		**< 0.010**	0.01000	0	0	-100	100	01/31/2017

Batch 126581 **SampType:** LCS Units **mg/Kg**

SampID: LCS-126581

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.010		**0.225**	0.2500	0	90.1	85	115	01/31/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011479

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 06-Feb-17

SW-846 7471B

Batch 126581 **SampType:** MS Units **mg/Kg-dry**

SampID: 17011479-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.011		**0.354**	0.2814	0.02285	117.8	75	125	02/01/2017

Batch 126581 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **15**

SampID: 17011479-001AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Mercury	0.011		**0.349**	0.2814	0.02285	115.9	0.3544	1.57	02/01/2017

Receiving Check List

http://www.teklabinc.com/

Client: PSC Industrial Outsourcing, LP
Work Order: 17011479
Client Project: Champaign Residual IRM 624-1610-0001 / J0055
Report Date: 06-Feb-17

Carrier: John Riley
Received By: AMD

Completed by: Laurie A. Langdon
On: 27-Jan-17

Reviewed by: Elizabeth A. Hurley
On: 27-Jan-17

Pages to follow: Chain of custody 1 Extra pages included 0

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C	5.82
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice	☐
Chain of custody present?	Yes ☑	No ☐			
Chain of custody signed when relinquished and received?	Yes ☑	No ☐			
Chain of custody agrees with sample labels?	Yes ☑	No ☐			
Samples in proper container/bottle?	Yes ☑	No ☐			
Sample containers intact?	Yes ☑	No ☐			
Sufficient sample volume for indicated test?	Yes ☑	No ☐			
All samples received within holding time?	Yes ☑	No ☐			
Reported field parameters measured:	Field ☐	Lab ☐	NA ☑		
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐			

When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.

Water – at least one vial per sample has zero headspace?	Yes ☐	No ☐	No VOA vials ☑
Water - TOX containers have zero headspace?	Yes ☐	No ☐	No TOX containers ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	NA ☑
NPDES/CWA TCN interferences checked/treated in the field?	Yes ☐	No ☐	NA ☑

Any No responses must be detailed below or on the COC.

Chain of Custody Record

210 West Sand Bank Road | Columbia, IL 62236 | P (618) 281-7173 | F (618) 281-7020

COC Serial No. ICMP-001

1701147-001 1701147-001 1/27/17

| | | |

January 31, 2017

Michael Crutcher
PSC Industrial Outsourcing, LP
210 West Sand Bank Road
Columbia, IL 62236-0230
TEL: (618) 281-7173
FAX: (618) 281-5120

RE: Champaign Residual IRM 624-1610-0001 / J0055 **WorkOrder:** 17011480

Dear Michael Crutcher:

TEKLAB, INC received 1 sample on 1/27/2017 8:30:00 AM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Michael L. Austin
Project Manager
(618)344-1004 ex 16
MAustin@teklabinc.com

Client: PSC Industrial Outsourcing, LP
Work Order: 17011480
Client Project: Champaign Residual IRM 624-1610-0001 / J0055
Report Date: 31-Jan-17

This reporting package includes the following:

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Report Contents	2
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Case Narrative	4
Laboratory Results	5
Sample Summary	9
Dates Report	10
Quality Control Results	11
Receiving Check List	26
Chain of Custody	Appended

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011480

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 31-Jan-17

Abbr Definition

CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilutions factors.
DNI	Did not ignite
DUP	Laboratory duplicate is an aliquot of a sample taken from the same container under laboratory conditions for independent processing and analysis independently of the original aliquot.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample, spiked with verified known amounts of analytes, is analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system. The acceptable recovery range is in the QC Package (provided upon request).
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MBLK	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	Method detection limit means the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero.
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions. The acceptable recovery range is listed in the QC Package (provided upon request).
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TIC	Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
TNTC	Too numerous to count (> 200 CFU)

Qualifiers

# - Unknown hydrocarbon	B - Analyte detected in associated Method Blank
E - Value above quantitation range	H - Holding times exceeded
I - Associated internal standard was outside method criteria	M - Manual Integration used to determine area response
ND - Not Detected at the Reporting Limit	R - RPD outside accepted recovery limits
S - Spike Recovery outside recovery limits	T - TIC(Tentatively identified compound)
X - Value exceeds Maximum Contaminant Level	

Case Narrative

http://www.teklabinc.com/

Client: PSC Industrial Outsourcing, LP
Work Order: 17011480
Client Project: Champaign Residual IRM 624-1610-0001 / J0055
Report Date: 31-Jan-17

Cooler Receipt Temp: 5.82 °C

Locations and Accreditations

	Collinsville	Springfield	Kansas City	Collinsville Air
Address	5445 Horseshoe Lake Road	3920 Pintail Dr	8421 Nieman Road	5445 Horseshoe Lake Road
	Collinsville, IL 62234-7425	Springfield, IL 62711-9415	Lenexa, KS 66214	Collinsville, IL 62234-7425
Phone	(618) 344-1004	(217) 698-1004	(913) 541-1998	(618) 344-1004
Fax	(618) 344-1005	(217) 698-1005	(913) 541-1998	(618) 344-1005
Email	jhriley@teklabinc.com	KKlostermann@teklabinc.com	Ryoungstrom@teklabinc.com	EHurley@teklabinc.com

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2018	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2017	Collinsville
Louisiana	LDEQ	166493	NELAP	6/30/2017	Collinsville
Louisiana	LDEQ	166578	NELAP	6/30/2017	Collinsville
Texas	TCEQ	T104704515-12-1	NELAP	7/31/2017	Collinsville
Arkansas	ADEQ	88-0966		3/14/2017	Collinsville
Illinois	IDPH	17584		5/31/2017	Collinsville
Kentucky	KDEP	98006		12/31/2017	Collinsville
Kentucky	UST	0073		1/31/2018	Collinsville
Missouri	MDNR	00930		5/31/2017	Collinsville
Missouri	MDNR	930		1/31/2018	Collinsville
Oklahoma	ODEQ	9978		8/31/2017	Collinsville

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011480

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 31-Jan-17

Lab ID: 17011480-001 **Client Sample ID:** FL-RES-REM-W2 (12)

Matrix: SOLID **Collection Date:** 01/26/2017 14:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**15.0**	%	1	01/27/2017 18:32	R228528
SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Acenaphthene	NELAP	0.008		**0.177**	mg/Kg-dry	1	01/30/2017 15:03	126529
Acenaphthylene	NELAP	0.008		**0.197**	mg/Kg-dry	1	01/30/2017 15:03	126529
Anthracene	NELAP	0.008		**0.156**	mg/Kg-dry	1	01/30/2017 15:03	126529
Benzo(a)anthracene	NELAP	0.024		**0.092**	mg/Kg-dry	1	01/30/2017 15:03	126529
Benzo(a)pyrene	NELAP	0.008		**0.055**	mg/Kg-dry	1	01/30/2017 15:03	126529
Benzo(b)fluoranthene	NELAP	0.008		**0.070**	mg/Kg-dry	1	01/30/2017 15:03	126529
Benzo(g,h,i)perylene	NELAP	0.008		**0.016**	mg/Kg-dry	1	01/30/2017 15:03	126529
Benzo(k)fluoranthene	NELAP	0.008		**0.025**	mg/Kg-dry	1	01/30/2017 15:03	126529
Chrysene	NELAP	0.008		**0.081**	mg/Kg-dry	1	01/30/2017 15:03	126529
Dibenzo(a,h)anthracene	NELAP	0.008		**ND**	mg/Kg-dry	1	01/30/2017 15:03	126529
Fluoranthene	NELAP	0.008		**0.208**	mg/Kg-dry	1	01/30/2017 15:03	126529
Fluorene	NELAP	0.008		**0.653**	mg/Kg-dry	1	01/30/2017 15:03	126529
Indeno(1,2,3-cd)pyrene	NELAP	0.008		**0.016**	mg/Kg-dry	1	01/30/2017 15:03	126529
Naphthalene	NELAP	0.080	S	**8.98**	mg/Kg-dry	10	01/30/2017 16:41	126529
Phenanthrene	NELAP	0.008		**0.650**	mg/Kg-dry	1	01/30/2017 15:03	126529
Pyrene	NELAP	0.008		**0.157**	mg/Kg-dry	1	01/30/2017 15:03	126529
Surr: 2-Fluorobiphenyl		19.9-83		**70.4**	%REC	1	01/30/2017 15:03	126529
Surr: Nitrobenzene-d5		23-84		**53.1**	%REC	1	01/30/2017 15:03	126529
Surr: p-Terphenyl-d14		33.5-106		**89.4**	%REC	1	01/30/2017 15:03	126529

MS/MSD QC limits for Naphthalene are not applicable due to high sample/spike ratio.
Elevated reporting limit due to sample composition.

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2,4-Trichlorobenzene	NELAP	1.18		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
1,2-Dichlorobenzene	NELAP	1.18		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
1,3-Dichlorobenzene	NELAP	1.18		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
1,4-Dichlorobenzene	NELAP	1.18		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
2,4,5-Trichlorophenol	NELAP	0.823		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
2,4,6-Trichlorophenol	NELAP	0.823		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
2,4-Dichlorophenol	NELAP	1.18		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
2,4-Dimethylphenol	NELAP	1.18	S	**2.45**	mg/Kg-dry	1	01/28/2017 15:00	126527
2,4-Dinitrophenol	NELAP	2.35		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
2,4-Dinitrotoluene	NELAP	0.823		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
2,6-Dinitrotoluene	NELAP	0.823		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
2-Chloronaphthalene	NELAP	0.823		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
2-Chlorophenol	NELAP	1.18		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
2-Methoxy-4-methylphenol		1.53		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
2-Methylnaphthalene	NELAP	0.823		**2.47**	mg/Kg-dry	1	01/28/2017 15:00	126527
2-Nitroaniline	NELAP	2.35		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
2-Nitrophenol	NELAP	0.823		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
3,3´-Dichlorobenzidine	NELAP	0.823		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
3-Nitroaniline	NELAP	2.35		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
4,6-Dinitro-2-methylphenol	NELAP	2.35		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
4-Bromophenyl phenyl ether	NELAP	0.823		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
4-Chloro-3-methylphenol	NELAP	1.18		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
4-Chloroaniline	NELAP	1.18		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011480

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 31-Jan-17

Lab ID: 17011480-001 **Client Sample ID:** FL-RES-REM-W2 (12)

Matrix: SOLID **Collection Date:** 01/26/2017 14:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
4-Chlorophenyl phenyl ether	NELAP	0.823		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
4-Nitroaniline	NELAP	1.18		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
4-Nitrophenol	NELAP	0.823		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
Aniline	NELAP	1.18		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
Azobenzene		0.823		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
Benzoic acid	NELAP	3.53		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
Benzyl alcohol	NELAP	1.18		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
Bis(2-chloroethoxy)methane	NELAP	0.823		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
Bis(2-chloroethyl)ether	NELAP	1.18		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
Bis(2-chloroisopropyl)ether	NELAP	0.823		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
Bis(2-ethylhexyl)phthalate	NELAP	0.823		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
Butyl benzyl phthalate	NELAP	0.823		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
Carbazole	NELAP	1.18		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
Dibenzofuran	NELAP	0.823		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
Diethyl phthalate	NELAP	1.18		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
Dimethyl phthalate	NELAP	0.823		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
Di-n-butyl phthalate	NELAP	0.823		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
Di-n-octyl phthalate	NELAP	0.823		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
Hexachlorobenzene	NELAP	0.823		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
Hexachlorobutadiene	NELAP	1.18		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
Hexachlorocyclopentadiene	NELAP	0.823		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
Hexachloroethane	NELAP	1.18		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
Isophorone	NELAP	0.823		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
m,p-Cresol	NELAP	1.18		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
Nitrobenzene	NELAP	1.18		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
N-Nitrosodimethylamine	NELAP	1.18		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
N-Nitroso-di-n-propylamine	NELAP	1.18		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
N-Nitrosodiphenylamine	NELAP	1.18		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
o-Cresol	NELAP	1.18		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
Pentachlorophenol	NELAP	4.70		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
Phenol	NELAP	0.823		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
Pyridine	NELAP	1.18	S	**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
1,2-Diphenylhydrazine		1.98		**ND**	mg/Kg-dry	1	01/28/2017 15:00	126527
Surr: 2,4,6-Tribromophenol		33-115		**82.3**	%REC	1	01/28/2017 15:00	126527
Surr: 2-Fluorobiphenyl		36.5-97.7		**67.8**	%REC	1	01/28/2017 15:00	126527
Surr: 2-Fluorophenol		39.4-92.8		**78.2**	%REC	1	01/28/2017 15:00	126527
Surr: Nitrobenzene-d5		34.7-90.1		**77.1**	%REC	1	01/28/2017 15:00	126527
Surr: Phenol-d5		42.8-106		**89.8**	%REC	1	01/28/2017 15:00	126527
Surr: p-Terphenyl-d14		43.7-124		**80.5**	%REC	1	01/28/2017 15:00	126527

MS and MSD did not recover within control limits due to matrix interference.

LCS recovered outside upper QC limits. Sample results are below reporting limit. Data is reportable per 2009 TNI Standard (Volume1, Module 4, section 1.7.4.2).

Elevated reporting limit due to sample composition.

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,1,2-Tetrachloroethane	NELAP	423		**ND**	µg/Kg-dry	50	01/30/2017 13:03	126575
1,1,1-Trichloroethane	NELAP	423		**ND**	µg/Kg-dry	50	01/30/2017 13:03	126575
1,1,2,2-Tetrachloroethane	NELAP	423		**ND**	µg/Kg-dry	50	01/30/2017 13:03	126575
1,1,2-Trichloro-1,2,2-trifluoroethane		423		**ND**	µg/Kg-dry	50	01/30/2017 13:03	126575

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011480

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 31-Jan-17

Lab ID: 17011480-001 **Client Sample ID:** FL-RES-REM-W2 (12)

Matrix: SOLID **Collection Date:** 01/26/2017 14:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,2-Trichloroethane	NELAP	423		ND	µg/Kg-dry	50	01/30/2017 13:03	126575
1,1-Dichloro-2-propanone		4230		ND	µg/Kg-dry	50	01/30/2017 13:03	126575
1,1-Dichloroethane	NELAP	423		ND	µg/Kg-dry	50	01/30/2017 13:03	126575
1,1-Dichloroethene	NELAP	423		ND	µg/Kg-dry	50	01/30/2017 13:03	126575
1,1-Dichloropropene	NELAP	423		ND	µg/Kg-dry	50	01/30/2017 13:03	126575
1,2,3-Trichlorobenzene	NELAP	423		ND	µg/Kg-dry	50	01/30/2017 13:03	126575
1,2,3-Trichloropropane	NELAP	845		ND	µg/Kg-dry	50	01/30/2017 13:03	126575
1,2,3-Trimethylbenzene		423		997	µg/Kg-dry	50	01/30/2017 13:03	126575
1,2,4-Trichlorobenzene	NELAP	423		ND	µg/Kg-dry	50	01/30/2017 13:03	126575
1,2,4-Trimethylbenzene	NELAP	423		3250	µg/Kg-dry	50	01/30/2017 13:03	126575
1,2-Dibromo-3-chloropropane	NELAP	423		ND	µg/Kg-dry	50	01/30/2017 13:03	126575
1,2-Dibromoethane	NELAP	423		ND	µg/Kg-dry	50	01/30/2017 13:03	126575
1,2-Dichlorobenzene	NELAP	423		ND	µg/Kg-dry	50	01/30/2017 13:03	126575
1,2-Dichloroethane	NELAP	423		ND	µg/Kg-dry	50	01/30/2017 13:03	126575
1,2-Dichloropropane	NELAP	423		ND	µg/Kg-dry	50	01/30/2017 13:03	126575
1,3,5-Trimethylbenzene	NELAP	423		1010	µg/Kg-dry	50	01/30/2017 13:03	126575
1,3-Dichlorobenzene	NELAP	423		ND	µg/Kg-dry	50	01/30/2017 13:03	126575
1,3-Dichloropropane	NELAP	423		ND	µg/Kg-dry	50	01/30/2017 13:03	126575
1,4-Dichlorobenzene	NELAP	423		ND	µg/Kg-dry	50	01/30/2017 13:03	126575
1-Chlorobutane	NELAP	423		ND	µg/Kg-dry	50	01/30/2017 13:03	126575
2,2-Dichloropropane	NELAP	423		ND	µg/Kg-dry	50	01/30/2017 13:03	126575
2-Butanone	NELAP	16900		ND	µg/Kg-dry	50	01/30/2017 13:03	126575
2-Chlorotoluene	NELAP	423		ND	µg/Kg-dry	50	01/30/2017 13:03	126575
2-Hexanone	NELAP	4230		ND	µg/Kg-dry	50	01/30/2017 13:03	126575
2-Nitropropane	NELAP	4230		ND	µg/Kg-dry	50	01/30/2017 13:03	126575
4-Chlorotoluene	NELAP	423		ND	µg/Kg-dry	50	01/30/2017 13:03	126575
4-Methyl-2-pentanone	NELAP	4230		ND	µg/Kg-dry	50	01/30/2017 13:03	126575
Acetone	NELAP	4230		ND	µg/Kg-dry	50	01/30/2017 13:03	126575
Acrolein	NELAP	8450		ND	µg/Kg-dry	50	01/30/2017 13:03	126575
Acrylonitrile	NELAP	845		ND	µg/Kg-dry	50	01/30/2017 13:03	126575
Allyl chloride	NELAP	423		ND	µg/Kg-dry	50	01/30/2017 13:03	126575
Benzene	NELAP	84.5		6630	µg/Kg-dry	50	01/30/2017 13:03	126575
Bromobenzene	NELAP	423		ND	µg/Kg-dry	50	01/30/2017 13:03	126575
Bromochloromethane	NELAP	423		ND	µg/Kg-dry	50	01/30/2017 13:03	126575
Bromodichloromethane	NELAP	423		ND	µg/Kg-dry	50	01/30/2017 13:03	126575
Bromoform	NELAP	423		ND	µg/Kg-dry	50	01/30/2017 13:03	126575
Bromomethane	NELAP	845		ND	µg/Kg-dry	50	01/30/2017 13:03	126575
Carbon disulfide	NELAP	423		ND	µg/Kg-dry	50	01/30/2017 13:03	126575
Carbon tetrachloride	NELAP	423		ND	µg/Kg-dry	50	01/30/2017 13:03	126575
Chlorobenzene	NELAP	423		ND	µg/Kg-dry	50	01/30/2017 13:03	126575
Chloroethane	NELAP	845		ND	µg/Kg-dry	50	01/30/2017 13:03	126575
Chloroform	NELAP	423		ND	µg/Kg-dry	50	01/30/2017 13:03	126575
Chloromethane	NELAP	845		ND	µg/Kg-dry	50	01/30/2017 13:03	126575
cis-1,2-Dichloroethene	NELAP	423		ND	µg/Kg-dry	50	01/30/2017 13:03	126575
cis-1,3-Dichloropropene	NELAP	338		ND	µg/Kg-dry	50	01/30/2017 13:03	126575
Cyclohexanone		8450		ND	µg/Kg-dry	50	01/30/2017 13:03	126575
Dibromochloromethane	NELAP	423		ND	µg/Kg-dry	50	01/30/2017 13:03	126575

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011480

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 31-Jan-17

Lab ID: 17011480-001 **Client Sample ID:** FL-RES-REM-W2 (12)

Matrix: SOLID **Collection Date:** 01/26/2017 14:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Dibromomethane	NELAP	423		**ND**	µg/Kg-dry	50	01/30/2017 13:03	126575
Dichlorodifluoromethane	NELAP	845		**ND**	µg/Kg-dry	50	01/30/2017 13:03	126575
Ethyl ether	NELAP	423		**ND**	µg/Kg-dry	50	01/30/2017 13:03	126575
Ethyl methacrylate	NELAP	423		**ND**	µg/Kg-dry	50	01/30/2017 13:03	126575
Ethylbenzene	NELAP	423		**1260**	µg/Kg-dry	50	01/30/2017 13:03	126575
Hexachlorobutadiene	NELAP	423		**ND**	µg/Kg-dry	50	01/30/2017 13:03	126575
Hexachloroethane	NELAP	423		**ND**	µg/Kg-dry	50	01/30/2017 13:03	126575
Iodomethane	NELAP	845		**ND**	µg/Kg-dry	50	01/30/2017 13:03	126575
Isopropylbenzene	NELAP	423		**ND**	µg/Kg-dry	50	01/30/2017 13:03	126575
m,p-Xylenes	NELAP	423		**9470**	µg/Kg-dry	50	01/30/2017 13:03	126575
Methacrylonitrile	NELAP	4230		**ND**	µg/Kg-dry	50	01/30/2017 13:03	126575
Methyl Methacrylate	NELAP	423		**ND**	µg/Kg-dry	50	01/30/2017 13:03	126575
Methyl tert-butyl ether	NELAP	169		**ND**	µg/Kg-dry	50	01/30/2017 13:03	126575
Methylacrylate	NELAP	845		**ND**	µg/Kg-dry	50	01/30/2017 13:03	126575
Methylene chloride	NELAP	423		**ND**	µg/Kg-dry	50	01/30/2017 13:03	126575
Naphthalene	NELAP	4230		**41400**	µg/Kg-dry	250	01/30/2017 15:43	126575
n-Butylbenzene	NELAP	423		**ND**	µg/Kg-dry	50	01/30/2017 13:03	126575
n-Heptane		4230		**ND**	µg/Kg-dry	50	01/30/2017 13:03	126575
n-Hexane		1690		**ND**	µg/Kg-dry	50	01/30/2017 13:03	126575
Nitrobenzene	NELAP	8450		**ND**	µg/Kg-dry	50	01/30/2017 13:03	126575
n-Propylbenzene	NELAP	423		**ND**	µg/Kg-dry	50	01/30/2017 13:03	126575
o-Xylene	NELAP	423		**3710**	µg/Kg-dry	50	01/30/2017 13:03	126575
Pentachloroethane	NELAP	423		**ND**	µg/Kg-dry	50	01/30/2017 13:03	126575
p-Isopropyltoluene	NELAP	423		**ND**	µg/Kg-dry	50	01/30/2017 13:03	126575
Propionitrile	NELAP	4230		**ND**	µg/Kg-dry	50	01/30/2017 13:03	126575
sec-Butylbenzene	NELAP	423		**ND**	µg/Kg-dry	50	01/30/2017 13:03	126575
Styrene	NELAP	423		**1020**	µg/Kg-dry	50	01/30/2017 13:03	126575
tert-Butylbenzene	NELAP	423		**ND**	µg/Kg-dry	50	01/30/2017 13:03	126575
Tetrachloroethene	NELAP	423		**ND**	µg/Kg-dry	50	01/30/2017 13:03	126575
Tetrahydrofuran	NELAP	4230		**ND**	µg/Kg-dry	50	01/30/2017 13:03	126575
Toluene	NELAP	423		**13300**	µg/Kg-dry	50	01/30/2017 13:03	126575
trans-1,2-Dichloroethene	NELAP	423		**ND**	µg/Kg-dry	50	01/30/2017 13:03	126575
trans-1,3-Dichloropropene	NELAP	338		**ND**	µg/Kg-dry	50	01/30/2017 13:03	126575
Trichloroethene	NELAP	423		**ND**	µg/Kg-dry	50	01/30/2017 13:03	126575
Trichlorofluoromethane	NELAP	423		**ND**	µg/Kg-dry	50	01/30/2017 13:03	126575
Vinyl acetate	NELAP	4230		**ND**	µg/Kg-dry	50	01/30/2017 13:03	126575
Vinyl chloride	NELAP	169		**ND**	µg/Kg-dry	50	01/30/2017 13:03	126575
Surr: 1,2-Dichloroethane-d4		72.2-131		**98.6**	%REC	50	01/30/2017 13:03	126575
Surr: 4-Bromofluorobenzene		82.1-116		**100.2**	%REC	50	01/30/2017 13:03	126575
Surr: Dibromofluoromethane		77.7-120		**102.9**	%REC	50	01/30/2017 13:03	126575
Surr: Toluene-d8		86-116		**100.0**	%REC	50	01/30/2017 13:03	126575

LCS recovered outside upper QC limits for 2-butanone and methylacrylate. Sample results are below reporting limit. Data is reportable per 2009 TNI Standard (Volume1, Module 4, section 1.7.4.2).

Elevated reporting limit due to high levels of target and/or non-target analytes.

Client: PSC Industrial Outsourcing, LP
Work Order: 17011480
Client Project: Champaign Residual IRM 624-1610-0001 / J0055
Report Date: 31-Jan-17

Lab Sample ID	Client Sample ID	Matrix	Fractions	Collection Date
17011480-001	FL-RES-REM-W2 (12)	Solid	4	01/26/2017 14:00

Client: PSC Industrial Outsourcing, LP
Work Order: 17011480
Client Project: Champaign Residual IRM 624-1610-0001 / J0055
Report Date: 31-Jan-17

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			Prep Date/Time	Analysis Date/Time
17011480-001A	FL-RES-REM-W2 (12)	01/26/2017 14:00	01/27/2017 8:30		
	EPA SW846 3550C, 5035A, ASTM D2974				01/27/2017 18:32
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			01/27/2017 12:21	01/30/2017 15:03
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			01/27/2017 12:21	01/30/2017 16:41
	SW-846 3550B, 8270C, Semi-Volatile Organic Compounds by GC/MS			01/27/2017 12:15	01/28/2017 15:00
17011480-001D	FL-RES-REM-W2 (12)	01/26/2017 14:00	01/27/2017 8:30		
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				01/30/2017 13:03
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				01/30/2017 15:43

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011480

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 31-Jan-17

EPA SW846 3550C, 5035A, ASTM D2974

Batch R228528 **SampType:** LCS Units %

SampID: LCS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	01/27/2017

Batch R228528 **SampType:** LCSQC Units %

SampID: LCSQC

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	01/27/2017

SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126527 **SampType:** MBLK Units %REC

SampID: MBLK-126527

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Surr: 2-Fluorobiphenyl			**0.597**	0.8350		71.5	47.8	104	01/27/2017

Batch 126527 **SampType:** LCS Units %REC

SampID: LCS-126527

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Surr: 2-Fluorobiphenyl			**0.580**	0.8350		69.5	47.8	104	01/27/2017

Batch 126527 **SampType:** LCSG Units %REC

SampID: LCSDRO-126527

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Surr: 2-Fluorobiphenyl			**0.566**	0.8350		67.8	47.8	104	01/27/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011480

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 31-Jan-17

SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126529 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK-126529

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Acenaphthene	0.003		ND						01/28/2017
Acenaphthylene	0.003		ND						01/28/2017
Anthracene	0.003		ND						01/28/2017
Benzo(a)anthracene	0.010		ND						01/28/2017
Benzo(a)pyrene	0.003		ND						01/28/2017
Benzo(b)fluoranthene	0.003		ND						01/28/2017
Benzo(g,h,i)perylene	0.003		ND						01/28/2017
Benzo(k)fluoranthene	0.003		ND						01/28/2017
Chrysene	0.003		ND						01/28/2017
Dibenzo(a,h)anthracene	0.003		ND						01/28/2017
Fluoranthene	0.003		ND						01/28/2017
Fluorene	0.003		ND						01/28/2017
Indeno(1,2,3-cd)pyrene	0.003		ND						01/28/2017
Naphthalene	0.003		ND						01/28/2017
Phenanthrene	0.003		ND						01/28/2017
Pyrene	0.003		ND						01/28/2017
Surr: 2-Fluorobiphenyl			**0.108**	0.1670		64.6	30	101	01/28/2017
Surr: Nitrobenzene-d5			**0.096**	0.1670		57.6	24.4	112	01/28/2017
Surr: p-Terphenyl-d14			**0.135**	0.1670		81.0	31.9	121	01/28/2017

Batch 126529 **SampType:** LCS Units **mg/Kg**

SampID: LCS-126529

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Acenaphthene	0.003		**0.144**	0.1670	0	86.5	47.9	103	01/28/2017
Acenaphthylene	0.003		**0.144**	0.1670	0	86.1	47.3	104	01/28/2017
Anthracene	0.003		**0.126**	0.1670	0	75.7	42.1	98.1	01/28/2017
Benzo(a)anthracene	0.010		**0.147**	0.1670	0	88.2	41.4	107	01/28/2017
Benzo(a)pyrene	0.003		**0.139**	0.1670	0	83.0	43.1	102	01/28/2017
Benzo(b)fluoranthene	0.003		**0.154**	0.1670	0	91.9	40.9	109	01/28/2017
Benzo(g,h,i)perylene	0.003		**0.147**	0.1670	0	87.9	36.2	113	01/28/2017
Benzo(k)fluoranthene	0.003		**0.145**	0.1670	0	86.8	45.4	107	01/28/2017
Chrysene	0.003		**0.142**	0.1670	0	85.3	47.9	107	01/28/2017
Dibenzo(a,h)anthracene	0.003		**0.156**	0.1670	0	93.5	41.2	112	01/28/2017
Fluoranthene	0.003		**0.129**	0.1670	0	77.2	45	104	01/28/2017
Fluorene	0.003		**0.149**	0.1670	0	89.2	47.8	106	01/28/2017
Indeno(1,2,3-cd)pyrene	0.003		**0.148**	0.1670	0	88.7	40	112	01/28/2017
Naphthalene	0.003		**0.113**	0.1670	0	67.8	42.9	93.3	01/28/2017
Phenanthrene	0.003		**0.128**	0.1670	0	76.6	44.2	99.2	01/28/2017
Pyrene	0.003		**0.128**	0.1670	0	76.8	41.3	103	01/28/2017
Surr: 2-Fluorobiphenyl			**0.096**	0.1670		57.7	30	101	01/28/2017
Surr: Nitrobenzene-d5			**0.101**	0.1670		60.2	24.4	112	01/28/2017
Surr: p-Terphenyl-d14			**0.122**	0.1670		73.0	31.9	121	01/28/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011480

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 31-Jan-17

SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126529 **SampType:** MS Units **mg/Kg-dry**

SampID: 17011480-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Acenaphthene	0.008		**0.431**	0.3899	0.1767	65.2	30.6	109	01/30/2017
Acenaphthylene	0.008		**0.419**	0.3899	0.1975	56.7	28	110	01/30/2017
Anthracene	0.008		**0.382**	0.3899	0.1561	57.9	41.4	94.3	01/30/2017
Benzo(a)anthracene	0.023		**0.356**	0.3899	0.09187	67.9	28.6	113	01/30/2017
Benzo(a)pyrene	0.008		**0.341**	0.3899	0.05487	73.5	37.9	102	01/30/2017
Benzo(b)fluoranthene	0.008		**0.363**	0.3899	0.07031	75.0	37.1	112	01/30/2017
Benzo(g,h,i)perylene	0.008		**0.240**	0.3899	0.01615	57.5	7.28	119	01/30/2017
Benzo(k)fluoranthene	0.008		**0.336**	0.3899	0.02454	79.8	34	115	01/30/2017
Chrysene	0.008		**0.322**	0.3899	0.08105	61.8	23.1	116	01/30/2017
Dibenzo(a,h)anthracene	0.008		**0.273**	0.3899	0.005722	68.5	23.9	110	01/30/2017
Fluoranthene	0.008		**0.378**	0.3899	0.2082	43.4	20.8	124	01/30/2017
Fluorene	0.008		**0.883**	0.3899	0.6533	58.8	44.3	96.6	01/30/2017
Indeno(1,2,3-cd)pyrene	0.008		**0.261**	0.3899	0.01630	62.8	12.6	119	01/30/2017
Naphthalene	0.079	S	**9.97**	0.3899	8.978	253.7	17.8	110	01/30/2017
Phenanthrene	0.008		**0.768**	0.3899	0.6500	30.2	22.3	117	01/30/2017
Pyrene	0.008		**0.366**	0.3899	0.1565	53.6	20.6	121	01/30/2017
Surr: 2-Fluorobiphenyl			**0.210**	0.3899		53.8	19.9	83	01/30/2017
Surr: Nitrobenzene-d5			**0.205**	0.3899		52.7	23	84	01/30/2017
Surr: p-Terphenyl-d14			**0.287**	0.3899		73.6	33.5	106	01/30/2017

Batch 126529 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **49.7**

SampID: 17011480-001AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Acenaphthene	0.008		**0.479**	0.3922	0.1767	77.0	0.4307	10.57	01/30/2017
Acenaphthylene	0.008		**0.477**	0.3922	0.1975	71.3	0.4185	13.04	01/30/2017
Anthracene	0.008		**0.385**	0.3922	0.1561	58.5	0.3816	0.98	01/30/2017
Benzo(a)anthracene	0.023		**0.378**	0.3922	0.09187	73.0	0.3564	5.93	01/30/2017
Benzo(a)pyrene	0.008		**0.366**	0.3922	0.05487	79.3	0.3413	6.95	01/30/2017
Benzo(b)fluoranthene	0.008		**0.397**	0.3922	0.07031	83.3	0.3627	9.02	01/30/2017
Benzo(g,h,i)perylene	0.008		**0.252**	0.3922	0.01615	60.1	0.2404	4.59	01/30/2017
Benzo(k)fluoranthene	0.008		**0.355**	0.3922	0.02454	84.2	0.3356	5.62	01/30/2017
Chrysene	0.008		**0.346**	0.3922	0.08105	67.5	0.3221	7.05	01/30/2017
Dibenzo(a,h)anthracene	0.008		**0.286**	0.3922	0.005722	71.5	0.2727	4.76	01/30/2017
Fluoranthene	0.008		**0.397**	0.3922	0.2082	48.1	0.3776	4.97	01/30/2017
Fluorene	0.008		**1.02**	0.3922	0.6533	93.0	0.8827	14.23	01/30/2017
Indeno(1,2,3-cd)pyrene	0.008		**0.274**	0.3922	0.01630	65.8	0.2610	5.00	01/30/2017
Naphthalene	0.080	S	**7.90**	0.3922	8.978	-274.7	9.967	23.13	01/30/2017
Phenanthrene	0.008		**0.751**	0.3922	0.6500	25.7	0.7679	2.26	01/30/2017
Pyrene	0.008		**0.377**	0.3922	0.1565	56.3	0.3657	3.12	01/30/2017
Surr: 2-Fluorobiphenyl			**0.185**	0.3922		47.3			01/30/2017
Surr: Nitrobenzene-d5			**0.202**	0.3922		51.5			01/30/2017
Surr: p-Terphenyl-d14			**0.280**	0.3922		71.5			01/30/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011480

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 31-Jan-17

SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126527 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK-126527

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,2,4-Trichlorobenzene	0.500		ND						01/28/2017
1,2-Dichlorobenzene	0.500		ND						01/28/2017
1,3-Dichlorobenzene	0.500		ND						01/28/2017
1,4-Dichlorobenzene	0.500		ND						01/28/2017
2,4,5-Trichlorophenol	0.350		ND						01/28/2017
2,4,6-Trichlorophenol	0.350		ND						01/28/2017
2,4-Dichlorophenol	0.500		ND						01/28/2017
2,4-Dimethylphenol	0.500		ND						01/28/2017
2,4-Dinitrophenol	1.00		ND						01/28/2017
2,4-Dinitrotoluene	0.350		ND						01/28/2017
2,6-Dinitrotoluene	0.350		ND						01/28/2017
2-Chloronaphthalene	0.350		ND						01/28/2017
2-Chlorophenol	0.500		ND						01/28/2017
2-Methoxy-4-methylphenol	0.650		ND						01/28/2017
2-Methylnaphthalene	0.350		ND						01/28/2017
2-Nitroaniline	1.00		ND						01/28/2017
2-Nitrophenol	0.350		ND						01/28/2017
3,3´-Dichlorobenzidine	0.350		ND						01/28/2017
3-Nitroaniline	1.00		ND						01/28/2017
4,6-Dinitro-2-methylphenol	1.00		ND						01/28/2017
4-Bromophenyl phenyl ether	0.350		ND						01/28/2017
4-Chloro-3-methylphenol	0.500		ND						01/28/2017
4-Chloroaniline	0.500		ND						01/28/2017
4-Chlorophenyl phenyl ether	0.350		ND						01/28/2017
4-Nitroaniline	0.500		ND						01/28/2017
4-Nitrophenol	0.350		ND						01/28/2017
Aniline	0.500		ND						01/28/2017
Azobenzene	0.350		ND						01/28/2017
Benzoic acid	1.50		ND						01/28/2017
Benzyl alcohol	0.500		ND						01/28/2017
Bis(2-chloroethoxy)methane	0.350		ND						01/28/2017
Bis(2-chloroethyl)ether	0.500		ND						01/28/2017
Bis(2-chloroisopropyl)ether	0.350		ND						01/28/2017
Bis(2-ethylhexyl)phthalate	0.350		ND						01/28/2017
Butyl benzyl phthalate	0.350		ND						01/28/2017
Carbazole	0.500		ND						01/28/2017
Dibenzofuran	0.350		ND						01/28/2017
Diethyl phthalate	0.500		ND						01/28/2017
Dimethyl phthalate	0.350		ND						01/28/2017
Di-n-butyl phthalate	0.350		ND						01/28/2017
Di-n-octyl phthalate	0.350		ND						01/28/2017
Hexachlorobenzene	0.350		ND						01/28/2017
Hexachlorobutadiene	0.500		ND						01/28/2017
Hexachlorocyclopentadiene	0.350		ND						01/28/2017
Hexachloroethane	0.500		ND						01/28/2017
Isophorone	0.350		ND						01/28/2017
m,p-Cresol	0.500		ND						01/28/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011480

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 31-Jan-17

SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126527 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK-126527

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Nitrobenzene	0.500		**ND**						01/28/2017
N-Nitrosodimethylamine	0.500		**ND**						01/28/2017
N-Nitroso-di-n-propylamine	0.500		**ND**						01/28/2017
N-Nitrosodiphenylamine	0.500		**ND**						01/28/2017
o-Cresol	0.500		**ND**						01/28/2017
Pentachlorophenol	2.00		**ND**						01/28/2017
Phenol	0.350		**ND**						01/28/2017
Pyridine	0.500		**ND**						01/28/2017
1,2-Diphenylhydrazine	0.840		**ND**						01/28/2017
Surr: 2,4,6-Tribromophenol			**1.29**	1.670		77.0	50.5	116	01/28/2017
Surr: 2-Fluorobiphenyl			**0.579**	0.8350		69.4	47.4	102	01/28/2017
Surr: 2-Fluorophenol			**1.23**	1.670		73.8	43.7	98.6	01/28/2017
Surr: Nitrobenzene-d5			**0.450**	0.8350		53.9	26.9	114	01/27/2017
Surr: Nitrobenzene-d5			**0.679**	0.8350		81.3	39	97.3	01/28/2017
Surr: Phenol-d5			**1.45**	1.670		87.0	48.1	104	01/28/2017
Surr: p-Terphenyl-d14			**0.683**	0.8350		81.8	50.7	129	01/27/2017
Surr: p-Terphenyl-d14			**0.759**	0.8350		90.9	53.2	119	01/28/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011480

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 31-Jan-17

SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126527 **SampType:** LCS Units **mg/Kg**

SampID: LCS-126527

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,2,4-Trichlorobenzene	0.500		**1.25**	1.670	0	75.0	52.4	102	01/28/2017
1,4-Dichlorobenzene	0.500		**1.29**	1.670	0	77.5	43	86.1	01/28/2017
2,4,5-Trichlorophenol	0.350		**1.26**	1.670	0	75.2	55.1	106	01/28/2017
2,4,6-Trichlorophenol	0.350		**1.18**	1.670	0	70.4	54	105	01/28/2017
2,4-Dimethylphenol	0.500		**1.49**	1.670	0	88.9	46.8	103	01/28/2017
2,4-Dinitrophenol	1.00		**1.25**	1.670	0	75.0	38	95.6	01/28/2017
2,4-Dinitrotoluene	0.350		**1.64**	1.670	0	98.5	55.6	109	01/28/2017
2-Chlorophenol	0.500		**1.23**	1.670	0	73.5	51.1	92.4	01/28/2017
4-Chloro-3-methylphenol	0.500		**1.46**	1.670	0	87.4	52	97.3	01/28/2017
4-Nitrophenol	0.350	S	**1.71**	1.670	0	102.2	48	99.6	01/28/2017
Bis(2-ethylhexyl)phthalate	0.350	S	**1.85**	1.670	0	110.6	48.3	106	01/28/2017
Diethyl phthalate	0.500	S	**1.73**	1.670	0	103.5	56.9	103	01/28/2017
Dimethyl phthalate	0.350		**1.60**	1.670	0	95.9	56.4	98.1	01/28/2017
Di-n-butyl phthalate	0.350	S	**1.68**	1.670	0	100.6	54.8	100	01/28/2017
Hexachlorobenzene	0.350		**1.35**	1.670	0	80.8	54.1	102	01/28/2017
Hexachlorobutadiene	0.500		**1.10**	1.670	0	65.7	46	103	01/28/2017
Hexachloroethane	0.500		**1.36**	1.670	0	81.3	45	90	01/28/2017
m,p-Cresol	0.500		**1.34**	1.670	0	80.2	53	98.5	01/28/2017
Nitrobenzene	0.500		**1.20**	1.670	0	71.9	44.4	86.6	01/28/2017
N-Nitroso-di-n-propylamine	0.500		**1.41**	1.670	0	84.7	39.8	94.3	01/28/2017
o-Cresol	0.500		**1.37**	1.670	0	81.8	52.1	96.4	01/28/2017
Pentachlorophenol	2.00		**ND**	1.670	0	73.0	37	91.7	01/28/2017
Phenol	0.350		**1.43**	1.670	0	85.4	52.9	95.6	01/28/2017
Pyridine	0.500		**0.952**	1.670	0	57.0	30	77.1	01/28/2017
Surr: 2,4,6-Tribromophenol			**1.37**	1.670		82.0	50.5	116	01/28/2017
Surr: 2-Fluorobiphenyl			**0.600**	0.8350		71.9	47.4	102	01/28/2017
Surr: 2-Fluorophenol			**1.27**	1.670		76.1	43.7	98.6	01/28/2017
Surr: Nitrobenzene-d5			**0.507**	0.8350		60.7	26.9	114	01/27/2017
Surr: Nitrobenzene-d5			**0.653**	0.8350		78.2	39	97.3	01/28/2017
Surr: Phenol-d5			**1.44**	1.670		86.1	48.1	104	01/28/2017
Surr: p-Terphenyl-d14			**0.595**	0.8350		71.3	50.7	129	01/27/2017
Surr: p-Terphenyl-d14			**0.681**	0.8350		81.5	53.2	119	01/28/2017

Batch 126527 **SampType:** LCSG Units **%REC**

SampID: LCSDRO-126527

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Surr: Nitrobenzene-d5			**0.415**	0.8350		49.7	26.9	114	01/27/2017
Surr: p-Terphenyl-d14			**0.624**	0.8350		74.7	50.7	129	01/27/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011480

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 31-Jan-17

SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126527 **SampType:** MS Units **mg/Kg-dry**

SampID: 17011480-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,2,4-Trichlorobenzene	1.18		**3.01**	3.925	0	76.6	35.9	102	01/28/2017
1,4-Dichlorobenzene	1.18		**3.20**	3.925	0	81.6	29.8	95.5	01/28/2017
2,4,5-Trichlorophenol	0.823		**2.98**	3.925	0	75.9	38.6	123	01/28/2017
2,4,6-Trichlorophenol	0.823		**2.86**	3.925	0	73.0	35.9	123	01/28/2017
2,4-Dimethylphenol	1.18		**5.90**	3.925	2.451	88.0	38.3	88	01/28/2017
2,4-Dinitrophenol	2.35		**2.79**	3.925	0	71.0	1.88	162	01/28/2017
2,4-Dinitrotoluene	0.823		**3.95**	3.925	0	100.6	37.5	107	01/28/2017
2-Chlorophenol	1.18		**3.10**	3.925	0	79.1	22.6	108	01/28/2017
4-Chloro-3-methylphenol	1.18		**3.30**	3.925	0	84.0	19.3	131	01/28/2017
4-Nitrophenol	0.823		**3.91**	3.925	0	99.7	27.6	123	01/28/2017
Bis(2-ethylhexyl)phthalate	0.823		**4.26**	3.925	0	108.6	56.3	109	01/28/2017
Diethyl phthalate	1.18		**3.96**	3.925	0	101.0	51.7	106	01/28/2017
Dimethyl phthalate	0.823		**3.77**	3.925	0	96.2	58.8	104	01/28/2017
Di-n-butyl phthalate	0.823		**3.85**	3.925	0	98.1	54.3	105	01/28/2017
Hexachlorobenzene	0.823		**3.22**	3.925	0	82.0	55.9	106	01/28/2017
Hexachlorobutadiene	1.18		**2.66**	3.925	0	67.8	35.7	100	01/28/2017
Hexachloroethane	1.18		**3.39**	3.925	0	86.3	38.9	89.9	01/28/2017
m,p-Cresol	1.18		**3.60**	3.925	0.4358	80.5	37.6	93.7	01/28/2017
Nitrobenzene	1.18		**2.77**	3.925	0	70.5	51.8	104	01/28/2017
N-Nitroso-di-n-propylamine	1.18		**3.36**	3.925	0	85.6	45.5	99.1	01/28/2017
o-Cresol	1.18		**3.71**	3.925	0.3943	84.5	43	101	01/28/2017
Pentachlorophenol	4.70		**ND**	3.925	0	81.0	18.5	113	01/28/2017
Phenol	0.823		**3.69**	3.925	0.3708	84.5	20.8	110	01/28/2017
Pyridine	1.18	S	**2.98**	3.925	0	75.9	3.61	74.3	01/28/2017
Surr: 2,4,6-Tribromophenol			**3.13**	3.925		79.7	33	115	01/28/2017
Surr: 2-Fluorobiphenyl			**1.25**	1.962		63.5	36.5	97.7	01/28/2017
Surr: 2-Fluorophenol			**3.04**	3.925		77.3	39.4	92.8	01/28/2017
Surr: Nitrobenzene-d5			**1.39**	1.962		70.9	34.7	90.1	01/28/2017
Surr: Phenol-d5			**3.33**	3.925		84.8	42.8	106	01/28/2017
Surr: p-Terphenyl-d14			**1.48**	1.962		75.2	43.7	124	01/28/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011480

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 31-Jan-17

SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126527 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **40**

SampID: 17011480-001AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
1,2,4-Trichlorobenzene	1.17		**2.80**	3.896	0	71.8	3.007	7.29	01/28/2017
1,4-Dichlorobenzene	1.17		**2.93**	3.896	0	75.3	3.203	8.79	01/28/2017
2,4,5-Trichlorophenol	0.817		**2.67**	3.896	0	68.5	2.978	10.93	01/28/2017
2,4,6-Trichlorophenol	0.817		**2.72**	3.896	0	69.9	2.863	5.00	01/28/2017
2,4-Dimethylphenol	1.17	S	**6.36**	3.896	2.451	100.3	5.905	7.40	01/28/2017
2,4-Dinitrophenol	2.33		**2.51**	3.896	0	64.6	2.786	10.21	01/28/2017
2,4-Dinitrotoluene	0.817		**3.47**	3.896	0	89.1	3.948	12.85	01/28/2017
2-Chlorophenol	1.17		**2.86**	3.896	0	73.5	3.104	8.08	01/28/2017
4-Chloro-3-methylphenol	1.17		**2.94**	3.896	0	75.3	3.297	11.60	01/28/2017
4-Nitrophenol	0.817		**3.59**	3.896	0	92.1	3.913	8.68	01/28/2017
Bis(2-ethylhexyl)phthalate	0.817		**3.80**	3.896	0	97.5	4.264	11.55	01/28/2017
Diethyl phthalate	1.17		**3.53**	3.896	0	90.6	3.965	11.65	01/28/2017
Dimethyl phthalate	0.817		**3.29**	3.896	0	84.6	3.774	13.58	01/28/2017
Di-n-butyl phthalate	0.817		**3.43**	3.896	0	88.1	3.849	11.47	01/28/2017
Hexachlorobenzene	0.817		**2.86**	3.896	0	73.4	3.216	11.72	01/28/2017
Hexachlorobutadiene	1.17		**2.44**	3.896	0	62.7	2.661	8.50	01/28/2017
Hexachloroethane	1.17		**3.22**	3.896	0	82.7	3.387	5.03	01/28/2017
m,p-Cresol	1.17		**3.42**	3.896	0.4358	76.6	3.596	5.05	01/28/2017
Nitrobenzene	1.17		**2.49**	3.896	0	64.0	2.765	10.29	01/28/2017
N-Nitroso-di-n-propylamine	1.17		**3.14**	3.896	0	80.6	3.361	6.75	01/28/2017
o-Cresol	1.17		**3.54**	3.896	0.3943	80.6	3.712	4.87	01/28/2017
Pentachlorophenol	4.67		**ND**	3.896	0	76.6	3.179	0.00	01/28/2017
Phenol	0.817		**3.53**	3.896	0.3708	81.2	3.689	4.30	01/28/2017
Pyridine	1.17		**2.75**	3.896	0	70.5	2.979	8.06	01/28/2017
Surr: 2,4,6-Tribromophenol			**2.78**	3.896		71.4			01/28/2017
Surr: 2-Fluorobiphenyl			**1.08**	1.948		55.7			01/28/2017
Surr: 2-Fluorophenol			**2.75**	3.896		70.7			01/28/2017
Surr: Nitrobenzene-d5			**1.26**	1.948		64.7			01/28/2017
Surr: Phenol-d5			**3.01**	3.896		77.2			01/28/2017
Surr: p-Terphenyl-d14			**1.31**	1.948		67.3			01/28/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011480

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 31-Jan-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126575 **SampType:** MBLK Units µg/Kg

SampID: MBLK-F170130A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		ND						01/30/2017
1,1,1-Trichloroethane	5.0		ND						01/30/2017
1,1,2,2-Tetrachloroethane	5.0		ND						01/30/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		ND						01/30/2017
1,1,2-Trichloroethane	5.0		ND						01/30/2017
1,1-Dichloro-2-propanone	50.0		ND						01/30/2017
1,1-Dichloroethane	5.0		ND						01/30/2017
1,1-Dichloroethene	5.0		ND						01/30/2017
1,1-Dichloropropene	5.0		ND						01/30/2017
1,2,3-Trichlorobenzene	5.0		ND						01/30/2017
1,2,3-Trichloropropane	10.0		ND						01/30/2017
1,2,3-Trimethylbenzene	5.0		ND						01/30/2017
1,2,4-Trichlorobenzene	5.0		ND						01/30/2017
1,2,4-Trimethylbenzene	5.0		ND						01/30/2017
1,2-Dibromo-3-chloropropane	5.0		ND						01/30/2017
1,2-Dibromoethane	5.0		ND						01/30/2017
1,2-Dichlorobenzene	5.0		ND						01/30/2017
1,2-Dichloroethane	5.0		ND						01/30/2017
1,2-Dichloropropane	5.0		ND						01/30/2017
1,3,5-Trimethylbenzene	5.0		ND						01/30/2017
1,3-Dichlorobenzene	5.0		ND						01/30/2017
1,3-Dichloropropane	5.0		ND						01/30/2017
1,4-Dichlorobenzene	5.0		ND						01/30/2017
1-Chlorobutane	5.0		ND						01/30/2017
2,2-Dichloropropane	5.0		ND						01/30/2017
2-Butanone	50.0		ND						01/30/2017
2-Chlorotoluene	5.0		ND						01/30/2017
2-Hexanone	50.0		ND						01/30/2017
2-Nitropropane	50.0		ND						01/30/2017
4-Chlorotoluene	5.0		ND						01/30/2017
4-Methyl-2-pentanone	50.0		ND						01/30/2017
Acetone	50.0		ND						01/30/2017
Acrolein	100		ND						01/30/2017
Acrylonitrile	10.0		ND						01/30/2017
Allyl chloride	5.0		ND						01/30/2017
Benzene	1.0		ND						01/30/2017
Bromobenzene	5.0		ND						01/30/2017
Bromochloromethane	5.0		ND						01/30/2017
Bromodichloromethane	5.0		ND						01/30/2017
Bromoform	5.0		ND						01/30/2017
Bromomethane	10.0		ND						01/30/2017
Carbon disulfide	5.0		ND						01/30/2017
Carbon tetrachloride	5.0		ND						01/30/2017
Chlorobenzene	5.0		ND						01/30/2017
Chloroethane	10.0		ND						01/30/2017
Chloroform	5.0		ND						01/30/2017
Chloromethane	10.0		ND						01/30/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011480

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 31-Jan-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126575 **SampType:** MBLK Units µg/Kg

SampID: MBLK-F170130A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		ND						01/30/2017
cis-1,3-Dichloropropene	4.0		ND						01/30/2017
Cyclohexanone	100		ND						01/30/2017
Dibromochloromethane	5.0		ND						01/30/2017
Dibromomethane	5.0		ND						01/30/2017
Dichlorodifluoromethane	10.0		ND						01/30/2017
Ethyl ether	5.0		ND						01/30/2017
Ethyl methacrylate	5.0		ND						01/30/2017
Ethylbenzene	5.0		ND						01/30/2017
Hexachlorobutadiene	5.0		ND						01/30/2017
Hexachloroethane	5.0		ND						01/30/2017
Iodomethane	10.0		ND						01/30/2017
Isopropylbenzene	5.0		ND						01/30/2017
m,p-Xylenes	5.0		ND						01/30/2017
Methacrylonitrile	50.0		ND						01/30/2017
Methyl Methacrylate	5.0		ND						01/30/2017
Methyl tert-butyl ether	2.0		ND						01/30/2017
Methylacrylate	10.0		ND						01/30/2017
Methylene chloride	5.0		ND						01/30/2017
Naphthalene	10.0		ND						01/30/2017
n-Butylbenzene	5.0		ND						01/30/2017
n-Heptane	20.0		ND						01/30/2017
n-Hexane	20.0		ND						01/30/2017
Nitrobenzene	100		ND						01/30/2017
n-Propylbenzene	5.0		ND						01/30/2017
o-Xylene	5.0		ND						01/30/2017
Pentachloroethane	5.0		ND						01/30/2017
p-Isopropyltoluene	5.0		ND						01/30/2017
Propionitrile	50.0		ND						01/30/2017
sec-Butylbenzene	5.0		ND						01/30/2017
Styrene	5.0		ND						01/30/2017
tert-Butylbenzene	5.0		ND						01/30/2017
Tetrachloroethene	5.0		ND						01/30/2017
Tetrahydrofuran	50.0		ND						01/30/2017
Toluene	5.0		ND						01/30/2017
trans-1,2-Dichloroethene	5.0		ND						01/30/2017
trans-1,3-Dichloropropene	4.0		ND						01/30/2017
Trichloroethene	5.0		ND						01/30/2017
Trichlorofluoromethane	5.0		ND						01/30/2017
Vinyl acetate	50.0		ND						01/30/2017
Vinyl chloride	2.0		ND						01/30/2017
Surr: 1,2-Dichloroethane-d4			**50.5**	50.00		101.1	72.2	131	01/30/2017
Surr: 4-Bromofluorobenzene			**49.1**	50.00		98.1	82.1	116	01/30/2017
Surr: Dibromofluoromethane			**50.7**	50.00		101.5	77.7	120	01/30/2017
Surr: Toluene-d8			**45.6**	50.00		91.2	86	116	01/30/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011480

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 31-Jan-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126575 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-F170130A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		51.9	50.00	0	103.8	51.87	0.02	01/30/2017
1,1,1-Trichloroethane	5.0		54.5	50.00	0	109.0	53.04	2.68	01/30/2017
1,1,2,2-Tetrachloroethane	5.0		45.4	50.00	0	90.9	48.62	6.76	01/30/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		53.7	50.00	0	107.4	51.91	3.43	01/30/2017
1,1,2-Trichloroethane	5.0		48.2	50.00	0	96.4	48.99	1.63	01/30/2017
1,1-Dichloro-2-propanone	50.0		122	125.0	0	97.4	127.6	4.63	01/30/2017
1,1-Dichloroethane	5.0		50.7	50.00	0	101.3	51.63	1.88	01/30/2017
1,1-Dichloroethene	5.0		53.4	50.00	0	106.8	53.54	0.22	01/30/2017
1,1-Dichloropropene	5.0		51.1	50.00	0	102.2	51.18	0.18	01/30/2017
1,2,3-Trichlorobenzene	5.0		52.8	50.00	0	105.6	53.47	1.28	01/30/2017
1,2,3-Trichloropropane	10.0		44.8	50.00	0	89.7	48.07	6.98	01/30/2017
1,2,3-Trimethylbenzene	5.0		49.8	50.00	0	99.6	50.07	0.52	01/30/2017
1,2,4-Trichlorobenzene	5.0		55.4	50.00	0	110.8	58.09	4.74	01/30/2017
1,2,4-Trimethylbenzene	5.0		50.2	50.00	0	100.4	52.06	3.68	01/30/2017
1,2-Dibromo-3-chloropropane	5.0		47.0	50.00	0	94.0	49.59	5.34	01/30/2017
1,2-Dibromoethane	5.0		48.6	50.00	0	97.3	50.12	3.02	01/30/2017
1,2-Dichlorobenzene	5.0		49.9	50.00	0	99.7	51.35	2.94	01/30/2017
1,2-Dichloroethane	5.0		53.4	50.00	0	106.8	54.21	1.51	01/30/2017
1,2-Dichloropropane	5.0		49.7	50.00	0	99.5	51.20	2.89	01/30/2017
1,3,5-Trimethylbenzene	5.0		51.4	50.00	0	102.8	51.87	0.93	01/30/2017
1,3-Dichlorobenzene	5.0		51.3	50.00	0	102.6	52.58	2.46	01/30/2017
1,3-Dichloropropane	5.0		47.7	50.00	0	95.4	48.87	2.44	01/30/2017
1,4-Dichlorobenzene	5.0		49.7	50.00	0	99.3	50.21	1.10	01/30/2017
1-Chlorobutane	5.0		53.0	50.00	0	106.1	52.30	1.39	01/30/2017
2,2-Dichloropropane	5.0		53.3	50.00	0	106.5	53.58	0.60	01/30/2017
2-Butanone	50.0		153	125.0	0	122.6	169.7	10.12	01/30/2017
2-Chlorotoluene	5.0		48.4	50.00	0	96.8	50.42	4.07	01/30/2017
2-Hexanone	50.0		137	125.0	0	109.5	151.7	10.27	01/30/2017
2-Nitropropane	50.0		538	500.0	0	107.6	567.1	5.24	01/30/2017
4-Chlorotoluene	5.0		45.4	50.00	0	90.8	47.33	4.18	01/30/2017
4-Methyl-2-pentanone	50.0		124	125.0	0	99.0	130.3	5.20	01/30/2017
Acetone	50.0		153	125.0	0	122.2	172.4	12.04	01/30/2017
Acrolein	100		526	500.0	0	105.1	541.4	2.96	01/30/2017
Acrylonitrile	10.0		50.6	50.00	0	101.1	52.10	3.02	01/30/2017
Allyl chloride	5.0		49.5	50.00	0	99.0	51.53	3.98	01/30/2017
Benzene	1.0		51.2	50.00	0	102.5	51.57	0.66	01/30/2017
Bromobenzene	5.0		47.5	50.00	0	95.0	49.33	3.82	01/30/2017
Bromochloromethane	5.0		51.5	50.00	0	103.1	52.09	1.06	01/30/2017
Bromodichloromethane	5.0		53.1	50.00	0	106.2	54.28	2.16	01/30/2017
Bromoform	5.0		54.3	50.00	0	108.5	55.99	3.14	01/30/2017
Bromomethane	10.0		43.8	50.00	0	87.6	35.73	20.27	01/30/2017
Carbon disulfide	5.0		49.2	50.00	0	98.4	49.61	0.85	01/30/2017
Carbon tetrachloride	5.0		56.5	50.00	0	112.9	56.44	0.05	01/30/2017
Chlorobenzene	5.0		49.4	50.00	0	98.7	49.56	0.42	01/30/2017
Chloroethane	10.0		52.2	50.00	0	104.3	51.11	2.05	01/30/2017
Chloroform	5.0		51.4	50.00	0	102.8	51.23	0.29	01/30/2017
Chloromethane	10.0		64.8	50.00	0	129.6	64.89	0.17	01/30/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011480

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 31-Jan-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126575 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-F170130A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
cis-1,2-Dichloroethene	5.0		**53.2**	50.00	0	106.3	53.23	0.11	01/30/2017
cis-1,3-Dichloropropene	4.0		**54.2**	50.00	0	108.4	55.53	2.42	01/30/2017
Cyclohexanone	100		**429**	500.0	0	85.8	470.0	9.09	01/30/2017
Dibromochloromethane	5.0		**52.5**	50.00	0	104.9	52.56	0.19	01/30/2017
Dibromomethane	5.0		**51.4**	50.00	0	102.8	53.62	4.23	01/30/2017
Dichlorodifluoromethane	10.0		**52.9**	50.00	0	105.8	53.37	0.92	01/30/2017
Ethyl ether	5.0		**49.9**	50.00	0	99.8	50.46	1.14	01/30/2017
Ethyl methacrylate	5.0		**48.7**	50.00	0	97.3	50.64	3.97	01/30/2017
Ethylbenzene	5.0		**51.0**	50.00	0	102.0	51.28	0.57	01/30/2017
Hexachlorobutadiene	5.0		**55.0**	50.00	0	110.1	55.62	1.05	01/30/2017
Hexachloroethane	5.0		**56.4**	50.00	0	112.8	56.97	1.04	01/30/2017
Iodomethane	10.0		**43.9**	50.00	0	87.8	40.42	8.21	01/30/2017
Isopropylbenzene	5.0		**52.1**	50.00	0	104.2	53.01	1.73	01/30/2017
m,p-Xylenes	5.0		**103**	100.0	0	102.7	104.4	1.64	01/30/2017
Methacrylonitrile	50.0		**ND**	50.00	0	99.7	49.39	0.00	01/30/2017
Methyl Methacrylate	5.0		**53.1**	50.00	0	106.1	56.72	6.67	01/30/2017
Methyl tert-butyl ether	2.0		**51.7**	50.00	0	103.4	52.99	2.43	01/30/2017
Methylacrylate	10.0		**60.4**	50.00	0	120.8	63.54	5.03	01/30/2017
Methylene chloride	5.0		**48.9**	50.00	0	97.7	49.38	1.06	01/30/2017
Naphthalene	10.0		**50.5**	50.00	0	100.9	52.20	3.37	01/30/2017
n-Butylbenzene	5.0		**51.9**	50.00	0	103.8	54.66	5.20	01/30/2017
n-Heptane	20.0		**59.3**	50.00	0	118.6	58.68	1.05	01/30/2017
n-Hexane	20.0		**55.2**	50.00	0	110.4	55.97	1.40	01/30/2017
Nitrobenzene	100		**472**	500.0	0	94.4	503.4	6.46	01/30/2017
n-Propylbenzene	5.0		**49.8**	50.00	0	99.7	51.54	3.33	01/30/2017
o-Xylene	5.0		**52.5**	50.00	0	105.0	51.34	2.20	01/30/2017
Pentachloroethane	5.0		**53.7**	50.00	0	107.3	55.43	3.25	01/30/2017
p-Isopropyltoluene	5.0		**52.6**	50.00	0	105.1	53.99	2.70	01/30/2017
Propionitrile	50.0		**519**	500.0	0	103.8	542.8	4.52	01/30/2017
sec-Butylbenzene	5.0		**52.3**	50.00	0	104.5	53.00	1.41	01/30/2017
Styrene	5.0		**53.0**	50.00	0	106.1	52.52	0.99	01/30/2017
tert-Butylbenzene	5.0		**49.1**	50.00	0	98.3	47.68	3.02	01/30/2017
Tetrachloroethene	5.0		**51.5**	50.00	0	103.0	50.60	1.72	01/30/2017
Tetrahydrofuran	50.0		**50.3**	50.00	0	100.6	53.78	6.67	01/30/2017
Toluene	5.0		**48.6**	50.00	0	97.1	48.97	0.82	01/30/2017
trans-1,2-Dichloroethene	5.0		**52.0**	50.00	0	104.1	51.26	1.49	01/30/2017
trans-1,3-Dichloropropene	4.0		**51.1**	50.00	0	102.2	52.82	3.31	01/30/2017
Trichloroethene	5.0		**53.3**	50.00	0	106.6	53.52	0.41	01/30/2017
Trichlorofluoromethane	5.0		**55.4**	50.00	0	110.9	55.72	0.49	01/30/2017
Vinyl acetate	50.0		**50.6**	50.00	0	101.1	53.58	5.82	01/30/2017
Vinyl chloride	2.0		**63.4**	50.00	0	126.8	61.36	3.25	01/30/2017
Surr: 1,2-Dichloroethane-d4			**50.9**	50.00		101.7			01/30/2017
Surr: 4-Bromofluorobenzene			**48.2**	50.00		96.4			01/30/2017
Surr: Dibromofluoromethane			**52.8**	50.00		105.6			01/30/2017
Surr: Toluene-d8			**47.4**	50.00		94.8			01/30/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011480

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 31-Jan-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126575 **SampType:** LCS Units µg/Kg

SampID: LCS-F170130A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		**51.9**	50.00	0	103.7	83.1	114	01/30/2017
1,1,1-Trichloroethane	5.0		**53.0**	50.00	0	106.1	78.5	119	01/30/2017
1,1,2,2-Tetrachloroethane	5.0		**48.6**	50.00	0	97.2	67.4	120	01/30/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		**51.9**	50.00	0	103.8	75.4	121	01/30/2017
1,1,2-Trichloroethane	5.0		**49.0**	50.00	0	98.0	81.1	111	01/30/2017
1,1-Dichloro-2-propanone	50.0		**128**	125.0	0	102.1	55.4	131	01/30/2017
1,1-Dichloroethane	5.0		**51.6**	50.00	0	103.3	80.1	116	01/30/2017
1,1-Dichloroethene	5.0		**53.5**	50.00	0	107.1	73.1	121	01/30/2017
1,1-Dichloropropene	5.0		**51.2**	50.00	0	102.4	82.2	114	01/30/2017
1,2,3-Trichlorobenzene	5.0		**53.5**	50.00	0	106.9	81.7	130	01/30/2017
1,2,3-Trichloropropane	10.0		**48.1**	50.00	0	96.1	67.8	118	01/30/2017
1,2,3-Trimethylbenzene	5.0		**50.1**	50.00	0	100.1	82.1	127	01/30/2017
1,2,4-Trichlorobenzene	5.0		**58.1**	50.00	0	116.2	72.3	141	01/30/2017
1,2,4-Trimethylbenzene	5.0		**52.1**	50.00	0	104.1	79.7	123	01/30/2017
1,2-Dibromo-3-chloropropane	5.0		**49.6**	50.00	0	99.2	62.1	123	01/30/2017
1,2-Dibromoethane	5.0		**50.1**	50.00	0	100.2	82.4	112	01/30/2017
1,2-Dichlorobenzene	5.0		**51.4**	50.00	0	102.7	82.7	119	01/30/2017
1,2-Dichloroethane	5.0		**54.2**	50.00	0	108.4	72.8	120	01/30/2017
1,2-Dichloropropane	5.0		**51.2**	50.00	0	102.4	80	116	01/30/2017
1,3,5-Trimethylbenzene	5.0		**51.9**	50.00	0	103.7	81.5	125	01/30/2017
1,3-Dichlorobenzene	5.0		**52.6**	50.00	0	105.2	82	124	01/30/2017
1,3-Dichloropropane	5.0		**48.9**	50.00	0	97.7	79.8	113	01/30/2017
1,4-Dichlorobenzene	5.0		**50.2**	50.00	0	100.4	81.1	124	01/30/2017
1-Chlorobutane	5.0		**52.3**	50.00	0	104.6	77.2	113	01/30/2017
2,2-Dichloropropane	5.0		**53.6**	50.00	0	107.2	76.6	121	01/30/2017
2-Butanone	50.0	S	**170**	125.0	0	135.7	62.8	131	01/30/2017
2-Chlorotoluene	5.0		**50.4**	50.00	0	100.8	78.8	121	01/30/2017
2-Hexanone	50.0		**152**	125.0	0	121.4	63.1	125	01/30/2017
2-Nitropropane	50.0		**567**	500.0	0	113.4	61.2	129	01/30/2017
4-Chlorotoluene	5.0		**47.3**	50.00	0	94.7	77.6	124	01/30/2017
4-Methyl-2-pentanone	50.0		**130**	125.0	0	104.3	60.6	126	01/30/2017
Acetone	50.0		**172**	125.0	0	137.9	39.5	159	01/30/2017
Acrolein	100		**541**	500.0	0	108.3	1	167	01/30/2017
Acrylonitrile	10.0		**52.1**	50.00	0	104.2	67	124	01/30/2017
Allyl chloride	5.0		**51.5**	50.00	0	103.1	58.5	129	01/30/2017
Benzene	1.0		**51.6**	50.00	0	103.1	80.8	117	01/30/2017
Bromobenzene	5.0		**49.3**	50.00	0	98.7	79.6	117	01/30/2017
Bromochloromethane	5.0		**52.1**	50.00	0	104.2	70.7	121	01/30/2017
Bromodichloromethane	5.0		**54.3**	50.00	0	108.6	80.7	121	01/30/2017
Bromoform	5.0		**56.0**	50.00	0	112.0	79.8	118	01/30/2017
Bromomethane	10.0		**35.7**	50.00	0	71.5	1	175	01/30/2017
Carbon disulfide	5.0		**49.6**	50.00	0	99.2	62.8	123	01/30/2017
Carbon tetrachloride	5.0		**56.4**	50.00	0	112.9	77.6	123	01/30/2017
Chlorobenzene	5.0		**49.6**	50.00	0	99.1	85.6	116	01/30/2017
Chloroethane	10.0		**51.1**	50.00	0	102.2	60.2	125	01/30/2017
Chloroform	5.0		**51.2**	50.00	0	102.5	77.9	116	01/30/2017
Chloromethane	10.0		**64.9**	50.00	0	129.8	29.9	157	01/30/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011480

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 31-Jan-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126575 **SampType:** LCS Units µg/Kg

SampID: LCS-F170130A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		**53.2**	50.00	0	106.5	80.1	116	01/30/2017
cis-1,3-Dichloropropene	4.0		**55.5**	50.00	0	111.1	80.5	121	01/30/2017
Cyclohexanone	100		**470**	500.0	0	94.0	45.4	128	01/30/2017
Dibromochloromethane	5.0		**52.6**	50.00	0	105.1	84.3	116	01/30/2017
Dibromomethane	5.0		**53.6**	50.00	0	107.2	76.6	115	01/30/2017
Dichlorodifluoromethane	10.0		**53.4**	50.00	0	106.7	1	200	01/30/2017
Ethyl ether	5.0		**50.5**	50.00	0	100.9	73.4	116	01/30/2017
Ethyl methacrylate	5.0		**50.6**	50.00	0	101.3	76.2	120	01/30/2017
Ethylbenzene	5.0		**51.3**	50.00	0	102.6	84.8	116	01/30/2017
Hexachlorobutadiene	5.0		**55.6**	50.00	0	111.2	74	135	01/30/2017
Hexachloroethane	5.0		**57.0**	50.00	0	113.9	76.4	121	01/30/2017
Iodomethane	10.0		**40.4**	50.00	0	80.8	38.7	161	01/30/2017
Isopropylbenzene	5.0		**53.0**	50.00	0	106.0	85	125	01/30/2017
m,p-Xylenes	5.0		**104**	100.0	0	104.4	85.3	120	01/30/2017
Methacrylonitrile	50.0		**ND**	50.00	0	98.8	65.7	120	01/30/2017
Methyl Methacrylate	5.0		**56.7**	50.00	0	113.4	69.1	114	01/30/2017
Methyl tert-butyl ether	2.0		**53.0**	50.00	0	106.0	66.6	125	01/30/2017
Methylacrylate	10.0	S	**63.5**	50.00	0	127.1	69.7	121	01/30/2017
Methylene chloride	5.0		**49.4**	50.00	0	98.8	73.4	115	01/30/2017
Naphthalene	10.0		**52.2**	50.00	0	104.4	70.1	134	01/30/2017
n-Butylbenzene	5.0		**54.7**	50.00	0	109.3	78.4	138	01/30/2017
n-Heptane	20.0		**58.7**	50.00	0	117.4	74.3	125	01/30/2017
n-Hexane	20.0		**56.0**	50.00	0	111.9	66.3	129	01/30/2017
Nitrobenzene	100		**503**	500.0	0	100.7	20.1	165	01/30/2017
n-Propylbenzene	5.0		**51.5**	50.00	0	103.1	79.1	125	01/30/2017
o-Xylene	5.0		**51.3**	50.00	0	102.7	81.9	118	01/30/2017
Pentachloroethane	5.0		**55.4**	50.00	0	110.9	72.7	123	01/30/2017
p-Isopropyltoluene	5.0		**54.0**	50.00	0	108.0	82.7	129	01/30/2017
Propionitrile	50.0		**543**	500.0	0	108.6	64.3	121	01/30/2017
sec-Butylbenzene	5.0		**53.0**	50.00	0	106.0	81.3	125	01/30/2017
Styrene	5.0		**52.5**	50.00	0	105.0	88.2	122	01/30/2017
tert-Butylbenzene	5.0		**47.7**	50.00	0	95.4	74.8	125	01/30/2017
Tetrachloroethene	5.0		**50.6**	50.00	0	101.2	84.2	122	01/30/2017
Tetrahydrofuran	50.0		**53.8**	50.00	0	107.6	61	118	01/30/2017
Toluene	5.0		**49.0**	50.00	0	97.9	81.3	113	01/30/2017
trans-1,2-Dichloroethene	5.0		**51.3**	50.00	0	102.5	78.2	118	01/30/2017
trans-1,3-Dichloropropene	4.0		**52.8**	50.00	0	105.6	81.7	124	01/30/2017
Trichloroethene	5.0		**53.5**	50.00	0	107.0	81	123	01/30/2017
Trichlorofluoromethane	5.0		**55.7**	50.00	0	111.4	66.8	131	01/30/2017
Vinyl acetate	50.0		**53.6**	50.00	0	107.2	64.3	122	01/30/2017
Vinyl chloride	2.0		**61.4**	50.00	0	122.7	45.2	140	01/30/2017
Surr: 1,2-Dichloroethane-d4			**52.6**	50.00		105.1	72.2	131	01/30/2017
Surr: 4-Bromofluorobenzene			**50.6**	50.00		101.1	82.1	116	01/30/2017
Surr: Dibromofluoromethane			**51.2**	50.00		102.4	77.7	120	01/30/2017
Surr: Toluene-d8			**48.0**	50.00		96.0	86	116	01/30/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011480

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 31-Jan-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126575 **SampType:** LCSGD Units %REC RPD Limit 0

SampID: LCSGD-F170130A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Surr: 1,2-Dichloroethane-d4			**52.8**	50.00		105.6			01/30/2017
Surr: 4-Bromofluorobenzene			**48.5**	50.00		97.1			01/30/2017
Surr: Dibromofluoromethane			**51.5**	50.00		103.1			01/30/2017
Surr: Toluene-d8			**49.0**	50.00		97.9			01/30/2017

Batch 126575 **SampType:** LCSG Units %REC

SampID: LCSG-F170130A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Surr: 1,2-Dichloroethane-d4			**53.4**	50.00		106.8	72.2	131	01/30/2017
Surr: 4-Bromofluorobenzene			**50.1**	50.00		100.2	82.1	116	01/30/2017
Surr: Dibromofluoromethane			**52.8**	50.00		105.7	77.7	120	01/30/2017
Surr: Toluene-d8			**47.5**	50.00		94.9	86	116	01/30/2017

Receiving Check List

http://www.teklabinc.com/

Client: PSC Industrial Outsourcing, LP
Work Order: 17011480
Client Project: Champaign Residual IRM 624-1610-0001 / J0055
Report Date: 31-Jan-17

Carrier: John Riley
Received By: AMD

Completed by: Laurie A. Langdon
On: 27-Jan-17

Reviewed by: Elizabeth A. Hurley
On: 27-Jan-17

Pages to follow: Chain of custody 1 Extra pages included 0

Shipping container/cooler in good condition?	Yes ☐	No ☐	Not Present ☐	Temp °C	5.82
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice	☐
Chain of custody present?	Yes ☑	No ☐			
Chain of custody signed when relinquished and received?	Yes ☑	No ☐			
Chain of custody agrees with sample labels?	Yes ☑	No ☐			
Samples in proper container/bottle?	Yes ☑	No ☐			
Sample containers intact?	Yes ☑	No ☐			
Sufficient sample volume for indicated test?	Yes ☑	No ☐			
All samples received within holding time?	Yes ☑	No ☐			
Reported field parameters measured:	Field ☐	Lab ☐	NA ☑		
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐			

When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.

Water – at least one vial per sample has zero headspace?	Yes ☐	No ☐	No VOA vials ☑
Water - TOX containers have zero headspace?	Yes ☐	No ☐	No TOX containers ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	NA ☑
NPDES/CWA TCN interferences checked/treated in the field?	Yes ☐	No ☐	NA ☑

Any No responses must be detailed below or on the COC.

Chain of Custody Record

210 West Sand Bank Road | Columbia, IL 62236 | P (618) 281-7173 | F (618) 281-7020

COC Serial No. CMP-001

1701147-80 1/27/17

Project Name: Champaign Residual IRM Project Mgr.: Crutcher

Project Number: 624-1610-0001 / J0055

Sampler(s): M. Flora

Laboratory Name: Teklab, Inc.

Laboratory Location: Collinsville, IL

Sample Number and (depth)	Date	Time	Matrix: Soil	Water	Air	Wipes	Other	Total Number of Containers	VOC (8260/5035)	SVOC (8270)	PAH (8270 SIM)						TPH (8015 OA2)		
1701148-001 FL-RES-REM-W2 (12)	1/26/17	1400	X					4	X	X	X							24-hour TAT	1701148-001

Temperature 5.8 ice

ONE DAY TAT

TEKLAB

Courier

Samples Iced: [X] Yes No [ ]

Preservatives

- [X] Volatile Organics (Soil - 5035)..... Sodium Bisulfate / Methanol
- [ ] Volatile Organics (Aqueous)..... Hydrochloric Acid (HCl)
- [ ] TPH (8015) ..... HCl and/or Sulfuric Acid
- [ ] Metals ..... Nitric Acid (HNO_3)
- [ ] Cyanide ..... Sodium Hydroxide (NaOH)
- [ ] Other (Specify) .....

Lab Directives:

Requested TAT: [X] 24-Hours [ ] 2-3 Days [X] STD [ ] Other

Fax and Mail Results to: mike.crutcher@pscnow.com / mike.flora@pscnow.com

Send Invoice to: **Michael Crutcher (PSC)**

QC Deliverable requested: [ ] Results + QC [X] EDD [ ] Other

Special Guidelines:

Reporting Limits: IL IAC 740/742 Tier 1

* Special:

Shipping:

Carrier / Airbill No.

Relinquished by:

Signature	Date	Time
	1/26/17	2020
	1/27/17	8:30

Received by:

Signature	Date	Time
	1/26/17	20:00
	1/27/17	830

Distribution: WHITE to Lab; YELLOW to PM; PINK to QA/QC; GREEN to Sampler.

* Shaded Areas to be Completed by Lab 1/27/17

January 31, 2017

Michael Crutcher
PSC Industrial Outsourcing, LP
210 West Sand Bank Road
Columbia, IL 62236-0230
TEL: (618) 281-7173
FAX: (618) 281-5120

RE: Champaign Residual IRM 624-1610-0001 / J0055 **WorkOrder:** 17011481

Dear Michael Crutcher:

TEKLAB, INC received 1 sample on 1/27/2017 8:30:00 AM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Michael L. Austin
Project Manager
(618)344-1004 ex 16
MAustin@teklabinc.com

Report Contents

Client: PSC Industrial Outsourcing, LP
Work Order: 17011481
Client Project: Champaign Residual IRM 624-1610-0001 / J0055
Report Date: 31-Jan-17

This reporting package includes the following:

Cover Letter	1
Report Contents	2
Definitions	3
Case Narrative	4
Laboratory Results	5
Sample Summary	6
Dates Report	7
Quality Control Results	8
Receiving Check List	9
Chain of Custody	Appended

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011481

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 31-Jan-17

Abbr Definition

CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilutions factors.
DNI	Did not ignite
DUP	Laboratory duplicate is an aliquot of a sample taken from the same container under laboratory conditions for independent processing and analysis independently of the original aliquot.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample, spiked with verified known amounts of analytes, is analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system. The acceptable recovery range is in the QC Package (provided upon request).
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MBLK	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	Method detection limit means the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero.
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions. The acceptable recovery range is listed in the QC Package (provided upon request).
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TIC	Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
TNTC	Too numerous to count (> 200 CFU)

Qualifiers

# - Unknown hydrocarbon	B - Analyte detected in associated Method Blank
E - Value above quantitation range	H - Holding times exceeded
I - Associated internal standard was outside method criteria	M - Manual Integration used to determine area response
ND - Not Detected at the Reporting Limit	R - RPD outside accepted recovery limits
S - Spike Recovery outside recovery limits	T - TIC(Tentatively identified compound)
X - Value exceeds Maximum Contaminant Level	

Case Narrative

http://www.teklabinc.com/

Client: PSC Industrial Outsourcing, LP
Work Order: 17011481
Client Project: Champaign Residual IRM 624-1610-0001 / J0055
Report Date: 31-Jan-17

Cooler Receipt Temp: 5.82 °C

Locations and Accreditations

	Collinsville	Springfield	Kansas City	Collinsville Air
Address	5445 Horseshoe Lake Road	3920 Pintail Dr	8421 Nieman Road	5445 Horseshoe Lake Road
	Collinsville, IL 62234-7425	Springfield, IL 62711-9415	Lenexa, KS 66214	Collinsville, IL 62234-7425
Phone	(618) 344-1004	(217) 698-1004	(913) 541-1998	(618) 344-1004
Fax	(618) 344-1005	(217) 698-1005	(913) 541-1998	(618) 344-1005
Email	jhriley@teklabinc.com	KKlostermann@teklabinc.com	Ryoungstrom@teklabinc.com	EHurley@teklabinc.com

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2018	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2017	Collinsville
Louisiana	LDEQ	166493	NELAP	6/30/2017	Collinsville
Louisiana	LDEQ	166578	NELAP	6/30/2017	Collinsville
Texas	TCEQ	T104704515-12-1	NELAP	7/31/2017	Collinsville
Arkansas	ADEQ	88-0966		3/14/2017	Collinsville
Illinois	IDPH	17584		5/31/2017	Collinsville
Kentucky	KDEP	98006		12/31/2017	Collinsville
Kentucky	UST	0073		1/31/2018	Collinsville
Missouri	MDNR	00930		5/31/2017	Collinsville
Missouri	MDNR	930		1/31/2018	Collinsville
Oklahoma	ODEQ	9978		8/31/2017	Collinsville

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011481

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 31-Jan-17

Lab ID: 17011481-001 **Client Sample ID:** FL-RES-REM-W2 (14)

Matrix: SOLID **Collection Date:** 01/26/2017 14:45

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**12.6**	%	1	01/27/2017 18:58	R228528
SW-846 3550B, 8015B, TOTAL PETROLEUM HYDROCARBONS (OA-2) BY GC/FID								
Diesel	NELAP	114	S	**ND**	mg/Kg-dry	10	01/30/2017 21:10	126528
Kerosene	NELAP	114	#	**421**	mg/Kg-dry	10	01/30/2017 21:10	126528
Mineral Spirits	NELAP	114		**ND**	mg/Kg-dry	10	01/30/2017 21:10	126528
Motor Oil	NELAP	114		**ND**	mg/Kg-dry	10	01/30/2017 21:10	126528
Surr: n-Tetracontane		20-152	S	**153.8**	%REC	10	01/30/2017 21:10	126528

Surrogate recovery is outside QC limits due to sample dilution.

MS/MSD QC limits for Diesel are not applicable due to high concentration of Kerosene.

Elevated reporting limit due to sample extract composition.

Client: PSC Industrial Outsourcing, LP
Work Order: 17011481
Client Project: Champaign Residual IRM 624-1610-0001 / J0055
Report Date: 31-Jan-17

Lab Sample ID	Client Sample ID	Matrix	Fractions	Collection Date
17011481-001	FL-RES-REM-W2 (14)	Solid	1	01/26/2017 14:45

Dates Report

Client: PSC Industrial Outsourcing, LP
Work Order: 17011481
Client Project: Champaign Residual IRM 624-1610-0001 / J0055
Report Date: 31-Jan-17

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
17011481-001A	FL-RES-REM-W2 (14)	01/26/2017 14:45	01/27/2017 8:30		
	EPA SW846 3550C, 5035A, ASTM D2974				01/27/2017 18:58
	SW-846 3550B, 8015B, Total Petroleum Hydrocarbons (OA-2) by GC/FID			01/27/2017 12:18	01/30/2017 21:10

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011481

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 31-Jan-17

EPA SW846 3550C, 5035A, ASTM D2974

Batch R228528 **SampType:** LCS Units **%**

SampID: LCS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	01/27/2017

Batch R228528 **SampType:** LCSQC Units **%**

SampID: LCSQC

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	01/27/2017

SW-846 3550B, 8015B, TOTAL PETROLEUM HYDROCARBONS (OA-2) BY GC/FID

Batch 126528 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK-126528

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Diesel	5.00		**ND**						01/30/2017
Kerosene	5.00		**ND**						01/30/2017
Mineral Spirits	5.00		**ND**						01/30/2017
Motor Oil	5.00		**ND**						01/30/2017
Surr: n-Tetracontane			**0.56**	0.6700		83.6	33.4	140	01/30/2017

Batch 126528 **SampType:** LCS Units **mg/Kg**

SampID: LCS-126528

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Diesel	5.00		**13.0**	16.70	0	78.1	35.2	131	01/30/2017
Surr: n-Tetracontane			**0.59**	0.6700		88.8	33.4	140	01/30/2017

Batch 126528 **SampType:** MS Units **mg/Kg-dry**

SampID: 17011481-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Diesel	114	S	**ND**	38.02	0	0	20.3	167	01/30/2017
Surr: n-Tetracontane		S	**2.34**	1.526		153.3	20	152	01/30/2017

Batch 126528 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **34**

SampID: 17011481-001AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Diesel	114	S	**ND**	38.20	0	0	0	0.00	01/30/2017
Surr: n-Tetracontane		S	**2.37**	1.533		154.4			01/30/2017

Receiving Check List

http://www.teklabinc.com/

Client: PSC Industrial Outsourcing, LP
Work Order: 17011481
Client Project: Champaign Residual IRM 624-1610-0001 / J0055
Report Date: 31-Jan-17

Carrier: John Riley
Received By: AMD

Completed by: Laurie A. Langdon
On: 27-Jan-17

Reviewed by: Elizabeth A. Hurley
On: 27-Jan-17

Pages to follow: Chain of custody 1 Extra pages included 0

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C	5.82
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice	☐
Chain of custody present?	Yes ☑	No ☐			
Chain of custody signed when relinquished and received?	Yes ☑	No ☐			
Chain of custody agrees with sample labels?	Yes ☑	No ☐			
Samples in proper container/bottle?	Yes ☑	No ☐			
Sample containers intact?	Yes ☑	No ☐			
Sufficient sample volume for indicated test?	Yes ☑	No ☐			
All samples received within holding time?	Yes ☑	No ☐			
Reported field parameters measured:	Field ☐	Lab ☐	NA ☑		
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐			

When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.

Water – at least one vial per sample has zero headspace?	Yes ☐	No ☐	No VOA vials ☑
Water - TOX containers have zero headspace?	Yes ☐	No ☐	No TOX containers ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	NA ☑
NPDES/CWA TCN interferences checked/treated in the field?	Yes ☐	No ☐	NA ☑

Any No responses must be detailed below or on the COC.

Chain of Custody Record

210 West Sand Bank Road | Columbia, IL 62236 | P (618) 281-7173 | F (618) 281-7020

COC Serial No. CMP-001T

17011481

Project Name: Champaign Residual IRM Project Mgr.: Crutcher

Project Number: 624-1610-0001 / J0055

Sampler(s): M. Flora

Laboratory Name: Teklab, Inc.

Laboratory Location: Collinsville, IL

Temperature: 5.8° ice

Sample Number and (depth)	Date	Time	Matrix: Soil	Water	Air	Wipes	Other	Total Number of Containers	VOC (8260/5035)	SVOC (8270)	PAH (8270 SIM)						TPH (8015 OA2)	Comments	Lab ID
17011481-001 FL-RES-REM-W2 (14)	1/26/17	1445	X					1									X	24-hour TAT	17011481-001

TEKLAB

Courier

ONE DAY TAT

Samples Iced: [X] Yes No [ ]

Preservatives

- [X] Volatile Organics (Soil - 5035)..... Sodium Bisulfate / Methanol
- [ ] Volatile Organics (Aqueous)..... Hydrochloric Acid (HCl)
- [ ] TPH (8015) ..... HCl and/or Sulfuric Acid
- [ ] Metals ..... Nitric Acid (HNO_3)
- [ ] Cyanide ..... Sodium Hydroxide (NaOH)
- [ ] Other (Specify) .....

Lab Directives:

Requested TAT: [X] 24-Hours [ ] 2-3 Days [X] STD [ ] Other

Fax and Mail Results to: mike.crutcher@pscnow.com / mike.flora@pscnow.com

Send Invoice to: **Michael Crutcher (PSC)**

QC Deliverable requested: [ ] Results + QC [X] EDD [ ] Other

Special Guidelines:

Reporting Limits: IL IAC 740/742 Tier 1

* Special:

Shipping:

Carrier / Airbill No.

Relinquished by:

Signature	Date	Time
	1/26/17	2020
	1/27/17	8:30

Received by:

Signature	Date	Time
	1/26/17	20:20
	1/27/17	830

Distribution: WHITE to Lab; YELLOW to PM; PINK to QA/QC; GREEN to Sampler.

* Shaded Areas to be Completed by Lab

February 01, 2017

Michael Crutcher
PSC Industrial Outsourcing, LP
210 West Sand Bank Road
Columbia, IL 62236-0230
TEL: (618) 281-7173
FAX: (618) 281-5120

RE: Champaign Residual IRM 624-1610-0001 / J0055 **WorkOrder:** 17011674

Dear Michael Crutcher:

TEKLAB, INC received 3 samples on 1/31/2017 4:53:00 PM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Michael L. Austin
Project Manager
(618)344-1004 ex 16
MAustin@teklabinc.com

Client: PSC Industrial Outsourcing, LP
Work Order: 17011674
Client Project: Champaign Residual IRM 624-1610-0001 / J0055
Report Date: 01-Feb-17

This reporting package includes the following:

Cover Letter	1
Report Contents	2
Definitions	3
Case Narrative	4
Laboratory Results	5
Sample Summary	9
Dates Report	10
Quality Control Results	11
Receiving Check List	25
Chain of Custody	Appended

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011674

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 01-Feb-17

Abbr Definition

CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilutions factors.
DNI	Did not ignite
DUP	Laboratory duplicate is an aliquot of a sample taken from the same container under laboratory conditions for independent processing and analysis independently of the original aliquot.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample, spiked with verified known amounts of analytes, is analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system. The acceptable recovery range is in the QC Package (provided upon request).
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MBLK	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	Method detection limit means the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero.
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions. The acceptable recovery range is listed in the QC Package (provided upon request).
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TIC	Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
TNTC	Too numerous to count (> 200 CFU)

Qualifiers

# - Unknown hydrocarbon	B - Analyte detected in associated Method Blank
E - Value above quantitation range	H - Holding times exceeded
I - Associated internal standard was outside method criteria	M - Manual Integration used to determine area response
ND - Not Detected at the Reporting Limit	R - RPD outside accepted recovery limits
S - Spike Recovery outside recovery limits	T - TIC(Tentatively identified compound)
X - Value exceeds Maximum Contaminant Level	

Case Narrative

http://www.teklabinc.com/

Client: PSC Industrial Outsourcing, LP
Work Order: 17011674
Client Project: Champaign Residual IRM 624-1610-0001 / J0055
Report Date: 01-Feb-17

Cooler Receipt Temp: 12.62 °C

Locations and Accreditations

	Collinsville	Springfield	Kansas City	Collinsville Air
Address	5445 Horseshoe Lake Road	3920 Pintail Dr	8421 Nieman Road	5445 Horseshoe Lake Road
	Collinsville, IL 62234-7425	Springfield, IL 62711-9415	Lenexa, KS 66214	Collinsville, IL 62234-7425
Phone	(618) 344-1004	(217) 698-1004	(913) 541-1998	(618) 344-1004
Fax	(618) 344-1005	(217) 698-1005	(913) 541-1998	(618) 344-1005
Email	jhriley@teklabinc.com	KKlostermann@teklabinc.com	Ryoungstrom@teklabinc.com	EHurley@teklabinc.com

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2018	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2017	Collinsville
Louisiana	LDEQ	166493	NELAP	6/30/2017	Collinsville
Louisiana	LDEQ	166578	NELAP	6/30/2017	Collinsville
Texas	TCEQ	T104704515-12-1	NELAP	7/31/2017	Collinsville
Arkansas	ADEQ	88-0966		3/14/2017	Collinsville
Illinois	IDPH	17584		5/31/2017	Collinsville
Kentucky	KDEP	98006		12/31/2017	Collinsville
Kentucky	UST	0073		1/31/2018	Collinsville
Missouri	MDNR	00930		5/31/2017	Collinsville
Missouri	MDNR	930		1/31/2018	Collinsville
Oklahoma	ODEQ	9978		8/31/2017	Collinsville

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011674

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 01-Feb-17

Lab ID: 17011674-003 **Client Sample ID:** FL-RES-REM-W6 (14)

Matrix: SOLID **Collection Date:** 01/31/2017 11:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**9.4**	%	1	01/31/2017 18:37	R228639
SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Acenaphthene	NELAP	0.541		**1.58**	mg/Kg-dry	5	02/01/2017 11:50	126602
Acenaphthylene	NELAP	0.541	SR	**3.48**	mg/Kg-dry	5	02/01/2017 11:50	126602
Anthracene	NELAP	0.541	SR	**6.51**	mg/Kg-dry	5	02/01/2017 11:50	126602
Benzo(a)anthracene	NELAP	1.59	SR	**4.50**	mg/Kg-dry	5	02/01/2017 11:50	126602
Benzo(a)pyrene	NELAP	0.541	SR	**3.91**	mg/Kg-dry	5	02/01/2017 11:50	126602
Benzo(b)fluoranthene	NELAP	0.541	SR	**4.27**	mg/Kg-dry	5	02/01/2017 11:50	126602
Benzo(g,h,i)perylene	NELAP	0.541	R	**1.96**	mg/Kg-dry	5	02/01/2017 11:50	126602
Benzo(k)fluoranthene	NELAP	0.541		**1.61**	mg/Kg-dry	5	02/01/2017 11:50	126602
Chrysene	NELAP	0.541	SR	**3.67**	mg/Kg-dry	5	02/01/2017 11:50	126602
Dibenzo(a,h)anthracene	NELAP	0.541		**ND**	mg/Kg-dry	5	02/01/2017 11:50	126602
Fluoranthene	NELAP	0.541	SR	**9.91**	mg/Kg-dry	5	02/01/2017 11:50	126602
Fluorene	NELAP	0.541	S	**6.89**	mg/Kg-dry	5	02/01/2017 11:50	126602
Indeno(1,2,3-cd)pyrene	NELAP	0.541	R	**1.63**	mg/Kg-dry	5	02/01/2017 11:50	126602
Naphthalene	NELAP	0.541	SR	**90.6**	mg/Kg-dry	5	02/01/2017 11:50	126602
Phenanthrene	NELAP	0.541	SR	**21.7**	mg/Kg-dry	5	02/01/2017 11:50	126602
Pyrene	NELAP	0.541	SR	**8.88**	mg/Kg-dry	5	02/01/2017 11:50	126602
Surr: 2-Fluorobiphenyl		19.9-83		**50.0**	%REC	5	02/01/2017 11:50	126602
Surr: Nitrobenzene-d5		23-84		**39.3**	%REC	5	02/01/2017 11:50	126602
Surr: p-Terphenyl-d14		33.5-106		**58.3**	%REC	5	02/01/2017 11:50	126602

RPD, MS and MSD recovery did not recover within control limits due to sample composition.

Elevated reporting limit due to sample composition.

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2,4-Trichlorobenzene	NELAP	15.9		**ND**	mg/Kg-dry	1	02/01/2017 13:16	126627
1,2-Dichlorobenzene	NELAP	15.9		**ND**	mg/Kg-dry	1	02/01/2017 13:16	126627
1,3-Dichlorobenzene	NELAP	15.9		**ND**	mg/Kg-dry	1	02/01/2017 13:16	126627
1,4-Dichlorobenzene	NELAP	15.9		**ND**	mg/Kg-dry	1	02/01/2017 13:16	126627
2,4,5-Trichlorophenol	NELAP	11.1		**ND**	mg/Kg-dry	1	02/01/2017 13:16	126627
2,4,6-Trichlorophenol	NELAP	11.1		**ND**	mg/Kg-dry	1	02/01/2017 13:16	126627
2,4-Dichlorophenol	NELAP	15.9		**ND**	mg/Kg-dry	1	02/01/2017 13:16	126627
2,4-Dimethylphenol	NELAP	15.9		**ND**	mg/Kg-dry	1	02/01/2017 13:16	126627
2,4-Dinitrophenol	NELAP	31.8		**ND**	mg/Kg-dry	1	02/01/2017 13:16	126627
2,4-Dinitrotoluene	NELAP	11.1		**ND**	mg/Kg-dry	1	02/01/2017 13:16	126627
2,6-Dinitrotoluene	NELAP	11.1		**ND**	mg/Kg-dry	1	02/01/2017 13:16	126627
2-Chloronaphthalene	NELAP	11.1		**ND**	mg/Kg-dry	1	02/01/2017 13:16	126627
2-Chlorophenol	NELAP	15.9		**ND**	mg/Kg-dry	1	02/01/2017 13:16	126627
2-Methoxy-4-methylphenol		20.7		**ND**	mg/Kg-dry	1	02/01/2017 13:16	126627
2-Methylnaphthalene	NELAP	11.1		**29.9**	mg/Kg-dry	1	02/01/2017 13:16	126627
2-Nitroaniline	NELAP	31.8		**ND**	mg/Kg-dry	1	02/01/2017 13:16	126627
2-Nitrophenol	NELAP	11.1		**ND**	mg/Kg-dry	1	02/01/2017 13:16	126627
3,3´-Dichlorobenzidine	NELAP	11.1		**ND**	mg/Kg-dry	1	02/01/2017 13:16	126627
3-Nitroaniline	NELAP	31.8		**ND**	mg/Kg-dry	1	02/01/2017 13:16	126627
4,6-Dinitro-2-methylphenol	NELAP	31.8		**ND**	mg/Kg-dry	1	02/01/2017 13:16	126627
4-Bromophenyl phenyl ether	NELAP	11.1		**ND**	mg/Kg-dry	1	02/01/2017 13:16	126627
4-Chloro-3-methylphenol	NELAP	15.9		**ND**	mg/Kg-dry	1	02/01/2017 13:16	126627
4-Chloroaniline	NELAP	15.9		**ND**	mg/Kg-dry	1	02/01/2017 13:16	126627

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011674

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 01-Feb-17

Lab ID: 17011674-003 **Client Sample ID:** FL-RES-REM-W6 (14)

Matrix: SOLID **Collection Date:** 01/31/2017 11:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
4-Chlorophenyl phenyl ether	NELAP	11.1		ND	mg/Kg-dry	1	02/01/2017 13:16	126627
4-Nitroaniline	NELAP	15.9		ND	mg/Kg-dry	1	02/01/2017 13:16	126627
4-Nitrophenol	NELAP	11.1		ND	mg/Kg-dry	1	02/01/2017 13:16	126627
Aniline	NELAP	15.9		ND	mg/Kg-dry	1	02/01/2017 13:16	126627
Azobenzene		11.1		ND	mg/Kg-dry	1	02/01/2017 13:16	126627
Benzoic acid	NELAP	47.8		ND	mg/Kg-dry	1	02/01/2017 13:16	126627
Benzyl alcohol	NELAP	15.9		ND	mg/Kg-dry	1	02/01/2017 13:16	126627
Bis(2-chloroethoxy)methane	NELAP	11.1		ND	mg/Kg-dry	1	02/01/2017 13:16	126627
Bis(2-chloroethyl)ether	NELAP	15.9		ND	mg/Kg-dry	1	02/01/2017 13:16	126627
Bis(2-chloroisopropyl)ether	NELAP	11.1		ND	mg/Kg-dry	1	02/01/2017 13:16	126627
Bis(2-ethylhexyl)phthalate	NELAP	11.1		ND	mg/Kg-dry	1	02/01/2017 13:16	126627
Butyl benzyl phthalate	NELAP	11.1		ND	mg/Kg-dry	1	02/01/2017 13:16	126627
Carbazole	NELAP	15.9		ND	mg/Kg-dry	1	02/01/2017 13:16	126627
Dibenzofuran	NELAP	11.1		ND	mg/Kg-dry	1	02/01/2017 13:16	126627
Diethyl phthalate	NELAP	15.9		ND	mg/Kg-dry	1	02/01/2017 13:16	126627
Dimethyl phthalate	NELAP	11.1		ND	mg/Kg-dry	1	02/01/2017 13:16	126627
Di-n-butyl phthalate	NELAP	11.1		ND	mg/Kg-dry	1	02/01/2017 13:16	126627
Di-n-octyl phthalate	NELAP	11.1		ND	mg/Kg-dry	1	02/01/2017 13:16	126627
Hexachlorobenzene	NELAP	11.1		ND	mg/Kg-dry	1	02/01/2017 13:16	126627
Hexachlorobutadiene	NELAP	15.9		ND	mg/Kg-dry	1	02/01/2017 13:16	126627
Hexachlorocyclopentadiene	NELAP	11.1		ND	mg/Kg-dry	1	02/01/2017 13:16	126627
Hexachloroethane	NELAP	15.9		ND	mg/Kg-dry	1	02/01/2017 13:16	126627
Isophorone	NELAP	11.1		ND	mg/Kg-dry	1	02/01/2017 13:16	126627
m,p-Cresol	NELAP	15.9		ND	mg/Kg-dry	1	02/01/2017 13:16	126627
Nitrobenzene	NELAP	15.9		ND	mg/Kg-dry	1	02/01/2017 13:16	126627
N-Nitrosodimethylamine	NELAP	15.9		ND	mg/Kg-dry	1	02/01/2017 13:16	126627
N-Nitroso-di-n-propylamine	NELAP	15.9		ND	mg/Kg-dry	1	02/01/2017 13:16	126627
N-Nitrosodiphenylamine	NELAP	15.9		ND	mg/Kg-dry	1	02/01/2017 13:16	126627
o-Cresol	NELAP	15.9		ND	mg/Kg-dry	1	02/01/2017 13:16	126627
Pentachlorophenol	NELAP	63.7		ND	mg/Kg-dry	1	02/01/2017 13:16	126627
Phenol	NELAP	11.1		ND	mg/Kg-dry	1	02/01/2017 13:16	126627
Pyridine	NELAP	15.9	S	ND	mg/Kg-dry	1	02/01/2017 13:16	126627
1,2-Diphenylhydrazine		26.7		ND	mg/Kg-dry	1	02/01/2017 13:16	126627
Surr: 2,4,6-Tribromophenol		33-115		**73.7**	%REC	1	02/01/2017 13:16	126627
Surr: 2-Fluorobiphenyl		36.5-97.7		**75.5**	%REC	1	02/01/2017 13:16	126627
Surr: 2-Fluorophenol		39.4-92.8		**62.7**	%REC	1	02/01/2017 13:16	126627
Surr: Nitrobenzene-d5		34.7-90.1		**67.9**	%REC	1	02/01/2017 13:16	126627
Surr: Phenol-d5		42.8-106		**78.9**	%REC	1	02/01/2017 13:16	126627
Surr: p-Terphenyl-d14		43.7-124		**79.4**	%REC	1	02/01/2017 13:16	126627

MS and MSD did not recover within control limits due to matrix interference.

Elevated reporting limit due to sample composition.

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,1,2-Tetrachloroethane	NELAP	677		ND	µg/Kg-dry	100	02/01/2017 11:41	126658
1,1,1-Trichloroethane	NELAP	677		ND	µg/Kg-dry	100	02/01/2017 11:41	126658
1,1,2,2-Tetrachloroethane	NELAP	677		ND	µg/Kg-dry	100	02/01/2017 11:41	126658
1,1,2-Trichloro-1,2,2-trifluoroethane		677		ND	µg/Kg-dry	100	02/01/2017 11:41	126658
1,1,2-Trichloroethane	NELAP	677		ND	µg/Kg-dry	100	02/01/2017 11:41	126658

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011674

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 01-Feb-17

Lab ID: 17011674-003 **Client Sample ID:** FL-RES-REM-W6 (14)

Matrix: SOLID **Collection Date:** 01/31/2017 11:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1-Dichloro-2-propanone		6770		ND	µg/Kg-dry	100	02/01/2017 11:41	126658
1,1-Dichloroethane	NELAP	677		ND	µg/Kg-dry	100	02/01/2017 11:41	126658
1,1-Dichloroethene	NELAP	677		ND	µg/Kg-dry	100	02/01/2017 11:41	126658
1,1-Dichloropropene	NELAP	677		ND	µg/Kg-dry	100	02/01/2017 11:41	126658
1,2,3-Trichlorobenzene	NELAP	677		ND	µg/Kg-dry	100	02/01/2017 11:41	126658
1,2,3-Trichloropropane	NELAP	1350		ND	µg/Kg-dry	100	02/01/2017 11:41	126658
1,2,3-Trimethylbenzene		677		**2220**	µg/Kg-dry	100	02/01/2017 11:41	126658
1,2,4-Trichlorobenzene	NELAP	677		ND	µg/Kg-dry	100	02/01/2017 11:41	126658
1,2,4-Trimethylbenzene	NELAP	677		**7230**	µg/Kg-dry	100	02/01/2017 11:41	126658
1,2-Dibromo-3-chloropropane	NELAP	677		ND	µg/Kg-dry	100	02/01/2017 11:41	126658
1,2-Dibromoethane	NELAP	677		ND	µg/Kg-dry	100	02/01/2017 11:41	126658
1,2-Dichlorobenzene	NELAP	677		ND	µg/Kg-dry	100	02/01/2017 11:41	126658
1,2-Dichloroethane	NELAP	677		ND	µg/Kg-dry	100	02/01/2017 11:41	126658
1,2-Dichloropropane	NELAP	677		ND	µg/Kg-dry	100	02/01/2017 11:41	126658
1,3,5-Trimethylbenzene	NELAP	677		**2670**	µg/Kg-dry	100	02/01/2017 11:41	126658
1,3-Dichlorobenzene	NELAP	677		ND	µg/Kg-dry	100	02/01/2017 11:41	126658
1,3-Dichloropropane	NELAP	677		ND	µg/Kg-dry	100	02/01/2017 11:41	126658
1,4-Dichlorobenzene	NELAP	677		ND	µg/Kg-dry	100	02/01/2017 11:41	126658
1-Chlorobutane	NELAP	677		ND	µg/Kg-dry	100	02/01/2017 11:41	126658
2,2-Dichloropropane	NELAP	677		ND	µg/Kg-dry	100	02/01/2017 11:41	126658
2-Butanone	NELAP	27100		ND	µg/Kg-dry	100	02/01/2017 11:41	126658
2-Chlorotoluene	NELAP	677		ND	µg/Kg-dry	100	02/01/2017 11:41	126658
2-Hexanone	NELAP	6770		ND	µg/Kg-dry	100	02/01/2017 11:41	126658
2-Nitropropane	NELAP	6770		ND	µg/Kg-dry	100	02/01/2017 11:41	126658
4-Chlorotoluene	NELAP	677		ND	µg/Kg-dry	100	02/01/2017 11:41	126658
4-Methyl-2-pentanone	NELAP	6770		ND	µg/Kg-dry	100	02/01/2017 11:41	126658
Acetone	NELAP	6770		ND	µg/Kg-dry	100	02/01/2017 11:41	126658
Acrolein	NELAP	13500		ND	µg/Kg-dry	100	02/01/2017 11:41	126658
Acrylonitrile	NELAP	1350		ND	µg/Kg-dry	100	02/01/2017 11:41	126658
Allyl chloride	NELAP	677		ND	µg/Kg-dry	100	02/01/2017 11:41	126658
Benzene	NELAP	135		**13400**	µg/Kg-dry	100	02/01/2017 11:41	126658
Bromobenzene	NELAP	677		ND	µg/Kg-dry	100	02/01/2017 11:41	126658
Bromochloromethane	NELAP	677		ND	µg/Kg-dry	100	02/01/2017 11:41	126658
Bromodichloromethane	NELAP	677		ND	µg/Kg-dry	100	02/01/2017 11:41	126658
Bromoform	NELAP	677		ND	µg/Kg-dry	100	02/01/2017 11:41	126658
Bromomethane	NELAP	1350		ND	µg/Kg-dry	100	02/01/2017 11:41	126658
Carbon disulfide	NELAP	677		ND	µg/Kg-dry	100	02/01/2017 11:41	126658
Carbon tetrachloride	NELAP	677		ND	µg/Kg-dry	100	02/01/2017 11:41	126658
Chlorobenzene	NELAP	677		ND	µg/Kg-dry	100	02/01/2017 11:41	126658
Chloroethane	NELAP	1350		ND	µg/Kg-dry	100	02/01/2017 11:41	126658
Chloroform	NELAP	677		ND	µg/Kg-dry	100	02/01/2017 11:41	126658
Chloromethane	NELAP	1350		ND	µg/Kg-dry	100	02/01/2017 11:41	126658
cis-1,2-Dichloroethene	NELAP	677		ND	µg/Kg-dry	100	02/01/2017 11:41	126658
cis-1,3-Dichloropropene	NELAP	542		ND	µg/Kg-dry	100	02/01/2017 11:41	126658
Cyclohexanone		13500		ND	µg/Kg-dry	100	02/01/2017 11:41	126658
Dibromochloromethane	NELAP	677		ND	µg/Kg-dry	100	02/01/2017 11:41	126658
Dibromomethane	NELAP	677		ND	µg/Kg-dry	100	02/01/2017 11:41	126658

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011674

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 01-Feb-17

Lab ID: 17011674-003 **Client Sample ID:** FL-RES-REM-W6 (14)

Matrix: SOLID **Collection Date:** 01/31/2017 11:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Dichlorodifluoromethane	NELAP	1350		**ND**	µg/Kg-dry	100	02/01/2017 11:41	126658
Ethyl ether	NELAP	677		**ND**	µg/Kg-dry	100	02/01/2017 11:41	126658
Ethyl methacrylate	NELAP	677		**ND**	µg/Kg-dry	100	02/01/2017 11:41	126658
Ethylbenzene	NELAP	677		**1760**	µg/Kg-dry	100	02/01/2017 11:41	126658
Hexachlorobutadiene	NELAP	677		**ND**	µg/Kg-dry	100	02/01/2017 11:41	126658
Hexachloroethane	NELAP	677		**ND**	µg/Kg-dry	100	02/01/2017 11:41	126658
Iodomethane	NELAP	1350		**ND**	µg/Kg-dry	100	02/01/2017 11:41	126658
Isopropylbenzene	NELAP	677		**ND**	µg/Kg-dry	100	02/01/2017 11:41	126658
m,p-Xylenes	NELAP	677		**14400**	µg/Kg-dry	100	02/01/2017 11:41	126658
Methacrylonitrile	NELAP	6770		**ND**	µg/Kg-dry	100	02/01/2017 11:41	126658
Methyl Methacrylate	NELAP	677		**ND**	µg/Kg-dry	100	02/01/2017 11:41	126658
Methyl tert-butyl ether	NELAP	271		**ND**	µg/Kg-dry	100	02/01/2017 11:41	126658
Methylacrylate	NELAP	1350		**ND**	µg/Kg-dry	100	02/01/2017 11:41	126658
Methylene chloride	NELAP	677		**ND**	µg/Kg-dry	100	02/01/2017 11:41	126658
Naphthalene	NELAP	13500		**137000**	µg/Kg-dry	1000	02/01/2017 12:34	126658
n-Butylbenzene	NELAP	677		**ND**	µg/Kg-dry	100	02/01/2017 11:41	126658
n-Heptane		6770		**ND**	µg/Kg-dry	100	02/01/2017 11:41	126658
n-Hexane		2710		**ND**	µg/Kg-dry	100	02/01/2017 11:41	126658
Nitrobenzene	NELAP	13500		**ND**	µg/Kg-dry	100	02/01/2017 11:41	126658
n-Propylbenzene	NELAP	677		**ND**	µg/Kg-dry	100	02/01/2017 11:41	126658
o-Xylene	NELAP	677		**5440**	µg/Kg-dry	100	02/01/2017 11:41	126658
Pentachloroethane	NELAP	677		**ND**	µg/Kg-dry	100	02/01/2017 11:41	126658
p-Isopropyltoluene	NELAP	677		**ND**	µg/Kg-dry	100	02/01/2017 11:41	126658
Propionitrile	NELAP	6770		**ND**	µg/Kg-dry	100	02/01/2017 11:41	126658
sec-Butylbenzene	NELAP	677		**ND**	µg/Kg-dry	100	02/01/2017 11:41	126658
Styrene	NELAP	677		**ND**	µg/Kg-dry	100	02/01/2017 11:41	126658
tert-Butylbenzene	NELAP	677		**ND**	µg/Kg-dry	100	02/01/2017 11:41	126658
Tetrachloroethene	NELAP	677		**ND**	µg/Kg-dry	100	02/01/2017 11:41	126658
Tetrahydrofuran	NELAP	6770		**ND**	µg/Kg-dry	100	02/01/2017 11:41	126658
Toluene	NELAP	677		**16500**	µg/Kg-dry	100	02/01/2017 11:41	126658
trans-1,2-Dichloroethene	NELAP	677		**ND**	µg/Kg-dry	100	02/01/2017 11:41	126658
trans-1,3-Dichloropropene	NELAP	542		**ND**	µg/Kg-dry	100	02/01/2017 11:41	126658
Trichloroethene	NELAP	677		**ND**	µg/Kg-dry	100	02/01/2017 11:41	126658
Trichlorofluoromethane	NELAP	677		**ND**	µg/Kg-dry	100	02/01/2017 11:41	126658
Vinyl acetate	NELAP	6770		**ND**	µg/Kg-dry	100	02/01/2017 11:41	126658
Vinyl chloride	NELAP	271		**ND**	µg/Kg-dry	100	02/01/2017 11:41	126658
Surr: 1,2-Dichloroethane-d4		72.2-131		**98.8**	%REC	100	02/01/2017 11:41	126658
Surr: 4-Bromofluorobenzene		82.1-116		**100.2**	%REC	100	02/01/2017 11:41	126658
Surr: Dibromofluoromethane		77.7-120		**93.4**	%REC	100	02/01/2017 11:41	126658
Surr: Toluene-d8		86-116		**101.2**	%REC	100	02/01/2017 11:41	126658

Elevated reporting limit due to high levels of target and/or non-target analytes.

Allowable Marginal Exceedance of hexachloroethane in the LCSD verified per 2009 TNI Standard (Volume 1, Module 4, section 1.7.4.2).

Allowable Marginal Exceedance of 2-butanone in the LCS verified per 2009 TNI Standard (Volume 1, Module 4, section 1.7.4.2).

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011674

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 01-Feb-17

Lab Sample ID	Client Sample ID	Matrix	Fractions	Collection Date
17011674-001	SW-RES-REM-W7 (3)	Solid	4	01/30/2017 12:00
17011674-002	SW-RES-REM-W6 (3)	Solid	4	01/30/2017 12:15
17011674-003	FL-RES-REM-W6 (14)	Solid	4	01/31/2017 11:00

Client: PSC Industrial Outsourcing, LP
Work Order: 17011674

Client Project: Champaign Residual IRM 624-1610-0001 / J0055
Report Date: 01-Feb-17

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			Prep Date/Time	Analysis Date/Time
17011674-003A	FL-RES-REM-W6 (14)	01/31/2017 11:00	01/31/2017 16:53		
	EPA SW846 3550C, 5035A, ASTM D2974				01/31/2017 18:37
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			01/31/2017 18:29	02/01/2017 11:50
	SW-846 3550B, 8270C, Semi-Volatile Organic Compounds by GC/MS			01/31/2017 18:23	02/01/2017 13:16
17011674-003D	FL-RES-REM-W6 (14)	01/31/2017 11:00	01/31/2017 16:53		
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/01/2017 11:41
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/01/2017 12:34

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011674

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 01-Feb-17

EPA SW846 3550C, 5035A, ASTM D2974

Batch R228639 **SampType:** LCS Units %

SampID: LCS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	01/31/2017

Batch R228639 **SampType:** LCSQC Units %

SampID: LCSQC

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	01/31/2017

SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126602 **SampType:** MBLK Units mg/Kg

SampID: MBLK-126602

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Acenaphthene	0.003		**ND**						01/31/2017
Acenaphthylene	0.003		**ND**						01/31/2017
Anthracene	0.003		**ND**						01/31/2017
Benzo(a)anthracene	0.010		**ND**						01/31/2017
Benzo(a)pyrene	0.003		**ND**						01/31/2017
Benzo(b)fluoranthene	0.003		**ND**						01/31/2017
Benzo(g,h,i)perylene	0.003		**ND**						01/31/2017
Benzo(k)fluoranthene	0.003		**ND**						01/31/2017
Chrysene	0.003		**ND**						01/31/2017
Dibenzo(a,h)anthracene	0.003		**ND**						01/31/2017
Fluoranthene	0.003		**ND**						01/31/2017
Fluorene	0.003		**ND**						01/31/2017
Indeno(1,2,3-cd)pyrene	0.003		**ND**						01/31/2017
Naphthalene	0.003		**ND**						01/31/2017
Phenanthrene	0.003		**ND**						01/31/2017
Pyrene	0.003		**ND**						01/31/2017
Surr: 2-Fluorobiphenyl			**0.095**	0.1670		56.9	30	101	01/31/2017
Surr: Nitrobenzene-d5			**0.085**	0.1670		50.6	24.4	112	01/31/2017
Surr: p-Terphenyl-d14			**0.095**	0.1670		57.0	31.9	121	01/31/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011674

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 01-Feb-17

SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126602 **SampType:** LCS Units **mg/Kg**

SampID: LCS-126602

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Acenaphthene	0.003		**0.099**	0.1670	0	59.4	47.9	103	01/31/2017
Acenaphthylene	0.003		**0.098**	0.1670	0	58.9	47.3	104	01/31/2017
Anthracene	0.003		**0.081**	0.1670	0	48.7	42.1	98.1	01/31/2017
Benzo(a)anthracene	0.010		**0.105**	0.1670	0	62.6	41.4	107	01/31/2017
Benzo(a)pyrene	0.003		**0.098**	0.1670	0	58.5	43.1	102	01/31/2017
Benzo(b)fluoranthene	0.003		**0.106**	0.1670	0	63.3	40.9	109	01/31/2017
Benzo(g,h,i)perylene	0.003		**0.103**	0.1670	0	61.9	36.2	113	01/31/2017
Benzo(k)fluoranthene	0.003		**0.103**	0.1670	0	61.4	45.4	107	01/31/2017
Chrysene	0.003		**0.102**	0.1670	0	61.3	47.9	107	01/31/2017
Dibenzo(a,h)anthracene	0.003		**0.108**	0.1670	0	64.8	41.2	112	01/31/2017
Fluoranthene	0.003		**0.084**	0.1670	0	50.5	45	104	01/31/2017
Fluorene	0.003		**0.102**	0.1670	0	61.0	47.8	106	01/31/2017
Indeno(1,2,3-cd)pyrene	0.003		**0.103**	0.1670	0	61.8	40	112	01/31/2017
Naphthalene	0.003		**0.080**	0.1670	0	48.2	42.9	93.3	01/31/2017
Phenanthrene	0.003		**0.087**	0.1670	0	52.0	44.2	99.2	01/31/2017
Pyrene	0.003		**0.084**	0.1670	0	50.4	41.3	103	01/31/2017
Surr: 2-Fluorobiphenyl			**0.072**	0.1670		43.3	30	101	01/31/2017
Surr: Nitrobenzene-d5			**0.061**	0.1670		36.3	24.4	112	01/31/2017
Surr: p-Terphenyl-d14			**0.081**	0.1670		48.3	31.9	121	01/31/2017

Batch 126602 **SampType:** MS Units **mg/Kg-dry**

SampID: 17011674-003AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Acenaphthene	0.546		**5.05**	5.368	1.576	64.7	30.6	109	02/01/2017
Acenaphthylene	0.546		**7.13**	5.368	3.481	67.9	28	110	02/01/2017
Anthracene	0.546		**10.9**	5.368	6.510	82.3	41.4	94.3	02/01/2017
Benzo(a)anthracene	1.61		**8.97**	5.368	4.499	83.3	28.6	113	02/01/2017
Benzo(a)pyrene	0.546		**8.18**	5.368	3.905	79.6	37.9	102	02/01/2017
Benzo(b)fluoranthene	0.546		**8.52**	5.368	4.266	79.2	37.1	112	02/01/2017
Benzo(g,h,i)perylene	0.546		**5.88**	5.368	1.963	72.9	7.28	119	02/01/2017
Benzo(k)fluoranthene	0.546		**5.72**	5.368	1.613	76.5	34	115	02/01/2017
Chrysene	0.546		**7.81**	5.368	3.672	77.0	23.1	116	02/01/2017
Dibenzo(a,h)anthracene	0.546		**4.07**	5.368	0.4722	67.1	23.9	110	02/01/2017
Fluoranthene	0.546		**16.5**	5.368	9.911	121.9	20.8	124	02/01/2017
Fluorene	0.546		**11.6**	5.368	6.887	88.6	44.3	96.6	02/01/2017
Indeno(1,2,3-cd)pyrene	0.546		**5.48**	5.368	1.629	71.7	12.6	119	02/01/2017
Naphthalene	0.546	S	**78.3**	5.368	90.58	-228.1	17.8	110	02/01/2017
Phenanthrene	0.546	S	**29.7**	5.368	21.73	148.7	22.3	117	02/01/2017
Pyrene	0.546		**15.4**	5.368	8.877	120.7	20.6	121	02/01/2017
Surr: 2-Fluorobiphenyl			**2.50**	5.368		46.6	19.9	83	02/01/2017
Surr: Nitrobenzene-d5			**1.91**	5.368		35.6	23	84	02/01/2017
Surr: p-Terphenyl-d14			**2.97**	5.368		55.4	33.5	106	02/01/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011674

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 01-Feb-17

SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126602 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **49.7**

SampID: 17011674-003AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Acenaphthene	0.521		**4.09**	5.120	1.576	49.2	5.047	20.88	02/01/2017
Acenaphthylene	0.521	SR	**4.50**	5.120	3.481	19.8	7.125	45.25	02/01/2017
Anthracene	0.521	SR	**4.46**	5.120	6.510	-40.1	10.93	84.16	02/01/2017
Benzo(a)anthracene	1.53	SR	**4.25**	5.120	4.499	-4.9	8.974	71.42	02/01/2017
Benzo(a)pyrene	0.521	SR	**3.83**	5.120	3.905	-1.5	8.181	72.52	02/01/2017
Benzo(b)fluoranthene	0.521	SR	**4.15**	5.120	4.266	-2.3	8.518	68.99	02/01/2017
Benzo(g,h,i)perylene	0.521	R	**3.68**	5.120	1.963	33.5	5.877	46.01	02/01/2017
Benzo(k)fluoranthene	0.521		**3.95**	5.120	1.613	45.7	5.722	36.52	02/01/2017
Chrysene	0.521	SR	**4.00**	5.120	3.672	6.4	7.806	64.46	02/01/2017
Dibenzo(a,h)anthracene	0.521		**3.77**	5.120	0.4722	64.3	4.072	7.81	02/01/2017
Fluoranthene	0.521	SR	**3.93**	5.120	9.911	-116.8	16.45	122.81	02/01/2017
Fluorene	0.521	S	**6.00**	5.120	6.887	-17.4	11.64	63.98	02/01/2017
Indeno(1,2,3-cd)pyrene	0.521	R	**3.69**	5.120	1.629	40.3	5.475	38.85	02/01/2017
Naphthalene	0.521	SR	**47.8**	5.120	90.58	-835.8	78.33	48.43	02/01/2017
Phenanthrene	0.521	SR	**8.58**	5.120	21.73	-256.8	29.71	110.38	02/01/2017
Pyrene	0.521	SR	**3.93**	5.120	8.877	-96.6	15.35	118.50	02/01/2017
Surr: 2-Fluorobiphenyl			**2.21**	5.120		43.1			02/01/2017
Surr: Nitrobenzene-d5			**1.68**	5.120		32.7			02/01/2017
Surr: p-Terphenyl-d14			**2.81**	5.120		54.8			02/01/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011674

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 01-Feb-17

SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126627 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK-126627

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,2,4-Trichlorobenzene	0.500		ND						02/01/2017
1,2-Dichlorobenzene	0.500		ND						02/01/2017
1,3-Dichlorobenzene	0.500		ND						02/01/2017
1,4-Dichlorobenzene	0.500		ND						02/01/2017
2,4,5-Trichlorophenol	0.350		ND						02/01/2017
2,4,6-Trichlorophenol	0.350		ND						02/01/2017
2,4-Dichlorophenol	0.500		ND						02/01/2017
2,4-Dimethylphenol	0.500		ND						02/01/2017
2,4-Dinitrophenol	1.00		ND						02/01/2017
2,4-Dinitrotoluene	0.350		ND						02/01/2017
2,6-Dinitrotoluene	0.350		ND						02/01/2017
2-Chloronaphthalene	0.350		ND						02/01/2017
2-Chlorophenol	0.500		ND						02/01/2017
2-Methoxy-4-methylphenol	0.650		ND						02/01/2017
2-Methylnaphthalene	0.350		ND						02/01/2017
2-Nitroaniline	1.00		ND						02/01/2017
2-Nitrophenol	0.350		ND						02/01/2017
3,3´-Dichlorobenzidine	0.350		ND						02/01/2017
3-Nitroaniline	1.00		ND						02/01/2017
4,6-Dinitro-2-methylphenol	1.00		ND						02/01/2017
4-Bromophenyl phenyl ether	0.350		ND						02/01/2017
4-Chloro-3-methylphenol	0.500		ND						02/01/2017
4-Chloroaniline	0.500		ND						02/01/2017
4-Chlorophenyl phenyl ether	0.350		ND						02/01/2017
4-Nitroaniline	0.500		ND						02/01/2017
4-Nitrophenol	0.350		ND						02/01/2017
Aniline	0.500		ND						02/01/2017
Azobenzene	0.350		ND						02/01/2017
Benzoic acid	1.50		ND						02/01/2017
Benzyl alcohol	0.500		ND						02/01/2017
Bis(2-chloroethoxy)methane	0.350		ND						02/01/2017
Bis(2-chloroethyl)ether	0.500		ND						02/01/2017
Bis(2-chloroisopropyl)ether	0.350		ND						02/01/2017
Bis(2-ethylhexyl)phthalate	0.350		ND						02/01/2017
Butyl benzyl phthalate	0.350		ND						02/01/2017
Carbazole	0.500		ND						02/01/2017
Dibenzofuran	0.350		ND						02/01/2017
Diethyl phthalate	0.500		ND						02/01/2017
Dimethyl phthalate	0.350		ND						02/01/2017
Di-n-butyl phthalate	0.350		ND						02/01/2017
Di-n-octyl phthalate	0.350		ND						02/01/2017
Hexachlorobenzene	0.350		ND						02/01/2017
Hexachlorobutadiene	0.500		ND						02/01/2017
Hexachlorocyclopentadiene	0.350		ND						02/01/2017
Hexachloroethane	0.500		ND						02/01/2017
Isophorone	0.350		ND						02/01/2017
m,p-Cresol	0.500		ND						02/01/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011674

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 01-Feb-17

SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126627 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK-126627

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Nitrobenzene	0.500		**ND**						02/01/2017
N-Nitrosodimethylamine	0.500		**ND**						02/01/2017
N-Nitroso-di-n-propylamine	0.500		**ND**						02/01/2017
N-Nitrosodiphenylamine	0.500		**ND**						02/01/2017
o-Cresol	0.500		**ND**						02/01/2017
Pentachlorophenol	2.00		**ND**						02/01/2017
Phenol	0.350		**ND**						02/01/2017
Pyridine	0.500		**ND**						02/01/2017
1,2-Diphenylhydrazine	0.840		**ND**						02/01/2017
Surr: 2,4,6-Tribromophenol			**1.17**	1.670		69.9	50.5	116	02/01/2017
Surr: 2-Fluorobiphenyl			**0.589**	0.8350		70.5	47.4	102	02/01/2017
Surr: 2-Fluorophenol			**1.01**	1.670		60.5	43.7	98.6	02/01/2017
Surr: Nitrobenzene-d5			**0.497**	0.8350		59.6	39	97.3	02/01/2017
Surr: Phenol-d5			**1.28**	1.670		76.5	48.1	104	02/01/2017
Surr: p-Terphenyl-d14			**0.619**	0.8350		74.1	53.2	119	02/01/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011674

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 01-Feb-17

SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126627 **SampType:** LCS Units **mg/Kg**

SampID: LCS-126627

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,2,4-Trichlorobenzene	0.500		**1.23**	1.670	0	73.9	52.4	102	02/01/2017
1,4-Dichlorobenzene	0.500		**1.08**	1.670	0	64.9	43	86.1	02/01/2017
2,4,5-Trichlorophenol	0.350		**1.19**	1.670	0	71.1	55.1	106	02/01/2017
2,4,6-Trichlorophenol	0.350		**1.09**	1.670	0	65.0	54	105	02/01/2017
2,4-Dimethylphenol	0.500		**1.07**	1.670	0	64.1	46.8	103	02/01/2017
2,4-Dinitrophenol	1.00		**1.06**	1.670	0	63.4	38	95.6	02/01/2017
2,4-Dinitrotoluene	0.350		**1.54**	1.670	0	92.4	55.6	109	02/01/2017
2-Chlorophenol	0.500		**1.14**	1.670	0	68.0	51.1	92.4	02/01/2017
4-Chloro-3-methylphenol	0.500		**1.22**	1.670	0	73.3	52	97.3	02/01/2017
4-Nitrophenol	0.350		**1.17**	1.670	0	70.3	48	99.6	02/01/2017
Bis(2-ethylhexyl)phthalate	0.350		**1.14**	1.670	0	68.5	48.3	106	02/01/2017
Diethyl phthalate	0.500		**1.55**	1.670	0	92.7	56.9	103	02/01/2017
Dimethyl phthalate	0.350		**1.50**	1.670	0	90.0	56.4	98.1	02/01/2017
Di-n-butyl phthalate	0.350		**1.47**	1.670	0	88.0	54.8	100	02/01/2017
Hexachlorobenzene	0.350		**1.22**	1.670	0	73.1	54.1	102	02/01/2017
Hexachlorobutadiene	0.500		**1.17**	1.670	0	70.2	46	103	02/01/2017
Hexachloroethane	0.500		**1.28**	1.670	0	76.6	45	90	02/01/2017
m,p-Cresol	0.500		**1.24**	1.670	0	74.5	53	98.5	02/01/2017
Nitrobenzene	0.500		**1.14**	1.670	0	68.1	44.4	86.6	02/01/2017
N-Nitroso-di-n-propylamine	0.500		**1.38**	1.670	0	82.5	39.8	94.3	02/01/2017
o-Cresol	0.500		**1.24**	1.670	0	74.4	52.1	96.4	02/01/2017
Pentachlorophenol	2.00		**ND**	1.670	0	51.9	37	91.7	02/01/2017
Phenol	0.350		**1.19**	1.670	0	71.3	52.9	95.6	02/01/2017
Pyridine	0.500		**0.670**	1.670	0	40.1	30	77.1	02/01/2017
Surr: 2,4,6-Tribromophenol			**1.24**	1.670		74.5	50.5	116	02/01/2017
Surr: 2-Fluorobiphenyl			**0.565**	0.8350		67.7	47.4	102	02/01/2017
Surr: 2-Fluorophenol			**0.939**	1.670		56.2	43.7	98.6	02/01/2017
Surr: Nitrobenzene-d5			**0.547**	0.8350		65.5	39	97.3	02/01/2017
Surr: Phenol-d5			**1.19**	1.670		71.1	48.1	104	02/01/2017
Surr: p-Terphenyl-d14			**0.639**	0.8350		76.5	53.2	119	02/01/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011674

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 01-Feb-17

SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126627 **SampType:** MS Units **mg/Kg-dry**

SampID: 17011674-003AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,2,4-Trichlorobenzene	14.5		**37.0**	48.50	0	76.2	35.9	102	02/01/2017
1,4-Dichlorobenzene	14.5		**35.9**	48.50	0	74.1	29.8	95.5	02/01/2017
2,4,5-Trichlorophenol	10.2		**34.0**	48.50	0	70.2	38.6	123	02/01/2017
2,4,6-Trichlorophenol	10.2		**31.9**	48.50	0	65.7	35.9	123	02/01/2017
2,4-Dimethylphenol	14.5		**35.2**	48.50	4.128	64.1	38.3	88	02/01/2017
2,4-Dinitrophenol	29.0		**ND**	48.50	0	53.5	1.88	162	02/01/2017
2,4-Dinitrotoluene	10.2		**44.9**	48.50	0	92.5	37.5	107	02/01/2017
2-Chlorophenol	14.5		**36.2**	48.50	0	74.7	22.6	108	02/01/2017
4-Chloro-3-methylphenol	14.5		**36.0**	48.50	0	74.2	19.3	131	02/01/2017
4-Nitrophenol	10.2		**33.2**	48.50	0	68.4	27.6	123	02/01/2017
Bis(2-ethylhexyl)phthalate	10.2		**35.8**	48.50	0	73.8	56.3	109	02/01/2017
Diethyl phthalate	14.5		**44.8**	48.50	0	92.4	51.7	106	02/01/2017
Dimethyl phthalate	10.2		**42.0**	48.50	0	86.6	58.8	104	02/01/2017
Di-n-butyl phthalate	10.2		**44.7**	48.50	0	92.1	54.3	105	02/01/2017
Hexachlorobenzene	10.2		**36.7**	48.50	0	75.6	55.9	106	02/01/2017
Hexachlorobutadiene	14.5		**35.3**	48.50	0	72.9	35.7	100	02/01/2017
Hexachloroethane	14.5		**40.1**	48.50	0	82.7	38.9	89.9	02/01/2017
m,p-Cresol	14.5		**39.1**	48.50	0	80.6	37.6	93.7	02/01/2017
Nitrobenzene	14.5		**33.0**	48.50	0	68.1	51.8	104	02/01/2017
N-Nitroso-di-n-propylamine	14.5		**43.2**	48.50	0	89.0	45.5	99.1	02/01/2017
o-Cresol	14.5		**39.4**	48.50	0	81.2	43	101	02/01/2017
Pentachlorophenol	58.1		**ND**	48.50	0	52.7	18.5	113	02/01/2017
Phenol	10.2		**39.1**	48.50	0	80.7	20.8	110	02/01/2017
Pyridine	14.5	S	**ND**	48.50	0	0	3.61	74.3	02/01/2017
Surr: 2,4,6-Tribromophenol			**36.6**	48.50		75.5	33	115	02/01/2017
Surr: 2-Fluorobiphenyl			**16.9**	24.25		69.8	36.5	97.7	02/01/2017
Surr: 2-Fluorophenol			**30.4**	48.50		62.7	39.4	92.8	02/01/2017
Surr: Nitrobenzene-d5			**14.8**	24.25		60.8	34.7	90.1	02/01/2017
Surr: Phenol-d5			**37.4**	48.50		77.1	42.8	106	02/01/2017
Surr: p-Terphenyl-d14			**19.2**	24.25		79.1	43.7	124	02/01/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011674

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 01-Feb-17

SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126627 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **40**

SampID: 17011674-003AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
1,2,4-Trichlorobenzene	16.1		**41.3**	53.68	0	76.9	36.95	11.05	02/01/2017
1,4-Dichlorobenzene	16.1		**39.2**	53.68	0	73.0	35.93	8.73	02/01/2017
2,4,5-Trichlorophenol	11.3		**39.8**	53.68	0	74.2	34.04	15.62	02/01/2017
2,4,6-Trichlorophenol	11.3		**36.9**	53.68	0	68.8	31.86	14.72	02/01/2017
2,4-Dimethylphenol	16.1		**39.5**	53.68	4.128	65.9	35.24	11.47	02/01/2017
2,4-Dinitrophenol	32.1		**ND**	53.68	0	54.5	25.94	0.00	02/01/2017
2,4-Dinitrotoluene	11.3		**51.1**	53.68	0	95.2	44.86	13.04	02/01/2017
2-Chlorophenol	16.1		**40.8**	53.68	0	76.0	36.21	11.99	02/01/2017
4-Chloro-3-methylphenol	16.1		**41.6**	53.68	0	77.6	35.97	14.59	02/01/2017
4-Nitrophenol	11.3		**37.9**	53.68	0	70.6	33.19	13.29	02/01/2017
Bis(2-ethylhexyl)phthalate	11.3		**38.6**	53.68	0	71.9	35.77	7.57	02/01/2017
Diethyl phthalate	16.1		**47.2**	53.68	0	87.9	44.82	5.10	02/01/2017
Dimethyl phthalate	11.3		**46.6**	53.68	0	86.8	42.00	10.37	02/01/2017
Di-n-butyl phthalate	11.3		**45.6**	53.68	0	84.9	44.66	2.02	02/01/2017
Hexachlorobenzene	11.3		**38.1**	53.68	0	71.0	36.68	3.77	02/01/2017
Hexachlorobutadiene	16.1		**38.0**	53.68	0	70.8	35.34	7.22	02/01/2017
Hexachloroethane	16.1		**46.4**	53.68	0	86.5	40.12	14.60	02/01/2017
m,p-Cresol	16.1		**44.8**	53.68	0	83.5	39.11	13.60	02/01/2017
Nitrobenzene	16.1		**37.7**	53.68	0	70.2	33.04	13.10	02/01/2017
N-Nitroso-di-n-propylamine	16.1		**48.7**	53.68	0	90.7	43.17	12.04	02/01/2017
o-Cresol	16.1		**44.4**	53.68	0	82.7	39.39	11.91	02/01/2017
Pentachlorophenol	64.3		**ND**	53.68	0	49.5	25.54	0.00	02/01/2017
Phenol	11.3		**44.7**	53.68	0	83.3	39.14	13.27	02/01/2017
Pyridine	16.1	S	**ND**	53.68	0	0	0	0.00	02/01/2017
Surr: 2,4,6-Tribromophenol			**39.0**	53.68		72.7			02/01/2017
Surr: 2-Fluorobiphenyl			**17.7**	26.84		66.0			02/01/2017
Surr: 2-Fluorophenol			**31.4**	53.68		58.5			02/01/2017
Surr: Nitrobenzene-d5			**16.9**	26.84		63.0			02/01/2017
Surr: Phenol-d5			**41.7**	53.68		77.7			02/01/2017
Surr: p-Terphenyl-d14			**20.1**	26.84		75.0			02/01/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011674

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 01-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126658 **SampType:** MBLK Units µg/Kg

SampID: MBLK-F170201A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		ND						02/01/2017
1,1,1-Trichloroethane	5.0		ND						02/01/2017
1,1,2,2-Tetrachloroethane	5.0		ND						02/01/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		ND						02/01/2017
1,1,2-Trichloroethane	5.0		ND						02/01/2017
1,1-Dichloro-2-propanone	50.0		ND						02/01/2017
1,1-Dichloroethane	5.0		ND						02/01/2017
1,1-Dichloroethene	5.0		ND						02/01/2017
1,1-Dichloropropene	5.0		ND						02/01/2017
1,2,3-Trichlorobenzene	5.0		ND						02/01/2017
1,2,3-Trichloropropane	10.0		ND						02/01/2017
1,2,3-Trimethylbenzene	5.0		ND						02/01/2017
1,2,4-Trichlorobenzene	5.0		ND						02/01/2017
1,2,4-Trimethylbenzene	5.0		ND						02/01/2017
1,2-Dibromo-3-chloropropane	5.0		ND						02/01/2017
1,2-Dibromoethane	5.0		ND						02/01/2017
1,2-Dichlorobenzene	5.0		ND						02/01/2017
1,2-Dichloroethane	5.0		ND						02/01/2017
1,2-Dichloropropane	5.0		ND						02/01/2017
1,3,5-Trimethylbenzene	5.0		ND						02/01/2017
1,3-Dichlorobenzene	5.0		ND						02/01/2017
1,3-Dichloropropane	5.0		ND						02/01/2017
1,4-Dichlorobenzene	5.0		ND						02/01/2017
1-Chlorobutane	5.0		ND						02/01/2017
2,2-Dichloropropane	5.0		ND						02/01/2017
2-Butanone	50.0		ND						02/01/2017
2-Chlorotoluene	5.0		ND						02/01/2017
2-Hexanone	50.0		ND						02/01/2017
2-Nitropropane	50.0		ND						02/01/2017
4-Chlorotoluene	5.0		ND						02/01/2017
4-Methyl-2-pentanone	50.0		ND						02/01/2017
Acetone	50.0		ND						02/01/2017
Acrolein	100		ND						02/01/2017
Acrylonitrile	10.0		ND						02/01/2017
Allyl chloride	5.0		ND						02/01/2017
Benzene	1.0		ND						02/01/2017
Bromobenzene	5.0		ND						02/01/2017
Bromochloromethane	5.0		ND						02/01/2017
Bromodichloromethane	5.0		ND						02/01/2017
Bromoform	5.0		ND						02/01/2017
Bromomethane	10.0		ND						02/01/2017
Carbon disulfide	5.0		ND						02/01/2017
Carbon tetrachloride	5.0		ND						02/01/2017
Chlorobenzene	5.0		ND						02/01/2017
Chloroethane	10.0		ND						02/01/2017
Chloroform	5.0		ND						02/01/2017
Chloromethane	10.0		ND						02/01/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011674

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 01-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126658 **SampType:** MBLK Units µg/Kg

SampID: MBLK-F170201A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		ND						02/01/2017
cis-1,3-Dichloropropene	4.0		ND						02/01/2017
Cyclohexanone	100		ND						02/01/2017
Dibromochloromethane	5.0		ND						02/01/2017
Dibromomethane	5.0		ND						02/01/2017
Dichlorodifluoromethane	10.0		ND						02/01/2017
Ethyl ether	5.0		ND						02/01/2017
Ethyl methacrylate	5.0		ND						02/01/2017
Ethylbenzene	5.0		ND						02/01/2017
Hexachlorobutadiene	5.0		ND						02/01/2017
Hexachloroethane	5.0		ND						02/01/2017
Iodomethane	10.0		ND						02/01/2017
Isopropylbenzene	5.0		ND						02/01/2017
m,p-Xylenes	5.0		ND						02/01/2017
Methacrylonitrile	50.0		ND						02/01/2017
Methyl Methacrylate	5.0		ND						02/01/2017
Methyl tert-butyl ether	2.0		ND						02/01/2017
Methylacrylate	10.0		ND						02/01/2017
Methylene chloride	5.0		ND						02/01/2017
Naphthalene	10.0		ND						02/01/2017
n-Butylbenzene	5.0		ND						02/01/2017
n-Heptane	20.0		ND						02/01/2017
n-Hexane	20.0		ND						02/01/2017
Nitrobenzene	100		ND						02/01/2017
n-Propylbenzene	5.0		ND						02/01/2017
o-Xylene	5.0		ND						02/01/2017
Pentachloroethane	5.0		ND						02/01/2017
p-Isopropyltoluene	5.0		ND						02/01/2017
Propionitrile	50.0		ND						02/01/2017
sec-Butylbenzene	5.0		ND						02/01/2017
Styrene	5.0		ND						02/01/2017
tert-Butylbenzene	5.0		ND						02/01/2017
Tetrachloroethene	5.0		ND						02/01/2017
Tetrahydrofuran	50.0		ND						02/01/2017
Toluene	5.0		ND						02/01/2017
trans-1,2-Dichloroethene	5.0		ND						02/01/2017
trans-1,3-Dichloropropene	4.0		ND						02/01/2017
Trichloroethene	5.0		ND						02/01/2017
Trichlorofluoromethane	5.0		ND						02/01/2017
Vinyl acetate	50.0		ND						02/01/2017
Vinyl chloride	2.0		ND						02/01/2017
Surr: 1,2-Dichloroethane-d4			**51.2**	50.00		102.4	72.2	131	02/01/2017
Surr: 4-Bromofluorobenzene			**51.0**	50.00		102.1	82.1	116	02/01/2017
Surr: Dibromofluoromethane			**48.6**	50.00		97.3	77.7	120	02/01/2017
Surr: Toluene-d8			**49.9**	50.00		99.8	86	116	02/01/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011674

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 01-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126658 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-F170201A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		**52.7**	50.00	0	105.5	53.31	1.07	02/01/2017
1,1,1-Trichloroethane	5.0		**53.2**	50.00	0	106.4	53.61	0.73	02/01/2017
1,1,2,2-Tetrachloroethane	5.0		**51.9**	50.00	0	103.9	50.97	1.87	02/01/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		**54.9**	50.00	0	109.8	53.65	2.30	02/01/2017
1,1,2-Trichloroethane	5.0		**49.4**	50.00	0	98.9	51.75	4.55	02/01/2017
1,1-Dichloro-2-propanone	50.0		**103**	125.0	0	82.3	137.5	28.80	02/01/2017
1,1-Dichloroethane	5.0		**52.5**	50.00	0	104.9	52.49	0.04	02/01/2017
1,1-Dichloroethene	5.0		**56.2**	50.00	0	112.3	54.39	3.18	02/01/2017
1,1-Dichloropropene	5.0		**53.1**	50.00	0	106.3	51.47	3.17	02/01/2017
1,2,3-Trichlorobenzene	5.0		**57.8**	50.00	0	115.5	57.45	0.56	02/01/2017
1,2,3-Trichloropropane	10.0		**50.1**	50.00	0	100.1	51.09	2.02	02/01/2017
1,2,3-Trimethylbenzene	5.0		**56.1**	50.00	0	112.2	54.45	3.00	02/01/2017
1,2,4-Trichlorobenzene	5.0		**62.7**	50.00	0	125.4	62.19	0.85	02/01/2017
1,2,4-Trimethylbenzene	5.0		**57.2**	50.00	0	114.3	56.42	1.30	02/01/2017
1,2-Dibromo-3-chloropropane	5.0		**49.8**	50.00	0	99.5	51.79	4.00	02/01/2017
1,2-Dibromoethane	5.0		**49.0**	50.00	0	98.0	50.32	2.66	02/01/2017
1,2-Dichlorobenzene	5.0		**56.0**	50.00	0	112.1	53.89	3.89	02/01/2017
1,2-Dichloroethane	5.0		**52.0**	50.00	0	103.9	52.26	0.59	02/01/2017
1,2-Dichloropropane	5.0		**50.6**	50.00	0	101.1	50.74	0.34	02/01/2017
1,3,5-Trimethylbenzene	5.0		**57.7**	50.00	0	115.5	55.80	3.40	02/01/2017
1,3-Dichlorobenzene	5.0		**57.2**	50.00	0	114.4	55.46	3.05	02/01/2017
1,3-Dichloropropane	5.0		**49.8**	50.00	0	99.7	52.85	5.86	02/01/2017
1,4-Dichlorobenzene	5.0		**55.1**	50.00	0	110.3	54.63	0.91	02/01/2017
1-Chlorobutane	5.0		**53.1**	50.00	0	106.2	51.23	3.60	02/01/2017
2,2-Dichloropropane	5.0		**53.3**	50.00	0	106.6	53.20	0.23	02/01/2017
2-Butanone	50.0		**147**	125.0	0	117.4	163.8	10.96	02/01/2017
2-Chlorotoluene	5.0		**57.6**	50.00	0	115.3	55.21	4.31	02/01/2017
2-Hexanone	50.0		**139**	125.0	0	111.5	155.1	10.67	02/01/2017
2-Nitropropane	50.0		**516**	500.0	0	103.3	551.7	6.61	02/01/2017
4-Chlorotoluene	5.0		**51.8**	50.00	0	103.5	50.94	1.58	02/01/2017
4-Methyl-2-pentanone	50.0		**121**	125.0	0	96.4	135.0	11.29	02/01/2017
Acetone	50.0		**160**	125.0	0	127.8	176.3	9.82	02/01/2017
Acrolein	100		**457**	500.0	0	91.3	475.1	3.98	02/01/2017
Acrylonitrile	10.0		**48.7**	50.00	0	97.5	51.98	6.45	02/01/2017
Allyl chloride	5.0		**51.3**	50.00	0	102.5	51.55	0.54	02/01/2017
Benzene	1.0		**51.3**	50.00	0	102.7	51.40	0.14	02/01/2017
Bromobenzene	5.0		**55.2**	50.00	0	110.4	53.58	3.00	02/01/2017
Bromochloromethane	5.0		**51.5**	50.00	0	103.0	51.79	0.58	02/01/2017
Bromodichloromethane	5.0		**52.6**	50.00	0	105.1	51.64	1.75	02/01/2017
Bromoform	5.0		**52.3**	50.00	0	104.6	57.02	8.64	02/01/2017
Bromomethane	10.0		**ND**	50.00	0	6.7	39.64	0.00	02/01/2017
Carbon disulfide	5.0		**51.9**	50.00	0	103.8	49.98	3.75	02/01/2017
Carbon tetrachloride	5.0		**56.1**	50.00	0	112.2	54.25	3.39	02/01/2017
Chlorobenzene	5.0		**52.3**	50.00	0	104.6	53.20	1.69	02/01/2017
Chloroethane	10.0		**52.6**	50.00	0	105.3	52.36	0.53	02/01/2017
Chloroform	5.0		**51.3**	50.00	0	102.6	51.50	0.35	02/01/2017
Chloromethane	10.0		**60.5**	50.00	0	121.0	62.15	2.67	02/01/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011674

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 01-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126658 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-F170201A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
cis-1,2-Dichloroethene	5.0		**52.6**	50.00	0	105.1	52.84	0.55	02/01/2017
cis-1,3-Dichloropropene	4.0		**53.6**	50.00	0	107.3	53.75	0.22	02/01/2017
Cyclohexanone	100		**440**	500.0	0	88.0	500.3	12.86	02/01/2017
Dibromochloromethane	5.0		**53.0**	50.00	0	106.1	55.41	4.37	02/01/2017
Dibromomethane	5.0		**50.3**	50.00	0	100.6	51.57	2.45	02/01/2017
Dichlorodifluoromethane	10.0		**57.0**	50.00	0	113.9	55.37	2.83	02/01/2017
Ethyl ether	5.0		**50.3**	50.00	0	100.5	51.11	1.66	02/01/2017
Ethyl methacrylate	5.0		**50.0**	50.00	0	99.9	54.29	8.33	02/01/2017
Ethylbenzene	5.0		**53.5**	50.00	0	106.9	54.33	1.60	02/01/2017
Hexachlorobutadiene	5.0		**62.0**	50.00	0	124.0	59.26	4.50	02/01/2017
Hexachloroethane	5.0	S	**63.0**	50.00	0	126.0	60.40	4.18	02/01/2017
Iodomethane	10.0		**51.3**	50.00	0	102.7	50.49	1.67	02/01/2017
Isopropylbenzene	5.0		**56.2**	50.00	0	112.4	56.19	0.02	02/01/2017
m,p-Xylenes	5.0		**109**	100.0	0	109.2	111.4	2.02	02/01/2017
Methacrylonitrile	50.0		**ND**	50.00	0	96.0	48.65	0.00	02/01/2017
Methyl Methacrylate	5.0		**50.3**	50.00	0	100.7	53.39	5.88	02/01/2017
Methyl tert-butyl ether	2.0		**51.1**	50.00	0	102.1	52.12	2.05	02/01/2017
Methylacrylate	10.0		**45.2**	50.00	0	90.4	49.94	9.94	02/01/2017
Methylene chloride	5.0		**52.4**	50.00	0	104.9	51.99	0.86	02/01/2017
Naphthalene	10.0		**55.6**	50.00	0	111.3	55.81	0.32	02/01/2017
n-Butylbenzene	5.0		**62.0**	50.00	0	123.9	60.43	2.52	02/01/2017
n-Heptane	20.0		**59.2**	50.00	0	118.5	60.31	1.81	02/01/2017
n-Hexane	20.0		**58.8**	50.00	0	117.6	57.37	2.44	02/01/2017
Nitrobenzene	100		**415**	500.0	0	82.9	439.2	5.77	02/01/2017
n-Propylbenzene	5.0		**59.2**	50.00	0	118.5	56.78	4.24	02/01/2017
o-Xylene	5.0		**54.4**	50.00	0	108.8	54.98	1.02	02/01/2017
Pentachloroethane	5.0		**57.9**	50.00	0	115.9	58.14	0.36	02/01/2017
p-Isopropyltoluene	5.0		**60.4**	50.00	0	120.9	57.99	4.12	02/01/2017
Propionitrile	50.0		**487**	500.0	0	97.4	540.7	10.45	02/01/2017
sec-Butylbenzene	5.0		**60.4**	50.00	0	120.9	55.57	8.41	02/01/2017
Styrene	5.0		**54.8**	50.00	0	109.6	55.37	1.05	02/01/2017
tert-Butylbenzene	5.0		**56.9**	50.00	0	113.8	55.03	3.38	02/01/2017
Tetrachloroethene	5.0		**54.5**	50.00	0	108.9	53.95	0.96	02/01/2017
Tetrahydrofuran	50.0		**ND**	50.00	0	98.0	52.61	0.00	02/01/2017
Toluene	5.0		**51.5**	50.00	0	103.1	51.17	0.72	02/01/2017
trans-1,2-Dichloroethene	5.0		**52.9**	50.00	0	105.8	51.95	1.85	02/01/2017
trans-1,3-Dichloropropene	4.0		**53.3**	50.00	0	106.7	55.07	3.19	02/01/2017
Trichloroethene	5.0		**52.8**	50.00	0	105.5	52.76	0.02	02/01/2017
Trichlorofluoromethane	5.0		**55.2**	50.00	0	110.4	54.78	0.75	02/01/2017
Vinyl acetate	50.0		**52.6**	50.00	0	105.2	59.23	11.82	02/01/2017
Vinyl chloride	2.0		**55.3**	50.00	0	110.7	55.74	0.74	02/01/2017
Surr: 1,2-Dichloroethane-d4			**50.6**	50.00		101.1			02/01/2017
Surr: 4-Bromofluorobenzene			**51.2**	50.00		102.5			02/01/2017
Surr: Dibromofluoromethane			**51.1**	50.00		102.1			02/01/2017
Surr: Toluene-d8			**49.4**	50.00		98.7			02/01/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011674

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 01-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126658 **SampType:** LCS Units µg/Kg

SampID: LCS-F170201A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		**53.3**	50.00	0	106.6	83.1	114	02/01/2017
1,1,1-Trichloroethane	5.0		**53.6**	50.00	0	107.2	78.5	119	02/01/2017
1,1,2,2-Tetrachloroethane	5.0		**51.0**	50.00	0	101.9	67.4	120	02/01/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		**53.6**	50.00	0	107.3	75.4	121	02/01/2017
1,1,2-Trichloroethane	5.0		**51.8**	50.00	0	103.5	81.1	111	02/01/2017
1,1-Dichloro-2-propanone	50.0		**138**	125.0	0	110.0	55.4	131	02/01/2017
1,1-Dichloroethane	5.0		**52.5**	50.00	0	105.0	80.1	116	02/01/2017
1,1-Dichloroethene	5.0		**54.4**	50.00	0	108.8	73.1	121	02/01/2017
1,1-Dichloropropene	5.0		**51.5**	50.00	0	102.9	82.2	114	02/01/2017
1,2,3-Trichlorobenzene	5.0		**57.4**	50.00	0	114.9	81.7	130	02/01/2017
1,2,3-Trichloropropane	10.0		**51.1**	50.00	0	102.2	67.8	118	02/01/2017
1,2,3-Trimethylbenzene	5.0		**54.4**	50.00	0	108.9	82.1	127	02/01/2017
1,2,4-Trichlorobenzene	5.0		**62.2**	50.00	0	124.4	72.3	141	02/01/2017
1,2,4-Trimethylbenzene	5.0		**56.4**	50.00	0	112.8	79.7	123	02/01/2017
1,2-Dibromo-3-chloropropane	5.0		**51.8**	50.00	0	103.6	62.1	123	02/01/2017
1,2-Dibromoethane	5.0		**50.3**	50.00	0	100.6	82.4	112	02/01/2017
1,2-Dichlorobenzene	5.0		**53.9**	50.00	0	107.8	82.7	119	02/01/2017
1,2-Dichloroethane	5.0		**52.3**	50.00	0	104.5	72.8	120	02/01/2017
1,2-Dichloropropane	5.0		**50.7**	50.00	0	101.5	80	116	02/01/2017
1,3,5-Trimethylbenzene	5.0		**55.8**	50.00	0	111.6	81.5	125	02/01/2017
1,3-Dichlorobenzene	5.0		**55.5**	50.00	0	110.9	82	124	02/01/2017
1,3-Dichloropropane	5.0		**52.8**	50.00	0	105.7	79.8	113	02/01/2017
1,4-Dichlorobenzene	5.0		**54.6**	50.00	0	109.3	81.1	124	02/01/2017
1-Chlorobutane	5.0		**51.2**	50.00	0	102.5	77.2	113	02/01/2017
2,2-Dichloropropane	5.0		**53.2**	50.00	0	106.4	76.6	121	02/01/2017
2-Butanone	50.0	S	**164**	125.0	0	131.1	62.8	131	02/01/2017
2-Chlorotoluene	5.0		**55.2**	50.00	0	110.4	78.8	121	02/01/2017
2-Hexanone	50.0		**155**	125.0	0	124.1	63.1	125	02/01/2017
2-Nitropropane	50.0		**552**	500.0	0	110.3	61.2	129	02/01/2017
4-Chlorotoluene	5.0		**50.9**	50.00	0	101.9	77.6	124	02/01/2017
4-Methyl-2-pentanone	50.0		**135**	125.0	0	108.0	60.6	126	02/01/2017
Acetone	50.0		**176**	125.0	0	141.0	39.5	159	02/01/2017
Acrolein	100		**475**	500.0	0	95.0	1	167	02/01/2017
Acrylonitrile	10.0		**52.0**	50.00	0	104.0	67	124	02/01/2017
Allyl chloride	5.0		**51.6**	50.00	0	103.1	58.5	129	02/01/2017
Benzene	1.0		**51.4**	50.00	0	102.8	80.8	117	02/01/2017
Bromobenzene	5.0		**53.6**	50.00	0	107.2	79.6	117	02/01/2017
Bromochloromethane	5.0		**51.8**	50.00	0	103.6	70.7	121	02/01/2017
Bromodichloromethane	5.0		**51.6**	50.00	0	103.3	80.7	121	02/01/2017
Bromoform	5.0		**57.0**	50.00	0	114.0	79.8	118	02/01/2017
Bromomethane	10.0		**39.6**	50.00	0	79.3	1	175	02/01/2017
Carbon disulfide	5.0		**50.0**	50.00	0	100.0	62.8	123	02/01/2017
Carbon tetrachloride	5.0		**54.2**	50.00	0	108.5	77.6	123	02/01/2017
Chlorobenzene	5.0		**53.2**	50.00	0	106.4	85.6	116	02/01/2017
Chloroethane	10.0		**52.4**	50.00	0	104.7	60.2	125	02/01/2017
Chloroform	5.0		**51.5**	50.00	0	103.0	77.9	116	02/01/2017
Chloromethane	10.0		**62.2**	50.00	0	124.3	29.9	157	02/01/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011674

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 01-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126658 **SampType:** LCS Units µg/Kg

SampID: LCS-F170201A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		**52.8**	50.00	0	105.7	80.1	116	02/01/2017
cis-1,3-Dichloropropene	4.0		**53.8**	50.00	0	107.5	80.5	121	02/01/2017
Cyclohexanone	100		**500**	500.0	0	100.1	45.4	128	02/01/2017
Dibromochloromethane	5.0		**55.4**	50.00	0	110.8	84.3	116	02/01/2017
Dibromomethane	5.0		**51.6**	50.00	0	103.1	76.6	115	02/01/2017
Dichlorodifluoromethane	10.0		**55.4**	50.00	0	110.7	1	200	02/01/2017
Ethyl ether	5.0		**51.1**	50.00	0	102.2	73.4	116	02/01/2017
Ethyl methacrylate	5.0		**54.3**	50.00	0	108.6	76.2	120	02/01/2017
Ethylbenzene	5.0		**54.3**	50.00	0	108.7	84.8	116	02/01/2017
Hexachlorobutadiene	5.0		**59.3**	50.00	0	118.5	74	135	02/01/2017
Hexachloroethane	5.0		**60.4**	50.00	0	120.8	76.4	121	02/01/2017
Iodomethane	10.0		**50.5**	50.00	0	101.0	38.7	161	02/01/2017
Isopropylbenzene	5.0		**56.2**	50.00	0	112.4	85	125	02/01/2017
m,p-Xylenes	5.0		**111**	100.0	0	111.4	85.3	120	02/01/2017
Methacrylonitrile	50.0		**ND**	50.00	0	97.3	65.7	120	02/01/2017
Methyl Methacrylate	5.0		**53.4**	50.00	0	106.8	69.1	114	02/01/2017
Methyl tert-butyl ether	2.0		**52.1**	50.00	0	104.2	66.6	125	02/01/2017
Methylacrylate	10.0		**49.9**	50.00	0	99.9	69.7	121	02/01/2017
Methylene chloride	5.0		**52.0**	50.00	0	104.0	73.4	115	02/01/2017
Naphthalene	10.0		**55.8**	50.00	0	111.6	70.1	134	02/01/2017
n-Butylbenzene	5.0		**60.4**	50.00	0	120.9	78.4	138	02/01/2017
n-Heptane	20.0		**60.3**	50.00	0	120.6	74.3	125	02/01/2017
n-Hexane	20.0		**57.4**	50.00	0	114.7	66.3	129	02/01/2017
Nitrobenzene	100		**439**	500.0	0	87.8	20.1	165	02/01/2017
n-Propylbenzene	5.0		**56.8**	50.00	0	113.6	79.1	125	02/01/2017
o-Xylene	5.0		**55.0**	50.00	0	110.0	81.9	118	02/01/2017
Pentachloroethane	5.0		**58.1**	50.00	0	116.3	72.7	123	02/01/2017
p-Isopropyltoluene	5.0		**58.0**	50.00	0	116.0	82.7	129	02/01/2017
Propionitrile	50.0		**541**	500.0	0	108.1	64.3	121	02/01/2017
sec-Butylbenzene	5.0		**55.6**	50.00	0	111.1	81.3	125	02/01/2017
Styrene	5.0		**55.4**	50.00	0	110.7	88.2	122	02/01/2017
tert-Butylbenzene	5.0		**55.0**	50.00	0	110.1	74.8	125	02/01/2017
Tetrachloroethene	5.0		**54.0**	50.00	0	107.9	84.2	122	02/01/2017
Tetrahydrofuran	50.0		**52.6**	50.00	0	105.2	61	118	02/01/2017
Toluene	5.0		**51.2**	50.00	0	102.3	81.3	113	02/01/2017
trans-1,2-Dichloroethene	5.0		**52.0**	50.00	0	103.9	78.2	118	02/01/2017
trans-1,3-Dichloropropene	4.0		**55.1**	50.00	0	110.1	81.7	124	02/01/2017
Trichloroethene	5.0		**52.8**	50.00	0	105.5	81	123	02/01/2017
Trichlorofluoromethane	5.0		**54.8**	50.00	0	109.6	66.8	131	02/01/2017
Vinyl acetate	50.0		**59.2**	50.00	0	118.5	64.3	122	02/01/2017
Vinyl chloride	2.0		**55.7**	50.00	0	111.5	45.2	140	02/01/2017
Surr: 1,2-Dichloroethane-d4			**52.8**	50.00		105.6	72.2	131	02/01/2017
Surr: 4-Bromofluorobenzene			**50.1**	50.00		100.2	82.1	116	02/01/2017
Surr: Dibromofluoromethane			**50.7**	50.00		101.4	77.7	120	02/01/2017
Surr: Toluene-d8			**50.8**	50.00		101.7	86	116	02/01/2017

Receiving Check List

http://www.teklabinc.com/

Client: PSC Industrial Outsourcing, LP
Work Order: 17011674
Client Project: Champaign Residual IRM 624-1610-0001 / J0055
Report Date: 01-Feb-17

Carrier: Employee
Received By: LAL

Completed by: Laurie A. Langdon
On: 31-Jan-17

Reviewed by: Elizabeth A. Hurley
On: 31-Jan-17

Pages to follow: Chain of custody 1 Extra pages included 0

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C	12.62
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice	☐
Chain of custody present?	Yes ☑	No ☐			
Chain of custody signed when relinquished and received?	Yes ☑	No ☐			
Chain of custody agrees with sample labels?	Yes ☑	No ☐			
Samples in proper container/bottle?	Yes ☑	No ☐			
Sample containers intact?	Yes ☑	No ☐			
Sufficient sample volume for indicated test?	Yes ☑	No ☐			
All samples received within holding time?	Yes ☑	No ☐			
Reported field parameters measured:	Field ☐	Lab ☐	NA ☑		
Container/Temp Blank temperature in compliance?	Yes ☐	No ☑			
When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.					
Water – at least one vial per sample has zero headspace?	Yes ☐	No ☐	No VOA vials ☑		
Water - TOX containers have zero headspace?	Yes ☐	No ☐	No TOX containers ☑		
Water - pH acceptable upon receipt?	Yes ☐	No ☐	NA ☑		
NPDES/CWA TCN interferences checked/treated in the field?	Yes ☐	No ☐	NA ☑		

Any No responses must be detailed below or on the COC.

The samples collected 1/30/17 were out of temperature compliance upon receipt. Mike Flora and Michael Crutcher notified of this error via e-mail and work order summary. LL 1/31/17

17011674

Chain of Custody Record

COC Serial No. CMP-002

210 West Sand Bank Road | Columbia, IL 62236 | P (618) 281-7173 | F (618) 281-7020

Project Name: Champaign Residual IRM Project Mgr.: Crutcher

Project Number: 624-1610-0001 / J0055

Sampler(s): M. Flora

Laboratory Name: Teklab, Inc.

Laboratory Location: Collinsville, IL

Temperature: ice 12.6C

Sample Number and (depth)	Date	Time	Matrix: Soil	Water	Air	Wipes	Other	Total Number of Containers	VOC (8260/5035)	SVOC (8270)	PAH (8270 SIM)	TPH (8015 OA2)	Comments	Lab ID
001 SW-RES-REM-W7 (3)	1/30/17	1200	X					4	X	X	X		STD TAT	17011674-001
002 SW-RES-REM-W6 (3)	1/30/17	1215	X					4	X	X	X		STD TAT	002
003 FL-RES-REM-W6 (14)	1/31/17	1100	X					4	X	X	X	X	24-HR TAT	003

Analyses by Method Name and Number

Samples Iced: [X] Yes No [ ]

Preservatives

- [X] Volatile Organics (Soil - 5035)..... Sodium Bisulfate / Methanol
- [ ] Volatile Organics (Aqueous)..... Hydrochloric Acid (HCl)
- [ ] TPH (8015) ..... HCl and/or Sulfuric Acid
- [ ] Metals ..... Nitric Acid (HNO_3)
- [ ] Cyanide ..... Sodium Hydroxide (NaOH)
- [ ] Other (Specify) .....

Lab Directives:

Requested TAT: [X] 24-Hours [ ] 2-3 Days [X] STD [ ] Other

Fax and Mail Results to: mike.crutcher@pscnow.com / mike.flora@pscnow.com

Send Invoice to: **Michael Crutcher (PSC)**

QC Deliverable requested: [ ] Results + QC [X] EDD [ ] Other

Special Guidelines:

Reporting Limits: IL IAC 740/742 Tier 1

* Special:

Shipping:

Carrier / Airbill No.

Relinquished by:

Signature	Date	Time
Michael Flora	1/31/17	1300
[signature]	1-31-17	1649

Received by:

Signature	Date	Time
[signature]	1-31-17	13:00
[signature]	1/31/17	1653

Distribution: WHITE to Lab; YELLOW to PM; PINK to QA/QC; GREEN to Sampler.

* Shaded Areas to be Completed by Lab

IAC 1/31/17

February 07, 2017

Michael Crutcher
PSC Industrial Outsourcing, LP
210 West Sand Bank Road
Columbia, IL 62236-0230
TEL: (618) 281-7173
FAX: (618) 281-5120

RE: Champaign Residual IRM 624-1610-0001 / J0055 **WorkOrder:** 17011675

Dear Michael Crutcher:

TEKLAB, INC received 3 samples on 1/31/2017 4:53:00 PM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Michael L. Austin
Project Manager
(618)344-1004 ex 16
MAustin@teklabinc.com

Client: PSC Industrial Outsourcing, LP
Work Order: 17011675
Client Project: Champaign Residual IRM 624-1610-0001 / J0055
Report Date: 07-Feb-17

This reporting package includes the following:

Cover Letter	1
Report Contents	2
Definitions	3
Case Narrative	4
Laboratory Results	5
Sample Summary	6
Dates Report	7
Quality Control Results	8
Receiving Check List	11
Chain of Custody	Appended

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011675

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 07-Feb-17

Abbr Definition

CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilutions factors.
DNI	Did not ignite
DUP	Laboratory duplicate is an aliquot of a sample taken from the same container under laboratory conditions for independent processing and analysis independently of the original aliquot.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample, spiked with verified known amounts of analytes, is analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system. The acceptable recovery range is in the QC Package (provided upon request).
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MBLK	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	Method detection limit means the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero.
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions. The acceptable recovery range is listed in the QC Package (provided upon request).
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TIC	Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
TNTC	Too numerous to count (> 200 CFU)

Qualifiers

# -	Unknown hydrocarbon	B -	Analyte detected in associated Method Blank
E -	Value above quantitation range	H -	Holding times exceeded
I -	Associated internal standard was outside method criteria	M -	Manual Integration used to determine area response
ND -	Not Detected at the Reporting Limit	R -	RPD outside accepted recovery limits
S -	Spike Recovery outside recovery limits	T -	TIC(Tentatively identified compound)
X -	Value exceeds Maximum Contaminant Level		

Case Narrative

http://www.teklabinc.com/

Client: PSC Industrial Outsourcing, LP
Work Order: 17011675
Client Project: Champaign Residual IRM 624-1610-0001 / J0055
Report Date: 07-Feb-17

Cooler Receipt Temp: 12.62 °C

Locations and Accreditations

	Collinsville	Springfield	Kansas City	Collinsville Air
Address	5445 Horseshoe Lake Road	3920 Pintail Dr	8421 Nieman Road	5445 Horseshoe Lake Road
	Collinsville, IL 62234-7425	Springfield, IL 62711-9415	Lenexa, KS 66214	Collinsville, IL 62234-7425
Phone	(618) 344-1004	(217) 698-1004	(913) 541-1998	(618) 344-1004
Fax	(618) 344-1005	(217) 698-1005	(913) 541-1998	(618) 344-1005
Email	jhriley@teklabinc.com	KKlostermann@teklabinc.com	Ryoungstrom@teklabinc.com	EHurley@teklabinc.com

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2018	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2017	Collinsville
Louisiana	LDEQ	166493	NELAP	6/30/2017	Collinsville
Louisiana	LDEQ	166578	NELAP	6/30/2017	Collinsville
Texas	TCEQ	T104704515-12-1	NELAP	7/31/2017	Collinsville
Arkansas	ADEQ	88-0966		3/14/2017	Collinsville
Illinois	IDPH	17584		5/31/2017	Collinsville
Kentucky	KDEP	98006		12/31/2017	Collinsville
Kentucky	UST	0073		1/31/2018	Collinsville
Missouri	MDNR	00930		5/31/2017	Collinsville
Missouri	MDNR	930		1/31/2018	Collinsville
Oklahoma	ODEQ	9978		8/31/2017	Collinsville

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011675

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 07-Feb-17

Lab ID: 17011675-003 **Client Sample ID:** IFL-RES-REM-W6 (14)

Matrix: SOLID **Collection Date:** 01/31/2017 11:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**9.0**	%	1	02/02/2017 19:53	R228745
SW-846 9012A								
Cyanide, Amenable to Chlorination		0.27		**Interference**	mg/Kg-dry	1	02/06/2017 0:00	126777
SW-846 9012A (TOTAL)								
Cyanide	NELAP	0.19		**< 0.19**	mg/Kg-dry	1	02/02/2017 15:11	126683
SW-846 3050B, 6010B, METALS BY ICP								
Arsenic	NELAP	2.50		**5.51**	mg/Kg-dry	1	02/03/2017 12:11	126672
Barium	NELAP	0.25		**14.7**	mg/Kg-dry	1	02/02/2017 19:47	126672
Cadmium	NELAP	0.20		**< 0.20**	mg/Kg-dry	1	02/02/2017 19:47	126672
Chromium	NELAP	0.50		**19.6**	mg/Kg-dry	1	02/02/2017 19:47	126672
Lead	NELAP	1.50		**9.22**	mg/Kg-dry	1	02/02/2017 19:47	126672
Silver	NELAP	0.50		**< 0.50**	mg/Kg-dry	1	02/02/2017 19:47	126672
SW-846 3050B, 6020A, METALS BY ICPMS								
Selenium	NELAP	0.91		**< 0.91**	mg/Kg-dry	10	02/07/2017 12:45	126765
SW-846 7471B								
Mercury	NELAP	0.010		**0.011**	mg/Kg-dry	1	02/01/2017 13:04	126624

Sample Summary

Client: PSC Industrial Outsourcing, LP
Work Order: 17011675
Client Project: Champaign Residual IRM 624-1610-0001 / J0055
Report Date: 07-Feb-17

Lab Sample ID	Client Sample ID	Matrix	Fractions	Collection Date
17011675-001	ISW-RES-REM-W7 (3)	Solid	1	01/30/2017 12:00
17011675-002	ISW-RES-REM-W6 (3)	Solid	1	01/30/2017 12:15
17011675-003	IFL-RES-REM-W6 (14)	Solid	1	01/31/2017 11:00

Client: PSC Industrial Outsourcing, LP
Work Order: 17011675
Client Project: Champaign Residual IRM 624-1610-0001 / J0055
Report Date: 07-Feb-17

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
17011675-003A	IFL-RES-REM-W6 (14)	01/31/2017 11:00	01/31/2017 16:53		
	EPA SW846 3550C, 5035A, ASTM D2974				02/02/2017 19:53
	SW-846 3050B, 6010B, Metals by ICP			02/01/2017 16:11	02/02/2017 19:47
	SW-846 3050B, 6010B, Metals by ICP			02/01/2017 16:11	02/03/2017 12:11
	SW-846 3050B, 6020A, Metals by ICPMS			02/03/2017 14:29	02/07/2017 12:45
	SW-846 7471B			01/31/2017 17:46	02/01/2017 13:04
	SW-846 9012A			02/03/2017 20:00	02/06/2017 0:00
	SW-846 9012A (Total)			02/01/2017 18:45	02/02/2017 15:11

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011675

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 07-Feb-17

EPA SW846 3550C, 5035A, ASTM D2974

Batch R228745 **SampType:** LCS Units **%**

SampID: LCS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	02/02/2017

Batch R228745 **SampType:** LCSQC Units **%**

SampID: LCSQC

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	02/02/2017

SW-846 9012A (TOTAL)

Batch 126683 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK 170201 TCN2

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cyanide	0.25		**< 0.25**						02/02/2017

Batch 126683 **SampType:** LCS Units **mg/Kg**

SampID: LCS 170201 TCN2

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cyanide	0.25		**1.29**	1.250	0	103.6	85	115	02/02/2017

Batch 126683 **SampType:** MS Units **mg/Kg-dry**

SampID: 17011675-003AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cyanide	0.26		**1.48**	1.295	0.1480	102.9	75	125	02/02/2017

Batch 126683 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **15**

SampID: 17011675-003AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Cyanide	0.27		**1.50**	1.346	0.1480	100.4	1.481	1.24	02/02/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011675

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 07-Feb-17

SW-846 3050B, 6010B, METALS BY ICP

Batch 126672 **SampType:** MBLK Units **mg/Kg-dry**

SampID: MBLK-126672

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	2.50		**< 2.50**	2.500	0	0	-100	100	02/02/2017
Arsenic	2.50		**< 2.50**	2.500	0	0	-100	100	02/03/2017
Barium	0.25		**< 0.25**	0.2500	0	0	-100	100	02/02/2017
Cadmium	0.20		**< 0.20**	0.2000	0	0	-100	100	02/02/2017
Cadmium	0.20		**< 0.20**	0.2000	0	0	-100	100	02/02/2017
Chromium	0.50		**< 0.50**	0.5000	0	0	-100	100	02/02/2017
Chromium	0.50		**< 0.50**	0.5000	0	0	-100	100	02/02/2017
Lead	1.50		**< 1.50**	1.500	0	0	-100	100	02/02/2017
Lead	1.50		**< 1.50**	1.500	0	0	-100	100	02/02/2017
Silver	0.50		**< 0.50**	0.5000	0	0	-100	100	02/02/2017
Silver	0.50		**< 0.50**	0.5000	0	0	-100	100	02/02/2017

Batch 126672 **SampType:** LCS Units **mg/Kg-dry**

SampID: LCS-126672

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	2.50		**45.4**	50.00	0	90.9	85	115	02/03/2017
Arsenic	2.50		**45.5**	50.00	0	91.0	85	115	02/02/2017
Barium	0.25		**206**	200.0	0	102.8	85	115	02/02/2017
Cadmium	0.20		**5.00**	5.000	0	100.0	85	115	02/02/2017
Cadmium	0.20		**4.89**	5.000	0	97.8	85	115	02/02/2017
Chromium	0.50		**19.8**	20.00	0	98.8	85	115	02/02/2017
Chromium	0.50		**20.0**	20.00	0	99.8	85	115	02/02/2017
Lead	1.50		**51.4**	50.00	0	102.8	85	115	02/02/2017
Lead	1.50		**50.1**	50.00	0	100.3	85	115	02/02/2017
Silver	0.50		**4.91**	5.000	0	98.2	85	115	02/02/2017
Silver	0.50		**4.91**	5.000	0	98.2	85	115	02/02/2017

Batch 126672 **SampType:** MS Units **mg/Kg-dry**

SampID: 17011675-003AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	2.50		**51.9**	50.00	5.510	92.8	75	125	02/03/2017
Barium	0.25		**230**	200.0	14.72	107.7	75	125	02/02/2017
Cadmium	0.20		**4.86**	5.000	0.07000	95.8	75	125	02/02/2017
Chromium	0.50		**41.0**	20.00	19.57	107.3	75	125	02/02/2017
Lead	1.50		**59.4**	50.00	9.220	100.4	75	125	02/02/2017
Silver	0.50		**5.08**	5.000	0	101.6	75	125	02/02/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17011675

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 07-Feb-17

SW-846 3050B, 6010B, METALS BY ICP

Batch 126672 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **20**

SampID: 17011675-003AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Arsenic	2.50		**52.7**	50.00	5.510	94.4	51.92	1.49	02/03/2017
Barium	0.25		**233**	200.0	14.72	109.0	230.1	1.17	02/02/2017
Cadmium	0.20		**4.95**	5.000	0.07000	97.6	4.860	1.83	02/02/2017
Chromium	0.50		**41.7**	20.00	19.57	110.4	41.03	1.52	02/02/2017
Lead	1.50		**60.5**	50.00	9.220	102.6	59.41	1.82	02/02/2017
Silver	0.50		**5.12**	5.000	0	102.4	5.080	0.78	02/02/2017

SW-846 3050B, 6020A, METALS BY ICPMS

Batch 126765 **SampType:** MBLK Units **mg/Kg-dry**

SampID: MBLK-126765

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Selenium	1.00		**< 1.00**	1.000	0	0	-100	100	02/07/2017

Batch 126765 **SampType:** LCS Units **mg/Kg-dry**

SampID: LCS-126765

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Selenium	1.00		**51.9**	50.00	0	103.7	80	120	02/07/2017

Batch 126765 **SampType:** MS Units **mg/Kg-dry**

SampID: 17011675-003AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Selenium	0.96		**49.0**	48.08	0	102.0	75	125	02/07/2017

Batch 126765 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **20**

SampID: 17011675-003AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Selenium	0.91		**46.0**	45.45	0	101.2	49.04	6.41	02/07/2017

SW-846 7471B

Batch 126624 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK-126624

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.010		**< 0.010**	0.01000	0	0	-100	100	02/01/2017

Batch 126624 **SampType:** LCS Units **mg/Kg**

SampID: LCS-126624

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.010		**0.274**	0.2500	0	109.6	85	115	02/01/2017

Receiving Check List

Teklab, Inc. Environmental Laboratory

http://www.teklabinc.com/

Client: PSC Industrial Outsourcing, LP

Work Order: 17011675

Client Project: Champaign Residual IRM 624-1610-0001 / J0055

Report Date: 07-Feb-17

Carrier: Employee

Received By: LAL

Completed by: Laurie A. Langdon
On: 31-Jan-17

Reviewed by: Elizabeth A. Hurley
On: 31-Jan-17

Pages to follow: Chain of custody 1 Extra pages included 0

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C	12.62
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice	☐
Chain of custody present?	Yes ☑	No ☐			
Chain of custody signed when relinquished and received?	Yes ☑	No ☐			
Chain of custody agrees with sample labels?	Yes ☑	No ☐			
Samples in proper container/bottle?	Yes ☑	No ☐			
Sample containers intact?	Yes ☑	No ☐			
Sufficient sample volume for indicated test?	Yes ☑	No ☐			
All samples received within holding time?	Yes ☑	No ☐			
Reported field parameters measured:	Field ☐	Lab ☐	NA ☑		
Container/Temp Blank temperature in compliance?	Yes ☐	No ☑			
When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.					
Water – at least one vial per sample has zero headspace?	Yes ☐	No ☐	No VOA vials ☑		
Water - TOX containers have zero headspace?	Yes ☐	No ☐	No TOX containers ☑		
Water - pH acceptable upon receipt?	Yes ☐	No ☐	NA ☑		
NPDES/CWA TCN interferences checked/treated in the field?	Yes ☐	No ☐	NA ☑		

Any No responses must be detailed below or on the COC.

The samples collected 1/30/17 were out of temperature compliance upon receipt. Mike Flora and Michael Crutcher notified of this error via e-mail and work order summary. LL 1/31/17

Chain of Custody Record

210 West Sand Bank Road | Columbia, IL 62236 | P (618) 281-7173 | F (618) 281-7020

17011675

COC Serial No. ICMP-002

Project Name: Champaign Residual IRM Project Mgr.: Crutcher

Project Number: 624-1610-0001 / J0055

Sampler(s): M. Flora

Laboratory Name: Teklab, Inc.

Laboratory Location: Collinsville, IL

Temperature: ice 12.62

Sample Number and (depth)	Date	Time	Matrix: Soil	Water	Air	Wipes	Other	Total Number of Containers	Total CYANIDE (9012)	Amenable CYANIDE (9012)	RCRA Metals	pH (9045)	Comments	Lab ID
17011675-001 ISW-RES-REM-W7 (3)	1/30/17	1200	X					1	X	X	X		STD TAT	17011675-001
002 ISW-RES-REM-W6 (3)	1/30/17	1215	X					1	X	X	X		STD TAT	002
003 IFL-RES-REM-W6 (14)	1/31/17	1100	X					1	X	X	X		STD TAT	003

Analyses by Method Name and Number

Samples Iced: [X] Yes No [ ]

Preservatives

- [ ] Volatile Organics (Soil - 5035)..... Sodium Bisulfate / Methanol
- [ ] Volatile Organics (Aqueous)..... Hydrochloric Acid (HCl)
- [ ] TPH (8015) ..... HCl and/or Sulfuric Acid
- [ ] Metals ..... Nitric Acid (HNO_3)
- [ ] Cyanide ..... Sodium Hydroxide (NaOH)
- [ ] Other (Specify) .....

Lab Directives:

Requested TAT: [ ] 24-Hours [ ] 2-3 Days [X] STD [ ] Other

Fax and Mail Results to: mike.crutcher@pscnow.com / mike.flora@pscnow.com

Send Invoice to: **Michael Crutcher (PSC)**

QC Deliverable requested: [ ] Results + QC [X] EDD [ ] Other

Special Guidelines:

Reporting Limits: IL IAC 740/742 Tier 1

* Special:

Shipping:

Carrier / Airbill No.

Relinquished by:

Signature	Date	Time
Michael Flora	1/31/17	1300
Tim May	1-31-17	16:49

Received by:

Signature	Date	Time
Tim May	1-31-17	13:00
[illegible]	1/31/17	1653

Distribution: WHITE to Lab; YELLOW to PM; PINK to QA/QC; GREEN to Sampler.

* Shaded Areas to be Completed by Lab

IAC 1/31/17

February 09, 2017

Michael Crutcher
PSC Industrial Outsourcing, LP
210 West Sand Bank Road
Columbia, IL 62236-0230
TEL: (618) 281-7173
FAX: (618) 281-5120

RE: Champaign Residual IRM 624-1610-0001 / J0055 **WorkOrder:** 17020090

Dear Michael Crutcher:

TEKLAB, INC received 7 samples on 2/1/2017 3:30:00 PM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Michael L. Austin
Project Manager
(618)344-1004 ex 16
MAustin@teklabinc.com

Client: PSC Industrial Outsourcing, LP
Work Order: 17020090
Client Project: Champaign Residual IRM 624-1610-0001 / J0055
Report Date: 09-Feb-17

This reporting package includes the following:

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Quality Control Results	37
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Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Abbr Definition

CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilutions factors.
DNI	Did not ignite
DUP	Laboratory duplicate is an aliquot of a sample taken from the same container under laboratory conditions for independent processing and analysis independently of the original aliquot.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample, spiked with verified known amounts of analytes, is analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system. The acceptable recovery range is in the QC Package (provided upon request).
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MBLK	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	Method detection limit means the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero.
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions. The acceptable recovery range is listed in the QC Package (provided upon request).
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TIC	Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
TNTC	Too numerous to count (> 200 CFU)

Qualifiers

# -	Unknown hydrocarbon	B -	Analyte detected in associated Method Blank
E -	Value above quantitation range	H -	Holding times exceeded
I -	Associated internal standard was outside method criteria	M -	Manual Integration used to determine area response
ND -	Not Detected at the Reporting Limit	R -	RPD outside accepted recovery limits
S -	Spike Recovery outside recovery limits	T -	TIC(Tentatively identified compound)
X -	Value exceeds Maximum Contaminant Level		

Case Narrative

http://www.teklabinc.com/

Client: PSC Industrial Outsourcing, LP
Work Order: 17020090
Client Project: Champaign Residual IRM 624-1610-0001 / J0055
Report Date: 09-Feb-17

Cooler Receipt Temp: 4.22 °C

Locations and Accreditations

	Collinsville	Springfield	Kansas City	Collinsville Air
Address	5445 Horseshoe Lake Road	3920 Pintail Dr	8421 Nieman Road	5445 Horseshoe Lake Road
	Collinsville, IL 62234-7425	Springfield, IL 62711-9415	Lenexa, KS 66214	Collinsville, IL 62234-7425
Phone	(618) 344-1004	(217) 698-1004	(913) 541-1998	(618) 344-1004
Fax	(618) 344-1005	(217) 698-1005	(913) 541-1998	(618) 344-1005
Email	jhriley@teklabinc.com	KKlostermann@teklabinc.com	Ryoungstrom@teklabinc.com	EHurley@teklabinc.com

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2018	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2017	Collinsville
Louisiana	LDEQ	166493	NELAP	6/30/2017	Collinsville
Louisiana	LDEQ	166578	NELAP	6/30/2017	Collinsville
Texas	TCEQ	T104704515-12-1	NELAP	7/31/2017	Collinsville
Arkansas	ADEQ	88-0966		3/14/2017	Collinsville
Illinois	IDPH	17584		5/31/2017	Collinsville
Kentucky	KDEP	98006		12/31/2017	Collinsville
Kentucky	UST	0073		1/31/2018	Collinsville
Missouri	MDNR	00930		5/31/2017	Collinsville
Missouri	MDNR	930		1/31/2018	Collinsville
Oklahoma	ODEQ	9978		8/31/2017	Collinsville

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Lab ID: 17020090-001 **Client Sample ID:** SW-RES-REM-W2 (10)

Matrix: SOLID **Collection Date:** 01/31/2017 15:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**20.0**	%	1	02/03/2017 14:45	R228804
SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Acenaphthene	NELAP	0.120		**10.3**	mg/Kg-dry	5	02/06/2017 18:15	126744
Acenaphthylene	NELAP	0.120		**4.75**	mg/Kg-dry	5	02/06/2017 18:15	126744
Anthracene	NELAP	0.120		**9.64**	mg/Kg-dry	5	02/06/2017 18:15	126744
Benzo(a)anthracene	NELAP	0.352		**24.2**	mg/Kg-dry	5	02/06/2017 18:15	126744
Benzo(a)pyrene	NELAP	0.120		**18.1**	mg/Kg-dry	5	02/06/2017 18:15	126744
Benzo(b)fluoranthene	NELAP	0.120		**24.0**	mg/Kg-dry	5	02/06/2017 18:15	126744
Benzo(g,h,i)perylene	NELAP	0.120		**3.13**	mg/Kg-dry	5	02/06/2017 18:15	126744
Benzo(k)fluoranthene	NELAP	0.120		**8.15**	mg/Kg-dry	5	02/06/2017 18:15	126744
Chrysene	NELAP	0.120		**22.3**	mg/Kg-dry	5	02/06/2017 18:15	126744
Dibenzo(a,h)anthracene	NELAP	0.120		**1.41**	mg/Kg-dry	5	02/06/2017 18:15	126744
Fluoranthene	NELAP	0.598		**87.6**	mg/Kg-dry	25	02/07/2017 17:35	126744
Fluorene	NELAP	0.120		**43.6**	mg/Kg-dry	5	02/06/2017 18:15	126744
Indeno(1,2,3-cd)pyrene	NELAP	0.120		**3.82**	mg/Kg-dry	5	02/06/2017 18:15	126744
Naphthalene	NELAP	0.120		**26.0**	mg/Kg-dry	5	02/06/2017 18:15	126744
Phenanthrene	NELAP	0.598		**168**	mg/Kg-dry	25	02/07/2017 17:35	126744
Pyrene	NELAP	0.120		**54.8**	mg/Kg-dry	5	02/06/2017 18:15	126744
Surr: 2-Fluorobiphenyl		19.9-83		**66.2**	%REC	5	02/06/2017 18:15	126744
Surr: Nitrobenzene-d5		23-84		**48.2**	%REC	5	02/06/2017 18:15	126744
Surr: p-Terphenyl-d14		33.5-106		**58.9**	%REC	5	02/06/2017 18:15	126744
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2,4-Trichlorobenzene	NELAP	17.6		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
1,2-Dichlorobenzene	NELAP	17.6		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
1,3-Dichlorobenzene	NELAP	17.6		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
1,4-Dichlorobenzene	NELAP	17.6		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
2,4,5-Trichlorophenol	NELAP	12.3		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
2,4,6-Trichlorophenol	NELAP	12.3		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
2,4-Dichlorophenol	NELAP	17.6		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
2,4-Dimethylphenol	NELAP	17.6		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
2,4-Dinitrophenol	NELAP	35.2	S	**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
2,4-Dinitrotoluene	NELAP	12.3		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
2,6-Dinitrotoluene	NELAP	12.3		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
2-Chloronaphthalene	NELAP	12.3		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
2-Chlorophenol	NELAP	17.6		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
2-Methoxy-4-methylphenol		22.9		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
2-Methylnaphthalene	NELAP	12.3		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
2-Nitroaniline	NELAP	35.2		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
2-Nitrophenol	NELAP	12.3		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
3,3´-Dichlorobenzidine	NELAP	12.3		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
3-Nitroaniline	NELAP	35.2		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
4,6-Dinitro-2-methylphenol	NELAP	35.2		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
4-Bromophenyl phenyl ether	NELAP	12.3		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
4-Chloro-3-methylphenol	NELAP	17.6		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
4-Chloroaniline	NELAP	17.6		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
4-Chlorophenyl phenyl ether	NELAP	12.3		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
4-Nitroaniline	NELAP	17.6		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Lab ID: 17020090-001 **Client Sample ID:** SW-RES-REM-W2 (10)

Matrix: SOLID **Collection Date:** 01/31/2017 15:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
4-Nitrophenol	NELAP	12.3		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
Aniline	NELAP	17.6		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
Azobenzene		12.3		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
Benzoic acid	NELAP	52.8		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
Benzyl alcohol	NELAP	17.6		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
Bis(2-chloroethoxy)methane	NELAP	12.3		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
Bis(2-chloroethyl)ether	NELAP	17.6		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
Bis(2-chloroisopropyl)ether	NELAP	12.3		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
Bis(2-ethylhexyl)phthalate	NELAP	12.3		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
Butyl benzyl phthalate	NELAP	12.3		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
Carbazole	NELAP	17.6		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
Dibenzofuran	NELAP	12.3		**47.6**	mg/Kg-dry	5	02/04/2017 1:44	126752
Diethyl phthalate	NELAP	17.6		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
Dimethyl phthalate	NELAP	12.3		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
Di-n-butyl phthalate	NELAP	12.3		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
Di-n-octyl phthalate	NELAP	12.3		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
Hexachlorobenzene	NELAP	12.3		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
Hexachlorobutadiene	NELAP	17.6		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
Hexachlorocyclopentadiene	NELAP	12.3		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
Hexachloroethane	NELAP	17.6		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
Isophorone	NELAP	12.3		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
m,p-Cresol	NELAP	17.6		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
Nitrobenzene	NELAP	17.6		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
N-Nitrosodimethylamine	NELAP	17.6		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
N-Nitroso-di-n-propylamine	NELAP	17.6		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
N-Nitrosodiphenylamine	NELAP	17.6		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
o-Cresol	NELAP	17.6		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
Pentachlorophenol	NELAP	70.4	S	**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
Phenol	NELAP	12.3		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
Pyridine	NELAP	17.6		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
1,2-Diphenylhydrazine		29.6		**ND**	mg/Kg-dry	5	02/04/2017 1:44	126752
Surr: 2,4,6-Tribromophenol		33-115		**67.1**	%REC	5	02/04/2017 1:44	126752
Surr: 2-Fluorobiphenyl		36.5-97.7		**77.0**	%REC	5	02/04/2017 1:44	126752
Surr: 2-Fluorophenol		39.4-92.8		**60.8**	%REC	5	02/04/2017 1:44	126752
Surr: Nitrobenzene-d5		34.7-90.1		**71.3**	%REC	5	02/04/2017 1:44	126752
Surr: Phenol-d5		42.8-106		**69.4**	%REC	5	02/04/2017 1:44	126752
Surr: p-Terphenyl-d14		43.7-124		**90.0**	%REC	5	02/04/2017 1:44	126752

MS and MSD did not recover within control limits due to sample composition.

Elevated reporting limit due to sample extract composition.

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,1,2-Tetrachloroethane	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
1,1,1-Trichloroethane	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
1,1,2,2-Tetrachloroethane	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
1,1,2-Trichloro-1,2,2-trifluoroethane		477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
1,1,2-Trichloroethane	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
1,1-Dichloro-2-propanone		4770		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
1,1-Dichloroethane	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Lab ID: 17020090-001 **Client Sample ID:** SW-RES-REM-W2 (10)

Matrix: SOLID **Collection Date:** 01/31/2017 15:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1-Dichloroethene	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
1,1-Dichloropropene	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
1,2,3-Trichlorobenzene	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
1,2,3-Trichloropropane	NELAP	953		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
1,2,3-Trimethylbenzene		477		**4180**	µg/Kg-dry	50	02/03/2017 16:01	126761
1,2,4-Trichlorobenzene	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
1,2,4-Trimethylbenzene	NELAP	477		**12600**	µg/Kg-dry	50	02/03/2017 16:01	126761
1,2-Dibromo-3-chloropropane	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
1,2-Dibromoethane	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
1,2-Dichlorobenzene	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
1,2-Dichloroethane	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
1,2-Dichloropropane	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
1,3,5-Trimethylbenzene	NELAP	477		**4180**	µg/Kg-dry	50	02/03/2017 16:01	126761
1,3-Dichlorobenzene	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
1,3-Dichloropropane	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
1,4-Dichlorobenzene	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
1-Chlorobutane	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
2,2-Dichloropropane	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
2-Butanone	NELAP	19100		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
2-Chlorotoluene	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
2-Hexanone	NELAP	4770		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
2-Nitropropane	NELAP	4770		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
4-Chlorotoluene	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
4-Methyl-2-pentanone	NELAP	4770		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
Acetone	NELAP	4770		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
Acrolein	NELAP	9530		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
Acrylonitrile	NELAP	953		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
Allyl chloride	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
Benzene	NELAP	95.3		**2750**	µg/Kg-dry	50	02/03/2017 16:01	126761
Bromobenzene	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
Bromochloromethane	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
Bromodichloromethane	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
Bromoform	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
Bromomethane	NELAP	953		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
Carbon disulfide	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
Carbon tetrachloride	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
Chlorobenzene	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
Chloroethane	NELAP	953		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
Chloroform	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
Chloromethane	NELAP	953		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
cis-1,2-Dichloroethene	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
cis-1,3-Dichloropropene	NELAP	381		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
Cyclohexanone		9530		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
Dibromochloromethane	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
Dibromomethane	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
Dichlorodifluoromethane	NELAP	953		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
Ethyl ether	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Lab ID: 17020090-001 **Client Sample ID:** SW-RES-REM-W2 (10)

Matrix: SOLID **Collection Date:** 01/31/2017 15:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Ethyl methacrylate	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
Ethylbenzene	NELAP	477		**3080**	µg/Kg-dry	50	02/03/2017 16:01	126761
Hexachlorobutadiene	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
Hexachloroethane	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
Iodomethane	NELAP	953		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
Isopropylbenzene	NELAP	477		**480**	µg/Kg-dry	50	02/03/2017 16:01	126761
m,p-Xylenes	NELAP	477		**12100**	µg/Kg-dry	50	02/03/2017 16:01	126761
Methacrylonitrile	NELAP	4770		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
Methyl Methacrylate	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
Methyl tert-butyl ether	NELAP	191		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
Methylacrylate	NELAP	953		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
Methylene chloride	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
Naphthalene	NELAP	19500		**253000**	µg/Kg-dry	1000	02/06/2017 12:31	126805
n-Butylbenzene	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
n-Heptane		4770		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
n-Hexane		1910		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
Nitrobenzene	NELAP	9530		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
n-Propylbenzene	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
o-Xylene	NELAP	477		**6320**	µg/Kg-dry	50	02/03/2017 16:01	126761
Pentachloroethane	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
p-Isopropyltoluene	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
Propionitrile	NELAP	4770		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
sec-Butylbenzene	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
Styrene	NELAP	477		**670**	µg/Kg-dry	50	02/03/2017 16:01	126761
tert-Butylbenzene	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
Tetrachloroethene	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
Tetrahydrofuran	NELAP	4770		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
Toluene	NELAP	477		**2410**	µg/Kg-dry	50	02/03/2017 16:01	126761
trans-1,2-Dichloroethene	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
trans-1,3-Dichloropropene	NELAP	381		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
Trichloroethene	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
Trichlorofluoromethane	NELAP	477		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
Vinyl acetate	NELAP	4770		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
Vinyl chloride	NELAP	191		**ND**	µg/Kg-dry	50	02/03/2017 16:01	126761
Surr: 1,2-Dichloroethane-d4		72.2-131		**106.4**	%REC	50	02/03/2017 16:01	126761
Surr: 4-Bromofluorobenzene		82.1-116		**108.1**	%REC	50	02/03/2017 16:01	126761
Surr: Dibromofluoromethane		77.7-120		**96.6**	%REC	50	02/03/2017 16:01	126761
Surr: Toluene-d8		86-116		**104.2**	%REC	50	02/03/2017 16:01	126761

Elevated reporting limit due to high levels of target and/or non-target analytes.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Lab ID: 17020090-002 **Client Sample ID:** SW-RES-REM-W3 (10)

Matrix: SOLID **Collection Date:** 01/31/2017 15:20

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**24.0**	%	1	02/03/2017 14:45	R228804
SW-846 3550B, 8015B, TOTAL PETROLEUM HYDROCARBONS (OA-2) BY GC/FID								
Diesel	NELAP	1290	#	**5070**	mg/Kg-dry	100	02/03/2017 14:29	126687
Kerosene	NELAP	1290		**ND**	mg/Kg-dry	100	02/03/2017 14:29	126687
Mineral Spirits	NELAP	1290		**ND**	mg/Kg-dry	100	02/03/2017 14:29	126687
Motor Oil	NELAP	1290	#	**2750**	mg/Kg-dry	100	02/03/2017 14:29	126687
Surr: n-Tetracontane		20-152	S	**860.7**	%REC	100	02/02/2017 15:02	126687
Elevated reporting limit due to sample extract composition.								
Surrogate recovery is outside QC limits due to sample dilution.								
SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Acenaphthene	NELAP	0.126		**17.9**	mg/Kg-dry	5	02/06/2017 18:48	126744
Acenaphthylene	NELAP	0.126		**38.3**	mg/Kg-dry	5	02/06/2017 18:48	126744
Anthracene	NELAP	0.126		**27.4**	mg/Kg-dry	5	02/06/2017 18:48	126744
Benzo(a)anthracene	NELAP	0.372		**44.4**	mg/Kg-dry	5	02/06/2017 18:48	126744
Benzo(a)pyrene	NELAP	0.126		**40.4**	mg/Kg-dry	5	02/06/2017 18:48	126744
Benzo(b)fluoranthene	NELAP	0.126		**61.5**	mg/Kg-dry	5	02/06/2017 18:48	126744
Benzo(g,h,i)perylene	NELAP	0.126		**4.93**	mg/Kg-dry	5	02/06/2017 18:48	126744
Benzo(k)fluoranthene	NELAP	0.126		**21.2**	mg/Kg-dry	5	02/06/2017 18:48	126744
Chrysene	NELAP	0.126		**41.4**	mg/Kg-dry	5	02/06/2017 18:48	126744
Dibenzo(a,h)anthracene	NELAP	0.126		**2.69**	mg/Kg-dry	5	02/06/2017 18:48	126744
Fluoranthene	NELAP	0.632		**104**	mg/Kg-dry	25	02/07/2017 18:08	126744
Fluorene	NELAP	0.632		**77.4**	mg/Kg-dry	25	02/07/2017 18:08	126744
Indeno(1,2,3-cd)pyrene	NELAP	0.126		**6.71**	mg/Kg-dry	5	02/06/2017 18:48	126744
Naphthalene	NELAP	0.632		**307**	mg/Kg-dry	25	02/07/2017 18:08	126744
Phenanthrene	NELAP	0.632		**184**	mg/Kg-dry	25	02/07/2017 18:08	126744
Pyrene	NELAP	0.632		**72.3**	mg/Kg-dry	25	02/07/2017 18:08	126744
Surr: 2-Fluorobiphenyl		19.9-83		**62.2**	%REC	5	02/06/2017 18:48	126744
Surr: Nitrobenzene-d5		23-84		**43.3**	%REC	5	02/06/2017 18:48	126744
Surr: p-Terphenyl-d14		33.5-106		**58.0**	%REC	5	02/06/2017 18:48	126744
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2,4-Trichlorobenzene	NELAP	37.2		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
1,2-Dichlorobenzene	NELAP	37.2		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
1,3-Dichlorobenzene	NELAP	37.2		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
1,4-Dichlorobenzene	NELAP	37.2		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
2,4,5-Trichlorophenol	NELAP	26.0		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
2,4,6-Trichlorophenol	NELAP	26.0		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
2,4-Dichlorophenol	NELAP	37.2		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
2,4-Dimethylphenol	NELAP	37.2		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
2,4-Dinitrophenol	NELAP	74.4		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
2,4-Dinitrotoluene	NELAP	26.0		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
2,6-Dinitrotoluene	NELAP	26.0		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
2-Chloronaphthalene	NELAP	26.0		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
2-Chlorophenol	NELAP	37.2		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
2-Methoxy-4-methylphenol		48.3		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
2-Methylnaphthalene	NELAP	26.0		**144**	mg/Kg-dry	10	02/04/2017 3:08	126752
2-Nitroaniline	NELAP	74.4		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
2-Nitrophenol	NELAP	26.0		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Lab ID: 17020090-002 **Client Sample ID:** SW-RES-REM-W3 (10)

Matrix: SOLID **Collection Date:** 01/31/2017 15:20

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
3,3´-Dichlorobenzidine	NELAP	26.0		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
3-Nitroaniline	NELAP	74.4		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
4,6-Dinitro-2-methylphenol	NELAP	74.4		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
4-Bromophenyl phenyl ether	NELAP	26.0		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
4-Chloro-3-methylphenol	NELAP	37.2		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
4-Chloroaniline	NELAP	37.2		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
4-Chlorophenyl phenyl ether	NELAP	26.0		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
4-Nitroaniline	NELAP	37.2		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
4-Nitrophenol	NELAP	26.0		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
Aniline	NELAP	37.2		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
Azobenzene		26.0		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
Benzoic acid	NELAP	112		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
Benzyl alcohol	NELAP	37.2		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
Bis(2-chloroethoxy)methane	NELAP	26.0		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
Bis(2-chloroethyl)ether	NELAP	37.2		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
Bis(2-chloroisopropyl)ether	NELAP	26.0		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
Bis(2-ethylhexyl)phthalate	NELAP	26.0		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
Butyl benzyl phthalate	NELAP	26.0		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
Carbazole	NELAP	37.2		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
Dibenzofuran	NELAP	26.0		**87.0**	mg/Kg-dry	10	02/04/2017 3:08	126752
Diethyl phthalate	NELAP	37.2		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
Dimethyl phthalate	NELAP	26.0		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
Di-n-butyl phthalate	NELAP	26.0		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
Di-n-octyl phthalate	NELAP	26.0		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
Hexachlorobenzene	NELAP	26.0		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
Hexachlorobutadiene	NELAP	37.2		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
Hexachlorocyclopentadiene	NELAP	26.0		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
Hexachloroethane	NELAP	37.2		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
Isophorone	NELAP	26.0		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
m,p-Cresol	NELAP	37.2		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
Nitrobenzene	NELAP	37.2		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
N-Nitrosodimethylamine	NELAP	37.2		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
N-Nitroso-di-n-propylamine	NELAP	37.2		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
N-Nitrosodiphenylamine	NELAP	37.2		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
o-Cresol	NELAP	37.2		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
Pentachlorophenol	NELAP	149		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
Phenol	NELAP	26.0		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
Pyridine	NELAP	37.2		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
1,2-Diphenylhydrazine		62.5		**ND**	mg/Kg-dry	10	02/04/2017 3:08	126752
Surr: 2,4,6-Tribromophenol		33-115		**102.4**	%REC	10	02/04/2017 3:08	126752
Surr: 2-Fluorobiphenyl		36.5-97.7		**92.2**	%REC	10	02/04/2017 3:08	126752
Surr: 2-Fluorophenol		39.4-92.8		**73.9**	%REC	10	02/04/2017 3:08	126752
Surr: Nitrobenzene-d5		34.7-90.1	S	**95.0**	%REC	10	02/04/2017 3:08	126752
Surr: Phenol-d5		42.8-106		**80.2**	%REC	10	02/04/2017 3:08	126752
Surr: p-Terphenyl-d14		43.7-124		**105.8**	%REC	10	02/04/2017 3:08	126752

Surrogate recovery is outside QC limits due to matrix interference.

Elevated reporting limit due to sample extract composition.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Lab ID: 17020090-002 **Client Sample ID:** SW-RES-REM-W3 (10)

Matrix: SOLID **Collection Date:** 01/31/2017 15:20

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,1,2-Tetrachloroethane	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
1,1,1-Trichloroethane	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
1,1,2,2-Tetrachloroethane	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
1,1,2-Trichloro-1,2,2-trifluoroethane		517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
1,1,2-Trichloroethane	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
1,1-Dichloro-2-propanone		5170		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
1,1-Dichloroethane	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
1,1-Dichloroethene	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
1,1-Dichloropropene	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
1,2,3-Trichlorobenzene	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
1,2,3-Trichloropropane	NELAP	1030		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
1,2,3-Trimethylbenzene		517		**2620**	µg/Kg-dry	50	02/03/2017 16:27	126761
1,2,4-Trichlorobenzene	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
1,2,4-Trimethylbenzene	NELAP	517		**8010**	µg/Kg-dry	50	02/03/2017 16:27	126761
1,2-Dibromo-3-chloropropane	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
1,2-Dibromoethane	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
1,2-Dichlorobenzene	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
1,2-Dichloroethane	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
1,2-Dichloropropane	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
1,3,5-Trimethylbenzene	NELAP	517		**2490**	µg/Kg-dry	50	02/03/2017 16:27	126761
1,3-Dichlorobenzene	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
1,3-Dichloropropane	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
1,4-Dichlorobenzene	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
1-Chlorobutane	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
2,2-Dichloropropane	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
2-Butanone	NELAP	20700		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
2-Chlorotoluene	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
2-Hexanone	NELAP	5170		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
2-Nitropropane	NELAP	5170		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
4-Chlorotoluene	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
4-Methyl-2-pentanone	NELAP	5170		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
Acetone	NELAP	5170		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
Acrolein	NELAP	10300		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
Acrylonitrile	NELAP	1030		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
Allyl chloride	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
Benzene	NELAP	103		**1250**	µg/Kg-dry	50	02/03/2017 16:27	126761
Bromobenzene	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
Bromochloromethane	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
Bromodichloromethane	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
Bromoform	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
Bromomethane	NELAP	1030		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
Carbon disulfide	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
Carbon tetrachloride	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
Chlorobenzene	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
Chloroethane	NELAP	1030		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
Chloroform	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
Chloromethane	NELAP	1030		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Lab ID: 17020090-002 **Client Sample ID:** SW-RES-REM-W3 (10)

Matrix: SOLID **Collection Date:** 01/31/2017 15:20

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
cis-1,2-Dichloroethene	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
cis-1,3-Dichloropropene	NELAP	414		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
Cyclohexanone		10300		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
Dibromochloromethane	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
Dibromomethane	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
Dichlorodifluoromethane	NELAP	1030		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
Ethyl ether	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
Ethyl methacrylate	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
Ethylbenzene	NELAP	517		**1480**	µg/Kg-dry	50	02/03/2017 16:27	126761
Hexachlorobutadiene	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
Hexachloroethane	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
Iodomethane	NELAP	1030		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
Isopropylbenzene	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
m,p-Xylenes	NELAP	517		**9800**	µg/Kg-dry	50	02/03/2017 16:27	126761
Methacrylonitrile	NELAP	5170		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
Methyl Methacrylate	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
Methyl tert-butyl ether	NELAP	207		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
Methylacrylate	NELAP	1030		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
Methylene chloride	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
Naphthalene	NELAP	21500		**162000**	µg/Kg-dry	1000	02/06/2017 12:58	126805
n-Butylbenzene	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
n-Heptane		5170		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
n-Hexane		2070		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
Nitrobenzene	NELAP	10300		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
n-Propylbenzene	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
o-Xylene	NELAP	517		**4030**	µg/Kg-dry	50	02/03/2017 16:27	126761
Pentachloroethane	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
p-Isopropyltoluene	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
Propionitrile	NELAP	5170		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
sec-Butylbenzene	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
Styrene	NELAP	517		**756**	µg/Kg-dry	50	02/03/2017 16:27	126761
tert-Butylbenzene	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
Tetrachloroethene	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
Tetrahydrofuran	NELAP	5170		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
Toluene	NELAP	517		**2540**	µg/Kg-dry	50	02/03/2017 16:27	126761
trans-1,2-Dichloroethene	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
trans-1,3-Dichloropropene	NELAP	414		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
Trichloroethene	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
Trichlorofluoromethane	NELAP	517		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
Vinyl acetate	NELAP	5170		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
Vinyl chloride	NELAP	207		**ND**	µg/Kg-dry	50	02/03/2017 16:27	126761
Surr: 1,2-Dichloroethane-d4		72.2-131		**103.2**	%REC	50	02/03/2017 16:27	126761
Surr: 4-Bromofluorobenzene		82.1-116		**105.1**	%REC	50	02/03/2017 16:27	126761
Surr: Dibromofluoromethane		77.7-120		**96.4**	%REC	50	02/03/2017 16:27	126761
Surr: Toluene-d8		86-116		**100.0**	%REC	50	02/03/2017 16:27	126761

Elevated reporting limit due to high levels of target and/or non-target analytes.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Lab ID: 17020090-003 **Client Sample ID:** SW-RES-REM-W4 (10)

Matrix: SOLID **Collection Date:** 01/31/2017 15:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**13.1**	%	1	02/03/2017 14:45	R228804
SW-846 3550B, 8015B, TOTAL PETROLEUM HYDROCARBONS (OA-2) BY GC/FID								
Diesel	NELAP	4200	#	**17100**	mg/Kg-dry	50	02/03/2017 14:48	126687
Kerosene	NELAP	4200		**ND**	mg/Kg-dry	50	02/03/2017 14:48	126687
Mineral Spirits	NELAP	4200		**ND**	mg/Kg-dry	50	02/03/2017 14:48	126687
Motor Oil	NELAP	4200	#	**8580**	mg/Kg-dry	50	02/03/2017 14:48	126687
Surr: n-Tetracontane		20-152	S	**2087**	%REC	50	02/02/2017 16:38	126687
Elevated reporting limit due to sample extract composition.								
Surrogate recovery is outside QC limits due to sample dilution.								
SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Acenaphthene	NELAP	2.27		**88.4**	mg/Kg-dry	100	02/07/2017 18:41	126744
Acenaphthylene	NELAP	2.27		**116**	mg/Kg-dry	100	02/07/2017 18:41	126744
Anthracene	NELAP	2.27		**221**	mg/Kg-dry	100	02/07/2017 18:41	126744
Benzo(a)anthracene	NELAP	6.67		**218**	mg/Kg-dry	100	02/07/2017 18:41	126744
Benzo(a)pyrene	NELAP	2.27		**159**	mg/Kg-dry	100	02/07/2017 18:41	126744
Benzo(b)fluoranthene	NELAP	2.27		**210**	mg/Kg-dry	100	02/07/2017 18:41	126744
Benzo(g,h,i)perylene	NELAP	2.27		**30.4**	mg/Kg-dry	100	02/07/2017 18:41	126744
Benzo(k)fluoranthene	NELAP	2.27		**75.4**	mg/Kg-dry	100	02/07/2017 18:41	126744
Chrysene	NELAP	2.27		**180**	mg/Kg-dry	100	02/07/2017 18:41	126744
Dibenzo(a,h)anthracene	NELAP	2.27		**17.0**	mg/Kg-dry	100	02/07/2017 18:41	126744
Fluoranthene	NELAP	2.27		**486**	mg/Kg-dry	100	02/07/2017 18:41	126744
Fluorene	NELAP	2.27		**358**	mg/Kg-dry	100	02/07/2017 18:41	126744
Indeno(1,2,3-cd)pyrene	NELAP	2.27		**37.4**	mg/Kg-dry	100	02/07/2017 18:41	126744
Naphthalene	NELAP	11.3		**1190**	mg/Kg-dry	500	02/08/2017 14:57	126744
Phenanthrene	NELAP	2.27		**889**	mg/Kg-dry	100	02/07/2017 18:41	126744
Pyrene	NELAP	2.27		**345**	mg/Kg-dry	100	02/07/2017 18:41	126744
Surr: 2-Fluorobiphenyl		19.9-83		**61.5**	%REC	100	02/07/2017 18:41	126744
Surr: Nitrobenzene-d5		23-84		**32.7**	%REC	100	02/07/2017 18:41	126744
Surr: p-Terphenyl-d14		33.5-106		**66.7**	%REC	100	02/07/2017 18:41	126744
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2,4-Trichlorobenzene	NELAP	167		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
1,2-Dichlorobenzene	NELAP	167		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
1,3-Dichlorobenzene	NELAP	167		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
1,4-Dichlorobenzene	NELAP	167		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
2,4,5-Trichlorophenol	NELAP	117		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
2,4,6-Trichlorophenol	NELAP	117		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
2,4-Dichlorophenol	NELAP	167		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
2,4-Dimethylphenol	NELAP	167		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
2,4-Dinitrophenol	NELAP	333		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
2,4-Dinitrotoluene	NELAP	117		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
2,6-Dinitrotoluene	NELAP	117		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
2-Chloronaphthalene	NELAP	117		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
2-Chlorophenol	NELAP	167		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
2-Methoxy-4-methylphenol		217		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
2-Methylnaphthalene	NELAP	117		**524**	mg/Kg-dry	50	02/03/2017 23:23	126752
2-Nitroaniline	NELAP	333		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
2-Nitrophenol	NELAP	117		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Lab ID: 17020090-003 **Client Sample ID:** SW-RES-REM-W4 (10)

Matrix: SOLID **Collection Date:** 01/31/2017 15:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
3,3´-Dichlorobenzidine	NELAP	117		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
3-Nitroaniline	NELAP	333		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
4,6-Dinitro-2-methylphenol	NELAP	333		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
4-Bromophenyl phenyl ether	NELAP	117		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
4-Chloro-3-methylphenol	NELAP	167		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
4-Chloroaniline	NELAP	167		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
4-Chlorophenyl phenyl ether	NELAP	117		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
4-Nitroaniline	NELAP	167		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
4-Nitrophenol	NELAP	117		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
Aniline	NELAP	167		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
Azobenzene		117		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
Benzoic acid	NELAP	500		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
Benzyl alcohol	NELAP	167		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
Bis(2-chloroethoxy)methane	NELAP	117		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
Bis(2-chloroethyl)ether	NELAP	167		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
Bis(2-chloroisopropyl)ether	NELAP	117		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
Bis(2-ethylhexyl)phthalate	NELAP	117		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
Butyl benzyl phthalate	NELAP	117		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
Carbazole	NELAP	167		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
Dibenzofuran	NELAP	117		**283**	mg/Kg-dry	50	02/03/2017 23:23	126752
Diethyl phthalate	NELAP	167		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
Dimethyl phthalate	NELAP	117		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
Di-n-butyl phthalate	NELAP	117		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
Di-n-octyl phthalate	NELAP	117		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
Hexachlorobenzene	NELAP	117		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
Hexachlorobutadiene	NELAP	167		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
Hexachlorocyclopentadiene	NELAP	117		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
Hexachloroethane	NELAP	167		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
Isophorone	NELAP	117		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
m,p-Cresol	NELAP	167		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
Nitrobenzene	NELAP	167		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
N-Nitrosodimethylamine	NELAP	167		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
N-Nitroso-di-n-propylamine	NELAP	167		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
N-Nitrosodiphenylamine	NELAP	167		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
o-Cresol	NELAP	167		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
Pentachlorophenol	NELAP	667		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
Phenol	NELAP	117		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
Pyridine	NELAP	167		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
1,2-Diphenylhydrazine		280		**ND**	mg/Kg-dry	50	02/03/2017 23:23	126752
Surr: 2,4,6-Tribromophenol		33-115	S	**161.7**	%REC	50	02/03/2017 23:23	126752
Surr: 2-Fluorobiphenyl		36.5-97.7		**71.9**	%REC	50	02/03/2017 23:23	126752
Surr: 2-Fluorophenol		39.4-92.8		**53.9**	%REC	50	02/03/2017 23:23	126752
Surr: Nitrobenzene-d5		34.7-90.1		**47.9**	%REC	50	02/03/2017 23:23	126752
Surr: Phenol-d5		42.8-106		**62.9**	%REC	50	02/03/2017 23:23	126752
Surr: p-Terphenyl-d14		43.7-124		**75.8**	%REC	50	02/03/2017 23:23	126752

Surrogate recovery is outside QC limits due to matrix interference.

Elevated reporting limit due to sample extract composition.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Lab ID: 17020090-003 **Client Sample ID:** SW-RES-REM-W4 (10)

Matrix: SOLID **Collection Date:** 01/31/2017 15:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,1,2-Tetrachloroethane	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
1,1,1-Trichloroethane	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
1,1,2,2-Tetrachloroethane	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
1,1,2-Trichloro-1,2,2-trifluoroethane		3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
1,1,2-Trichloroethane	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
1,1-Dichloro-2-propanone		39400		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
1,1-Dichloroethane	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
1,1-Dichloroethene	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
1,1-Dichloropropene	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
1,2,3-Trichlorobenzene	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
1,2,3-Trichloropropane	NELAP	7870		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
1,2,3-Trimethylbenzene		3940		**40500**	µg/Kg-dry	500	02/03/2017 16:55	126761
1,2,4-Trichlorobenzene	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
1,2,4-Trimethylbenzene	NELAP	3940		**127000**	µg/Kg-dry	500	02/03/2017 16:55	126761
1,2-Dibromo-3-chloropropane	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
1,2-Dibromoethane	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
1,2-Dichlorobenzene	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
1,2-Dichloroethane	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
1,2-Dichloropropane	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
1,3,5-Trimethylbenzene	NELAP	3940		**43900**	µg/Kg-dry	500	02/03/2017 16:55	126761
1,3-Dichlorobenzene	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
1,3-Dichloropropane	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
1,4-Dichlorobenzene	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
1-Chlorobutane	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
2,2-Dichloropropane	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
2-Butanone	NELAP	157000		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
2-Chlorotoluene	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
2-Hexanone	NELAP	39400		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
2-Nitropropane	NELAP	39400		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
4-Chlorotoluene	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
4-Methyl-2-pentanone	NELAP	39400		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
Acetone	NELAP	39400		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
Acrolein	NELAP	78700		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
Acrylonitrile	NELAP	7870		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
Allyl chloride	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
Benzene	NELAP	787		**6910**	µg/Kg-dry	500	02/03/2017 16:55	126761
Bromobenzene	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
Bromochloromethane	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
Bromodichloromethane	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
Bromoform	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
Bromomethane	NELAP	7870		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
Carbon disulfide	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
Carbon tetrachloride	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
Chlorobenzene	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
Chloroethane	NELAP	7870		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
Chloroform	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
Chloromethane	NELAP	7870		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Lab ID: 17020090-003 **Client Sample ID:** SW-RES-REM-W4 (10)

Matrix: SOLID **Collection Date:** 01/31/2017 15:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
cis-1,2-Dichloroethene	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
cis-1,3-Dichloropropene	NELAP	3150		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
Cyclohexanone		78700		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
Dibromochloromethane	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
Dibromomethane	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
Dichlorodifluoromethane	NELAP	7870		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
Ethyl ether	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
Ethyl methacrylate	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
Ethylbenzene	NELAP	3940		**23400**	µg/Kg-dry	500	02/03/2017 16:55	126761
Hexachlorobutadiene	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
Hexachloroethane	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
Iodomethane	NELAP	7870		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
Isopropylbenzene	NELAP	3940		**4530**	µg/Kg-dry	500	02/03/2017 16:55	126761
m,p-Xylenes	NELAP	3940		**148000**	µg/Kg-dry	500	02/03/2017 16:55	126761
Methacrylonitrile	NELAP	39400		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
Methyl Methacrylate	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
Methyl tert-butyl ether	NELAP	1570		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
Methylacrylate	NELAP	7870		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
Methylene chloride	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
Naphthalene	NELAP	158000		**2280000**	µg/Kg-dry	10000	02/06/2017 16:54	126805
n-Butylbenzene	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
n-Heptane		39400		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
n-Hexane		15700		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
Nitrobenzene	NELAP	78700		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
n-Propylbenzene	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
o-Xylene	NELAP	3940		**62600**	µg/Kg-dry	500	02/03/2017 16:55	126761
Pentachloroethane	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
p-Isopropyltoluene	NELAP	3940		**5160**	µg/Kg-dry	500	02/03/2017 16:55	126761
Propionitrile	NELAP	39400		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
sec-Butylbenzene	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
Styrene	NELAP	3940		**13000**	µg/Kg-dry	500	02/03/2017 16:55	126761
tert-Butylbenzene	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
Tetrachloroethene	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
Tetrahydrofuran	NELAP	39400		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
Toluene	NELAP	3940		**56800**	µg/Kg-dry	500	02/03/2017 16:55	126761
trans-1,2-Dichloroethene	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
trans-1,3-Dichloropropene	NELAP	3150		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
Trichloroethene	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
Trichlorofluoromethane	NELAP	3940		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
Vinyl acetate	NELAP	39400		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
Vinyl chloride	NELAP	1570		**ND**	µg/Kg-dry	500	02/03/2017 16:55	126761
Surr: 1,2-Dichloroethane-d4		72.2-131		**106.9**	%REC	500	02/03/2017 16:55	126761
Surr: 4-Bromofluorobenzene		82.1-116		**109.4**	%REC	500	02/03/2017 16:55	126761
Surr: Dibromofluoromethane		77.7-120		**96.6**	%REC	500	02/03/2017 16:55	126761
Surr: Toluene-d8		86-116		**103.9**	%REC	500	02/03/2017 16:55	126761

Elevated reporting limit due to high levels of target and/or non-target analytes.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Lab ID: 17020090-004 **Client Sample ID:** SW-RES-REM-W4 (2)

Matrix: SOLID **Collection Date:** 01/31/2017 16:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**17.5**	%	1	02/03/2017 14:47	R228804
SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Acenaphthene	NELAP	0.041		**ND**	mg/Kg-dry	5	02/06/2017 19:21	126744
Acenaphthylene	NELAP	0.041		**0.373**	mg/Kg-dry	5	02/06/2017 19:21	126744
Anthracene	NELAP	0.041		**0.168**	mg/Kg-dry	5	02/06/2017 19:21	126744
Benzo(a)anthracene	NELAP	0.121		**1.06**	mg/Kg-dry	5	02/06/2017 19:21	126744
Benzo(a)pyrene	NELAP	0.041		**1.37**	mg/Kg-dry	5	02/06/2017 19:21	126744
Benzo(b)fluoranthene	NELAP	0.041		**2.08**	mg/Kg-dry	5	02/06/2017 19:21	126744
Benzo(g,h,i)perylene	NELAP	0.041		**0.498**	mg/Kg-dry	5	02/06/2017 19:21	126744
Benzo(k)fluoranthene	NELAP	0.041		**0.687**	mg/Kg-dry	5	02/06/2017 19:21	126744
Chrysene	NELAP	0.041		**1.05**	mg/Kg-dry	5	02/06/2017 19:21	126744
Dibenzo(a,h)anthracene	NELAP	0.041		**0.155**	mg/Kg-dry	5	02/06/2017 19:21	126744
Fluoranthene	NELAP	0.041		**1.39**	mg/Kg-dry	5	02/06/2017 19:21	126744
Fluorene	NELAP	0.041		**0.122**	mg/Kg-dry	5	02/06/2017 19:21	126744
Indeno(1,2,3-cd)pyrene	NELAP	0.041		**0.468**	mg/Kg-dry	5	02/06/2017 19:21	126744
Naphthalene	NELAP	0.041		**0.291**	mg/Kg-dry	5	02/06/2017 19:21	126744
Phenanthrene	NELAP	0.041		**0.681**	mg/Kg-dry	5	02/06/2017 19:21	126744
Pyrene	NELAP	0.041		**1.60**	mg/Kg-dry	5	02/06/2017 19:21	126744
Surr: 2-Fluorobiphenyl		19.9-83		**49.2**	%REC	5	02/06/2017 19:21	126744
Surr: Nitrobenzene-d5		23-84		**38.5**	%REC	5	02/06/2017 19:21	126744
Surr: p-Terphenyl-d14		33.5-106		**52.9**	%REC	5	02/06/2017 19:21	126744
Elevated reporting limit due to sample extract composition.								
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2,4-Trichlorobenzene	NELAP	6.05		**ND**	mg/Kg-dry	5	02/03/2017 23:51	126752
1,2-Dichlorobenzene	NELAP	6.05		**ND**	mg/Kg-dry	5	02/03/2017 23:51	126752
1,3-Dichlorobenzene	NELAP	6.05		**ND**	mg/Kg-dry	5	02/03/2017 23:51	126752
1,4-Dichlorobenzene	NELAP	6.05		**ND**	mg/Kg-dry	5	02/03/2017 23:51	126752
2,4,5-Trichlorophenol	NELAP	4.24		**ND**	mg/Kg-dry	5	02/03/2017 23:51	126752
2,4,6-Trichlorophenol	NELAP	4.24		**ND**	mg/Kg-dry	5	02/03/2017 23:51	126752
2,4-Dichlorophenol	NELAP	6.05		**ND**	mg/Kg-dry	5	02/03/2017 23:51	126752
2,4-Dimethylphenol	NELAP	6.05		**ND**	mg/Kg-dry	5	02/03/2017 23:51	126752
2,4-Dinitrophenol	NELAP	12.1		**ND**	mg/Kg-dry	5	02/03/2017 23:51	126752
2,4-Dinitrotoluene	NELAP	4.24		**ND**	mg/Kg-dry	5	02/03/2017 23:51	126752
2,6-Dinitrotoluene	NELAP	4.24		**ND**	mg/Kg-dry	5	02/03/2017 23:51	126752
2-Chloronaphthalene	NELAP	4.24		**ND**	mg/Kg-dry	5	02/03/2017 23:51	126752
2-Chlorophenol	NELAP	6.05		**ND**	mg/Kg-dry	5	02/03/2017 23:51	126752
2-Methoxy-4-methylphenol		7.87		**ND**	mg/Kg-dry	5	02/03/2017 23:51	126752
2-Methylnaphthalene	NELAP	4.24		**ND**	mg/Kg-dry	5	02/03/2017 23:51	126752
2-Nitroaniline	NELAP	12.1		**ND**	mg/Kg-dry	5	02/03/2017 23:51	126752
2-Nitrophenol	NELAP	4.24		**ND**	mg/Kg-dry	5	02/03/2017 23:51	126752
3,3´-Dichlorobenzidine	NELAP	4.24		**ND**	mg/Kg-dry	5	02/03/2017 23:51	126752
3-Nitroaniline	NELAP	12.1		**ND**	mg/Kg-dry	5	02/03/2017 23:51	126752
4,6-Dinitro-2-methylphenol	NELAP	12.1		**ND**	mg/Kg-dry	5	02/03/2017 23:51	126752
4-Bromophenyl phenyl ether	NELAP	4.24		**ND**	mg/Kg-dry	5	02/03/2017 23:51	126752
4-Chloro-3-methylphenol	NELAP	6.05		**ND**	mg/Kg-dry	5	02/03/2017 23:51	126752
4-Chloroaniline	NELAP	6.05		**ND**	mg/Kg-dry	5	02/03/2017 23:51	126752
4-Chlorophenyl phenyl ether	NELAP	4.24		**ND**	mg/Kg-dry	5	02/03/2017 23:51	126752

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Lab ID: 17020090-004 **Client Sample ID:** SW-RES-REM-W4 (2)

Matrix: SOLID **Collection Date:** 01/31/2017 16:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
4-Nitroaniline	NELAP	6.05		ND	mg/Kg-dry	5	02/03/2017 23:51	126752
4-Nitrophenol	NELAP	4.24		ND	mg/Kg-dry	5	02/03/2017 23:51	126752
Aniline	NELAP	6.05		ND	mg/Kg-dry	5	02/03/2017 23:51	126752
Azobenzene		4.24		ND	mg/Kg-dry	5	02/03/2017 23:51	126752
Benzoic acid	NELAP	18.2		ND	mg/Kg-dry	5	02/03/2017 23:51	126752
Benzyl alcohol	NELAP	6.05		ND	mg/Kg-dry	5	02/03/2017 23:51	126752
Bis(2-chloroethoxy)methane	NELAP	4.24		ND	mg/Kg-dry	5	02/03/2017 23:51	126752
Bis(2-chloroethyl)ether	NELAP	6.05		ND	mg/Kg-dry	5	02/03/2017 23:51	126752
Bis(2-chloroisopropyl)ether	NELAP	4.24		ND	mg/Kg-dry	5	02/03/2017 23:51	126752
Bis(2-ethylhexyl)phthalate	NELAP	4.24		ND	mg/Kg-dry	5	02/03/2017 23:51	126752
Butyl benzyl phthalate	NELAP	4.24		ND	mg/Kg-dry	5	02/03/2017 23:51	126752
Carbazole	NELAP	6.05		ND	mg/Kg-dry	5	02/03/2017 23:51	126752
Dibenzofuran	NELAP	4.24		ND	mg/Kg-dry	5	02/03/2017 23:51	126752
Diethyl phthalate	NELAP	6.05		ND	mg/Kg-dry	5	02/03/2017 23:51	126752
Dimethyl phthalate	NELAP	4.24		ND	mg/Kg-dry	5	02/03/2017 23:51	126752
Di-n-butyl phthalate	NELAP	4.24		ND	mg/Kg-dry	5	02/03/2017 23:51	126752
Di-n-octyl phthalate	NELAP	4.24		ND	mg/Kg-dry	5	02/03/2017 23:51	126752
Hexachlorobenzene	NELAP	4.24		ND	mg/Kg-dry	5	02/03/2017 23:51	126752
Hexachlorobutadiene	NELAP	6.05		ND	mg/Kg-dry	5	02/03/2017 23:51	126752
Hexachlorocyclopentadiene	NELAP	4.24		ND	mg/Kg-dry	5	02/03/2017 23:51	126752
Hexachloroethane	NELAP	6.05		ND	mg/Kg-dry	5	02/03/2017 23:51	126752
Isophorone	NELAP	4.24		ND	mg/Kg-dry	5	02/03/2017 23:51	126752
m,p-Cresol	NELAP	6.05		ND	mg/Kg-dry	5	02/03/2017 23:51	126752
Nitrobenzene	NELAP	6.05		ND	mg/Kg-dry	5	02/03/2017 23:51	126752
N-Nitrosodimethylamine	NELAP	6.05		ND	mg/Kg-dry	5	02/03/2017 23:51	126752
N-Nitroso-di-n-propylamine	NELAP	6.05		ND	mg/Kg-dry	5	02/03/2017 23:51	126752
N-Nitrosodiphenylamine	NELAP	6.05		ND	mg/Kg-dry	5	02/03/2017 23:51	126752
o-Cresol	NELAP	6.05		ND	mg/Kg-dry	5	02/03/2017 23:51	126752
Pentachlorophenol	NELAP	24.2		ND	mg/Kg-dry	5	02/03/2017 23:51	126752
Phenol	NELAP	4.24		ND	mg/Kg-dry	5	02/03/2017 23:51	126752
Pyridine	NELAP	6.05		ND	mg/Kg-dry	5	02/03/2017 23:51	126752
1,2-Diphenylhydrazine		10.2		ND	mg/Kg-dry	5	02/03/2017 23:51	126752
Surr: 2,4,6-Tribromophenol		33-115		69.1	%REC	5	02/03/2017 23:51	126752
Surr: 2-Fluorobiphenyl		36.5-97.7		70.7	%REC	5	02/03/2017 23:51	126752
Surr: 2-Fluorophenol		39.4-92.8		62.2	%REC	5	02/03/2017 23:51	126752
Surr: Nitrobenzene-d5		34.7-90.1		67.3	%REC	5	02/03/2017 23:51	126752
Surr: Phenol-d5		42.8-106		76.2	%REC	5	02/03/2017 23:51	126752
Surr: p-Terphenyl-d14		43.7-124		80.6	%REC	5	02/03/2017 23:51	126752
Elevated reporting limit due to sample extract composition.								
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,1,2-Tetrachloroethane	NELAP	141		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
1,1,1-Trichloroethane	NELAP	141		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
1,1,2,2-Tetrachloroethane	NELAP	141		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
1,1,2-Trichloro-1,2,2-trifluoroethane		141		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
1,1,2-Trichloroethane	NELAP	141		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
1,1-Dichloro-2-propanone		1410		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
1,1-Dichloroethane	NELAP	141		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Lab ID: 17020090-004 **Client Sample ID:** SW-RES-REM-W4 (2)

Matrix: SOLID **Collection Date:** 01/31/2017 16:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1-Dichloroethene	NELAP	141		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
1,1-Dichloropropene	NELAP	141		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
1,2,3-Trichlorobenzene	NELAP	141		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
1,2,3-Trichloropropane	NELAP	282		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
1,2,3-Trimethylbenzene		141		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
1,2,4-Trichlorobenzene	NELAP	141		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
1,2,4-Trimethylbenzene	NELAP	141		166	µg/Kg-dry	12.5	02/03/2017 17:21	126761
1,2-Dibromo-3-chloropropane	NELAP	141		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
1,2-Dibromoethane	NELAP	141		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
1,2-Dichlorobenzene	NELAP	141		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
1,2-Dichloroethane	NELAP	141		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
1,2-Dichloropropane	NELAP	141		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
1,3,5-Trimethylbenzene	NELAP	141		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
1,3-Dichlorobenzene	NELAP	141		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
1,3-Dichloropropane	NELAP	141		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
1,4-Dichlorobenzene	NELAP	141		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
1-Chlorobutane	NELAP	141		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
2,2-Dichloropropane	NELAP	141		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
2-Butanone	NELAP	5630		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
2-Chlorotoluene	NELAP	141		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
2-Hexanone	NELAP	1410		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
2-Nitropropane	NELAP	1410		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
4-Chlorotoluene	NELAP	141		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
4-Methyl-2-pentanone	NELAP	1410		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
Acetone	NELAP	1410		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
Acrolein	NELAP	2820		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
Acrylonitrile	NELAP	282		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
Allyl chloride	NELAP	141		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
Benzene	NELAP	28.2		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
Bromobenzene	NELAP	141		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
Bromochloromethane	NELAP	141		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
Bromodichloromethane	NELAP	141		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
Bromoform	NELAP	141		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
Bromomethane	NELAP	282		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
Carbon disulfide	NELAP	141		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
Carbon tetrachloride	NELAP	141		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
Chlorobenzene	NELAP	141		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
Chloroethane	NELAP	282		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
Chloroform	NELAP	141		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
Chloromethane	NELAP	282		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
cis-1,2-Dichloroethene	NELAP	141		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
cis-1,3-Dichloropropene	NELAP	113		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
Cyclohexanone		2820		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
Dibromochloromethane	NELAP	141		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
Dibromomethane	NELAP	141		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
Dichlorodifluoromethane	NELAP	282		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761
Ethyl ether	NELAP	141		ND	µg/Kg-dry	12.5	02/03/2017 17:21	126761

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Lab ID: 17020090-004 **Client Sample ID:** SW-RES-REM-W4 (2)

Matrix: SOLID **Collection Date:** 01/31/2017 16:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Ethyl methacrylate	NELAP	141		**ND**	µg/Kg-dry	12.5	02/03/2017 17:21	126761
Ethylbenzene	NELAP	141		**ND**	µg/Kg-dry	12.5	02/03/2017 17:21	126761
Hexachlorobutadiene	NELAP	141		**ND**	µg/Kg-dry	12.5	02/03/2017 17:21	126761
Hexachloroethane	NELAP	141		**ND**	µg/Kg-dry	12.5	02/03/2017 17:21	126761
Iodomethane	NELAP	282		**ND**	µg/Kg-dry	12.5	02/03/2017 17:21	126761
Isopropylbenzene	NELAP	141		**ND**	µg/Kg-dry	12.5	02/03/2017 17:21	126761
m,p-Xylenes	NELAP	141		**191**	µg/Kg-dry	12.5	02/03/2017 17:21	126761
Methacrylonitrile	NELAP	1410		**ND**	µg/Kg-dry	12.5	02/03/2017 17:21	126761
Methyl Methacrylate	NELAP	141		**ND**	µg/Kg-dry	12.5	02/03/2017 17:21	126761
Methyl tert-butyl ether	NELAP	56.3		**ND**	µg/Kg-dry	12.5	02/03/2017 17:21	126761
Methylacrylate	NELAP	282		**ND**	µg/Kg-dry	12.5	02/03/2017 17:21	126761
Methylene chloride	NELAP	141		**ND**	µg/Kg-dry	12.5	02/03/2017 17:21	126761
Naphthalene	NELAP	282		**2240**	µg/Kg-dry	12.5	02/03/2017 17:21	126761
n-Butylbenzene	NELAP	141		**ND**	µg/Kg-dry	12.5	02/03/2017 17:21	126761
n-Heptane		1410		**ND**	µg/Kg-dry	12.5	02/03/2017 17:21	126761
n-Hexane		563		**ND**	µg/Kg-dry	12.5	02/03/2017 17:21	126761
Nitrobenzene	NELAP	2820		**ND**	µg/Kg-dry	12.5	02/03/2017 17:21	126761
n-Propylbenzene	NELAP	141		**ND**	µg/Kg-dry	12.5	02/03/2017 17:21	126761
o-Xylene	NELAP	141		**ND**	µg/Kg-dry	12.5	02/03/2017 17:21	126761
Pentachloroethane	NELAP	141		**ND**	µg/Kg-dry	12.5	02/03/2017 17:21	126761
p-Isopropyltoluene	NELAP	141		**ND**	µg/Kg-dry	12.5	02/03/2017 17:21	126761
Propionitrile	NELAP	1410		**ND**	µg/Kg-dry	12.5	02/03/2017 17:21	126761
sec-Butylbenzene	NELAP	141		**ND**	µg/Kg-dry	12.5	02/03/2017 17:21	126761
Styrene	NELAP	141		**ND**	µg/Kg-dry	12.5	02/03/2017 17:21	126761
tert-Butylbenzene	NELAP	141		**ND**	µg/Kg-dry	12.5	02/03/2017 17:21	126761
Tetrachloroethene	NELAP	141		**ND**	µg/Kg-dry	12.5	02/03/2017 17:21	126761
Tetrahydrofuran	NELAP	1410		**ND**	µg/Kg-dry	12.5	02/03/2017 17:21	126761
Toluene	NELAP	141		**ND**	µg/Kg-dry	12.5	02/03/2017 17:21	126761
trans-1,2-Dichloroethene	NELAP	141		**ND**	µg/Kg-dry	12.5	02/03/2017 17:21	126761
trans-1,3-Dichloropropene	NELAP	113		**ND**	µg/Kg-dry	12.5	02/03/2017 17:21	126761
Trichloroethene	NELAP	141		**ND**	µg/Kg-dry	12.5	02/03/2017 17:21	126761
Trichlorofluoromethane	NELAP	141		**ND**	µg/Kg-dry	12.5	02/03/2017 17:21	126761
Vinyl acetate	NELAP	1410		**ND**	µg/Kg-dry	12.5	02/03/2017 17:21	126761
Vinyl chloride	NELAP	56.3		**ND**	µg/Kg-dry	12.5	02/03/2017 17:21	126761
Surr: 1,2-Dichloroethane-d4		72.2-131		**101.9**	%REC	12.5	02/03/2017 17:21	126761
Surr: 4-Bromofluorobenzene		82.1-116		**103.7**	%REC	12.5	02/03/2017 17:21	126761
Surr: Dibromofluoromethane		77.7-120		**92.4**	%REC	12.5	02/03/2017 17:21	126761
Surr: Toluene-d8		86-116		**105.1**	%REC	12.5	02/03/2017 17:21	126761

Elevated reporting limit due to high levels of target and/or non-target analytes.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Lab ID: 17020090-005 **Client Sample ID:** SW-RES-REM-W2 (2)

Matrix: SOLID **Collection Date:** 02/01/2017 9:20

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**19.9**	%	1	02/03/2017 14:47	R228804
SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Acenaphthene	NELAP	0.105		**ND**	mg/Kg-dry	25	02/07/2017 15:56	126744
Acenaphthylene	NELAP	0.105		**ND**	mg/Kg-dry	25	02/07/2017 15:56	126744
Anthracene	NELAP	0.105		**ND**	mg/Kg-dry	25	02/07/2017 15:56	126744
Benzo(a)anthracene	NELAP	0.310		**0.695**	mg/Kg-dry	25	02/07/2017 15:56	126744
Benzo(a)pyrene	NELAP	0.105	S	**0.628**	mg/Kg-dry	25	02/07/2017 15:56	126744
Benzo(b)fluoranthene	NELAP	0.105	S	**1.05**	mg/Kg-dry	25	02/07/2017 15:56	126744
Benzo(g,h,i)perylene	NELAP	0.105		**0.377**	mg/Kg-dry	25	02/07/2017 15:56	126744
Benzo(k)fluoranthene	NELAP	0.105		**0.375**	mg/Kg-dry	25	02/07/2017 15:56	126744
Chrysene	NELAP	0.105		**0.718**	mg/Kg-dry	25	02/07/2017 15:56	126744
Dibenzo(a,h)anthracene	NELAP	0.105		**0.129**	mg/Kg-dry	25	02/07/2017 15:56	126744
Fluoranthene	NELAP	0.105		**0.649**	mg/Kg-dry	25	02/07/2017 15:56	126744
Fluorene	NELAP	0.105		**ND**	mg/Kg-dry	25	02/07/2017 15:56	126744
Indeno(1,2,3-cd)pyrene	NELAP	0.105		**0.382**	mg/Kg-dry	25	02/07/2017 15:56	126744
Naphthalene	NELAP	0.105		**ND**	mg/Kg-dry	25	02/07/2017 15:56	126744
Phenanthrene	NELAP	0.105		**0.212**	mg/Kg-dry	25	02/07/2017 15:56	126744
Pyrene	NELAP	0.105		**0.658**	mg/Kg-dry	25	02/07/2017 15:56	126744
Surr: 2-Fluorobiphenyl		19.9-83		**59.3**	%REC	25	02/07/2017 15:56	126744
Surr: Nitrobenzene-d5		23-84		**42.2**	%REC	25	02/07/2017 15:56	126744
Surr: p-Terphenyl-d14		33.5-106		**62.7**	%REC	25	02/07/2017 15:56	126744

MSD did not recover within control limits due to sample composition.

Elevated reporting limit due to sample extract composition.

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2,4-Trichlorobenzene	NELAP	3.10		**ND**	mg/Kg-dry	5	02/04/2017 0:20	126752
1,2-Dichlorobenzene	NELAP	3.10		**ND**	mg/Kg-dry	5	02/04/2017 0:20	126752
1,3-Dichlorobenzene	NELAP	3.10		**ND**	mg/Kg-dry	5	02/04/2017 0:20	126752
1,4-Dichlorobenzene	NELAP	3.10		**ND**	mg/Kg-dry	5	02/04/2017 0:20	126752
2,4,5-Trichlorophenol	NELAP	2.17		**ND**	mg/Kg-dry	5	02/04/2017 0:20	126752
2,4,6-Trichlorophenol	NELAP	2.17		**ND**	mg/Kg-dry	5	02/04/2017 0:20	126752
2,4-Dichlorophenol	NELAP	3.10		**ND**	mg/Kg-dry	5	02/04/2017 0:20	126752
2,4-Dimethylphenol	NELAP	3.10		**ND**	mg/Kg-dry	5	02/04/2017 0:20	126752
2,4-Dinitrophenol	NELAP	6.20		**ND**	mg/Kg-dry	5	02/04/2017 0:20	126752
2,4-Dinitrotoluene	NELAP	2.17		**ND**	mg/Kg-dry	5	02/04/2017 0:20	126752
2,6-Dinitrotoluene	NELAP	2.17		**ND**	mg/Kg-dry	5	02/04/2017 0:20	126752
2-Chloronaphthalene	NELAP	2.17		**ND**	mg/Kg-dry	5	02/04/2017 0:20	126752
2-Chlorophenol	NELAP	3.10		**ND**	mg/Kg-dry	5	02/04/2017 0:20	126752
2-Methoxy-4-methylphenol		4.03		**ND**	mg/Kg-dry	5	02/04/2017 0:20	126752
2-Methylnaphthalene	NELAP	2.17		**ND**	mg/Kg-dry	5	02/04/2017 0:20	126752
2-Nitroaniline	NELAP	6.20		**ND**	mg/Kg-dry	5	02/04/2017 0:20	126752
2-Nitrophenol	NELAP	2.17		**ND**	mg/Kg-dry	5	02/04/2017 0:20	126752
3,3´-Dichlorobenzidine	NELAP	2.17		**ND**	mg/Kg-dry	5	02/04/2017 0:20	126752
3-Nitroaniline	NELAP	6.20		**ND**	mg/Kg-dry	5	02/04/2017 0:20	126752
4,6-Dinitro-2-methylphenol	NELAP	6.20		**ND**	mg/Kg-dry	5	02/04/2017 0:20	126752
4-Bromophenyl phenyl ether	NELAP	2.17		**ND**	mg/Kg-dry	5	02/04/2017 0:20	126752
4-Chloro-3-methylphenol	NELAP	3.10		**ND**	mg/Kg-dry	5	02/04/2017 0:20	126752
4-Chloroaniline	NELAP	3.10		**ND**	mg/Kg-dry	5	02/04/2017 0:20	126752

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Lab ID: 17020090-005 **Client Sample ID:** SW-RES-REM-W2 (2)

Matrix: SOLID **Collection Date:** 02/01/2017 9:20

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
4-Chlorophenyl phenyl ether	NELAP	2.17		ND	mg/Kg-dry	5	02/04/2017 0:20	126752
4-Nitroaniline	NELAP	3.10		ND	mg/Kg-dry	5	02/04/2017 0:20	126752
4-Nitrophenol	NELAP	2.17		ND	mg/Kg-dry	5	02/04/2017 0:20	126752
Aniline	NELAP	3.10		ND	mg/Kg-dry	5	02/04/2017 0:20	126752
Azobenzene		2.17		ND	mg/Kg-dry	5	02/04/2017 0:20	126752
Benzoic acid	NELAP	9.30		ND	mg/Kg-dry	5	02/04/2017 0:20	126752
Benzyl alcohol	NELAP	3.10		ND	mg/Kg-dry	5	02/04/2017 0:20	126752
Bis(2-chloroethoxy)methane	NELAP	2.17		ND	mg/Kg-dry	5	02/04/2017 0:20	126752
Bis(2-chloroethyl)ether	NELAP	3.10		ND	mg/Kg-dry	5	02/04/2017 0:20	126752
Bis(2-chloroisopropyl)ether	NELAP	2.17		ND	mg/Kg-dry	5	02/04/2017 0:20	126752
Bis(2-ethylhexyl)phthalate	NELAP	2.17		ND	mg/Kg-dry	5	02/04/2017 0:20	126752
Butyl benzyl phthalate	NELAP	2.17		ND	mg/Kg-dry	5	02/04/2017 0:20	126752
Carbazole	NELAP	3.10		ND	mg/Kg-dry	5	02/04/2017 0:20	126752
Dibenzofuran	NELAP	2.17		ND	mg/Kg-dry	5	02/04/2017 0:20	126752
Diethyl phthalate	NELAP	3.10		ND	mg/Kg-dry	5	02/04/2017 0:20	126752
Dimethyl phthalate	NELAP	2.17		ND	mg/Kg-dry	5	02/04/2017 0:20	126752
Di-n-butyl phthalate	NELAP	2.17		ND	mg/Kg-dry	5	02/04/2017 0:20	126752
Di-n-octyl phthalate	NELAP	2.17		ND	mg/Kg-dry	5	02/04/2017 0:20	126752
Hexachlorobenzene	NELAP	2.17		ND	mg/Kg-dry	5	02/04/2017 0:20	126752
Hexachlorobutadiene	NELAP	3.10		ND	mg/Kg-dry	5	02/04/2017 0:20	126752
Hexachlorocyclopentadiene	NELAP	2.17		ND	mg/Kg-dry	5	02/04/2017 0:20	126752
Hexachloroethane	NELAP	3.10		ND	mg/Kg-dry	5	02/04/2017 0:20	126752
Isophorone	NELAP	2.17		ND	mg/Kg-dry	5	02/04/2017 0:20	126752
m,p-Cresol	NELAP	3.10		ND	mg/Kg-dry	5	02/04/2017 0:20	126752
Nitrobenzene	NELAP	3.10		ND	mg/Kg-dry	5	02/04/2017 0:20	126752
N-Nitrosodimethylamine	NELAP	3.10		ND	mg/Kg-dry	5	02/04/2017 0:20	126752
N-Nitroso-di-n-propylamine	NELAP	3.10		ND	mg/Kg-dry	5	02/04/2017 0:20	126752
N-Nitrosodiphenylamine	NELAP	3.10		ND	mg/Kg-dry	5	02/04/2017 0:20	126752
o-Cresol	NELAP	3.10		ND	mg/Kg-dry	5	02/04/2017 0:20	126752
Pentachlorophenol	NELAP	12.4		ND	mg/Kg-dry	5	02/04/2017 0:20	126752
Phenol	NELAP	2.17		ND	mg/Kg-dry	5	02/04/2017 0:20	126752
Pyridine	NELAP	3.10		ND	mg/Kg-dry	5	02/04/2017 0:20	126752
1,2-Diphenylhydrazine		5.21		ND	mg/Kg-dry	5	02/04/2017 0:20	126752
Surr: 2,4,6-Tribromophenol		33-115		63.0	%REC	5	02/04/2017 0:20	126752
Surr: 2-Fluorobiphenyl		36.5-97.7		63.7	%REC	5	02/04/2017 0:20	126752
Surr: 2-Fluorophenol		39.4-92.8		58.8	%REC	5	02/04/2017 0:20	126752
Surr: Nitrobenzene-d5		34.7-90.1		67.1	%REC	5	02/04/2017 0:20	126752
Surr: Phenol-d5		42.8-106		74.0	%REC	5	02/04/2017 0:20	126752
Surr: p-Terphenyl-d14		43.7-124		69.5	%REC	5	02/04/2017 0:20	126752
Elevated reporting limit due to sample extract composition.								
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,1,2-Tetrachloroethane	NELAP	124		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
1,1,1-Trichloroethane	NELAP	124		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
1,1,2,2-Tetrachloroethane	NELAP	124		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
1,1,2-Trichloro-1,2,2-trifluoroethane		124		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
1,1,2-Trichloroethane	NELAP	124		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
1,1-Dichloro-2-propanone		1240		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Lab ID: 17020090-005 **Client Sample ID:** SW-RES-REM-W2 (2)

Matrix: SOLID **Collection Date:** 02/01/2017 9:20

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1-Dichloroethane	NELAP	124		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
1,1-Dichloroethene	NELAP	124		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
1,1-Dichloropropene	NELAP	124		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
1,2,3-Trichlorobenzene	NELAP	124		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
1,2,3-Trichloropropane	NELAP	248		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
1,2,3-Trimethylbenzene		124		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
1,2,4-Trichlorobenzene	NELAP	124		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
1,2,4-Trimethylbenzene	NELAP	124		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
1,2-Dibromo-3-chloropropane	NELAP	124		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
1,2-Dibromoethane	NELAP	124		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
1,2-Dichlorobenzene	NELAP	124		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
1,2-Dichloroethane	NELAP	124		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
1,2-Dichloropropane	NELAP	124		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
1,3,5-Trimethylbenzene	NELAP	124		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
1,3-Dichlorobenzene	NELAP	124		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
1,3-Dichloropropane	NELAP	124		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
1,4-Dichlorobenzene	NELAP	124		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
1-Chlorobutane	NELAP	124		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
2,2-Dichloropropane	NELAP	124		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
2-Butanone	NELAP	4970		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
2-Chlorotoluene	NELAP	124		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
2-Hexanone	NELAP	1240		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
2-Nitropropane	NELAP	1240		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
4-Chlorotoluene	NELAP	124		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
4-Methyl-2-pentanone	NELAP	1240		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
Acetone	NELAP	1240		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
Acrolein	NELAP	2480		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
Acrylonitrile	NELAP	248		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
Allyl chloride	NELAP	124		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
Benzene	NELAP	24.8		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
Bromobenzene	NELAP	124		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
Bromochloromethane	NELAP	124		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
Bromodichloromethane	NELAP	124		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
Bromoform	NELAP	124		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
Bromomethane	NELAP	248		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
Carbon disulfide	NELAP	124		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
Carbon tetrachloride	NELAP	124		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
Chlorobenzene	NELAP	124		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
Chloroethane	NELAP	248		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
Chloroform	NELAP	124		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
Chloromethane	NELAP	248		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
cis-1,2-Dichloroethene	NELAP	124		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
cis-1,3-Dichloropropene	NELAP	99.4		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
Cyclohexanone		2480		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
Dibromochloromethane	NELAP	124		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
Dibromomethane	NELAP	124		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761
Dichlorodifluoromethane	NELAP	248		ND	µg/Kg-dry	12.5	02/03/2017 17:48	126761

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Lab ID: 17020090-005 **Client Sample ID:** SW-RES-REM-W2 (2)

Matrix: SOLID **Collection Date:** 02/01/2017 9:20

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Ethyl ether	NELAP	124		**ND**	µg/Kg-dry	12.5	02/03/2017 17:48	126761
Ethyl methacrylate	NELAP	124		**ND**	µg/Kg-dry	12.5	02/03/2017 17:48	126761
Ethylbenzene	NELAP	124		**ND**	µg/Kg-dry	12.5	02/03/2017 17:48	126761
Hexachlorobutadiene	NELAP	124		**ND**	µg/Kg-dry	12.5	02/03/2017 17:48	126761
Hexachloroethane	NELAP	124		**ND**	µg/Kg-dry	12.5	02/03/2017 17:48	126761
Iodomethane	NELAP	248		**ND**	µg/Kg-dry	12.5	02/03/2017 17:48	126761
Isopropylbenzene	NELAP	124		**ND**	µg/Kg-dry	12.5	02/03/2017 17:48	126761
m,p-Xylenes	NELAP	124		**ND**	µg/Kg-dry	12.5	02/03/2017 17:48	126761
Methacrylonitrile	NELAP	1240		**ND**	µg/Kg-dry	12.5	02/03/2017 17:48	126761
Methyl Methacrylate	NELAP	124		**ND**	µg/Kg-dry	12.5	02/03/2017 17:48	126761
Methyl tert-butyl ether	NELAP	49.7		**ND**	µg/Kg-dry	12.5	02/03/2017 17:48	126761
Methylacrylate	NELAP	248		**ND**	µg/Kg-dry	12.5	02/03/2017 17:48	126761
Methylene chloride	NELAP	124		**ND**	µg/Kg-dry	12.5	02/03/2017 17:48	126761
Naphthalene	NELAP	248		**ND**	µg/Kg-dry	12.5	02/03/2017 17:48	126761
n-Butylbenzene	NELAP	124		**ND**	µg/Kg-dry	12.5	02/03/2017 17:48	126761
n-Heptane		1240		**ND**	µg/Kg-dry	12.5	02/03/2017 17:48	126761
n-Hexane		497		**ND**	µg/Kg-dry	12.5	02/03/2017 17:48	126761
Nitrobenzene	NELAP	2480		**ND**	µg/Kg-dry	12.5	02/03/2017 17:48	126761
n-Propylbenzene	NELAP	124		**ND**	µg/Kg-dry	12.5	02/03/2017 17:48	126761
o-Xylene	NELAP	124		**ND**	µg/Kg-dry	12.5	02/03/2017 17:48	126761
Pentachloroethane	NELAP	124		**ND**	µg/Kg-dry	12.5	02/03/2017 17:48	126761
p-Isopropyltoluene	NELAP	124		**203**	µg/Kg-dry	12.5	02/03/2017 17:48	126761
Propionitrile	NELAP	1240		**ND**	µg/Kg-dry	12.5	02/03/2017 17:48	126761
sec-Butylbenzene	NELAP	124		**ND**	µg/Kg-dry	12.5	02/03/2017 17:48	126761
Styrene	NELAP	124		**ND**	µg/Kg-dry	12.5	02/03/2017 17:48	126761
tert-Butylbenzene	NELAP	124		**ND**	µg/Kg-dry	12.5	02/03/2017 17:48	126761
Tetrachloroethene	NELAP	124		**ND**	µg/Kg-dry	12.5	02/03/2017 17:48	126761
Tetrahydrofuran	NELAP	1240		**ND**	µg/Kg-dry	12.5	02/03/2017 17:48	126761
Toluene	NELAP	124		**ND**	µg/Kg-dry	12.5	02/03/2017 17:48	126761
trans-1,2-Dichloroethene	NELAP	124		**ND**	µg/Kg-dry	12.5	02/03/2017 17:48	126761
trans-1,3-Dichloropropene	NELAP	99.4		**ND**	µg/Kg-dry	12.5	02/03/2017 17:48	126761
Trichloroethene	NELAP	124		**ND**	µg/Kg-dry	12.5	02/03/2017 17:48	126761
Trichlorofluoromethane	NELAP	124		**ND**	µg/Kg-dry	12.5	02/03/2017 17:48	126761
Vinyl acetate	NELAP	1240		**ND**	µg/Kg-dry	12.5	02/03/2017 17:48	126761
Vinyl chloride	NELAP	49.7		**ND**	µg/Kg-dry	12.5	02/03/2017 17:48	126761
Surr: 1,2-Dichloroethane-d4		72.2-131		**100.3**	%REC	12.5	02/03/2017 17:48	126761
Surr: 4-Bromofluorobenzene		82.1-116		**102.7**	%REC	12.5	02/03/2017 17:48	126761
Surr: Dibromofluoromethane		77.7-120		**93.2**	%REC	12.5	02/03/2017 17:48	126761
Surr: Toluene-d8		86-116		**103.8**	%REC	12.5	02/03/2017 17:48	126761

Elevated reporting limit due to matrix interference.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Lab ID: 17020090-006 **Client Sample ID:** SW-RES-REM-W3 (2)

Matrix: SOLID **Collection Date:** 02/01/2017 9:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**26.4**	%	1	02/03/2017 14:47	R228804
SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Acenaphthene	NELAP	0.133		**ND**	mg/Kg-dry	5	02/06/2017 19:53	126744
Acenaphthylene	NELAP	0.133		**0.299**	mg/Kg-dry	5	02/06/2017 19:53	126744
Anthracene	NELAP	0.133		**0.273**	mg/Kg-dry	5	02/06/2017 19:53	126744
Benzo(a)anthracene	NELAP	0.390		**1.03**	mg/Kg-dry	5	02/06/2017 19:53	126744
Benzo(a)pyrene	NELAP	0.133		**1.09**	mg/Kg-dry	5	02/06/2017 19:53	126744
Benzo(b)fluoranthene	NELAP	0.133		**1.91**	mg/Kg-dry	5	02/06/2017 19:53	126744
Benzo(g,h,i)perylene	NELAP	0.133		**0.539**	mg/Kg-dry	5	02/06/2017 19:53	126744
Benzo(k)fluoranthene	NELAP	0.133		**0.604**	mg/Kg-dry	5	02/06/2017 19:53	126744
Chrysene	NELAP	0.133		**1.09**	mg/Kg-dry	5	02/06/2017 19:53	126744
Dibenzo(a,h)anthracene	NELAP	0.133		**0.143**	mg/Kg-dry	5	02/06/2017 19:53	126744
Fluoranthene	NELAP	0.133		**1.57**	mg/Kg-dry	5	02/06/2017 19:53	126744
Fluorene	NELAP	0.133		**ND**	mg/Kg-dry	5	02/06/2017 19:53	126744
Indeno(1,2,3-cd)pyrene	NELAP	0.133		**0.475**	mg/Kg-dry	5	02/06/2017 19:53	126744
Naphthalene	NELAP	0.133		**0.285**	mg/Kg-dry	5	02/06/2017 19:53	126744
Phenanthrene	NELAP	0.133		**1.07**	mg/Kg-dry	5	02/06/2017 19:53	126744
Pyrene	NELAP	0.133		**1.33**	mg/Kg-dry	5	02/06/2017 19:53	126744
Surr: 2-Fluorobiphenyl		19.9-83		**59.2**	%REC	5	02/06/2017 19:53	126744
Surr: Nitrobenzene-d5		23-84		**40.1**	%REC	5	02/06/2017 19:53	126744
Surr: p-Terphenyl-d14		33.5-106		**50.0**	%REC	5	02/06/2017 19:53	126744
Elevated reporting limit due to sample extract composition.								
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2,4-Trichlorobenzene	NELAP	19.5		**ND**	mg/Kg-dry	5	02/04/2017 0:48	126752
1,2-Dichlorobenzene	NELAP	19.5		**ND**	mg/Kg-dry	5	02/04/2017 0:48	126752
1,3-Dichlorobenzene	NELAP	19.5		**ND**	mg/Kg-dry	5	02/04/2017 0:48	126752
1,4-Dichlorobenzene	NELAP	19.5		**ND**	mg/Kg-dry	5	02/04/2017 0:48	126752
2,4,5-Trichlorophenol	NELAP	13.7		**ND**	mg/Kg-dry	5	02/04/2017 0:48	126752
2,4,6-Trichlorophenol	NELAP	13.7		**ND**	mg/Kg-dry	5	02/04/2017 0:48	126752
2,4-Dichlorophenol	NELAP	19.5		**ND**	mg/Kg-dry	5	02/04/2017 0:48	126752
2,4-Dimethylphenol	NELAP	19.5		**ND**	mg/Kg-dry	5	02/04/2017 0:48	126752
2,4-Dinitrophenol	NELAP	39.0		**ND**	mg/Kg-dry	5	02/04/2017 0:48	126752
2,4-Dinitrotoluene	NELAP	13.7		**ND**	mg/Kg-dry	5	02/04/2017 0:48	126752
2,6-Dinitrotoluene	NELAP	13.7		**ND**	mg/Kg-dry	5	02/04/2017 0:48	126752
2-Chloronaphthalene	NELAP	13.7		**ND**	mg/Kg-dry	5	02/04/2017 0:48	126752
2-Chlorophenol	NELAP	19.5		**ND**	mg/Kg-dry	5	02/04/2017 0:48	126752
2-Methoxy-4-methylphenol		25.4		**ND**	mg/Kg-dry	5	02/04/2017 0:48	126752
2-Methylnaphthalene	NELAP	13.7		**ND**	mg/Kg-dry	5	02/04/2017 0:48	126752
2-Nitroaniline	NELAP	39.0		**ND**	mg/Kg-dry	5	02/04/2017 0:48	126752
2-Nitrophenol	NELAP	13.7		**ND**	mg/Kg-dry	5	02/04/2017 0:48	126752
3,3´-Dichlorobenzidine	NELAP	13.7		**ND**	mg/Kg-dry	5	02/04/2017 0:48	126752
3-Nitroaniline	NELAP	39.0		**ND**	mg/Kg-dry	5	02/04/2017 0:48	126752
4,6-Dinitro-2-methylphenol	NELAP	39.0		**ND**	mg/Kg-dry	5	02/04/2017 0:48	126752
4-Bromophenyl phenyl ether	NELAP	13.7		**ND**	mg/Kg-dry	5	02/04/2017 0:48	126752
4-Chloro-3-methylphenol	NELAP	19.5		**ND**	mg/Kg-dry	5	02/04/2017 0:48	126752
4-Chloroaniline	NELAP	19.5		**ND**	mg/Kg-dry	5	02/04/2017 0:48	126752
4-Chlorophenyl phenyl ether	NELAP	13.7		**ND**	mg/Kg-dry	5	02/04/2017 0:48	126752

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Lab ID: 17020090-006 **Client Sample ID:** SW-RES-REM-W3 (2)

Matrix: SOLID **Collection Date:** 02/01/2017 9:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
4-Nitroaniline	NELAP	19.5		ND	mg/Kg-dry	5	02/04/2017 0:48	126752
4-Nitrophenol	NELAP	13.7		ND	mg/Kg-dry	5	02/04/2017 0:48	126752
Aniline	NELAP	19.5		ND	mg/Kg-dry	5	02/04/2017 0:48	126752
Azobenzene		13.7		ND	mg/Kg-dry	5	02/04/2017 0:48	126752
Benzoic acid	NELAP	58.6		ND	mg/Kg-dry	5	02/04/2017 0:48	126752
Benzyl alcohol	NELAP	19.5		ND	mg/Kg-dry	5	02/04/2017 0:48	126752
Bis(2-chloroethoxy)methane	NELAP	13.7		ND	mg/Kg-dry	5	02/04/2017 0:48	126752
Bis(2-chloroethyl)ether	NELAP	19.5		ND	mg/Kg-dry	5	02/04/2017 0:48	126752
Bis(2-chloroisopropyl)ether	NELAP	13.7		ND	mg/Kg-dry	5	02/04/2017 0:48	126752
Bis(2-ethylhexyl)phthalate	NELAP	13.7		ND	mg/Kg-dry	5	02/04/2017 0:48	126752
Butyl benzyl phthalate	NELAP	13.7		ND	mg/Kg-dry	5	02/04/2017 0:48	126752
Carbazole	NELAP	19.5		ND	mg/Kg-dry	5	02/04/2017 0:48	126752
Dibenzofuran	NELAP	13.7		ND	mg/Kg-dry	5	02/04/2017 0:48	126752
Diethyl phthalate	NELAP	19.5		ND	mg/Kg-dry	5	02/04/2017 0:48	126752
Dimethyl phthalate	NELAP	13.7		ND	mg/Kg-dry	5	02/04/2017 0:48	126752
Di-n-butyl phthalate	NELAP	13.7		ND	mg/Kg-dry	5	02/04/2017 0:48	126752
Di-n-octyl phthalate	NELAP	13.7		ND	mg/Kg-dry	5	02/04/2017 0:48	126752
Hexachlorobenzene	NELAP	13.7		ND	mg/Kg-dry	5	02/04/2017 0:48	126752
Hexachlorobutadiene	NELAP	19.5		ND	mg/Kg-dry	5	02/04/2017 0:48	126752
Hexachlorocyclopentadiene	NELAP	13.7		ND	mg/Kg-dry	5	02/04/2017 0:48	126752
Hexachloroethane	NELAP	19.5		ND	mg/Kg-dry	5	02/04/2017 0:48	126752
Isophorone	NELAP	13.7		ND	mg/Kg-dry	5	02/04/2017 0:48	126752
m,p-Cresol	NELAP	19.5		ND	mg/Kg-dry	5	02/04/2017 0:48	126752
Nitrobenzene	NELAP	19.5		ND	mg/Kg-dry	5	02/04/2017 0:48	126752
N-Nitrosodimethylamine	NELAP	19.5		ND	mg/Kg-dry	5	02/04/2017 0:48	126752
N-Nitroso-di-n-propylamine	NELAP	19.5		ND	mg/Kg-dry	5	02/04/2017 0:48	126752
N-Nitrosodiphenylamine	NELAP	19.5		ND	mg/Kg-dry	5	02/04/2017 0:48	126752
o-Cresol	NELAP	19.5		ND	mg/Kg-dry	5	02/04/2017 0:48	126752
Pentachlorophenol	NELAP	78.1		ND	mg/Kg-dry	5	02/04/2017 0:48	126752
Phenol	NELAP	13.7		ND	mg/Kg-dry	5	02/04/2017 0:48	126752
Pyridine	NELAP	19.5		ND	mg/Kg-dry	5	02/04/2017 0:48	126752
1,2-Diphenylhydrazine		32.8		ND	mg/Kg-dry	5	02/04/2017 0:48	126752
Surr: 2,4,6-Tribromophenol		33-115		56.9	%REC	5	02/04/2017 0:48	126752
Surr: 2-Fluorobiphenyl		36.5-97.7		67.7	%REC	5	02/04/2017 0:48	126752
Surr: 2-Fluorophenol		39.4-92.8		42.0	%REC	5	02/04/2017 0:48	126752
Surr: Nitrobenzene-d5		34.7-90.1		59.3	%REC	5	02/04/2017 0:48	126752
Surr: Phenol-d5		42.8-106		49.4	%REC	5	02/04/2017 0:48	126752
Surr: p-Terphenyl-d14		43.7-124		76.0	%REC	5	02/04/2017 0:48	126752
Elevated reporting limit due to sample extract composition.								
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,1,2-Tetrachloroethane	NELAP	163		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
1,1,1-Trichloroethane	NELAP	163		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
1,1,2,2-Tetrachloroethane	NELAP	163		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
1,1,2-Trichloro-1,2,2-trifluoroethane		163		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
1,1,2-Trichloroethane	NELAP	163		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
1,1-Dichloro-2-propanone		1630		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
1,1-Dichloroethane	NELAP	163		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Lab ID: 17020090-006 **Client Sample ID:** SW-RES-REM-W3 (2)

Matrix: SOLID **Collection Date:** 02/01/2017 9:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1-Dichloroethene	NELAP	163		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
1,1-Dichloropropene	NELAP	163		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
1,2,3-Trichlorobenzene	NELAP	163		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
1,2,3-Trichloropropane	NELAP	326		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
1,2,3-Trimethylbenzene		163		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
1,2,4-Trichlorobenzene	NELAP	163		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
1,2,4-Trimethylbenzene	NELAP	163		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
1,2-Dibromo-3-chloropropane	NELAP	163		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
1,2-Dibromoethane	NELAP	163		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
1,2-Dichlorobenzene	NELAP	163		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
1,2-Dichloroethane	NELAP	163		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
1,2-Dichloropropane	NELAP	163		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
1,3,5-Trimethylbenzene	NELAP	163		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
1,3-Dichlorobenzene	NELAP	163		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
1,3-Dichloropropane	NELAP	163		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
1,4-Dichlorobenzene	NELAP	163		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
1-Chlorobutane	NELAP	163		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
2,2-Dichloropropane	NELAP	163		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
2-Butanone	NELAP	6520		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
2-Chlorotoluene	NELAP	163		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
2-Hexanone	NELAP	1630		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
2-Nitropropane	NELAP	1630		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
4-Chlorotoluene	NELAP	163		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
4-Methyl-2-pentanone	NELAP	1630		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
Acetone	NELAP	1630		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
Acrolein	NELAP	3260		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
Acrylonitrile	NELAP	326		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
Allyl chloride	NELAP	163		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
Benzene	NELAP	32.6		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
Bromobenzene	NELAP	163		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
Bromochloromethane	NELAP	163		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
Bromodichloromethane	NELAP	163		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
Bromoform	NELAP	163		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
Bromomethane	NELAP	326		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
Carbon disulfide	NELAP	163		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
Carbon tetrachloride	NELAP	163		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
Chlorobenzene	NELAP	163		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
Chloroethane	NELAP	326		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
Chloroform	NELAP	163		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
Chloromethane	NELAP	326		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
cis-1,2-Dichloroethene	NELAP	163		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
cis-1,3-Dichloropropene	NELAP	130		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
Cyclohexanone		3260		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
Dibromochloromethane	NELAP	163		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
Dibromomethane	NELAP	163		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
Dichlorodifluoromethane	NELAP	326		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761
Ethyl ether	NELAP	163		ND	µg/Kg-dry	12.5	02/03/2017 18:15	126761

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Lab ID: 17020090-006 **Client Sample ID:** SW-RES-REM-W3 (2)

Matrix: SOLID **Collection Date:** 02/01/2017 9:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Ethyl methacrylate	NELAP	163		**ND**	µg/Kg-dry	12.5	02/03/2017 18:15	126761
Ethylbenzene	NELAP	163		**ND**	µg/Kg-dry	12.5	02/03/2017 18:15	126761
Hexachlorobutadiene	NELAP	163		**ND**	µg/Kg-dry	12.5	02/03/2017 18:15	126761
Hexachloroethane	NELAP	163		**ND**	µg/Kg-dry	12.5	02/03/2017 18:15	126761
Iodomethane	NELAP	326		**ND**	µg/Kg-dry	12.5	02/03/2017 18:15	126761
Isopropylbenzene	NELAP	163		**ND**	µg/Kg-dry	12.5	02/03/2017 18:15	126761
m,p-Xylenes	NELAP	163		**ND**	µg/Kg-dry	12.5	02/03/2017 18:15	126761
Methacrylonitrile	NELAP	1630		**ND**	µg/Kg-dry	12.5	02/03/2017 18:15	126761
Methyl Methacrylate	NELAP	163		**ND**	µg/Kg-dry	12.5	02/03/2017 18:15	126761
Methyl tert-butyl ether	NELAP	65.2		**ND**	µg/Kg-dry	12.5	02/03/2017 18:15	126761
Methylacrylate	NELAP	326		**ND**	µg/Kg-dry	12.5	02/03/2017 18:15	126761
Methylene chloride	NELAP	163		**ND**	µg/Kg-dry	12.5	02/03/2017 18:15	126761
Naphthalene	NELAP	326		**427**	µg/Kg-dry	12.5	02/03/2017 18:15	126761
n-Butylbenzene	NELAP	163		**ND**	µg/Kg-dry	12.5	02/03/2017 18:15	126761
n-Heptane		1630		**ND**	µg/Kg-dry	12.5	02/03/2017 18:15	126761
n-Hexane		652		**ND**	µg/Kg-dry	12.5	02/03/2017 18:15	126761
Nitrobenzene	NELAP	3260		**ND**	µg/Kg-dry	12.5	02/03/2017 18:15	126761
n-Propylbenzene	NELAP	163		**ND**	µg/Kg-dry	12.5	02/03/2017 18:15	126761
o-Xylene	NELAP	163		**ND**	µg/Kg-dry	12.5	02/03/2017 18:15	126761
Pentachloroethane	NELAP	163		**ND**	µg/Kg-dry	12.5	02/03/2017 18:15	126761
p-Isopropyltoluene	NELAP	163		**ND**	µg/Kg-dry	12.5	02/03/2017 18:15	126761
Propionitrile	NELAP	1630		**ND**	µg/Kg-dry	12.5	02/03/2017 18:15	126761
sec-Butylbenzene	NELAP	163		**ND**	µg/Kg-dry	12.5	02/03/2017 18:15	126761
Styrene	NELAP	163		**ND**	µg/Kg-dry	12.5	02/03/2017 18:15	126761
tert-Butylbenzene	NELAP	163		**ND**	µg/Kg-dry	12.5	02/03/2017 18:15	126761
Tetrachloroethene	NELAP	163		**ND**	µg/Kg-dry	12.5	02/03/2017 18:15	126761
Tetrahydrofuran	NELAP	1630		**ND**	µg/Kg-dry	12.5	02/03/2017 18:15	126761
Toluene	NELAP	163		**ND**	µg/Kg-dry	12.5	02/03/2017 18:15	126761
trans-1,2-Dichloroethene	NELAP	163		**ND**	µg/Kg-dry	12.5	02/03/2017 18:15	126761
trans-1,3-Dichloropropene	NELAP	130		**ND**	µg/Kg-dry	12.5	02/03/2017 18:15	126761
Trichloroethene	NELAP	163		**ND**	µg/Kg-dry	12.5	02/03/2017 18:15	126761
Trichlorofluoromethane	NELAP	163		**ND**	µg/Kg-dry	12.5	02/03/2017 18:15	126761
Vinyl acetate	NELAP	1630		**ND**	µg/Kg-dry	12.5	02/03/2017 18:15	126761
Vinyl chloride	NELAP	65.2		**ND**	µg/Kg-dry	12.5	02/03/2017 18:15	126761
Surr: 1,2-Dichloroethane-d4		72.2-131		**97.6**	%REC	12.5	02/03/2017 18:15	126761
Surr: 4-Bromofluorobenzene		82.1-116		**103.4**	%REC	12.5	02/03/2017 18:15	126761
Surr: Dibromofluoromethane		77.7-120		**89.0**	%REC	12.5	02/03/2017 18:15	126761
Surr: Toluene-d8		86-116		**106.0**	%REC	12.5	02/03/2017 18:15	126761

Elevated reporting limit due to high levels of target and/or non-target analytes.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Lab ID: 17020090-007 **Client Sample ID:** FL-RES-REM-W4 (12)

Matrix: SOLID **Collection Date:** 01/31/2017 14:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**11.9**	%	1	02/01/2017 21:29	R228698
SW-846 3550B, 8015B, TOTAL PETROLEUM HYDROCARBONS (OA-2) BY GC/FID								
Diesel	NELAP	112	S#	**1950**	mg/Kg-dry	10	02/02/2017 12:28	126687
Kerosene	NELAP	112		**ND**	mg/Kg-dry	10	02/02/2017 12:28	126687
Mineral Spirits	NELAP	112		**ND**	mg/Kg-dry	10	02/02/2017 12:28	126687
Motor Oil	NELAP	112	#	**1040**	mg/Kg-dry	10	02/02/2017 12:28	126687
Surr: n-Tetracontane		20-152	S	**175.1**	%REC	10	02/02/2017 12:28	126687
Surrogate recovery is outside QC limits due to sample dilution.								
MS/MSD QC limits fo Diesel are not applicable due to high sample/spike ratio.								
Elevated reporting limit due to sample composition.								
SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Acenaphthene	NELAP	0.077	S	**7.48**	mg/Kg-dry	10	02/02/2017 12:02	126677
Acenaphthylene	NELAP	0.077	S	**14.4**	mg/Kg-dry	10	02/02/2017 12:02	126677
Anthracene	NELAP	0.077	S	**15.6**	mg/Kg-dry	10	02/02/2017 12:02	126677
Benzo(a)anthracene	NELAP	0.227	S	**10.7**	mg/Kg-dry	10	02/02/2017 12:02	126677
Benzo(a)pyrene	NELAP	0.077	S	**6.54**	mg/Kg-dry	10	02/02/2017 12:02	126677
Benzo(b)fluoranthene	NELAP	0.077	S	**8.25**	mg/Kg-dry	10	02/02/2017 12:02	126677
Benzo(g,h,i)perylene	NELAP	0.077	S	**1.12**	mg/Kg-dry	10	02/02/2017 12:02	126677
Benzo(k)fluoranthene	NELAP	0.077	S	**2.55**	mg/Kg-dry	10	02/02/2017 12:02	126677
Chrysene	NELAP	0.077	S	**9.96**	mg/Kg-dry	10	02/02/2017 12:02	126677
Dibenzo(a,h)anthracene	NELAP	0.077	S	**0.612**	mg/Kg-dry	10	02/02/2017 12:02	126677
Fluoranthene	NELAP	0.077	S	**22.0**	mg/Kg-dry	10	02/02/2017 12:02	126677
Fluorene	NELAP	0.077	S	**36.3**	mg/Kg-dry	10	02/02/2017 12:02	126677
Indeno(1,2,3-cd)pyrene	NELAP	0.077	S	**1.36**	mg/Kg-dry	10	02/02/2017 12:02	126677
Naphthalene	NELAP	0.385	S	**114**	mg/Kg-dry	50	02/02/2017 13:40	126677
Phenanthrene	NELAP	0.385	S	**41.6**	mg/Kg-dry	50	02/02/2017 13:40	126677
Pyrene	NELAP	0.077	S	**16.3**	mg/Kg-dry	10	02/02/2017 12:02	126677
Surr: 2-Fluorobiphenyl		19.9-83		**44.5**	%REC	10	02/02/2017 12:02	126677
Surr: Nitrobenzene-d5		23-84		**36.2**	%REC	10	02/02/2017 12:02	126677
Surr: p-Terphenyl-d14		33.5-106		**59.6**	%REC	10	02/02/2017 12:02	126677
MS and MSD did not recover within control limits due to sample composition.								
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2,4-Trichlorobenzene	NELAP	11.3	S	**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
1,2-Dichlorobenzene	NELAP	11.3		**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
1,3-Dichlorobenzene	NELAP	11.3		**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
1,4-Dichlorobenzene	NELAP	11.3	S	**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
2,4,5-Trichlorophenol	NELAP	7.94	S	**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
2,4,6-Trichlorophenol	NELAP	7.94	S	**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
2,4-Dichlorophenol	NELAP	11.3		**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
2,4-Dimethylphenol	NELAP	11.3	S	**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
2,4-Dinitrophenol	NELAP	22.7	S	**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
2,4-Dinitrotoluene	NELAP	7.94	S	**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
2,6-Dinitrotoluene	NELAP	7.94		**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
2-Chloronaphthalene	NELAP	7.94		**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
2-Chlorophenol	NELAP	11.3	S	**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
2-Methoxy-4-methylphenol		14.7		**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
2-Methylnaphthalene	NELAP	7.94		**64.2**	mg/Kg-dry	10	02/02/2017 11:54	126627

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Lab ID: 17020090-007 **Client Sample ID:** FL-RES-REM-W4 (12)

Matrix: SOLID **Collection Date:** 01/31/2017 14:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
2-Nitroaniline	NELAP	22.7		**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
2-Nitrophenol	NELAP	7.94		**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
3,3´-Dichlorobenzidine	NELAP	7.94		**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
3-Nitroaniline	NELAP	22.7		**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
4,6-Dinitro-2-methylphenol	NELAP	22.7		**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
4-Bromophenyl phenyl ether	NELAP	7.94		**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
4-Chloro-3-methylphenol	NELAP	11.3	S	**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
4-Chloroaniline	NELAP	11.3		**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
4-Chlorophenyl phenyl ether	NELAP	7.94		**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
4-Nitroaniline	NELAP	11.3		**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
4-Nitrophenol	NELAP	7.94	S	**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
Aniline	NELAP	11.3		**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
Azobenzene		7.94		**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
Benzoic acid	NELAP	34.0		**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
Benzyl alcohol	NELAP	11.3		**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
Bis(2-chloroethoxy)methane	NELAP	7.94		**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
Bis(2-chloroethyl)ether	NELAP	11.3		**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
Bis(2-chloroisopropyl)ether	NELAP	7.94		**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
Bis(2-ethylhexyl)phthalate	NELAP	7.94	S	**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
Butyl benzyl phthalate	NELAP	7.94		**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
Carbazole	NELAP	11.3		**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
Dibenzofuran	NELAP	7.94		**23.4**	mg/Kg-dry	10	02/02/2017 11:54	126627
Diethyl phthalate	NELAP	11.3		**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
Dimethyl phthalate	NELAP	7.94		**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
Di-n-butyl phthalate	NELAP	7.94		**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
Di-n-octyl phthalate	NELAP	7.94		**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
Hexachlorobenzene	NELAP	7.94	S	**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
Hexachlorobutadiene	NELAP	11.3	S	**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
Hexachlorocyclopentadiene	NELAP	7.94		**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
Hexachloroethane	NELAP	11.3	S	**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
Isophorone	NELAP	7.94		**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
m,p-Cresol	NELAP	11.3	S	**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
Nitrobenzene	NELAP	11.3	S	**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
N-Nitrosodimethylamine	NELAP	11.3		**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
N-Nitroso-di-n-propylamine	NELAP	11.3	S	**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
N-Nitrosodiphenylamine	NELAP	11.3		**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
o-Cresol	NELAP	11.3		**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
Pentachlorophenol	NELAP	45.4	S	**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
Phenol	NELAP	7.94	S	**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
Pyridine	NELAP	11.3	S	**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
1,2-Diphenylhydrazine		19.0		**ND**	mg/Kg-dry	10	02/02/2017 11:54	126627
Surr: 2,4,6-Tribromophenol		33-115		**95.8**	%REC	10	02/02/2017 11:54	126627
Surr: 2-Fluorobiphenyl		36.5-97.7		**90.6**	%REC	10	02/02/2017 11:54	126627
Surr: 2-Fluorophenol		39.4-92.8		**80.4**	%REC	10	02/02/2017 11:54	126627
Surr: Nitrobenzene-d5		34.7-90.1	S	**91.8**	%REC	10	02/02/2017 11:54	126627
Surr: Phenol-d5		42.8-106		**89.4**	%REC	10	02/02/2017 11:54	126627
Surr: p-Terphenyl-d14		43.7-124		**100.6**	%REC	10	02/02/2017 11:54	126627

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Lab ID: 17020090-007 **Client Sample ID:** FL-RES-REM-W4 (12)

Matrix: SOLID **Collection Date:** 01/31/2017 14:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Surrogate recovery is outside QC limits due to matrix interference.								
MS and MSD did not recover within control limits due to sample dilution.								
Elevated reporting limit due to sample extract composition.								
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,1,2-Tetrachloroethane	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
1,1,1-Trichloroethane	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
1,1,2,2-Tetrachloroethane	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
1,1,2-Trichloro-1,2,2-trifluoroethane		4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
1,1,2-Trichloroethane	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
1,1-Dichloro-2-propanone		40500		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
1,1-Dichloroethane	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
1,1-Dichloroethene	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
1,1-Dichloropropene	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
1,2,3-Trichlorobenzene	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
1,2,3-Trichloropropane	NELAP	8100		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
1,2,3-Trimethylbenzene		4050		**7740**	µg/Kg-dry	500	02/02/2017 13:51	126720
1,2,4-Trichlorobenzene	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
1,2,4-Trimethylbenzene	NELAP	4050		**23800**	µg/Kg-dry	500	02/02/2017 13:51	126720
1,2-Dibromo-3-chloropropane	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
1,2-Dibromoethane	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
1,2-Dichlorobenzene	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
1,2-Dichloroethane	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
1,2-Dichloropropane	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
1,3,5-Trimethylbenzene	NELAP	4050		**7130**	µg/Kg-dry	500	02/02/2017 13:51	126720
1,3-Dichlorobenzene	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
1,3-Dichloropropane	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
1,4-Dichlorobenzene	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
1-Chlorobutane	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
2,2-Dichloropropane	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
2-Butanone	NELAP	162000		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
2-Chlorotoluene	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
2-Hexanone	NELAP	40500		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
2-Nitropropane	NELAP	40500		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
4-Chlorotoluene	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
4-Methyl-2-pentanone	NELAP	40500		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
Acetone	NELAP	40500		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
Acrolein	NELAP	81000		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
Acrylonitrile	NELAP	8100		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
Allyl chloride	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
Benzene	NELAP	810		**16000**	µg/Kg-dry	500	02/02/2017 13:51	126720
Bromobenzene	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
Bromochloromethane	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
Bromodichloromethane	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
Bromoform	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
Bromomethane	NELAP	8100		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
Carbon disulfide	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
Carbon tetrachloride	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Lab ID: 17020090-007 **Client Sample ID:** FL-RES-REM-W4 (12)

Matrix: SOLID **Collection Date:** 01/31/2017 14:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Chlorobenzene	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
Chloroethane	NELAP	8100		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
Chloroform	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
Chloromethane	NELAP	8100		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
cis-1,2-Dichloroethene	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
cis-1,3-Dichloropropene	NELAP	3240		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
Cyclohexanone		81000		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
Dibromochloromethane	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
Dibromomethane	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
Dichlorodifluoromethane	NELAP	8100		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
Ethyl ether	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
Ethyl methacrylate	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
Ethylbenzene	NELAP	4050		**6020**	µg/Kg-dry	500	02/02/2017 13:51	126720
Hexachlorobutadiene	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
Hexachloroethane	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
Iodomethane	NELAP	8100		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
Isopropylbenzene	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
m,p-Xylenes	NELAP	4050		**45400**	µg/Kg-dry	500	02/02/2017 13:51	126720
Methacrylonitrile	NELAP	40500		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
Methyl Methacrylate	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
Methyl tert-butyl ether	NELAP	1620		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
Methylacrylate	NELAP	8100		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
Methylene chloride	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
Naphthalene	NELAP	16200		**284000**	µg/Kg-dry	1000	02/02/2017 14:44	126720
n-Butylbenzene	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
n-Heptane		40500		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
n-Hexane		16200		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
Nitrobenzene	NELAP	81000		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
n-Propylbenzene	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
o-Xylene	NELAP	4050		**17700**	µg/Kg-dry	500	02/02/2017 13:51	126720
Pentachloroethane	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
p-Isopropyltoluene	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
Propionitrile	NELAP	40500		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
sec-Butylbenzene	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
Styrene	NELAP	4050		**10200**	µg/Kg-dry	500	02/02/2017 13:51	126720
tert-Butylbenzene	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
Tetrachloroethene	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
Tetrahydrofuran	NELAP	40500		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
Toluene	NELAP	4050		**45100**	µg/Kg-dry	500	02/02/2017 13:51	126720
trans-1,2-Dichloroethene	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
trans-1,3-Dichloropropene	NELAP	3240		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
Trichloroethene	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
Trichlorofluoromethane	NELAP	4050		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
Vinyl acetate	NELAP	40500		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
Vinyl chloride	NELAP	1620		**ND**	µg/Kg-dry	500	02/02/2017 13:51	126720
Surr: 1,2-Dichloroethane-d4		72.2-131		**102.1**	%REC	500	02/02/2017 13:51	126720
Surr: 4-Bromofluorobenzene		82.1-116		**104.9**	%REC	500	02/02/2017 13:51	126720

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Lab ID: 17020090-007 **Client Sample ID:** FL-RES-REM-W4 (12)

Matrix: SOLID **Collection Date:** 01/31/2017 14:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Surr: Dibromofluoromethane		77.7-120		**97.3**	%REC	500	02/02/2017 13:51	126720
Surr: Toluene-d8		86-116		**100.9**	%REC	500	02/02/2017 13:51	126720

Allowable Marginal Exceedance of 2-butanone, 2-hexanone & trans-1,4-dichloro-2-butene in the LCS verified per 2009 TNI Standard (Volume 1, Module 4, section 1.7.4.2).

LCS recovered outside upper QC limits for 2-butanone and 2-hexanone. Sample results are below reporting limit. Data is reportable per 2009 TNI Standard (Volume1, Module 4, section 1.7.4.2).

Elevated reporting limit due to high levels of target and/or non-target analytes.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Lab Sample ID	Client Sample ID	Matrix	Fractions	Collection Date
17020090-001	SW-RES-REM-W2 (10)	Solid	4	01/31/2017 15:00
17020090-002	SW-RES-REM-W3 (10)	Solid	4	01/31/2017 15:20
17020090-003	SW-RES-REM-W4 (10)	Solid	4	01/31/2017 15:40
17020090-004	SW-RES-REM-W4 (2)	Solid	4	01/31/2017 16:00
17020090-005	SW-RES-REM-W2 (2)	Solid	4	02/01/2017 9:20
17020090-006	SW-RES-REM-W3 (2)	Solid	4	02/01/2017 9:40
17020090-007	FL-RES-REM-W4 (12)	Solid	4	01/31/2017 14:00

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			Prep Date/Time	Analysis Date/Time
17020090-001A	SW-RES-REM-W2 (10)	01/31/2017 15:00	02/01/2017 15:30		
	EPA SW846 3550C, 5035A, ASTM D2974				02/03/2017 14:45
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/03/2017 9:53	02/06/2017 18:15
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/03/2017 9:53	02/07/2017 17:35
	SW-846 3550B, 8270C, Semi-Volatile Organic Compounds by GC/MS			02/03/2017 10:13	02/04/2017 1:44
17020090-001D	SW-RES-REM-W2 (10)	01/31/2017 15:00	02/01/2017 15:30		
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/03/2017 16:01
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/06/2017 12:31
17020090-002A	SW-RES-REM-W3 (10)	01/31/2017 15:20	02/01/2017 15:30		
	EPA SW846 3550C, 5035A, ASTM D2974				02/03/2017 14:45
	SW-846 3550B, 8015B, Total Petroleum Hydrocarbons (OA-2) by GC/FID			02/02/2017 11:06	02/02/2017 15:02
	SW-846 3550B, 8015B, Total Petroleum Hydrocarbons (OA-2) by GC/FID			02/02/2017 11:06	02/03/2017 14:29
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/03/2017 9:53	02/06/2017 18:48
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/03/2017 9:53	02/07/2017 18:08
	SW-846 3550B, 8270C, Semi-Volatile Organic Compounds by GC/MS			02/03/2017 10:13	02/04/2017 3:08
17020090-002D	SW-RES-REM-W3 (10)	01/31/2017 15:20	02/01/2017 15:30		
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/03/2017 16:27
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/06/2017 12:58
17020090-003A	SW-RES-REM-W4 (10)	01/31/2017 15:40	02/01/2017 15:30		
	EPA SW846 3550C, 5035A, ASTM D2974				02/03/2017 14:45
	SW-846 3550B, 8015B, Total Petroleum Hydrocarbons (OA-2) by GC/FID			02/02/2017 11:06	02/02/2017 16:38
	SW-846 3550B, 8015B, Total Petroleum Hydrocarbons (OA-2) by GC/FID			02/02/2017 11:06	02/03/2017 14:48
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/03/2017 9:53	02/07/2017 18:41
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/03/2017 9:53	02/08/2017 14:57
	SW-846 3550B, 8270C, Semi-Volatile Organic Compounds by GC/MS			02/03/2017 10:13	02/03/2017 23:23
17020090-003D	SW-RES-REM-W4 (10)	01/31/2017 15:40	02/01/2017 15:30		
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/03/2017 16:55
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/06/2017 16:54
17020090-004A	SW-RES-REM-W4 (2)	01/31/2017 16:00	02/01/2017 15:30		
	EPA SW846 3550C, 5035A, ASTM D2974				02/03/2017 14:47
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/03/2017 9:53	02/06/2017 19:21
	SW-846 3550B, 8270C, Semi-Volatile Organic Compounds by GC/MS			02/03/2017 10:13	02/03/2017 23:51
17020090-004D	SW-RES-REM-W4 (2)	01/31/2017 16:00	02/01/2017 15:30		
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/03/2017 17:21
17020090-005A	SW-RES-REM-W2 (2)	02/01/2017 9:20	02/01/2017 15:30		
	EPA SW846 3550C, 5035A, ASTM D2974				02/03/2017 14:47

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			Prep Date/Time	Analysis Date/Time
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/03/2017 9:53	02/07/2017 15:56
	SW-846 3550B, 8270C, Semi-Volatile Organic Compounds by GC/MS			02/03/2017 10:13	02/04/2017 0:20
17020090-005D	SW-RES-REM-W2 (2)	02/01/2017 9:20	02/01/2017 15:30		
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/03/2017 17:48
17020090-006A	SW-RES-REM-W3 (2)	02/01/2017 9:40	02/01/2017 15:30		
	EPA SW846 3550C, 5035A, ASTM D2974				02/03/2017 14:47
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/03/2017 9:53	02/06/2017 19:53
	SW-846 3550B, 8270C, Semi-Volatile Organic Compounds by GC/MS			02/03/2017 10:13	02/04/2017 0:48
17020090-006D	SW-RES-REM-W3 (2)	02/01/2017 9:40	02/01/2017 15:30		
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/03/2017 18:15
17020090-007A	FL-RES-REM-W4 (12)	01/31/2017 14:00	02/01/2017 15:30		
	EPA SW846 3550C, 5035A, ASTM D2974				02/01/2017 21:29
	SW-846 3550B, 8015B, Total Petroleum Hydrocarbons (OA-2) by GC/FID			02/01/2017 20:22	02/02/2017 12:28
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/01/2017 18:18	02/02/2017 12:02
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/01/2017 18:18	02/02/2017 13:40
	SW-846 3550B, 8270C, Semi-Volatile Organic Compounds by GC/MS			02/01/2017 18:14	02/02/2017 11:54
17020090-007D	FL-RES-REM-W4 (12)	01/31/2017 14:00	02/01/2017 15:30		
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/02/2017 13:51
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/02/2017 14:44

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

EPA SW846 3550C, 5035A, ASTM D2974

Batch R228698 **SampType:** LCS Units %
SampID: LCS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	02/01/2017

Batch R228698 **SampType:** LCSQC Units %
SampID: LCSQC

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	02/01/2017

Batch R228804 **SampType:** LCS Units %
SampID: LCS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	02/03/2017

Batch R228804 **SampType:** LCSQC Units %
SampID: LCSQC

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	02/03/2017

SW-846 3550B, 8015B, TOTAL PETROLEUM HYDROCARBONS (OA-2) BY GC/FID

Batch 126687 **SampType:** MBLK Units mg/Kg
SampID: MBLK-126687

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Diesel	5.00		**ND**						02/02/2017
Kerosene	5.00		**ND**						02/02/2017
Mineral Spirits	5.00		**ND**						02/02/2017
Motor Oil	5.00		**ND**						02/02/2017
Surr: n-Tetracontane			**0.63**	0.6700		93.8	33.4	140	02/02/2017

Batch 126687 **SampType:** LCS Units mg/Kg
SampID: LCS-126687

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Diesel	5.00		**13.7**	16.70	0	81.8	35.2	131	02/02/2017
Surr: n-Tetracontane			**0.58**	0.6700		86.7	33.4	140	02/02/2017

Batch 126687 **SampType:** MS Units mg/Kg-dry
SampID: 17020090-007AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Diesel	113	S#	**2210**	37.69	1952	675.5	20.3	167	02/02/2017
Surr: n-Tetracontane			**2.29**	1.512		151.2	20	152	02/02/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 3550B, 8015B, TOTAL PETROLEUM HYDROCARBONS (OA-2) BY GC/FID

Batch 126687 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **34**

SampID: 17020090-007AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Diesel	113	S#	**1910**	37.59	1952	-122.1	2207	14.61	02/02/2017
Surr: n-Tetracontane		S	**2.45**	1.508		162.2			02/02/2017

SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126627 **SampType:** MBLK Units **%REC**

SampID: MBLK-126627

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Surr: Nitrobenzene-d5			**0.439**	0.8350		52.6	26.9	114	02/02/2017
Surr: p-Terphenyl-d14			**0.607**	0.8350		72.7	50.7	129	02/02/2017

Batch 126627 **SampType:** LCS Units **%REC**

SampID: LCS-126627

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Surr: Nitrobenzene-d5			**0.486**	0.8350		58.2	26.9	114	02/02/2017
Surr: p-Terphenyl-d14			**0.526**	0.8350		63.0	50.7	129	02/02/2017

Batch 126627 **SampType:** LCSG Units **%REC**

SampID: LCSDRO-126627

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Surr: Nitrobenzene-d5			**0.479**	0.8350		57.4	26.9	114	02/02/2017
Surr: p-Terphenyl-d14			**0.657**	0.8350		78.7	50.7	129	02/02/2017

Batch 126677 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK-126677

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Acenaphthene	0.003		**ND**						02/02/2017
Acenaphthylene	0.003		**ND**						02/02/2017
Anthracene	0.003		**ND**						02/02/2017
Benzo(a)anthracene	0.010		**ND**						02/02/2017
Benzo(a)pyrene	0.003		**ND**						02/02/2017
Benzo(b)fluoranthene	0.003		**ND**						02/02/2017
Benzo(g,h,i)perylene	0.003		**ND**						02/02/2017
Benzo(k)fluoranthene	0.003		**ND**						02/02/2017
Chrysene	0.003		**ND**						02/02/2017
Dibenzo(a,h)anthracene	0.003		**ND**						02/02/2017
Fluoranthene	0.003		**ND**						02/02/2017
Fluorene	0.003		**ND**						02/02/2017
Indeno(1,2,3-cd)pyrene	0.003		**ND**						02/02/2017
Naphthalene	0.003		**ND**						02/02/2017
Phenanthrene	0.003		**ND**						02/02/2017
Pyrene	0.003		**ND**						02/02/2017
Surr: 2-Fluorobiphenyl			**0.134**	0.1670		80.0	30	101	02/02/2017
Surr: Nitrobenzene-d5			**0.112**	0.1670		67.2	24.4	112	02/02/2017
Surr: p-Terphenyl-d14			**0.127**	0.1670		76.0	31.9	121	02/02/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126677 **SampType:** LCS Units **mg/Kg**

SampID: LCS-126677

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Acenaphthene	0.003		**0.110**	0.1670	0	65.8	47.9	103	02/02/2017
Acenaphthylene	0.003		**0.109**	0.1670	0	65.1	47.3	104	02/02/2017
Anthracene	0.003		**0.095**	0.1670	0	57.2	42.1	98.1	02/02/2017
Benzo(a)anthracene	0.010		**0.116**	0.1670	0	69.3	41.4	107	02/02/2017
Benzo(a)pyrene	0.003		**0.115**	0.1670	0	68.9	43.1	102	02/02/2017
Benzo(b)fluoranthene	0.003		**0.115**	0.1670	0	69.1	40.9	109	02/02/2017
Benzo(g,h,i)perylene	0.003		**0.115**	0.1670	0	68.7	36.2	113	02/02/2017
Benzo(k)fluoranthene	0.003		**0.112**	0.1670	0	67.1	45.4	107	02/02/2017
Chrysene	0.003		**0.111**	0.1670	0	66.2	47.9	107	02/02/2017
Dibenzo(a,h)anthracene	0.003		**0.121**	0.1670	0	72.6	41.2	112	02/02/2017
Fluoranthene	0.003		**0.096**	0.1670	0	57.3	45	104	02/02/2017
Fluorene	0.003		**0.109**	0.1670	0	65.4	47.8	106	02/02/2017
Indeno(1,2,3-cd)pyrene	0.003		**0.115**	0.1670	0	68.9	40	112	02/02/2017
Naphthalene	0.003		**0.094**	0.1670	0	56.1	42.9	93.3	02/02/2017
Phenanthrene	0.003		**0.097**	0.1670	0	57.8	44.2	99.2	02/02/2017
Pyrene	0.003		**0.094**	0.1670	0	56.2	41.3	103	02/02/2017
Surr: 2-Fluorobiphenyl			**0.085**	0.1670		51.1	30	101	02/02/2017
Surr: Nitrobenzene-d5			**0.077**	0.1670		45.9	24.4	112	02/02/2017
Surr: p-Terphenyl-d14			**0.090**	0.1670		53.6	31.9	121	02/02/2017

Batch 126677 **SampType:** MS Units **mg/Kg-dry**

SampID: 17020090-007AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Acenaphthene	0.077	S	**6.46**	0.3782	7.476	-267.5	30.6	109	02/02/2017
Acenaphthylene	0.077	S	**11.5**	0.3782	14.38	-754.8	28	110	02/02/2017
Anthracene	0.077	S	**13.8**	0.3782	15.62	-469.4	41.4	94.3	02/02/2017
Benzo(a)anthracene	0.226	S	**9.26**	0.3782	10.68	-373.4	28.6	113	02/02/2017
Benzo(a)pyrene	0.077	S	**5.47**	0.3782	6.537	-281.9	37.9	102	02/02/2017
Benzo(b)fluoranthene	0.077	S	**7.21**	0.3782	8.246	-273.0	37.1	112	02/02/2017
Benzo(g,h,i)perylene	0.077	S	**1.05**	0.3782	1.116	-16.8	7.28	119	02/02/2017
Benzo(k)fluoranthene	0.077	S	**2.63**	0.3782	2.553	20.5	34	115	02/02/2017
Chrysene	0.077	S	**8.39**	0.3782	9.961	-415.5	23.1	116	02/02/2017
Dibenzo(a,h)anthracene	0.077	S	**0.701**	0.3782	0.6115	23.7	23.9	110	02/02/2017
Fluoranthene	0.077	S	**18.9**	0.3782	21.99	-812.3	20.8	124	02/02/2017
Fluorene	0.077	S	**29.8**	0.3782	36.32	-1733	44.3	96.6	02/02/2017
Indeno(1,2,3-cd)pyrene	0.077	S	**1.28**	0.3782	1.356	-20.4	12.6	119	02/02/2017
Naphthalene	0.385	S	**85.1**	0.3782	113.9	-7615	17.8	110	02/02/2017
Phenanthrene	0.385	S	**32.0**	0.3782	41.63	-2559	22.3	117	02/02/2017
Pyrene	0.077	S	**14.2**	0.3782	16.35	-574.0	20.6	121	02/02/2017
Surr: 2-Fluorobiphenyl			**0.128**	0.3782		33.7	19.9	83	02/02/2017
Surr: Nitrobenzene-d5			**0.110**	0.3782		29.1	23	84	02/02/2017
Surr: p-Terphenyl-d14			**0.249**	0.3782		65.9	33.5	106	02/02/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126677 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **49.7**

SampID: 17020090-007AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Acenaphthene	0.077	S	**5.22**	0.3792	7.476	-596.2	6.465	21.39	02/02/2017
Acenaphthylene	0.077	S	**9.06**	0.3792	14.38	-1401	11.52	23.89	02/02/2017
Anthracene	0.077	S	**10.8**	0.3792	15.62	-1282	13.84	25.10	02/02/2017
Benzo(a)anthracene	0.227	S	**7.41**	0.3792	10.68	-861.7	9.264	22.26	02/02/2017
Benzo(a)pyrene	0.077	S	**4.17**	0.3792	6.537	-624.6	5.471	27.02	02/02/2017
Benzo(b)fluoranthene	0.077	S	**5.55**	0.3792	8.246	-712.1	7.214	26.14	02/02/2017
Benzo(g,h,i)perylene	0.077	S	**0.776**	0.3792	1.116	-89.8	1.053	30.32	02/02/2017
Benzo(k)fluoranthene	0.077	S	**2.05**	0.3792	2.553	-132.0	2.631	24.69	02/02/2017
Chrysene	0.077	S	**6.87**	0.3792	9.961	-814.3	8.390	19.87	02/02/2017
Dibenzo(a,h)anthracene	0.077	S	**0.525**	0.3792	0.6115	-22.7	0.7013	28.70	02/02/2017
Fluoranthene	0.077	S	**15.0**	0.3792	21.99	-1842	18.92	23.07	02/02/2017
Fluorene	0.077	S	**24.1**	0.3792	36.32	-3216	29.76	20.95	02/02/2017
Indeno(1,2,3-cd)pyrene	0.077	S	**0.970**	0.3792	1.356	-101.9	1.279	27.50	02/02/2017
Naphthalene	0.386	S	**80.2**	0.3792	113.9	-8889	85.06	5.94	02/02/2017
Phenanthrene	0.386	S	**28.3**	0.3792	41.63	-3522	31.95	12.22	02/02/2017
Pyrene	0.077	S	**10.8**	0.3792	16.35	-1456	14.18	26.80	02/02/2017
Surr: 2-Fluorobiphenyl			**0.118**	0.3792		31.1			02/02/2017
Surr: Nitrobenzene-d5			**0.118**	0.3792		31.1			02/02/2017
Surr: p-Terphenyl-d14			**0.191**	0.3792		50.3			02/02/2017

Batch 126744 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK-126744

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Acenaphthene	0.003		**ND**						02/06/2017
Acenaphthylene	0.003		**ND**						02/06/2017
Anthracene	0.003		**ND**						02/06/2017
Benzo(a)anthracene	0.010		**ND**						02/06/2017
Benzo(a)pyrene	0.003		**ND**						02/06/2017
Benzo(b)fluoranthene	0.003		**ND**						02/06/2017
Benzo(g,h,i)perylene	0.003		**ND**						02/06/2017
Benzo(k)fluoranthene	0.003		**ND**						02/06/2017
Chrysene	0.003		**ND**						02/06/2017
Dibenzo(a,h)anthracene	0.003		**ND**						02/06/2017
Fluoranthene	0.003		**ND**						02/06/2017
Fluorene	0.003		**ND**						02/06/2017
Indeno(1,2,3-cd)pyrene	0.003		**ND**						02/06/2017
Naphthalene	0.003		**ND**						02/06/2017
Phenanthrene	0.003		**ND**						02/06/2017
Pyrene	0.003		**ND**						02/06/2017
Surr: 2-Fluorobiphenyl			**0.111**	0.1670		66.7	30	101	02/06/2017
Surr: Nitrobenzene-d5			**0.080**	0.1670		48.0	24.4	112	02/06/2017
Surr: p-Terphenyl-d14			**0.113**	0.1670		67.9	31.9	121	02/06/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126744 **SampType:** LCS Units **mg/Kg**

SampID: LCS-126744

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Acenaphthene	0.003		**0.117**	0.1670	0	70.0	47.9	103	02/06/2017
Acenaphthylene	0.003		**0.116**	0.1670	0	69.5	47.3	104	02/06/2017
Anthracene	0.003		**0.114**	0.1670	0	68.2	42.1	98.1	02/06/2017
Benzo(a)anthracene	0.010		**0.133**	0.1670	0	79.9	41.4	107	02/06/2017
Benzo(a)pyrene	0.003		**0.126**	0.1670	0	75.2	43.1	102	02/06/2017
Benzo(b)fluoranthene	0.003		**0.144**	0.1670	0	85.9	40.9	109	02/06/2017
Benzo(g,h,i)perylene	0.003		**0.136**	0.1670	0	81.7	36.2	113	02/06/2017
Benzo(k)fluoranthene	0.003		**0.134**	0.1670	0	80.2	45.4	107	02/06/2017
Chrysene	0.003		**0.127**	0.1670	0	75.8	47.9	107	02/06/2017
Dibenzo(a,h)anthracene	0.003		**0.144**	0.1670	0	86.4	41.2	112	02/06/2017
Fluoranthene	0.003		**0.122**	0.1670	0	72.8	45	104	02/06/2017
Fluorene	0.003		**0.124**	0.1670	0	74.2	47.8	106	02/06/2017
Indeno(1,2,3-cd)pyrene	0.003		**0.136**	0.1670	0	81.3	40	112	02/06/2017
Naphthalene	0.003		**0.094**	0.1670	0	56.0	42.9	93.3	02/06/2017
Phenanthrene	0.003		**0.119**	0.1670	0	71.4	44.2	99.2	02/06/2017
Pyrene	0.003		**0.122**	0.1670	0	72.9	41.3	103	02/06/2017
Surr: 2-Fluorobiphenyl			**0.114**	0.1670		68.5	30	101	02/06/2017
Surr: Nitrobenzene-d5			**0.093**	0.1670		55.9	24.4	112	02/06/2017
Surr: p-Terphenyl-d14			**0.112**	0.1670		67.4	31.9	121	02/06/2017

Batch 126744 **SampType:** MS Units **mg/Kg-dry**

SampID: 17020090-005AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Acenaphthene	0.105		**0.152**	0.2072	0	73.4	30.6	109	02/07/2017
Acenaphthylene	0.105		**0.227**	0.2072	0.08890	66.9	28	110	02/07/2017
Anthracene	0.105		**0.188**	0.2072	0.05582	63.9	41.4	94.3	02/07/2017
Benzo(a)anthracene	0.310		**0.829**	0.2072	0.6946	65.0	28.6	113	02/07/2017
Benzo(a)pyrene	0.105		**0.804**	0.2072	0.6285	84.9	37.9	102	02/07/2017
Benzo(b)fluoranthene	0.105		**1.26**	0.2072	1.050	99.0	37.1	112	02/07/2017
Benzo(g,h,i)perylene	0.105		**0.530**	0.2072	0.3773	73.9	7.28	119	02/07/2017
Benzo(k)fluoranthene	0.105		**0.590**	0.2072	0.3752	103.9	34	115	02/07/2017
Chrysene	0.105		**0.847**	0.2072	0.7184	62.0	23.1	116	02/07/2017
Dibenzo(a,h)anthracene	0.105		**0.287**	0.2072	0.1292	76.4	23.9	110	02/07/2017
Fluoranthene	0.105		**0.779**	0.2072	0.6492	62.5	20.8	124	02/07/2017
Fluorene	0.105		**0.163**	0.2072	0	78.8	44.3	96.6	02/07/2017
Indeno(1,2,3-cd)pyrene	0.105		**0.540**	0.2072	0.3825	75.9	12.6	119	02/07/2017
Naphthalene	0.105		**0.180**	0.2072	0	86.8	17.8	110	02/07/2017
Phenanthrene	0.105		**0.331**	0.2072	0.2119	57.4	22.3	117	02/07/2017
Pyrene	0.105		**0.795**	0.2072	0.6585	66.0	20.6	121	02/07/2017
Surr: 2-Fluorobiphenyl			**0.115**	0.2072		55.4	19.9	83	02/07/2017
Surr: Nitrobenzene-d5			**0.072**	0.2072		34.9	23	84	02/07/2017
Surr: p-Terphenyl-d14			**0.139**	0.2072		66.9	33.5	106	02/07/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126744 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **49.7**

SampID: 17020090-005AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Acenaphthene	0.106		**0.164**	0.2078	0	78.8	0.1520	7.51	02/07/2017
Acenaphthylene	0.106		**0.239**	0.2078	0.08890	72.0	0.2275	4.74	02/07/2017
Anthracene	0.106		**0.227**	0.2078	0.05582	82.4	0.1882	18.75	02/07/2017
Benzo(a)anthracene	0.311		**0.819**	0.2078	0.6946	60.0	0.8293	1.21	02/07/2017
Benzo(a)pyrene	0.106	S	**0.696**	0.2078	0.6285	32.4	0.8045	14.47	02/07/2017
Benzo(b)fluoranthene	0.106	S	**1.11**	0.2078	1.050	29.6	1.255	12.13	02/07/2017
Benzo(g,h,i)perylene	0.106		**0.459**	0.2078	0.3773	39.5	0.5305	14.35	02/07/2017
Benzo(k)fluoranthene	0.106		**0.531**	0.2078	0.3752	75.0	0.5904	10.60	02/07/2017
Chrysene	0.106		**0.807**	0.2078	0.7184	42.6	0.8469	4.84	02/07/2017
Dibenzo(a,h)anthracene	0.106		**0.275**	0.2078	0.1292	70.1	0.2875	4.49	02/07/2017
Fluoranthene	0.106		**0.800**	0.2078	0.6492	72.4	0.7786	2.66	02/07/2017
Fluorene	0.106		**0.180**	0.2078	0	86.8	0.1634	9.94	02/07/2017
Indeno(1,2,3-cd)pyrene	0.106		**0.500**	0.2078	0.3825	56.5	0.5398	7.67	02/07/2017
Naphthalene	0.106		**0.223**	0.2078	0	107.3	0.1799	21.37	02/07/2017
Phenanthrene	0.106		**0.350**	0.2078	0.2119	66.2	0.3309	5.47	02/07/2017
Pyrene	0.106		**0.815**	0.2078	0.6585	75.4	0.7952	2.49	02/07/2017
Surr: 2-Fluorobiphenyl			**0.136**	0.2078		65.4			02/07/2017
Surr: Nitrobenzene-d5			**0.087**	0.2078		41.9			02/07/2017
Surr: p-Terphenyl-d14			**0.150**	0.2078		72.4			02/07/2017

Batch 126752 **SampType:** MBLK Units **%REC**

SampID: MBLK-126752

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Surr: Nitrobenzene-d5			**0.485**	0.8350		58.1	26.9	114	02/06/2017
Surr: p-Terphenyl-d14			**0.602**	0.8350		72.1	50.7	129	02/06/2017

Batch 126752 **SampType:** LCS Units **%REC**

SampID: LCS-126752

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Surr: Nitrobenzene-d5			**0.590**	0.8350		70.7	26.9	114	02/06/2017
Surr: p-Terphenyl-d14			**0.661**	0.8350		79.2	50.7	129	02/06/2017

Batch 126752 **SampType:** LCSG Units **%REC**

SampID: LCSDRO-126752

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Surr: Nitrobenzene-d5			**0.456**	0.8350		54.6	26.9	114	02/06/2017
Surr: p-Terphenyl-d14			**0.597**	0.8350		71.5	50.7	129	02/06/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126627 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK-126627

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,2,4-Trichlorobenzene	0.500		ND						02/01/2017
1,2-Dichlorobenzene	0.500		ND						02/01/2017
1,3-Dichlorobenzene	0.500		ND						02/01/2017
1,4-Dichlorobenzene	0.500		ND						02/01/2017
2,4,5-Trichlorophenol	0.350		ND						02/01/2017
2,4,6-Trichlorophenol	0.350		ND						02/01/2017
2,4-Dichlorophenol	0.500		ND						02/01/2017
2,4-Dimethylphenol	0.500		ND						02/01/2017
2,4-Dinitrophenol	1.00		ND						02/01/2017
2,4-Dinitrotoluene	0.350		ND						02/01/2017
2,6-Dinitrotoluene	0.350		ND						02/01/2017
2-Chloronaphthalene	0.350		ND						02/01/2017
2-Chlorophenol	0.500		ND						02/01/2017
2-Methoxy-4-methylphenol	0.650		ND						02/01/2017
2-Methylnaphthalene	0.350		ND						02/01/2017
2-Nitroaniline	1.00		ND						02/01/2017
2-Nitrophenol	0.350		ND						02/01/2017
3,3´-Dichlorobenzidine	0.350		ND						02/01/2017
3-Nitroaniline	1.00		ND						02/01/2017
4,6-Dinitro-2-methylphenol	1.00		ND						02/01/2017
4-Bromophenyl phenyl ether	0.350		ND						02/01/2017
4-Chloro-3-methylphenol	0.500		ND						02/01/2017
4-Chloroaniline	0.500		ND						02/01/2017
4-Chlorophenyl phenyl ether	0.350		ND						02/01/2017
4-Nitroaniline	0.500		ND						02/01/2017
4-Nitrophenol	0.350		ND						02/01/2017
Aniline	0.500		ND						02/01/2017
Azobenzene	0.350		ND						02/01/2017
Benzoic acid	1.50		ND						02/01/2017
Benzyl alcohol	0.500		ND						02/01/2017
Bis(2-chloroethoxy)methane	0.350		ND						02/01/2017
Bis(2-chloroethyl)ether	0.500		ND						02/01/2017
Bis(2-chloroisopropyl)ether	0.350		ND						02/01/2017
Bis(2-ethylhexyl)phthalate	0.350		ND						02/01/2017
Butyl benzyl phthalate	0.350		ND						02/01/2017
Carbazole	0.500		ND						02/01/2017
Dibenzofuran	0.350		ND						02/01/2017
Diethyl phthalate	0.500		ND						02/01/2017
Dimethyl phthalate	0.350		ND						02/01/2017
Di-n-butyl phthalate	0.350		ND						02/01/2017
Di-n-octyl phthalate	0.350		ND						02/01/2017
Hexachlorobenzene	0.350		ND						02/01/2017
Hexachlorobutadiene	0.500		ND						02/01/2017
Hexachlorocyclopentadiene	0.350		ND						02/01/2017
Hexachloroethane	0.500		ND						02/01/2017
Isophorone	0.350		ND						02/01/2017
m,p-Cresol	0.500		ND						02/01/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126627 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK-126627

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Nitrobenzene	0.500		**ND**						02/01/2017
N-Nitrosodimethylamine	0.500		**ND**						02/01/2017
N-Nitroso-di-n-propylamine	0.500		**ND**						02/01/2017
N-Nitrosodiphenylamine	0.500		**ND**						02/01/2017
o-Cresol	0.500		**ND**						02/01/2017
Pentachlorophenol	2.00		**ND**						02/01/2017
Phenol	0.350		**ND**						02/01/2017
Pyridine	0.500		**ND**						02/01/2017
1,2-Diphenylhydrazine	0.840		**ND**						02/01/2017
Surr: 2,4,6-Tribromophenol			**1.17**	1.670		69.9	50.5	116	02/01/2017
Surr: 2-Fluorobiphenyl			**0.589**	0.8350		70.5	47.4	102	02/01/2017
Surr: 2-Fluorobiphenyl			**0.589**	0.8350		70.5	47.8	104	02/02/2017
Surr: 2-Fluorophenol			**1.01**	1.670		60.5	43.7	98.6	02/01/2017
Surr: Nitrobenzene-d5			**0.497**	0.8350		59.6	39	97.3	02/01/2017
Surr: Phenol-d5			**1.28**	1.670		76.5	48.1	104	02/01/2017
Surr: p-Terphenyl-d14			**0.619**	0.8350		74.1	53.2	119	02/01/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126627 **SampType:** LCS Units **mg/Kg**

SampID: LCS-126627

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,2,4-Trichlorobenzene	0.500		**1.23**	1.670	0	73.9	52.4	102	02/01/2017
1,4-Dichlorobenzene	0.500		**1.08**	1.670	0	64.9	43	86.1	02/01/2017
2,4,5-Trichlorophenol	0.350		**1.19**	1.670	0	71.1	55.1	106	02/01/2017
2,4,6-Trichlorophenol	0.350		**1.09**	1.670	0	65.0	54	105	02/01/2017
2,4-Dimethylphenol	0.500		**1.07**	1.670	0	64.1	46.8	103	02/01/2017
2,4-Dinitrophenol	1.00		**1.06**	1.670	0	63.4	38	95.6	02/01/2017
2,4-Dinitrotoluene	0.350		**1.54**	1.670	0	92.4	55.6	109	02/01/2017
2-Chlorophenol	0.500		**1.14**	1.670	0	68.0	51.1	92.4	02/01/2017
4-Chloro-3-methylphenol	0.500		**1.22**	1.670	0	73.3	52	97.3	02/01/2017
4-Nitrophenol	0.350		**1.17**	1.670	0	70.3	48	99.6	02/01/2017
Bis(2-ethylhexyl)phthalate	0.350		**1.14**	1.670	0	68.5	48.3	106	02/01/2017
Diethyl phthalate	0.500		**1.55**	1.670	0	92.7	56.9	103	02/01/2017
Dimethyl phthalate	0.350		**1.50**	1.670	0	90.0	56.4	98.1	02/01/2017
Di-n-butyl phthalate	0.350		**1.47**	1.670	0	88.0	54.8	100	02/01/2017
Hexachlorobenzene	0.350		**1.22**	1.670	0	73.1	54.1	102	02/01/2017
Hexachlorobutadiene	0.500		**1.17**	1.670	0	70.2	46	103	02/01/2017
Hexachloroethane	0.500		**1.28**	1.670	0	76.6	45	90	02/01/2017
m,p-Cresol	0.500		**1.24**	1.670	0	74.5	53	98.5	02/01/2017
Nitrobenzene	0.500		**1.14**	1.670	0	68.1	44.4	86.6	02/01/2017
N-Nitroso-di-n-propylamine	0.500		**1.38**	1.670	0	82.5	39.8	94.3	02/01/2017
o-Cresol	0.500		**1.24**	1.670	0	74.4	52.1	96.4	02/01/2017
Pentachlorophenol	2.00		**ND**	1.670	0	51.9	37	91.7	02/01/2017
Phenol	0.350		**1.19**	1.670	0	71.3	52.9	95.6	02/01/2017
Pyridine	0.500		**0.670**	1.670	0	40.1	30	77.1	02/01/2017
Surr: 2,4,6-Tribromophenol			**1.24**	1.670		74.5	50.5	116	02/01/2017
Surr: 2-Fluorobiphenyl			**0.576**	0.8350		69.0	47.8	104	02/02/2017
Surr: 2-Fluorobiphenyl			**0.565**	0.8350		67.7	47.4	102	02/01/2017
Surr: 2-Fluorophenol			**0.939**	1.670		56.2	43.7	98.6	02/01/2017
Surr: Nitrobenzene-d5			**0.547**	0.8350		65.5	39	97.3	02/01/2017
Surr: Phenol-d5			**1.19**	1.670		71.1	48.1	104	02/01/2017
Surr: p-Terphenyl-d14			**0.639**	0.8350		76.5	53.2	119	02/01/2017

Batch 126627 **SampType:** LCSG Units **%REC**

SampID: LCSDRO-126627

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Surr: 2-Fluorobiphenyl			**0.626**	0.8350		74.9	47.8	104	02/02/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126627 **SampType:** MS Units **mg/Kg-dry**

SampID: 17020090-007AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,2,4-Trichlorobenzene	11.2	S	**ND**	3.754	0	0	35.9	102	02/02/2017
1,4-Dichlorobenzene	11.2	S	**ND**	3.754	0	0	29.8	95.5	02/02/2017
2,4,5-Trichlorophenol	7.87		**ND**	3.754	0	67.5	38.6	123	02/02/2017
2,4,6-Trichlorophenol	7.87	S	**ND**	3.754	0	0	35.9	123	02/02/2017
2,4-Dimethylphenol	11.2		**ND**	3.754	6.614	48.0	38.3	88	02/02/2017
2,4-Dinitrophenol	22.5	S	**ND**	3.754	0	0	1.88	162	02/02/2017
2,4-Dinitrotoluene	7.87		**ND**	3.754	0	73.1	37.5	107	02/02/2017
2-Chlorophenol	11.2	S	**ND**	3.754	0	0	22.6	108	02/02/2017
4-Chloro-3-methylphenol	11.2		**ND**	3.754	0	67.5	19.3	131	02/02/2017
4-Nitrophenol	7.87	S	**ND**	3.754	0	0	27.6	123	02/02/2017
Bis(2-ethylhexyl)phthalate	7.87		**ND**	3.754	0	72.9	56.3	109	02/02/2017
Diethyl phthalate	11.2		**ND**	3.754	0	83.8	51.7	106	02/02/2017
Dimethyl phthalate	7.87		**ND**	3.754	0	84.6	58.8	104	02/02/2017
Di-n-butyl phthalate	7.87		**ND**	3.754	0	68.1	54.3	105	02/02/2017
Hexachlorobenzene	7.87	S	**ND**	3.754	0	0	55.9	106	02/02/2017
Hexachlorobutadiene	11.2	S	**ND**	3.754	0	0	35.7	100	02/02/2017
Hexachloroethane	11.2	S	**ND**	3.754	0	103.4	38.9	89.9	02/02/2017
m,p-Cresol	11.2		**ND**	3.754	0	77.8	37.6	93.7	02/02/2017
Nitrobenzene	11.2	S	**ND**	3.754	0	0	51.8	104	02/02/2017
N-Nitroso-di-n-propylamine	11.2		**ND**	3.754	0	73.9	45.5	99.1	02/02/2017
o-Cresol	11.2		**ND**	3.754	0	79.4	43	101	02/02/2017
Pentachlorophenol	45.0	S	**ND**	3.754	0	0	18.5	113	02/02/2017
Phenol	7.87		**ND**	3.754	0	78.2	20.8	110	02/02/2017
Pyridine	11.2	S	**ND**	3.754	0	0	3.61	74.3	02/02/2017
Surr: 2,4,6-Tribromophenol			**2.99**	3.754		79.6	33	115	02/02/2017
Surr: 2-Fluorobiphenyl			**1.21**	1.877		64.3	36.5	97.7	02/02/2017
Surr: 2-Fluorophenol			**2.29**	3.754		60.9	39.4	92.8	02/02/2017
Surr: Nitrobenzene-d5			**1.10**	1.877		58.7	34.7	90.1	02/02/2017
Surr: Phenol-d5			**2.66**	3.754		70.9	42.8	106	02/02/2017
Surr: p-Terphenyl-d14			**1.33**	1.877		71.1	43.7	124	02/02/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126627 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **40**

SampID: 17020090-007AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
1,2,4-Trichlorobenzene	11.3	S	**ND**	3.774	0	0	0	0.00	02/02/2017
1,4-Dichlorobenzene	11.3	S	**ND**	3.774	0	0	0	0.00	02/02/2017
2,4,5-Trichlorophenol	7.91	S	**ND**	3.774	0	0	2.533	0.00	02/02/2017
2,4,6-Trichlorophenol	7.91	S	**ND**	3.774	0	0	0	0.00	02/02/2017
2,4-Dimethylphenol	11.3	S	**ND**	3.774	6.614	11.4	8.416	0.00	02/02/2017
2,4-Dinitrophenol	22.6	S	**ND**	3.774	0	0	0	0.00	02/02/2017
2,4-Dinitrotoluene	7.91	S	**ND**	3.774	0	0	2.743	0.00	02/02/2017
2-Chlorophenol	11.3	S	**ND**	3.774	0	0	0	0.00	02/02/2017
4-Chloro-3-methylphenol	11.3	S	**ND**	3.774	0	0	2.533	0.00	02/02/2017
4-Nitrophenol	7.91	S	**ND**	3.774	0	0	0	0.00	02/02/2017
Bis(2-ethylhexyl)phthalate	7.91	S	**ND**	3.774	0	0	2.735	0.00	02/02/2017
Diethyl phthalate	11.3		**ND**	3.774	0	73.7	3.147	0.00	02/02/2017
Dimethyl phthalate	7.91		**ND**	3.774	0	72.1	3.177	0.00	02/02/2017
Di-n-butyl phthalate	7.91		**ND**	3.774	0	62.7	2.555	0.00	02/02/2017
Hexachlorobenzene	7.91	S	**ND**	3.774	0	0	0	0.00	02/02/2017
Hexachlorobutadiene	11.3	S	**ND**	3.774	0	0	0	0.00	02/02/2017
Hexachloroethane	11.3	S	**ND**	3.774	0	108.0	3.882	0.00	02/02/2017
m,p-Cresol	11.3	S	**ND**	3.774	0	0	2.923	0.00	02/02/2017
Nitrobenzene	11.3	S	**ND**	3.774	0	0	0	0.00	02/02/2017
N-Nitroso-di-n-propylamine	11.3	S	**ND**	3.774	0	0	2.773	0.00	02/02/2017
o-Cresol	11.3		**ND**	3.774	0	71.5	2.983	0.00	02/02/2017
Pentachlorophenol	45.2	S	**ND**	3.774	0	0	0	0.00	02/02/2017
Phenol	7.91	S	**ND**	3.774	0	0	2.938	0.00	02/02/2017
Pyridine	11.3	S	**ND**	3.774	0	0	0	0.00	02/02/2017
Surr: 2,4,6-Tribromophenol			**2.96**	3.774		78.4			02/02/2017
Surr: 2-Fluorobiphenyl			**1.15**	1.887		60.7			02/02/2017
Surr: 2-Fluorophenol			**1.97**	3.774		52.1			02/02/2017
Surr: Nitrobenzene-d5			**1.15**	1.887		61.1			02/02/2017
Surr: Phenol-d5			**2.21**	3.774		58.5			02/02/2017
Surr: p-Terphenyl-d14			**1.30**	1.887		68.7			02/02/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126752 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK-126752

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,2,4-Trichlorobenzene	0.500		ND						02/03/2017
1,2-Dichlorobenzene	0.500		ND						02/03/2017
1,3-Dichlorobenzene	0.500		ND						02/03/2017
1,4-Dichlorobenzene	0.500		ND						02/03/2017
2,4,5-Trichlorophenol	0.350		ND						02/03/2017
2,4,6-Trichlorophenol	0.350		ND						02/03/2017
2,4-Dichlorophenol	0.500		ND						02/03/2017
2,4-Dimethylphenol	0.500		ND						02/03/2017
2,4-Dinitrophenol	1.00		ND						02/03/2017
2,4-Dinitrotoluene	0.350		ND						02/03/2017
2,6-Dinitrotoluene	0.350		ND						02/03/2017
2-Chloronaphthalene	0.350		ND						02/03/2017
2-Chlorophenol	0.500		ND						02/03/2017
2-Methoxy-4-methylphenol	0.650		ND						02/03/2017
2-Methylnaphthalene	0.350		ND						02/03/2017
2-Nitroaniline	1.00		ND						02/03/2017
2-Nitrophenol	0.350		ND						02/03/2017
3,3´-Dichlorobenzidine	0.350		ND						02/03/2017
3-Nitroaniline	1.00		ND						02/03/2017
4,6-Dinitro-2-methylphenol	1.00		ND						02/03/2017
4-Bromophenyl phenyl ether	0.350		ND						02/03/2017
4-Chloro-3-methylphenol	0.500		ND						02/03/2017
4-Chloroaniline	0.500		ND						02/03/2017
4-Chlorophenyl phenyl ether	0.350		ND						02/03/2017
4-Nitroaniline	0.500		ND						02/03/2017
4-Nitrophenol	0.350		ND						02/03/2017
Aniline	0.500		ND						02/03/2017
Azobenzene	0.350		ND						02/03/2017
Benzoic acid	1.50		ND						02/03/2017
Benzyl alcohol	0.500		ND						02/03/2017
Bis(2-chloroethoxy)methane	0.350		ND						02/03/2017
Bis(2-chloroethyl)ether	0.500		ND						02/03/2017
Bis(2-chloroisopropyl)ether	0.350		ND						02/03/2017
Bis(2-ethylhexyl)phthalate	0.350		ND						02/03/2017
Butyl benzyl phthalate	0.350		ND						02/03/2017
Carbazole	0.500		ND						02/03/2017
Dibenzofuran	0.350		ND						02/03/2017
Diethyl phthalate	0.500		ND						02/03/2017
Dimethyl phthalate	0.350		ND						02/03/2017
Di-n-butyl phthalate	0.350		ND						02/03/2017
Di-n-octyl phthalate	0.350		ND						02/03/2017
Hexachlorobenzene	0.350		ND						02/03/2017
Hexachlorobutadiene	0.500		ND						02/03/2017
Hexachlorocyclopentadiene	0.350		ND						02/03/2017
Hexachloroethane	0.500		ND						02/03/2017
Isophorone	0.350		ND						02/03/2017
m,p-Cresol	0.500		ND						02/03/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126752 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK-126752

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Nitrobenzene	0.500		**ND**						02/03/2017
N-Nitrosodimethylamine	0.500		**ND**						02/03/2017
N-Nitroso-di-n-propylamine	0.500		**ND**						02/03/2017
N-Nitrosodiphenylamine	0.500		**ND**						02/03/2017
o-Cresol	0.500		**ND**						02/03/2017
Pentachlorophenol	2.00		**ND**						02/03/2017
Phenol	0.350		**ND**						02/03/2017
Pyridine	0.500		**ND**						02/03/2017
1,2-Diphenylhydrazine	0.840		**ND**						02/03/2017
Surr: 2,4,6-Tribromophenol			**1.24**	1.670		74.1	50.5	116	02/03/2017
Surr: 2-Fluorobiphenyl			**0.733**	0.8350		87.8	47.4	102	02/03/2017
Surr: 2-Fluorobiphenyl			**0.659**	0.8350		78.9	47.8	104	02/06/2017
Surr: 2-Fluorophenol			**1.41**	1.670		84.6	43.7	98.6	02/03/2017
Surr: Nitrobenzene-d5			**0.698**	0.8350		83.6	39	97.3	02/03/2017
Surr: Phenol-d5			**1.54**	1.670		92.5	48.1	104	02/03/2017
Surr: p-Terphenyl-d14			**0.763**	0.8350		91.4	53.2	119	02/03/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126752 **SampType:** LCS Units **mg/Kg**

SampID: LCS-126752

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,2,4-Trichlorobenzene	0.500		**1.40**	1.670	0	83.5	52.4	102	02/03/2017
1,4-Dichlorobenzene	0.500		**1.40**	1.670	0	83.7	43	86.1	02/03/2017
2,4,5-Trichlorophenol	0.350		**1.39**	1.670	0	83.2	55.1	106	02/03/2017
2,4,6-Trichlorophenol	0.350		**1.40**	1.670	0	83.6	54	105	02/03/2017
2,4-Dimethylphenol	0.500		**1.22**	1.670	0	72.9	46.8	103	02/03/2017
2,4-Dinitrophenol	1.00		**ND**	1.670	0	57.4	38	95.6	02/03/2017
2,4-Dinitrotoluene	0.350		**1.45**	1.670	0	86.7	55.6	109	02/03/2017
2-Chlorophenol	0.500		**1.31**	1.670	0	78.4	51.1	92.4	02/03/2017
4-Chloro-3-methylphenol	0.500		**1.43**	1.670	0	85.5	52	97.3	02/03/2017
4-Nitrophenol	0.350		**1.15**	1.670	0	69.0	48	99.6	02/03/2017
Bis(2-ethylhexyl)phthalate	0.350		**1.11**	1.670	0	66.7	48.3	106	02/03/2017
Diethyl phthalate	0.500		**1.53**	1.670	0	91.6	56.9	103	02/03/2017
Dimethyl phthalate	0.350		**1.52**	1.670	0	91.2	56.4	98.1	02/03/2017
Di-n-butyl phthalate	0.350		**1.30**	1.670	0	78.1	54.8	100	02/03/2017
Hexachlorobenzene	0.350		**1.49**	1.670	0	89.2	54.1	102	02/03/2017
Hexachlorobutadiene	0.500		**1.34**	1.670	0	80.4	46	103	02/03/2017
Hexachloroethane	0.500		**1.34**	1.670	0	80.5	45	90	02/03/2017
m,p-Cresol	0.500		**1.33**	1.670	0	79.5	53	98.5	02/03/2017
Nitrobenzene	0.500		**1.21**	1.670	0	72.4	44.4	86.6	02/03/2017
N-Nitroso-di-n-propylamine	0.500		**1.48**	1.670	0	88.6	39.8	94.3	02/03/2017
o-Cresol	0.500		**1.32**	1.670	0	79.2	52.1	96.4	02/03/2017
Pentachlorophenol	2.00		**ND**	1.670	0	65.5	37	91.7	02/03/2017
Phenol	0.350		**1.37**	1.670	0	81.9	52.9	95.6	02/03/2017
Pyridine	0.500		**0.934**	1.670	0	55.9	30	77.1	02/03/2017
Surr: 2,4,6-Tribromophenol			**1.26**	1.670		75.4	50.5	116	02/03/2017
Surr: 2-Fluorobiphenyl			**0.680**	0.8350		81.5	47.4	102	02/03/2017
Surr: 2-Fluorobiphenyl			**0.712**	0.8350		85.2	47.8	104	02/06/2017
Surr: 2-Fluorophenol			**1.27**	1.670		76.0	43.7	98.6	02/03/2017
Surr: Nitrobenzene-d5			**0.621**	0.8350		74.4	39	97.3	02/03/2017
Surr: Phenol-d5			**1.33**	1.670		79.5	48.1	104	02/03/2017
Surr: p-Terphenyl-d14			**0.710**	0.8350		85.1	53.2	119	02/03/2017

Batch 126752 **SampType:** LCSG Units **%REC**

SampID: LCSDRO-126752

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Surr: 2-Fluorobiphenyl			**0.650**	0.8350		77.8	47.8	104	02/06/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126752 **SampType:** MS Units **mg/Kg-dry**

SampID: 17020090-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,2,4-Trichlorobenzene	17.8		**ND**	11.87	0	76.6	35.9	102	02/04/2017
1,4-Dichlorobenzene	17.8		**ND**	11.87	0	71.6	29.8	95.5	02/04/2017
2,4,5-Trichlorophenol	12.4		**ND**	11.87	0	77.8	38.6	123	02/04/2017
2,4,6-Trichlorophenol	12.4		**ND**	11.87	0	70.6	35.9	123	02/04/2017
2,4-Dimethylphenol	17.8		**ND**	11.87	0	75.3	38.3	88	02/04/2017
2,4-Dinitrophenol	35.5	S	**ND**	11.87	0	0	1.88	162	02/04/2017
2,4-Dinitrotoluene	12.4		**ND**	11.87	0	71.3	37.5	107	02/04/2017
2-Chlorophenol	17.8		**ND**	11.87	0	66.4	22.6	108	02/04/2017
4-Chloro-3-methylphenol	17.8		**ND**	11.87	0	75.6	19.3	131	02/04/2017
4-Nitrophenol	12.4		**ND**	11.87	0	46.4	27.6	123	02/04/2017
Bis(2-ethylhexyl)phthalate	12.4		**ND**	11.87	0	66.0	56.3	109	02/04/2017
Diethyl phthalate	17.8		**ND**	11.87	0	80.8	51.7	106	02/04/2017
Dimethyl phthalate	12.4		**ND**	11.87	0	77.4	58.8	104	02/04/2017
Di-n-butyl phthalate	12.4		**ND**	11.87	0	71.6	54.3	105	02/04/2017
Hexachlorobenzene	12.4		**ND**	11.87	0	77.9	55.9	106	02/04/2017
Hexachlorobutadiene	17.8		**ND**	11.87	0	75.3	35.7	100	02/04/2017
Hexachloroethane	17.8		**ND**	11.87	0	80.9	38.9	89.9	02/04/2017
m,p-Cresol	17.8		**ND**	11.87	0	75.5	37.6	93.7	02/04/2017
Nitrobenzene	17.8		**ND**	11.87	0	67.9	51.8	104	02/04/2017
N-Nitroso-di-n-propylamine	17.8		**ND**	11.87	0	80.5	45.5	99.1	02/04/2017
o-Cresol	17.8		**ND**	11.87	0	74.4	43	101	02/04/2017
Pentachlorophenol	71.1	S	**ND**	11.87	0	0	18.5	113	02/04/2017
Phenol	12.4		**ND**	11.87	0	71.3	20.8	110	02/04/2017
Pyridine	17.8		**ND**	11.87	0	61.9	3.61	74.3	02/04/2017
Surr: 2,4,6-Tribromophenol			**8.71**	11.87		73.4	33	115	02/04/2017
Surr: 2-Fluorobiphenyl			**4.54**	5.934		76.4	36.5	97.7	02/04/2017
Surr: 2-Fluorophenol			**8.05**	11.87		67.9	39.4	92.8	02/04/2017
Surr: Nitrobenzene-d5			**3.85**	5.934		64.9	34.7	90.1	02/04/2017
Surr: Phenol-d5			**8.61**	11.87		72.6	42.8	106	02/04/2017
Surr: p-Terphenyl-d14			**4.65**	5.934		78.4	43.7	124	02/04/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126752 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **40**

SampID: 17020090-001AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
1,2,4-Trichlorobenzene	17.8		**ND**	11.87	0	73.6	9.097	0.00	02/04/2017
1,4-Dichlorobenzene	17.8		**ND**	11.87	0	70.6	8.493	0.00	02/04/2017
2,4,5-Trichlorophenol	12.4		**ND**	11.87	0	72.4	9.239	0.00	02/04/2017
2,4,6-Trichlorophenol	12.4		**ND**	11.87	0	69.0	8.374	0.00	02/04/2017
2,4-Dimethylphenol	17.8		**ND**	11.87	0	67.2	8.943	0.00	02/04/2017
2,4-Dinitrophenol	35.5	S	**ND**	11.87	0	0	0	0.00	02/04/2017
2,4-Dinitrotoluene	12.4		**ND**	11.87	0	67.1	8.457	0.00	02/04/2017
2-Chlorophenol	17.8		**ND**	11.87	0	62.0	7.877	0.00	02/04/2017
4-Chloro-3-methylphenol	17.8		**ND**	11.87	0	74.0	8.978	0.00	02/04/2017
4-Nitrophenol	12.4		**ND**	11.87	0	45.2	5.508	0.00	02/04/2017
Bis(2-ethylhexyl)phthalate	12.4		**ND**	11.87	0	65.4	7.829	0.00	02/04/2017
Diethyl phthalate	17.8		**ND**	11.87	0	82.0	9.594	0.00	02/04/2017
Dimethyl phthalate	12.4		**ND**	11.87	0	77.0	9.191	0.00	02/04/2017
Di-n-butyl phthalate	12.4		**ND**	11.87	0	69.1	8.493	0.00	02/04/2017
Hexachlorobenzene	12.4		**ND**	11.87	0	75.1	9.251	0.00	02/04/2017
Hexachlorobutadiene	17.8		**ND**	11.87	0	65.3	8.943	0.00	02/04/2017
Hexachloroethane	17.8		**ND**	11.87	0	78.8	9.606	0.00	02/04/2017
m,p-Cresol	17.8		**ND**	11.87	0	73.4	8.966	0.00	02/04/2017
Nitrobenzene	17.8		**ND**	11.87	0	63.4	8.054	0.00	02/04/2017
N-Nitroso-di-n-propylamine	17.8		**ND**	11.87	0	78.0	9.559	0.00	02/04/2017
o-Cresol	17.8		**ND**	11.87	0	73.5	8.824	0.00	02/04/2017
Pentachlorophenol	71.1	S	**ND**	11.87	0	0	0	0.00	02/04/2017
Phenol	12.4		**ND**	11.87	0	70.0	8.457	0.00	02/04/2017
Pyridine	17.8		**ND**	11.87	0	46.2	7.344	0.00	02/04/2017
Surr: 2,4,6-Tribromophenol			**8.62**	11.87		72.7			02/04/2017
Surr: 2-Fluorobiphenyl			**4.02**	5.934		67.7			02/04/2017
Surr: 2-Fluorophenol			**6.98**	11.87		58.8			02/04/2017
Surr: Nitrobenzene-d5			**3.87**	5.934		65.3			02/04/2017
Surr: Phenol-d5			**7.73**	11.87		65.2			02/04/2017
Surr: p-Terphenyl-d14			**4.64**	5.934		78.2			02/04/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126720 **SampType:** MBLK Units µg/Kg

SampID: MBLK-F170202A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		ND						02/02/2017
1,1,1-Trichloroethane	5.0		ND						02/02/2017
1,1,2,2-Tetrachloroethane	5.0		ND						02/02/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		ND						02/02/2017
1,1,2-Trichloroethane	5.0		ND						02/02/2017
1,1-Dichloro-2-propanone	50.0		ND						02/02/2017
1,1-Dichloroethane	5.0		ND						02/02/2017
1,1-Dichloroethene	5.0		ND						02/02/2017
1,1-Dichloropropene	5.0		ND						02/02/2017
1,2,3-Trichlorobenzene	5.0		ND						02/02/2017
1,2,3-Trichloropropane	10.0		ND						02/02/2017
1,2,3-Trimethylbenzene	5.0		ND						02/02/2017
1,2,4-Trichlorobenzene	5.0		ND						02/02/2017
1,2,4-Trimethylbenzene	5.0		ND						02/02/2017
1,2-Dibromo-3-chloropropane	5.0		ND						02/02/2017
1,2-Dibromoethane	5.0		ND						02/02/2017
1,2-Dichlorobenzene	5.0		ND						02/02/2017
1,2-Dichloroethane	5.0		ND						02/02/2017
1,2-Dichloropropane	5.0		ND						02/02/2017
1,3,5-Trimethylbenzene	5.0		ND						02/02/2017
1,3-Dichlorobenzene	5.0		ND						02/02/2017
1,3-Dichloropropane	5.0		ND						02/02/2017
1,4-Dichlorobenzene	5.0		ND						02/02/2017
1-Chlorobutane	5.0		ND						02/02/2017
2,2-Dichloropropane	5.0		ND						02/02/2017
2-Butanone	50.0		ND						02/02/2017
2-Chlorotoluene	5.0		ND						02/02/2017
2-Hexanone	50.0		ND						02/02/2017
2-Nitropropane	50.0		ND						02/02/2017
4-Chlorotoluene	5.0		ND						02/02/2017
4-Methyl-2-pentanone	50.0		ND						02/02/2017
Acetone	50.0		ND						02/02/2017
Acrolein	100		ND						02/02/2017
Acrylonitrile	10.0		ND						02/02/2017
Allyl chloride	5.0		ND						02/02/2017
Benzene	1.0		ND						02/02/2017
Bromobenzene	5.0		ND						02/02/2017
Bromochloromethane	5.0		ND						02/02/2017
Bromodichloromethane	5.0		ND						02/02/2017
Bromoform	5.0		ND						02/02/2017
Bromomethane	10.0		ND						02/02/2017
Carbon disulfide	5.0		ND						02/02/2017
Carbon tetrachloride	5.0		ND						02/02/2017
Chlorobenzene	5.0		ND						02/02/2017
Chloroethane	10.0		ND						02/02/2017
Chloroform	5.0		ND						02/02/2017
Chloromethane	10.0		ND						02/02/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126720 **SampType:** MBLK Units µg/Kg

SampID: MBLK-F170202A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		ND						02/02/2017
cis-1,3-Dichloropropene	4.0		ND						02/02/2017
Cyclohexanone	100		ND						02/02/2017
Dibromochloromethane	5.0		ND						02/02/2017
Dibromomethane	5.0		ND						02/02/2017
Dichlorodifluoromethane	10.0		ND						02/02/2017
Ethyl ether	5.0		ND						02/02/2017
Ethyl methacrylate	5.0		ND						02/02/2017
Ethylbenzene	5.0		ND						02/02/2017
Hexachlorobutadiene	5.0		ND						02/02/2017
Hexachloroethane	5.0		ND						02/02/2017
Iodomethane	10.0		ND						02/02/2017
Isopropylbenzene	5.0		ND						02/02/2017
m,p-Xylenes	5.0		ND						02/02/2017
Methacrylonitrile	50.0		ND						02/02/2017
Methyl Methacrylate	5.0		ND						02/02/2017
Methyl tert-butyl ether	2.0		ND						02/02/2017
Methylacrylate	10.0		ND						02/02/2017
Methylene chloride	5.0		ND						02/02/2017
Naphthalene	10.0		ND						02/02/2017
n-Butylbenzene	5.0		ND						02/02/2017
n-Heptane	20.0		ND						02/02/2017
n-Hexane	20.0		ND						02/02/2017
Nitrobenzene	100		ND						02/02/2017
n-Propylbenzene	5.0		ND						02/02/2017
o-Xylene	5.0		ND						02/02/2017
Pentachloroethane	5.0		ND						02/02/2017
p-Isopropyltoluene	5.0		ND						02/02/2017
Propionitrile	50.0		ND						02/02/2017
sec-Butylbenzene	5.0		ND						02/02/2017
Styrene	5.0		ND						02/02/2017
tert-Butylbenzene	5.0		ND						02/02/2017
Tetrachloroethene	5.0		ND						02/02/2017
Tetrahydrofuran	50.0		ND						02/02/2017
Toluene	5.0		ND						02/02/2017
trans-1,2-Dichloroethene	5.0		ND						02/02/2017
trans-1,3-Dichloropropene	4.0		ND						02/02/2017
Trichloroethene	5.0		ND						02/02/2017
Trichlorofluoromethane	5.0		ND						02/02/2017
Vinyl acetate	50.0		ND						02/02/2017
Vinyl chloride	2.0		ND						02/02/2017
Surr: 1,2-Dichloroethane-d4			**53.5**	50.00		107.0	72.2	131	02/02/2017
Surr: 4-Bromofluorobenzene			**50.5**	50.00		101.0	82.1	116	02/02/2017
Surr: Dibromofluoromethane			**49.0**	50.00		98.0	77.7	120	02/02/2017
Surr: Toluene-d8			**52.9**	50.00		105.9	86	116	02/02/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126720 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-F170202A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		**52.2**	50.00	0	104.4	51.60	1.16	02/02/2017
1,1,1-Trichloroethane	5.0		**51.8**	50.00	0	103.6	54.08	4.29	02/02/2017
1,1,2,2-Tetrachloroethane	5.0		**49.7**	50.00	0	99.4	53.02	6.50	02/02/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		**52.3**	50.00	0	104.6	53.08	1.52	02/02/2017
1,1,2-Trichloroethane	5.0		**47.7**	50.00	0	95.3	50.68	6.14	02/02/2017
1,1-Dichloro-2-propanone	50.0		**116**	125.0	0	92.6	122.4	5.54	02/02/2017
1,1-Dichloroethane	5.0		**50.4**	50.00	0	100.9	51.46	2.00	02/02/2017
1,1-Dichloroethene	5.0		**53.6**	50.00	0	107.2	54.92	2.40	02/02/2017
1,1-Dichloropropene	5.0		**51.6**	50.00	0	103.2	51.15	0.84	02/02/2017
1,2,3-Trichlorobenzene	5.0		**52.2**	50.00	0	104.4	56.64	8.20	02/02/2017
1,2,3-Trichloropropane	10.0		**47.5**	50.00	0	95.1	51.58	8.15	02/02/2017
1,2,3-Trimethylbenzene	5.0		**52.0**	50.00	0	104.1	53.95	3.62	02/02/2017
1,2,4-Trichlorobenzene	5.0		**55.4**	50.00	0	110.7	60.60	9.04	02/02/2017
1,2,4-Trimethylbenzene	5.0		**55.2**	50.00	0	110.5	54.84	0.71	02/02/2017
1,2-Dibromo-3-chloropropane	5.0		**49.0**	50.00	0	98.0	53.51	8.84	02/02/2017
1,2-Dibromoethane	5.0		**49.0**	50.00	0	98.0	49.55	1.16	02/02/2017
1,2-Dichlorobenzene	5.0		**51.2**	50.00	0	102.3	54.72	6.71	02/02/2017
1,2-Dichloroethane	5.0		**53.2**	50.00	0	106.4	55.78	4.70	02/02/2017
1,2-Dichloropropane	5.0		**49.4**	50.00	0	98.8	51.54	4.26	02/02/2017
1,3,5-Trimethylbenzene	5.0		**53.3**	50.00	0	106.6	55.65	4.33	02/02/2017
1,3-Dichlorobenzene	5.0		**52.8**	50.00	0	105.6	55.54	5.04	02/02/2017
1,3-Dichloropropane	5.0		**51.4**	50.00	0	102.8	51.38	0.08	02/02/2017
1,4-Dichlorobenzene	5.0		**51.8**	50.00	0	103.5	54.57	5.30	02/02/2017
1-Chlorobutane	5.0		**52.1**	50.00	0	104.1	53.26	2.26	02/02/2017
2,2-Dichloropropane	5.0		**52.6**	50.00	0	105.2	54.69	3.88	02/02/2017
2-Butanone	50.0		**155**	125.0	0	124.0	173.8	11.40	02/02/2017
2-Chlorotoluene	5.0		**53.0**	50.00	0	106.0	54.34	2.52	02/02/2017
2-Hexanone	50.0		**154**	125.0	0	122.8	160.8	4.59	02/02/2017
2-Nitropropane	50.0		**516**	500.0	0	103.2	547.5	5.96	02/02/2017
4-Chlorotoluene	5.0		**49.9**	50.00	0	99.9	50.74	1.59	02/02/2017
4-Methyl-2-pentanone	50.0		**130**	125.0	0	103.7	137.5	5.93	02/02/2017
Acetone	50.0		**175**	125.0	0	139.9	197.1	11.96	02/02/2017
Acrolein	100		**438**	500.0	0	87.7	487.7	10.66	02/02/2017
Acrylonitrile	10.0		**49.1**	50.00	0	98.3	53.95	9.33	02/02/2017
Allyl chloride	5.0		**50.7**	50.00	0	101.4	52.49	3.47	02/02/2017
Benzene	1.0		**50.4**	50.00	0	100.7	51.90	2.99	02/02/2017
Bromobenzene	5.0		**51.3**	50.00	0	102.5	54.20	5.58	02/02/2017
Bromochloromethane	5.0		**50.7**	50.00	0	101.4	53.38	5.17	02/02/2017
Bromodichloromethane	5.0		**51.1**	50.00	0	102.2	53.08	3.78	02/02/2017
Bromoform	5.0		**51.5**	50.00	0	103.1	52.61	2.05	02/02/2017
Bromomethane	10.0		**41.8**	50.00	0	83.6	41.42	0.96	02/02/2017
Carbon disulfide	5.0		**48.1**	50.00	0	96.2	49.62	3.09	02/02/2017
Carbon tetrachloride	5.0		**54.5**	50.00	0	109.1	54.95	0.77	02/02/2017
Chlorobenzene	5.0		**50.3**	50.00	0	100.7	51.98	3.21	02/02/2017
Chloroethane	10.0		**51.0**	50.00	0	102.0	53.54	4.84	02/02/2017
Chloroform	5.0		**49.8**	50.00	0	99.5	52.01	4.44	02/02/2017
Chloromethane	10.0		**62.2**	50.00	0	124.4	65.91	5.76	02/02/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126720 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-F170202A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
cis-1,2-Dichloroethene	5.0		**51.4**	50.00	0	102.9	54.10	5.04	02/02/2017
cis-1,3-Dichloropropene	4.0		**53.6**	50.00	0	107.2	54.70	1.99	02/02/2017
Cyclohexanone	100		**459**	500.0	0	91.8	495.0	7.52	02/02/2017
Dibromochloromethane	5.0		**52.3**	50.00	0	104.6	53.48	2.23	02/02/2017
Dibromomethane	5.0		**50.7**	50.00	0	101.4	51.70	1.93	02/02/2017
Dichlorodifluoromethane	10.0		**61.1**	50.00	0	122.2	64.63	5.58	02/02/2017
Ethyl ether	5.0		**48.0**	50.00	0	96.1	50.64	5.27	02/02/2017
Ethyl methacrylate	5.0		**51.7**	50.00	0	103.5	54.06	4.39	02/02/2017
Ethylbenzene	5.0		**52.7**	50.00	0	105.4	52.06	1.18	02/02/2017
Hexachlorobutadiene	5.0		**55.6**	50.00	0	111.3	59.04	5.93	02/02/2017
Hexachloroethane	5.0		**57.2**	50.00	0	114.3	59.40	3.84	02/02/2017
Iodomethane	10.0		**46.7**	50.00	0	93.4	49.36	5.56	02/02/2017
Isopropylbenzene	5.0		**52.3**	50.00	0	104.6	54.13	3.42	02/02/2017
m,p-Xylenes	5.0		**106**	100.0	0	106.2	109.0	2.60	02/02/2017
Methacrylonitrile	50.0		**ND**	50.00	0	97.7	55.65	0.00	02/02/2017
Methyl Methacrylate	5.0		**52.3**	50.00	0	104.6	53.34	1.99	02/02/2017
Methyl tert-butyl ether	2.0		**51.4**	50.00	0	102.8	54.94	6.62	02/02/2017
Methylacrylate	10.0		**57.2**	50.00	0	114.4	51.41	10.70	02/02/2017
Methylene chloride	5.0		**49.1**	50.00	0	98.2	51.12	4.07	02/02/2017
Naphthalene	10.0		**52.0**	50.00	0	104.0	55.97	7.32	02/02/2017
n-Butylbenzene	5.0		**57.2**	50.00	0	114.4	60.82	6.17	02/02/2017
n-Heptane	20.0		**57.5**	50.00	0	115.0	58.88	2.34	02/02/2017
n-Hexane	20.0		**56.7**	50.00	0	113.4	59.42	4.70	02/02/2017
Nitrobenzene	100		**403**	500.0	0	80.6	432.4	7.01	02/02/2017
n-Propylbenzene	5.0		**55.1**	50.00	0	110.2	56.99	3.41	02/02/2017
o-Xylene	5.0		**53.4**	50.00	0	106.7	53.21	0.26	02/02/2017
Pentachloroethane	5.0		**54.6**	50.00	0	109.1	52.47	3.91	02/02/2017
p-Isopropyltoluene	5.0		**55.6**	50.00	0	111.2	57.24	2.87	02/02/2017
Propionitrile	50.0		**494**	500.0	0	98.9	540.4	8.89	02/02/2017
sec-Butylbenzene	5.0		**55.3**	50.00	0	110.6	56.00	1.29	02/02/2017
Styrene	5.0		**53.5**	50.00	0	107.1	54.17	1.17	02/02/2017
tert-Butylbenzene	5.0		**53.0**	50.00	0	106.1	53.55	0.94	02/02/2017
Tetrachloroethene	5.0		**53.3**	50.00	0	106.6	55.16	3.41	02/02/2017
Tetrahydrofuran	50.0		**ND**	50.00	0	98.0	54.39	0.00	02/02/2017
Toluene	5.0		**50.0**	50.00	0	99.9	49.76	0.38	02/02/2017
trans-1,2-Dichloroethene	5.0		**51.3**	50.00	0	102.5	53.38	4.05	02/02/2017
trans-1,3-Dichloropropene	4.0		**52.6**	50.00	0	105.1	55.03	4.57	02/02/2017
Trichloroethene	5.0		**51.4**	50.00	0	102.8	51.22	0.35	02/02/2017
Trichlorofluoromethane	5.0		**54.5**	50.00	0	109.0	56.19	3.07	02/02/2017
Vinyl acetate	50.0		**57.1**	50.00	0	114.1	57.57	0.87	02/02/2017
Vinyl chloride	2.0		**53.6**	50.00	0	107.1	57.39	6.89	02/02/2017
Surr: 1,2-Dichloroethane-d4			**53.6**	50.00		107.3			02/02/2017
Surr: 4-Bromofluorobenzene			**51.2**	50.00		102.4			02/02/2017
Surr: Dibromofluoromethane			**51.1**	50.00		102.3			02/02/2017
Surr: Toluene-d8			**50.6**	50.00		101.2			02/02/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126720 **SampType:** LCS Units µg/Kg

SampID: LCS-F170202A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		**51.6**	50.00	0	103.2	83.1	114	02/02/2017
1,1,1-Trichloroethane	5.0		**54.1**	50.00	0	108.2	78.5	119	02/02/2017
1,1,2,2-Tetrachloroethane	5.0		**53.0**	50.00	0	106.0	67.4	120	02/02/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		**53.1**	50.00	0	106.2	75.4	121	02/02/2017
1,1,2-Trichloroethane	5.0		**50.7**	50.00	0	101.4	81.1	111	02/02/2017
1,1-Dichloro-2-propanone	50.0		**122**	125.0	0	97.9	55.4	131	02/02/2017
1,1-Dichloroethane	5.0		**51.5**	50.00	0	102.9	80.1	116	02/02/2017
1,1-Dichloroethene	5.0		**54.9**	50.00	0	109.8	73.1	121	02/02/2017
1,1-Dichloropropene	5.0		**51.2**	50.00	0	102.3	82.2	114	02/02/2017
1,2,3-Trichlorobenzene	5.0		**56.6**	50.00	0	113.3	81.7	130	02/02/2017
1,2,3-Trichloropropane	10.0		**51.6**	50.00	0	103.2	67.8	118	02/02/2017
1,2,3-Trimethylbenzene	5.0		**54.0**	50.00	0	107.9	82.1	127	02/02/2017
1,2,4-Trichlorobenzene	5.0		**60.6**	50.00	0	121.2	72.3	141	02/02/2017
1,2,4-Trimethylbenzene	5.0		**54.8**	50.00	0	109.7	79.7	123	02/02/2017
1,2-Dibromo-3-chloropropane	5.0		**53.5**	50.00	0	107.0	62.1	123	02/02/2017
1,2-Dibromoethane	5.0		**49.6**	50.00	0	99.1	82.4	112	02/02/2017
1,2-Dichlorobenzene	5.0		**54.7**	50.00	0	109.4	82.7	119	02/02/2017
1,2-Dichloroethane	5.0		**55.8**	50.00	0	111.6	72.8	120	02/02/2017
1,2-Dichloropropane	5.0		**51.5**	50.00	0	103.1	80	116	02/02/2017
1,3,5-Trimethylbenzene	5.0		**55.6**	50.00	0	111.3	81.5	125	02/02/2017
1,3-Dichlorobenzene	5.0		**55.5**	50.00	0	111.1	82	124	02/02/2017
1,3-Dichloropropane	5.0		**51.4**	50.00	0	102.8	79.8	113	02/02/2017
1,4-Dichlorobenzene	5.0		**54.6**	50.00	0	109.1	81.1	124	02/02/2017
1-Chlorobutane	5.0		**53.3**	50.00	0	106.5	77.2	113	02/02/2017
2,2-Dichloropropane	5.0		**54.7**	50.00	0	109.4	76.6	121	02/02/2017
2-Butanone	50.0	S	**174**	125.0	0	139.0	62.8	131	02/02/2017
2-Chlorotoluene	5.0		**54.3**	50.00	0	108.7	78.8	121	02/02/2017
2-Hexanone	50.0	S	**161**	125.0	0	128.6	63.1	125	02/02/2017
2-Nitropropane	50.0		**548**	500.0	0	109.5	61.2	129	02/02/2017
4-Chlorotoluene	5.0		**50.7**	50.00	0	101.5	77.6	124	02/02/2017
4-Methyl-2-pentanone	50.0		**138**	125.0	0	110.0	60.6	126	02/02/2017
Acetone	50.0		**197**	125.0	0	157.7	39.5	159	02/02/2017
Acrolein	100		**488**	500.0	0	97.5	1	167	02/02/2017
Acrylonitrile	10.0		**54.0**	50.00	0	107.9	67	124	02/02/2017
Allyl chloride	5.0		**52.5**	50.00	0	105.0	58.5	129	02/02/2017
Benzene	1.0		**51.9**	50.00	0	103.8	80.8	117	02/02/2017
Bromobenzene	5.0		**54.2**	50.00	0	108.4	79.6	117	02/02/2017
Bromochloromethane	5.0		**53.4**	50.00	0	106.8	70.7	121	02/02/2017
Bromodichloromethane	5.0		**53.1**	50.00	0	106.2	80.7	121	02/02/2017
Bromoform	5.0		**52.6**	50.00	0	105.2	79.8	118	02/02/2017
Bromomethane	10.0		**41.4**	50.00	0	82.8	1	175	02/02/2017
Carbon disulfide	5.0		**49.6**	50.00	0	99.2	62.8	123	02/02/2017
Carbon tetrachloride	5.0		**55.0**	50.00	0	109.9	77.6	123	02/02/2017
Chlorobenzene	5.0		**52.0**	50.00	0	104.0	85.6	116	02/02/2017
Chloroethane	10.0		**53.5**	50.00	0	107.1	60.2	125	02/02/2017
Chloroform	5.0		**52.0**	50.00	0	104.0	77.9	116	02/02/2017
Chloromethane	10.0		**65.9**	50.00	0	131.8	29.9	157	02/02/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126720 **SampType:** LCS Units µg/Kg

SampID: LCS-F170202A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		54.1	50.00	0	108.2	80.1	116	02/02/2017
cis-1,3-Dichloropropene	4.0		54.7	50.00	0	109.4	80.5	121	02/02/2017
Cyclohexanone	100		495	500.0	0	99.0	45.4	128	02/02/2017
Dibromochloromethane	5.0		53.5	50.00	0	107.0	84.3	116	02/02/2017
Dibromomethane	5.0		51.7	50.00	0	103.4	76.6	115	02/02/2017
Dichlorodifluoromethane	10.0		64.6	50.00	0	129.3	1	200	02/02/2017
Ethyl ether	5.0		50.6	50.00	0	101.3	73.4	116	02/02/2017
Ethyl methacrylate	5.0		54.1	50.00	0	108.1	76.2	120	02/02/2017
Ethylbenzene	5.0		52.1	50.00	0	104.1	84.8	116	02/02/2017
Hexachlorobutadiene	5.0		59.0	50.00	0	118.1	74	135	02/02/2017
Hexachloroethane	5.0		59.4	50.00	0	118.8	76.4	121	02/02/2017
Iodomethane	10.0		49.4	50.00	0	98.7	38.7	161	02/02/2017
Isopropylbenzene	5.0		54.1	50.00	0	108.3	85	125	02/02/2017
m,p-Xylenes	5.0		109	100.0	0	109.0	85.3	120	02/02/2017
Methacrylonitrile	50.0		55.6	50.00	0	111.3	65.7	120	02/02/2017
Methyl Methacrylate	5.0		53.3	50.00	0	106.7	69.1	114	02/02/2017
Methyl tert-butyl ether	2.0		54.9	50.00	0	109.9	66.6	125	02/02/2017
Methylacrylate	10.0		51.4	50.00	0	102.8	69.7	121	02/02/2017
Methylene chloride	5.0		51.1	50.00	0	102.2	73.4	115	02/02/2017
Naphthalene	10.0		56.0	50.00	0	111.9	70.1	134	02/02/2017
n-Butylbenzene	5.0		60.8	50.00	0	121.6	78.4	138	02/02/2017
n-Heptane	20.0		58.9	50.00	0	117.8	74.3	125	02/02/2017
n-Hexane	20.0		59.4	50.00	0	118.8	66.3	129	02/02/2017
Nitrobenzene	100		432	500.0	0	86.5	20.1	165	02/02/2017
n-Propylbenzene	5.0		57.0	50.00	0	114.0	79.1	125	02/02/2017
o-Xylene	5.0		53.2	50.00	0	106.4	81.9	118	02/02/2017
Pentachloroethane	5.0		52.5	50.00	0	104.9	72.7	123	02/02/2017
p-Isopropyltoluene	5.0		57.2	50.00	0	114.5	82.7	129	02/02/2017
Propionitrile	50.0		540	500.0	0	108.1	64.3	121	02/02/2017
sec-Butylbenzene	5.0		56.0	50.00	0	112.0	81.3	125	02/02/2017
Styrene	5.0		54.2	50.00	0	108.3	88.2	122	02/02/2017
tert-Butylbenzene	5.0		53.6	50.00	0	107.1	74.8	125	02/02/2017
Tetrachloroethene	5.0		55.2	50.00	0	110.3	84.2	122	02/02/2017
Tetrahydrofuran	50.0		54.4	50.00	0	108.8	61	118	02/02/2017
Toluene	5.0		49.8	50.00	0	99.5	81.3	113	02/02/2017
trans-1,2-Dichloroethene	5.0		53.4	50.00	0	106.8	78.2	118	02/02/2017
trans-1,3-Dichloropropene	4.0		55.0	50.00	0	110.1	81.7	124	02/02/2017
Trichloroethene	5.0		51.2	50.00	0	102.4	81	123	02/02/2017
Trichlorofluoromethane	5.0		56.2	50.00	0	112.4	66.8	131	02/02/2017
Vinyl acetate	50.0		57.6	50.00	0	115.1	64.3	122	02/02/2017
Vinyl chloride	2.0		57.4	50.00	0	114.8	45.2	140	02/02/2017
Surr: 1,2-Dichloroethane-d4			54.3	50.00		108.6	72.2	131	02/02/2017
Surr: 4-Bromofluorobenzene			51.6	50.00		103.3	82.1	116	02/02/2017
Surr: Dibromofluoromethane			51.2	50.00		102.3	77.7	120	02/02/2017
Surr: Toluene-d8			49.6	50.00		99.1	86	116	02/02/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126761 **SampType:** MBLK Units µg/Kg

SampID: MBLK-F170203A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		ND						02/03/2017
1,1,1-Trichloroethane	5.0		ND						02/03/2017
1,1,2,2-Tetrachloroethane	5.0		ND						02/03/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		ND						02/03/2017
1,1,2-Trichloroethane	5.0		ND						02/03/2017
1,1-Dichloro-2-propanone	50.0		ND						02/03/2017
1,1-Dichloroethane	5.0		ND						02/03/2017
1,1-Dichloroethene	5.0		ND						02/03/2017
1,1-Dichloropropene	5.0		ND						02/03/2017
1,2,3-Trichlorobenzene	5.0		ND						02/03/2017
1,2,3-Trichloropropane	10.0		ND						02/03/2017
1,2,3-Trimethylbenzene	5.0		ND						02/03/2017
1,2,4-Trichlorobenzene	5.0		ND						02/03/2017
1,2,4-Trimethylbenzene	5.0		ND						02/03/2017
1,2-Dibromo-3-chloropropane	5.0		ND						02/03/2017
1,2-Dibromoethane	5.0		ND						02/03/2017
1,2-Dichlorobenzene	5.0		ND						02/03/2017
1,2-Dichloroethane	5.0		ND						02/03/2017
1,2-Dichloropropane	5.0		ND						02/03/2017
1,3,5-Trimethylbenzene	5.0		ND						02/03/2017
1,3-Dichlorobenzene	5.0		ND						02/03/2017
1,3-Dichloropropane	5.0		ND						02/03/2017
1,4-Dichlorobenzene	5.0		ND						02/03/2017
1-Chlorobutane	5.0		ND						02/03/2017
2,2-Dichloropropane	5.0		ND						02/03/2017
2-Butanone	50.0		ND						02/03/2017
2-Chlorotoluene	5.0		ND						02/03/2017
2-Hexanone	50.0		ND						02/03/2017
2-Nitropropane	50.0		ND						02/03/2017
4-Chlorotoluene	5.0		ND						02/03/2017
4-Methyl-2-pentanone	50.0		ND						02/03/2017
Acetone	50.0		ND						02/03/2017
Acrolein	100		ND						02/03/2017
Acrylonitrile	10.0		ND						02/03/2017
Allyl chloride	5.0		ND						02/03/2017
Benzene	1.0		ND						02/03/2017
Bromobenzene	5.0		ND						02/03/2017
Bromochloromethane	5.0		ND						02/03/2017
Bromodichloromethane	5.0		ND						02/03/2017
Bromoform	5.0		ND						02/03/2017
Bromomethane	10.0		ND						02/03/2017
Carbon disulfide	5.0		ND						02/03/2017
Carbon tetrachloride	5.0		ND						02/03/2017
Chlorobenzene	5.0		ND						02/03/2017
Chloroethane	10.0		ND						02/03/2017
Chloroform	5.0		ND						02/03/2017
Chloromethane	10.0		ND						02/03/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126761 **SampType:** MBLK Units µg/Kg

SampID: MBLK-F170203A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		ND						02/03/2017
cis-1,3-Dichloropropene	4.0		ND						02/03/2017
Cyclohexanone	100		ND						02/03/2017
Dibromochloromethane	5.0		ND						02/03/2017
Dibromomethane	5.0		ND						02/03/2017
Dichlorodifluoromethane	10.0		ND						02/03/2017
Ethyl ether	5.0		ND						02/03/2017
Ethyl methacrylate	5.0		ND						02/03/2017
Ethylbenzene	5.0		ND						02/03/2017
Hexachlorobutadiene	5.0		ND						02/03/2017
Hexachloroethane	5.0		ND						02/03/2017
Iodomethane	10.0		ND						02/03/2017
Isopropylbenzene	5.0		ND						02/03/2017
m,p-Xylenes	5.0		ND						02/03/2017
Methacrylonitrile	50.0		ND						02/03/2017
Methyl Methacrylate	5.0		ND						02/03/2017
Methyl tert-butyl ether	2.0		ND						02/03/2017
Methylacrylate	10.0		ND						02/03/2017
Methylene chloride	5.0		ND						02/03/2017
Naphthalene	10.0		ND						02/03/2017
n-Butylbenzene	5.0		ND						02/03/2017
n-Heptane	20.0		ND						02/03/2017
n-Hexane	20.0		ND						02/03/2017
Nitrobenzene	100		ND						02/03/2017
n-Propylbenzene	5.0		ND						02/03/2017
o-Xylene	5.0		ND						02/03/2017
Pentachloroethane	5.0		ND						02/03/2017
p-Isopropyltoluene	5.0		ND						02/03/2017
Propionitrile	50.0		ND						02/03/2017
sec-Butylbenzene	5.0		ND						02/03/2017
Styrene	5.0		ND						02/03/2017
tert-Butylbenzene	5.0		ND						02/03/2017
Tetrachloroethene	5.0		ND						02/03/2017
Tetrahydrofuran	50.0		ND						02/03/2017
Toluene	5.0		ND						02/03/2017
trans-1,2-Dichloroethene	5.0		ND						02/03/2017
trans-1,3-Dichloropropene	4.0		ND						02/03/2017
Trichloroethene	5.0		ND						02/03/2017
Trichlorofluoromethane	5.0		ND						02/03/2017
Vinyl acetate	50.0		ND						02/03/2017
Vinyl chloride	2.0		ND						02/03/2017
Surr: 1,2-Dichloroethane-d4			**53.7**	50.00		107.3	72.2	131	02/03/2017
Surr: 4-Bromofluorobenzene			**50.9**	50.00		101.8	82.1	116	02/03/2017
Surr: Dibromofluoromethane			**48.8**	50.00		97.7	77.7	120	02/03/2017
Surr: Toluene-d8			**50.5**	50.00		101.0	86	116	02/03/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126761 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-F170203A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		**52.2**	50.00	0	104.4	52.47	0.54	02/03/2017
1,1,1-Trichloroethane	5.0		**50.6**	50.00	0	101.1	51.61	2.08	02/03/2017
1,1,2,2-Tetrachloroethane	5.0		**50.2**	50.00	0	100.4	49.61	1.16	02/03/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		**49.0**	50.00	0	97.9	48.33	1.32	02/03/2017
1,1,2-Trichloroethane	5.0		**49.1**	50.00	0	98.2	49.22	0.20	02/03/2017
1,1-Dichloro-2-propanone	50.0		**115**	125.0	0	91.7	111.0	3.24	02/03/2017
1,1-Dichloroethane	5.0		**49.1**	50.00	0	98.3	49.02	0.24	02/03/2017
1,1-Dichloroethene	5.0		**49.8**	50.00	0	99.7	49.76	0.18	02/03/2017
1,1-Dichloropropene	5.0		**51.2**	50.00	0	102.4	50.93	0.55	02/03/2017
1,2,3-Trichlorobenzene	5.0		**51.9**	50.00	0	103.8	54.46	4.85	02/03/2017
1,2,3-Trichloropropane	10.0		**49.2**	50.00	0	98.4	49.78	1.13	02/03/2017
1,2,3-Trimethylbenzene	5.0		**51.9**	50.00	0	103.8	52.97	2.00	02/03/2017
1,2,4-Trichlorobenzene	5.0		**53.8**	50.00	0	107.7	57.32	6.24	02/03/2017
1,2,4-Trimethylbenzene	5.0		**53.2**	50.00	0	106.4	53.51	0.58	02/03/2017
1,2-Dibromo-3-chloropropane	5.0		**50.7**	50.00	0	101.5	50.45	0.57	02/03/2017
1,2-Dibromoethane	5.0		**48.0**	50.00	0	96.1	49.28	2.57	02/03/2017
1,2-Dichlorobenzene	5.0		**49.7**	50.00	0	99.3	52.46	5.46	02/03/2017
1,2-Dichloroethane	5.0		**51.4**	50.00	0	102.9	53.56	4.04	02/03/2017
1,2-Dichloropropane	5.0		**50.2**	50.00	0	100.4	50.53	0.68	02/03/2017
1,3,5-Trimethylbenzene	5.0		**53.2**	50.00	0	106.5	54.22	1.81	02/03/2017
1,3-Dichlorobenzene	5.0		**52.4**	50.00	0	104.9	53.76	2.50	02/03/2017
1,3-Dichloropropane	5.0		**51.3**	50.00	0	102.5	50.59	1.32	02/03/2017
1,4-Dichlorobenzene	5.0		**51.6**	50.00	0	103.1	52.11	1.08	02/03/2017
1-Chlorobutane	5.0		**52.0**	50.00	0	104.1	52.29	0.48	02/03/2017
2,2-Dichloropropane	5.0		**52.5**	50.00	0	105.1	51.36	2.25	02/03/2017
2-Butanone	50.0		**159**	125.0	0	126.8	144.4	9.31	02/03/2017
2-Chlorotoluene	5.0		**51.5**	50.00	0	103.1	54.14	4.94	02/03/2017
2-Hexanone	50.0		**146**	125.0	0	116.7	139.3	4.62	02/03/2017
2-Nitropropane	50.0		**533**	500.0	0	106.6	528.4	0.89	02/03/2017
4-Chlorotoluene	5.0		**48.4**	50.00	0	96.8	49.46	2.15	02/03/2017
4-Methyl-2-pentanone	50.0		**128**	125.0	0	102.4	134.1	4.72	02/03/2017
Acetone	50.0		**160**	125.0	0	128.3	144.7	10.29	02/03/2017
Acrolein	100		**433**	500.0	0	86.5	434.4	0.38	02/03/2017
Acrylonitrile	10.0		**50.1**	50.00	0	100.2	50.83	1.45	02/03/2017
Allyl chloride	5.0		**47.9**	50.00	0	95.7	47.82	0.08	02/03/2017
Benzene	1.0		**46.6**	50.00	0	93.2	48.32	3.65	02/03/2017
Bromobenzene	5.0		**51.9**	50.00	0	103.8	52.95	1.96	02/03/2017
Bromochloromethane	5.0		**51.2**	50.00	0	102.3	51.66	0.95	02/03/2017
Bromodichloromethane	5.0		**52.0**	50.00	0	104.0	51.52	0.89	02/03/2017
Bromoform	5.0		**52.2**	50.00	0	104.5	51.42	1.60	02/03/2017
Bromomethane	10.0		**30.0**	50.00	0	59.9	32.68	8.72	02/03/2017
Carbon disulfide	5.0		**43.8**	50.00	0	87.6	44.61	1.79	02/03/2017
Carbon tetrachloride	5.0		**53.5**	50.00	0	107.0	52.34	2.23	02/03/2017
Chlorobenzene	5.0		**50.3**	50.00	0	100.5	51.37	2.18	02/03/2017
Chloroethane	10.0		**46.4**	50.00	0	92.9	46.56	0.26	02/03/2017
Chloroform	5.0		**48.0**	50.00	0	95.9	49.52	3.18	02/03/2017
Chloromethane	10.0		**49.0**	50.00	0	97.9	47.80	2.38	02/03/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126761 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-F170203A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
cis-1,2-Dichloroethene	5.0		**51.9**	50.00	0	103.7	50.57	2.52	02/03/2017
cis-1,3-Dichloropropene	4.0		**51.0**	50.00	0	102.0	51.71	1.38	02/03/2017
Cyclohexanone	100		**495**	500.0	0	99.1	463.6	6.62	02/03/2017
Dibromochloromethane	5.0		**52.4**	50.00	0	104.9	54.16	3.21	02/03/2017
Dibromomethane	5.0		**48.6**	50.00	0	97.2	50.14	3.16	02/03/2017
Dichlorodifluoromethane	10.0		**36.5**	50.00	0	73.1	36.22	0.85	02/03/2017
Ethyl ether	5.0		**48.0**	50.00	0	96.1	48.65	1.24	02/03/2017
Ethyl methacrylate	5.0		**52.8**	50.00	0	105.6	54.40	2.99	02/03/2017
Ethylbenzene	5.0		**53.2**	50.00	0	106.4	52.89	0.57	02/03/2017
Hexachlorobutadiene	5.0		**53.3**	50.00	0	106.6	55.96	4.85	02/03/2017
Hexachloroethane	5.0		**55.4**	50.00	0	110.7	55.68	0.56	02/03/2017
Iodomethane	10.0		**41.0**	50.00	0	82.1	39.11	4.84	02/03/2017
Isopropylbenzene	5.0		**52.1**	50.00	0	104.2	53.37	2.45	02/03/2017
m,p-Xylenes	5.0		**105**	100.0	0	105.2	102.9	2.24	02/03/2017
Methacrylonitrile	50.0		**ND**	50.00	0	99.8	52.76	0.00	02/03/2017
Methyl Methacrylate	5.0		**51.4**	50.00	0	102.7	52.82	2.78	02/03/2017
Methyl tert-butyl ether	2.0		**49.7**	50.00	0	99.4	51.59	3.77	02/03/2017
Methylacrylate	10.0		**58.4**	50.00	0	116.8	58.65	0.46	02/03/2017
Methylene chloride	5.0		**47.8**	50.00	0	95.7	47.90	0.13	02/03/2017
Naphthalene	10.0		**53.6**	50.00	0	107.2	54.45	1.55	02/03/2017
n-Butylbenzene	5.0		**56.4**	50.00	0	112.7	58.98	4.56	02/03/2017
n-Heptane	20.0		**57.8**	50.00	0	115.5	60.01	3.82	02/03/2017
n-Hexane	20.0		**52.9**	50.00	0	105.9	53.58	1.20	02/03/2017
Nitrobenzene	100		**386**	500.0	0	77.2	378.3	2.06	02/03/2017
n-Propylbenzene	5.0		**53.4**	50.00	0	106.7	55.12	3.26	02/03/2017
o-Xylene	5.0		**51.6**	50.00	0	103.2	52.02	0.83	02/03/2017
Pentachloroethane	5.0		**54.0**	50.00	0	107.9	56.24	4.12	02/03/2017
p-Isopropyltoluene	5.0		**54.6**	50.00	0	109.2	55.18	1.07	02/03/2017
Propionitrile	50.0		**501**	500.0	0	100.1	500.6	0.01	02/03/2017
sec-Butylbenzene	5.0		**55.2**	50.00	0	110.5	54.63	1.11	02/03/2017
Styrene	5.0		**51.9**	50.00	0	103.9	52.49	1.05	02/03/2017
tert-Butylbenzene	5.0		**51.8**	50.00	0	103.7	52.25	0.79	02/03/2017
Tetrachloroethene	5.0		**50.5**	50.00	0	101.1	50.42	0.22	02/03/2017
Tetrahydrofuran	50.0		**51.6**	50.00	0	103.3	52.53	1.69	02/03/2017
Toluene	5.0		**49.2**	50.00	0	98.4	49.90	1.43	02/03/2017
trans-1,2-Dichloroethene	5.0		**49.3**	50.00	0	98.7	50.67	2.68	02/03/2017
trans-1,3-Dichloropropene	4.0		**54.6**	50.00	0	109.2	53.60	1.87	02/03/2017
Trichloroethene	5.0		**49.3**	50.00	0	98.6	49.89	1.15	02/03/2017
Trichlorofluoromethane	5.0		**48.2**	50.00	0	96.4	49.35	2.40	02/03/2017
Vinyl acetate	50.0		**56.0**	50.00	0	111.9	54.35	2.90	02/03/2017
Vinyl chloride	2.0		**43.7**	50.00	0	87.3	42.95	1.66	02/03/2017
Surr: 1,2-Dichloroethane-d4			**51.8**	50.00		103.6			02/03/2017
Surr: 4-Bromofluorobenzene			**51.7**	50.00		103.3			02/03/2017
Surr: Dibromofluoromethane			**50.2**	50.00		100.3			02/03/2017
Surr: Toluene-d8			**50.5**	50.00		100.9			02/03/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126761 **SampType:** LCS Units µg/Kg

SampID: LCS-F170203A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		**52.5**	50.00	0	104.9	83.1	114	02/03/2017
1,1,1-Trichloroethane	5.0		**51.6**	50.00	0	103.2	78.5	119	02/03/2017
1,1,2,2-Tetrachloroethane	5.0		**49.6**	50.00	0	99.2	67.4	120	02/03/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		**48.3**	50.00	0	96.7	75.4	121	02/03/2017
1,1,2-Trichloroethane	5.0		**49.2**	50.00	0	98.4	81.1	111	02/03/2017
1,1-Dichloro-2-propanone	50.0		**111**	125.0	0	88.8	55.4	131	02/03/2017
1,1-Dichloroethane	5.0		**49.0**	50.00	0	98.0	80.1	116	02/03/2017
1,1-Dichloroethene	5.0		**49.8**	50.00	0	99.5	73.1	121	02/03/2017
1,1-Dichloropropene	5.0		**50.9**	50.00	0	101.9	82.2	114	02/03/2017
1,2,3-Trichlorobenzene	5.0		**54.5**	50.00	0	108.9	81.7	130	02/03/2017
1,2,3-Trichloropropane	10.0		**49.8**	50.00	0	99.6	67.8	118	02/03/2017
1,2,3-Trimethylbenzene	5.0		**53.0**	50.00	0	105.9	82.1	127	02/03/2017
1,2,4-Trichlorobenzene	5.0		**57.3**	50.00	0	114.6	72.3	141	02/03/2017
1,2,4-Trimethylbenzene	5.0		**53.5**	50.00	0	107.0	79.7	123	02/03/2017
1,2-Dibromo-3-chloropropane	5.0		**50.4**	50.00	0	100.9	62.1	123	02/03/2017
1,2-Dibromoethane	5.0		**49.3**	50.00	0	98.6	82.4	112	02/03/2017
1,2-Dichlorobenzene	5.0		**52.5**	50.00	0	104.9	82.7	119	02/03/2017
1,2-Dichloroethane	5.0		**53.6**	50.00	0	107.1	72.8	120	02/03/2017
1,2-Dichloropropane	5.0		**50.5**	50.00	0	101.1	80	116	02/03/2017
1,3,5-Trimethylbenzene	5.0		**54.2**	50.00	0	108.4	81.5	125	02/03/2017
1,3-Dichlorobenzene	5.0		**53.8**	50.00	0	107.5	82	124	02/03/2017
1,3-Dichloropropane	5.0		**50.6**	50.00	0	101.2	79.8	113	02/03/2017
1,4-Dichlorobenzene	5.0		**52.1**	50.00	0	104.2	81.1	124	02/03/2017
1-Chlorobutane	5.0		**52.3**	50.00	0	104.6	77.2	113	02/03/2017
2,2-Dichloropropane	5.0		**51.4**	50.00	0	102.7	76.6	121	02/03/2017
2-Butanone	50.0		**144**	125.0	0	115.5	62.8	131	02/03/2017
2-Chlorotoluene	5.0		**54.1**	50.00	0	108.3	78.8	121	02/03/2017
2-Hexanone	50.0		**139**	125.0	0	111.4	63.1	125	02/03/2017
2-Nitropropane	50.0		**528**	500.0	0	105.7	61.2	129	02/03/2017
4-Chlorotoluene	5.0		**49.5**	50.00	0	98.9	77.6	124	02/03/2017
4-Methyl-2-pentanone	50.0		**134**	125.0	0	107.3	60.6	126	02/03/2017
Acetone	50.0		**145**	125.0	0	115.8	39.5	159	02/03/2017
Acrolein	100		**434**	500.0	0	86.9	1	167	02/03/2017
Acrylonitrile	10.0		**50.8**	50.00	0	101.7	67	124	02/03/2017
Allyl chloride	5.0		**47.8**	50.00	0	95.6	58.5	129	02/03/2017
Benzene	1.0		**48.3**	50.00	0	96.6	80.8	117	02/03/2017
Bromobenzene	5.0		**53.0**	50.00	0	105.9	79.6	117	02/03/2017
Bromochloromethane	5.0		**51.7**	50.00	0	103.3	70.7	121	02/03/2017
Bromodichloromethane	5.0		**51.5**	50.00	0	103.0	80.7	121	02/03/2017
Bromoform	5.0		**51.4**	50.00	0	102.8	79.8	118	02/03/2017
Bromomethane	10.0		**32.7**	50.00	0	65.4	1	175	02/03/2017
Carbon disulfide	5.0		**44.6**	50.00	0	89.2	62.8	123	02/03/2017
Carbon tetrachloride	5.0		**52.3**	50.00	0	104.7	77.6	123	02/03/2017
Chlorobenzene	5.0		**51.4**	50.00	0	102.7	85.6	116	02/03/2017
Chloroethane	10.0		**46.6**	50.00	0	93.1	60.2	125	02/03/2017
Chloroform	5.0		**49.5**	50.00	0	99.0	77.9	116	02/03/2017
Chloromethane	10.0		**47.8**	50.00	0	95.6	29.9	157	02/03/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126761 **SampType:** LCS Units µg/Kg

SampID: LCS-F170203A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		**50.6**	50.00	0	101.1	80.1	116	02/03/2017
cis-1,3-Dichloropropene	4.0		**51.7**	50.00	0	103.4	80.5	121	02/03/2017
Cyclohexanone	100		**464**	500.0	0	92.7	45.4	128	02/03/2017
Dibromochloromethane	5.0		**54.2**	50.00	0	108.3	84.3	116	02/03/2017
Dibromomethane	5.0		**50.1**	50.00	0	100.3	76.6	115	02/03/2017
Dichlorodifluoromethane	10.0		**36.2**	50.00	0	72.4	1	200	02/03/2017
Ethyl ether	5.0		**48.6**	50.00	0	97.3	73.4	116	02/03/2017
Ethyl methacrylate	5.0		**54.4**	50.00	0	108.8	76.2	120	02/03/2017
Ethylbenzene	5.0		**52.9**	50.00	0	105.8	84.8	116	02/03/2017
Hexachlorobutadiene	5.0		**56.0**	50.00	0	111.9	74	135	02/03/2017
Hexachloroethane	5.0		**55.7**	50.00	0	111.4	76.4	121	02/03/2017
Iodomethane	10.0		**39.1**	50.00	0	78.2	38.7	161	02/03/2017
Isopropylbenzene	5.0		**53.4**	50.00	0	106.7	85	125	02/03/2017
m,p-Xylenes	5.0		**103**	100.0	0	102.9	85.3	120	02/03/2017
Methacrylonitrile	50.0		**52.8**	50.00	0	105.5	65.7	120	02/03/2017
Methyl Methacrylate	5.0		**52.8**	50.00	0	105.6	69.1	114	02/03/2017
Methyl tert-butyl ether	2.0		**51.6**	50.00	0	103.2	66.6	125	02/03/2017
Methylacrylate	10.0		**58.6**	50.00	0	117.3	69.7	121	02/03/2017
Methylene chloride	5.0		**47.9**	50.00	0	95.8	73.4	115	02/03/2017
Naphthalene	10.0		**54.4**	50.00	0	108.9	70.1	134	02/03/2017
n-Butylbenzene	5.0		**59.0**	50.00	0	118.0	78.4	138	02/03/2017
n-Heptane	20.0		**60.0**	50.00	0	120.0	74.3	125	02/03/2017
n-Hexane	20.0		**53.6**	50.00	0	107.2	66.3	129	02/03/2017
Nitrobenzene	100		**378**	500.0	0	75.7	20.1	165	02/03/2017
n-Propylbenzene	5.0		**55.1**	50.00	0	110.2	79.1	125	02/03/2017
o-Xylene	5.0		**52.0**	50.00	0	104.0	81.9	118	02/03/2017
Pentachloroethane	5.0		**56.2**	50.00	0	112.5	72.7	123	02/03/2017
p-Isopropyltoluene	5.0		**55.2**	50.00	0	110.4	82.7	129	02/03/2017
Propionitrile	50.0		**501**	500.0	0	100.1	64.3	121	02/03/2017
sec-Butylbenzene	5.0		**54.6**	50.00	0	109.3	81.3	125	02/03/2017
Styrene	5.0		**52.5**	50.00	0	105.0	88.2	122	02/03/2017
tert-Butylbenzene	5.0		**52.2**	50.00	0	104.5	74.8	125	02/03/2017
Tetrachloroethene	5.0		**50.4**	50.00	0	100.8	84.2	122	02/03/2017
Tetrahydrofuran	50.0		**52.5**	50.00	0	105.1	61	118	02/03/2017
Toluene	5.0		**49.9**	50.00	0	99.8	81.3	113	02/03/2017
trans-1,2-Dichloroethene	5.0		**50.7**	50.00	0	101.3	78.2	118	02/03/2017
trans-1,3-Dichloropropene	4.0		**53.6**	50.00	0	107.2	81.7	124	02/03/2017
Trichloroethene	5.0		**49.9**	50.00	0	99.8	81	123	02/03/2017
Trichlorofluoromethane	5.0		**49.4**	50.00	0	98.7	66.8	131	02/03/2017
Vinyl acetate	50.0		**54.4**	50.00	0	108.7	64.3	122	02/03/2017
Vinyl chloride	2.0		**43.0**	50.00	0	85.9	45.2	140	02/03/2017
Surr: 1,2-Dichloroethane-d4			**53.5**	50.00		107.0	72.2	131	02/03/2017
Surr: 4-Bromofluorobenzene			**51.5**	50.00		103.0	82.1	116	02/03/2017
Surr: Dibromofluoromethane			**51.0**	50.00		102.0	77.7	120	02/03/2017
Surr: Toluene-d8			**50.8**	50.00		101.6	86	116	02/03/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126761 **SampType:** LCSGD Units %REC RPD Limit 0

SampID: LCSGD-F170203A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Surr: 1,2-Dichloroethane-d4			**53.6**	50.00		107.2			02/03/2017
Surr: 4-Bromofluorobenzene			**52.2**	50.00		104.4			02/03/2017
Surr: Dibromofluoromethane			**49.7**	50.00		99.4			02/03/2017
Surr: Toluene-d8			**52.0**	50.00		104.0			02/03/2017

Batch 126761 **SampType:** LCSG Units %REC

SampID: LCSG-F170203A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Surr: 1,2-Dichloroethane-d4			**52.7**	50.00		105.5	72.2	131	02/03/2017
Surr: 4-Bromofluorobenzene			**47.2**	50.00		94.5	82.1	116	02/03/2017
Surr: Dibromofluoromethane			**49.4**	50.00		98.9	77.7	120	02/03/2017
Surr: Toluene-d8			**52.2**	50.00		104.5	86	116	02/03/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126805 **SampType:** MBLK Units µg/Kg

SampID: MBLK-Y170206A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		ND						02/06/2017
1,1,1-Trichloroethane	5.0		ND						02/06/2017
1,1,2,2-Tetrachloroethane	5.0		ND						02/06/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		ND						02/06/2017
1,1,2-Trichloroethane	5.0		ND						02/06/2017
1,1-Dichloro-2-propanone	50.0		ND						02/06/2017
1,1-Dichloroethane	5.0		ND						02/06/2017
1,1-Dichloroethene	5.0		ND						02/06/2017
1,1-Dichloropropene	5.0		ND						02/06/2017
1,2,3-Trichlorobenzene	5.0		ND						02/06/2017
1,2,3-Trichloropropane	10.0		ND						02/06/2017
1,2,3-Trimethylbenzene	5.0		ND						02/06/2017
1,2,4-Trichlorobenzene	5.0		ND						02/06/2017
1,2,4-Trimethylbenzene	5.0		ND						02/06/2017
1,2-Dibromo-3-chloropropane	5.0		ND						02/06/2017
1,2-Dibromoethane	5.0		ND						02/06/2017
1,2-Dichlorobenzene	5.0		ND						02/06/2017
1,2-Dichloroethane	5.0		ND						02/06/2017
1,2-Dichloropropane	5.0		ND						02/06/2017
1,3,5-Trimethylbenzene	5.0		ND						02/06/2017
1,3-Dichlorobenzene	5.0		ND						02/06/2017
1,3-Dichloropropane	5.0		ND						02/06/2017
1,4-Dichlorobenzene	5.0		ND						02/06/2017
1-Chlorobutane	5.0		ND						02/06/2017
2,2-Dichloropropane	5.0		ND						02/06/2017
2-Butanone	50.0		ND						02/06/2017
2-Chlorotoluene	5.0		ND						02/06/2017
2-Hexanone	50.0		ND						02/06/2017
2-Nitropropane	50.0		ND						02/06/2017
4-Chlorotoluene	5.0		ND						02/06/2017
4-Methyl-2-pentanone	50.0		ND						02/06/2017
Acetone	50.0		ND						02/06/2017
Acrolein	100		ND						02/06/2017
Acrylonitrile	10.0		ND						02/06/2017
Allyl chloride	5.0		ND						02/06/2017
Benzene	1.0		ND						02/06/2017
Bromobenzene	5.0		ND						02/06/2017
Bromochloromethane	5.0		ND						02/06/2017
Bromodichloromethane	5.0		ND						02/06/2017
Bromoform	5.0		ND						02/06/2017
Bromomethane	10.0		ND						02/06/2017
Carbon disulfide	5.0		ND						02/06/2017
Carbon tetrachloride	5.0		ND						02/06/2017
Chlorobenzene	5.0		ND						02/06/2017
Chloroethane	10.0		ND						02/06/2017
Chloroform	5.0		ND						02/06/2017
Chloromethane	10.0		ND						02/06/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126805 **SampType:** MBLK Units µg/Kg

SampID: MBLK-Y170206A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		ND						02/06/2017
cis-1,3-Dichloropropene	4.0		ND						02/06/2017
Cyclohexanone	100		ND						02/06/2017
Dibromochloromethane	5.0		ND						02/06/2017
Dibromomethane	5.0		ND						02/06/2017
Dichlorodifluoromethane	10.0		ND						02/06/2017
Ethyl ether	5.0		ND						02/06/2017
Ethyl methacrylate	5.0		ND						02/06/2017
Ethylbenzene	5.0		ND						02/06/2017
Hexachlorobutadiene	5.0		ND						02/06/2017
Hexachloroethane	5.0		ND						02/06/2017
Iodomethane	10.0		ND						02/06/2017
Isopropylbenzene	5.0		ND						02/06/2017
m,p-Xylenes	5.0		ND						02/06/2017
Methacrylonitrile	50.0		ND						02/06/2017
Methyl Methacrylate	5.0		ND						02/06/2017
Methyl tert-butyl ether	2.0		ND						02/06/2017
Methylacrylate	10.0		ND						02/06/2017
Methylene chloride	5.0		ND						02/06/2017
Naphthalene	10.0		ND						02/06/2017
n-Butylbenzene	5.0		ND						02/06/2017
n-Heptane	20.0		ND						02/06/2017
n-Hexane	20.0		ND						02/06/2017
Nitrobenzene	100		ND						02/06/2017
n-Propylbenzene	5.0		ND						02/06/2017
o-Xylene	5.0		ND						02/06/2017
Pentachloroethane	5.0		ND						02/06/2017
p-Isopropyltoluene	5.0		ND						02/06/2017
Propionitrile	50.0		ND						02/06/2017
sec-Butylbenzene	5.0		ND						02/06/2017
Styrene	5.0		ND						02/06/2017
tert-Butylbenzene	5.0		ND						02/06/2017
Tetrachloroethene	5.0		ND						02/06/2017
Tetrahydrofuran	50.0		ND						02/06/2017
Toluene	5.0		ND						02/06/2017
trans-1,2-Dichloroethene	5.0		ND						02/06/2017
trans-1,3-Dichloropropene	4.0		ND						02/06/2017
Trichloroethene	5.0		ND						02/06/2017
Trichlorofluoromethane	5.0		ND						02/06/2017
Vinyl acetate	50.0		ND						02/06/2017
Vinyl chloride	2.0		ND						02/06/2017
Surr: 1,2-Dichloroethane-d4			**52.2**	50.00		104.4	72.2	131	02/06/2017
Surr: 4-Bromofluorobenzene			**50.1**	50.00		100.2	82.1	116	02/06/2017
Surr: Dibromofluoromethane			**50.5**	50.00		101.1	77.7	120	02/06/2017
Surr: Toluene-d8			**50.2**	50.00		100.5	86	116	02/06/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126805 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-Y170206A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		49.2	50.00	0	98.5	49.04	0.39	02/06/2017
1,1,1-Trichloroethane	5.0		50.1	50.00	0	100.3	50.37	0.46	02/06/2017
1,1,2,2-Tetrachloroethane	5.0		49.2	50.00	0	98.5	48.88	0.71	02/06/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		49.5	50.00	0	99.0	49.61	0.26	02/06/2017
1,1,2-Trichloroethane	5.0		46.9	50.00	0	93.8	47.03	0.30	02/06/2017
1,1-Dichloro-2-propanone	50.0		116	125.0	0	92.7	119.5	3.09	02/06/2017
1,1-Dichloroethane	5.0		52.8	50.00	0	105.5	52.32	0.82	02/06/2017
1,1-Dichloroethene	5.0		49.1	50.00	0	98.3	50.11	1.98	02/06/2017
1,1-Dichloropropene	5.0		51.1	50.00	0	102.2	50.87	0.41	02/06/2017
1,2,3-Trichlorobenzene	5.0		48.3	50.00	0	96.6	48.26	0.04	02/06/2017
1,2,3-Trichloropropane	10.0		46.9	50.00	0	93.8	45.76	2.44	02/06/2017
1,2,3-Trimethylbenzene	5.0		51.2	50.00	0	102.3	50.75	0.82	02/06/2017
1,2,4-Trichlorobenzene	5.0		52.2	50.00	0	104.4	52.29	0.15	02/06/2017
1,2,4-Trimethylbenzene	5.0		52.0	50.00	0	104.1	51.68	0.67	02/06/2017
1,2-Dibromo-3-chloropropane	5.0		45.4	50.00	0	90.9	46.85	3.03	02/06/2017
1,2-Dibromoethane	5.0		50.2	50.00	0	100.4	49.90	0.60	02/06/2017
1,2-Dichlorobenzene	5.0		51.0	50.00	0	102.0	50.72	0.51	02/06/2017
1,2-Dichloroethane	5.0		49.8	50.00	0	99.6	49.62	0.38	02/06/2017
1,2-Dichloropropane	5.0		50.3	50.00	0	100.7	50.55	0.42	02/06/2017
1,3,5-Trimethylbenzene	5.0		51.8	50.00	0	103.6	51.35	0.89	02/06/2017
1,3-Dichlorobenzene	5.0		52.0	50.00	0	103.9	52.16	0.40	02/06/2017
1,3-Dichloropropane	5.0		47.9	50.00	0	95.9	47.77	0.33	02/06/2017
1,4-Dichlorobenzene	5.0		52.8	50.00	0	105.5	52.60	0.32	02/06/2017
1-Chlorobutane	5.0		51.1	50.00	0	102.2	50.53	1.12	02/06/2017
2,2-Dichloropropane	5.0		51.4	50.00	0	102.8	51.27	0.21	02/06/2017
2-Butanone	50.0		125	125.0	0	99.9	130.1	4.09	02/06/2017
2-Chlorotoluene	5.0		51.9	50.00	0	103.9	51.86	0.13	02/06/2017
2-Hexanone	50.0		123	125.0	0	98.5	128.0	3.83	02/06/2017
2-Nitropropane	50.0		510	500.0	0	102.1	501.8	1.69	02/06/2017
4-Chlorotoluene	5.0		48.1	50.00	0	96.3	48.66	1.07	02/06/2017
4-Methyl-2-pentanone	50.0		122	125.0	0	97.6	121.4	0.48	02/06/2017
Acetone	50.0		122	125.0	0	97.5	133.2	8.92	02/06/2017
Acrolein	100		431	500.0	0	86.2	409.6	5.12	02/06/2017
Acrylonitrile	10.0		48.5	50.00	0	97.0	47.15	2.86	02/06/2017
Allyl chloride	5.0		50.2	50.00	0	100.4	51.02	1.58	02/06/2017
Benzene	1.0		48.8	50.00	0	97.7	48.62	0.45	02/06/2017
Bromobenzene	5.0		51.0	50.00	0	102.0	50.92	0.12	02/06/2017
Bromochloromethane	5.0		50.0	50.00	0	100.0	49.80	0.44	02/06/2017
Bromodichloromethane	5.0		50.5	50.00	0	101.0	51.06	1.14	02/06/2017
Bromoform	5.0		48.1	50.00	0	96.1	47.54	1.09	02/06/2017
Bromomethane	10.0		40.3	50.00	0	80.7	37.39	7.59	02/06/2017
Carbon disulfide	5.0		47.7	50.00	0	95.4	47.64	0.13	02/06/2017
Carbon tetrachloride	5.0		50.6	50.00	0	101.1	50.20	0.73	02/06/2017
Chlorobenzene	5.0		50.9	50.00	0	101.9	50.97	0.06	02/06/2017
Chloroethane	10.0		43.6	50.00	0	87.2	42.96	1.48	02/06/2017
Chloroform	5.0		49.6	50.00	0	99.2	49.61	0.06	02/06/2017
Chloromethane	10.0		44.0	50.00	0	88.0	44.38	0.86	02/06/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126805 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-Y170206A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
cis-1,2-Dichloroethene	5.0		**51.0**	50.00	0	102.1	50.41	1.24	02/06/2017
cis-1,3-Dichloropropene	4.0		**50.8**	50.00	0	101.6	50.17	1.21	02/06/2017
Cyclohexanone	100		**445**	500.0	0	89.1	455.4	2.22	02/06/2017
Dibromochloromethane	5.0		**49.1**	50.00	0	98.1	49.08	0.04	02/06/2017
Dibromomethane	5.0		**48.9**	50.00	0	97.8	48.32	1.19	02/06/2017
Dichlorodifluoromethane	10.0		**30.2**	50.00	0	60.4	31.48	4.08	02/06/2017
Ethyl ether	5.0		**47.8**	50.00	0	95.5	47.20	1.20	02/06/2017
Ethyl methacrylate	5.0		**49.0**	50.00	0	98.0	48.54	0.90	02/06/2017
Ethylbenzene	5.0		**51.4**	50.00	0	102.7	52.38	1.99	02/06/2017
Hexachlorobutadiene	5.0		**51.0**	50.00	0	101.9	50.92	0.10	02/06/2017
Hexachloroethane	5.0		**53.1**	50.00	0	106.2	52.64	0.89	02/06/2017
Iodomethane	10.0		**48.9**	50.00	0	97.8	48.56	0.74	02/06/2017
Isopropylbenzene	5.0		**51.5**	50.00	0	103.0	51.27	0.41	02/06/2017
m,p-Xylenes	5.0		**103**	100.0	0	103.2	104.3	1.09	02/06/2017
Methacrylonitrile	50.0		**ND**	50.00	0	95.6	46.61	0.00	02/06/2017
Methyl Methacrylate	5.0		**48.6**	50.00	0	97.2	47.25	2.86	02/06/2017
Methyl tert-butyl ether	2.0		**47.8**	50.00	0	95.6	47.16	1.35	02/06/2017
Methylacrylate	10.0		**48.8**	50.00	0	97.6	48.04	1.55	02/06/2017
Methylene chloride	5.0		**49.3**	50.00	0	98.7	49.44	0.20	02/06/2017
Naphthalene	10.0		**48.0**	50.00	0	96.0	47.56	0.94	02/06/2017
n-Butylbenzene	5.0		**55.2**	50.00	0	110.5	55.43	0.36	02/06/2017
n-Heptane	20.0		**54.7**	50.00	0	109.3	55.45	1.42	02/06/2017
n-Hexane	20.0		**51.3**	50.00	0	102.6	51.78	0.97	02/06/2017
Nitrobenzene	100		**532**	500.0	0	106.4	539.6	1.47	02/06/2017
n-Propylbenzene	5.0		**53.0**	50.00	0	105.9	52.86	0.19	02/06/2017
o-Xylene	5.0		**51.1**	50.00	0	102.3	51.46	0.64	02/06/2017
Pentachloroethane	5.0		**50.3**	50.00	0	100.7	50.68	0.67	02/06/2017
p-Isopropyltoluene	5.0		**53.4**	50.00	0	106.7	53.01	0.64	02/06/2017
Propionitrile	50.0		**486**	500.0	0	97.2	481.1	1.06	02/06/2017
sec-Butylbenzene	5.0		**52.1**	50.00	0	104.3	52.05	0.17	02/06/2017
Styrene	5.0		**49.7**	50.00	0	99.3	49.81	0.28	02/06/2017
tert-Butylbenzene	5.0		**50.4**	50.00	0	100.9	50.18	0.50	02/06/2017
Tetrachloroethene	5.0		**47.8**	50.00	0	95.7	47.67	0.38	02/06/2017
Tetrahydrofuran	50.0		**ND**	50.00	0	94.5	47.78	0.00	02/06/2017
Toluene	5.0		**50.0**	50.00	0	99.9	50.60	1.25	02/06/2017
trans-1,2-Dichloroethene	5.0		**50.9**	50.00	0	101.9	51.06	0.25	02/06/2017
trans-1,3-Dichloropropene	4.0		**50.9**	50.00	0	101.8	49.96	1.84	02/06/2017
Trichloroethene	5.0		**50.0**	50.00	0	100.0	50.42	0.82	02/06/2017
Trichlorofluoromethane	5.0		**46.2**	50.00	0	92.3	46.28	0.24	02/06/2017
Vinyl acetate	50.0		**ND**	50.00	0	98.0	51.18	0.00	02/06/2017
Vinyl chloride	2.0		**43.6**	50.00	0	87.2	43.34	0.60	02/06/2017
Surr: 1,2-Dichloroethane-d4			**50.8**	50.00		101.5			02/06/2017
Surr: 4-Bromofluorobenzene			**50.9**	50.00		101.8			02/06/2017
Surr: Dibromofluoromethane			**50.6**	50.00		101.2			02/06/2017
Surr: Toluene-d8			**49.1**	50.00		98.2			02/06/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126805 **SampType:** LCS Units µg/Kg

SampID: LCS-Y170206A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		49.0	50.00	0	98.1	83.1	114	02/06/2017
1,1,1-Trichloroethane	5.0		50.4	50.00	0	100.7	78.5	119	02/06/2017
1,1,2,2-Tetrachloroethane	5.0		48.9	50.00	0	97.8	67.4	120	02/06/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		49.6	50.00	0	99.2	75.4	121	02/06/2017
1,1,2-Trichloroethane	5.0		47.0	50.00	0	94.1	81.1	111	02/06/2017
1,1-Dichloro-2-propanone	50.0		119	125.0	0	95.6	55.4	131	02/06/2017
1,1-Dichloroethane	5.0		52.3	50.00	0	104.6	80.1	116	02/06/2017
1,1-Dichloroethene	5.0		50.1	50.00	0	100.2	73.1	121	02/06/2017
1,1-Dichloropropene	5.0		50.9	50.00	0	101.7	82.2	114	02/06/2017
1,2,3-Trichlorobenzene	5.0		48.3	50.00	0	96.5	81.7	130	02/06/2017
1,2,3-Trichloropropane	10.0		45.8	50.00	0	91.5	67.8	118	02/06/2017
1,2,3-Trimethylbenzene	5.0		50.8	50.00	0	101.5	82.1	127	02/06/2017
1,2,4-Trichlorobenzene	5.0		52.3	50.00	0	104.6	72.3	141	02/06/2017
1,2,4-Trimethylbenzene	5.0		51.7	50.00	0	103.4	79.7	123	02/06/2017
1,2-Dibromo-3-chloropropane	5.0		46.8	50.00	0	93.7	62.1	123	02/06/2017
1,2-Dibromoethane	5.0		49.9	50.00	0	99.8	82.4	112	02/06/2017
1,2-Dichlorobenzene	5.0		50.7	50.00	0	101.4	82.7	119	02/06/2017
1,2-Dichloroethane	5.0		49.6	50.00	0	99.2	72.8	120	02/06/2017
1,2-Dichloropropane	5.0		50.6	50.00	0	101.1	80	116	02/06/2017
1,3,5-Trimethylbenzene	5.0		51.4	50.00	0	102.7	81.5	125	02/06/2017
1,3-Dichlorobenzene	5.0		52.2	50.00	0	104.3	82	124	02/06/2017
1,3-Dichloropropane	5.0		47.8	50.00	0	95.5	79.8	113	02/06/2017
1,4-Dichlorobenzene	5.0		52.6	50.00	0	105.2	81.1	124	02/06/2017
1-Chlorobutane	5.0		50.5	50.00	0	101.1	77.2	113	02/06/2017
2,2-Dichloropropane	5.0		51.3	50.00	0	102.5	76.6	121	02/06/2017
2-Butanone	50.0		130	125.0	0	104.1	62.8	131	02/06/2017
2-Chlorotoluene	5.0		51.9	50.00	0	103.7	78.8	121	02/06/2017
2-Hexanone	50.0		128	125.0	0	102.4	63.1	125	02/06/2017
2-Nitropropane	50.0		502	500.0	0	100.4	61.2	129	02/06/2017
4-Chlorotoluene	5.0		48.7	50.00	0	97.3	77.6	124	02/06/2017
4-Methyl-2-pentanone	50.0		121	125.0	0	97.1	60.6	126	02/06/2017
Acetone	50.0		133	125.0	0	106.6	39.5	159	02/06/2017
Acrolein	100		410	500.0	0	81.9	1	167	02/06/2017
Acrylonitrile	10.0		47.2	50.00	0	94.3	67	124	02/06/2017
Allyl chloride	5.0		51.0	50.00	0	102.0	58.5	129	02/06/2017
Benzene	1.0		48.6	50.00	0	97.2	80.8	117	02/06/2017
Bromobenzene	5.0		50.9	50.00	0	101.8	79.6	117	02/06/2017
Bromochloromethane	5.0		49.8	50.00	0	99.6	70.7	121	02/06/2017
Bromodichloromethane	5.0		51.1	50.00	0	102.1	80.7	121	02/06/2017
Bromoform	5.0		47.5	50.00	0	95.1	79.8	118	02/06/2017
Bromomethane	10.0		37.4	50.00	0	74.8	1	175	02/06/2017
Carbon disulfide	5.0		47.6	50.00	0	95.3	62.8	123	02/06/2017
Carbon tetrachloride	5.0		50.2	50.00	0	100.4	77.6	123	02/06/2017
Chlorobenzene	5.0		51.0	50.00	0	101.9	85.6	116	02/06/2017
Chloroethane	10.0		43.0	50.00	0	85.9	60.2	125	02/06/2017
Chloroform	5.0		49.6	50.00	0	99.2	77.9	116	02/06/2017
Chloromethane	10.0		44.4	50.00	0	88.8	29.9	157	02/06/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126805 **SampType:** LCS Units µg/Kg

SampID: LCS-Y170206A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		50.4	50.00	0	100.8	80.1	116	02/06/2017
cis-1,3-Dichloropropene	4.0		50.2	50.00	0	100.3	80.5	121	02/06/2017
Cyclohexanone	100		455	500.0	0	91.1	45.4	128	02/06/2017
Dibromochloromethane	5.0		49.1	50.00	0	98.2	84.3	116	02/06/2017
Dibromomethane	5.0		48.3	50.00	0	96.6	76.6	115	02/06/2017
Dichlorodifluoromethane	10.0		31.5	50.00	0	63.0	1	200	02/06/2017
Ethyl ether	5.0		47.2	50.00	0	94.4	73.4	116	02/06/2017
Ethyl methacrylate	5.0		48.5	50.00	0	97.1	76.2	120	02/06/2017
Ethylbenzene	5.0		52.4	50.00	0	104.8	84.8	116	02/06/2017
Hexachlorobutadiene	5.0		50.9	50.00	0	101.8	74	135	02/06/2017
Hexachloroethane	5.0		52.6	50.00	0	105.3	76.4	121	02/06/2017
Iodomethane	10.0		48.6	50.00	0	97.1	38.7	161	02/06/2017
Isopropylbenzene	5.0		51.3	50.00	0	102.5	85	125	02/06/2017
m,p-Xylenes	5.0		104	100.0	0	104.3	85.3	120	02/06/2017
Methacrylonitrile	50.0		ND	50.00	0	93.2	65.7	120	02/06/2017
Methyl Methacrylate	5.0		47.2	50.00	0	94.5	69.1	114	02/06/2017
Methyl tert-butyl ether	2.0		47.2	50.00	0	94.3	66.6	125	02/06/2017
Methylacrylate	10.0		48.0	50.00	0	96.1	69.7	121	02/06/2017
Methylene chloride	5.0		49.4	50.00	0	98.9	73.4	115	02/06/2017
Naphthalene	10.0		47.6	50.00	0	95.1	70.1	134	02/06/2017
n-Butylbenzene	5.0		55.4	50.00	0	110.9	78.4	138	02/06/2017
n-Heptane	20.0		55.4	50.00	0	110.9	74.3	125	02/06/2017
n-Hexane	20.0		51.8	50.00	0	103.6	66.3	129	02/06/2017
Nitrobenzene	100		540	500.0	0	107.9	20.1	165	02/06/2017
n-Propylbenzene	5.0		52.9	50.00	0	105.7	79.1	125	02/06/2017
o-Xylene	5.0		51.5	50.00	0	102.9	81.9	118	02/06/2017
Pentachloroethane	5.0		50.7	50.00	0	101.4	72.7	123	02/06/2017
p-Isopropyltoluene	5.0		53.0	50.00	0	106.0	82.7	129	02/06/2017
Propionitrile	50.0		481	500.0	0	96.2	64.3	121	02/06/2017
sec-Butylbenzene	5.0		52.0	50.00	0	104.1	81.3	125	02/06/2017
Styrene	5.0		49.8	50.00	0	99.6	88.2	122	02/06/2017
tert-Butylbenzene	5.0		50.2	50.00	0	100.4	74.8	125	02/06/2017
Tetrachloroethene	5.0		47.7	50.00	0	95.3	84.2	122	02/06/2017
Tetrahydrofuran	50.0		ND	50.00	0	95.6	61	118	02/06/2017
Toluene	5.0		50.6	50.00	0	101.2	81.3	113	02/06/2017
trans-1,2-Dichloroethene	5.0		51.1	50.00	0	102.1	78.2	118	02/06/2017
trans-1,3-Dichloropropene	4.0		50.0	50.00	0	99.9	81.7	124	02/06/2017
Trichloroethene	5.0		50.4	50.00	0	100.8	81	123	02/06/2017
Trichlorofluoromethane	5.0		46.3	50.00	0	92.6	66.8	131	02/06/2017
Vinyl acetate	50.0		51.2	50.00	0	102.4	64.3	122	02/06/2017
Vinyl chloride	2.0		43.3	50.00	0	86.7	45.2	140	02/06/2017
Surr: 1,2-Dichloroethane-d4			50.7	50.00		101.4	72.2	131	02/06/2017
Surr: 4-Bromofluorobenzene			51.0	50.00		102.0	82.1	116	02/06/2017
Surr: Dibromofluoromethane			50.5	50.00		101.0	77.7	120	02/06/2017
Surr: Toluene-d8			48.8	50.00		97.6	86	116	02/06/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126805 **SampType:** LCSGD Units %REC RPD Limit 0

SampID: LCSGD-Y170206A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Surr: 1,2-Dichloroethane-d4			**51.2**	50.00		102.3			02/06/2017
Surr: 4-Bromofluorobenzene			**51.5**	50.00		103.0			02/06/2017
Surr: Dibromofluoromethane			**50.3**	50.00		100.6			02/06/2017
Surr: Toluene-d8			**52.0**	50.00		103.9			02/06/2017

Batch 126805 **SampType:** LCSG Units %REC

SampID: LCSG-Y170206A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Surr: 1,2-Dichloroethane-d4			**51.4**	50.00		102.7	72.2	131	02/06/2017
Surr: 4-Bromofluorobenzene			**50.9**	50.00		101.8	82.1	116	02/06/2017
Surr: Dibromofluoromethane			**50.4**	50.00		100.8	77.7	120	02/06/2017
Surr: Toluene-d8			**51.2**	50.00		102.4	86	116	02/06/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126810 **SampType:** MBLK Units µg/Kg

SampID: MBLK-F170206A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		ND						02/06/2017
1,1,1-Trichloroethane	5.0		ND						02/06/2017
1,1,2,2-Tetrachloroethane	5.0		ND						02/06/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		ND						02/06/2017
1,1,2-Trichloroethane	5.0		ND						02/06/2017
1,1-Dichloro-2-propanone	50.0		ND						02/06/2017
1,1-Dichloroethane	5.0		ND						02/06/2017
1,1-Dichloroethene	5.0		ND						02/06/2017
1,1-Dichloropropene	5.0		ND						02/06/2017
1,2,3-Trichlorobenzene	5.0		ND						02/06/2017
1,2,3-Trichloropropane	10.0		ND						02/06/2017
1,2,3-Trimethylbenzene	5.0		ND						02/06/2017
1,2,4-Trichlorobenzene	5.0		ND						02/06/2017
1,2,4-Trimethylbenzene	5.0		ND						02/06/2017
1,2-Dibromo-3-chloropropane	5.0		ND						02/06/2017
1,2-Dibromoethane	5.0		ND						02/06/2017
1,2-Dichlorobenzene	5.0		ND						02/06/2017
1,2-Dichloroethane	5.0		ND						02/06/2017
1,2-Dichloropropane	5.0		ND						02/06/2017
1,3,5-Trimethylbenzene	5.0		ND						02/06/2017
1,3-Dichlorobenzene	5.0		ND						02/06/2017
1,3-Dichloropropane	5.0		ND						02/06/2017
1,4-Dichlorobenzene	5.0		ND						02/06/2017
1-Chlorobutane	5.0		ND						02/06/2017
2,2-Dichloropropane	5.0		ND						02/06/2017
2-Butanone	50.0		ND						02/06/2017
2-Chlorotoluene	5.0		ND						02/06/2017
2-Hexanone	50.0		ND						02/06/2017
2-Nitropropane	50.0		ND						02/06/2017
4-Chlorotoluene	5.0		ND						02/06/2017
4-Methyl-2-pentanone	50.0		ND						02/06/2017
Acetone	50.0		ND						02/06/2017
Acrolein	100		ND						02/06/2017
Acrylonitrile	10.0		ND						02/06/2017
Allyl chloride	5.0		ND						02/06/2017
Benzene	1.0		ND						02/06/2017
Bromobenzene	5.0		ND						02/06/2017
Bromochloromethane	5.0		ND						02/06/2017
Bromodichloromethane	5.0		ND						02/06/2017
Bromoform	5.0		ND						02/06/2017
Bromomethane	10.0		ND						02/06/2017
Carbon disulfide	5.0		ND						02/06/2017
Carbon tetrachloride	5.0		ND						02/06/2017
Chlorobenzene	5.0		ND						02/06/2017
Chloroethane	10.0		ND						02/06/2017
Chloroform	5.0		ND						02/06/2017
Chloromethane	10.0		ND						02/06/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126810 **SampType:** MBLK Units µg/Kg

SampID: MBLK-F170206A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		ND						02/06/2017
cis-1,3-Dichloropropene	4.0		ND						02/06/2017
Cyclohexanone	100		ND						02/06/2017
Dibromochloromethane	5.0		ND						02/06/2017
Dibromomethane	5.0		ND						02/06/2017
Dichlorodifluoromethane	10.0		ND						02/06/2017
Ethyl ether	5.0		ND						02/06/2017
Ethyl methacrylate	5.0		ND						02/06/2017
Ethylbenzene	5.0		ND						02/06/2017
Hexachlorobutadiene	5.0		ND						02/06/2017
Hexachloroethane	5.0		ND						02/06/2017
Iodomethane	10.0		ND						02/06/2017
Isopropylbenzene	5.0		ND						02/06/2017
m,p-Xylenes	5.0		ND						02/06/2017
Methacrylonitrile	50.0		ND						02/06/2017
Methyl Methacrylate	5.0		ND						02/06/2017
Methyl tert-butyl ether	2.0		ND						02/06/2017
Methylacrylate	10.0		ND						02/06/2017
Methylene chloride	5.0		ND						02/06/2017
Naphthalene	10.0		ND						02/06/2017
n-Butylbenzene	5.0		ND						02/06/2017
n-Heptane	20.0		ND						02/06/2017
n-Hexane	20.0		ND						02/06/2017
Nitrobenzene	100		ND						02/06/2017
n-Propylbenzene	5.0		ND						02/06/2017
o-Xylene	5.0		ND						02/06/2017
Pentachloroethane	5.0		ND						02/06/2017
p-Isopropyltoluene	5.0		ND						02/06/2017
Propionitrile	50.0		ND						02/06/2017
sec-Butylbenzene	5.0		ND						02/06/2017
Styrene	5.0		ND						02/06/2017
tert-Butylbenzene	5.0		ND						02/06/2017
Tetrachloroethene	5.0		ND						02/06/2017
Tetrahydrofuran	50.0		ND						02/06/2017
Toluene	5.0		ND						02/06/2017
trans-1,2-Dichloroethene	5.0		ND						02/06/2017
trans-1,3-Dichloropropene	4.0		ND						02/06/2017
Trichloroethene	5.0		ND						02/06/2017
Trichlorofluoromethane	5.0		ND						02/06/2017
Vinyl acetate	50.0		ND						02/06/2017
Vinyl chloride	2.0		ND						02/06/2017
Surr: 1,2-Dichloroethane-d4			**53.6**	50.00		107.2	72.2	131	02/06/2017
Surr: 4-Bromofluorobenzene			**49.7**	50.00		99.4	82.1	116	02/06/2017
Surr: Dibromofluoromethane			**50.2**	50.00		100.4	77.7	120	02/06/2017
Surr: Toluene-d8			**49.9**	50.00		99.9	86	116	02/06/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126810 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-F170206A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		**51.6**	50.00	0	103.3	50.92	1.40	02/06/2017
1,1,1-Trichloroethane	5.0		**51.3**	50.00	0	102.6	51.76	0.91	02/06/2017
1,1,2,2-Tetrachloroethane	5.0		**49.0**	50.00	0	97.9	50.31	2.74	02/06/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		**47.8**	50.00	0	95.5	50.00	4.58	02/06/2017
1,1,2-Trichloroethane	5.0		**47.9**	50.00	0	95.8	49.00	2.27	02/06/2017
1,1-Dichloro-2-propanone	50.0		**129**	125.0	0	103.2	113.1	13.09	02/06/2017
1,1-Dichloroethane	5.0		**50.6**	50.00	0	101.2	50.67	0.18	02/06/2017
1,1-Dichloroethene	5.0		**49.8**	50.00	0	99.6	52.05	4.40	02/06/2017
1,1-Dichloropropene	5.0		**51.0**	50.00	0	102.0	51.74	1.48	02/06/2017
1,2,3-Trichlorobenzene	5.0		**51.9**	50.00	0	103.8	53.65	3.28	02/06/2017
1,2,3-Trichloropropane	10.0		**48.2**	50.00	0	96.4	49.59	2.82	02/06/2017
1,2,3-Trimethylbenzene	5.0		**50.9**	50.00	0	101.7	50.18	1.37	02/06/2017
1,2,4-Trichlorobenzene	5.0		**54.1**	50.00	0	108.2	57.24	5.66	02/06/2017
1,2,4-Trimethylbenzene	5.0		**52.8**	50.00	0	105.6	54.04	2.34	02/06/2017
1,2-Dibromo-3-chloropropane	5.0		**51.8**	50.00	0	103.6	55.23	6.37	02/06/2017
1,2-Dibromoethane	5.0		**47.4**	50.00	0	94.8	48.26	1.76	02/06/2017
1,2-Dichlorobenzene	5.0		**51.0**	50.00	0	102.1	51.07	0.08	02/06/2017
1,2-Dichloroethane	5.0		**52.2**	50.00	0	104.3	53.83	3.17	02/06/2017
1,2-Dichloropropane	5.0		**49.8**	50.00	0	99.7	50.85	1.99	02/06/2017
1,3,5-Trimethylbenzene	5.0		**51.6**	50.00	0	103.3	53.44	3.43	02/06/2017
1,3-Dichlorobenzene	5.0		**51.7**	50.00	0	103.4	51.89	0.35	02/06/2017
1,3-Dichloropropane	5.0		**47.9**	50.00	0	95.8	50.48	5.29	02/06/2017
1,4-Dichlorobenzene	5.0		**50.7**	50.00	0	101.3	50.65	0.04	02/06/2017
1-Chlorobutane	5.0		**52.0**	50.00	0	104.0	52.07	0.15	02/06/2017
2,2-Dichloropropane	5.0		**51.8**	50.00	0	103.6	52.88	2.10	02/06/2017
2-Butanone	50.0		**152**	125.0	0	122.0	157.7	3.40	02/06/2017
2-Chlorotoluene	5.0		**52.0**	50.00	0	104.0	54.14	4.01	02/06/2017
2-Hexanone	50.0		**139**	125.0	0	111.0	141.3	1.76	02/06/2017
2-Nitropropane	50.0		**565**	500.0	0	113.0	578.9	2.46	02/06/2017
4-Chlorotoluene	5.0		**48.6**	50.00	0	97.1	49.09	1.09	02/06/2017
4-Methyl-2-pentanone	50.0		**123**	125.0	0	98.7	133.6	7.97	02/06/2017
Acetone	50.0		**165**	125.0	0	132.0	171.6	3.89	02/06/2017
Acrolein	100		**401**	500.0	0	80.1	398.1	0.63	02/06/2017
Acrylonitrile	10.0		**50.5**	50.00	0	101.1	53.53	5.77	02/06/2017
Allyl chloride	5.0		**51.7**	50.00	0	103.3	50.08	3.13	02/06/2017
Benzene	1.0		**48.5**	50.00	0	96.9	48.92	0.92	02/06/2017
Bromobenzene	5.0		**50.6**	50.00	0	101.3	51.94	2.55	02/06/2017
Bromochloromethane	5.0		**51.5**	50.00	0	103.1	52.26	1.39	02/06/2017
Bromodichloromethane	5.0		**52.3**	50.00	0	104.7	55.08	5.10	02/06/2017
Bromoform	5.0		**52.6**	50.00	0	105.3	53.97	2.48	02/06/2017
Bromomethane	10.0		**34.2**	50.00	0	68.4	31.90	7.02	02/06/2017
Carbon disulfide	5.0		**45.0**	50.00	0	89.9	45.99	2.24	02/06/2017
Carbon tetrachloride	5.0		**53.7**	50.00	0	107.3	53.52	0.28	02/06/2017
Chlorobenzene	5.0		**49.0**	50.00	0	98.0	50.52	3.03	02/06/2017
Chloroethane	10.0		**46.0**	50.00	0	91.9	46.92	2.09	02/06/2017
Chloroform	5.0		**49.8**	50.00	0	99.7	49.99	0.28	02/06/2017
Chloromethane	10.0		**51.8**	50.00	0	103.6	54.94	5.86	02/06/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126810 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-F170206A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
cis-1,2-Dichloroethene	5.0		**51.2**	50.00	0	102.4	52.23	1.95	02/06/2017
cis-1,3-Dichloropropene	4.0		**53.3**	50.00	0	106.6	53.15	0.32	02/06/2017
Cyclohexanone	100		**495**	500.0	0	98.9	502.6	1.60	02/06/2017
Dibromochloromethane	5.0		**51.6**	50.00	0	103.1	52.12	1.08	02/06/2017
Dibromomethane	5.0		**49.0**	50.00	0	98.0	48.66	0.72	02/06/2017
Dichlorodifluoromethane	10.0		**33.7**	50.00	0	67.4	35.10	4.10	02/06/2017
Ethyl ether	5.0		**48.5**	50.00	0	96.9	48.58	0.25	02/06/2017
Ethyl methacrylate	5.0		**49.2**	50.00	0	98.3	51.70	5.06	02/06/2017
Ethylbenzene	5.0		**51.8**	50.00	0	103.5	52.16	0.77	02/06/2017
Hexachlorobutadiene	5.0		**55.8**	50.00	0	111.6	54.68	2.03	02/06/2017
Hexachloroethane	5.0		**56.8**	50.00	0	113.6	58.30	2.64	02/06/2017
Iodomethane	10.0		**45.2**	50.00	0	90.5	42.59	6.06	02/06/2017
Isopropylbenzene	5.0		**51.7**	50.00	0	103.4	52.48	1.52	02/06/2017
m,p-Xylenes	5.0		**103**	100.0	0	103.2	102.8	0.36	02/06/2017
Methacrylonitrile	50.0		**52.9**	50.00	0	105.8	52.69	0.36	02/06/2017
Methyl Methacrylate	5.0		**52.6**	50.00	0	105.3	54.32	3.12	02/06/2017
Methyl tert-butyl ether	2.0		**51.2**	50.00	0	102.3	51.70	1.05	02/06/2017
Methylacrylate	10.0		**49.1**	50.00	0	98.2	49.88	1.56	02/06/2017
Methylene chloride	5.0		**49.7**	50.00	0	99.4	49.09	1.21	02/06/2017
Naphthalene	10.0		**52.1**	50.00	0	104.2	54.09	3.75	02/06/2017
n-Butylbenzene	5.0		**57.6**	50.00	0	115.3	58.17	0.92	02/06/2017
n-Heptane	20.0		**57.9**	50.00	0	115.8	58.63	1.25	02/06/2017
n-Hexane	20.0		**53.9**	50.00	0	107.8	54.03	0.26	02/06/2017
Nitrobenzene	100		**497**	500.0	0	99.3	527.5	6.02	02/06/2017
n-Propylbenzene	5.0		**53.0**	50.00	0	106.0	53.98	1.85	02/06/2017
o-Xylene	5.0		**51.6**	50.00	0	103.2	52.04	0.81	02/06/2017
Pentachloroethane	5.0		**55.1**	50.00	0	110.1	55.83	1.37	02/06/2017
p-Isopropyltoluene	5.0		**53.5**	50.00	0	106.9	53.89	0.78	02/06/2017
Propionitrile	50.0		**512**	500.0	0	102.3	531.6	3.81	02/06/2017
sec-Butylbenzene	5.0		**52.8**	50.00	0	105.6	54.25	2.75	02/06/2017
Styrene	5.0		**51.4**	50.00	0	102.7	51.87	0.99	02/06/2017
tert-Butylbenzene	5.0		**51.6**	50.00	0	103.2	51.44	0.35	02/06/2017
Tetrachloroethene	5.0		**47.4**	50.00	0	94.8	48.07	1.45	02/06/2017
Tetrahydrofuran	50.0		**52.0**	50.00	0	104.0	55.24	6.00	02/06/2017
Toluene	5.0		**48.7**	50.00	0	97.3	49.08	0.86	02/06/2017
trans-1,2-Dichloroethene	5.0		**51.3**	50.00	0	102.5	51.30	0.06	02/06/2017
trans-1,3-Dichloropropene	4.0		**53.4**	50.00	0	106.8	52.95	0.86	02/06/2017
Trichloroethene	5.0		**49.8**	50.00	0	99.6	50.32	1.04	02/06/2017
Trichlorofluoromethane	5.0		**47.3**	50.00	0	94.6	48.84	3.18	02/06/2017
Vinyl acetate	50.0		**57.3**	50.00	0	114.7	59.78	4.17	02/06/2017
Vinyl chloride	2.0		**47.3**	50.00	0	94.7	46.26	2.31	02/06/2017
Surr: 1,2-Dichloroethane-d4			**55.0**	50.00		110.1			02/06/2017
Surr: 4-Bromofluorobenzene			**52.5**	50.00		105.0			02/06/2017
Surr: Dibromofluoromethane			**50.6**	50.00		101.2			02/06/2017
Surr: Toluene-d8			**49.6**	50.00		99.1			02/06/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126810 **SampType:** LCS Units µg/Kg

SampID: LCS-F170206A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		**50.9**	50.00	0	101.8	83.1	114	02/06/2017
1,1,1-Trichloroethane	5.0		**51.8**	50.00	0	103.5	78.5	119	02/06/2017
1,1,2,2-Tetrachloroethane	5.0		**50.3**	50.00	0	100.6	67.4	120	02/06/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		**50.0**	50.00	0	100.0	75.4	121	02/06/2017
1,1,2-Trichloroethane	5.0		**49.0**	50.00	0	98.0	81.1	111	02/06/2017
1,1-Dichloro-2-propanone	50.0		**113**	125.0	0	90.5	55.4	131	02/06/2017
1,1-Dichloroethane	5.0		**50.7**	50.00	0	101.3	80.1	116	02/06/2017
1,1-Dichloroethene	5.0		**52.0**	50.00	0	104.1	73.1	121	02/06/2017
1,1-Dichloropropene	5.0		**51.7**	50.00	0	103.5	82.2	114	02/06/2017
1,2,3-Trichlorobenzene	5.0		**53.6**	50.00	0	107.3	81.7	130	02/06/2017
1,2,3-Trichloropropane	10.0		**49.6**	50.00	0	99.2	67.8	118	02/06/2017
1,2,3-Trimethylbenzene	5.0		**50.2**	50.00	0	100.4	82.1	127	02/06/2017
1,2,4-Trichlorobenzene	5.0		**57.2**	50.00	0	114.5	72.3	141	02/06/2017
1,2,4-Trimethylbenzene	5.0		**54.0**	50.00	0	108.1	79.7	123	02/06/2017
1,2-Dibromo-3-chloropropane	5.0		**55.2**	50.00	0	110.5	62.1	123	02/06/2017
1,2-Dibromoethane	5.0		**48.3**	50.00	0	96.5	82.4	112	02/06/2017
1,2-Dichlorobenzene	5.0		**51.1**	50.00	0	102.1	82.7	119	02/06/2017
1,2-Dichloroethane	5.0		**53.8**	50.00	0	107.7	72.8	120	02/06/2017
1,2-Dichloropropane	5.0		**50.8**	50.00	0	101.7	80	116	02/06/2017
1,3,5-Trimethylbenzene	5.0		**53.4**	50.00	0	106.9	81.5	125	02/06/2017
1,3-Dichlorobenzene	5.0		**51.9**	50.00	0	103.8	82	124	02/06/2017
1,3-Dichloropropane	5.0		**50.5**	50.00	0	101.0	79.8	113	02/06/2017
1,4-Dichlorobenzene	5.0		**50.6**	50.00	0	101.3	81.1	124	02/06/2017
1-Chlorobutane	5.0		**52.1**	50.00	0	104.1	77.2	113	02/06/2017
2,2-Dichloropropane	5.0		**52.9**	50.00	0	105.8	76.6	121	02/06/2017
2-Butanone	50.0		**158**	125.0	0	126.2	62.8	131	02/06/2017
2-Chlorotoluene	5.0		**54.1**	50.00	0	108.3	78.8	121	02/06/2017
2-Hexanone	50.0		**141**	125.0	0	113.0	63.1	125	02/06/2017
2-Nitropropane	50.0		**579**	500.0	0	115.8	61.2	129	02/06/2017
4-Chlorotoluene	5.0		**49.1**	50.00	0	98.2	77.6	124	02/06/2017
4-Methyl-2-pentanone	50.0		**134**	125.0	0	106.8	60.6	126	02/06/2017
Acetone	50.0		**172**	125.0	0	137.3	39.5	159	02/06/2017
Acrolein	100		**398**	500.0	0	79.6	1	167	02/06/2017
Acrylonitrile	10.0		**53.5**	50.00	0	107.1	67	124	02/06/2017
Allyl chloride	5.0		**50.1**	50.00	0	100.2	58.5	129	02/06/2017
Benzene	1.0		**48.9**	50.00	0	97.8	80.8	117	02/06/2017
Bromobenzene	5.0		**51.9**	50.00	0	103.9	79.6	117	02/06/2017
Bromochloromethane	5.0		**52.3**	50.00	0	104.5	70.7	121	02/06/2017
Bromodichloromethane	5.0		**55.1**	50.00	0	110.2	80.7	121	02/06/2017
Bromoform	5.0		**54.0**	50.00	0	107.9	79.8	118	02/06/2017
Bromomethane	10.0		**31.9**	50.00	0	63.8	1	175	02/06/2017
Carbon disulfide	5.0		**46.0**	50.00	0	92.0	62.8	123	02/06/2017
Carbon tetrachloride	5.0		**53.5**	50.00	0	107.0	77.6	123	02/06/2017
Chlorobenzene	5.0		**50.5**	50.00	0	101.0	85.6	116	02/06/2017
Chloroethane	10.0		**46.9**	50.00	0	93.8	60.2	125	02/06/2017
Chloroform	5.0		**50.0**	50.00	0	100.0	77.9	116	02/06/2017
Chloromethane	10.0		**54.9**	50.00	0	109.9	29.9	157	02/06/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126810 **SampType:** LCS Units µg/Kg

SampID: LCS-F170206A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		**52.2**	50.00	0	104.5	80.1	116	02/06/2017
cis-1,3-Dichloropropene	4.0		**53.2**	50.00	0	106.3	80.5	121	02/06/2017
Cyclohexanone	100		**503**	500.0	0	100.5	45.4	128	02/06/2017
Dibromochloromethane	5.0		**52.1**	50.00	0	104.2	84.3	116	02/06/2017
Dibromomethane	5.0		**48.7**	50.00	0	97.3	76.6	115	02/06/2017
Dichlorodifluoromethane	10.0		**35.1**	50.00	0	70.2	1	200	02/06/2017
Ethyl ether	5.0		**48.6**	50.00	0	97.2	73.4	116	02/06/2017
Ethyl methacrylate	5.0		**51.7**	50.00	0	103.4	76.2	120	02/06/2017
Ethylbenzene	5.0		**52.2**	50.00	0	104.3	84.8	116	02/06/2017
Hexachlorobutadiene	5.0		**54.7**	50.00	0	109.4	74	135	02/06/2017
Hexachloroethane	5.0		**58.3**	50.00	0	116.6	76.4	121	02/06/2017
Iodomethane	10.0		**42.6**	50.00	0	85.2	38.7	161	02/06/2017
Isopropylbenzene	5.0		**52.5**	50.00	0	105.0	85	125	02/06/2017
m,p-Xylenes	5.0		**103**	100.0	0	102.8	85.3	120	02/06/2017
Methacrylonitrile	50.0		**52.7**	50.00	0	105.4	65.7	120	02/06/2017
Methyl Methacrylate	5.0		**54.3**	50.00	0	108.6	69.1	114	02/06/2017
Methyl tert-butyl ether	2.0		**51.7**	50.00	0	103.4	66.6	125	02/06/2017
Methylacrylate	10.0		**49.9**	50.00	0	99.8	69.7	121	02/06/2017
Methylene chloride	5.0		**49.1**	50.00	0	98.2	73.4	115	02/06/2017
Naphthalene	10.0		**54.1**	50.00	0	108.2	70.1	134	02/06/2017
n-Butylbenzene	5.0		**58.2**	50.00	0	116.3	78.4	138	02/06/2017
n-Heptane	20.0		**58.6**	50.00	0	117.3	74.3	125	02/06/2017
n-Hexane	20.0		**54.0**	50.00	0	108.1	66.3	129	02/06/2017
Nitrobenzene	100		**528**	500.0	0	105.5	20.1	165	02/06/2017
n-Propylbenzene	5.0		**54.0**	50.00	0	108.0	79.1	125	02/06/2017
o-Xylene	5.0		**52.0**	50.00	0	104.1	81.9	118	02/06/2017
Pentachloroethane	5.0		**55.8**	50.00	0	111.7	72.7	123	02/06/2017
p-Isopropyltoluene	5.0		**53.9**	50.00	0	107.8	82.7	129	02/06/2017
Propionitrile	50.0		**532**	500.0	0	106.3	64.3	121	02/06/2017
sec-Butylbenzene	5.0		**54.2**	50.00	0	108.5	81.3	125	02/06/2017
Styrene	5.0		**51.9**	50.00	0	103.7	88.2	122	02/06/2017
tert-Butylbenzene	5.0		**51.4**	50.00	0	102.9	74.8	125	02/06/2017
Tetrachloroethene	5.0		**48.1**	50.00	0	96.1	84.2	122	02/06/2017
Tetrahydrofuran	50.0		**55.2**	50.00	0	110.5	61	118	02/06/2017
Toluene	5.0		**49.1**	50.00	0	98.2	81.3	113	02/06/2017
trans-1,2-Dichloroethene	5.0		**51.3**	50.00	0	102.6	78.2	118	02/06/2017
trans-1,3-Dichloropropene	4.0		**53.0**	50.00	0	105.9	81.7	124	02/06/2017
Trichloroethene	5.0		**50.3**	50.00	0	100.6	81	123	02/06/2017
Trichlorofluoromethane	5.0		**48.8**	50.00	0	97.7	66.8	131	02/06/2017
Vinyl acetate	50.0		**59.8**	50.00	0	119.6	64.3	122	02/06/2017
Vinyl chloride	2.0		**46.3**	50.00	0	92.5	45.2	140	02/06/2017
Surr: 1,2-Dichloroethane-d4			**53.9**	50.00		107.8	72.2	131	02/06/2017
Surr: 4-Bromofluorobenzene			**52.4**	50.00		104.7	82.1	116	02/06/2017
Surr: Dibromofluoromethane			**51.3**	50.00		102.6	77.7	120	02/06/2017
Surr: Toluene-d8			**49.4**	50.00		98.9	86	116	02/06/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126810 **SampType:** LCSGD Units %REC RPD Limit 0

SampID: LCSGD-F170206A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Surr: 1,2-Dichloroethane-d4			**54.3**	50.00		108.5			02/06/2017
Surr: 4-Bromofluorobenzene			**50.1**	50.00		100.2			02/06/2017
Surr: Dibromofluoromethane			**51.8**	50.00		103.6			02/06/2017
Surr: Toluene-d8			**51.6**	50.00		103.3			02/06/2017

Batch 126810 **SampType:** LCSG Units %REC

SampID: LCSG-F170206A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Surr: 1,2-Dichloroethane-d4			**51.5**	50.00		103.1	72.2	131	02/06/2017
Surr: 4-Bromofluorobenzene			**51.2**	50.00		102.3	82.1	116	02/06/2017
Surr: Dibromofluoromethane			**49.6**	50.00		99.2	77.7	120	02/06/2017
Surr: Toluene-d8			**51.0**	50.00		102.1	86	116	02/06/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126859 **SampType:** MBLK Units µg/Kg

SampID: MBLK-F170207A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		ND						02/07/2017
1,1,1-Trichloroethane	5.0		ND						02/07/2017
1,1,2,2-Tetrachloroethane	5.0		ND						02/07/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		ND						02/07/2017
1,1,2-Trichloroethane	5.0		ND						02/07/2017
1,1-Dichloro-2-propanone	50.0		ND						02/07/2017
1,1-Dichloroethane	5.0		ND						02/07/2017
1,1-Dichloroethene	5.0		ND						02/07/2017
1,1-Dichloropropene	5.0		ND						02/07/2017
1,2,3-Trichlorobenzene	5.0		ND						02/07/2017
1,2,3-Trichloropropane	10.0		ND						02/07/2017
1,2,3-Trimethylbenzene	5.0		ND						02/07/2017
1,2,4-Trichlorobenzene	5.0		ND						02/07/2017
1,2,4-Trimethylbenzene	5.0		ND						02/07/2017
1,2-Dibromo-3-chloropropane	5.0		ND						02/07/2017
1,2-Dibromoethane	5.0		ND						02/07/2017
1,2-Dichlorobenzene	5.0		ND						02/07/2017
1,2-Dichloroethane	5.0		ND						02/07/2017
1,2-Dichloropropane	5.0		ND						02/07/2017
1,3,5-Trimethylbenzene	5.0		ND						02/07/2017
1,3-Dichlorobenzene	5.0		ND						02/07/2017
1,3-Dichloropropane	5.0		ND						02/07/2017
1,4-Dichlorobenzene	5.0		ND						02/07/2017
1-Chlorobutane	5.0		ND						02/07/2017
2,2-Dichloropropane	5.0		ND						02/07/2017
2-Butanone	50.0		ND						02/07/2017
2-Chlorotoluene	5.0		ND						02/07/2017
2-Hexanone	50.0		ND						02/07/2017
2-Nitropropane	50.0		ND						02/07/2017
4-Chlorotoluene	5.0		ND						02/07/2017
4-Methyl-2-pentanone	50.0		ND						02/07/2017
Acetone	50.0		ND						02/07/2017
Acrolein	100		ND						02/07/2017
Acrylonitrile	10.0		ND						02/07/2017
Allyl chloride	5.0		ND						02/07/2017
Benzene	1.0		ND						02/07/2017
Bromobenzene	5.0		ND						02/07/2017
Bromochloromethane	5.0		ND						02/07/2017
Bromodichloromethane	5.0		ND						02/07/2017
Bromoform	5.0		ND						02/07/2017
Bromomethane	10.0		ND						02/07/2017
Carbon disulfide	5.0		ND						02/07/2017
Carbon tetrachloride	5.0		ND						02/07/2017
Chlorobenzene	5.0		ND						02/07/2017
Chloroethane	10.0		ND						02/07/2017
Chloroform	5.0		ND						02/07/2017
Chloromethane	10.0		ND						02/07/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126859 **SampType:** MBLK Units µg/Kg

SampID: MBLK-F170207A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		ND						02/07/2017
cis-1,3-Dichloropropene	4.0		ND						02/07/2017
Cyclohexanone	100		ND						02/07/2017
Dibromochloromethane	5.0		ND						02/07/2017
Dibromomethane	5.0		ND						02/07/2017
Dichlorodifluoromethane	10.0		ND						02/07/2017
Ethyl ether	5.0		ND						02/07/2017
Ethyl methacrylate	5.0		ND						02/07/2017
Ethylbenzene	5.0		ND						02/07/2017
Hexachlorobutadiene	5.0		ND						02/07/2017
Hexachloroethane	5.0		ND						02/07/2017
Iodomethane	10.0		ND						02/07/2017
Isopropylbenzene	5.0		ND						02/07/2017
m,p-Xylenes	5.0		ND						02/07/2017
Methacrylonitrile	50.0		ND						02/07/2017
Methyl Methacrylate	5.0		ND						02/07/2017
Methyl tert-butyl ether	2.0		ND						02/07/2017
Methylacrylate	10.0		ND						02/07/2017
Methylene chloride	5.0		ND						02/07/2017
Naphthalene	10.0		ND						02/07/2017
n-Butylbenzene	5.0		ND						02/07/2017
n-Heptane	20.0		ND						02/07/2017
n-Hexane	20.0		ND						02/07/2017
Nitrobenzene	100		ND						02/07/2017
n-Propylbenzene	5.0		ND						02/07/2017
o-Xylene	5.0		ND						02/07/2017
Pentachloroethane	5.0		ND						02/07/2017
p-Isopropyltoluene	5.0		ND						02/07/2017
Propionitrile	50.0		ND						02/07/2017
sec-Butylbenzene	5.0		ND						02/07/2017
Styrene	5.0		ND						02/07/2017
tert-Butylbenzene	5.0		ND						02/07/2017
Tetrachloroethene	5.0		ND						02/07/2017
Tetrahydrofuran	50.0		ND						02/07/2017
Toluene	5.0		ND						02/07/2017
trans-1,2-Dichloroethene	5.0		ND						02/07/2017
trans-1,3-Dichloropropene	4.0		ND						02/07/2017
Trichloroethene	5.0		ND						02/07/2017
Trichlorofluoromethane	5.0		ND						02/07/2017
Vinyl acetate	50.0		ND						02/07/2017
Vinyl chloride	2.0		ND						02/07/2017
Surr: 1,2-Dichloroethane-d4			**54.4**	50.00		108.7	72.2	131	02/07/2017
Surr: 4-Bromofluorobenzene			**51.3**	50.00		102.7	82.1	116	02/07/2017
Surr: Dibromofluoromethane			**50.1**	50.00		100.2	77.7	120	02/07/2017
Surr: Toluene-d8			**49.8**	50.00		99.5	86	116	02/07/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126859 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-F170207A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		**50.1**	50.00	0	100.3	51.14	1.99	02/07/2017
1,1,1-Trichloroethane	5.0		**52.6**	50.00	0	105.3	50.72	3.72	02/07/2017
1,1,2,2-Tetrachloroethane	5.0		**50.5**	50.00	0	101.1	49.99	1.09	02/07/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		**48.4**	50.00	0	96.9	47.56	1.81	02/07/2017
1,1,2-Trichloroethane	5.0		**49.4**	50.00	0	98.8	47.35	4.24	02/07/2017
1,1-Dichloro-2-propanone	50.0		**140**	125.0	0	112.3	123.4	12.87	02/07/2017
1,1-Dichloroethane	5.0		**51.6**	50.00	0	103.1	50.99	1.11	02/07/2017
1,1-Dichloroethene	5.0		**50.2**	50.00	0	100.4	48.86	2.67	02/07/2017
1,1-Dichloropropene	5.0		**51.7**	50.00	0	103.4	50.36	2.59	02/07/2017
1,2,3-Trichlorobenzene	5.0		**51.6**	50.00	0	103.3	50.94	1.38	02/07/2017
1,2,3-Trichloropropane	10.0		**51.0**	50.00	0	102.0	45.25	11.91	02/07/2017
1,2,3-Trimethylbenzene	5.0		**51.1**	50.00	0	102.2	50.36	1.50	02/07/2017
1,2,4-Trichlorobenzene	5.0		**52.6**	50.00	0	105.1	53.29	1.36	02/07/2017
1,2,4-Trimethylbenzene	5.0		**51.8**	50.00	0	103.6	49.80	3.94	02/07/2017
1,2-Dibromo-3-chloropropane	5.0		**52.9**	50.00	0	105.8	49.32	7.02	02/07/2017
1,2-Dibromoethane	5.0		**49.4**	50.00	0	98.8	48.31	2.21	02/07/2017
1,2-Dichlorobenzene	5.0		**50.4**	50.00	0	100.8	49.65	1.46	02/07/2017
1,2-Dichloroethane	5.0		**54.8**	50.00	0	109.5	54.10	1.19	02/07/2017
1,2-Dichloropropane	5.0		**51.3**	50.00	0	102.6	50.96	0.68	02/07/2017
1,3,5-Trimethylbenzene	5.0		**50.5**	50.00	0	100.9	52.02	3.04	02/07/2017
1,3-Dichlorobenzene	5.0		**50.9**	50.00	0	101.7	49.06	3.62	02/07/2017
1,3-Dichloropropane	5.0		**50.5**	50.00	0	101.0	51.31	1.61	02/07/2017
1,4-Dichlorobenzene	5.0		**49.9**	50.00	0	99.8	49.87	0.02	02/07/2017
1-Chlorobutane	5.0		**51.8**	50.00	0	103.5	52.83	2.05	02/07/2017
2,2-Dichloropropane	5.0		**53.6**	50.00	0	107.2	51.30	4.37	02/07/2017
2-Butanone	50.0		**138**	125.0	0	110.0	149.9	8.62	02/07/2017
2-Chlorotoluene	5.0		**50.1**	50.00	0	100.2	49.74	0.70	02/07/2017
2-Hexanone	50.0		**137**	125.0	0	109.3	140.0	2.44	02/07/2017
2-Nitropropane	50.0		**602**	500.0	0	120.4	531.6	12.44	02/07/2017
4-Chlorotoluene	5.0		**46.6**	50.00	0	93.1	47.81	2.63	02/07/2017
4-Methyl-2-pentanone	50.0		**136**	125.0	0	108.8	131.0	3.69	02/07/2017
Acetone	50.0		**104**	125.0	0	83.1	146.7	34.22	02/07/2017
Acrolein	100		**413**	500.0	0	82.7	382.4	7.76	02/07/2017
Acrylonitrile	10.0		**56.2**	50.00	0	112.5	50.58	10.58	02/07/2017
Allyl chloride	5.0		**50.0**	50.00	0	100.1	50.22	0.36	02/07/2017
Benzene	1.0		**48.6**	50.00	0	97.1	47.94	1.26	02/07/2017
Bromobenzene	5.0		**50.2**	50.00	0	100.4	51.32	2.17	02/07/2017
Bromochloromethane	5.0		**54.2**	50.00	0	108.4	51.68	4.72	02/07/2017
Bromodichloromethane	5.0		**54.1**	50.00	0	108.1	52.18	3.56	02/07/2017
Bromoform	5.0		**53.7**	50.00	0	107.4	51.17	4.86	02/07/2017
Bromomethane	10.0		**24.5**	50.00	0	49.0	27.07	9.93	02/07/2017
Carbon disulfide	5.0		**44.0**	50.00	0	88.0	43.14	1.97	02/07/2017
Carbon tetrachloride	5.0		**53.6**	50.00	0	107.3	52.10	2.91	02/07/2017
Chlorobenzene	5.0		**49.3**	50.00	0	98.7	49.27	0.14	02/07/2017
Chloroethane	10.0		**47.2**	50.00	0	94.4	46.58	1.32	02/07/2017
Chloroform	5.0		**51.4**	50.00	0	102.8	49.45	3.85	02/07/2017
Chloromethane	10.0		**45.9**	50.00	0	91.8	46.22	0.67	02/07/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126859 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-F170207A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
cis-1,2-Dichloroethene	5.0		**53.0**	50.00	0	106.1	51.91	2.17	02/07/2017
cis-1,3-Dichloropropene	4.0		**53.7**	50.00	0	107.3	51.74	3.66	02/07/2017
Cyclohexanone	100		**479**	500.0	0	95.8	449.9	6.25	02/07/2017
Dibromochloromethane	5.0		**51.7**	50.00	0	103.3	50.80	1.70	02/07/2017
Dibromomethane	5.0		**51.6**	50.00	0	103.3	49.65	3.95	02/07/2017
Dichlorodifluoromethane	10.0		**27.0**	50.00	0	54.0	27.45	1.69	02/07/2017
Ethyl ether	5.0		**50.2**	50.00	0	100.4	47.64	5.27	02/07/2017
Ethyl methacrylate	5.0		**54.7**	50.00	0	109.4	53.71	1.79	02/07/2017
Ethylbenzene	5.0		**51.5**	50.00	0	102.9	51.77	0.60	02/07/2017
Hexachlorobutadiene	5.0		**52.6**	50.00	0	105.3	52.38	0.48	02/07/2017
Hexachloroethane	5.0		**52.4**	50.00	0	104.7	52.08	0.54	02/07/2017
Iodomethane	10.0		**38.0**	50.00	0	76.0	35.17	7.74	02/07/2017
Isopropylbenzene	5.0		**50.5**	50.00	0	101.0	50.15	0.74	02/07/2017
m,p-Xylenes	5.0		**102**	100.0	0	102.2	103.6	1.36	02/07/2017
Methacrylonitrile	50.0		**56.1**	50.00	0	112.2	51.81	7.92	02/07/2017
Methyl Methacrylate	5.0	S	**57.1**	50.00	0	114.1	53.61	6.23	02/07/2017
Methyl tert-butyl ether	2.0		**54.2**	50.00	0	108.4	50.07	7.92	02/07/2017
Methylacrylate	10.0		**50.2**	50.00	0	100.4	48.08	4.33	02/07/2017
Methylene chloride	5.0		**50.0**	50.00	0	100.1	48.27	3.58	02/07/2017
Naphthalene	10.0		**54.2**	50.00	0	108.4	50.99	6.12	02/07/2017
n-Butylbenzene	5.0		**53.9**	50.00	0	107.9	54.55	1.14	02/07/2017
n-Heptane	20.0		**57.4**	50.00	0	114.8	56.39	1.76	02/07/2017
n-Hexane	20.0		**52.1**	50.00	0	104.2	51.04	2.09	02/07/2017
Nitrobenzene	100		**425**	500.0	0	85.0	370.9	13.59	02/07/2017
n-Propylbenzene	5.0		**49.8**	50.00	0	99.7	50.48	1.30	02/07/2017
o-Xylene	5.0		**51.4**	50.00	0	102.8	51.92	1.03	02/07/2017
Pentachloroethane	5.0		**55.7**	50.00	0	111.4	53.49	4.08	02/07/2017
p-Isopropyltoluene	5.0		**51.8**	50.00	0	103.7	50.11	3.37	02/07/2017
Propionitrile	50.0		**575**	500.0	0	115.1	529.8	8.25	02/07/2017
sec-Butylbenzene	5.0		**52.2**	50.00	0	104.3	52.38	0.40	02/07/2017
Styrene	5.0		**50.9**	50.00	0	101.9	51.59	1.29	02/07/2017
tert-Butylbenzene	5.0		**50.1**	50.00	0	100.2	48.21	3.81	02/07/2017
Tetrachloroethene	5.0		**48.0**	50.00	0	96.0	47.34	1.43	02/07/2017
Tetrahydrofuran	50.0		**57.1**	50.00	0	114.2	51.84	9.64	02/07/2017
Toluene	5.0		**47.6**	50.00	0	95.2	49.03	2.92	02/07/2017
trans-1,2-Dichloroethene	5.0		**50.6**	50.00	0	101.3	48.50	4.30	02/07/2017
trans-1,3-Dichloropropene	4.0		**53.7**	50.00	0	107.4	52.50	2.28	02/07/2017
Trichloroethene	5.0		**50.4**	50.00	0	100.8	49.73	1.32	02/07/2017
Trichlorofluoromethane	5.0		**47.1**	50.00	0	94.3	46.42	1.52	02/07/2017
Vinyl acetate	50.0	S	**63.4**	50.00	0	126.7	57.62	9.50	02/07/2017
Vinyl chloride	2.0		**43.8**	50.00	0	87.5	44.21	1.02	02/07/2017
Surr: 1,2-Dichloroethane-d4			**54.7**	50.00		109.4			02/07/2017
Surr: 4-Bromofluorobenzene			**52.2**	50.00		104.3			02/07/2017
Surr: Dibromofluoromethane			**51.3**	50.00		102.7			02/07/2017
Surr: Toluene-d8			**48.0**	50.00		96.0			02/07/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126859 **SampType:** LCS Units µg/Kg

SampID: LCS-F170207A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		**51.1**	50.00	0	102.3	83.1	114	02/07/2017
1,1,1-Trichloroethane	5.0		**50.7**	50.00	0	101.4	78.5	119	02/07/2017
1,1,2,2-Tetrachloroethane	5.0		**50.0**	50.00	0	100.0	67.4	120	02/07/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		**47.6**	50.00	0	95.1	75.4	121	02/07/2017
1,1,2-Trichloroethane	5.0		**47.4**	50.00	0	94.7	81.1	111	02/07/2017
1,1-Dichloro-2-propanone	50.0		**123**	125.0	0	98.7	55.4	131	02/07/2017
1,1-Dichloroethane	5.0		**51.0**	50.00	0	102.0	80.1	116	02/07/2017
1,1-Dichloroethene	5.0		**48.9**	50.00	0	97.7	73.1	121	02/07/2017
1,1-Dichloropropene	5.0		**50.4**	50.00	0	100.7	82.2	114	02/07/2017
1,2,3-Trichlorobenzene	5.0		**50.9**	50.00	0	101.9	81.7	130	02/07/2017
1,2,3-Trichloropropane	10.0		**45.2**	50.00	0	90.5	67.8	118	02/07/2017
1,2,3-Trimethylbenzene	5.0		**50.4**	50.00	0	100.7	82.1	127	02/07/2017
1,2,4-Trichlorobenzene	5.0		**53.3**	50.00	0	106.6	72.3	141	02/07/2017
1,2,4-Trimethylbenzene	5.0		**49.8**	50.00	0	99.6	79.7	123	02/07/2017
1,2-Dibromo-3-chloropropane	5.0		**49.3**	50.00	0	98.6	62.1	123	02/07/2017
1,2-Dibromoethane	5.0		**48.3**	50.00	0	96.6	82.4	112	02/07/2017
1,2-Dichlorobenzene	5.0		**49.6**	50.00	0	99.3	82.7	119	02/07/2017
1,2-Dichloroethane	5.0		**54.1**	50.00	0	108.2	72.8	120	02/07/2017
1,2-Dichloropropane	5.0		**51.0**	50.00	0	101.9	80	116	02/07/2017
1,3,5-Trimethylbenzene	5.0		**52.0**	50.00	0	104.0	81.5	125	02/07/2017
1,3-Dichlorobenzene	5.0		**49.1**	50.00	0	98.1	82	124	02/07/2017
1,3-Dichloropropane	5.0		**51.3**	50.00	0	102.6	79.8	113	02/07/2017
1,4-Dichlorobenzene	5.0		**49.9**	50.00	0	99.7	81.1	124	02/07/2017
1-Chlorobutane	5.0		**52.8**	50.00	0	105.7	77.2	113	02/07/2017
2,2-Dichloropropane	5.0		**51.3**	50.00	0	102.6	76.6	121	02/07/2017
2-Butanone	50.0		**150**	125.0	0	119.9	62.8	131	02/07/2017
2-Chlorotoluene	5.0		**49.7**	50.00	0	99.5	78.8	121	02/07/2017
2-Hexanone	50.0		**140**	125.0	0	112.0	63.1	125	02/07/2017
2-Nitropropane	50.0		**532**	500.0	0	106.3	61.2	129	02/07/2017
4-Chlorotoluene	5.0		**47.8**	50.00	0	95.6	77.6	124	02/07/2017
4-Methyl-2-pentanone	50.0		**131**	125.0	0	104.8	60.6	126	02/07/2017
Acetone	50.0		**147**	125.0	0	117.4	39.5	159	02/07/2017
Acrolein	100		**382**	500.0	0	76.5	1	167	02/07/2017
Acrylonitrile	10.0		**50.6**	50.00	0	101.2	67	124	02/07/2017
Allyl chloride	5.0		**50.2**	50.00	0	100.4	58.5	129	02/07/2017
Benzene	1.0		**47.9**	50.00	0	95.9	80.8	117	02/07/2017
Bromobenzene	5.0		**51.3**	50.00	0	102.6	79.6	117	02/07/2017
Bromochloromethane	5.0		**51.7**	50.00	0	103.4	70.7	121	02/07/2017
Bromodichloromethane	5.0		**52.2**	50.00	0	104.4	80.7	121	02/07/2017
Bromoform	5.0		**51.2**	50.00	0	102.3	79.8	118	02/07/2017
Bromomethane	10.0		**27.1**	50.00	0	54.1	1	175	02/07/2017
Carbon disulfide	5.0		**43.1**	50.00	0	86.3	62.8	123	02/07/2017
Carbon tetrachloride	5.0		**52.1**	50.00	0	104.2	77.6	123	02/07/2017
Chlorobenzene	5.0		**49.3**	50.00	0	98.5	85.6	116	02/07/2017
Chloroethane	10.0		**46.6**	50.00	0	93.2	60.2	125	02/07/2017
Chloroform	5.0		**49.4**	50.00	0	98.9	77.9	116	02/07/2017
Chloromethane	10.0		**46.2**	50.00	0	92.4	29.9	157	02/07/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126859 **SampType:** LCS Units µg/Kg

SampID: LCS-F170207A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		51.9	50.00	0	103.8	80.1	116	02/07/2017
cis-1,3-Dichloropropene	4.0		51.7	50.00	0	103.5	80.5	121	02/07/2017
Cyclohexanone	100		450	500.0	0	90.0	45.4	128	02/07/2017
Dibromochloromethane	5.0		50.8	50.00	0	101.6	84.3	116	02/07/2017
Dibromomethane	5.0		49.6	50.00	0	99.3	76.6	115	02/07/2017
Dichlorodifluoromethane	10.0		27.4	50.00	0	54.9	1	200	02/07/2017
Ethyl ether	5.0		47.6	50.00	0	95.3	73.4	116	02/07/2017
Ethyl methacrylate	5.0		53.7	50.00	0	107.4	76.2	120	02/07/2017
Ethylbenzene	5.0		51.8	50.00	0	103.5	84.8	116	02/07/2017
Hexachlorobutadiene	5.0		52.4	50.00	0	104.8	74	135	02/07/2017
Hexachloroethane	5.0		52.1	50.00	0	104.2	76.4	121	02/07/2017
Iodomethane	10.0		35.2	50.00	0	70.3	38.7	161	02/07/2017
Isopropylbenzene	5.0		50.2	50.00	0	100.3	85	125	02/07/2017
m,p-Xylenes	5.0		104	100.0	0	103.6	85.3	120	02/07/2017
Methacrylonitrile	50.0		51.8	50.00	0	103.6	65.7	120	02/07/2017
Methyl Methacrylate	5.0		53.6	50.00	0	107.2	69.1	114	02/07/2017
Methyl tert-butyl ether	2.0		50.1	50.00	0	100.1	66.6	125	02/07/2017
Methylacrylate	10.0		48.1	50.00	0	96.2	69.7	121	02/07/2017
Methylene chloride	5.0		48.3	50.00	0	96.5	73.4	115	02/07/2017
Naphthalene	10.0		51.0	50.00	0	102.0	70.1	134	02/07/2017
n-Butylbenzene	5.0		54.6	50.00	0	109.1	78.4	138	02/07/2017
n-Heptane	20.0		56.4	50.00	0	112.8	74.3	125	02/07/2017
n-Hexane	20.0		51.0	50.00	0	102.1	66.3	129	02/07/2017
Nitrobenzene	100		371	500.0	0	74.2	20.1	165	02/07/2017
n-Propylbenzene	5.0		50.5	50.00	0	101.0	79.1	125	02/07/2017
o-Xylene	5.0		51.9	50.00	0	103.8	81.9	118	02/07/2017
Pentachloroethane	5.0		53.5	50.00	0	107.0	72.7	123	02/07/2017
p-Isopropyltoluene	5.0		50.1	50.00	0	100.2	82.7	129	02/07/2017
Propionitrile	50.0		530	500.0	0	106.0	64.3	121	02/07/2017
sec-Butylbenzene	5.0		52.4	50.00	0	104.8	81.3	125	02/07/2017
Styrene	5.0		51.6	50.00	0	103.2	88.2	122	02/07/2017
tert-Butylbenzene	5.0		48.2	50.00	0	96.4	74.8	125	02/07/2017
Tetrachloroethene	5.0		47.3	50.00	0	94.7	84.2	122	02/07/2017
Tetrahydrofuran	50.0		51.8	50.00	0	103.7	61	118	02/07/2017
Toluene	5.0		49.0	50.00	0	98.1	81.3	113	02/07/2017
trans-1,2-Dichloroethene	5.0		48.5	50.00	0	97.0	78.2	118	02/07/2017
trans-1,3-Dichloropropene	4.0		52.5	50.00	0	105.0	81.7	124	02/07/2017
Trichloroethene	5.0		49.7	50.00	0	99.5	81	123	02/07/2017
Trichlorofluoromethane	5.0		46.4	50.00	0	92.8	66.8	131	02/07/2017
Vinyl acetate	50.0		57.6	50.00	0	115.2	64.3	122	02/07/2017
Vinyl chloride	2.0		44.2	50.00	0	88.4	45.2	140	02/07/2017
Surr: 1,2-Dichloroethane-d4			53.3	50.00		106.6	72.2	131	02/07/2017
Surr: 4-Bromofluorobenzene			51.3	50.00		102.6	82.1	116	02/07/2017
Surr: Dibromofluoromethane			48.9	50.00		97.8	77.7	120	02/07/2017
Surr: Toluene-d8			50.1	50.00		100.3	86	116	02/07/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020090

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126859 **SampType:** LCSGD Units %REC RPD Limit 0

SampID: LCSGD-F170207A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Surr: 1,2-Dichloroethane-d4			**54.0**	50.00		108.0			02/07/2017
Surr: 4-Bromofluorobenzene			**49.8**	50.00		99.6			02/07/2017
Surr: Dibromofluoromethane			**49.3**	50.00		98.7			02/07/2017
Surr: Toluene-d8			**50.8**	50.00		101.6			02/07/2017

Batch 126859 **SampType:** LCSG Units %REC

SampID: LCSG-F170207A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Surr: 1,2-Dichloroethane-d4			**54.5**	50.00		109.0	72.2	131	02/07/2017
Surr: 4-Bromofluorobenzene			**51.5**	50.00		103.0	82.1	116	02/07/2017
Surr: Dibromofluoromethane			**50.7**	50.00		101.4	77.7	120	02/07/2017
Surr: Toluene-d8			**49.8**	50.00		99.7	86	116	02/07/2017

Receiving Check List

http://www.teklabinc.com/

Client: PSC Industrial Outsourcing, LP
Work Order: 17020090
Client Project: Champaign Residual IRM 624-1610-0001 / J0055
Report Date: 09-Feb-17

Carrier: Paul Reeves
Received By: AMD

Completed by: Laurie A. Langdon
On: 01-Feb-17

Reviewed by: Elizabeth A. Hurley
On: 01-Feb-17

Pages to follow: Chain of custody 1 Extra pages included 0

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C	4.22
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice	☐
Chain of custody present?	Yes ☑	No ☐			
Chain of custody signed when relinquished and received?	Yes ☑	No ☐			
Chain of custody agrees with sample labels?	Yes ☑	No ☐			
Samples in proper container/bottle?	Yes ☑	No ☐			
Sample containers intact?	Yes ☑	No ☐			
Sufficient sample volume for indicated test?	Yes ☑	No ☐			
All samples received within holding time?	Yes ☑	No ☐			
Reported field parameters measured:	Field ☐	Lab ☐	NA ☑		
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐			

When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.

Water – at least one vial per sample has zero headspace?	Yes ☐	No ☐	No VOA vials ☑
Water - TOX containers have zero headspace?	Yes ☐	No ☐	No TOX containers ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	NA ☑
NPDES/CWA TCN interferences checked/treated in the field?	Yes ☐	No ☐	NA ☑

Any No responses must be detailed below or on the COC.

17020090

Chain of Custody Record

210 West Sand Bank Road | Columbia, IL 62236 | P (618) 281-7173 | F (618) 281-7020

COC Serial No. CMP-003

Project Name: Champaign Residual IRM Project Mgr.: Crutcher

Project Number: 624-1610-0001 / J0055

Sampler(s): M. Flora

Laboratory Name: Teklab, Inc.

Location: Collinsville, IL

Temperature 4.22

Sample Number and (depth)	Date	Time	Matrix: Soil	Water	Air	Wipes	Other	Total Number of Containers	VOC (8260/5035)	SVOC (8270)	PAH (8270 SIM)						TPH (8015 OA2)	Comments	Lab ID
17020090-001 * SW-RES-REM-W2 (10)	1/31/17	15:00	X					4	X	X	X							STD TAT	17020090-001
002 SW-RES-REM-W3 (10)	1/31/17	15:20	X					4	X	X	X						X	STD TAT	002
003 SW-RES-REM-W4 (10)	1/31/17	15:40	X					4	X	X	X						X	STD TAT	003
004 SW-RES-REM-W4 (2)	1/31/17	16:00	X					4	X	X	X							STD TAT	004
005 SW-RES-REM-W2 (2)	2/1/17	9:20	X					4	X	X	X							STD TAT	005
006 SW-RES-REM-W3 (2)	2/1/17	9:40	X					4	X	X	X							STD TAT	006
007 FL-RES-REM-W4 (12)	1/31/17	14:00	X					4	X	X	X						X	24-HR TAT	007

TEKLAB Courier

Samples Iced: [X] Yes No [ ]

Preservatives

- [X] Volatile Organics (Soil - 5035)..... Sodium Bisulfate / Methanol
- [ ] Volatile Organics (Aqueous)..... Hydrochloric Acid (HCl)
- [ ] TPH (8015) ..... HCl and/or Sulfuric Acid
- [ ] Metals ..... Nitric Acid (HNO_3)
- [ ] Cyanide ..... Sodium Hydroxide (NaOH)
- [ ] Other (Specify) .....

Lab Directives:

Requested TAT: [X] 24-Hours [ ] 2-3 Days [X] STD [ ] Other

Fax and Mail Results to: mike.crutcher@pscnow.com / mike.flora@pscnow.com

Send Invoice to: **Michael Crutcher (PSC)**

QC Deliverable requested: [ ] Results + QC [X] EDD [ ] Other

Special Guidelines:

Reporting Limits: IL IAC 740/742 Tier 1 JEA 2/1/17

* Special: ~~* 8oz jar Cracked~~ IAC 2/01/17

Shipping:

Carrier / Airbill No.

Relinquished by:

Signature	Date	Time
Michael Flora	2/1/17	1210
[signature]	2/1/17	1530

Received by:

Signature	Date	Time
[signature]	2/1/17	1240
[signature]	2/1/17	1530

Distribution: WHITE to Lab; YELLOW to PM; PINK to QA/QC; GREEN to Sampler.

* Shaded Areas to be Completed by Lab

IAC 2/1/17

February 09, 2017

Michael Crutcher
PSC Industrial Outsourcing, LP
210 West Sand Bank Road
Columbia, IL 62236-0230
TEL: (618) 281-7173
FAX: (618) 281-5120

RE: Champaign Residual IRM 624-1610-0001 / J0055 **WorkOrder:** 17020091

Dear Michael Crutcher:

TEKLAB, INC received 7 samples on 2/1/2017 3:30:00 PM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Michael L. Austin
Project Manager
(618)344-1004 ex 16
MAustin@teklabinc.com

Client: PSC Industrial Outsourcing, LP
Work Order: 17020091
Client Project: Champaign Residual IRM 624-1610-0001 / J0055
Report Date: 09-Feb-17

This reporting package includes the following:

Cover Letter	1
Report Contents	2
Definitions	3
Case Narrative	4
Laboratory Results	5
Sample Summary	12
Dates Report	13
Quality Control Results	15
Receiving Check List	19
Chain of Custody	Appended

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020091

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Abbr Definition

CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilutions factors.
DNI	Did not ignite
DUP	Laboratory duplicate is an aliquot of a sample taken from the same container under laboratory conditions for independent processing and analysis independently of the original aliquot.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample, spiked with verified known amounts of analytes, is analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system. The acceptable recovery range is in the QC Package (provided upon request).
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MBLK	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	Method detection limit means the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero.
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions. The acceptable recovery range is listed in the QC Package (provided upon request).
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TIC	Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
TNTC	Too numerous to count (> 200 CFU)

Qualifiers

# - Unknown hydrocarbon	B - Analyte detected in associated Method Blank
E - Value above quantitation range	H - Holding times exceeded
I - Associated internal standard was outside method criteria	M - Manual Integration used to determine area response
ND - Not Detected at the Reporting Limit	R - RPD outside accepted recovery limits
S - Spike Recovery outside recovery limits	T - TIC(Tentatively identified compound)
X - Value exceeds Maximum Contaminant Level	

Case Narrative

http://www.teklabinc.com/

Client: PSC Industrial Outsourcing, LP
Work Order: 17020091
Client Project: Champaign Residual IRM 624-1610-0001 / J0055
Report Date: 09-Feb-17

Cooler Receipt Temp: 4.22 °C

Locations and Accreditations

	Collinsville	Springfield	Kansas City	Collinsville Air
Address	5445 Horseshoe Lake Road	3920 Pintail Dr	8421 Nieman Road	5445 Horseshoe Lake Road
	Collinsville, IL 62234-7425	Springfield, IL 62711-9415	Lenexa, KS 66214	Collinsville, IL 62234-7425
Phone	(618) 344-1004	(217) 698-1004	(913) 541-1998	(618) 344-1004
Fax	(618) 344-1005	(217) 698-1005	(913) 541-1998	(618) 344-1005
Email	jhriley@teklabinc.com	KKlostermann@teklabinc.com	Ryoungstrom@teklabinc.com	EHurley@teklabinc.com

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2018	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2017	Collinsville
Louisiana	LDEQ	166493	NELAP	6/30/2017	Collinsville
Louisiana	LDEQ	166578	NELAP	6/30/2017	Collinsville
Texas	TCEQ	T104704515-12-1	NELAP	7/31/2017	Collinsville
Arkansas	ADEQ	88-0966		3/14/2017	Collinsville
Illinois	IDPH	17584		5/31/2017	Collinsville
Kentucky	KDEP	98006		12/31/2017	Collinsville
Kentucky	UST	0073		1/31/2018	Collinsville
Missouri	MDNR	00930		5/31/2017	Collinsville
Missouri	MDNR	930		1/31/2018	Collinsville
Oklahoma	ODEQ	9978		8/31/2017	Collinsville

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020091

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Lab ID: 17020091-001 **Client Sample ID:** ISW-RES-REM-W2 (10)

Matrix: SOLID **Collection Date:** 01/31/2017 15:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**21.5**	%	1	02/03/2017 14:48	R228804
SW-846 9012A								
Cyanide, Amenable to Chlorination		6.37		**Interference**	mg/Kg-dry	20	02/06/2017 0:00	126777
SW-846 9012A (TOTAL)								
Cyanide	NELAP	0.30		**1.31**	mg/Kg-dry	1	02/06/2017 13:17	126736
SW-846 3050B, 6010B, METALS BY ICP								
Arsenic	NELAP	2.50		**13.1**	mg/Kg-dry	1	02/07/2017 13:21	126759
Barium	NELAP	0.25		**130**	mg/Kg-dry	1	02/06/2017 18:05	126759
Cadmium	NELAP	0.20		**0.38**	mg/Kg-dry	1	02/06/2017 18:05	126759
Chromium	NELAP	0.50		**18.8**	mg/Kg-dry	1	02/06/2017 18:05	126759
Lead	NELAP	1.50		**13.5**	mg/Kg-dry	1	02/06/2017 18:05	126759
Silver	NELAP	0.50		**< 0.50**	mg/Kg-dry	1	02/06/2017 18:05	126759
SW-846 3050B, 6020A, METALS BY ICPMS								
Selenium	NELAP	1.00		**< 1.00**	mg/Kg-dry	10	02/07/2017 15:07	126765
SW-846 7471B								
Mercury	NELAP	0.012		**0.063**	mg/Kg-dry	1	02/03/2017 10:42	126704

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020091

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Lab ID: 17020091-002 **Client Sample ID:** ISW-RES-REM-W3 (10)

Matrix: SOLID **Collection Date:** 01/31/2017 15:20

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**24.2**	%	1	02/03/2017 14:48	R228804
SW-846 9012A								
Cyanide, Amenable to Chlorination		1.60		**Interference**	mg/Kg-dry	5	02/06/2017 0:00	126777
SW-846 9012A (TOTAL)								
Cyanide	NELAP	0.32		**0.86**	mg/Kg-dry	1	02/06/2017 13:21	126736
SW-846 3050B, 6010B, METALS BY ICP								
Arsenic	NELAP	2.50		**7.12**	mg/Kg-dry	1	02/07/2017 13:25	126759
Barium	NELAP	0.25		**123**	mg/Kg-dry	1	02/06/2017 18:09	126759
Cadmium	NELAP	0.20		**0.38**	mg/Kg-dry	1	02/06/2017 18:09	126759
Chromium	NELAP	0.50		**15.7**	mg/Kg-dry	1	02/06/2017 18:09	126759
Lead	NELAP	1.50		**14.7**	mg/Kg-dry	1	02/06/2017 18:09	126759
Silver	NELAP	0.50		**< 0.50**	mg/Kg-dry	1	02/06/2017 18:09	126759
SW-846 3050B, 6020A, METALS BY ICPMS								
Selenium	NELAP	1.00		**< 1.00**	mg/Kg-dry	10	02/07/2017 15:15	126765
SW-846 7471B								
Mercury	NELAP	0.013		**0.048**	mg/Kg-dry	1	02/03/2017 10:44	126704

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020091

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Lab ID: 17020091-003 **Client Sample ID:** ISW-RES-REM-W4 (10)

Matrix: SOLID **Collection Date:** 01/31/2017 15:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**12.3**	%	1	02/03/2017 14:49	R228804
SW-846 9012A								
Cyanide, Amenable to Chlorination		0.28		**0.86**	mg/Kg-dry	1	02/06/2017 0:00	126777
SW-846 9012A (TOTAL)								
Cyanide	NELAP	0.28		**2.26**	mg/Kg-dry	1	02/06/2017 13:26	126736
SW-846 3050B, 6010B, METALS BY ICP								
Arsenic	NELAP	2.31		**6.44**	mg/Kg-dry	1	02/07/2017 13:30	126759
Barium	NELAP	0.23		**55.6**	mg/Kg-dry	1	02/06/2017 18:12	126759
Cadmium	NELAP	0.19		**0.33**	mg/Kg-dry	1	02/06/2017 18:12	126759
Chromium	NELAP	0.46		**8.95**	mg/Kg-dry	1	02/06/2017 18:12	126759
Lead	NELAP	1.39		**10.8**	mg/Kg-dry	1	02/06/2017 18:12	126759
Silver	NELAP	0.46		**< 0.46**	mg/Kg-dry	1	02/06/2017 18:12	126759
SW-846 3050B, 6020A, METALS BY ICPMS								
Selenium	NELAP	0.93		**< 0.93**	mg/Kg-dry	10	02/08/2017 0:06	126765
SW-846 7471B								
Mercury	NELAP	0.011		**0.047**	mg/Kg-dry	1	02/03/2017 10:46	126704

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020091

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Lab ID: 17020091-004 **Client Sample ID:** ISW-RES-REM-W4 (2)

Matrix: SOLID **Collection Date:** 01/31/2017 16:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**18.4**	%	1	02/03/2017 14:50	R228804
SW-846 9012A								
Cyanide, Amenable to Chlorination		6.13		**Interference**	mg/Kg-dry	20	02/06/2017 0:00	126777
SW-846 9012A (TOTAL)								
Cyanide	NELAP	2.76		**4.81**	mg/Kg-dry	10	02/06/2017 15:24	126736
SW-846 3050B, 6010B, METALS BY ICP								
Arsenic	NELAP	2.31		**10.6**	mg/Kg-dry	1	02/07/2017 13:33	126759
Barium	NELAP	0.23		**123**	mg/Kg-dry	1	02/06/2017 18:16	126759
Cadmium	NELAP	0.19		**0.89**	mg/Kg-dry	1	02/06/2017 18:16	126759
Chromium	NELAP	0.46		**18.8**	mg/Kg-dry	1	02/06/2017 18:16	126759
Lead	NELAP	1.39		**102**	mg/Kg-dry	1	02/06/2017 18:16	126759
Silver	NELAP	0.46		**< 0.46**	mg/Kg-dry	1	02/06/2017 18:16	126759
SW-846 3050B, 6020A, METALS BY ICPMS								
Selenium	NELAP	0.93		**< 0.93**	mg/Kg-dry	10	02/08/2017 0:14	126765
SW-846 7471B								
Mercury	NELAP	0.024		**0.699**	mg/Kg-dry	2	02/03/2017 11:15	126704

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020091

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Lab ID: 17020091-005 **Client Sample ID:** ISW-RES-REM-W2 (2)

Matrix: SOLID **Collection Date:** 02/01/2017 9:20

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**19.9**	%	1	02/03/2017 14:50	R228804
SW-846 9012A								
Cyanide, Amenable to Chlorination		0.30		**Interference**	mg/Kg-dry	1	02/06/2017 0:00	126777
SW-846 9012A (TOTAL)								
Cyanide	NELAP	0.29		**0.96**	mg/Kg-dry	1	02/06/2017 13:39	126736
SW-846 3050B, 6010B, METALS BY ICP								
Arsenic	NELAP	2.27		**9.07**	mg/Kg-dry	1	02/07/2017 13:44	126759
Barium	NELAP	0.23		**130**	mg/Kg-dry	1	02/06/2017 18:27	126759
Cadmium	NELAP	0.18		**0.57**	mg/Kg-dry	1	02/06/2017 18:27	126759
Chromium	NELAP	0.45		**17.4**	mg/Kg-dry	1	02/06/2017 18:27	126759
Lead	NELAP	1.36		**32.8**	mg/Kg-dry	1	02/06/2017 18:27	126759
Silver	NELAP	0.45		**< 0.45**	mg/Kg-dry	1	02/06/2017 18:27	126759
SW-846 3050B, 6020A, METALS BY ICPMS								
Selenium	NELAP	0.91		**< 0.91**	mg/Kg-dry	10	02/08/2017 0:38	126765
SW-846 7471B								
Mercury	NELAP	0.012		**0.040**	mg/Kg-dry	1	02/06/2017 10:31	126762

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020091

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Lab ID: 17020091-006 **Client Sample ID:** ISW-RES-REM-W3 (2)

Matrix: SOLID **Collection Date:** 02/01/2017 9:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**31.2**	%	1	02/03/2017 14:51	R228804
SW-846 9012A								
Cyanide, Amenable to Chlorination		0.35		**2.11**	mg/Kg-dry	1	02/06/2017 0:00	126777
SW-846 9012A (TOTAL)								
Cyanide	NELAP	0.35		**2.11**	mg/Kg-dry	1	02/06/2017 12:55	126736
SW-846 3050B, 6010B, METALS BY ICP								
Arsenic	NELAP	2.36		**25.2**	mg/Kg-dry	1	02/07/2017 13:48	126759
Barium	NELAP	0.24		**94.6**	mg/Kg-dry	1	02/06/2017 18:31	126759
Cadmium	NELAP	0.19		**1.38**	mg/Kg-dry	1	02/06/2017 18:31	126759
Chromium	NELAP	0.47		**12.6**	mg/Kg-dry	1	02/06/2017 18:31	126759
Lead	NELAP	1.42		**95.8**	mg/Kg-dry	1	02/06/2017 18:31	126759
Silver	NELAP	0.47		**< 0.47**	mg/Kg-dry	1	02/06/2017 18:31	126759
SW-846 3050B, 6020A, METALS BY ICPMS								
Selenium	NELAP	0.94		**1.08**	mg/Kg-dry	10	02/08/2017 0:46	126765
SW-846 7471B								
Mercury	NELAP	0.014		**0.302**	mg/Kg-dry	1	02/06/2017 10:38	126762

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020091

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Lab ID: 17020091-007 **Client Sample ID:** IFL-RES-REM-W4 (12)

Matrix: SOLID **Collection Date:** 01/31/2017 14:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**12.2**	%	1	02/03/2017 14:51	R228804
SW-846 9012A								
Cyanide, Amenable to Chlorination		0.27		**Interference**	mg/Kg-dry	1	02/06/2017 0:00	126777
SW-846 9012A (TOTAL)								
Cyanide	NELAP	0.27		**< 0.27**	mg/Kg-dry	1	02/06/2017 13:43	126736
SW-846 3050B, 6010B, METALS BY ICP								
Arsenic	NELAP	2.36		**5.27**	mg/Kg-dry	1	02/07/2017 13:52	126759
Barium	NELAP	0.24		**30.9**	mg/Kg-dry	1	02/06/2017 18:34	126759
Cadmium	NELAP	0.19		**< 0.19**	mg/Kg-dry	1	02/06/2017 18:34	126759
Chromium	NELAP	0.47		**13.8**	mg/Kg-dry	1	02/06/2017 18:34	126759
Lead	NELAP	1.42		**8.58**	mg/Kg-dry	1	02/06/2017 18:34	126759
Silver	NELAP	0.47		**< 0.47**	mg/Kg-dry	1	02/06/2017 18:34	126759
SW-846 3050B, 6020A, METALS BY ICPMS								
Selenium	NELAP	0.94		**< 0.94**	mg/Kg-dry	10	02/08/2017 0:54	126765
SW-846 7471B								
Mercury	NELAP	0.011		**< 0.011**	mg/Kg-dry	1	02/03/2017 11:00	126704

Sample Summary

Client: PSC Industrial Outsourcing, LP
Work Order: 17020091
Client Project: Champaign Residual IRM 624-1610-0001 / J0055
Report Date: 09-Feb-17

Lab Sample ID	Client Sample ID	Matrix	Fractions	Collection Date
17020091-001	ISW-RES-REM-W2 (10)	Solid	1	01/31/2017 15:00
17020091-002	ISW-RES-REM-W3 (10)	Solid	1	01/31/2017 15:20
17020091-003	ISW-RES-REM-W4 (10)	Solid	1	01/31/2017 15:40
17020091-004	ISW-RES-REM-W4 (2)	Solid	1	01/31/2017 16:00
17020091-005	ISW-RES-REM-W2 (2)	Solid	1	02/01/2017 9:20
17020091-006	ISW-RES-REM-W3 (2)	Solid	1	02/01/2017 9:40
17020091-007	IFL-RES-REM-W4 (12)	Solid	1	01/31/2017 14:00

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020091

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			Prep Date/Time	Analysis Date/Time
17020091-001A	ISW-RES-REM-W2 (10)	01/31/2017 15:00	02/01/2017 15:30		
	EPA SW846 3550C, 5035A, ASTM D2974				02/03/2017 14:48
	SW-846 3050B, 6010B, Metals by ICP			02/03/2017 13:40	02/06/2017 18:05
	SW-846 3050B, 6010B, Metals by ICP			02/03/2017 13:40	02/07/2017 13:21
	SW-846 3050B, 6020A, Metals by ICPMS			02/03/2017 14:29	02/07/2017 15:07
	SW-846 7471B			02/02/2017 10:14	02/03/2017 10:42
	SW-846 9012A			02/03/2017 20:00	02/06/2017 0:00
	SW-846 9012A (Total)			02/03/2017 17:15	02/06/2017 13:17
17020091-002A	ISW-RES-REM-W3 (10)	01/31/2017 15:20	02/01/2017 15:30		
	EPA SW846 3550C, 5035A, ASTM D2974				02/03/2017 14:48
	SW-846 3050B, 6010B, Metals by ICP			02/03/2017 13:40	02/06/2017 18:09
	SW-846 3050B, 6010B, Metals by ICP			02/03/2017 13:40	02/07/2017 13:25
	SW-846 3050B, 6020A, Metals by ICPMS			02/03/2017 14:29	02/07/2017 15:15
	SW-846 7471B			02/02/2017 10:14	02/03/2017 10:44
	SW-846 9012A			02/03/2017 20:00	02/06/2017 0:00
	SW-846 9012A (Total)			02/03/2017 17:15	02/06/2017 13:21
17020091-003A	ISW-RES-REM-W4 (10)	01/31/2017 15:40	02/01/2017 15:30		
	EPA SW846 3550C, 5035A, ASTM D2974				02/03/2017 14:49
	SW-846 3050B, 6010B, Metals by ICP			02/03/2017 13:40	02/06/2017 18:12
	SW-846 3050B, 6010B, Metals by ICP			02/03/2017 13:40	02/07/2017 13:30
	SW-846 3050B, 6020A, Metals by ICPMS			02/03/2017 14:29	02/08/2017 0:06
	SW-846 7471B			02/02/2017 10:14	02/03/2017 10:46
	SW-846 9012A			02/03/2017 20:00	02/06/2017 0:00
	SW-846 9012A (Total)			02/03/2017 17:15	02/06/2017 13:26
17020091-004A	ISW-RES-REM-W4 (2)	01/31/2017 16:00	02/01/2017 15:30		
	EPA SW846 3550C, 5035A, ASTM D2974				02/03/2017 14:50
	SW-846 3050B, 6010B, Metals by ICP			02/03/2017 13:40	02/06/2017 18:16
	SW-846 3050B, 6010B, Metals by ICP			02/03/2017 13:40	02/07/2017 13:33
	SW-846 3050B, 6020A, Metals by ICPMS			02/03/2017 14:29	02/08/2017 0:14
	SW-846 7471B			02/02/2017 10:14	02/03/2017 11:15
	SW-846 9012A			02/03/2017 20:00	02/06/2017 0:00
	SW-846 9012A (Total)			02/03/2017 17:15	02/06/2017 15:24
17020091-005A	ISW-RES-REM-W2 (2)	02/01/2017 9:20	02/01/2017 15:30		
	EPA SW846 3550C, 5035A, ASTM D2974				02/03/2017 14:50
	SW-846 3050B, 6010B, Metals by ICP			02/03/2017 13:40	02/06/2017 18:27
	SW-846 3050B, 6010B, Metals by ICP			02/03/2017 13:40	02/07/2017 13:44
	SW-846 3050B, 6020A, Metals by ICPMS			02/03/2017 14:29	02/08/2017 0:38

Client: PSC Industrial Outsourcing, LP
Work Order: 17020091
Client Project: Champaign Residual IRM 624-1610-0001 / J0055
Report Date: 09-Feb-17

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			Prep Date/Time	Analysis Date/Time
	SW-846 7471B			02/03/2017 15:42	02/06/2017 10:31
	SW-846 9012A			02/03/2017 20:00	02/06/2017 0:00
	SW-846 9012A (Total)			02/03/2017 17:15	02/06/2017 13:39
17020091-006A	ISW-RES-REM-W3 (2)	02/01/2017 9:40	02/01/2017 15:30		
	EPA SW846 3550C, 5035A, ASTM D2974				02/03/2017 14:51
	SW-846 3050B, 6010B, Metals by ICP			02/03/2017 13:40	02/06/2017 18:31
	SW-846 3050B, 6010B, Metals by ICP			02/03/2017 13:40	02/07/2017 13:48
	SW-846 3050B, 6020A, Metals by ICPMS			02/03/2017 14:29	02/08/2017 0:46
	SW-846 7471B			02/03/2017 15:42	02/06/2017 10:38
	SW-846 9012A			02/03/2017 20:00	02/06/2017 0:00
	SW-846 9012A (Total)			02/03/2017 17:15	02/06/2017 12:55
17020091-007A	IFL-RES-REM-W4 (12)	01/31/2017 14:00	02/01/2017 15:30		
	EPA SW846 3550C, 5035A, ASTM D2974				02/03/2017 14:51
	SW-846 3050B, 6010B, Metals by ICP			02/03/2017 13:40	02/06/2017 18:34
	SW-846 3050B, 6010B, Metals by ICP			02/03/2017 13:40	02/07/2017 13:52
	SW-846 3050B, 6020A, Metals by ICPMS			02/03/2017 14:29	02/08/2017 0:54
	SW-846 7471B			02/02/2017 10:14	02/03/2017 11:00
	SW-846 9012A			02/03/2017 20:00	02/06/2017 0:00
	SW-846 9012A (Total)			02/03/2017 17:15	02/06/2017 13:43

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020091

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

EPA SW846 3550C, 5035A, ASTM D2974

Batch R228804 **SampType:** LCS Units **%**
SampID: LCS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	02/03/2017

Batch R228804 **SampType:** LCSQC Units **%**
SampID: LCSQC

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	02/03/2017

SW-846 9012A (TOTAL)

Batch 126736 **SampType:** MBLK Units **mg/Kg**
SampID: MBLK 170203 TCN2

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cyanide	0.25		**< 0.25**						02/06/2017

Batch 126736 **SampType:** LCS Units **mg/Kg**
SampID: LCS 170203 TCN2

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cyanide	0.25		**1.24**	1.250	0	99.5	85	115	02/06/2017

Batch 126736 **SampType:** MS Units **mg/Kg-dry**
SampID: 17020091-006AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cyanide	0.34	E	**3.61**	1.715	2.106	87.7	75	125	02/06/2017

Batch 126736 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **15**
SampID: 17020091-006AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Cyanide	0.36	E	**3.76**	1.782	2.106	92.9	3.609	4.11	02/06/2017

SW-846 3050B, 6010B, METALS BY ICP

Batch 126759 **SampType:** MBLK Units **mg/Kg-dry**
SampID: MBLK-126759

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	2.50		**< 2.50**	2.500	0	0	-100	100	02/06/2017
Barium	0.25		**< 0.25**	0.2500	0	0	-100	100	02/06/2017
Cadmium	0.20		**< 0.20**	0.2000	0	0	-100	100	02/06/2017
Chromium	0.50		**< 0.50**	0.5000	0	0	-100	100	02/06/2017
Lead	1.50		**< 1.50**	1.500	0	0	-100	100	02/06/2017
Silver	0.50		**< 0.50**	0.5000	0	0	-100	100	02/06/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020091

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 3050B, 6010B, METALS BY ICP

Batch 126759 **SampType:** LCS Units **mg/Kg-dry**

SampID: LCS-126759

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	2.50		**44.7**	50.00	0	89.5	85	115	02/06/2017
Barium	0.25		**202**	200.0	0	101.2	85	115	02/06/2017
Cadmium	0.20		**4.86**	5.000	0	97.2	85	115	02/06/2017
Chromium	0.50		**19.5**	20.00	0	97.5	85	115	02/06/2017
Lead	1.50		**50.0**	50.00	0	99.9	85	115	02/06/2017
Silver	0.50		**4.84**	5.000	0	96.8	85	115	02/06/2017

Batch 126759 **SampType:** MS Units **mg/Kg-dry**

SampID: 17020091-004AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	2.45		**55.7**	49.02	10.62	92.0	75	125	02/07/2017
Barium	0.25		**320**	196.1	123.0	100.3	75	125	02/06/2017
Cadmium	0.20		**5.35**	4.902	0.8889	91.1	75	125	02/06/2017
Chromium	0.49		**39.2**	19.61	18.81	104.2	75	125	02/06/2017
Lead	1.47		**149**	49.02	101.7	96.0	75	125	02/06/2017
Silver	0.49		**4.72**	4.902	0	96.2	75	125	02/06/2017

Batch 126759 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **20**

SampID: 17020091-004AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Arsenic	2.27		**52.8**	45.45	10.62	92.8	55.70	5.36	02/07/2017
Barium	0.23		**300**	181.8	123.0	97.5	319.7	6.27	02/06/2017
Cadmium	0.18		**5.09**	4.545	0.8889	92.4	5.353	5.02	02/06/2017
Chromium	0.45		**37.6**	18.18	18.81	103.3	39.25	4.31	02/06/2017
Lead	1.36		**142**	45.45	101.7	88.7	148.7	4.63	02/06/2017
Silver	0.45		**4.45**	4.545	0	97.8	4.716	5.90	02/06/2017

SW-846 3050B, 6020A, METALS BY ICPMS

Batch 126765 **SampType:** MBLK Units **mg/Kg-dry**

SampID: MBLK-126765

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Selenium	1.00		**< 1.00**	1.000	0	0	-100	100	02/07/2017

Batch 126765 **SampType:** LCS Units **mg/Kg-dry**

SampID: LCS-126765

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Selenium	1.00		**51.9**	50.00	0	103.7	80	120	02/07/2017

Batch 126765 **SampType:** MS Units **mg/Kg-dry**

SampID: 17020091-004AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Selenium	0.98		**45.8**	49.02	0	93.5	75	125	02/08/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020091

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 3050B, 6020A, METALS BY ICPMS

Batch 126765 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **20**

SampID: 17020091-004AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Selenium	0.91		**43.5**	45.45	0	95.7	45.82	5.20	02/08/2017

SW-846 7471B

Batch 126704 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK-126704

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.010		**< 0.010**	0.01000	0	0	-100	100	02/03/2017

Batch 126704 **SampType:** LCS Units **mg/Kg**

SampID: LCS-126704

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.010		**0.243**	0.2500	0	97.1	85	115	02/03/2017

Batch 126704 **SampType:** MS Units **mg/Kg-dry**

SampID: 17020091-003AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.011		**0.343**	0.2749	0.04695	107.7	75	125	02/03/2017

Batch 126704 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **15**

SampID: 17020091-003AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Mercury	0.011		**0.334**	0.2749	0.04695	104.3	0.3430	2.75	02/03/2017

Batch 126762 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK-126762

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.010		**< 0.010**	0.01000	0	0	-100	100	02/06/2017

Batch 126762 **SampType:** LCS Units **mg/Kg**

SampID: LCS-126762

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.010		**0.243**	0.2500	0	97.1	85	115	02/06/2017

Batch 126762 **SampType:** MS Units **mg/Kg-dry**

SampID: 17020091-005AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.012		**0.340**	0.3121	0.03986	96.1	75	125	02/06/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020091

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 7471B

Batch **126762** **SampType:** **MSD** Units **mg/Kg-dry** RPD Limit **15**

SampID: 17020091-005AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Mercury	0.012		**0.372**	0.2937	0.03986	113.2	0.3397	9.21	02/06/2017

Receiving Check List

Teklab, Inc. Environmental Laboratory

http://www.teklabinc.com/

Client: PSC Industrial Outsourcing, LP

Work Order: 17020091

Client Project: Champaign Residual IRM 624-1610-0001 / J0055

Report Date: 09-Feb-17

Carrier: Paul Reeves

Received By: AMD

Completed by: Laurie A. Langdon
On: 01-Feb-17

Reviewed by: Elizabeth A. Hurley
On: 01-Feb-17

Pages to follow: Chain of custody 1 Extra pages included 0

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C	4.22
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice	☐
Chain of custody present?	Yes ☑	No ☐			
Chain of custody signed when relinquished and received?	Yes ☑	No ☐			
Chain of custody agrees with sample labels?	Yes ☑	No ☐			
Samples in proper container/bottle?	Yes ☑	No ☐			
Sample containers intact?	Yes ☐	No ☑			
Sufficient sample volume for indicated test?	Yes ☑	No ☐			
All samples received within holding time?	Yes ☑	No ☐			
Reported field parameters measured:	Field ☐	Lab ☐	NA ☑		
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐			
When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.					
Water – at least one vial per sample has zero headspace?	Yes ☐	No ☐	No VOA vials ☑		
Water - TOX containers have zero headspace?	Yes ☐	No ☐	No TOX containers ☑		
Water - pH acceptable upon receipt?	Yes ☐	No ☐	NA ☑		
NPDES/CWA TCN interferences checked/treated in the field?	Yes ☐	No ☐	NA ☑		

Any No responses must be detailed below or on the COC.

ISW-RES-REM-W2 (10) was damaged in transit. The sample was transferred to a new container. Mike Crutcher was notified of the damage via e-mail and work order summary. LL/EAH 2/1/17

17020091

Chain of Custody Record

210 West Sand Bank Road | Columbia, IL 62236 | P (618) 281-7173 | F (618) 281-7020

COC Serial No. ICMP-003

Project Name: Champaign Residual IRM Project Mgr.: Crutcher

Project Number: 624-1610-0001 / J0055

Sampler(s): M. Flora

Laboratory: Name: Teklab, Inc. Location: Collinsville, IL

Temperature: 4.28

Analyses by Method Name and Number

Sample Number and (depth)	Date	Time	Soil	Water	Air	Wipes	Other	Total Number of Containers	Total CYANIDE (9012)	Amenable CYANIDE (9012)	RCRA Metals	pH (9045)						Comments	Lab ID
1702009 001 ISW-RES-REM-W2 (10)	1/31/17	15:00	X					1	X	X	X							STD TAT	17020091-001
002 ISW-RES-REM-W3 (10)	1/31/17	15:20	X					1	X	X	X							STD TAT	002
003 ISW-RES-REM-W4 (10)	1/31/17	15:40	X					1	X	X	X							STD TAT	003
004 ISW-RES-REM-W4 (2)	1/31/17	16:00	X					1	X	X	X							STD TAT	004
005 ISW-RES-REM-W2 (2)	2/1/17	9:20	X					1	X	X	X							STD TAT	005
006 ISW-RES-REM-W3 (2)	2/1/17	9:40	X					1	X	X	X							STD TAT	006
007 IFL-RES-REM-W4 (12)	1/31/17	14:00	X					1	X	X	X							STD TAT	007

TEKLAB Courier

Samples Iced: [X] Yes No [ ]

Preservatives

- [ ] Volatile Organics (Soil - 5035)..... Sodium Bisulfate / Methanol
- [ ] Volatile Organics (Aqueous)..... Hydrochloric Acid (HCl)
- [ ] TPH (8015) ..... HCl and/or Sulfuric Acid
- [ ] Metals ..... Nitric Acid (HNO_3)
- [ ] Cyanide ..... Sodium Hydroxide (NaOH)
- [ ] Other (Specify) .....

Lab Directives:

Requested TAT: [ ] 24-Hours [ ] 2-3 Days [X] STD [ ] Other

Fax and Mail Results to: mike.crutcher@pscnow.com / mike.flora@pscnow.com

Send Invoice to: **Michael Crutcher (PSC)**

QC Deliverable requested: [ ] Results + QC [X] EDD [ ] Other

Special Guidelines:

Reporting Limits: IL IAC 740/742 Tier 1

* Special: X 8 oz Container Broken upon arrival. TAC 2/1/17

Shipping:

Carrier / Airbill No.

Relinquished by:

Signature	Date	Time
Michael Flora	2/1/17	1240
[signature]	2/1/17	1530

Received by:

Signature	Date	Time
[signature]	2/1/17	1240
Amber Dilallo	2/1/17	1530

Distribution: WHITE to Lab; YELLOW to PM; PINK to QA/QC; GREEN to Sampler.

* Shaded Areas to be Completed by Lab

TAC 2/01/17

February 09, 2017

Michael Crutcher
PSC Industrial Outsourcing, LP
210 West Sand Bank Road
Columbia, IL 62236-0230
TEL: (618) 281-7173
FAX: (618) 281-5120

RE: Champaign Residual IRM 624-1610-0001 / J0055 **WorkOrder:** 17020296

Dear Michael Crutcher:

TEKLAB, INC received 2 samples on 2/3/2017 4:37:00 PM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Michael L. Austin
Project Manager
(618)344-1004 ex 16
MAustin@teklabinc.com

Client: PSC Industrial Outsourcing, LP
Work Order: 17020296
Client Project: Champaign Residual IRM 624-1610-0001 / J0055
Report Date: 09-Feb-17

This reporting package includes the following:

Cover Letter	1
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Laboratory Results	5
Sample Summary	14
Dates Report	15
Quality Control Results	16
Receiving Check List	46
Chain of Custody	Appended

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020296

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Abbr Definition

CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilutions factors.
DNI	Did not ignite
DUP	Laboratory duplicate is an aliquot of a sample taken from the same container under laboratory conditions for independent processing and analysis independently of the original aliquot.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample, spiked with verified known amounts of analytes, is analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system. The acceptable recovery range is in the QC Package (provided upon request).
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MBLK	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	Method detection limit means the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero.
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions. The acceptable recovery range is listed in the QC Package (provided upon request).
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TIC	Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
TNTC	Too numerous to count (> 200 CFU)

Qualifiers

# -	Unknown hydrocarbon	B -	Analyte detected in associated Method Blank
E -	Value above quantitation range	H -	Holding times exceeded
I -	Associated internal standard was outside method criteria	M -	Manual Integration used to determine area response
ND -	Not Detected at the Reporting Limit	R -	RPD outside accepted recovery limits
S -	Spike Recovery outside recovery limits	T -	TIC(Tentatively identified compound)
X -	Value exceeds Maximum Contaminant Level		

Case Narrative

http://www.teklabinc.com/

Client: PSC Industrial Outsourcing, LP
Work Order: 17020296
Client Project: Champaign Residual IRM 624-1610-0001 / J0055
Report Date: 09-Feb-17

Cooler Receipt Temp: 5.62 °C

Locations and Accreditations

	Collinsville	Springfield	Kansas City	Collinsville Air
Address	5445 Horseshoe Lake Road	3920 Pintail Dr	8421 Nieman Road	5445 Horseshoe Lake Road
	Collinsville, IL 62234-7425	Springfield, IL 62711-9415	Lenexa, KS 66214	Collinsville, IL 62234-7425
Phone	(618) 344-1004	(217) 698-1004	(913) 541-1998	(618) 344-1004
Fax	(618) 344-1005	(217) 698-1005	(913) 541-1998	(618) 344-1005
Email	jhriley@teklabinc.com	KKlostermann@teklabinc.com	Ryoungstrom@teklabinc.com	EHurley@teklabinc.com

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2018	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2017	Collinsville
Louisiana	LDEQ	166493	NELAP	6/30/2017	Collinsville
Louisiana	LDEQ	166578	NELAP	6/30/2017	Collinsville
Texas	TCEQ	T104704515-12-1	NELAP	7/31/2017	Collinsville
Arkansas	ADEQ	88-0966		3/14/2017	Collinsville
Illinois	IDPH	17584		5/31/2017	Collinsville
Kentucky	KDEP	98006		12/31/2017	Collinsville
Kentucky	UST	0073		1/31/2018	Collinsville
Missouri	MDNR	00930		5/31/2017	Collinsville
Missouri	MDNR	930		1/31/2018	Collinsville
Oklahoma	ODEQ	9978		8/31/2017	Collinsville

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020296

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Lab ID: 17020296-001 **Client Sample ID:** SW-RES-REM-W6 (3)

Matrix: SOLID **Collection Date:** 02/02/2017 9:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**20.7**	%	1	02/06/2017 15:54	R228849
SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Acenaphthene	NELAP	0.009		**ND**	mg/Kg-dry	1	02/09/2017 0:26	126744
Acenaphthylene	NELAP	0.009		**0.164**	mg/Kg-dry	1	02/09/2017 0:26	126744
Anthracene	NELAP	0.009		**0.069**	mg/Kg-dry	1	02/09/2017 0:26	126744
Benzo(a)anthracene	NELAP	0.025		**0.899**	mg/Kg-dry	1	02/09/2017 0:26	126744
Benzo(a)pyrene	NELAP	0.009		**1.29**	mg/Kg-dry	1	02/09/2017 0:26	126744
Benzo(b)fluoranthene	NELAP	0.009		**1.64**	mg/Kg-dry	1	02/09/2017 0:26	126744
Benzo(g,h,i)perylene	NELAP	0.009		**0.471**	mg/Kg-dry	1	02/09/2017 0:26	126744
Benzo(k)fluoranthene	NELAP	0.009		**0.533**	mg/Kg-dry	1	02/09/2017 0:26	126744
Chrysene	NELAP	0.009		**0.857**	mg/Kg-dry	1	02/09/2017 0:26	126744
Dibenzo(a,h)anthracene	NELAP	0.009		**0.154**	mg/Kg-dry	1	02/09/2017 0:26	126744
Fluoranthene	NELAP	0.009		**0.974**	mg/Kg-dry	1	02/09/2017 0:26	126744
Fluorene	NELAP	0.009		**0.019**	mg/Kg-dry	1	02/09/2017 0:26	126744
Indeno(1,2,3-cd)pyrene	NELAP	0.009		**0.504**	mg/Kg-dry	1	02/09/2017 0:26	126744
Naphthalene	NELAP	0.009		**0.039**	mg/Kg-dry	1	02/09/2017 0:26	126744
Phenanthrene	NELAP	0.009		**0.240**	mg/Kg-dry	1	02/09/2017 0:26	126744
Pyrene	NELAP	0.009		**0.945**	mg/Kg-dry	1	02/09/2017 0:26	126744
Surr: 2-Fluorobiphenyl		8.85-90.5		**74.4**	%REC	1	02/09/2017 0:26	126744
Surr: Nitrobenzene-d5		5-102		**91.4**	%REC	1	02/09/2017 0:26	126744
Surr: p-Terphenyl-d14		18.4-103		**72.8**	%REC	1	02/09/2017 0:26	126744
Elevated reporting limit due to sample composition.								
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2,4-Trichlorobenzene	NELAP	1.26		**ND**	mg/Kg-dry	1	02/05/2017 15:51	126774
1,2-Dichlorobenzene	NELAP	1.26		**ND**	mg/Kg-dry	1	02/05/2017 15:51	126774
1,3-Dichlorobenzene	NELAP	1.26		**ND**	mg/Kg-dry	1	02/05/2017 15:51	126774
1,4-Dichlorobenzene	NELAP	1.26		**ND**	mg/Kg-dry	1	02/05/2017 15:51	126774
2,4,5-Trichlorophenol	NELAP	0.883		**ND**	mg/Kg-dry	1	02/05/2017 15:51	126774
2,4,6-Trichlorophenol	NELAP	0.883		**ND**	mg/Kg-dry	1	02/05/2017 15:51	126774
2,4-Dichlorophenol	NELAP	1.26		**ND**	mg/Kg-dry	1	02/05/2017 15:51	126774
2,4-Dimethylphenol	NELAP	1.26		**ND**	mg/Kg-dry	1	02/05/2017 15:51	126774
2,4-Dinitrophenol	NELAP	2.52		**ND**	mg/Kg-dry	1	02/05/2017 15:51	126774
2,4-Dinitrotoluene	NELAP	0.883		**ND**	mg/Kg-dry	1	02/05/2017 15:51	126774
2,6-Dinitrotoluene	NELAP	0.883		**ND**	mg/Kg-dry	1	02/05/2017 15:51	126774
2-Chloronaphthalene	NELAP	0.883		**ND**	mg/Kg-dry	1	02/05/2017 15:51	126774
2-Chlorophenol	NELAP	1.26		**ND**	mg/Kg-dry	1	02/05/2017 15:51	126774
2-Methoxy-4-methylphenol		1.64		**ND**	mg/Kg-dry	1	02/05/2017 15:51	126774
2-Methylnaphthalene	NELAP	0.883		**ND**	mg/Kg-dry	1	02/05/2017 15:51	126774
2-Nitroaniline	NELAP	2.52		**ND**	mg/Kg-dry	1	02/05/2017 15:51	126774
2-Nitrophenol	NELAP	0.883		**ND**	mg/Kg-dry	1	02/05/2017 15:51	126774
3,3´-Dichlorobenzidine	NELAP	0.883		**ND**	mg/Kg-dry	1	02/05/2017 15:51	126774
3-Nitroaniline	NELAP	2.52		**ND**	mg/Kg-dry	1	02/05/2017 15:51	126774
4,6-Dinitro-2-methylphenol	NELAP	2.52		**ND**	mg/Kg-dry	1	02/05/2017 15:51	126774
4-Bromophenyl phenyl ether	NELAP	0.883		**ND**	mg/Kg-dry	1	02/05/2017 15:51	126774
4-Chloro-3-methylphenol	NELAP	1.26		**ND**	mg/Kg-dry	1	02/05/2017 15:51	126774
4-Chloroaniline	NELAP	1.26		**ND**	mg/Kg-dry	1	02/05/2017 15:51	126774
4-Chlorophenyl phenyl ether	NELAP	0.883		**ND**	mg/Kg-dry	1	02/05/2017 15:51	126774

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020296

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Lab ID: 17020296-001 **Client Sample ID:** SW-RES-REM-W6 (3)

Matrix: SOLID **Collection Date:** 02/02/2017 9:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
4-Nitroaniline	NELAP	1.26		ND	mg/Kg-dry	1	02/05/2017 15:51	126774
4-Nitrophenol	NELAP	0.883		ND	mg/Kg-dry	1	02/05/2017 15:51	126774
Aniline	NELAP	1.26		ND	mg/Kg-dry	1	02/05/2017 15:51	126774
Azobenzene		0.883		ND	mg/Kg-dry	1	02/05/2017 15:51	126774
Benzoic acid	NELAP	3.78		ND	mg/Kg-dry	1	02/05/2017 15:51	126774
Benzyl alcohol	NELAP	1.26		ND	mg/Kg-dry	1	02/05/2017 15:51	126774
Bis(2-chloroethoxy)methane	NELAP	0.883		ND	mg/Kg-dry	1	02/05/2017 15:51	126774
Bis(2-chloroethyl)ether	NELAP	1.26		ND	mg/Kg-dry	1	02/05/2017 15:51	126774
Bis(2-chloroisopropyl)ether	NELAP	0.883		ND	mg/Kg-dry	1	02/05/2017 15:51	126774
Bis(2-ethylhexyl)phthalate	NELAP	0.883		ND	mg/Kg-dry	1	02/05/2017 15:51	126774
Butyl benzyl phthalate	NELAP	0.883		ND	mg/Kg-dry	1	02/05/2017 15:51	126774
Carbazole	NELAP	1.26		ND	mg/Kg-dry	1	02/05/2017 15:51	126774
Dibenzofuran	NELAP	0.883		ND	mg/Kg-dry	1	02/05/2017 15:51	126774
Diethyl phthalate	NELAP	1.26		ND	mg/Kg-dry	1	02/05/2017 15:51	126774
Dimethyl phthalate	NELAP	0.883		ND	mg/Kg-dry	1	02/05/2017 15:51	126774
Di-n-butyl phthalate	NELAP	0.883		ND	mg/Kg-dry	1	02/05/2017 15:51	126774
Di-n-octyl phthalate	NELAP	0.883		ND	mg/Kg-dry	1	02/05/2017 15:51	126774
Hexachlorobenzene	NELAP	0.883		ND	mg/Kg-dry	1	02/05/2017 15:51	126774
Hexachlorobutadiene	NELAP	1.26		ND	mg/Kg-dry	1	02/05/2017 15:51	126774
Hexachlorocyclopentadiene	NELAP	0.883		ND	mg/Kg-dry	1	02/05/2017 15:51	126774
Hexachloroethane	NELAP	1.26		ND	mg/Kg-dry	1	02/05/2017 15:51	126774
Isophorone	NELAP	0.883		ND	mg/Kg-dry	1	02/05/2017 15:51	126774
m,p-Cresol	NELAP	1.26		ND	mg/Kg-dry	1	02/05/2017 15:51	126774
Nitrobenzene	NELAP	1.26		ND	mg/Kg-dry	1	02/05/2017 15:51	126774
N-Nitrosodimethylamine	NELAP	1.26		ND	mg/Kg-dry	1	02/05/2017 15:51	126774
N-Nitroso-di-n-propylamine	NELAP	1.26		ND	mg/Kg-dry	1	02/05/2017 15:51	126774
N-Nitrosodiphenylamine	NELAP	1.26		ND	mg/Kg-dry	1	02/05/2017 15:51	126774
o-Cresol	NELAP	1.26		ND	mg/Kg-dry	1	02/05/2017 15:51	126774
Pentachlorophenol	NELAP	5.04		ND	mg/Kg-dry	1	02/05/2017 15:51	126774
Phenol	NELAP	0.883		ND	mg/Kg-dry	1	02/05/2017 15:51	126774
Pyridine	NELAP	1.26		ND	mg/Kg-dry	1	02/05/2017 15:51	126774
1,2-Diphenylhydrazine		2.12		ND	mg/Kg-dry	1	02/05/2017 15:51	126774
Surr: 2,4,6-Tribromophenol		33-115		95.7	%REC	1	02/05/2017 15:51	126774
Surr: 2-Fluorobiphenyl		36.5-97.7		95.8	%REC	1	02/05/2017 15:51	126774
Surr: 2-Fluorophenol		39.4-92.8		81.6	%REC	1	02/05/2017 15:51	126774
Surr: Nitrobenzene-d5		34.7-90.1		89.4	%REC	1	02/05/2017 15:51	126774
Surr: Phenol-d5		42.8-106		90.8	%REC	1	02/05/2017 15:51	126774
Surr: p-Terphenyl-d14		43.7-124		108.8	%REC	1	02/05/2017 15:51	126774
Elevated reporting limit due to sample composition.								
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,1,2-Tetrachloroethane	NELAP	4.4		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
1,1,1-Trichloroethane	NELAP	4.4		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
1,1,2,2-Tetrachloroethane	NELAP	4.4		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
1,1,2-Trichloro-1,2,2-trifluoroethane		4.4		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
1,1,2-Trichloroethane	NELAP	4.4		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
1,1-Dichloro-2-propanone		44.1		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
1,1-Dichloroethane	NELAP	4.4		ND	µg/Kg-dry	1	02/07/2017 6:29	126846

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020296

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Lab ID: 17020296-001 **Client Sample ID:** SW-RES-REM-W6 (3)

Matrix: SOLID **Collection Date:** 02/02/2017 9:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1-Dichloroethene	NELAP	4.4		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
1,1-Dichloropropene	NELAP	4.4		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
1,2,3-Trichlorobenzene	NELAP	4.4		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
1,2,3-Trichloropropane	NELAP	8.8		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
1,2,3-Trimethylbenzene		4.4		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
1,2,4-Trichlorobenzene	NELAP	4.4		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
1,2,4-Trimethylbenzene	NELAP	4.4		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
1,2-Dibromo-3-chloropropane	NELAP	4.4		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
1,2-Dibromoethane	NELAP	4.4		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
1,2-Dichlorobenzene	NELAP	4.4		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
1,2-Dichloroethane	NELAP	4.4		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
1,2-Dichloropropane	NELAP	4.4		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
1,3,5-Trimethylbenzene	NELAP	4.4		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
1,3-Dichlorobenzene	NELAP	4.4		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
1,3-Dichloropropane	NELAP	4.4		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
1,4-Dichlorobenzene	NELAP	4.4		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
1-Chlorobutane	NELAP	4.4		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
2,2-Dichloropropane	NELAP	4.4		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
2-Butanone	NELAP	176		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
2-Chlorotoluene	NELAP	4.4		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
2-Hexanone	NELAP	44.1		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
2-Nitropropane	NELAP	44.1		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
4-Chlorotoluene	NELAP	4.4		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
4-Methyl-2-pentanone	NELAP	44.1		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
Acetone	NELAP	44.1		208	µg/Kg-dry	1	02/07/2017 6:29	126846
Acrolein	NELAP	88.2		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
Acrylonitrile	NELAP	8.8		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
Allyl chloride	NELAP	4.4		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
Benzene	NELAP	0.9		4.8	µg/Kg-dry	1	02/07/2017 6:29	126846
Bromobenzene	NELAP	4.4		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
Bromochloromethane	NELAP	4.4		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
Bromodichloromethane	NELAP	4.4		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
Bromoform	NELAP	4.4		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
Bromomethane	NELAP	8.8		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
Carbon disulfide	NELAP	4.4		4.5	µg/Kg-dry	1	02/07/2017 6:29	126846
Carbon tetrachloride	NELAP	4.4		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
Chlorobenzene	NELAP	4.4		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
Chloroethane	NELAP	8.8		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
Chloroform	NELAP	4.4		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
Chloromethane	NELAP	8.8		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
cis-1,2-Dichloroethene	NELAP	4.4		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
cis-1,3-Dichloropropene	NELAP	3.5		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
Cyclohexanone		88.2		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
Dibromochloromethane	NELAP	4.4		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
Dibromomethane	NELAP	4.4		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
Dichlorodifluoromethane	NELAP	8.8		ND	µg/Kg-dry	1	02/07/2017 6:29	126846
Ethyl ether	NELAP	4.4		ND	µg/Kg-dry	1	02/07/2017 6:29	126846

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020296

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Lab ID: 17020296-001 **Client Sample ID:** SW-RES-REM-W6 (3)

Matrix: SOLID **Collection Date:** 02/02/2017 9:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Ethyl methacrylate	NELAP	4.4		**ND**	µg/Kg-dry	1	02/07/2017 6:29	126846
Ethylbenzene	NELAP	4.4		**ND**	µg/Kg-dry	1	02/07/2017 6:29	126846
Hexachlorobutadiene	NELAP	4.4		**ND**	µg/Kg-dry	1	02/07/2017 6:29	126846
Hexachloroethane	NELAP	4.4		**ND**	µg/Kg-dry	1	02/07/2017 6:29	126846
Iodomethane	NELAP	8.8		**ND**	µg/Kg-dry	1	02/07/2017 6:29	126846
Isopropylbenzene	NELAP	4.4		**ND**	µg/Kg-dry	1	02/07/2017 6:29	126846
m,p-Xylenes	NELAP	4.4		**ND**	µg/Kg-dry	1	02/07/2017 6:29	126846
Methacrylonitrile	NELAP	44.1		**ND**	µg/Kg-dry	1	02/07/2017 6:29	126846
Methyl Methacrylate	NELAP	4.4		**ND**	µg/Kg-dry	1	02/07/2017 6:29	126846
Methyl tert-butyl ether	NELAP	1.8		**ND**	µg/Kg-dry	1	02/07/2017 6:29	126846
Methylacrylate	NELAP	8.8		**ND**	µg/Kg-dry	1	02/07/2017 6:29	126846
Methylene chloride	NELAP	4.4		**ND**	µg/Kg-dry	1	02/07/2017 6:29	126846
Naphthalene	NELAP	8.8		**ND**	µg/Kg-dry	1	02/07/2017 6:29	126846
n-Butylbenzene	NELAP	4.4		**ND**	µg/Kg-dry	1	02/07/2017 6:29	126846
n-Heptane		44.1		**ND**	µg/Kg-dry	1	02/07/2017 6:29	126846
n-Hexane		17.6		**ND**	µg/Kg-dry	1	02/07/2017 6:29	126846
Nitrobenzene	NELAP	88.2		**ND**	µg/Kg-dry	1	02/07/2017 6:29	126846
n-Propylbenzene	NELAP	4.4		**ND**	µg/Kg-dry	1	02/07/2017 6:29	126846
o-Xylene	NELAP	4.4		**ND**	µg/Kg-dry	1	02/07/2017 6:29	126846
Pentachloroethane	NELAP	4.4		**ND**	µg/Kg-dry	1	02/07/2017 6:29	126846
p-Isopropyltoluene	NELAP	4.4		**ND**	µg/Kg-dry	1	02/07/2017 6:29	126846
Propionitrile	NELAP	44.1		**ND**	µg/Kg-dry	1	02/07/2017 6:29	126846
sec-Butylbenzene	NELAP	4.4		**ND**	µg/Kg-dry	1	02/07/2017 6:29	126846
Styrene	NELAP	4.4		**ND**	µg/Kg-dry	1	02/07/2017 6:29	126846
tert-Butylbenzene	NELAP	4.4		**ND**	µg/Kg-dry	1	02/07/2017 6:29	126846
Tetrachloroethene	NELAP	4.4		**ND**	µg/Kg-dry	1	02/07/2017 6:29	126846
Tetrahydrofuran	NELAP	44.1		**ND**	µg/Kg-dry	1	02/07/2017 6:29	126846
Toluene	NELAP	4.4		**ND**	µg/Kg-dry	1	02/07/2017 6:29	126846
trans-1,2-Dichloroethene	NELAP	4.4		**ND**	µg/Kg-dry	1	02/07/2017 6:29	126846
trans-1,3-Dichloropropene	NELAP	3.5		**ND**	µg/Kg-dry	1	02/07/2017 6:29	126846
Trichloroethene	NELAP	4.4		**ND**	µg/Kg-dry	1	02/07/2017 6:29	126846
Trichlorofluoromethane	NELAP	4.4		**ND**	µg/Kg-dry	1	02/07/2017 6:29	126846
Vinyl acetate	NELAP	44.1		**ND**	µg/Kg-dry	1	02/07/2017 6:29	126846
Vinyl chloride	NELAP	1.8		**ND**	µg/Kg-dry	1	02/07/2017 6:29	126846
Surr: 1,2-Dichloroethane-d4		72.2-131		**124.1**	%REC	1	02/07/2017 6:29	126846
Surr: 4-Bromofluorobenzene		82.1-116	S	**119.5**	%REC	1	02/07/2017 6:29	126846
Surr: Dibromofluoromethane		77.7-120		**107.3**	%REC	1	02/07/2017 6:29	126846
Surr: Toluene-d8		86-116		**105.6**	%REC	1	02/07/2017 6:29	126846

LCS and LCSD have analytes that recovered outside upper QC limits. The sample results are below reporting limit. Data is reportable per 2009 TNI Standard (Volume1, Module 4, section 1.7.4.2).

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020296

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Lab ID: 17020296-002 **Client Sample ID:** FL-RES-REM-W7 (15)

Matrix: SOLID **Collection Date:** 02/02/2017 10:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**10.2**	%	1	02/03/2017 17:36	R228804
SW-846 3550B, 8015B, TOTAL PETROLEUM HYDROCARBONS (OA-2) BY GC/FID								
Diesel	NELAP	11.0	#	**42.9**	mg/Kg-dry	1	02/06/2017 15:36	126775
Kerosene	NELAP	11.0		**ND**	mg/Kg-dry	1	02/06/2017 15:36	126775
Mineral Spirits	NELAP	11.0		**ND**	mg/Kg-dry	1	02/06/2017 15:36	126775
Motor Oil	NELAP	11.0		**ND**	mg/Kg-dry	1	02/06/2017 15:36	126775
Surr: n-Tetracontane		20-152		**106.1**	%REC	1	02/06/2017 15:36	126775
Elevated reporting limit due to sample composition.								
SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Acenaphthene	NELAP	0.007		**ND**	mg/Kg-dry	1	02/06/2017 12:16	126744
Acenaphthylene	NELAP	0.007		**0.013**	mg/Kg-dry	1	02/06/2017 12:16	126744
Anthracene	NELAP	0.007		**0.019**	mg/Kg-dry	1	02/06/2017 12:16	126744
Benzo(a)anthracene	NELAP	0.022		**ND**	mg/Kg-dry	1	02/06/2017 12:16	126744
Benzo(a)pyrene	NELAP	0.007		**0.010**	mg/Kg-dry	1	02/06/2017 12:16	126744
Benzo(b)fluoranthene	NELAP	0.007		**0.012**	mg/Kg-dry	1	02/06/2017 12:16	126744
Benzo(g,h,i)perylene	NELAP	0.007		**ND**	mg/Kg-dry	1	02/06/2017 12:16	126744
Benzo(k)fluoranthene	NELAP	0.007		**ND**	mg/Kg-dry	1	02/06/2017 12:16	126744
Chrysene	NELAP	0.007		**0.013**	mg/Kg-dry	1	02/06/2017 12:16	126744
Dibenzo(a,h)anthracene	NELAP	0.007		**ND**	mg/Kg-dry	1	02/06/2017 12:16	126744
Fluoranthene	NELAP	0.007		**0.029**	mg/Kg-dry	1	02/06/2017 12:16	126744
Fluorene	NELAP	0.007		**0.021**	mg/Kg-dry	1	02/06/2017 12:16	126744
Indeno(1,2,3-cd)pyrene	NELAP	0.007		**ND**	mg/Kg-dry	1	02/06/2017 12:16	126744
Naphthalene	NELAP	0.007	S	**3.20**	mg/Kg-dry	1	02/06/2017 12:16	126744
Phenanthrene	NELAP	0.007		**0.058**	mg/Kg-dry	1	02/06/2017 12:16	126744
Pyrene	NELAP	0.007		**0.028**	mg/Kg-dry	1	02/06/2017 12:16	126744
Surr: 2-Fluorobiphenyl		19.9-83		**57.7**	%REC	1	02/06/2017 12:16	126744
Surr: Nitrobenzene-d5		23-84		**44.5**	%REC	1	02/06/2017 12:16	126744
Surr: p-Terphenyl-d14		33.5-106		**53.7**	%REC	1	02/06/2017 12:16	126744
MS QC limits for Naphthalene are not applicable due to high sample/spike ratio.								
Elevated reporting limit due to sample composition.								
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2,4-Trichlorobenzene	NELAP	1.10		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
1,2-Dichlorobenzene	NELAP	1.10		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
1,3-Dichlorobenzene	NELAP	1.10		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
1,4-Dichlorobenzene	NELAP	1.10		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
2,4,5-Trichlorophenol	NELAP	0.772		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
2,4,6-Trichlorophenol	NELAP	0.772		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
2,4-Dichlorophenol	NELAP	1.10		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
2,4-Dimethylphenol	NELAP	1.10		**1.92**	mg/Kg-dry	1	02/05/2017 13:29	126774
2,4-Dinitrophenol	NELAP	2.21		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
2,4-Dinitrotoluene	NELAP	0.772		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
2,6-Dinitrotoluene	NELAP	0.772		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
2-Chloronaphthalene	NELAP	0.772		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
2-Chlorophenol	NELAP	1.10		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
2-Methoxy-4-methylphenol		1.43		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
2-Methylnaphthalene	NELAP	0.772		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
2-Nitroaniline	NELAP	2.21		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020296

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Lab ID: 17020296-002 **Client Sample ID:** FL-RES-REM-W7 (15)

Matrix: SOLID **Collection Date:** 02/02/2017 10:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
2-Nitrophenol	NELAP	0.772		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
3,3´-Dichlorobenzidine	NELAP	0.772		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
3-Nitroaniline	NELAP	2.21		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
4,6-Dinitro-2-methylphenol	NELAP	2.21		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
4-Bromophenyl phenyl ether	NELAP	0.772		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
4-Chloro-3-methylphenol	NELAP	1.10		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
4-Chloroaniline	NELAP	1.10		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
4-Chlorophenyl phenyl ether	NELAP	0.772		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
4-Nitroaniline	NELAP	1.10		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
4-Nitrophenol	NELAP	0.772		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
Aniline	NELAP	1.10		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
Azobenzene		0.772		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
Benzoic acid	NELAP	3.31		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
Benzyl alcohol	NELAP	1.10		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
Bis(2-chloroethoxy)methane	NELAP	0.772		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
Bis(2-chloroethyl)ether	NELAP	1.10		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
Bis(2-chloroisopropyl)ether	NELAP	0.772		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
Bis(2-ethylhexyl)phthalate	NELAP	0.772	S	**1.05**	mg/Kg-dry	1	02/05/2017 13:29	126774
Butyl benzyl phthalate	NELAP	0.772		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
Carbazole	NELAP	1.10		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
Dibenzofuran	NELAP	0.772		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
Diethyl phthalate	NELAP	1.10		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
Dimethyl phthalate	NELAP	0.772		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
Di-n-butyl phthalate	NELAP	0.772		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
Di-n-octyl phthalate	NELAP	0.772		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
Hexachlorobenzene	NELAP	0.772		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
Hexachlorobutadiene	NELAP	1.10		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
Hexachlorocyclopentadiene	NELAP	0.772		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
Hexachloroethane	NELAP	1.10		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
Isophorone	NELAP	0.772		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
m,p-Cresol	NELAP	1.10		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
Nitrobenzene	NELAP	1.10		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
N-Nitrosodimethylamine	NELAP	1.10		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
N-Nitroso-di-n-propylamine	NELAP	1.10		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
N-Nitrosodiphenylamine	NELAP	1.10		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
o-Cresol	NELAP	1.10		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
Pentachlorophenol	NELAP	4.41		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
Phenol	NELAP	0.772		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
Pyridine	NELAP	1.10		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
1,2-Diphenylhydrazine		1.85		**ND**	mg/Kg-dry	1	02/05/2017 13:29	126774
Surr: 2,4,6-Tribromophenol		33-115		**64.9**	%REC	1	02/05/2017 13:29	126774
Surr: 2-Fluorobiphenyl		36.5-97.7		**75.8**	%REC	1	02/05/2017 13:29	126774
Surr: 2-Fluorophenol		39.4-92.8		**65.7**	%REC	1	02/05/2017 13:29	126774
Surr: Nitrobenzene-d5		34.7-90.1		**71.9**	%REC	1	02/05/2017 13:29	126774
Surr: Phenol-d5		42.8-106		**77.0**	%REC	1	02/05/2017 13:29	126774
Surr: p-Terphenyl-d14		43.7-124		**83.9**	%REC	1	02/05/2017 13:29	126774

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020296

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Lab ID: 17020296-002 **Client Sample ID:** FL-RES-REM-W7 (15)

Matrix: SOLID **Collection Date:** 02/02/2017 10:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
MS did not recover within control limits due to sample composition.								
Elevated reporting limit due to sample composition.								
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,1,2-Tetrachloroethane	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
1,1,1-Trichloroethane	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
1,1,2,2-Tetrachloroethane	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
1,1,2-Trichloro-1,2,2-trifluoroethane		682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
1,1,2-Trichloroethane	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
1,1-Dichloro-2-propanone		6820		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
1,1-Dichloroethane	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
1,1-Dichloroethene	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
1,1-Dichloropropene	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
1,2,3-Trichlorobenzene	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
1,2,3-Trichloropropane	NELAP	1360		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
1,2,3-Trimethylbenzene		682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
1,2,4-Trichlorobenzene	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
1,2,4-Trimethylbenzene	NELAP	682		**992**	µg/Kg-dry	100	02/06/2017 11:15	126810
1,2-Dibromo-3-chloropropane	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
1,2-Dibromoethane	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
1,2-Dichlorobenzene	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
1,2-Dichloroethane	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
1,2-Dichloropropane	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
1,3,5-Trimethylbenzene	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
1,3-Dichlorobenzene	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
1,3-Dichloropropane	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
1,4-Dichlorobenzene	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
1-Chlorobutane	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
2,2-Dichloropropane	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
2-Butanone	NELAP	27300		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
2-Chlorotoluene	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
2-Hexanone	NELAP	6820		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
2-Nitropropane	NELAP	6820		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
4-Chlorotoluene	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
4-Methyl-2-pentanone	NELAP	6820		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
Acetone	NELAP	6820		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
Acrolein	NELAP	13600		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
Acrylonitrile	NELAP	1360		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
Allyl chloride	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
Benzene	NELAP	341		**36000**	µg/Kg-dry	250	02/06/2017 13:50	126805
Bromobenzene	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
Bromochloromethane	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
Bromodichloromethane	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
Bromoform	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
Bromomethane	NELAP	1360		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
Carbon disulfide	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
Carbon tetrachloride	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
Chlorobenzene	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020296

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Lab ID: 17020296-002 **Client Sample ID:** FL-RES-REM-W7 (15)

Matrix: SOLID **Collection Date:** 02/02/2017 10:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Chloroethane	NELAP	1360		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
Chloroform	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
Chloromethane	NELAP	1360		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
cis-1,2-Dichloroethene	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
cis-1,3-Dichloropropene	NELAP	545		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
Cyclohexanone		13600		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
Dibromochloromethane	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
Dibromomethane	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
Dichlorodifluoromethane	NELAP	1360		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
Ethyl ether	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
Ethyl methacrylate	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
Ethylbenzene	NELAP	682		**1090**	µg/Kg-dry	100	02/06/2017 11:15	126810
Hexachlorobutadiene	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
Hexachloroethane	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
Iodomethane	NELAP	1360		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
Isopropylbenzene	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
m,p-Xylenes	NELAP	682		**3920**	µg/Kg-dry	100	02/06/2017 11:15	126810
Methacrylonitrile	NELAP	6820		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
Methyl Methacrylate	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
Methyl tert-butyl ether	NELAP	273		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
Methylacrylate	NELAP	1360		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
Methylene chloride	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
Naphthalene	NELAP	1360		**20500**	µg/Kg-dry	100	02/06/2017 11:15	126810
n-Butylbenzene	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
n-Heptane		6820		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
n-Hexane		2730		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
Nitrobenzene	NELAP	13600		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
n-Propylbenzene	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
o-Xylene	NELAP	682		**3560**	µg/Kg-dry	100	02/06/2017 11:15	126810
Pentachloroethane	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
p-Isopropyltoluene	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
Propionitrile	NELAP	6820		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
sec-Butylbenzene	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
Styrene	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
tert-Butylbenzene	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
Tetrachloroethene	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
Tetrahydrofuran	NELAP	6820		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
Toluene	NELAP	682		**8250**	µg/Kg-dry	100	02/06/2017 11:15	126810
trans-1,2-Dichloroethene	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
trans-1,3-Dichloropropene	NELAP	545		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
Trichloroethene	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
Trichlorofluoromethane	NELAP	682		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
Vinyl acetate	NELAP	6820		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
Vinyl chloride	NELAP	273		**ND**	µg/Kg-dry	100	02/06/2017 11:15	126810
Surr: 1,2-Dichloroethane-d4		72.2-131		**96.2**	%REC	100	02/06/2017 11:15	126810
Surr: 4-Bromofluorobenzene		82.1-116		**97.7**	%REC	100	02/06/2017 11:15	126810
Surr: Dibromofluoromethane		77.7-120		**99.3**	%REC	100	02/06/2017 11:15	126810

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020296

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

Lab ID: 17020296-002 **Client Sample ID:** FL-RES-REM-W7 (15)

Matrix: SOLID **Collection Date:** 02/02/2017 10:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Surr: Toluene-d8		86-116		**98.3**	%REC	100	02/06/2017 11:15	126810

Elevated reporting limit due to high levels of target and/or non-target analytes.

Client: PSC Industrial Outsourcing, LP
Work Order: 17020296
Client Project: Champaign Residual IRM 624-1610-0001 / J0055
Report Date: 09-Feb-17

Lab Sample ID	Client Sample ID	Matrix	Fractions	Collection Date
17020296-001	SW-RES-REM-W6 (3)	Solid	4	02/02/2017 9:40
17020296-002	FL-RES-REM-W7 (15)	Solid	4	02/02/2017 10:00

Client: PSC Industrial Outsourcing, LP
Work Order: 17020296
Client Project: Champaign Residual IRM 624-1610-0001 / J0055
Report Date: 09-Feb-17

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			Prep Date/Time	Analysis Date/Time
17020296-001A	SW-RES-REM-W6 (3)	02/02/2017 9:40	02/03/2017 16:37		
	EPA SW846 3550C, 5035A, ASTM D2974				02/06/2017 15:54
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/03/2017 18:47	02/09/2017 0:26
	SW-846 3550B, 8270C, Semi-Volatile Organic Compounds by GC/MS			02/03/2017 18:34	02/05/2017 15:51
17020296-001D	SW-RES-REM-W6 (3)	02/02/2017 9:40	02/03/2017 16:37		
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/07/2017 6:29
17020296-002A	FL-RES-REM-W7 (15)	02/02/2017 10:00	02/03/2017 16:37		
	EPA SW846 3550C, 5035A, ASTM D2974				02/03/2017 17:36
	SW-846 3550B, 8015B, Total Petroleum Hydrocarbons (OA-2) by GC/FID			02/03/2017 18:46	02/06/2017 15:36
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/03/2017 18:47	02/06/2017 12:16
	SW-846 3550B, 8270C, Semi-Volatile Organic Compounds by GC/MS			02/03/2017 18:34	02/05/2017 13:29
17020296-002D	FL-RES-REM-W7 (15)	02/02/2017 10:00	02/03/2017 16:37		
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/06/2017 11:15
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/06/2017 13:50

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020296

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

EPA SW846 3550C, 5035A, ASTM D2974

Batch R228804 **SampType:** LCS Units %
SampID: LCS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	02/03/2017

Batch R228804 **SampType:** LCSQC Units %
SampID: LCSQC

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	02/03/2017

Batch R228849 **SampType:** LCS Units %
SampID: LCS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	02/06/2017

Batch R228849 **SampType:** LCSQC Units %
SampID: LCSQC

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	02/06/2017

SW-846 3550B, 8015B, TOTAL PETROLEUM HYDROCARBONS (OA-2) BY GC/FID

Batch 126775 **SampType:** MBLK Units mg/Kg
SampID: MBLK-126775

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Diesel	5.00		**ND**						02/06/2017
Kerosene	5.00		**ND**						02/06/2017
Mineral Spirits	5.00		**ND**						02/06/2017
Motor Oil	5.00		**ND**						02/06/2017
Surr: n-Tetracontane			**0.57**	0.6700		85.2	33.4	140	02/06/2017

Batch 126775 **SampType:** LCS Units mg/Kg
SampID: LCS-126775

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Diesel	5.00		**15.8**	16.70	0	94.6	35.2	131	02/06/2017
Surr: n-Tetracontane			**0.55**	0.6700		82.3	33.4	140	02/06/2017

Batch 126775 **SampType:** MS Units mg/Kg-dry
SampID: 17020296-002AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Diesel	11.0		**66.0**	36.81	42.87	62.7	20.3	167	02/06/2017
Surr: n-Tetracontane			**1.59**	1.477		108.0	20	152	02/06/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020296

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 3550B, 8015B, TOTAL PETROLEUM HYDROCARBONS (OA-2) BY GC/FID

Batch 126775 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **34**

SampID: 17020296-002AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Diesel	11.1		**80.2**	36.95	42.87	101.0	65.95	19.48	02/06/2017
Surr: n-Tetracontane			**1.61**	1.482		108.3			02/06/2017

SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126744 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK-126744

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Acenaphthene	0.003		**ND**						02/06/2017
Acenaphthylene	0.003		**ND**						02/06/2017
Anthracene	0.003		**ND**						02/06/2017
Benzo(a)anthracene	0.010		**ND**						02/06/2017
Benzo(a)pyrene	0.003		**ND**						02/06/2017
Benzo(b)fluoranthene	0.003		**ND**						02/06/2017
Benzo(g,h,i)perylene	0.003		**ND**						02/06/2017
Benzo(k)fluoranthene	0.003		**ND**						02/06/2017
Chrysene	0.003		**ND**						02/06/2017
Dibenzo(a,h)anthracene	0.003		**ND**						02/06/2017
Fluoranthene	0.003		**ND**						02/06/2017
Fluorene	0.003		**ND**						02/06/2017
Indeno(1,2,3-cd)pyrene	0.003		**ND**						02/06/2017
Naphthalene	0.003		**ND**						02/06/2017
Phenanthrene	0.003		**ND**						02/06/2017
Pyrene	0.003		**ND**						02/06/2017
Surr: 2-Fluorobiphenyl			**0.111**	0.1670		66.7	30	101	02/06/2017
Surr: Nitrobenzene-d5			**0.080**	0.1670		48.0	24.4	112	02/06/2017
Surr: p-Terphenyl-d14			**0.113**	0.1670		67.9	31.9	121	02/06/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020296

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126744 **SampType:** LCS Units **mg/Kg**

SampID: LCS-126744

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Acenaphthene	0.003		**0.117**	0.1670	0	70.0	47.9	103	02/06/2017
Acenaphthylene	0.003		**0.116**	0.1670	0	69.5	47.3	104	02/06/2017
Anthracene	0.003		**0.114**	0.1670	0	68.2	42.1	98.1	02/06/2017
Benzo(a)anthracene	0.010		**0.133**	0.1670	0	79.9	41.4	107	02/06/2017
Benzo(a)pyrene	0.003		**0.126**	0.1670	0	75.2	43.1	102	02/06/2017
Benzo(b)fluoranthene	0.003		**0.144**	0.1670	0	85.9	40.9	109	02/06/2017
Benzo(g,h,i)perylene	0.003		**0.136**	0.1670	0	81.7	36.2	113	02/06/2017
Benzo(k)fluoranthene	0.003		**0.134**	0.1670	0	80.2	45.4	107	02/06/2017
Chrysene	0.003		**0.127**	0.1670	0	75.8	47.9	107	02/06/2017
Dibenzo(a,h)anthracene	0.003		**0.144**	0.1670	0	86.4	41.2	112	02/06/2017
Fluoranthene	0.003		**0.122**	0.1670	0	72.8	45	104	02/06/2017
Fluorene	0.003		**0.124**	0.1670	0	74.2	47.8	106	02/06/2017
Indeno(1,2,3-cd)pyrene	0.003		**0.136**	0.1670	0	81.3	40	112	02/06/2017
Naphthalene	0.003		**0.094**	0.1670	0	56.0	42.9	93.3	02/06/2017
Phenanthrene	0.003		**0.119**	0.1670	0	71.4	44.2	99.2	02/06/2017
Pyrene	0.003		**0.122**	0.1670	0	72.9	41.3	103	02/06/2017
Surr: 2-Fluorobiphenyl			**0.114**	0.1670		68.5	30	101	02/06/2017
Surr: Nitrobenzene-d5			**0.093**	0.1670		55.9	24.4	112	02/06/2017
Surr: p-Terphenyl-d14			**0.112**	0.1670		67.4	31.9	121	02/06/2017

Batch 126744 **SampType:** MS Units **mg/Kg-dry**

SampID: 17020296-002AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Acenaphthene	0.008		**0.217**	0.3705	0.005293	57.1	30.6	109	02/06/2017
Acenaphthylene	0.008		**0.219**	0.3705	0.01264	55.8	28	110	02/06/2017
Anthracene	0.008		**0.210**	0.3705	0.01941	51.3	41.4	94.3	02/06/2017
Benzo(a)anthracene	0.022		**0.255**	0.3705	0.01955	63.5	28.6	113	02/06/2017
Benzo(a)pyrene	0.008		**0.242**	0.3705	0.01037	62.5	37.9	102	02/06/2017
Benzo(b)fluoranthene	0.008		**0.251**	0.3705	0.01176	64.5	37.1	112	02/06/2017
Benzo(g,h,i)perylene	0.008		**0.234**	0.3705	0.006763	61.3	7.28	119	02/06/2017
Benzo(k)fluoranthene	0.008		**0.227**	0.3705	0.004484	60.0	34	115	02/06/2017
Chrysene	0.008		**0.231**	0.3705	0.01323	58.9	23.1	116	02/06/2017
Dibenzo(a,h)anthracene	0.008		**0.242**	0.3705	0	65.3	23.9	110	02/06/2017
Fluoranthene	0.008		**0.219**	0.3705	0.02882	51.2	20.8	124	02/06/2017
Fluorene	0.008		**0.234**	0.3705	0.02058	57.5	44.3	96.6	02/06/2017
Indeno(1,2,3-cd)pyrene	0.008		**0.233**	0.3705	0.003749	62.0	12.6	119	02/06/2017
Naphthalene	0.008	S	**3.04**	0.3705	3.199	-42.4	17.8	110	02/06/2017
Phenanthrene	0.008		**0.236**	0.3705	0.05763	48.2	22.3	117	02/06/2017
Pyrene	0.008		**0.223**	0.3705	0.02757	52.8	20.6	121	02/06/2017
Surr: 2-Fluorobiphenyl			**0.202**	0.3705		54.5	19.9	83	02/06/2017
Surr: Nitrobenzene-d5			**0.152**	0.3705		41.1	23	84	02/06/2017
Surr: p-Terphenyl-d14			**0.199**	0.3705		53.7	33.5	106	02/06/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020296

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126744 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **49.7**

SampID: 17020296-002AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Acenaphthene	0.008		**0.203**	0.3698	0.005293	53.5	0.2169	6.57	02/06/2017
Acenaphthylene	0.008		**0.211**	0.3698	0.01264	53.7	0.2193	3.77	02/06/2017
Anthracene	0.008		**0.192**	0.3698	0.01941	46.7	0.2096	8.66	02/06/2017
Benzo(a)anthracene	0.022		**0.232**	0.3698	0.01955	57.4	0.2548	9.40	02/06/2017
Benzo(a)pyrene	0.008		**0.221**	0.3698	0.01037	56.9	0.2419	9.11	02/06/2017
Benzo(b)fluoranthene	0.008		**0.235**	0.3698	0.01176	60.4	0.2508	6.46	02/06/2017
Benzo(g,h,i)perylene	0.008		**0.217**	0.3698	0.006763	56.9	0.2340	7.40	02/06/2017
Benzo(k)fluoranthene	0.008		**0.216**	0.3698	0.004484	57.2	0.2267	4.84	02/06/2017
Chrysene	0.008		**0.215**	0.3698	0.01323	54.6	0.2315	7.28	02/06/2017
Dibenzo(a,h)anthracene	0.008		**0.227**	0.3698	0	61.3	0.2420	6.57	02/06/2017
Fluoranthene	0.008		**0.193**	0.3698	0.02882	44.3	0.2187	12.63	02/06/2017
Fluorene	0.008		**0.212**	0.3698	0.02058	51.8	0.2336	9.61	02/06/2017
Indeno(1,2,3-cd)pyrene	0.008		**0.215**	0.3698	0.003749	57.1	0.2333	8.21	02/06/2017
Naphthalene	0.008		**3.46**	0.3698	3.199	71.3	3.042	12.94	02/06/2017
Phenanthrene	0.008		**0.196**	0.3698	0.05763	37.4	0.2361	18.52	02/06/2017
Pyrene	0.008		**0.201**	0.3698	0.02757	46.9	0.2232	10.44	02/06/2017
Surr: 2-Fluorobiphenyl			**0.197**	0.3698		53.3			02/06/2017
Surr: Nitrobenzene-d5			**0.135**	0.3698		36.6			02/06/2017
Surr: p-Terphenyl-d14			**0.187**	0.3698		50.5			02/06/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020296

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126774 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK-126774

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,2,4-Trichlorobenzene	0.500		ND						02/05/2017
1,2-Dichlorobenzene	0.500		ND						02/05/2017
1,3-Dichlorobenzene	0.500		ND						02/05/2017
1,4-Dichlorobenzene	0.500		ND						02/05/2017
2,4,5-Trichlorophenol	0.350		ND						02/05/2017
2,4,6-Trichlorophenol	0.350		ND						02/05/2017
2,4-Dichlorophenol	0.500		ND						02/05/2017
2,4-Dimethylphenol	0.500		ND						02/05/2017
2,4-Dinitrophenol	1.00		ND						02/05/2017
2,4-Dinitrotoluene	0.350		ND						02/05/2017
2,6-Dinitrotoluene	0.350		ND						02/05/2017
2-Chloronaphthalene	0.350		ND						02/05/2017
2-Chlorophenol	0.500		ND						02/05/2017
2-Methoxy-4-methylphenol	0.650		ND						02/05/2017
2-Methylnaphthalene	0.350		ND						02/05/2017
2-Nitroaniline	1.00		ND						02/05/2017
2-Nitrophenol	0.350		ND						02/05/2017
3,3´-Dichlorobenzidine	0.350		ND						02/05/2017
3-Nitroaniline	1.00		ND						02/05/2017
4,6-Dinitro-2-methylphenol	1.00		ND						02/05/2017
4-Bromophenyl phenyl ether	0.350		ND						02/05/2017
4-Chloro-3-methylphenol	0.500		ND						02/05/2017
4-Chloroaniline	0.500		ND						02/05/2017
4-Chlorophenyl phenyl ether	0.350		ND						02/05/2017
4-Nitroaniline	0.500		ND						02/05/2017
4-Nitrophenol	0.350		ND						02/05/2017
Aniline	0.500		ND						02/05/2017
Azobenzene	0.350		ND						02/05/2017
Benzoic acid	1.50		ND						02/05/2017
Benzyl alcohol	0.500		ND						02/05/2017
Bis(2-chloroethoxy)methane	0.350		ND						02/05/2017
Bis(2-chloroethyl)ether	0.500		ND						02/05/2017
Bis(2-chloroisopropyl)ether	0.350		ND						02/05/2017
Bis(2-ethylhexyl)phthalate	0.350		ND						02/05/2017
Butyl benzyl phthalate	0.350		ND						02/05/2017
Carbazole	0.500		ND						02/05/2017
Dibenzofuran	0.350		ND						02/05/2017
Diethyl phthalate	0.500		ND						02/05/2017
Dimethyl phthalate	0.350		ND						02/05/2017
Di-n-butyl phthalate	0.350		ND						02/05/2017
Di-n-octyl phthalate	0.350		ND						02/05/2017
Hexachlorobenzene	0.350		ND						02/05/2017
Hexachlorobutadiene	0.500		ND						02/05/2017
Hexachlorocyclopentadiene	0.350		ND						02/05/2017
Hexachloroethane	0.500		ND						02/05/2017
Isophorone	0.350		ND						02/05/2017
m,p-Cresol	0.500		ND						02/05/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020296

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126774 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK-126774

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Nitrobenzene	0.500		**ND**						02/05/2017
N-Nitrosodimethylamine	0.500		**ND**						02/05/2017
N-Nitroso-di-n-propylamine	0.500		**ND**						02/05/2017
N-Nitrosodiphenylamine	0.500		**ND**						02/05/2017
o-Cresol	0.500		**ND**						02/05/2017
Pentachlorophenol	2.00		**ND**						02/05/2017
Phenol	0.350		**ND**						02/05/2017
Pyridine	0.500		**ND**						02/05/2017
1,2-Diphenylhydrazine	0.840		**ND**						02/05/2017
Surr: 2,4,6-Tribromophenol			**1.34**	1.670		80.5	50.5	116	02/05/2017
Surr: 2-Fluorobiphenyl			**0.717**	0.8350		85.9	47.4	102	02/05/2017
Surr: 2-Fluorophenol			**1.35**	1.670		80.8	43.7	98.6	02/05/2017
Surr: Nitrobenzene-d5			**0.711**	0.8350		85.1	39	97.3	02/05/2017
Surr: Phenol-d5			**1.40**	1.670		84.0	48.1	104	02/05/2017
Surr: p-Terphenyl-d14			**0.838**	0.8350		100.4	53.2	119	02/05/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020296

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126774 **SampType:** LCS Units **mg/Kg**

SampID: LCS-126774

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,2,4-Trichlorobenzene	0.500		**1.38**	1.670	0	82.4	52.4	102	02/05/2017
1,4-Dichlorobenzene	0.500		**1.28**	1.670	0	76.6	43	86.1	02/05/2017
2,4,5-Trichlorophenol	0.350		**1.52**	1.670	0	90.8	55.1	106	02/05/2017
2,4,6-Trichlorophenol	0.350		**1.49**	1.670	0	89.1	54	105	02/05/2017
2,4-Dimethylphenol	0.500		**1.28**	1.670	0	76.9	46.8	103	02/05/2017
2,4-Dinitrophenol	1.00		**1.18**	1.670	0	70.9	38	95.6	02/05/2017
2,4-Dinitrotoluene	0.350		**1.46**	1.670	0	87.4	55.6	109	02/05/2017
2-Chlorophenol	0.500		**1.33**	1.670	0	79.4	51.1	92.4	02/05/2017
4-Chloro-3-methylphenol	0.500		**1.51**	1.670	0	90.4	52	97.3	02/05/2017
4-Nitrophenol	0.350		**1.26**	1.670	0	75.6	48	99.6	02/05/2017
Bis(2-ethylhexyl)phthalate	0.350		**1.45**	1.670	0	86.9	48.3	106	02/05/2017
Diethyl phthalate	0.500		**1.56**	1.670	0	93.4	56.9	103	02/05/2017
Dimethyl phthalate	0.350		**1.48**	1.670	0	88.6	56.4	98.1	02/05/2017
Di-n-butyl phthalate	0.350		**1.40**	1.670	0	83.8	54.8	100	02/05/2017
Hexachlorobenzene	0.350		**1.38**	1.670	0	82.4	54.1	102	02/05/2017
Hexachlorobutadiene	0.500		**1.29**	1.670	0	77.0	46	103	02/05/2017
Hexachloroethane	0.500		**1.33**	1.670	0	79.4	45	90	02/05/2017
m,p-Cresol	0.500		**1.47**	1.670	0	88.1	53	98.5	02/05/2017
Nitrobenzene	0.500		**1.21**	1.670	0	72.2	44.4	86.6	02/05/2017
N-Nitroso-di-n-propylamine	0.500		**1.57**	1.670	0	93.9	39.8	94.3	02/05/2017
o-Cresol	0.500		**1.43**	1.670	0	85.5	52.1	96.4	02/05/2017
Pentachlorophenol	2.00		**ND**	1.670	0	71.5	37	91.7	02/05/2017
Phenol	0.350		**1.42**	1.670	0	84.9	52.9	95.6	02/05/2017
Pyridine	0.500		**0.907**	1.670	0	54.3	30	77.1	02/05/2017
Surr: 2,4,6-Tribromophenol			**1.34**	1.670		80.4	50.5	116	02/05/2017
Surr: 2-Fluorobiphenyl			**0.647**	0.8350		77.5	47.4	102	02/05/2017
Surr: 2-Fluorophenol			**1.23**	1.670		73.4	43.7	98.6	02/05/2017
Surr: Nitrobenzene-d5			**0.645**	0.8350		77.2	39	97.3	02/05/2017
Surr: Phenol-d5			**1.41**	1.670		84.5	48.1	104	02/05/2017
Surr: p-Terphenyl-d14			**0.741**	0.8350		88.7	53.2	119	02/05/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020296

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126774 **SampType:** MS Units **mg/Kg-dry**

SampID: 17020296-002AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,2,4-Trichlorobenzene	1.11		**3.02**	3.717	0	81.3	35.9	102	02/05/2017
1,4-Dichlorobenzene	1.11		**2.82**	3.717	0	75.8	29.8	95.5	02/05/2017
2,4,5-Trichlorophenol	0.779		**2.64**	3.717	0	71.1	38.6	123	02/05/2017
2,4,6-Trichlorophenol	0.779		**3.03**	3.717	0	81.6	35.9	123	02/05/2017
2,4-Dimethylphenol	1.11		**4.80**	3.717	1.922	77.5	38.3	88	02/05/2017
2,4-Dinitrophenol	2.23		**ND**	3.717	0	48.5	1.88	162	02/05/2017
2,4-Dinitrotoluene	0.779		**3.26**	3.717	0	87.6	37.5	107	02/05/2017
2-Chlorophenol	1.11		**2.80**	3.717	0	75.2	22.6	108	02/05/2017
4-Chloro-3-methylphenol	1.11		**3.14**	3.717	0	84.5	19.3	131	02/05/2017
4-Nitrophenol	0.779		**2.33**	3.717	0	62.6	27.6	123	02/05/2017
Bis(2-ethylhexyl)phthalate	0.779	S	**5.16**	3.717	1.050	110.5	56.3	109	02/05/2017
Diethyl phthalate	1.11		**3.31**	3.717	0	89.2	51.7	106	02/05/2017
Dimethyl phthalate	0.779		**3.24**	3.717	0	87.2	58.8	104	02/05/2017
Di-n-butyl phthalate	0.779		**3.05**	3.717	0	81.9	54.3	105	02/05/2017
Hexachlorobenzene	0.779		**3.10**	3.717	0	83.5	55.9	106	02/05/2017
Hexachlorobutadiene	1.11		**2.95**	3.717	0	79.4	35.7	100	02/05/2017
Hexachloroethane	1.11		**2.77**	3.717	0	74.6	38.9	89.9	02/05/2017
m,p-Cresol	1.11		**3.03**	3.717	0	81.6	37.6	93.7	02/05/2017
Nitrobenzene	1.11		**2.51**	3.717	0	67.6	51.8	104	02/05/2017
N-Nitroso-di-n-propylamine	1.11		**3.19**	3.717	0	85.7	45.5	99.1	02/05/2017
o-Cresol	1.11		**3.06**	3.717	0	82.2	43	101	02/05/2017
Pentachlorophenol	4.45		**ND**	3.717	0	55.1	18.5	113	02/05/2017
Phenol	0.779		**3.57**	3.717	0.4124	85.0	20.8	110	02/05/2017
Pyridine	1.11		**2.33**	3.717	0	62.8	3.61	74.3	02/05/2017
Surr: 2,4,6-Tribromophenol			**2.38**	3.717		64.0	33	115	02/05/2017
Surr: 2-Fluorobiphenyl			**1.32**	1.859		71.0	36.5	97.7	02/05/2017
Surr: 2-Fluorophenol			**2.42**	3.717		65.2	39.4	92.8	02/05/2017
Surr: Nitrobenzene-d5			**1.23**	1.859		66.0	34.7	90.1	02/05/2017
Surr: Phenol-d5			**3.09**	3.717		83.3	42.8	106	02/05/2017
Surr: p-Terphenyl-d14			**1.60**	1.859		86.3	43.7	124	02/05/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020296

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126774 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **40**

SampID: 17020296-002AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
1,2,4-Trichlorobenzene	1.10		**2.84**	3.668	0	77.5	3.023	6.10	02/05/2017
1,4-Dichlorobenzene	1.10		**2.90**	3.668	0	79.1	2.819	2.93	02/05/2017
2,4,5-Trichlorophenol	0.769		**2.99**	3.668	0	81.5	2.644	12.23	02/05/2017
2,4,6-Trichlorophenol	0.769		**3.02**	3.668	0	82.2	3.032	0.49	02/05/2017
2,4-Dimethylphenol	1.10		**4.50**	3.668	1.922	70.4	4.803	6.46	02/05/2017
2,4-Dinitrophenol	2.20		**ND**	3.668	0	58.3	1.802	0.00	02/05/2017
2,4-Dinitrotoluene	0.769		**3.54**	3.668	0	96.4	3.257	8.24	02/05/2017
2-Chlorophenol	1.10		**2.85**	3.668	0	77.7	2.796	1.91	02/05/2017
4-Chloro-3-methylphenol	1.10		**3.20**	3.668	0	87.3	3.139	2.05	02/05/2017
4-Nitrophenol	0.769		**2.69**	3.668	0	73.3	2.327	14.48	02/05/2017
Bis(2-ethylhexyl)phthalate	0.769		**4.43**	3.668	1.050	92.2	5.158	15.14	02/05/2017
Diethyl phthalate	1.10		**3.51**	3.668	0	95.8	3.314	5.84	02/05/2017
Dimethyl phthalate	0.769		**3.31**	3.668	0	90.2	3.241	2.03	02/05/2017
Di-n-butyl phthalate	0.769		**3.19**	3.668	0	86.9	3.045	4.59	02/05/2017
Hexachlorobenzene	0.769		**3.21**	3.668	0	87.5	3.104	3.37	02/05/2017
Hexachlorobutadiene	1.10		**2.78**	3.668	0	75.7	2.952	6.06	02/05/2017
Hexachloroethane	1.10		**2.79**	3.668	0	76.0	2.774	0.53	02/05/2017
m,p-Cresol	1.10		**3.07**	3.668	0	83.7	3.032	1.31	02/05/2017
Nitrobenzene	1.10		**2.39**	3.668	0	65.2	2.515	5.05	02/05/2017
N-Nitroso-di-n-propylamine	1.10		**3.45**	3.668	0	93.9	3.188	7.79	02/05/2017
o-Cresol	1.10		**2.99**	3.668	0	81.6	3.055	2.10	02/05/2017
Pentachlorophenol	4.39		**ND**	3.668	0	65.7	2.050	0.00	02/05/2017
Phenol	0.769		**3.59**	3.668	0.4124	86.6	3.573	0.43	02/05/2017
Pyridine	1.10		**2.12**	3.668	0	57.7	2.333	9.71	02/05/2017
Surr: 2,4,6-Tribromophenol			**2.71**	3.668		73.9			02/05/2017
Surr: 2-Fluorobiphenyl			**1.26**	1.834		68.5			02/05/2017
Surr: 2-Fluorophenol			**2.42**	3.668		66.0			02/05/2017
Surr: Nitrobenzene-d5			**1.19**	1.834		64.6			02/05/2017
Surr: Phenol-d5			**3.03**	3.668		82.7			02/05/2017
Surr: p-Terphenyl-d14			**1.57**	1.834		85.6			02/05/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020296

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126805 **SampType:** MBLK Units µg/Kg

SampID: MBLK-Y170206A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		ND						02/06/2017
1,1,1-Trichloroethane	5.0		ND						02/06/2017
1,1,2,2-Tetrachloroethane	5.0		ND						02/06/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		ND						02/06/2017
1,1,2-Trichloroethane	5.0		ND						02/06/2017
1,1-Dichloro-2-propanone	50.0		ND						02/06/2017
1,1-Dichloroethane	5.0		ND						02/06/2017
1,1-Dichloroethene	5.0		ND						02/06/2017
1,1-Dichloropropene	5.0		ND						02/06/2017
1,2,3-Trichlorobenzene	5.0		ND						02/06/2017
1,2,3-Trichloropropane	10.0		ND						02/06/2017
1,2,3-Trimethylbenzene	5.0		ND						02/06/2017
1,2,4-Trichlorobenzene	5.0		ND						02/06/2017
1,2,4-Trimethylbenzene	5.0		ND						02/06/2017
1,2-Dibromo-3-chloropropane	5.0		ND						02/06/2017
1,2-Dibromoethane	5.0		ND						02/06/2017
1,2-Dichlorobenzene	5.0		ND						02/06/2017
1,2-Dichloroethane	5.0		ND						02/06/2017
1,2-Dichloropropane	5.0		ND						02/06/2017
1,3,5-Trimethylbenzene	5.0		ND						02/06/2017
1,3-Dichlorobenzene	5.0		ND						02/06/2017
1,3-Dichloropropane	5.0		ND						02/06/2017
1,4-Dichlorobenzene	5.0		ND						02/06/2017
1-Chlorobutane	5.0		ND						02/06/2017
2,2-Dichloropropane	5.0		ND						02/06/2017
2-Butanone	50.0		ND						02/06/2017
2-Chlorotoluene	5.0		ND						02/06/2017
2-Hexanone	50.0		ND						02/06/2017
2-Nitropropane	50.0		ND						02/06/2017
4-Chlorotoluene	5.0		ND						02/06/2017
4-Methyl-2-pentanone	50.0		ND						02/06/2017
Acetone	50.0		ND						02/06/2017
Acrolein	100		ND						02/06/2017
Acrylonitrile	10.0		ND						02/06/2017
Allyl chloride	5.0		ND						02/06/2017
Benzene	1.0		ND						02/06/2017
Bromobenzene	5.0		ND						02/06/2017
Bromochloromethane	5.0		ND						02/06/2017
Bromodichloromethane	5.0		ND						02/06/2017
Bromoform	5.0		ND						02/06/2017
Bromomethane	10.0		ND						02/06/2017
Carbon disulfide	5.0		ND						02/06/2017
Carbon tetrachloride	5.0		ND						02/06/2017
Chlorobenzene	5.0		ND						02/06/2017
Chloroethane	10.0		ND						02/06/2017
Chloroform	5.0		ND						02/06/2017
Chloromethane	10.0		ND						02/06/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020296

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126805 **SampType:** MBLK Units µg/Kg

SampID: MBLK-Y170206A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		ND						02/06/2017
cis-1,3-Dichloropropene	4.0		ND						02/06/2017
Cyclohexanone	100		ND						02/06/2017
Dibromochloromethane	5.0		ND						02/06/2017
Dibromomethane	5.0		ND						02/06/2017
Dichlorodifluoromethane	10.0		ND						02/06/2017
Ethyl ether	5.0		ND						02/06/2017
Ethyl methacrylate	5.0		ND						02/06/2017
Ethylbenzene	5.0		ND						02/06/2017
Hexachlorobutadiene	5.0		ND						02/06/2017
Hexachloroethane	5.0		ND						02/06/2017
Iodomethane	10.0		ND						02/06/2017
Isopropylbenzene	5.0		ND						02/06/2017
m,p-Xylenes	5.0		ND						02/06/2017
Methacrylonitrile	50.0		ND						02/06/2017
Methyl Methacrylate	5.0		ND						02/06/2017
Methyl tert-butyl ether	2.0		ND						02/06/2017
Methylacrylate	10.0		ND						02/06/2017
Methylene chloride	5.0		ND						02/06/2017
Naphthalene	10.0		ND						02/06/2017
n-Butylbenzene	5.0		ND						02/06/2017
n-Heptane	20.0		ND						02/06/2017
n-Hexane	20.0		ND						02/06/2017
Nitrobenzene	100		ND						02/06/2017
n-Propylbenzene	5.0		ND						02/06/2017
o-Xylene	5.0		ND						02/06/2017
Pentachloroethane	5.0		ND						02/06/2017
p-Isopropyltoluene	5.0		ND						02/06/2017
Propionitrile	50.0		ND						02/06/2017
sec-Butylbenzene	5.0		ND						02/06/2017
Styrene	5.0		ND						02/06/2017
tert-Butylbenzene	5.0		ND						02/06/2017
Tetrachloroethene	5.0		ND						02/06/2017
Tetrahydrofuran	50.0		ND						02/06/2017
Toluene	5.0		ND						02/06/2017
trans-1,2-Dichloroethene	5.0		ND						02/06/2017
trans-1,3-Dichloropropene	4.0		ND						02/06/2017
Trichloroethene	5.0		ND						02/06/2017
Trichlorofluoromethane	5.0		ND						02/06/2017
Vinyl acetate	50.0		ND						02/06/2017
Vinyl chloride	2.0		ND						02/06/2017
Surr: 1,2-Dichloroethane-d4			**52.2**	50.00		104.4	72.2	131	02/06/2017
Surr: 4-Bromofluorobenzene			**50.1**	50.00		100.2	82.1	116	02/06/2017
Surr: Dibromofluoromethane			**50.5**	50.00		101.1	77.7	120	02/06/2017
Surr: Toluene-d8			**50.2**	50.00		100.5	86	116	02/06/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020296

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126805 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-Y170206A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		49.2	50.00	0	98.5	49.04	0.39	02/06/2017
1,1,1-Trichloroethane	5.0		50.1	50.00	0	100.3	50.37	0.46	02/06/2017
1,1,2,2-Tetrachloroethane	5.0		49.2	50.00	0	98.5	48.88	0.71	02/06/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		49.5	50.00	0	99.0	49.61	0.26	02/06/2017
1,1,2-Trichloroethane	5.0		46.9	50.00	0	93.8	47.03	0.30	02/06/2017
1,1-Dichloro-2-propanone	50.0		116	125.0	0	92.7	119.5	3.09	02/06/2017
1,1-Dichloroethane	5.0		52.8	50.00	0	105.5	52.32	0.82	02/06/2017
1,1-Dichloroethene	5.0		49.1	50.00	0	98.3	50.11	1.98	02/06/2017
1,1-Dichloropropene	5.0		51.1	50.00	0	102.2	50.87	0.41	02/06/2017
1,2,3-Trichlorobenzene	5.0		48.3	50.00	0	96.6	48.26	0.04	02/06/2017
1,2,3-Trichloropropane	10.0		46.9	50.00	0	93.8	45.76	2.44	02/06/2017
1,2,3-Trimethylbenzene	5.0		51.2	50.00	0	102.3	50.75	0.82	02/06/2017
1,2,4-Trichlorobenzene	5.0		52.2	50.00	0	104.4	52.29	0.15	02/06/2017
1,2,4-Trimethylbenzene	5.0		52.0	50.00	0	104.1	51.68	0.67	02/06/2017
1,2-Dibromo-3-chloropropane	5.0		45.4	50.00	0	90.9	46.85	3.03	02/06/2017
1,2-Dibromoethane	5.0		50.2	50.00	0	100.4	49.90	0.60	02/06/2017
1,2-Dichlorobenzene	5.0		51.0	50.00	0	102.0	50.72	0.51	02/06/2017
1,2-Dichloroethane	5.0		49.8	50.00	0	99.6	49.62	0.38	02/06/2017
1,2-Dichloropropane	5.0		50.3	50.00	0	100.7	50.55	0.42	02/06/2017
1,3,5-Trimethylbenzene	5.0		51.8	50.00	0	103.6	51.35	0.89	02/06/2017
1,3-Dichlorobenzene	5.0		52.0	50.00	0	103.9	52.16	0.40	02/06/2017
1,3-Dichloropropane	5.0		47.9	50.00	0	95.9	47.77	0.33	02/06/2017
1,4-Dichlorobenzene	5.0		52.8	50.00	0	105.5	52.60	0.32	02/06/2017
1-Chlorobutane	5.0		51.1	50.00	0	102.2	50.53	1.12	02/06/2017
2,2-Dichloropropane	5.0		51.4	50.00	0	102.8	51.27	0.21	02/06/2017
2-Butanone	50.0		125	125.0	0	99.9	130.1	4.09	02/06/2017
2-Chlorotoluene	5.0		51.9	50.00	0	103.9	51.86	0.13	02/06/2017
2-Hexanone	50.0		123	125.0	0	98.5	128.0	3.83	02/06/2017
2-Nitropropane	50.0		510	500.0	0	102.1	501.8	1.69	02/06/2017
4-Chlorotoluene	5.0		48.1	50.00	0	96.3	48.66	1.07	02/06/2017
4-Methyl-2-pentanone	50.0		122	125.0	0	97.6	121.4	0.48	02/06/2017
Acetone	50.0		122	125.0	0	97.5	133.2	8.92	02/06/2017
Acrolein	100		431	500.0	0	86.2	409.6	5.12	02/06/2017
Acrylonitrile	10.0		48.5	50.00	0	97.0	47.15	2.86	02/06/2017
Allyl chloride	5.0		50.2	50.00	0	100.4	51.02	1.58	02/06/2017
Benzene	1.0		48.8	50.00	0	97.7	48.62	0.45	02/06/2017
Bromobenzene	5.0		51.0	50.00	0	102.0	50.92	0.12	02/06/2017
Bromochloromethane	5.0		50.0	50.00	0	100.0	49.80	0.44	02/06/2017
Bromodichloromethane	5.0		50.5	50.00	0	101.0	51.06	1.14	02/06/2017
Bromoform	5.0		48.1	50.00	0	96.1	47.54	1.09	02/06/2017
Bromomethane	10.0		40.3	50.00	0	80.7	37.39	7.59	02/06/2017
Carbon disulfide	5.0		47.7	50.00	0	95.4	47.64	0.13	02/06/2017
Carbon tetrachloride	5.0		50.6	50.00	0	101.1	50.20	0.73	02/06/2017
Chlorobenzene	5.0		50.9	50.00	0	101.9	50.97	0.06	02/06/2017
Chloroethane	10.0		43.6	50.00	0	87.2	42.96	1.48	02/06/2017
Chloroform	5.0		49.6	50.00	0	99.2	49.61	0.06	02/06/2017
Chloromethane	10.0		44.0	50.00	0	88.0	44.38	0.86	02/06/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020296

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126805 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-Y170206A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
cis-1,2-Dichloroethene	5.0		**51.0**	50.00	0	102.1	50.41	1.24	02/06/2017
cis-1,3-Dichloropropene	4.0		**50.8**	50.00	0	101.6	50.17	1.21	02/06/2017
Cyclohexanone	100		**445**	500.0	0	89.1	455.4	2.22	02/06/2017
Dibromochloromethane	5.0		**49.1**	50.00	0	98.1	49.08	0.04	02/06/2017
Dibromomethane	5.0		**48.9**	50.00	0	97.8	48.32	1.19	02/06/2017
Dichlorodifluoromethane	10.0		**30.2**	50.00	0	60.4	31.48	4.08	02/06/2017
Ethyl ether	5.0		**47.8**	50.00	0	95.5	47.20	1.20	02/06/2017
Ethyl methacrylate	5.0		**49.0**	50.00	0	98.0	48.54	0.90	02/06/2017
Ethylbenzene	5.0		**51.4**	50.00	0	102.7	52.38	1.99	02/06/2017
Hexachlorobutadiene	5.0		**51.0**	50.00	0	101.9	50.92	0.10	02/06/2017
Hexachloroethane	5.0		**53.1**	50.00	0	106.2	52.64	0.89	02/06/2017
Iodomethane	10.0		**48.9**	50.00	0	97.8	48.56	0.74	02/06/2017
Isopropylbenzene	5.0		**51.5**	50.00	0	103.0	51.27	0.41	02/06/2017
m,p-Xylenes	5.0		**103**	100.0	0	103.2	104.3	1.09	02/06/2017
Methacrylonitrile	50.0		**ND**	50.00	0	95.6	46.61	0.00	02/06/2017
Methyl Methacrylate	5.0		**48.6**	50.00	0	97.2	47.25	2.86	02/06/2017
Methyl tert-butyl ether	2.0		**47.8**	50.00	0	95.6	47.16	1.35	02/06/2017
Methylacrylate	10.0		**48.8**	50.00	0	97.6	48.04	1.55	02/06/2017
Methylene chloride	5.0		**49.3**	50.00	0	98.7	49.44	0.20	02/06/2017
Naphthalene	10.0		**48.0**	50.00	0	96.0	47.56	0.94	02/06/2017
n-Butylbenzene	5.0		**55.2**	50.00	0	110.5	55.43	0.36	02/06/2017
n-Heptane	20.0		**54.7**	50.00	0	109.3	55.45	1.42	02/06/2017
n-Hexane	20.0		**51.3**	50.00	0	102.6	51.78	0.97	02/06/2017
Nitrobenzene	100		**532**	500.0	0	106.4	539.6	1.47	02/06/2017
n-Propylbenzene	5.0		**53.0**	50.00	0	105.9	52.86	0.19	02/06/2017
o-Xylene	5.0		**51.1**	50.00	0	102.3	51.46	0.64	02/06/2017
Pentachloroethane	5.0		**50.3**	50.00	0	100.7	50.68	0.67	02/06/2017
p-Isopropyltoluene	5.0		**53.4**	50.00	0	106.7	53.01	0.64	02/06/2017
Propionitrile	50.0		**486**	500.0	0	97.2	481.1	1.06	02/06/2017
sec-Butylbenzene	5.0		**52.1**	50.00	0	104.3	52.05	0.17	02/06/2017
Styrene	5.0		**49.7**	50.00	0	99.3	49.81	0.28	02/06/2017
tert-Butylbenzene	5.0		**50.4**	50.00	0	100.9	50.18	0.50	02/06/2017
Tetrachloroethene	5.0		**47.8**	50.00	0	95.7	47.67	0.38	02/06/2017
Tetrahydrofuran	50.0		**ND**	50.00	0	94.5	47.78	0.00	02/06/2017
Toluene	5.0		**50.0**	50.00	0	99.9	50.60	1.25	02/06/2017
trans-1,2-Dichloroethene	5.0		**50.9**	50.00	0	101.9	51.06	0.25	02/06/2017
trans-1,3-Dichloropropene	4.0		**50.9**	50.00	0	101.8	49.96	1.84	02/06/2017
Trichloroethene	5.0		**50.0**	50.00	0	100.0	50.42	0.82	02/06/2017
Trichlorofluoromethane	5.0		**46.2**	50.00	0	92.3	46.28	0.24	02/06/2017
Vinyl acetate	50.0		**ND**	50.00	0	98.0	51.18	0.00	02/06/2017
Vinyl chloride	2.0		**43.6**	50.00	0	87.2	43.34	0.60	02/06/2017
Surr: 1,2-Dichloroethane-d4			**50.8**	50.00		101.5			02/06/2017
Surr: 4-Bromofluorobenzene			**50.9**	50.00		101.8			02/06/2017
Surr: Dibromofluoromethane			**50.6**	50.00		101.2			02/06/2017
Surr: Toluene-d8			**49.1**	50.00		98.2			02/06/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020296

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126805 **SampType:** LCS Units µg/Kg

SampID: LCS-Y170206A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		49.0	50.00	0	98.1	83.1	114	02/06/2017
1,1,1-Trichloroethane	5.0		50.4	50.00	0	100.7	78.5	119	02/06/2017
1,1,2,2-Tetrachloroethane	5.0		48.9	50.00	0	97.8	67.4	120	02/06/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		49.6	50.00	0	99.2	75.4	121	02/06/2017
1,1,2-Trichloroethane	5.0		47.0	50.00	0	94.1	81.1	111	02/06/2017
1,1-Dichloro-2-propanone	50.0		119	125.0	0	95.6	55.4	131	02/06/2017
1,1-Dichloroethane	5.0		52.3	50.00	0	104.6	80.1	116	02/06/2017
1,1-Dichloroethene	5.0		50.1	50.00	0	100.2	73.1	121	02/06/2017
1,1-Dichloropropene	5.0		50.9	50.00	0	101.7	82.2	114	02/06/2017
1,2,3-Trichlorobenzene	5.0		48.3	50.00	0	96.5	81.7	130	02/06/2017
1,2,3-Trichloropropane	10.0		45.8	50.00	0	91.5	67.8	118	02/06/2017
1,2,3-Trimethylbenzene	5.0		50.8	50.00	0	101.5	82.1	127	02/06/2017
1,2,4-Trichlorobenzene	5.0		52.3	50.00	0	104.6	72.3	141	02/06/2017
1,2,4-Trimethylbenzene	5.0		51.7	50.00	0	103.4	79.7	123	02/06/2017
1,2-Dibromo-3-chloropropane	5.0		46.8	50.00	0	93.7	62.1	123	02/06/2017
1,2-Dibromoethane	5.0		49.9	50.00	0	99.8	82.4	112	02/06/2017
1,2-Dichlorobenzene	5.0		50.7	50.00	0	101.4	82.7	119	02/06/2017
1,2-Dichloroethane	5.0		49.6	50.00	0	99.2	72.8	120	02/06/2017
1,2-Dichloropropane	5.0		50.6	50.00	0	101.1	80	116	02/06/2017
1,3,5-Trimethylbenzene	5.0		51.4	50.00	0	102.7	81.5	125	02/06/2017
1,3-Dichlorobenzene	5.0		52.2	50.00	0	104.3	82	124	02/06/2017
1,3-Dichloropropane	5.0		47.8	50.00	0	95.5	79.8	113	02/06/2017
1,4-Dichlorobenzene	5.0		52.6	50.00	0	105.2	81.1	124	02/06/2017
1-Chlorobutane	5.0		50.5	50.00	0	101.1	77.2	113	02/06/2017
2,2-Dichloropropane	5.0		51.3	50.00	0	102.5	76.6	121	02/06/2017
2-Butanone	50.0		130	125.0	0	104.1	62.8	131	02/06/2017
2-Chlorotoluene	5.0		51.9	50.00	0	103.7	78.8	121	02/06/2017
2-Hexanone	50.0		128	125.0	0	102.4	63.1	125	02/06/2017
2-Nitropropane	50.0		502	500.0	0	100.4	61.2	129	02/06/2017
4-Chlorotoluene	5.0		48.7	50.00	0	97.3	77.6	124	02/06/2017
4-Methyl-2-pentanone	50.0		121	125.0	0	97.1	60.6	126	02/06/2017
Acetone	50.0		133	125.0	0	106.6	39.5	159	02/06/2017
Acrolein	100		410	500.0	0	81.9	1	167	02/06/2017
Acrylonitrile	10.0		47.2	50.00	0	94.3	67	124	02/06/2017
Allyl chloride	5.0		51.0	50.00	0	102.0	58.5	129	02/06/2017
Benzene	1.0		48.6	50.00	0	97.2	80.8	117	02/06/2017
Bromobenzene	5.0		50.9	50.00	0	101.8	79.6	117	02/06/2017
Bromochloromethane	5.0		49.8	50.00	0	99.6	70.7	121	02/06/2017
Bromodichloromethane	5.0		51.1	50.00	0	102.1	80.7	121	02/06/2017
Bromoform	5.0		47.5	50.00	0	95.1	79.8	118	02/06/2017
Bromomethane	10.0		37.4	50.00	0	74.8	1	175	02/06/2017
Carbon disulfide	5.0		47.6	50.00	0	95.3	62.8	123	02/06/2017
Carbon tetrachloride	5.0		50.2	50.00	0	100.4	77.6	123	02/06/2017
Chlorobenzene	5.0		51.0	50.00	0	101.9	85.6	116	02/06/2017
Chloroethane	10.0		43.0	50.00	0	85.9	60.2	125	02/06/2017
Chloroform	5.0		49.6	50.00	0	99.2	77.9	116	02/06/2017
Chloromethane	10.0		44.4	50.00	0	88.8	29.9	157	02/06/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020296

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126805 **SampType:** LCS Units µg/Kg

SampID: LCS-Y170206A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		**50.4**	50.00	0	100.8	80.1	116	02/06/2017
cis-1,3-Dichloropropene	4.0		**50.2**	50.00	0	100.3	80.5	121	02/06/2017
Cyclohexanone	100		**455**	500.0	0	91.1	45.4	128	02/06/2017
Dibromochloromethane	5.0		**49.1**	50.00	0	98.2	84.3	116	02/06/2017
Dibromomethane	5.0		**48.3**	50.00	0	96.6	76.6	115	02/06/2017
Dichlorodifluoromethane	10.0		**31.5**	50.00	0	63.0	1	200	02/06/2017
Ethyl ether	5.0		**47.2**	50.00	0	94.4	73.4	116	02/06/2017
Ethyl methacrylate	5.0		**48.5**	50.00	0	97.1	76.2	120	02/06/2017
Ethylbenzene	5.0		**52.4**	50.00	0	104.8	84.8	116	02/06/2017
Hexachlorobutadiene	5.0		**50.9**	50.00	0	101.8	74	135	02/06/2017
Hexachloroethane	5.0		**52.6**	50.00	0	105.3	76.4	121	02/06/2017
Iodomethane	10.0		**48.6**	50.00	0	97.1	38.7	161	02/06/2017
Isopropylbenzene	5.0		**51.3**	50.00	0	102.5	85	125	02/06/2017
m,p-Xylenes	5.0		**104**	100.0	0	104.3	85.3	120	02/06/2017
Methacrylonitrile	50.0		**ND**	50.00	0	93.2	65.7	120	02/06/2017
Methyl Methacrylate	5.0		**47.2**	50.00	0	94.5	69.1	114	02/06/2017
Methyl tert-butyl ether	2.0		**47.2**	50.00	0	94.3	66.6	125	02/06/2017
Methylacrylate	10.0		**48.0**	50.00	0	96.1	69.7	121	02/06/2017
Methylene chloride	5.0		**49.4**	50.00	0	98.9	73.4	115	02/06/2017
Naphthalene	10.0		**47.6**	50.00	0	95.1	70.1	134	02/06/2017
n-Butylbenzene	5.0		**55.4**	50.00	0	110.9	78.4	138	02/06/2017
n-Heptane	20.0		**55.4**	50.00	0	110.9	74.3	125	02/06/2017
n-Hexane	20.0		**51.8**	50.00	0	103.6	66.3	129	02/06/2017
Nitrobenzene	100		**540**	500.0	0	107.9	20.1	165	02/06/2017
n-Propylbenzene	5.0		**52.9**	50.00	0	105.7	79.1	125	02/06/2017
o-Xylene	5.0		**51.5**	50.00	0	102.9	81.9	118	02/06/2017
Pentachloroethane	5.0		**50.7**	50.00	0	101.4	72.7	123	02/06/2017
p-Isopropyltoluene	5.0		**53.0**	50.00	0	106.0	82.7	129	02/06/2017
Propionitrile	50.0		**481**	500.0	0	96.2	64.3	121	02/06/2017
sec-Butylbenzene	5.0		**52.0**	50.00	0	104.1	81.3	125	02/06/2017
Styrene	5.0		**49.8**	50.00	0	99.6	88.2	122	02/06/2017
tert-Butylbenzene	5.0		**50.2**	50.00	0	100.4	74.8	125	02/06/2017
Tetrachloroethene	5.0		**47.7**	50.00	0	95.3	84.2	122	02/06/2017
Tetrahydrofuran	50.0		**ND**	50.00	0	95.6	61	118	02/06/2017
Toluene	5.0		**50.6**	50.00	0	101.2	81.3	113	02/06/2017
trans-1,2-Dichloroethene	5.0		**51.1**	50.00	0	102.1	78.2	118	02/06/2017
trans-1,3-Dichloropropene	4.0		**50.0**	50.00	0	99.9	81.7	124	02/06/2017
Trichloroethene	5.0		**50.4**	50.00	0	100.8	81	123	02/06/2017
Trichlorofluoromethane	5.0		**46.3**	50.00	0	92.6	66.8	131	02/06/2017
Vinyl acetate	50.0		**51.2**	50.00	0	102.4	64.3	122	02/06/2017
Vinyl chloride	2.0		**43.3**	50.00	0	86.7	45.2	140	02/06/2017
Surr: 1,2-Dichloroethane-d4			**50.7**	50.00		101.4	72.2	131	02/06/2017
Surr: 4-Bromofluorobenzene			**51.0**	50.00		102.0	82.1	116	02/06/2017
Surr: Dibromofluoromethane			**50.5**	50.00		101.0	77.7	120	02/06/2017
Surr: Toluene-d8			**48.8**	50.00		97.6	86	116	02/06/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020296

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126805 **SampType:** LCSGD Units %REC RPD Limit 0

SampID: LCSGD-Y170206A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Surr: 1,2-Dichloroethane-d4			**51.2**	50.00		102.3			02/06/2017
Surr: 4-Bromofluorobenzene			**51.5**	50.00		103.0			02/06/2017
Surr: Dibromofluoromethane			**50.3**	50.00		100.6			02/06/2017
Surr: Toluene-d8			**52.0**	50.00		103.9			02/06/2017

Batch 126805 **SampType:** LCSG Units %REC

SampID: LCSG-Y170206A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Surr: 1,2-Dichloroethane-d4			**51.4**	50.00		102.7	72.2	131	02/06/2017
Surr: 4-Bromofluorobenzene			**50.9**	50.00		101.8	82.1	116	02/06/2017
Surr: Dibromofluoromethane			**50.4**	50.00		100.8	77.7	120	02/06/2017
Surr: Toluene-d8			**51.2**	50.00		102.4	86	116	02/06/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020296

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126810 **SampType:** MBLK Units µg/Kg

SampID: MBLK-F170206A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		ND						02/06/2017
1,1,1-Trichloroethane	5.0		ND						02/06/2017
1,1,2,2-Tetrachloroethane	5.0		ND						02/06/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		ND						02/06/2017
1,1,2-Trichloroethane	5.0		ND						02/06/2017
1,1-Dichloro-2-propanone	50.0		ND						02/06/2017
1,1-Dichloroethane	5.0		ND						02/06/2017
1,1-Dichloroethene	5.0		ND						02/06/2017
1,1-Dichloropropene	5.0		ND						02/06/2017
1,2,3-Trichlorobenzene	5.0		ND						02/06/2017
1,2,3-Trichloropropane	10.0		ND						02/06/2017
1,2,3-Trimethylbenzene	5.0		ND						02/06/2017
1,2,4-Trichlorobenzene	5.0		ND						02/06/2017
1,2,4-Trimethylbenzene	5.0		ND						02/06/2017
1,2-Dibromo-3-chloropropane	5.0		ND						02/06/2017
1,2-Dibromoethane	5.0		ND						02/06/2017
1,2-Dichlorobenzene	5.0		ND						02/06/2017
1,2-Dichloroethane	5.0		ND						02/06/2017
1,2-Dichloropropane	5.0		ND						02/06/2017
1,3,5-Trimethylbenzene	5.0		ND						02/06/2017
1,3-Dichlorobenzene	5.0		ND						02/06/2017
1,3-Dichloropropane	5.0		ND						02/06/2017
1,4-Dichlorobenzene	5.0		ND						02/06/2017
1-Chlorobutane	5.0		ND						02/06/2017
2,2-Dichloropropane	5.0		ND						02/06/2017
2-Butanone	50.0		ND						02/06/2017
2-Chlorotoluene	5.0		ND						02/06/2017
2-Hexanone	50.0		ND						02/06/2017
2-Nitropropane	50.0		ND						02/06/2017
4-Chlorotoluene	5.0		ND						02/06/2017
4-Methyl-2-pentanone	50.0		ND						02/06/2017
Acetone	50.0		ND						02/06/2017
Acrolein	100		ND						02/06/2017
Acrylonitrile	10.0		ND						02/06/2017
Allyl chloride	5.0		ND						02/06/2017
Benzene	1.0		ND						02/06/2017
Bromobenzene	5.0		ND						02/06/2017
Bromochloromethane	5.0		ND						02/06/2017
Bromodichloromethane	5.0		ND						02/06/2017
Bromoform	5.0		ND						02/06/2017
Bromomethane	10.0		ND						02/06/2017
Carbon disulfide	5.0		ND						02/06/2017
Carbon tetrachloride	5.0		ND						02/06/2017
Chlorobenzene	5.0		ND						02/06/2017
Chloroethane	10.0		ND						02/06/2017
Chloroform	5.0		ND						02/06/2017
Chloromethane	10.0		ND						02/06/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020296

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126810 **SampType:** MBLK Units µg/Kg

SampID: MBLK-F170206A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		ND						02/06/2017
cis-1,3-Dichloropropene	4.0		ND						02/06/2017
Cyclohexanone	100		ND						02/06/2017
Dibromochloromethane	5.0		ND						02/06/2017
Dibromomethane	5.0		ND						02/06/2017
Dichlorodifluoromethane	10.0		ND						02/06/2017
Ethyl ether	5.0		ND						02/06/2017
Ethyl methacrylate	5.0		ND						02/06/2017
Ethylbenzene	5.0		ND						02/06/2017
Hexachlorobutadiene	5.0		ND						02/06/2017
Hexachloroethane	5.0		ND						02/06/2017
Iodomethane	10.0		ND						02/06/2017
Isopropylbenzene	5.0		ND						02/06/2017
m,p-Xylenes	5.0		ND						02/06/2017
Methacrylonitrile	50.0		ND						02/06/2017
Methyl Methacrylate	5.0		ND						02/06/2017
Methyl tert-butyl ether	2.0		ND						02/06/2017
Methylacrylate	10.0		ND						02/06/2017
Methylene chloride	5.0		ND						02/06/2017
Naphthalene	10.0		ND						02/06/2017
n-Butylbenzene	5.0		ND						02/06/2017
n-Heptane	20.0		ND						02/06/2017
n-Hexane	20.0		ND						02/06/2017
Nitrobenzene	100		ND						02/06/2017
n-Propylbenzene	5.0		ND						02/06/2017
o-Xylene	5.0		ND						02/06/2017
Pentachloroethane	5.0		ND						02/06/2017
p-Isopropyltoluene	5.0		ND						02/06/2017
Propionitrile	50.0		ND						02/06/2017
sec-Butylbenzene	5.0		ND						02/06/2017
Styrene	5.0		ND						02/06/2017
tert-Butylbenzene	5.0		ND						02/06/2017
Tetrachloroethene	5.0		ND						02/06/2017
Tetrahydrofuran	50.0		ND						02/06/2017
Toluene	5.0		ND						02/06/2017
trans-1,2-Dichloroethene	5.0		ND						02/06/2017
trans-1,3-Dichloropropene	4.0		ND						02/06/2017
Trichloroethene	5.0		ND						02/06/2017
Trichlorofluoromethane	5.0		ND						02/06/2017
Vinyl acetate	50.0		ND						02/06/2017
Vinyl chloride	2.0		ND						02/06/2017
Surr: 1,2-Dichloroethane-d4			**53.6**	50.00		107.2	72.2	131	02/06/2017
Surr: 4-Bromofluorobenzene			**49.7**	50.00		99.4	82.1	116	02/06/2017
Surr: Dibromofluoromethane			**50.2**	50.00		100.4	77.7	120	02/06/2017
Surr: Toluene-d8			**49.9**	50.00		99.9	86	116	02/06/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020296

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126810 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-F170206A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		**51.6**	50.00	0	103.3	50.92	1.40	02/06/2017
1,1,1-Trichloroethane	5.0		**51.3**	50.00	0	102.6	51.76	0.91	02/06/2017
1,1,2,2-Tetrachloroethane	5.0		**49.0**	50.00	0	97.9	50.31	2.74	02/06/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		**47.8**	50.00	0	95.5	50.00	4.58	02/06/2017
1,1,2-Trichloroethane	5.0		**47.9**	50.00	0	95.8	49.00	2.27	02/06/2017
1,1-Dichloro-2-propanone	50.0		**129**	125.0	0	103.2	113.1	13.09	02/06/2017
1,1-Dichloroethane	5.0		**50.6**	50.00	0	101.2	50.67	0.18	02/06/2017
1,1-Dichloroethene	5.0		**49.8**	50.00	0	99.6	52.05	4.40	02/06/2017
1,1-Dichloropropene	5.0		**51.0**	50.00	0	102.0	51.74	1.48	02/06/2017
1,2,3-Trichlorobenzene	5.0		**51.9**	50.00	0	103.8	53.65	3.28	02/06/2017
1,2,3-Trichloropropane	10.0		**48.2**	50.00	0	96.4	49.59	2.82	02/06/2017
1,2,3-Trimethylbenzene	5.0		**50.9**	50.00	0	101.7	50.18	1.37	02/06/2017
1,2,4-Trichlorobenzene	5.0		**54.1**	50.00	0	108.2	57.24	5.66	02/06/2017
1,2,4-Trimethylbenzene	5.0		**52.8**	50.00	0	105.6	54.04	2.34	02/06/2017
1,2-Dibromo-3-chloropropane	5.0		**51.8**	50.00	0	103.6	55.23	6.37	02/06/2017
1,2-Dibromoethane	5.0		**47.4**	50.00	0	94.8	48.26	1.76	02/06/2017
1,2-Dichlorobenzene	5.0		**51.0**	50.00	0	102.1	51.07	0.08	02/06/2017
1,2-Dichloroethane	5.0		**52.2**	50.00	0	104.3	53.83	3.17	02/06/2017
1,2-Dichloropropane	5.0		**49.8**	50.00	0	99.7	50.85	1.99	02/06/2017
1,3,5-Trimethylbenzene	5.0		**51.6**	50.00	0	103.3	53.44	3.43	02/06/2017
1,3-Dichlorobenzene	5.0		**51.7**	50.00	0	103.4	51.89	0.35	02/06/2017
1,3-Dichloropropane	5.0		**47.9**	50.00	0	95.8	50.48	5.29	02/06/2017
1,4-Dichlorobenzene	5.0		**50.7**	50.00	0	101.3	50.65	0.04	02/06/2017
1-Chlorobutane	5.0		**52.0**	50.00	0	104.0	52.07	0.15	02/06/2017
2,2-Dichloropropane	5.0		**51.8**	50.00	0	103.6	52.88	2.10	02/06/2017
2-Butanone	50.0		**152**	125.0	0	122.0	157.7	3.40	02/06/2017
2-Chlorotoluene	5.0		**52.0**	50.00	0	104.0	54.14	4.01	02/06/2017
2-Hexanone	50.0		**139**	125.0	0	111.0	141.3	1.76	02/06/2017
2-Nitropropane	50.0		**565**	500.0	0	113.0	578.9	2.46	02/06/2017
4-Chlorotoluene	5.0		**48.6**	50.00	0	97.1	49.09	1.09	02/06/2017
4-Methyl-2-pentanone	50.0		**123**	125.0	0	98.7	133.6	7.97	02/06/2017
Acetone	50.0		**165**	125.0	0	132.0	171.6	3.89	02/06/2017
Acrolein	100		**401**	500.0	0	80.1	398.1	0.63	02/06/2017
Acrylonitrile	10.0		**50.5**	50.00	0	101.1	53.53	5.77	02/06/2017
Allyl chloride	5.0		**51.7**	50.00	0	103.3	50.08	3.13	02/06/2017
Benzene	1.0		**48.5**	50.00	0	96.9	48.92	0.92	02/06/2017
Bromobenzene	5.0		**50.6**	50.00	0	101.3	51.94	2.55	02/06/2017
Bromochloromethane	5.0		**51.5**	50.00	0	103.1	52.26	1.39	02/06/2017
Bromodichloromethane	5.0		**52.3**	50.00	0	104.7	55.08	5.10	02/06/2017
Bromoform	5.0		**52.6**	50.00	0	105.3	53.97	2.48	02/06/2017
Bromomethane	10.0		**34.2**	50.00	0	68.4	31.90	7.02	02/06/2017
Carbon disulfide	5.0		**45.0**	50.00	0	89.9	45.99	2.24	02/06/2017
Carbon tetrachloride	5.0		**53.7**	50.00	0	107.3	53.52	0.28	02/06/2017
Chlorobenzene	5.0		**49.0**	50.00	0	98.0	50.52	3.03	02/06/2017
Chloroethane	10.0		**46.0**	50.00	0	91.9	46.92	2.09	02/06/2017
Chloroform	5.0		**49.8**	50.00	0	99.7	49.99	0.28	02/06/2017
Chloromethane	10.0		**51.8**	50.00	0	103.6	54.94	5.86	02/06/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020296

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126810 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-F170206A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
cis-1,2-Dichloroethene	5.0		**51.2**	50.00	0	102.4	52.23	1.95	02/06/2017
cis-1,3-Dichloropropene	4.0		**53.3**	50.00	0	106.6	53.15	0.32	02/06/2017
Cyclohexanone	100		**495**	500.0	0	98.9	502.6	1.60	02/06/2017
Dibromochloromethane	5.0		**51.6**	50.00	0	103.1	52.12	1.08	02/06/2017
Dibromomethane	5.0		**49.0**	50.00	0	98.0	48.66	0.72	02/06/2017
Dichlorodifluoromethane	10.0		**33.7**	50.00	0	67.4	35.10	4.10	02/06/2017
Ethyl ether	5.0		**48.5**	50.00	0	96.9	48.58	0.25	02/06/2017
Ethyl methacrylate	5.0		**49.2**	50.00	0	98.3	51.70	5.06	02/06/2017
Ethylbenzene	5.0		**51.8**	50.00	0	103.5	52.16	0.77	02/06/2017
Hexachlorobutadiene	5.0		**55.8**	50.00	0	111.6	54.68	2.03	02/06/2017
Hexachloroethane	5.0		**56.8**	50.00	0	113.6	58.30	2.64	02/06/2017
Iodomethane	10.0		**45.2**	50.00	0	90.5	42.59	6.06	02/06/2017
Isopropylbenzene	5.0		**51.7**	50.00	0	103.4	52.48	1.52	02/06/2017
m,p-Xylenes	5.0		**103**	100.0	0	103.2	102.8	0.36	02/06/2017
Methacrylonitrile	50.0		**52.9**	50.00	0	105.8	52.69	0.36	02/06/2017
Methyl Methacrylate	5.0		**52.6**	50.00	0	105.3	54.32	3.12	02/06/2017
Methyl tert-butyl ether	2.0		**51.2**	50.00	0	102.3	51.70	1.05	02/06/2017
Methylacrylate	10.0		**49.1**	50.00	0	98.2	49.88	1.56	02/06/2017
Methylene chloride	5.0		**49.7**	50.00	0	99.4	49.09	1.21	02/06/2017
Naphthalene	10.0		**52.1**	50.00	0	104.2	54.09	3.75	02/06/2017
n-Butylbenzene	5.0		**57.6**	50.00	0	115.3	58.17	0.92	02/06/2017
n-Heptane	20.0		**57.9**	50.00	0	115.8	58.63	1.25	02/06/2017
n-Hexane	20.0		**53.9**	50.00	0	107.8	54.03	0.26	02/06/2017
Nitrobenzene	100		**497**	500.0	0	99.3	527.5	6.02	02/06/2017
n-Propylbenzene	5.0		**53.0**	50.00	0	106.0	53.98	1.85	02/06/2017
o-Xylene	5.0		**51.6**	50.00	0	103.2	52.04	0.81	02/06/2017
Pentachloroethane	5.0		**55.1**	50.00	0	110.1	55.83	1.37	02/06/2017
p-Isopropyltoluene	5.0		**53.5**	50.00	0	106.9	53.89	0.78	02/06/2017
Propionitrile	50.0		**512**	500.0	0	102.3	531.6	3.81	02/06/2017
sec-Butylbenzene	5.0		**52.8**	50.00	0	105.6	54.25	2.75	02/06/2017
Styrene	5.0		**51.4**	50.00	0	102.7	51.87	0.99	02/06/2017
tert-Butylbenzene	5.0		**51.6**	50.00	0	103.2	51.44	0.35	02/06/2017
Tetrachloroethene	5.0		**47.4**	50.00	0	94.8	48.07	1.45	02/06/2017
Tetrahydrofuran	50.0		**52.0**	50.00	0	104.0	55.24	6.00	02/06/2017
Toluene	5.0		**48.7**	50.00	0	97.3	49.08	0.86	02/06/2017
trans-1,2-Dichloroethene	5.0		**51.3**	50.00	0	102.5	51.30	0.06	02/06/2017
trans-1,3-Dichloropropene	4.0		**53.4**	50.00	0	106.8	52.95	0.86	02/06/2017
Trichloroethene	5.0		**49.8**	50.00	0	99.6	50.32	1.04	02/06/2017
Trichlorofluoromethane	5.0		**47.3**	50.00	0	94.6	48.84	3.18	02/06/2017
Vinyl acetate	50.0		**57.3**	50.00	0	114.7	59.78	4.17	02/06/2017
Vinyl chloride	2.0		**47.3**	50.00	0	94.7	46.26	2.31	02/06/2017
Surr: 1,2-Dichloroethane-d4			**55.0**	50.00		110.1			02/06/2017
Surr: 4-Bromofluorobenzene			**52.5**	50.00		105.0			02/06/2017
Surr: Dibromofluoromethane			**50.6**	50.00		101.2			02/06/2017
Surr: Toluene-d8			**49.6**	50.00		99.1			02/06/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020296

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126810 **SampType:** LCS Units µg/Kg

SampID: LCS-F170206A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		**50.9**	50.00	0	101.8	83.1	114	02/06/2017
1,1,1-Trichloroethane	5.0		**51.8**	50.00	0	103.5	78.5	119	02/06/2017
1,1,2,2-Tetrachloroethane	5.0		**50.3**	50.00	0	100.6	67.4	120	02/06/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		**50.0**	50.00	0	100.0	75.4	121	02/06/2017
1,1,2-Trichloroethane	5.0		**49.0**	50.00	0	98.0	81.1	111	02/06/2017
1,1-Dichloro-2-propanone	50.0		**113**	125.0	0	90.5	55.4	131	02/06/2017
1,1-Dichloroethane	5.0		**50.7**	50.00	0	101.3	80.1	116	02/06/2017
1,1-Dichloroethene	5.0		**52.0**	50.00	0	104.1	73.1	121	02/06/2017
1,1-Dichloropropene	5.0		**51.7**	50.00	0	103.5	82.2	114	02/06/2017
1,2,3-Trichlorobenzene	5.0		**53.6**	50.00	0	107.3	81.7	130	02/06/2017
1,2,3-Trichloropropane	10.0		**49.6**	50.00	0	99.2	67.8	118	02/06/2017
1,2,3-Trimethylbenzene	5.0		**50.2**	50.00	0	100.4	82.1	127	02/06/2017
1,2,4-Trichlorobenzene	5.0		**57.2**	50.00	0	114.5	72.3	141	02/06/2017
1,2,4-Trimethylbenzene	5.0		**54.0**	50.00	0	108.1	79.7	123	02/06/2017
1,2-Dibromo-3-chloropropane	5.0		**55.2**	50.00	0	110.5	62.1	123	02/06/2017
1,2-Dibromoethane	5.0		**48.3**	50.00	0	96.5	82.4	112	02/06/2017
1,2-Dichlorobenzene	5.0		**51.1**	50.00	0	102.1	82.7	119	02/06/2017
1,2-Dichloroethane	5.0		**53.8**	50.00	0	107.7	72.8	120	02/06/2017
1,2-Dichloropropane	5.0		**50.8**	50.00	0	101.7	80	116	02/06/2017
1,3,5-Trimethylbenzene	5.0		**53.4**	50.00	0	106.9	81.5	125	02/06/2017
1,3-Dichlorobenzene	5.0		**51.9**	50.00	0	103.8	82	124	02/06/2017
1,3-Dichloropropane	5.0		**50.5**	50.00	0	101.0	79.8	113	02/06/2017
1,4-Dichlorobenzene	5.0		**50.6**	50.00	0	101.3	81.1	124	02/06/2017
1-Chlorobutane	5.0		**52.1**	50.00	0	104.1	77.2	113	02/06/2017
2,2-Dichloropropane	5.0		**52.9**	50.00	0	105.8	76.6	121	02/06/2017
2-Butanone	50.0		**158**	125.0	0	126.2	62.8	131	02/06/2017
2-Chlorotoluene	5.0		**54.1**	50.00	0	108.3	78.8	121	02/06/2017
2-Hexanone	50.0		**141**	125.0	0	113.0	63.1	125	02/06/2017
2-Nitropropane	50.0		**579**	500.0	0	115.8	61.2	129	02/06/2017
4-Chlorotoluene	5.0		**49.1**	50.00	0	98.2	77.6	124	02/06/2017
4-Methyl-2-pentanone	50.0		**134**	125.0	0	106.8	60.6	126	02/06/2017
Acetone	50.0		**172**	125.0	0	137.3	39.5	159	02/06/2017
Acrolein	100		**398**	500.0	0	79.6	1	167	02/06/2017
Acrylonitrile	10.0		**53.5**	50.00	0	107.1	67	124	02/06/2017
Allyl chloride	5.0		**50.1**	50.00	0	100.2	58.5	129	02/06/2017
Benzene	1.0		**48.9**	50.00	0	97.8	80.8	117	02/06/2017
Bromobenzene	5.0		**51.9**	50.00	0	103.9	79.6	117	02/06/2017
Bromochloromethane	5.0		**52.3**	50.00	0	104.5	70.7	121	02/06/2017
Bromodichloromethane	5.0		**55.1**	50.00	0	110.2	80.7	121	02/06/2017
Bromoform	5.0		**54.0**	50.00	0	107.9	79.8	118	02/06/2017
Bromomethane	10.0		**31.9**	50.00	0	63.8	1	175	02/06/2017
Carbon disulfide	5.0		**46.0**	50.00	0	92.0	62.8	123	02/06/2017
Carbon tetrachloride	5.0		**53.5**	50.00	0	107.0	77.6	123	02/06/2017
Chlorobenzene	5.0		**50.5**	50.00	0	101.0	85.6	116	02/06/2017
Chloroethane	10.0		**46.9**	50.00	0	93.8	60.2	125	02/06/2017
Chloroform	5.0		**50.0**	50.00	0	100.0	77.9	116	02/06/2017
Chloromethane	10.0		**54.9**	50.00	0	109.9	29.9	157	02/06/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020296

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126810 **SampType:** LCS Units µg/Kg

SampID: LCS-F170206A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		**52.2**	50.00	0	104.5	80.1	116	02/06/2017
cis-1,3-Dichloropropene	4.0		**53.2**	50.00	0	106.3	80.5	121	02/06/2017
Cyclohexanone	100		**503**	500.0	0	100.5	45.4	128	02/06/2017
Dibromochloromethane	5.0		**52.1**	50.00	0	104.2	84.3	116	02/06/2017
Dibromomethane	5.0		**48.7**	50.00	0	97.3	76.6	115	02/06/2017
Dichlorodifluoromethane	10.0		**35.1**	50.00	0	70.2	1	200	02/06/2017
Ethyl ether	5.0		**48.6**	50.00	0	97.2	73.4	116	02/06/2017
Ethyl methacrylate	5.0		**51.7**	50.00	0	103.4	76.2	120	02/06/2017
Ethylbenzene	5.0		**52.2**	50.00	0	104.3	84.8	116	02/06/2017
Hexachlorobutadiene	5.0		**54.7**	50.00	0	109.4	74	135	02/06/2017
Hexachloroethane	5.0		**58.3**	50.00	0	116.6	76.4	121	02/06/2017
Iodomethane	10.0		**42.6**	50.00	0	85.2	38.7	161	02/06/2017
Isopropylbenzene	5.0		**52.5**	50.00	0	105.0	85	125	02/06/2017
m,p-Xylenes	5.0		**103**	100.0	0	102.8	85.3	120	02/06/2017
Methacrylonitrile	50.0		**52.7**	50.00	0	105.4	65.7	120	02/06/2017
Methyl Methacrylate	5.0		**54.3**	50.00	0	108.6	69.1	114	02/06/2017
Methyl tert-butyl ether	2.0		**51.7**	50.00	0	103.4	66.6	125	02/06/2017
Methylacrylate	10.0		**49.9**	50.00	0	99.8	69.7	121	02/06/2017
Methylene chloride	5.0		**49.1**	50.00	0	98.2	73.4	115	02/06/2017
Naphthalene	10.0		**54.1**	50.00	0	108.2	70.1	134	02/06/2017
n-Butylbenzene	5.0		**58.2**	50.00	0	116.3	78.4	138	02/06/2017
n-Heptane	20.0		**58.6**	50.00	0	117.3	74.3	125	02/06/2017
n-Hexane	20.0		**54.0**	50.00	0	108.1	66.3	129	02/06/2017
Nitrobenzene	100		**528**	500.0	0	105.5	20.1	165	02/06/2017
n-Propylbenzene	5.0		**54.0**	50.00	0	108.0	79.1	125	02/06/2017
o-Xylene	5.0		**52.0**	50.00	0	104.1	81.9	118	02/06/2017
Pentachloroethane	5.0		**55.8**	50.00	0	111.7	72.7	123	02/06/2017
p-Isopropyltoluene	5.0		**53.9**	50.00	0	107.8	82.7	129	02/06/2017
Propionitrile	50.0		**532**	500.0	0	106.3	64.3	121	02/06/2017
sec-Butylbenzene	5.0		**54.2**	50.00	0	108.5	81.3	125	02/06/2017
Styrene	5.0		**51.9**	50.00	0	103.7	88.2	122	02/06/2017
tert-Butylbenzene	5.0		**51.4**	50.00	0	102.9	74.8	125	02/06/2017
Tetrachloroethene	5.0		**48.1**	50.00	0	96.1	84.2	122	02/06/2017
Tetrahydrofuran	50.0		**55.2**	50.00	0	110.5	61	118	02/06/2017
Toluene	5.0		**49.1**	50.00	0	98.2	81.3	113	02/06/2017
trans-1,2-Dichloroethene	5.0		**51.3**	50.00	0	102.6	78.2	118	02/06/2017
trans-1,3-Dichloropropene	4.0		**53.0**	50.00	0	105.9	81.7	124	02/06/2017
Trichloroethene	5.0		**50.3**	50.00	0	100.6	81	123	02/06/2017
Trichlorofluoromethane	5.0		**48.8**	50.00	0	97.7	66.8	131	02/06/2017
Vinyl acetate	50.0		**59.8**	50.00	0	119.6	64.3	122	02/06/2017
Vinyl chloride	2.0		**46.3**	50.00	0	92.5	45.2	140	02/06/2017
Surr: 1,2-Dichloroethane-d4			**53.9**	50.00		107.8	72.2	131	02/06/2017
Surr: 4-Bromofluorobenzene			**52.4**	50.00		104.7	82.1	116	02/06/2017
Surr: Dibromofluoromethane			**51.3**	50.00		102.6	77.7	120	02/06/2017
Surr: Toluene-d8			**49.4**	50.00		98.9	86	116	02/06/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020296

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126810 **SampType:** LCSGD Units %REC RPD Limit 0

SampID: LCSGD-F170206A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Surr: 1,2-Dichloroethane-d4			**54.3**	50.00		108.5			02/06/2017
Surr: 4-Bromofluorobenzene			**50.1**	50.00		100.2			02/06/2017
Surr: Dibromofluoromethane			**51.8**	50.00		103.6			02/06/2017
Surr: Toluene-d8			**51.6**	50.00		103.3			02/06/2017

Batch 126810 **SampType:** LCSG Units %REC

SampID: LCSG-F170206A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Surr: 1,2-Dichloroethane-d4			**51.5**	50.00		103.1	72.2	131	02/06/2017
Surr: 4-Bromofluorobenzene			**51.2**	50.00		102.3	82.1	116	02/06/2017
Surr: Dibromofluoromethane			**49.6**	50.00		99.2	77.7	120	02/06/2017
Surr: Toluene-d8			**51.0**	50.00		102.1	86	116	02/06/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020296

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126846 **SampType:** MBLK Units µg/Kg

SampID: MBLK-F170206A-2

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		ND						02/07/2017
1,1,1-Trichloroethane	5.0		ND						02/07/2017
1,1,2,2-Tetrachloroethane	5.0		ND						02/07/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		ND						02/07/2017
1,1,2-Trichloroethane	5.0		ND						02/07/2017
1,1-Dichloro-2-propanone	50.0		ND						02/07/2017
1,1-Dichloroethane	5.0		ND						02/07/2017
1,1-Dichloroethene	5.0		ND						02/07/2017
1,1-Dichloropropene	5.0		ND						02/07/2017
1,2,3-Trichlorobenzene	5.0		ND						02/07/2017
1,2,3-Trichloropropane	10.0		ND						02/07/2017
1,2,3-Trimethylbenzene	5.0		ND						02/07/2017
1,2,4-Trichlorobenzene	5.0		ND						02/07/2017
1,2,4-Trimethylbenzene	5.0		ND						02/07/2017
1,2-Dibromo-3-chloropropane	5.0		ND						02/07/2017
1,2-Dibromoethane	5.0		ND						02/07/2017
1,2-Dichlorobenzene	5.0		ND						02/07/2017
1,2-Dichloroethane	5.0		ND						02/07/2017
1,2-Dichloropropane	5.0		ND						02/07/2017
1,3,5-Trimethylbenzene	5.0		ND						02/07/2017
1,3-Dichlorobenzene	5.0		ND						02/07/2017
1,3-Dichloropropane	5.0		ND						02/07/2017
1,4-Dichlorobenzene	5.0		ND						02/07/2017
1-Chlorobutane	5.0		ND						02/07/2017
2,2-Dichloropropane	5.0		ND						02/07/2017
2-Butanone	50.0		ND						02/07/2017
2-Chlorotoluene	5.0		ND						02/07/2017
2-Hexanone	50.0		ND						02/07/2017
2-Nitropropane	50.0		ND						02/07/2017
4-Chlorotoluene	5.0		ND						02/07/2017
4-Methyl-2-pentanone	50.0		ND						02/07/2017
Acetone	50.0		ND						02/07/2017
Acrolein	100		ND						02/07/2017
Acrylonitrile	10.0		ND						02/07/2017
Allyl chloride	5.0		ND						02/07/2017
Benzene	1.0		ND						02/07/2017
Bromobenzene	5.0		ND						02/07/2017
Bromochloromethane	5.0		ND						02/07/2017
Bromodichloromethane	5.0		ND						02/07/2017
Bromoform	5.0		ND						02/07/2017
Bromomethane	10.0		ND						02/07/2017
Carbon disulfide	5.0		ND						02/07/2017
Carbon tetrachloride	5.0		ND						02/07/2017
Chlorobenzene	5.0		ND						02/07/2017
Chloroethane	10.0		ND						02/07/2017
Chloroform	5.0		ND						02/07/2017
Chloromethane	10.0		ND						02/07/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020296

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126846 **SampType:** MBLK Units µg/Kg

SampID: MBLK-F170206A-2

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		ND						02/07/2017
cis-1,3-Dichloropropene	4.0		ND						02/07/2017
Cyclohexanone	100		ND						02/07/2017
Dibromochloromethane	5.0		ND						02/07/2017
Dibromomethane	5.0		ND						02/07/2017
Dichlorodifluoromethane	10.0		ND						02/07/2017
Ethyl ether	5.0		ND						02/07/2017
Ethyl methacrylate	5.0		ND						02/07/2017
Ethylbenzene	5.0		ND						02/07/2017
Hexachlorobutadiene	5.0		ND						02/07/2017
Hexachloroethane	5.0		ND						02/07/2017
Iodomethane	10.0		ND						02/07/2017
Isopropylbenzene	5.0		ND						02/07/2017
m,p-Xylenes	5.0		ND						02/07/2017
Methacrylonitrile	50.0		ND						02/07/2017
Methyl Methacrylate	5.0		ND						02/07/2017
Methyl tert-butyl ether	2.0		ND						02/07/2017
Methylacrylate	10.0		ND						02/07/2017
Methylene chloride	5.0		ND						02/07/2017
Naphthalene	10.0		ND						02/07/2017
n-Butylbenzene	5.0		ND						02/07/2017
n-Heptane	20.0		ND						02/07/2017
n-Hexane	20.0		ND						02/07/2017
Nitrobenzene	100		ND						02/07/2017
n-Propylbenzene	5.0		ND						02/07/2017
o-Xylene	5.0		ND						02/07/2017
Pentachloroethane	5.0		ND						02/07/2017
p-Isopropyltoluene	5.0		ND						02/07/2017
Propionitrile	50.0		ND						02/07/2017
sec-Butylbenzene	5.0		ND						02/07/2017
Styrene	5.0		ND						02/07/2017
tert-Butylbenzene	5.0		ND						02/07/2017
Tetrachloroethene	5.0		ND						02/07/2017
Tetrahydrofuran	50.0		ND						02/07/2017
Toluene	5.0		ND						02/07/2017
trans-1,2-Dichloroethene	5.0		ND						02/07/2017
trans-1,3-Dichloropropene	4.0		ND						02/07/2017
Trichloroethene	5.0		ND						02/07/2017
Trichlorofluoromethane	5.0		ND						02/07/2017
Vinyl acetate	50.0		ND						02/07/2017
Vinyl chloride	2.0		ND						02/07/2017
Surr: 1,2-Dichloroethane-d4			**56.6**	50.00		113.2	72.2	131	02/07/2017
Surr: 4-Bromofluorobenzene			**48.4**	50.00		96.8	82.1	116	02/07/2017
Surr: Dibromofluoromethane			**50.4**	50.00		100.7	77.7	120	02/07/2017
Surr: Toluene-d8			**49.8**	50.00		99.6	86	116	02/07/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020296

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126846 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-F170206A-2

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		**51.6**	50.00	0	103.2	51.93	0.60	02/06/2017
1,1,1-Trichloroethane	5.0		**51.0**	50.00	0	102.1	51.39	0.66	02/06/2017
1,1,2,2-Tetrachloroethane	5.0		**56.4**	50.00	0	112.8	54.68	3.10	02/06/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		**46.0**	50.00	0	91.9	47.19	2.62	02/06/2017
1,1,2-Trichloroethane	5.0		**52.2**	50.00	0	104.4	52.11	0.19	02/06/2017
1,1-Dichloro-2-propanone	50.0	S	**168**	125.0	0	134.4	155.4	7.80	02/06/2017
1,1-Dichloroethane	5.0		**49.7**	50.00	0	99.4	50.67	1.93	02/06/2017
1,1-Dichloroethene	5.0		**48.3**	50.00	0	96.5	49.21	1.93	02/06/2017
1,1-Dichloropropene	5.0		**49.2**	50.00	0	98.3	49.56	0.83	02/06/2017
1,2,3-Trichlorobenzene	5.0		**49.5**	50.00	0	99.0	46.44	6.34	02/06/2017
1,2,3-Trichloropropane	10.0		**55.7**	50.00	0	111.5	55.01	1.30	02/06/2017
1,2,3-Trimethylbenzene	5.0		**47.5**	50.00	0	95.1	48.24	1.48	02/06/2017
1,2,4-Trichlorobenzene	5.0		**46.6**	50.00	0	93.3	44.86	3.91	02/06/2017
1,2,4-Trimethylbenzene	5.0		**47.4**	50.00	0	94.8	47.04	0.76	02/06/2017
1,2-Dibromo-3-chloropropane	5.0	S	**66.0**	50.00	0	132.0	62.78	5.00	02/06/2017
1,2-Dibromoethane	5.0		**53.1**	50.00	0	106.2	53.54	0.81	02/06/2017
1,2-Dichlorobenzene	5.0		**47.3**	50.00	0	94.6	47.28	0.04	02/06/2017
1,2-Dichloroethane	5.0		**54.6**	50.00	0	109.1	56.58	3.64	02/06/2017
1,2-Dichloropropane	5.0		**50.8**	50.00	0	101.6	53.48	5.18	02/06/2017
1,3,5-Trimethylbenzene	5.0		**47.5**	50.00	0	94.9	47.84	0.78	02/06/2017
1,3-Dichlorobenzene	5.0		**46.9**	50.00	0	93.9	44.96	4.31	02/06/2017
1,3-Dichloropropane	5.0		**53.0**	50.00	0	106.1	55.63	4.77	02/06/2017
1,4-Dichlorobenzene	5.0		**45.8**	50.00	0	91.5	44.97	1.74	02/06/2017
1-Chlorobutane	5.0		**50.6**	50.00	0	101.3	51.56	1.80	02/06/2017
2,2-Dichloropropane	5.0		**49.0**	50.00	0	98.1	49.08	0.06	02/06/2017
2-Butanone	50.0	S	**179**	125.0	0	143.1	168.2	6.14	02/06/2017
2-Chlorotoluene	5.0		**47.4**	50.00	0	94.7	47.06	0.64	02/06/2017
2-Hexanone	50.0	S	**177**	125.0	0	141.5	172.8	2.36	02/06/2017
2-Nitropropane	50.0	S	**720**	500.0	0	144.0	683.8	5.19	02/06/2017
4-Chlorotoluene	5.0		**43.8**	50.00	0	87.5	47.61	8.43	02/06/2017
4-Methyl-2-pentanone	50.0	S	**169**	125.0	0	135.2	163.0	3.60	02/06/2017
Acetone	50.0		**146**	125.0	0	116.9	132.9	9.42	02/06/2017
Acrolein	100		**525**	500.0	0	105.0	491.7	6.57	02/06/2017
Acrylonitrile	10.0	S	**64.4**	50.00	0	128.8	65.78	2.14	02/06/2017
Allyl chloride	5.0		**46.0**	50.00	0	92.0	49.04	6.35	02/06/2017
Benzene	1.0		**47.9**	50.00	0	95.8	48.25	0.69	02/06/2017
Bromobenzene	5.0		**50.4**	50.00	0	100.8	48.81	3.21	02/06/2017
Bromochloromethane	5.0		**52.3**	50.00	0	104.7	52.85	0.99	02/06/2017
Bromodichloromethane	5.0		**52.2**	50.00	0	104.3	53.44	2.42	02/06/2017
Bromoform	5.0	S	**59.2**	50.00	0	118.5	58.81	0.75	02/06/2017
Bromomethane	10.0		**19.5**	50.00	0	39.0	22.01	12.20	02/06/2017
Carbon disulfide	5.0		**41.5**	50.00	0	83.0	42.94	3.41	02/06/2017
Carbon tetrachloride	5.0		**51.5**	50.00	0	103.0	51.88	0.70	02/06/2017
Chlorobenzene	5.0		**47.9**	50.00	0	95.9	48.53	1.22	02/06/2017
Chloroethane	10.0		**43.3**	50.00	0	86.6	46.87	7.87	02/06/2017
Chloroform	5.0		**48.7**	50.00	0	97.4	49.33	1.31	02/06/2017
Chloromethane	10.0		**49.3**	50.00	0	98.6	53.12	7.50	02/06/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020296

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126846 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-F170206A-2

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
cis-1,2-Dichloroethene	5.0		**50.8**	50.00	0	101.5	52.15	2.68	02/06/2017
cis-1,3-Dichloropropene	4.0		**51.2**	50.00	0	102.5	52.19	1.82	02/06/2017
Cyclohexanone	100	S	**660**	500.0	0	132.1	630.3	4.67	02/06/2017
Dibromochloromethane	5.0		**55.4**	50.00	0	110.7	54.96	0.71	02/06/2017
Dibromomethane	5.0		**54.3**	50.00	0	108.6	54.31	0.02	02/06/2017
Dichlorodifluoromethane	10.0		**28.5**	50.00	0	57.1	29.36	2.87	02/06/2017
Ethyl ether	5.0		**51.5**	50.00	0	103.0	52.71	2.32	02/06/2017
Ethyl methacrylate	5.0	S	**61.2**	50.00	0	122.5	60.30	1.55	02/06/2017
Ethylbenzene	5.0		**49.4**	50.00	0	98.8	50.00	1.23	02/06/2017
Hexachlorobutadiene	5.0		**48.0**	50.00	0	95.9	45.68	4.89	02/06/2017
Hexachloroethane	5.0		**51.7**	50.00	0	103.5	50.95	1.54	02/06/2017
Iodomethane	10.0		**41.0**	50.00	0	82.0	39.38	3.98	02/06/2017
Isopropylbenzene	5.0		**49.5**	50.00	0	98.9	51.38	3.81	02/06/2017
m,p-Xylenes	5.0		**97.2**	100.0	0	97.2	100.4	3.21	02/06/2017
Methacrylonitrile	50.0	S	**61.6**	50.00	0	123.1	57.80	6.32	02/06/2017
Methyl Methacrylate	5.0	S	**65.5**	50.00	0	131.0	64.17	2.05	02/06/2017
Methyl tert-butyl ether	2.0		**56.8**	50.00	0	113.5	57.27	0.91	02/06/2017
Methylacrylate	10.0		**60.4**	50.00	0	120.8	61.35	1.54	02/06/2017
Methylene chloride	5.0		**49.2**	50.00	0	98.3	49.78	1.25	02/06/2017
Naphthalene	10.0		**59.1**	50.00	0	118.3	56.62	4.35	02/06/2017
n-Butylbenzene	5.0		**46.9**	50.00	0	93.7	47.65	1.65	02/06/2017
n-Heptane	20.0		**51.5**	50.00	0	103.0	52.43	1.83	02/06/2017
n-Hexane	20.0		**47.9**	50.00	0	95.7	47.02	1.79	02/06/2017
Nitrobenzene	100		**586**	500.0	0	117.1	535.9	8.87	02/06/2017
n-Propylbenzene	5.0		**46.7**	50.00	0	93.3	47.84	2.48	02/06/2017
o-Xylene	5.0		**51.8**	50.00	0	103.5	52.71	1.80	02/06/2017
Pentachloroethane	5.0		**49.0**	50.00	0	98.0	50.92	3.86	02/06/2017
p-Isopropyltoluene	5.0		**47.7**	50.00	0	95.4	46.27	3.06	02/06/2017
Propionitrile	50.0	S	**678**	500.0	0	135.6	680.0	0.29	02/06/2017
sec-Butylbenzene	5.0		**47.8**	50.00	0	95.5	47.23	1.14	02/06/2017
Styrene	5.0		**50.6**	50.00	0	101.1	50.97	0.81	02/06/2017
tert-Butylbenzene	5.0		**47.1**	50.00	0	94.2	47.79	1.48	02/06/2017
Tetrachloroethene	5.0		**47.7**	50.00	0	95.4	47.06	1.31	02/06/2017
Tetrahydrofuran	50.0	S	**72.2**	50.00	0	144.5	69.30	4.17	02/06/2017
Toluene	5.0		**47.0**	50.00	0	94.1	47.21	0.34	02/06/2017
trans-1,2-Dichloroethene	5.0		**48.1**	50.00	0	96.2	49.60	3.09	02/06/2017
trans-1,3-Dichloropropene	4.0		**54.1**	50.00	0	108.1	54.77	1.30	02/06/2017
Trichloroethene	5.0		**47.9**	50.00	0	95.8	48.57	1.43	02/06/2017
Trichlorofluoromethane	5.0		**45.7**	50.00	0	91.3	46.89	2.64	02/06/2017
Vinyl acetate	50.0	S	**66.5**	50.00	0	133.0	68.26	2.60	02/06/2017
Vinyl chloride	2.0		**42.6**	50.00	0	85.2	45.24	5.99	02/06/2017
Surr: 1,2-Dichloroethane-d4			**57.9**	50.00		115.7			02/06/2017
Surr: 4-Bromofluorobenzene			**49.3**	50.00		98.5			02/06/2017
Surr: Dibromofluoromethane			**51.8**	50.00		103.5			02/06/2017
Surr: Toluene-d8			**49.7**	50.00		99.3			02/06/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020296

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126846 **SampType:** LCS Units µg/Kg

SampID: LCS-F170206A-2

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		**51.9**	50.00	0	103.9	83.1	114	02/06/2017
1,1,1-Trichloroethane	5.0		**51.4**	50.00	0	102.8	78.5	119	02/06/2017
1,1,2,2-Tetrachloroethane	5.0		**54.7**	50.00	0	109.4	67.4	120	02/06/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		**47.2**	50.00	0	94.4	75.4	121	02/06/2017
1,1,2-Trichloroethane	5.0		**52.1**	50.00	0	104.2	81.1	111	02/06/2017
1,1-Dichloro-2-propanone	50.0		**155**	125.0	0	124.3	55.4	131	02/06/2017
1,1-Dichloroethane	5.0		**50.7**	50.00	0	101.3	80.1	116	02/06/2017
1,1-Dichloroethene	5.0		**49.2**	50.00	0	98.4	73.1	121	02/06/2017
1,1-Dichloropropene	5.0		**49.6**	50.00	0	99.1	82.2	114	02/06/2017
1,2,3-Trichlorobenzene	5.0		**46.4**	50.00	0	92.9	81.7	130	02/06/2017
1,2,3-Trichloropropane	10.0		**55.0**	50.00	0	110.0	67.8	118	02/06/2017
1,2,3-Trimethylbenzene	5.0		**48.2**	50.00	0	96.5	82.1	127	02/06/2017
1,2,4-Trichlorobenzene	5.0		**44.9**	50.00	0	89.7	72.3	141	02/06/2017
1,2,4-Trimethylbenzene	5.0		**47.0**	50.00	0	94.1	79.7	123	02/06/2017
1,2-Dibromo-3-chloropropane	5.0	S	**62.8**	50.00	0	125.6	62.1	123	02/06/2017
1,2-Dibromoethane	5.0		**53.5**	50.00	0	107.1	82.4	112	02/06/2017
1,2-Dichlorobenzene	5.0		**47.3**	50.00	0	94.6	82.7	119	02/06/2017
1,2-Dichloroethane	5.0		**56.6**	50.00	0	113.2	72.8	120	02/06/2017
1,2-Dichloropropane	5.0		**53.5**	50.00	0	107.0	80	116	02/06/2017
1,3,5-Trimethylbenzene	5.0		**47.8**	50.00	0	95.7	81.5	125	02/06/2017
1,3-Dichlorobenzene	5.0		**45.0**	50.00	0	89.9	82	124	02/06/2017
1,3-Dichloropropane	5.0		**55.6**	50.00	0	111.3	79.8	113	02/06/2017
1,4-Dichlorobenzene	5.0		**45.0**	50.00	0	89.9	81.1	124	02/06/2017
1-Chlorobutane	5.0		**51.6**	50.00	0	103.1	77.2	113	02/06/2017
2,2-Dichloropropane	5.0		**49.1**	50.00	0	98.2	76.6	121	02/06/2017
2-Butanone	50.0	S	**168**	125.0	0	134.6	62.8	131	02/06/2017
2-Chlorotoluene	5.0		**47.1**	50.00	0	94.1	78.8	121	02/06/2017
2-Hexanone	50.0	S	**173**	125.0	0	138.2	63.1	125	02/06/2017
2-Nitropropane	50.0	S	**684**	500.0	0	136.8	61.2	129	02/06/2017
4-Chlorotoluene	5.0		**47.6**	50.00	0	95.2	77.6	124	02/06/2017
4-Methyl-2-pentanone	50.0	S	**163**	125.0	0	130.4	60.6	126	02/06/2017
Acetone	50.0		**133**	125.0	0	106.4	39.5	159	02/06/2017
Acrolein	100		**492**	500.0	0	98.3	1	167	02/06/2017
Acrylonitrile	10.0	S	**65.8**	50.00	0	131.6	67	124	02/06/2017
Allyl chloride	5.0		**49.0**	50.00	0	98.1	58.5	129	02/06/2017
Benzene	1.0		**48.2**	50.00	0	96.5	80.8	117	02/06/2017
Bromobenzene	5.0		**48.8**	50.00	0	97.6	79.6	117	02/06/2017
Bromochloromethane	5.0		**52.8**	50.00	0	105.7	70.7	121	02/06/2017
Bromodichloromethane	5.0		**53.4**	50.00	0	106.9	80.7	121	02/06/2017
Bromoform	5.0		**58.8**	50.00	0	117.6	79.8	118	02/06/2017
Bromomethane	10.0		**22.0**	50.00	0	44.0	1	175	02/06/2017
Carbon disulfide	5.0		**42.9**	50.00	0	85.9	62.8	123	02/06/2017
Carbon tetrachloride	5.0		**51.9**	50.00	0	103.8	77.6	123	02/06/2017
Chlorobenzene	5.0		**48.5**	50.00	0	97.1	85.6	116	02/06/2017
Chloroethane	10.0		**46.9**	50.00	0	93.7	60.2	125	02/06/2017
Chloroform	5.0		**49.3**	50.00	0	98.7	77.9	116	02/06/2017
Chloromethane	10.0		**53.1**	50.00	0	106.2	29.9	157	02/06/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020296

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126846 **SampType:** LCS Units µg/Kg

SampID: LCS-F170206A-2

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		**52.2**	50.00	0	104.3	80.1	116	02/06/2017
cis-1,3-Dichloropropene	4.0		**52.2**	50.00	0	104.4	80.5	121	02/06/2017
Cyclohexanone	100		**630**	500.0	0	126.1	45.4	128	02/06/2017
Dibromochloromethane	5.0		**55.0**	50.00	0	109.9	84.3	116	02/06/2017
Dibromomethane	5.0		**54.3**	50.00	0	108.6	76.6	115	02/06/2017
Dichlorodifluoromethane	10.0		**29.4**	50.00	0	58.7	1	200	02/06/2017
Ethyl ether	5.0		**52.7**	50.00	0	105.4	73.4	116	02/06/2017
Ethyl methacrylate	5.0	S	**60.3**	50.00	0	120.6	76.2	120	02/06/2017
Ethylbenzene	5.0		**50.0**	50.00	0	100.0	84.8	116	02/06/2017
Hexachlorobutadiene	5.0		**45.7**	50.00	0	91.4	74	135	02/06/2017
Hexachloroethane	5.0		**51.0**	50.00	0	101.9	76.4	121	02/06/2017
Iodomethane	10.0		**39.4**	50.00	0	78.8	38.7	161	02/06/2017
Isopropylbenzene	5.0		**51.4**	50.00	0	102.8	85	125	02/06/2017
m,p-Xylenes	5.0		**100**	100.0	0	100.4	85.3	120	02/06/2017
Methacrylonitrile	50.0		**57.8**	50.00	0	115.6	65.7	120	02/06/2017
Methyl Methacrylate	5.0	S	**64.2**	50.00	0	128.3	69.1	114	02/06/2017
Methyl tert-butyl ether	2.0		**57.3**	50.00	0	114.5	66.6	125	02/06/2017
Methylacrylate	10.0	S	**61.4**	50.00	0	122.7	69.7	121	02/06/2017
Methylene chloride	5.0		**49.8**	50.00	0	99.6	73.4	115	02/06/2017
Naphthalene	10.0		**56.6**	50.00	0	113.2	70.1	134	02/06/2017
n-Butylbenzene	5.0		**47.6**	50.00	0	95.3	78.4	138	02/06/2017
n-Heptane	20.0		**52.4**	50.00	0	104.9	74.3	125	02/06/2017
n-Hexane	20.0		**47.0**	50.00	0	94.0	66.3	129	02/06/2017
Nitrobenzene	100		**536**	500.0	0	107.2	20.1	165	02/06/2017
n-Propylbenzene	5.0		**47.8**	50.00	0	95.7	79.1	125	02/06/2017
o-Xylene	5.0		**52.7**	50.00	0	105.4	81.9	118	02/06/2017
Pentachloroethane	5.0		**50.9**	50.00	0	101.8	72.7	123	02/06/2017
p-Isopropyltoluene	5.0		**46.3**	50.00	0	92.5	82.7	129	02/06/2017
Propionitrile	50.0	S	**680**	500.0	0	136.0	64.3	121	02/06/2017
sec-Butylbenzene	5.0		**47.2**	50.00	0	94.5	81.3	125	02/06/2017
Styrene	5.0		**51.0**	50.00	0	101.9	88.2	122	02/06/2017
tert-Butylbenzene	5.0		**47.8**	50.00	0	95.6	74.8	125	02/06/2017
Tetrachloroethene	5.0		**47.1**	50.00	0	94.1	84.2	122	02/06/2017
Tetrahydrofuran	50.0	S	**69.3**	50.00	0	138.6	61	118	02/06/2017
Toluene	5.0		**47.2**	50.00	0	94.4	81.3	113	02/06/2017
trans-1,2-Dichloroethene	5.0		**49.6**	50.00	0	99.2	78.2	118	02/06/2017
trans-1,3-Dichloropropene	4.0		**54.8**	50.00	0	109.5	81.7	124	02/06/2017
Trichloroethene	5.0		**48.6**	50.00	0	97.1	81	123	02/06/2017
Trichlorofluoromethane	5.0		**46.9**	50.00	0	93.8	66.8	131	02/06/2017
Vinyl acetate	50.0	S	**68.3**	50.00	0	136.5	64.3	122	02/06/2017
Vinyl chloride	2.0		**45.2**	50.00	0	90.5	45.2	140	02/06/2017
Surr: 1,2-Dichloroethane-d4			**56.3**	50.00		112.6	72.2	131	02/06/2017
Surr: 4-Bromofluorobenzene			**51.0**	50.00		102.0	82.1	116	02/06/2017
Surr: Dibromofluoromethane			**52.5**	50.00		105.0	77.7	120	02/06/2017
Surr: Toluene-d8			**48.7**	50.00		97.3	86	116	02/06/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020296

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 09-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126846 **SampType:** LCSGD Units %REC RPD Limit 0

SampID: LCSGD-F170206A-2

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Surr: 1,2-Dichloroethane-d4			**56.9**	50.00		113.7			02/07/2017
Surr: 4-Bromofluorobenzene			**51.5**	50.00		103.0			02/07/2017
Surr: Dibromofluoromethane			**49.7**	50.00		99.4			02/07/2017
Surr: Toluene-d8			**50.1**	50.00		100.3			02/07/2017

Batch 126846 **SampType:** LCSG Units %REC

SampID: LCSG-F170206A-2

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Surr: 1,2-Dichloroethane-d4			**57.4**	50.00		114.8	72.2	131	02/06/2017
Surr: 4-Bromofluorobenzene			**49.5**	50.00		98.9	82.1	116	02/06/2017
Surr: Dibromofluoromethane			**49.3**	50.00		98.6	77.7	120	02/06/2017
Surr: Toluene-d8			**50.6**	50.00		101.3	86	116	02/06/2017

Receiving Check List

Teklab, Inc. Environmental Laboratory

http://www.teklabinc.com/

Client: PSC Industrial Outsourcing, LP
Work Order: 17020296
Client Project: Champaign Residual IRM 624-1610-0001 / J0055
Report Date: 09-Feb-17

Carrier: Employee
Received By: TAC

Completed by: Amber M. Dilallo
On: 03-Feb-17

Reviewed by: Elizabeth A. Hurley
On: 03-Feb-17

Pages to follow: Chain of custody 1 Extra pages included 0

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C	5.62
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice	☐
Chain of custody present?	Yes ☑	No ☐			
Chain of custody signed when relinquished and received?	Yes ☑	No ☐			
Chain of custody agrees with sample labels?	Yes ☑	No ☐			
Samples in proper container/bottle?	Yes ☑	No ☐			
Sample containers intact?	Yes ☑	No ☐			
Sufficient sample volume for indicated test?	Yes ☑	No ☐			
All samples received within holding time?	Yes ☑	No ☐			
Reported field parameters measured:	Field ☐	Lab ☐	NA ☑		
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐			

When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.

Water – at least one vial per sample has zero headspace?	Yes ☐	No ☐	No VOA vials ☑
Water - TOX containers have zero headspace?	Yes ☐	No ☐	No TOX containers ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	NA ☑
NPDES/CWA TCN interferences checked/treated in the field?	Yes ☐	No ☐	NA ☑

Any No responses must be detailed below or on the COC.

Chain of Custody Record

210 West Sand Bank Road | Columbia, IL 62236 | P (618) 281-7173 | F (618) 281-7020

1702029

COC Serial No. CMP-003

Project Name: Champaign Residual IRM Project Mgr.: Crutcher

Project Number: 624-1610-0001 / J0055

Sampler(s): M. Flora

Laboratory — Name: Teklab, Inc. Location: Collinsville, IL

Temperature: 5.62 ice

Sample Number and (depth)	Date	Time	Matrix: Soil	Water	Air	Wipes	Other	Total Number of Containers	VOC (8260/5035)	SVOC (8270)	PAH (8270 SIM)						TPH (8015 OA2)			Comments	Lab ID
1702029-001 SW-RES-REM-W6 (3)	2/2/17	9:40	X					4	X	X	X									STD TAT	1702029-001
002 FL-RES-REM-W7 (15)	2/2/17	10:00	X					4	X	X	X						X			24-Hr TAT	002

Analyses by Method Name and Number

Samples Iced: [X] Yes No [ ]

Preservatives

[X]	Volatile Organics (Soil - 5035).....	Sodium Bisulfate / Methanol
[ ]	Volatile Organics (Aqueous).....	Hydrochloric Acid (HCl)
[ ]	TPH (8015)	HCl and/or Sulfuric Acid
[ ]	Metals	Nitric Acid (HNO_3)
[ ]	Cyanide	Sodium Hydroxide (NaOH)
[ ]	Other (Specify)	

Lab Directives:

Requested TAT: [X] 24-Hours [ ] 2-3 Days [X] STD [ ] Other

Fax and Mail Results to: mike.crutcher@pscnow.com / mike.flora@pscnow.com

Send Invoice to: **Michael Crutcher (PSC)**

QC Deliverable requested: [ ] Results + QC [X] EDD [ ] Other

Special Guidelines:

Reporting Limits: IL IAC 740/742 Tier 1

* Special:

Shipping:

Carrier / Airbill No.

Relinquished by:

Signature	Date	Time
Michael Flora	2/3/17	1335
Kim M. May	2-3-17	16:37

Received by:

Signature	Date	Time
Kim May	2-3-17	13:35
Jenny Carroll	2/3/17	16:37

Distribution: WHITE to Lab; YELLOW to PM; PINK to QA/QC; GREEN to Sampler.

* Shaded Areas to be Completed by Lab

IAC 2/3/17

February 10, 2017

Michael Crutcher
PSC Industrial Outsourcing, LP
210 West Sand Bank Road
Columbia, IL 62236-0230
TEL: (618) 281-7173
FAX: (618) 281-5120

RE: Champaign Residual IRM 624-1610-0001 / J0055 **WorkOrder:** 17020297

Dear Michael Crutcher:

TEKLAB, INC received 2 samples on 2/3/2017 4:37:00 PM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Michael L. Austin
Project Manager
(618)344-1004 ex 16
MAustin@teklabinc.com

Client: PSC Industrial Outsourcing, LP
Work Order: 17020297
Client Project: Champaign Residual IRM 624-1610-0001 / J0055
Report Date: 10-Feb-17

This reporting package includes the following:

Cover Letter	1
Report Contents	2
Definitions	3
Case Narrative	4
Laboratory Results	5
Sample Summary	7
Dates Report	8
Quality Control Results	9
Receiving Check List	12
Chain of Custody	Appended

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020297

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 10-Feb-17

Abbr Definition

CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilutions factors.
DNI	Did not ignite
DUP	Laboratory duplicate is an aliquot of a sample taken from the same container under laboratory conditions for independent processing and analysis independently of the original aliquot.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample, spiked with verified known amounts of analytes, is analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system. The acceptable recovery range is in the QC Package (provided upon request).
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MBLK	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	Method detection limit means the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero.
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions. The acceptable recovery range is listed in the QC Package (provided upon request).
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TIC	Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
TNTC	Too numerous to count (> 200 CFU)

Qualifiers

# -	Unknown hydrocarbon	B -	Analyte detected in associated Method Blank
E -	Value above quantitation range	H -	Holding times exceeded
I -	Associated internal standard was outside method criteria	M -	Manual Integration used to determine area response
ND -	Not Detected at the Reporting Limit	R -	RPD outside accepted recovery limits
S -	Spike Recovery outside recovery limits	T -	TIC(Tentatively identified compound)
X -	Value exceeds Maximum Contaminant Level		

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020297

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 10-Feb-17

Cooler Receipt Temp: 5.62 °C

Locations and Accreditations

	Collinsville	Springfield	Kansas City	Collinsville Air
Address	5445 Horseshoe Lake Road	3920 Pintail Dr	8421 Nieman Road	5445 Horseshoe Lake Road
	Collinsville, IL 62234-7425	Springfield, IL 62711-9415	Lenexa, KS 66214	Collinsville, IL 62234-7425
Phone	(618) 344-1004	(217) 698-1004	(913) 541-1998	(618) 344-1004
Fax	(618) 344-1005	(217) 698-1005	(913) 541-1998	(618) 344-1005
Email	jhriley@teklabinc.com	KKlostermann@teklabinc.com	Ryoungstrom@teklabinc.com	EHurley@teklabinc.com

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2018	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2017	Collinsville
Louisiana	LDEQ	166493	NELAP	6/30/2017	Collinsville
Louisiana	LDEQ	166578	NELAP	6/30/2017	Collinsville
Texas	TCEQ	T104704515-12-1	NELAP	7/31/2017	Collinsville
Arkansas	ADEQ	88-0966		3/14/2017	Collinsville
Illinois	IDPH	17584		5/31/2017	Collinsville
Kentucky	KDEP	98006		12/31/2017	Collinsville
Kentucky	UST	0073		1/31/2018	Collinsville
Missouri	MDNR	00930		5/31/2017	Collinsville
Missouri	MDNR	930		1/31/2018	Collinsville
Oklahoma	ODEQ	9978		8/31/2017	Collinsville

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020297

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 10-Feb-17

Lab ID: 17020297-001 **Client Sample ID:** SW-RES-REM-W6 (3)

Matrix: SOLID **Collection Date:** 02/02/2017 9:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**21.4**	%	1	02/06/2017 15:55	R228849
SW-846 9012A								
Cyanide, Amenable to Chlorination		1.59		**< 1.59**	mg/Kg-dry	5	02/08/2017 0:00	126963
SW-846 9012A (TOTAL)								
Cyanide	NELAP	1.59	S	**5.64**	mg/Kg-dry	5	02/08/2017 20:58	126962
MS and MSD did not recover within control limits due to matrix interference.								
SW-846 3050B, 6010B, METALS BY ICP								
Arsenic	NELAP	2.45		**10.9**	mg/Kg-dry	1	02/07/2017 17:50	126798
Barium	NELAP	0.25		**110**	mg/Kg-dry	1	02/07/2017 17:50	126798
Cadmium	NELAP	0.20		**0.56**	mg/Kg-dry	1	02/07/2017 17:50	126798
Chromium	NELAP	0.49		**17.2**	mg/Kg-dry	1	02/07/2017 17:50	126798
Lead	NELAP	1.47		**55.4**	mg/Kg-dry	1	02/08/2017 11:58	126798
Silver	NELAP	0.49		**< 0.49**	mg/Kg-dry	1	02/07/2017 17:50	126798
SW-846 3050B, 6020A, METALS BY ICPMS								
Selenium	NELAP	1.00		**< 1.00**	mg/Kg-dry	10	02/09/2017 13:41	126799
SW-846 7471B								
Mercury	NELAP	0.012		**0.155**	mg/Kg-dry	1	02/07/2017 12:39	126808

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020297

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 10-Feb-17

Lab ID: 17020297-002 **Client Sample ID:** FL-RES-REM-W7 (15)

Matrix: SOLID **Collection Date:** 02/02/2017 10:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**10.1**	%	1	02/06/2017 15:56	R228849
SW-846 9012A								
Cyanide, Amenable to Chlorination		0.26		**Interference**	mg/Kg-dry	1	02/08/2017 0:00	126963
SW-846 9012A (TOTAL)								
Cyanide	NELAP	0.26		**0.28**	mg/Kg-dry	1	02/08/2017 17:45	126962
SW-846 3050B, 6010B, METALS BY ICP								
Arsenic	NELAP	2.50		**5.84**	mg/Kg-dry	1	02/07/2017 18:25	126798
Barium	NELAP	0.25		**20.3**	mg/Kg-dry	1	02/07/2017 18:25	126798
Cadmium	NELAP	0.20		**< 0.20**	mg/Kg-dry	1	02/07/2017 18:25	126798
Chromium	NELAP	0.50		**20.2**	mg/Kg-dry	1	02/07/2017 18:25	126798
Lead	NELAP	1.50		**10.2**	mg/Kg-dry	1	02/07/2017 18:25	126798
Silver	NELAP	0.50		**< 0.50**	mg/Kg-dry	1	02/07/2017 18:25	126798
SW-846 3050B, 6020A, METALS BY ICPMS								
Selenium	NELAP	1.00		**< 1.00**	mg/Kg-dry	10	02/09/2017 14:15	126799
SW-846 7471B								
Mercury	NELAP	0.011		**< 0.011**	mg/Kg-dry	1	02/07/2017 12:46	126808

Sample Summary

Client: PSC Industrial Outsourcing, LP
Work Order: 17020297
Client Project: Champaign Residual IRM 624-1610-0001 / J0055
Report Date: 10-Feb-17

Lab Sample ID	Client Sample ID	Matrix	Fractions	Collection Date
17020297-001	SW-RES-REM-W6 (3)	Solid	1	02/02/2017 9:40
17020297-002	FL-RES-REM-W7 (15)	Solid	1	02/02/2017 10:00

Client: PSC Industrial Outsourcing, LP
Work Order: 17020297
Client Project: Champaign Residual IRM 624-1610-0001 / J0055
Report Date: 10-Feb-17

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			Prep Date/Time	Analysis Date/Time
17020297-001A	SW-RES-REM-W6 (3)	02/02/2017 9:40	02/03/2017 16:37		
	EPA SW846 3550C, 5035A, ASTM D2974				02/06/2017 15:55
	SW-846 3050B, 6010B, Metals by ICP			02/06/2017 11:30	02/07/2017 17:50
	SW-846 3050B, 6010B, Metals by ICP			02/06/2017 11:30	02/08/2017 11:58
	SW-846 3050B, 6020A, Metals by ICPMS			02/06/2017 11:33	02/09/2017 13:41
	SW-846 7471B			02/06/2017 13:37	02/07/2017 12:39
	SW-846 9012A			02/08/2017 12:50	02/08/2017 0:00
	SW-846 9012A (Total)			02/07/2017 9:30	02/08/2017 20:58
17020297-002A	FL-RES-REM-W7 (15)	02/02/2017 10:00	02/03/2017 16:37		
	EPA SW846 3550C, 5035A, ASTM D2974				02/06/2017 15:56
	SW-846 3050B, 6010B, Metals by ICP			02/06/2017 11:30	02/07/2017 18:25
	SW-846 3050B, 6020A, Metals by ICPMS			02/06/2017 11:33	02/09/2017 14:15
	SW-846 7471B			02/06/2017 13:37	02/07/2017 12:46
	SW-846 9012A			02/08/2017 12:50	02/08/2017 0:00
	SW-846 9012A (Total)			02/07/2017 9:30	02/08/2017 17:45

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020297

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 10-Feb-17

EPA SW846 3550C, 5035A, ASTM D2974

Batch R228849 **SampType:** LCS Units **%**
SampID: LCS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	02/06/2017

Batch R228849 **SampType:** LCSQC Units **%**
SampID: LCSQC

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	02/06/2017

SW-846 9012A (TOTAL)

Batch 126962 **SampType:** MBLK Units **mg/Kg**
SampID: MBLK 170207 TCN2

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cyanide	0.25		**< 0.25**						02/08/2017

Batch 126962 **SampType:** LCS Units **mg/Kg**
SampID: LCS 170207 TCN2

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cyanide	0.25		**1.29**	1.250	0	103.2	85	115	02/08/2017

Batch 126962 **SampType:** MS Units **mg/Kg-dry**
SampID: 17020297-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cyanide	1.53	S	**6.48**	1.529	5.636	55.5	75	125	02/08/2017

Batch 126962 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **15**
SampID: 17020297-001AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Cyanide	1.56	S	**6.15**	1.559	5.636	33.2	6.485	5.25	02/08/2017

SW-846 3050B, 6010B, METALS BY ICP

Batch 126798 **SampType:** MBLK Units **mg/Kg-dry**
SampID: MBLK-126798

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	2.50		**< 2.50**	2.500	0	0	-100	100	02/07/2017
Barium	0.25		**< 0.25**	0.2500	0	0	-100	100	02/07/2017
Cadmium	0.20		**< 0.20**	0.2000	0	0	-100	100	02/07/2017
Chromium	0.50		**< 0.50**	0.5000	0	0	-100	100	02/07/2017
Lead	1.50		**< 1.50**	1.500	0	0	-100	100	02/07/2017
Silver	0.50		**< 0.50**	0.5000	0	0	-100	100	02/07/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020297

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 10-Feb-17

SW-846 3050B, 6010B, METALS BY ICP

Batch 126798 **SampType:** LCS Units **mg/Kg-dry**

SampID: LCS-126798

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	2.50		**45.9**	50.00	0	91.7	85	115	02/07/2017
Barium	0.25		**201**	200.0	0	100.7	85	115	02/07/2017
Cadmium	0.20		**5.03**	5.000	0	100.6	85	115	02/07/2017
Chromium	0.50		**19.9**	20.00	0	99.7	85	115	02/07/2017
Lead	1.50		**51.3**	50.00	0	102.6	85	115	02/07/2017
Silver	0.50		**5.06**	5.000	0	101.2	85	115	02/07/2017

Batch 126798 **SampType:** MS Units **mg/Kg-dry**

SampID: 17020297-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	2.31		**52.3**	46.30	10.89	89.4	75	125	02/07/2017
Barium	0.23		**329**	185.2	109.6	118.6	75	125	02/07/2017
Cadmium	0.19		**5.12**	4.630	0.5588	98.5	75	125	02/07/2017
Chromium	0.46		**38.2**	18.52	17.23	113.1	75	125	02/07/2017
Lead	1.39		**102**	46.30	55.44	99.6	75	125	02/08/2017
Silver	0.46		**4.73**	4.630	0	102.2	75	125	02/07/2017

Batch 126798 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **20**

SampID: 17020297-001AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Arsenic	2.31		**51.3**	46.30	10.89	87.2	52.29	2.00	02/07/2017
Barium	0.23		**307**	185.2	109.6	106.5	329.3	7.05	02/07/2017
Cadmium	0.19		**4.96**	4.630	0.5588	95.1	5.120	3.12	02/07/2017
Chromium	0.46		**38.5**	18.52	17.23	115.0	38.17	0.94	02/07/2017
Lead	1.39		**90.6**	46.30	55.44	75.8	101.6	11.47	02/08/2017
Silver	0.46		**4.56**	4.630	0	98.4	4.731	3.79	02/07/2017

SW-846 3050B, 6020A, METALS BY ICPMS

Batch 126799 **SampType:** MBLK Units **mg/Kg-dry**

SampID: MBLK-126799

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Selenium	1.00		**< 1.00**	1.000	0	0	-100	100	02/08/2017

Batch 126799 **SampType:** LCS Units **mg/Kg-dry**

SampID: LCS-126799

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Selenium	1.00		**50.2**	50.00	0	100.4	80	120	02/08/2017

Batch 126799 **SampType:** MS Units **mg/Kg-dry**

SampID: 17020297-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Selenium	1.00		**46.9**	50.00	0	93.9	75	125	02/09/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020297

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 10-Feb-17

SW-846 3050B, 6020A, METALS BY ICPMS

Batch 126799 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **20**

SampID: 17020297-001AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Selenium	1.00		**46.8**	50.00	0	93.6	46.94	0.35	02/09/2017

SW-846 7471B

Batch 126808 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK-126808

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.010		**< 0.010**	0.01000	0	31.6	-100	100	02/07/2017

Batch 126808 **SampType:** LCS Units **mg/Kg**

SampID: LCS-126808

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.010		**0.239**	0.2500	0	95.7	85	115	02/07/2017

Batch 126808 **SampType:** MS Units **mg/Kg-dry**

SampID: 17020297-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.012		**0.494**	0.3029	0.1546	112.0	75	125	02/07/2017

Batch 126808 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **15**

SampID: 17020297-001AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Mercury	0.012		**0.462**	0.3103	0.1546	99.0	0.4938	6.70	02/07/2017

Receiving Check List

http://www.teklabinc.com/

Client: PSC Industrial Outsourcing, LP
Work Order: 17020297
Client Project: Champaign Residual IRM 624-1610-0001 / J0055
Report Date: 10-Feb-17

Carrier: Employee
Received By: TAC

Completed by: Amber M. Dilallo
On: 03-Feb-17

Reviewed by: Elizabeth A. Hurley
On: 03-Feb-17

Pages to follow: Chain of custody 1 Extra pages included 0

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C 5.62
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice ☐
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☐	No ☑		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Reported field parameters measured:	Field ☐	Lab ☐	NA ☑	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐		
When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.				
Water – at least one vial per sample has zero headspace?	Yes ☐	No ☐	No VOA vials ☑	
Water - TOX containers have zero headspace?	Yes ☐	No ☐	No TOX containers ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	NA ☑	
NPDES/CWA TCN interferences checked/treated in the field?	Yes ☐	No ☐	NA ☑	

Any No responses must be detailed below or on the COC.

SW-RES-REM-W6 (3) is labeled as ISW-RES-REM-W6 (3), and FL-RES-REM-W7 (15) is labeled as IFL-RES-REM-W7 (15). Mike Crutcher was notified of these errors via work order summary. AMD 2/3/17

Chain of Custody Record

210 West Sand Bank Road | Columbia, IL 62236 | P (618) 281-7173 | F (618) 281-7020

17020297
COC Serial No. ICMP-003

Project Name: Champaign Residual IRM Project Mgr.: Crutcher
Project Number: 624-1610-0001 / J0055
Sampler(s): M. Flora

Laboratory Name: Teklab, Inc.
Laboratory Location: Collinsville, IL

Temperature: 5.62

Sample Number and (depth)	Date	Time	Matrix: Soil	Water	Air	Wipes	Other	Total Number of Containers	Total CYANIDE (9012)	Amenable CYANIDE (9012)	RCRA Metals	pH (9045)						Comments	Lab ID
17020297-001 SW-RES-REM-W6 (3)	2/2/17	9:40	X					1	X	X	X							STD TAT	17020297-001
FL-RES-REM-W7 (15)	2/2/17	10:00	X					1	X	X	X							STD TAT	002

Samples Iced: [X] Yes No [ ]

Preservatives

[ ]	Volatile Organics (Soil - 5035).....	Sodium Bisulfate / Methanol
[ ]	Volatile Organics (Aqueous).....	Hydrochloric Acid (HCl)
[ ]	TPH (8015)	HCl and/or Sulfuric Acid
[ ]	Metals	Nitric Acid (HNO_3)
[ ]	Cyanide	Sodium Hydroxide (NaOH)
[ ]	Other (Specify)	

Lab Directives:

Requested TAT: [ ] 24-Hours [ ] 2-3 Days [X] STD [ ] Other
Fax and Mail Results to: mike.crutcher@pscnow.com / mike.flora@pscnow.com
Send Invoice to: **Michael Crutcher (PSC)**
QC Deliverable requested: [ ] Results + QC [X] EDD [ ] Other
Special Guidelines:
Reporting Limits: IL IAC 740/742 Tier 1
* Special: X Sample Containers say ISW and IFL. TK 2/3/17

Shipping:

Carrier / Airbill No.

Relinquished by:

Signature	Date	Time
Michael Flora M. Flora	2/3/17	1335
Tina M. May	2-3-17	1637

Received by:

Signature	Date	Time
Tina May	2-3-17	13:35
Tracy Carroll	2/3/17	16:37

Distribution: WHITE to Lab; YELLOW to PM; PINK to QA/QC; GREEN to Sampler.

* Shaded Areas to be Completed by Lab

TAC 2/3/17

February 08, 2017

Michael Crutcher
PSC Industrial Outsourcing, LP
210 West Sand Bank Road
Columbia, IL 62236-0230
TEL: (618) 281-7173
FAX: (618) 281-5120

RE: Champaign Residual IRM 624-1610-0001 / J0055 **WorkOrder:** 17020396

Dear Michael Crutcher:

TEKLAB, INC received 1 sample on 1/31/2017 4:53:00 PM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Michael L. Austin
Project Manager
(618)344-1004 ex 16
MAustin@teklabinc.com

Report Contents

Client: PSC Industrial Outsourcing, LP
Work Order: 17020396
Client Project: Champaign Residual IRM 624-1610-0001 / J0055
Report Date: 08-Feb-17

This reporting package includes the following:

Cover Letter	1
Report Contents	2
Definitions	3
Case Narrative	4
Laboratory Results	5
Sample Summary	6
Dates Report	7
Quality Control Results	8
Chain of Custody	Appended

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020396

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 08-Feb-17

Abbr Definition

CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilutions factors.
DNI	Did not ignite
DUP	Laboratory duplicate is an aliquot of a sample taken from the same container under laboratory conditions for independent processing and analysis independently of the original aliquot.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample, spiked with verified known amounts of analytes, is analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system. The acceptable recovery range is in the QC Package (provided upon request).
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MBLK	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	Method detection limit means the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero.
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions. The acceptable recovery range is listed in the QC Package (provided upon request).
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TIC	Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
TNTC	Too numerous to count (> 200 CFU)

Qualifiers

# -	Unknown hydrocarbon
B -	Analyte detected in associated Method Blank
E -	Value above quantitation range
H -	Holding times exceeded
I -	Associated internal standard was outside method criteria
M -	Manual Integration used to determine area response
ND -	Not Detected at the Reporting Limit
R -	RPD outside accepted recovery limits
S -	Spike Recovery outside recovery limits
T -	TIC(Tentatively identified compound)
X -	Value exceeds Maximum Contaminant Level	

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020396

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 08-Feb-17

Cooler Receipt Temp: °C

Additional analysis requested to WO# 17011674.

Locations and Accreditations

	Collinsville	Springfield	Kansas City	Collinsville Air
Address	5445 Horseshoe Lake Road	3920 Pintail Dr	8421 Nieman Road	5445 Horseshoe Lake Road
	Collinsville, IL 62234-7425	Springfield, IL 62711-9415	Lenexa, KS 66214	Collinsville, IL 62234-7425
Phone	(618) 344-1004	(217) 698-1004	(913) 541-1998	(618) 344-1004
Fax	(618) 344-1005	(217) 698-1005	(913) 541-1998	(618) 344-1005
Email	jhriley@teklabinc.com	KKlostermann@teklabinc.com	Ryoungstrom@teklabinc.com	EHurley@teklabinc.com

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2018	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2017	Collinsville
Louisiana	LDEQ	166493	NELAP	6/30/2017	Collinsville
Louisiana	LDEQ	166578	NELAP	6/30/2017	Collinsville
Texas	TCEQ	T104704515-12-1	NELAP	7/31/2017	Collinsville
Arkansas	ADEQ	88-0966		3/14/2017	Collinsville
Illinois	IDPH	17584		5/31/2017	Collinsville
Kentucky	KDEP	98006		12/31/2017	Collinsville
Kentucky	UST	0073		1/31/2018	Collinsville
Missouri	MDNR	00930		5/31/2017	Collinsville
Missouri	MDNR	930		1/31/2018	Collinsville
Oklahoma	ODEQ	9978		8/31/2017	Collinsville

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020396

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 08-Feb-17

Lab ID: 17020396-001 **Client Sample ID:** FL-RES-REM-W6 (14)

Matrix: SOLID **Collection Date:** 01/31/2017 11:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**9.4**	%	1	01/31/2017 18:37	R228639
SW-846 3550B, 8015B, TOTAL PETROLEUM HYDROCARBONS (OA-2) BY GC/FID								
Diesel	NELAP	55.1	S#	**667**	mg/Kg-dry	10	02/08/2017 11:36	126864
Kerosene	NELAP	55.1		**ND**	mg/Kg-dry	10	02/08/2017 11:36	126864
Mineral Spirits	NELAP	55.1		**ND**	mg/Kg-dry	10	02/08/2017 11:36	126864
Motor Oil	NELAP	55.1	#	**372**	mg/Kg-dry	10	02/08/2017 11:36	126864
Surr: n-Tetracontane		20-152	S	**335.2**	%REC	10	02/08/2017 11:36	126864

Surrogate recovery is outside QC limits due to matrix interference.

MS/MSD QC limits for Diesel are not applicable due to high sample/spike ratio.

Elevated reporting limit due to sample extract composition.

Sample Summary

Client: PSC Industrial Outsourcing, LP
Work Order: 17020396
Client Project: Champaign Residual IRM 624-1610-0001 / J0055
Report Date: 08-Feb-17

Lab Sample ID	Client Sample ID	Matrix	Fractions	Collection Date
17020396-001	FL-RES-REM-W6 (14)	Solid	1	01/31/2017 11:00

Client: PSC Industrial Outsourcing, LP
Work Order: 17020396
Client Project: Champaign Residual IRM 624-1610-0001 / J0055
Report Date: 08-Feb-17

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			Prep Date/Time	Analysis Date/Time
17020396-001A	FL-RES-REM-W6 (14)	01/31/2017 11:00	01/31/2017 16:53		
	EPA SW846 3550C, 5035A, ASTM D2974				01/31/2017 18:37
	SW-846 3550B, 8015B, Total Petroleum Hydrocarbons (OA-2) by GC/FID			02/07/2017 15:28	02/08/2017 11:36

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020396

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 08-Feb-17

EPA SW846 3550C, 5035A, ASTM D2974

Batch R228639 **SampType:** LCS Units **%**

SampID: LCS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	01/31/2017

Batch R228639 **SampType:** LCSQC Units **%**

SampID: LCSQC

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	01/31/2017

SW-846 3550B, 8015B, TOTAL PETROLEUM HYDROCARBONS (OA-2) BY GC/FID

Batch 126864 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK-126864

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Diesel	5.00		**ND**						02/08/2017
Kerosene	5.00		**ND**						02/08/2017
Mineral Spirits	5.00		**ND**						02/08/2017
Motor Oil	5.00		**ND**						02/08/2017
Surr: n-Tetracontane			**0.65**	0.6700		97.0	33.4	140	02/08/2017

Batch 126864 **SampType:** LCS Units **mg/Kg**

SampID: LCS-126864

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Diesel	5.00		**15.9**	16.70	0	95.0	35.2	131	02/08/2017
Surr: n-Tetracontane			**0.61**	0.6700		91.1	33.4	140	02/08/2017

Batch 126864 **SampType:** MS Units **mg/Kg-dry**

SampID: 17020396-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Diesel	54.9	S	**434**	18.32	667.5	-1273	20.3	167	02/08/2017
Surr: n-Tetracontane		S	**2.33**	0.7350		317.2	20	152	02/08/2017

Batch 126864 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **34**

SampID: 17020396-001AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Diesel	54.9	S	**486**	18.33	667.5	-991.8	434.3	11.18	02/08/2017
Surr: n-Tetracontane		S	**2.32**	0.7353		315.8			02/08/2017

17020396

TEKLAB, INC
5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
TEL: (618) 344-1004
FAX: (618) 344-1005

CHAIN-OF-CUSTODY RECORD

WorkOrder: 17020396

Client:
PSC Industrial Outsourcing, LP
210 West Sand Bank Road
Columbia, IL 62236-0230

TEL: (618) 281-7173
FAX: (618) 281-5120
Project: Champaign Residual IRM 62

One Day TAT

07-Feb-17

					Requested Tests						
Sample ID	**ClientSampID**	**Matrix**	**Date Collected**	**Bottle**	**SW3550C_5035A_ASTM29**	**SW8015M/OA2**					
17020396-001	FL-RES-REM-W6 (14)	Solid	1/31/2017 11:00:00 AM		A	A					

Comments: Level 3 QC, Excel STD EDD.
Cc: Invoices to: Cindy Grohmann (Cindy.grohmann@pscnow.com)
Per Mike Crutcher, additional analysis requested for WO# 17011674. MLA 2/7/17

		Date/Time			**Date/Time**
Relinquished by:			**Received by:**	L Langdon	2/7/17
Relinquished by:			**Received by:**		
Relinquished by:			**Received by:**		

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.

Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

February 10, 2017

Michael Crutcher
PSC Industrial Outsourcing, LP
210 West Sand Bank Road
Columbia, IL 62236-0230
TEL: (618) 281-7173
FAX: (618) 281-5120

RE: Champaign Soil Residual IRM 624-1610-001 / J0055 **WorkOrder:** 17020459

Dear Michael Crutcher:

TEKLAB, INC received 3 samples on 2/8/2017 8:02:00 AM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Michael L. Austin
Project Manager
(618)344-1004 ex 16
MAustin@teklabinc.com

Client: PSC Industrial Outsourcing, LP
Work Order: 17020459
Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055
Report Date: 10-Feb-17

This reporting package includes the following:

Cover Letter	1
Report Contents	2
Definitions	3
Case Narrative	4
Laboratory Results	5
Sample Summary	8
Dates Report	9
Quality Control Results	10
Receiving Check List	11
Chain of Custody	Appended

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020459

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 10-Feb-17

Abbr Definition

CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilutions factors.
DNI	Did not ignite
DUP	Laboratory duplicate is an aliquot of a sample taken from the same container under laboratory conditions for independent processing and analysis independently of the original aliquot.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample, spiked with verified known amounts of analytes, is analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system. The acceptable recovery range is in the QC Package (provided upon request).
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MBLK	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	Method detection limit means the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero.
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions. The acceptable recovery range is listed in the QC Package (provided upon request).
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TIC	Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
TNTC	Too numerous to count (> 200 CFU)

Qualifiers

# -	Unknown hydrocarbon	B -	Analyte detected in associated Method Blank
E -	Value above quantitation range	H -	Holding times exceeded
I -	Associated internal standard was outside method criteria	M -	Manual Integration used to determine area response
ND -	Not Detected at the Reporting Limit	R -	RPD outside accepted recovery limits
S -	Spike Recovery outside recovery limits	T -	TIC(Tentatively identified compound)
X -	Value exceeds Maximum Contaminant Level		

Case Narrative

http://www.teklabinc.com/

Client: PSC Industrial Outsourcing, LP
Work Order: 17020459
Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055
Report Date: 10-Feb-17

Cooler Receipt Temp: 1.82 °C

Locations and Accreditations

	Collinsville	Springfield	Kansas City	Collinsville Air
Address	5445 Horseshoe Lake Road	3920 Pintail Dr	8421 Nieman Road	5445 Horseshoe Lake Road
	Collinsville, IL 62234-7425	Springfield, IL 62711-9415	Lenexa, KS 66214	Collinsville, IL 62234-7425
Phone	(618) 344-1004	(217) 698-1004	(913) 541-1998	(618) 344-1004
Fax	(618) 344-1005	(217) 698-1005	(913) 541-1998	(618) 344-1005
Email	jhriley@teklabinc.com	KKlostermann@teklabinc.com	Ryoungstrom@teklabinc.com	EHurley@teklabinc.com

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2018	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2017	Collinsville
Louisiana	LDEQ	166493	NELAP	6/30/2017	Collinsville
Louisiana	LDEQ	166578	NELAP	6/30/2017	Collinsville
Texas	TCEQ	T104704515-12-1	NELAP	7/31/2017	Collinsville
Arkansas	ADEQ	88-0966		3/14/2017	Collinsville
Illinois	IDPH	17584		5/31/2017	Collinsville
Kentucky	KDEP	98006		12/31/2017	Collinsville
Kentucky	UST	0073		1/31/2018	Collinsville
Missouri	MDNR	00930		5/31/2017	Collinsville
Missouri	MDNR	930		1/31/2018	Collinsville
Oklahoma	ODEQ	9978		8/31/2017	Collinsville

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020459

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 10-Feb-17

Lab ID: 17020459-001 **Client Sample ID:** SW-RES-REM-W7 (10)

Matrix: SOLID **Collection Date:** 02/06/2017 11:15

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**19.2**	%	1	02/08/2017 18:41	R228981
SW-846 3550B, 8015B, TOTAL PETROLEUM HYDROCARBONS (OA-2) BY GC/FID								
Diesel	NELAP	6.15	#	**11.5**	mg/Kg-dry	1	02/08/2017 15:10	126864
Kerosene	NELAP	6.15		**ND**	mg/Kg-dry	1	02/08/2017 15:10	126864
Mineral Spirits	NELAP	6.15		**ND**	mg/Kg-dry	1	02/08/2017 15:10	126864
Motor Oil	NELAP	6.15		**ND**	mg/Kg-dry	1	02/08/2017 15:10	126864
Surr: n-Tetracontane		20-152		**93.3**	%REC	1	02/08/2017 15:10	126864

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020459

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 10-Feb-17

Lab ID: 17020459-002 **Client Sample ID:** SW-RES-REM-W6 (10)

Matrix: SOLID **Collection Date:** 02/06/2017 11:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**13.7**	%	1	02/08/2017 18:42	R228981
SW-846 3550B, 8015B, TOTAL PETROLEUM HYDROCARBONS (OA-2) BY GC/FID								
Diesel	NELAP	749	#	**6530**	mg/Kg-dry	10	02/08/2017 16:47	126864
Kerosene	NELAP	749		**ND**	mg/Kg-dry	10	02/08/2017 16:47	126864
Mineral Spirits	NELAP	749		**ND**	mg/Kg-dry	10	02/08/2017 16:47	126864
Motor Oil	NELAP	749	#	**2070**	mg/Kg-dry	10	02/08/2017 16:47	126864
Surr: n-Tetracontane		20-152	S	**193.6**	%REC	10	02/08/2017 16:47	126864

Surrogate recovery is outside QC limits due to sample dilution.

Elevated reporting limit due to sample composition.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020459

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 10-Feb-17

Lab ID: 17020459-003 **Client Sample ID:** SW-RES-REM-W5 (10)

Matrix: SOLID **Collection Date:** 02/06/2017 15:15

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**18.4**	%	1	02/08/2017 18:42	R228981
SW-846 3550B, 8015B, TOTAL PETROLEUM HYDROCARBONS (OA-2) BY GC/FID								
Diesel	NELAP	178	S#	**844**	mg/Kg-dry	5	02/08/2017 17:07	126864
Kerosene	NELAP	178		**ND**	mg/Kg-dry	5	02/08/2017 17:07	126864
Mineral Spirits	NELAP	178		**ND**	mg/Kg-dry	5	02/08/2017 17:07	126864
Motor Oil	NELAP	178		**ND**	mg/Kg-dry	5	02/08/2017 17:07	126864
Surr: n-Tetracontane		20-152	S	**188.7**	%REC	5	02/08/2017 17:07	126864

Surrogate recovery is outside QC limits due to sample dilution.

MS/MSD QC limits for Diesel are not applicable due to high sample/spike ratio.

Elevated reporting limit due to sample composition.

Sample Summary

Client: PSC Industrial Outsourcing, LP
Work Order: 17020459
Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055
Report Date: 10-Feb-17

Lab Sample ID	Client Sample ID	Matrix	Fractions	Collection Date
17020459-001	SW-RES-REM-W7 (10)	Solid	1	02/06/2017 11:15
17020459-002	SW-RES-REM-W6 (10)	Solid	1	02/06/2017 11:30
17020459-003	SW-RES-REM-W5 (10)	Solid	1	02/06/2017 15:15

Client: PSC Industrial Outsourcing, LP
Work Order: 17020459
Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055
Report Date: 10-Feb-17

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			Prep Date/Time	Analysis Date/Time
17020459-001A	SW-RES-REM-W7 (10)	02/06/2017 11:15	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/08/2017 18:41
	SW-846 3550B, 8015B, Total Petroleum Hydrocarbons (OA-2) by GC/FID			02/08/2017 12:15	02/08/2017 15:10
17020459-002A	SW-RES-REM-W6 (10)	02/06/2017 11:30	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/08/2017 18:42
	SW-846 3550B, 8015B, Total Petroleum Hydrocarbons (OA-2) by GC/FID			02/08/2017 12:15	02/08/2017 16:47
17020459-003A	SW-RES-REM-W5 (10)	02/06/2017 15:15	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/08/2017 18:42
	SW-846 3550B, 8015B, Total Petroleum Hydrocarbons (OA-2) by GC/FID			02/08/2017 12:15	02/08/2017 17:07

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020459

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 10-Feb-17

EPA SW846 3550C, 5035A, ASTM D2974

Batch R228981 **SampType:** LCS Units **%**

SampID: LCS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	02/08/2017

Batch R228981 **SampType:** LCSQC Units **%**

SampID: LCSQC

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	02/08/2017

SW-846 3550B, 8015B, TOTAL PETROLEUM HYDROCARBONS (OA-2) BY GC/FID

Batch 126864 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK-126864

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Diesel	5.00		**ND**						02/08/2017
Kerosene	5.00		**ND**						02/08/2017
Mineral Spirits	5.00		**ND**						02/08/2017
Motor Oil	5.00		**ND**						02/08/2017
Surr: n-Tetracontane			**0.65**	0.6700		97.0	33.4	140	02/08/2017

Batch 126864 **SampType:** LCS Units **mg/Kg**

SampID: LCS-126864

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Diesel	5.00		**15.9**	16.70	0	95.0	35.2	131	02/08/2017
Surr: n-Tetracontane			**0.61**	0.6700		91.1	33.4	140	02/08/2017

Batch 126864 **SampType:** MS Units **mg/Kg-dry**

SampID: 17020459-003AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Diesel	175		**1010**	117.2	844.1	138.3	20.3	167	02/08/2017
Surr: n-Tetracontane		S	**8.38**	4.703		178.3	20	152	02/08/2017

Batch 126864 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **34**

SampID: 17020459-003AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Diesel	178	S	**1070**	119.0	844.1	193.9	1006	6.60	02/08/2017
Surr: n-Tetracontane		S	**8.70**	4.775		182.2			02/08/2017

Receiving Check List

http://www.teklabinc.com/

Client: PSC Industrial Outsourcing, LP
Work Order: 17020459
Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055
Report Date: 10-Feb-17

Carrier: Employee
Received By: AMD

Completed by: Laurie A. Langdon
On: 08-Feb-17

Reviewed by: Elizabeth A. Hurley
On: 08-Feb-17

Pages to follow: Chain of custody 1 Extra pages included 0

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C	1.82
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice	☐
Chain of custody present?	Yes ☑	No ☐			
Chain of custody signed when relinquished and received?	Yes ☑	No ☐			
Chain of custody agrees with sample labels?	Yes ☑	No ☐			
Samples in proper container/bottle?	Yes ☑	No ☐			
Sample containers intact?	Yes ☑	No ☐			
Sufficient sample volume for indicated test?	Yes ☑	No ☐			
All samples received within holding time?	Yes ☑	No ☐			
Reported field parameters measured:	Field ☐	Lab ☐	NA ☑		
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐			

When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.

Water – at least one vial per sample has zero headspace?	Yes ☐	No ☐	No VOA vials ☑
Water - TOX containers have zero headspace?	Yes ☐	No ☐	No TOX containers ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	NA ☑
NPDES/CWA TCN interferences checked/treated in the field?	Yes ☐	No ☐	NA ☑

Any No responses must be detailed below or on the COC.

Chain of Custody Record

210 West Sand Bank Road | Columbia, IL 62236 | P (618) 281-7173 | F (618) 281-7020

COC Serial No. CMP-004

17020459

Project Name: Champaign Residual IRM Project Mgr.: Crutcher

Project Number: 624-1610-0001 / J0055

Sampler(s): M. Flora

Laboratory Name: Teklab, Inc.

Laboratory Location: Collinsville, IL

Temperature: 1.82 ice

Sample Number and (depth)	Date	Time	Matrix: Soil	Water	Air	Wipes	Other	Total Number of Containers	TPH (8015 OA2)	Comments	Lab ID
001 SW-RES-REM-W7 (10)	2/6/17	11:15	X					1	X	24-Hr TAT	17020459-001
002 SW-RES-REM-W6 (10)	2/6/17	11:30	X					1	X	24-Hr TAT	002
003 SW-RES-REM-W5 (10)	2/6/17	15:15	X					1	X	24-Hr TAT	003

ONE DAY TAT

Samples Iced: [X] Yes No [ ]

Preservatives

- [X] Volatile Organics (Soil - 5035)..... Sodium Bisulfate / Methanol
- [ ] Volatile Organics (Aqueous)..... Hydrochloric Acid (HCl)
- [ ] TPH (8015) ..... HCl and/or Sulfuric Acid
- [ ] Metals ..... Nitric Acid (HNO_3)
- [ ] Cyanide ..... Sodium Hydroxide (NaOH)
- [ ] Other (Specify) .....

Lab Directives:

Requested TAT: [X] 24-Hours [ ] 2-3 Days [X] STD [ ] Other

Fax and Mail Results to: mike.crutcher@pscnow.com / mike.flora@pscnow.com

Send Invoice to: Michael Crutcher (PSC)

QC Deliverable requested: [ ] Results + QC [X] EDD [ ] Other

Special Guidelines:

Reporting Limits: IL IAC 740/742 Tier 1

* Special:

Shipping:

Carrier / Airbill No.

Relinquished by:

Signature	Date	Time
Michael Flora	2/7/17	1700
Kathryn Bartel	2/8/17	8:02

Received by:

Signature	Date	Time
Kathryn Bartel	2/7/17	17:00
Omar DeLaCruz	2/8/17	802

* Shaded Areas to be Completed by Lab

Distribution: WHITE to Lab; YELLOW to PM; PINK to QA/QC; GREEN to Sampler.

OMD 2/8/17

February 14, 2017

Michael Crutcher
PSC Industrial Outsourcing, LP
210 West Sand Bank Road
Columbia, IL 62236-0230
TEL: (618) 281-7173
FAX: (618) 281-5120

RE: Champaign Soil Residual IRM 624-1610-001-J0055 **WorkOrder:** 17020460

Dear Michael Crutcher:

TEKLAB, INC received 13 samples on 2/8/2017 8:02:00 AM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Michael L. Austin
Project Manager
(618)344-1004 ex 16
MAustin@teklabinc.com

Client: PSC Industrial Outsourcing, LP
Work Order: 17020460
Client Project: Champaign Soil Residual IRM 624-1610-001-J0055
Report Date: 14-Feb-17

This reporting package includes the following:

Cover Letter	1
Report Contents	2
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Case Narrative	4
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Sample Summary	57
Dates Report	58
Quality Control Results	61
Receiving Check List	94
Chain of Custody	Appended

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Abbr Definition

CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilutions factors.
DNI	Did not ignite
DUP	Laboratory duplicate is an aliquot of a sample taken from the same container under laboratory conditions for independent processing and analysis independently of the original aliquot.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample, spiked with verified known amounts of analytes, is analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system. The acceptable recovery range is in the QC Package (provided upon request).
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MBLK	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	Method detection limit means the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero.
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions. The acceptable recovery range is listed in the QC Package (provided upon request).
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TIC	Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
TNTC	Too numerous to count (> 200 CFU)

Qualifiers

# -	Unknown hydrocarbon
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E -	Value above quantitation range
H -	Holding times exceeded
I -	Associated internal standard was outside method criteria
M -	Manual Integration used to determine area response
ND -	Not Detected at the Reporting Limit
R -	RPD outside accepted recovery limits
S -	Spike Recovery outside recovery limits
T -	TIC(Tentatively identified compound)
X -	Value exceeds Maximum Contaminant Level	

Case Narrative

http://www.teklabinc.com/

Client: PSC Industrial Outsourcing, LP
Work Order: 17020460
Client Project: Champaign Soil Residual IRM 624-1610-001-J0055
Report Date: 14-Feb-17

Cooler Receipt Temp: 1.82 °C

Locations and Accreditations

	Collinsville	Springfield	Kansas City	Collinsville Air
Address	5445 Horseshoe Lake Road	3920 Pintail Dr	8421 Nieman Road	5445 Horseshoe Lake Road
	Collinsville, IL 62234-7425	Springfield, IL 62711-9415	Lenexa, KS 66214	Collinsville, IL 62234-7425
Phone	(618) 344-1004	(217) 698-1004	(913) 541-1998	(618) 344-1004
Fax	(618) 344-1005	(217) 698-1005	(913) 541-1998	(618) 344-1005
Email	jhriley@teklabinc.com	KKlostermann@teklabinc.com	Ryoungstrom@teklabinc.com	EHurley@teklabinc.com

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2018	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2017	Collinsville
Louisiana	LDEQ	166493	NELAP	6/30/2017	Collinsville
Louisiana	LDEQ	166578	NELAP	6/30/2017	Collinsville
Texas	TCEQ	T104704515-12-1	NELAP	7/31/2017	Collinsville
Arkansas	ADEQ	88-0966		3/14/2017	Collinsville
Illinois	IDPH	17584		5/31/2017	Collinsville
Kentucky	KDEP	98006		12/31/2017	Collinsville
Kentucky	UST	0073		1/31/2018	Collinsville
Missouri	MDNR	00930		5/31/2017	Collinsville
Missouri	MDNR	930		1/31/2018	Collinsville
Oklahoma	ODEQ	9978		8/31/2017	Collinsville

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-001 **Client Sample ID:** CH-FS-01 (14-15)

Matrix: SOLID **Collection Date:** 02/06/2017 8:55

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**16.9**	%	1	02/08/2017 17:39	R228981
SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Acenaphthene	NELAP	0.204	S	**0.849**	mg/Kg-dry	25	02/09/2017 19:19	126904
Acenaphthylene	NELAP	0.204	SR	**1.01**	mg/Kg-dry	25	02/09/2017 19:19	126904
Anthracene	NELAP	0.204	S	**3.06**	mg/Kg-dry	25	02/09/2017 19:19	126904
Benzo(a)anthracene	NELAP	0.601	SR	**1.95**	mg/Kg-dry	25	02/09/2017 19:19	126904
Benzo(a)pyrene	NELAP	0.204	S	**1.48**	mg/Kg-dry	25	02/09/2017 19:19	126904
Benzo(b)fluoranthene	NELAP	0.204	S	**1.33**	mg/Kg-dry	25	02/09/2017 19:19	126904
Benzo(g,h,i)perylene	NELAP	0.204	SR	**0.525**	mg/Kg-dry	25	02/09/2017 19:19	126904
Benzo(k)fluoranthene	NELAP	0.204	S	**0.571**	mg/Kg-dry	25	02/09/2017 19:19	126904
Chrysene	NELAP	0.204	S	**1.54**	mg/Kg-dry	25	02/09/2017 19:19	126904
Dibenzo(a,h)anthracene	NELAP	0.204		**ND**	mg/Kg-dry	25	02/09/2017 19:19	126904
Fluoranthene	NELAP	0.204	S	**4.26**	mg/Kg-dry	25	02/09/2017 19:19	126904
Fluorene	NELAP	0.204	S	**4.01**	mg/Kg-dry	25	02/09/2017 19:19	126904
Indeno(1,2,3-cd)pyrene	NELAP	0.204	SR	**0.443**	mg/Kg-dry	25	02/09/2017 19:19	126904
Naphthalene	NELAP	0.204	SR	**38.5**	mg/Kg-dry	25	02/09/2017 19:19	126904
Phenanthrene	NELAP	0.204	SR	**9.41**	mg/Kg-dry	25	02/09/2017 19:19	126904
Pyrene	NELAP	0.204	S	**4.30**	mg/Kg-dry	25	02/09/2017 19:19	126904
Surr: 2-Fluorobiphenyl		8.85-90.5		**61.8**	%REC	25	02/09/2017 19:19	126904
Surr: Nitrobenzene-d5		5-102		**72.3**	%REC	25	02/09/2017 19:19	126904
Surr: p-Terphenyl-d14		18.4-103		**60.8**	%REC	25	02/09/2017 19:19	126904

MS/MSD, RPD QC limits are not applicable due to high sample/spike ratio.

Elevated reporting limit due to sample composition.

SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2,4-Trichlorobenzene	NELAP	1.20		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
1,2-Dichlorobenzene	NELAP	1.20		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
1,3-Dichlorobenzene	NELAP	1.20		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
1,4-Dichlorobenzene	NELAP	1.20		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
2,4,5-Trichlorophenol	NELAP	0.841		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
2,4,6-Trichlorophenol	NELAP	0.841		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
2,4-Dichlorophenol	NELAP	1.20		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
2,4-Dimethylphenol	NELAP	1.20		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
2,4-Dinitrophenol	NELAP	2.40		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
2,4-Dinitrotoluene	NELAP	0.841		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
2,6-Dinitrotoluene	NELAP	0.841		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
2-Chloronaphthalene	NELAP	0.841		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
2-Chlorophenol	NELAP	1.20		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
2-Methoxy-4-methylphenol		1.56		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
2-Methylnaphthalene	NELAP	8.41		**17.7**	mg/Kg-dry	10	02/09/2017 14:34	126878
2-Nitroaniline	NELAP	2.40		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
2-Nitrophenol	NELAP	0.841		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
3,3´-Dichlorobenzidine	NELAP	0.841		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
3-Nitroaniline	NELAP	2.40		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
4,6-Dinitro-2-methylphenol	NELAP	2.40		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
4-Bromophenyl phenyl ether	NELAP	0.841		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
4-Chloro-3-methylphenol	NELAP	1.20		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
4-Chloroaniline	NELAP	1.20		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-001 **Client Sample ID:** CH-FS-01 (14-15)

Matrix: SOLID **Collection Date:** 02/06/2017 8:55

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
4-Chlorophenyl phenyl ether	NELAP	0.841		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
4-Nitroaniline	NELAP	1.20		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
4-Nitrophenol	NELAP	0.841		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
Aniline	NELAP	1.20		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
Azobenzene		0.841		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
Benzoic acid	NELAP	3.61		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
Benzyl alcohol	NELAP	1.20		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
Bis(2-chloroethoxy)methane	NELAP	0.841		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
Bis(2-chloroethyl)ether	NELAP	1.20		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
Bis(2-chloroisopropyl)ether	NELAP	0.841		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
Bis(2-ethylhexyl)phthalate	NELAP	0.841		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
Butyl benzyl phthalate	NELAP	0.841		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
Carbazole	NELAP	1.20		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
Dibenzofuran	NELAP	0.841		**2.74**	mg/Kg-dry	1	02/09/2017 12:42	126878
Diethyl phthalate	NELAP	1.20		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
Dimethyl phthalate	NELAP	0.841		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
Di-n-butyl phthalate	NELAP	0.841		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
Di-n-octyl phthalate	NELAP	0.841		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
Hexachlorobenzene	NELAP	0.841		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
Hexachlorobutadiene	NELAP	1.20		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
Hexachlorocyclopentadiene	NELAP	0.841		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
Hexachloroethane	NELAP	1.20		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
Isophorone	NELAP	0.841		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
m,p-Cresol	NELAP	1.20		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
Nitrobenzene	NELAP	1.20		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
N-Nitrosodimethylamine	NELAP	1.20		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
N-Nitroso-di-n-propylamine	NELAP	1.20		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
N-Nitrosodiphenylamine	NELAP	1.20		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
o-Cresol	NELAP	1.20		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
Pentachlorophenol	NELAP	4.81		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
Phenol	NELAP	0.841		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
Pyridine	NELAP	1.20		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
1,2-Diphenylhydrazine		2.02		**ND**	mg/Kg-dry	1	02/09/2017 12:42	126878
Surr: 2,4,6-Tribromophenol		33-115		**98.0**	%REC	1	02/09/2017 12:42	126878
Surr: 2-Fluorobiphenyl		36.5-97.7		**89.1**	%REC	1	02/09/2017 12:42	126878
Surr: 2-Fluorophenol		39.4-92.8		**65.2**	%REC	1	02/09/2017 12:42	126878
Surr: Nitrobenzene-d5		34.7-90.1		**83.5**	%REC	1	02/09/2017 12:42	126878
Surr: Phenol-d5		42.8-106		**85.4**	%REC	1	02/09/2017 12:42	126878
Surr: p-Terphenyl-d14		43.7-124		**104.8**	%REC	1	02/09/2017 12:42	126878
Elevated reporting limit due to sample composition.								
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,1,2-Tetrachloroethane	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
1,1,1-Trichloroethane	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
1,1,2,2-Tetrachloroethane	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
1,1,2-Trichloro-1,2,2-trifluoroethane		3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
1,1,2-Trichloroethane	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
1,1-Dichloro-2-propanone		39000		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-001 **Client Sample ID:** CH-FS-01 (14-15)

Matrix: SOLID **Collection Date:** 02/06/2017 8:55

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1-Dichloroethane	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
1,1-Dichloroethene	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
1,1-Dichloropropene	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
1,2,3-Trichlorobenzene	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
1,2,3-Trichloropropane	NELAP	7810		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
1,2,3-Trimethylbenzene		3900		**17300**	µg/Kg-dry	500	02/08/2017 11:24	126894
1,2,4-Trichlorobenzene	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
1,2,4-Trimethylbenzene	NELAP	3900		**49800**	µg/Kg-dry	500	02/08/2017 11:24	126894
1,2-Dibromo-3-chloropropane	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
1,2-Dibromoethane	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
1,2-Dichlorobenzene	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
1,2-Dichloroethane	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
1,2-Dichloropropane	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
1,3,5-Trimethylbenzene	NELAP	3900		**16200**	µg/Kg-dry	500	02/08/2017 11:24	126894
1,3-Dichlorobenzene	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
1,3-Dichloropropane	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
1,4-Dichlorobenzene	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
1-Chlorobutane	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
2,2-Dichloropropane	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
2-Butanone	NELAP	156000		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
2-Chlorotoluene	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
2-Hexanone	NELAP	39000		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
2-Nitropropane	NELAP	39000		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
4-Chlorotoluene	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
4-Methyl-2-pentanone	NELAP	39000		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
Acetone	NELAP	39000		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
Acrolein	NELAP	78100		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
Acrylonitrile	NELAP	7810		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
Allyl chloride	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
Benzene	NELAP	781		**38600**	µg/Kg-dry	500	02/08/2017 11:24	126894
Bromobenzene	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
Bromochloromethane	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
Bromodichloromethane	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
Bromoform	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
Bromomethane	NELAP	7810		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
Carbon disulfide	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
Carbon tetrachloride	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
Chlorobenzene	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
Chloroethane	NELAP	7810		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
Chloroform	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
Chloromethane	NELAP	7810		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
cis-1,2-Dichloroethene	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
cis-1,3-Dichloropropene	NELAP	3120		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
Cyclohexanone		78100		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
Dibromochloromethane	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
Dibromomethane	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
Dichlorodifluoromethane	NELAP	7810		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-001 **Client Sample ID:** CH-FS-01 (14-15)

Matrix: SOLID **Collection Date:** 02/06/2017 8:55

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Ethyl ether	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
Ethyl methacrylate	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
Ethylbenzene	NELAP	3900		**11000**	µg/Kg-dry	500	02/08/2017 11:24	126894
Hexachlorobutadiene	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
Hexachloroethane	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
Iodomethane	NELAP	7810		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
Isopropylbenzene	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
m,p-Xylenes	NELAP	3900		**66200**	µg/Kg-dry	500	02/08/2017 11:24	126894
Methacrylonitrile	NELAP	39000		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
Methyl Methacrylate	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
Methyl tert-butyl ether	NELAP	1560		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
Methylacrylate	NELAP	7810		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
Methylene chloride	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
Naphthalene	NELAP	78100		**1070000**	µg/Kg-dry	5000	02/08/2017 14:06	126894
n-Butylbenzene	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
n-Heptane		39000		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
n-Hexane		15600		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
Nitrobenzene	NELAP	78100		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
n-Propylbenzene	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
o-Xylene	NELAP	3900		**28100**	µg/Kg-dry	500	02/08/2017 11:24	126894
Pentachloroethane	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
p-Isopropyltoluene	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
Propionitrile	NELAP	39000		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
sec-Butylbenzene	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
Styrene	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
tert-Butylbenzene	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
Tetrachloroethene	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
Tetrahydrofuran	NELAP	39000		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
Toluene	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
trans-1,2-Dichloroethene	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
trans-1,3-Dichloropropene	NELAP	3120		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
Trichloroethene	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
Trichlorofluoromethane	NELAP	3900		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
Vinyl acetate	NELAP	39000		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
Vinyl chloride	NELAP	1560		**ND**	µg/Kg-dry	500	02/08/2017 11:24	126894
Surr: 1,2-Dichloroethane-d4		72.2-131		**104.3**	%REC	500	02/08/2017 11:24	126894
Surr: 4-Bromofluorobenzene		82.1-116		**108.9**	%REC	500	02/08/2017 11:24	126894
Surr: Dibromofluoromethane		77.7-120		**98.5**	%REC	500	02/08/2017 11:24	126894
Surr: Toluene-d8		86-116		**100.6**	%REC	500	02/08/2017 11:24	126894

LCS and LCSD have analytes that recovered outside upper QC limits. The sample results are below reporting limit. Data is reportable per 2009 TNI Standard (Volume1, Module 4, section 1.7.4.2).

Elevated reporting limit due to high levels of target and/or non-target analytes.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-002 **Client Sample ID:** CH-FS-01 (17-18)

Matrix: SOLID **Collection Date:** 02/06/2017 9:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**16.3**	%	1	02/08/2017 17:40	R228981
SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Acenaphthene	NELAP	0.203		**0.233**	mg/Kg-dry	25	02/09/2017 20:56	126904
Acenaphthylene	NELAP	0.203		**0.334**	mg/Kg-dry	25	02/09/2017 20:56	126904
Anthracene	NELAP	0.203		**0.344**	mg/Kg-dry	25	02/09/2017 20:56	126904
Benzo(a)anthracene	NELAP	0.597		**ND**	mg/Kg-dry	25	02/09/2017 20:56	126904
Benzo(a)pyrene	NELAP	0.203		**0.370**	mg/Kg-dry	25	02/09/2017 20:56	126904
Benzo(b)fluoranthene	NELAP	0.203		**0.289**	mg/Kg-dry	25	02/09/2017 20:56	126904
Benzo(g,h,i)perylene	NELAP	0.203		**ND**	mg/Kg-dry	25	02/09/2017 20:56	126904
Benzo(k)fluoranthene	NELAP	0.203		**ND**	mg/Kg-dry	25	02/09/2017 20:56	126904
Chrysene	NELAP	0.203		**0.378**	mg/Kg-dry	25	02/09/2017 20:56	126904
Dibenzo(a,h)anthracene	NELAP	0.203		**ND**	mg/Kg-dry	25	02/09/2017 20:56	126904
Fluoranthene	NELAP	0.203		**0.826**	mg/Kg-dry	25	02/09/2017 20:56	126904
Fluorene	NELAP	0.203		**0.852**	mg/Kg-dry	25	02/09/2017 20:56	126904
Indeno(1,2,3-cd)pyrene	NELAP	0.203		**ND**	mg/Kg-dry	25	02/09/2017 20:56	126904
Naphthalene	NELAP	0.203		**4.70**	mg/Kg-dry	25	02/09/2017 20:56	126904
Phenanthrene	NELAP	0.203		**0.985**	mg/Kg-dry	25	02/09/2017 20:56	126904
Pyrene	NELAP	0.203		**1.00**	mg/Kg-dry	25	02/09/2017 20:56	126904
Surr: 2-Fluorobiphenyl		8.85-90.5		**61.1**	%REC	25	02/09/2017 20:56	126904
Surr: Nitrobenzene-d5		5-102		**73.2**	%REC	25	02/09/2017 20:56	126904
Surr: p-Terphenyl-d14		18.4-103		**56.9**	%REC	25	02/09/2017 20:56	126904
Elevated reporting limit due to sample composition.								
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2,4-Trichlorobenzene	NELAP	1.19		**ND**	mg/Kg-dry	1	02/09/2017 14:07	126878
1,2-Dichlorobenzene	NELAP	1.19		**ND**	mg/Kg-dry	1	02/09/2017 14:07	126878
1,3-Dichlorobenzene	NELAP	1.19		**ND**	mg/Kg-dry	1	02/09/2017 14:07	126878
1,4-Dichlorobenzene	NELAP	1.19		**ND**	mg/Kg-dry	1	02/09/2017 14:07	126878
2,4,5-Trichlorophenol	NELAP	0.836		**ND**	mg/Kg-dry	1	02/09/2017 14:07	126878
2,4,6-Trichlorophenol	NELAP	0.836		**ND**	mg/Kg-dry	1	02/09/2017 14:07	126878
2,4-Dichlorophenol	NELAP	1.19		**ND**	mg/Kg-dry	1	02/09/2017 14:07	126878
2,4-Dimethylphenol	NELAP	1.19		**ND**	mg/Kg-dry	1	02/09/2017 14:07	126878
2,4-Dinitrophenol	NELAP	2.39		**ND**	mg/Kg-dry	1	02/09/2017 14:07	126878
2,4-Dinitrotoluene	NELAP	0.836		**ND**	mg/Kg-dry	1	02/09/2017 14:07	126878
2,6-Dinitrotoluene	NELAP	0.836		**ND**	mg/Kg-dry	1	02/09/2017 14:07	126878
2-Chloronaphthalene	NELAP	0.836		**ND**	mg/Kg-dry	1	02/09/2017 14:07	126878
2-Chlorophenol	NELAP	1.19		**ND**	mg/Kg-dry	1	02/09/2017 14:07	126878
2-Methoxy-4-methylphenol		1.55		**ND**	mg/Kg-dry	1	02/09/2017 14:07	126878
2-Methylnaphthalene	NELAP	0.836		**1.84**	mg/Kg-dry	1	02/09/2017 14:07	126878
2-Nitroaniline	NELAP	2.39		**ND**	mg/Kg-dry	1	02/09/2017 14:07	126878
2-Nitrophenol	NELAP	0.836		**ND**	mg/Kg-dry	1	02/09/2017 14:07	126878
3,3´-Dichlorobenzidine	NELAP	0.836		**ND**	mg/Kg-dry	1	02/09/2017 14:07	126878
3-Nitroaniline	NELAP	2.39		**ND**	mg/Kg-dry	1	02/09/2017 14:07	126878
4,6-Dinitro-2-methylphenol	NELAP	2.39		**ND**	mg/Kg-dry	1	02/09/2017 14:07	126878
4-Bromophenyl phenyl ether	NELAP	0.836		**ND**	mg/Kg-dry	1	02/09/2017 14:07	126878
4-Chloro-3-methylphenol	NELAP	1.19		**ND**	mg/Kg-dry	1	02/09/2017 14:07	126878
4-Chloroaniline	NELAP	1.19		**ND**	mg/Kg-dry	1	02/09/2017 14:07	126878
4-Chlorophenyl phenyl ether	NELAP	0.836		**ND**	mg/Kg-dry	1	02/09/2017 14:07	126878

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-002 **Client Sample ID:** CH-FS-01 (17-18)

Matrix: SOLID **Collection Date:** 02/06/2017 9:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
4-Nitroaniline	NELAP	1.19		ND	mg/Kg-dry	1	02/09/2017 14:07	126878
4-Nitrophenol	NELAP	0.836		ND	mg/Kg-dry	1	02/09/2017 14:07	126878
Aniline	NELAP	1.19		ND	mg/Kg-dry	1	02/09/2017 14:07	126878
Azobenzene		0.836		ND	mg/Kg-dry	1	02/09/2017 14:07	126878
Benzoic acid	NELAP	3.58		ND	mg/Kg-dry	1	02/09/2017 14:07	126878
Benzyl alcohol	NELAP	1.19		ND	mg/Kg-dry	1	02/09/2017 14:07	126878
Bis(2-chloroethoxy)methane	NELAP	0.836		ND	mg/Kg-dry	1	02/09/2017 14:07	126878
Bis(2-chloroethyl)ether	NELAP	1.19		ND	mg/Kg-dry	1	02/09/2017 14:07	126878
Bis(2-chloroisopropyl)ether	NELAP	0.836		ND	mg/Kg-dry	1	02/09/2017 14:07	126878
Bis(2-ethylhexyl)phthalate	NELAP	0.836		ND	mg/Kg-dry	1	02/09/2017 14:07	126878
Butyl benzyl phthalate	NELAP	0.836		ND	mg/Kg-dry	1	02/09/2017 14:07	126878
Carbazole	NELAP	1.19		ND	mg/Kg-dry	1	02/09/2017 14:07	126878
Dibenzofuran	NELAP	0.836		ND	mg/Kg-dry	1	02/09/2017 14:07	126878
Diethyl phthalate	NELAP	1.19		ND	mg/Kg-dry	1	02/09/2017 14:07	126878
Dimethyl phthalate	NELAP	0.836		ND	mg/Kg-dry	1	02/09/2017 14:07	126878
Di-n-butyl phthalate	NELAP	0.836		ND	mg/Kg-dry	1	02/09/2017 14:07	126878
Di-n-octyl phthalate	NELAP	0.836		ND	mg/Kg-dry	1	02/09/2017 14:07	126878
Hexachlorobenzene	NELAP	0.836		ND	mg/Kg-dry	1	02/09/2017 14:07	126878
Hexachlorobutadiene	NELAP	1.19		ND	mg/Kg-dry	1	02/09/2017 14:07	126878
Hexachlorocyclopentadiene	NELAP	0.836		ND	mg/Kg-dry	1	02/09/2017 14:07	126878
Hexachloroethane	NELAP	1.19		ND	mg/Kg-dry	1	02/09/2017 14:07	126878
Isophorone	NELAP	0.836		ND	mg/Kg-dry	1	02/09/2017 14:07	126878
m,p-Cresol	NELAP	1.19		ND	mg/Kg-dry	1	02/09/2017 14:07	126878
Nitrobenzene	NELAP	1.19		ND	mg/Kg-dry	1	02/09/2017 14:07	126878
N-Nitrosodimethylamine	NELAP	1.19		ND	mg/Kg-dry	1	02/09/2017 14:07	126878
N-Nitroso-di-n-propylamine	NELAP	1.19		ND	mg/Kg-dry	1	02/09/2017 14:07	126878
N-Nitrosodiphenylamine	NELAP	1.19		ND	mg/Kg-dry	1	02/09/2017 14:07	126878
o-Cresol	NELAP	1.19		ND	mg/Kg-dry	1	02/09/2017 14:07	126878
Pentachlorophenol	NELAP	4.78		ND	mg/Kg-dry	1	02/09/2017 14:07	126878
Phenol	NELAP	0.836		ND	mg/Kg-dry	1	02/09/2017 14:07	126878
Pyridine	NELAP	1.19		ND	mg/Kg-dry	1	02/09/2017 14:07	126878
1,2-Diphenylhydrazine		2.01		ND	mg/Kg-dry	1	02/09/2017 14:07	126878
Surr: 2,4,6-Tribromophenol		33-115		69.2	%REC	1	02/09/2017 14:07	126878
Surr: 2-Fluorobiphenyl		36.5-97.7		70.5	%REC	1	02/09/2017 14:07	126878
Surr: 2-Fluorophenol		39.4-92.8		72.7	%REC	1	02/09/2017 14:07	126878
Surr: Nitrobenzene-d5		34.7-90.1		72.1	%REC	1	02/09/2017 14:07	126878
Surr: Phenol-d5		42.8-106		79.1	%REC	1	02/09/2017 14:07	126878
Surr: p-Terphenyl-d14		43.7-124		72.6	%REC	1	02/09/2017 14:07	126878
Elevated reporting limit due to sample composition.								
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,1,2-Tetrachloroethane	NELAP	223		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
1,1,1-Trichloroethane	NELAP	223		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
1,1,2,2-Tetrachloroethane	NELAP	223		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
1,1,2-Trichloro-1,2,2-trifluoroethane		223		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
1,1,2-Trichloroethane	NELAP	223		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
1,1-Dichloro-2-propanone		2230		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
1,1-Dichloroethane	NELAP	223		ND	µg/Kg-dry	25	02/08/2017 11:52	126894

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-002 **Client Sample ID:** CH-FS-01 (17-18)

Matrix: SOLID **Collection Date:** 02/06/2017 9:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1-Dichloroethene	NELAP	223		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
1,1-Dichloropropene	NELAP	223		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
1,2,3-Trichlorobenzene	NELAP	223		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
1,2,3-Trichloropropane	NELAP	445		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
1,2,3-Trimethylbenzene		223		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
1,2,4-Trichlorobenzene	NELAP	223		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
1,2,4-Trimethylbenzene	NELAP	223		525	µg/Kg-dry	25	02/08/2017 11:52	126894
1,2-Dibromo-3-chloropropane	NELAP	223		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
1,2-Dibromoethane	NELAP	223		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
1,2-Dichlorobenzene	NELAP	223		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
1,2-Dichloroethane	NELAP	223		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
1,2-Dichloropropane	NELAP	223		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
1,3,5-Trimethylbenzene	NELAP	223		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
1,3-Dichlorobenzene	NELAP	223		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
1,3-Dichloropropane	NELAP	223		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
1,4-Dichlorobenzene	NELAP	223		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
1-Chlorobutane	NELAP	223		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
2,2-Dichloropropane	NELAP	223		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
2-Butanone	NELAP	8910		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
2-Chlorotoluene	NELAP	223		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
2-Hexanone	NELAP	2230		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
2-Nitropropane	NELAP	2230		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
4-Chlorotoluene	NELAP	223		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
4-Methyl-2-pentanone	NELAP	2230		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
Acetone	NELAP	2230		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
Acrolein	NELAP	4450		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
Acrylonitrile	NELAP	445		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
Allyl chloride	NELAP	223		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
Benzene	NELAP	44.5		220	µg/Kg-dry	25	02/08/2017 11:52	126894
Bromobenzene	NELAP	223		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
Bromochloromethane	NELAP	223		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
Bromodichloromethane	NELAP	223		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
Bromoform	NELAP	223		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
Bromomethane	NELAP	445		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
Carbon disulfide	NELAP	223		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
Carbon tetrachloride	NELAP	223		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
Chlorobenzene	NELAP	223		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
Chloroethane	NELAP	445		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
Chloroform	NELAP	223		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
Chloromethane	NELAP	445		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
cis-1,2-Dichloroethene	NELAP	223		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
cis-1,3-Dichloropropene	NELAP	178		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
Cyclohexanone		4450		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
Dibromochloromethane	NELAP	223		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
Dibromomethane	NELAP	223		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
Dichlorodifluoromethane	NELAP	445		ND	µg/Kg-dry	25	02/08/2017 11:52	126894
Ethyl ether	NELAP	223		ND	µg/Kg-dry	25	02/08/2017 11:52	126894

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-002 **Client Sample ID:** CH-FS-01 (17-18)

Matrix: SOLID **Collection Date:** 02/06/2017 9:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Ethyl methacrylate	NELAP	223		**ND**	µg/Kg-dry	25	02/08/2017 11:52	126894
Ethylbenzene	NELAP	223		**ND**	µg/Kg-dry	25	02/08/2017 11:52	126894
Hexachlorobutadiene	NELAP	223		**ND**	µg/Kg-dry	25	02/08/2017 11:52	126894
Hexachloroethane	NELAP	223		**ND**	µg/Kg-dry	25	02/08/2017 11:52	126894
Iodomethane	NELAP	445		**ND**	µg/Kg-dry	25	02/08/2017 11:52	126894
Isopropylbenzene	NELAP	223		**ND**	µg/Kg-dry	25	02/08/2017 11:52	126894
m,p-Xylenes	NELAP	223		**355**	µg/Kg-dry	25	02/08/2017 11:52	126894
Methacrylonitrile	NELAP	2230		**ND**	µg/Kg-dry	25	02/08/2017 11:52	126894
Methyl Methacrylate	NELAP	223		**ND**	µg/Kg-dry	25	02/08/2017 11:52	126894
Methyl tert-butyl ether	NELAP	89.1		**ND**	µg/Kg-dry	25	02/08/2017 11:52	126894
Methylacrylate	NELAP	445		**ND**	µg/Kg-dry	25	02/08/2017 11:52	126894
Methylene chloride	NELAP	223		**ND**	µg/Kg-dry	25	02/08/2017 11:52	126894
Naphthalene	NELAP	1780		**12500**	µg/Kg-dry	100	02/08/2017 14:32	126894
n-Butylbenzene	NELAP	223		**ND**	µg/Kg-dry	25	02/08/2017 11:52	126894
n-Heptane		2230		**ND**	µg/Kg-dry	25	02/08/2017 11:52	126894
n-Hexane		891		**ND**	µg/Kg-dry	25	02/08/2017 11:52	126894
Nitrobenzene	NELAP	4450		**ND**	µg/Kg-dry	25	02/08/2017 11:52	126894
n-Propylbenzene	NELAP	223		**ND**	µg/Kg-dry	25	02/08/2017 11:52	126894
o-Xylene	NELAP	223		**ND**	µg/Kg-dry	25	02/08/2017 11:52	126894
Pentachloroethane	NELAP	223		**ND**	µg/Kg-dry	25	02/08/2017 11:52	126894
p-Isopropyltoluene	NELAP	223		**ND**	µg/Kg-dry	25	02/08/2017 11:52	126894
Propionitrile	NELAP	2230		**ND**	µg/Kg-dry	25	02/08/2017 11:52	126894
sec-Butylbenzene	NELAP	223		**ND**	µg/Kg-dry	25	02/08/2017 11:52	126894
Styrene	NELAP	223		**ND**	µg/Kg-dry	25	02/08/2017 11:52	126894
tert-Butylbenzene	NELAP	223		**ND**	µg/Kg-dry	25	02/08/2017 11:52	126894
Tetrachloroethene	NELAP	223		**ND**	µg/Kg-dry	25	02/08/2017 11:52	126894
Tetrahydrofuran	NELAP	2230		**ND**	µg/Kg-dry	25	02/08/2017 11:52	126894
Toluene	NELAP	223		**ND**	µg/Kg-dry	25	02/08/2017 11:52	126894
trans-1,2-Dichloroethene	NELAP	223		**ND**	µg/Kg-dry	25	02/08/2017 11:52	126894
trans-1,3-Dichloropropene	NELAP	178		**ND**	µg/Kg-dry	25	02/08/2017 11:52	126894
Trichloroethene	NELAP	223		**ND**	µg/Kg-dry	25	02/08/2017 11:52	126894
Trichlorofluoromethane	NELAP	223		**ND**	µg/Kg-dry	25	02/08/2017 11:52	126894
Vinyl acetate	NELAP	2230		**ND**	µg/Kg-dry	25	02/08/2017 11:52	126894
Vinyl chloride	NELAP	89.1		**ND**	µg/Kg-dry	25	02/08/2017 11:52	126894
Surr: 1,2-Dichloroethane-d4		72.2-131		**106.3**	%REC	25	02/08/2017 11:52	126894
Surr: 4-Bromofluorobenzene		82.1-116		**102.5**	%REC	25	02/08/2017 11:52	126894
Surr: Dibromofluoromethane		77.7-120		**98.8**	%REC	25	02/08/2017 11:52	126894
Surr: Toluene-d8		86-116		**101.7**	%REC	25	02/08/2017 11:52	126894

LCS and LCSD have analytes that recovered outside upper QC limits. The sample results are below reporting limit. Data is reportable per 2009 TNI Standard (Volume1, Module 4, section 1.7.4.2).

Elevated reporting limit due to high levels of target and/or non-target analytes.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-003 **Client Sample ID:** CH-FS-02 (8-9)

Matrix: SOLID **Collection Date:** 02/06/2017 10:15

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**18.0**	%	1	02/08/2017 17:40	R228981
SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Acenaphthene	NELAP	0.618		**49.7**	mg/Kg-dry	25	02/09/2017 21:29	126904
Acenaphthylene	NELAP	0.618		**113**	mg/Kg-dry	25	02/09/2017 21:29	126904
Anthracene	NELAP	0.618		**90.6**	mg/Kg-dry	25	02/09/2017 21:29	126904
Benzo(a)anthracene	NELAP	1.82		**53.6**	mg/Kg-dry	25	02/09/2017 21:29	126904
Benzo(a)pyrene	NELAP	0.618		**37.6**	mg/Kg-dry	25	02/09/2017 21:29	126904
Benzo(b)fluoranthene	NELAP	0.618		**38.6**	mg/Kg-dry	25	02/09/2017 21:29	126904
Benzo(g,h,i)perylene	NELAP	0.618		**6.79**	mg/Kg-dry	25	02/09/2017 21:29	126904
Benzo(k)fluoranthene	NELAP	0.618		**13.1**	mg/Kg-dry	25	02/09/2017 21:29	126904
Chrysene	NELAP	0.618		**45.1**	mg/Kg-dry	25	02/09/2017 21:29	126904
Dibenzo(a,h)anthracene	NELAP	0.618		**3.04**	mg/Kg-dry	25	02/09/2017 21:29	126904
Fluoranthene	NELAP	0.618		**122**	mg/Kg-dry	25	02/09/2017 21:29	126904
Fluorene	NELAP	0.618		**196**	mg/Kg-dry	25	02/09/2017 21:29	126904
Indeno(1,2,3-cd)pyrene	NELAP	0.618		**8.05**	mg/Kg-dry	25	02/09/2017 21:29	126904
Naphthalene	NELAP	2.47		**341**	mg/Kg-dry	100	02/10/2017 13:39	126904
Phenanthrene	NELAP	0.618		**270**	mg/Kg-dry	25	02/09/2017 21:29	126904
Pyrene	NELAP	0.618		**90.0**	mg/Kg-dry	25	02/09/2017 21:29	126904
Surr: 2-Fluorobiphenyl		8.85-90.5		**56.4**	%REC	25	02/09/2017 21:29	126904
Surr: Nitrobenzene-d5		5-102		**62.8**	%REC	25	02/09/2017 21:29	126904
Surr: p-Terphenyl-d14		18.4-103		**57.3**	%REC	25	02/09/2017 21:29	126904
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2,4-Trichlorobenzene	NELAP	36.4		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
1,2-Dichlorobenzene	NELAP	36.4		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
1,3-Dichlorobenzene	NELAP	36.4		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
1,4-Dichlorobenzene	NELAP	36.4		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
2,4,5-Trichlorophenol	NELAP	25.5		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
2,4,6-Trichlorophenol	NELAP	25.5		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
2,4-Dichlorophenol	NELAP	36.4		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
2,4-Dimethylphenol	NELAP	36.4		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
2,4-Dinitrophenol	NELAP	72.8		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
2,4-Dinitrotoluene	NELAP	25.5		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
2,6-Dinitrotoluene	NELAP	25.5		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
2-Chloronaphthalene	NELAP	25.5		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
2-Chlorophenol	NELAP	36.4		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
2-Methoxy-4-methylphenol		47.3		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
2-Methylnaphthalene	NELAP	25.5		**196**	mg/Kg-dry	10	02/09/2017 11:58	126878
2-Nitroaniline	NELAP	72.8		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
2-Nitrophenol	NELAP	25.5		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
3,3´-Dichlorobenzidine	NELAP	25.5		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
3-Nitroaniline	NELAP	72.8		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
4,6-Dinitro-2-methylphenol	NELAP	72.8		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
4-Bromophenyl phenyl ether	NELAP	25.5		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
4-Chloro-3-methylphenol	NELAP	36.4		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
4-Chloroaniline	NELAP	36.4		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
4-Chlorophenyl phenyl ether	NELAP	25.5		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
4-Nitroaniline	NELAP	36.4		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-003 **Client Sample ID:** CH-FS-02 (8-9)

Matrix: SOLID **Collection Date:** 02/06/2017 10:15

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
4-Nitrophenol	NELAP	25.5		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
Aniline	NELAP	36.4		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
Azobenzene		25.5		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
Benzoic acid	NELAP	109		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
Benzyl alcohol	NELAP	36.4		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
Bis(2-chloroethoxy)methane	NELAP	25.5		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
Bis(2-chloroethyl)ether	NELAP	36.4		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
Bis(2-chloroisopropyl)ether	NELAP	25.5		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
Bis(2-ethylhexyl)phthalate	NELAP	25.5		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
Butyl benzyl phthalate	NELAP	25.5		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
Carbazole	NELAP	36.4		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
Dibenzofuran	NELAP	25.5		**119**	mg/Kg-dry	10	02/09/2017 11:58	126878
Diethyl phthalate	NELAP	36.4		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
Dimethyl phthalate	NELAP	25.5		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
Di-n-butyl phthalate	NELAP	25.5		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
Di-n-octyl phthalate	NELAP	25.5		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
Hexachlorobenzene	NELAP	25.5		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
Hexachlorobutadiene	NELAP	36.4		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
Hexachlorocyclopentadiene	NELAP	25.5		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
Hexachloroethane	NELAP	36.4		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
Isophorone	NELAP	25.5		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
m,p-Cresol	NELAP	36.4		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
Nitrobenzene	NELAP	36.4		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
N-Nitrosodimethylamine	NELAP	36.4		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
N-Nitroso-di-n-propylamine	NELAP	36.4		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
N-Nitrosodiphenylamine	NELAP	36.4		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
o-Cresol	NELAP	36.4		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
Pentachlorophenol	NELAP	146		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
Phenol	NELAP	25.5		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
Pyridine	NELAP	36.4		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
1,2-Diphenylhydrazine		61.1		**ND**	mg/Kg-dry	10	02/09/2017 11:58	126878
Surr: 2,4,6-Tribromophenol		33-115		**98.6**	%REC	10	02/09/2017 11:58	126878
Surr: 2-Fluorobiphenyl		36.5-97.7		**91.4**	%REC	10	02/09/2017 11:58	126878
Surr: 2-Fluorophenol		39.4-92.8		**57.9**	%REC	10	02/09/2017 11:58	126878
Surr: Nitrobenzene-d5		34.7-90.1		**83.4**	%REC	10	02/09/2017 11:58	126878
Surr: Phenol-d5		42.8-106		**75.0**	%REC	10	02/09/2017 11:58	126878
Surr: p-Terphenyl-d14		43.7-124		**107.8**	%REC	10	02/09/2017 11:58	126878
Elevated reporting limit due to sample composition.								
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,1,2-Tetrachloroethane	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
1,1,1-Trichloroethane	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
1,1,2,2-Tetrachloroethane	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
1,1,2-Trichloro-1,2,2-trifluoroethane		48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
1,1,2-Trichloroethane	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
1,1-Dichloro-2-propanone		486000		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
1,1-Dichloroethane	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
1,1-Dichloroethene	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-003 **Client Sample ID:** CH-FS-02 (8-9)

Matrix: SOLID **Collection Date:** 02/06/2017 10:15

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1-Dichloropropene	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
1,2,3-Trichlorobenzene	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
1,2,3-Trichloropropane	NELAP	97300		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
1,2,3-Trimethylbenzene		48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
1,2,4-Trichlorobenzene	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
1,2,4-Trimethylbenzene	NELAP	48600		**91100**	µg/Kg-dry	5000	02/08/2017 12:18	126894
1,2-Dibromo-3-chloropropane	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
1,2-Dibromoethane	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
1,2-Dichlorobenzene	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
1,2-Dichloroethane	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
1,2-Dichloropropane	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
1,3,5-Trimethylbenzene	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
1,3-Dichlorobenzene	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
1,3-Dichloropropane	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
1,4-Dichlorobenzene	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
1-Chlorobutane	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
2,2-Dichloropropane	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
2-Butanone	NELAP	1950000		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
2-Chlorotoluene	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
2-Hexanone	NELAP	486000		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
2-Nitropropane	NELAP	486000		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
4-Chlorotoluene	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
4-Methyl-2-pentanone	NELAP	486000		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
Acetone	NELAP	486000		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
Acrolein	NELAP	973000		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
Acrylonitrile	NELAP	97300		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
Allyl chloride	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
Benzene	NELAP	9730		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
Bromobenzene	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
Bromochloromethane	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
Bromodichloromethane	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
Bromoform	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
Bromomethane	NELAP	97300		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
Carbon disulfide	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
Carbon tetrachloride	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
Chlorobenzene	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
Chloroethane	NELAP	97300		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
Chloroform	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
Chloromethane	NELAP	97300		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
cis-1,2-Dichloroethene	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
cis-1,3-Dichloropropene	NELAP	38900		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
Cyclohexanone		973000		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
Dibromochloromethane	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
Dibromomethane	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
Dichlorodifluoromethane	NELAP	97300		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
Ethyl ether	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
Ethyl methacrylate	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-003 **Client Sample ID:** CH-FS-02 (8-9)

Matrix: SOLID **Collection Date:** 02/06/2017 10:15

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Ethylbenzene	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
Hexachlorobutadiene	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
Hexachloroethane	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
Iodomethane	NELAP	97300		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
Isopropylbenzene	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
m,p-Xylenes	NELAP	48600		**98100**	µg/Kg-dry	5000	02/08/2017 12:18	126894
Methacrylonitrile	NELAP	486000		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
Methyl Methacrylate	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
Methyl tert-butyl ether	NELAP	19500		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
Methylacrylate	NELAP	97300		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
Methylene chloride	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
Naphthalene	NELAP	97300		**1320000**	µg/Kg-dry	5000	02/08/2017 12:18	126894
n-Butylbenzene	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
n-Heptane		486000		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
n-Hexane		195000		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
Nitrobenzene	NELAP	973000		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
n-Propylbenzene	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
o-Xylene	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
Pentachloroethane	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
p-Isopropyltoluene	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
Propionitrile	NELAP	486000		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
sec-Butylbenzene	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
Styrene	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
tert-Butylbenzene	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
Tetrachloroethene	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
Tetrahydrofuran	NELAP	486000		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
Toluene	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
trans-1,2-Dichloroethene	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
trans-1,3-Dichloropropene	NELAP	38900		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
Trichloroethene	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
Trichlorofluoromethane	NELAP	48600		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
Vinyl acetate	NELAP	486000		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
Vinyl chloride	NELAP	19500		**ND**	µg/Kg-dry	5000	02/08/2017 12:18	126894
Surr: 1,2-Dichloroethane-d4		72.2-131		**108.5**	%REC	5000	02/08/2017 12:18	126894
Surr: 4-Bromofluorobenzene		82.1-116		**104.0**	%REC	5000	02/08/2017 12:18	126894
Surr: Dibromofluoromethane		77.7-120		**102.6**	%REC	5000	02/08/2017 12:18	126894
Surr: Toluene-d8		86-116		**96.6**	%REC	5000	02/08/2017 12:18	126894

LCS and LCSD have analytes that recovered outside upper QC limits. The sample results are below reporting limit. Data is reportable per 2009 TNI Standard (Volume1, Module 4, section 1.7.4.2).

Elevated reporting limit due to high levels of target and/or non-target analytes.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-004 **Client Sample ID:** CH-FS-02 (17-18)

Matrix: SOLID **Collection Date:** 02/06/2017 10:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**13.4**	%	1	02/08/2017 17:41	R228981
SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Acenaphthene	NELAP	0.575		**13.9**	mg/Kg-dry	25	02/09/2017 22:01	126904
Acenaphthylene	NELAP	0.575		**57.0**	mg/Kg-dry	25	02/09/2017 22:01	126904
Anthracene	NELAP	0.575		**47.7**	mg/Kg-dry	25	02/09/2017 22:01	126904
Benzo(a)anthracene	NELAP	1.69		**30.0**	mg/Kg-dry	25	02/09/2017 22:01	126904
Benzo(a)pyrene	NELAP	0.575		**21.6**	mg/Kg-dry	25	02/09/2017 22:01	126904
Benzo(b)fluoranthene	NELAP	0.575		**21.8**	mg/Kg-dry	25	02/09/2017 22:01	126904
Benzo(g,h,i)perylene	NELAP	0.575		**3.70**	mg/Kg-dry	25	02/09/2017 22:01	126904
Benzo(k)fluoranthene	NELAP	0.575		**8.60**	mg/Kg-dry	25	02/09/2017 22:01	126904
Chrysene	NELAP	0.575		**25.5**	mg/Kg-dry	25	02/09/2017 22:01	126904
Dibenzo(a,h)anthracene	NELAP	0.575		**1.69**	mg/Kg-dry	25	02/09/2017 22:01	126904
Fluoranthene	NELAP	0.575		**69.0**	mg/Kg-dry	25	02/09/2017 22:01	126904
Fluorene	NELAP	0.575		**79.4**	mg/Kg-dry	25	02/09/2017 22:01	126904
Indeno(1,2,3-cd)pyrene	NELAP	0.575		**4.59**	mg/Kg-dry	25	02/09/2017 22:01	126904
Naphthalene	NELAP	0.575		**219**	mg/Kg-dry	25	02/09/2017 22:01	126904
Phenanthrene	NELAP	0.575		**134**	mg/Kg-dry	25	02/09/2017 22:01	126904
Pyrene	NELAP	0.575		**48.3**	mg/Kg-dry	25	02/09/2017 22:01	126904
Surr: 2-Fluorobiphenyl		8.85-90.5		**52.1**	%REC	25	02/09/2017 22:01	126904
Surr: Nitrobenzene-d5		5-102		**47.2**	%REC	25	02/09/2017 22:01	126904
Surr: p-Terphenyl-d14		18.4-103		**54.8**	%REC	25	02/09/2017 22:01	126904
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2,4-Trichlorobenzene	NELAP	33.8		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
1,2-Dichlorobenzene	NELAP	33.8		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
1,3-Dichlorobenzene	NELAP	33.8		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
1,4-Dichlorobenzene	NELAP	33.8		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
2,4,5-Trichlorophenol	NELAP	23.7		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
2,4,6-Trichlorophenol	NELAP	23.7		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
2,4-Dichlorophenol	NELAP	33.8		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
2,4-Dimethylphenol	NELAP	33.8		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
2,4-Dinitrophenol	NELAP	67.7		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
2,4-Dinitrotoluene	NELAP	23.7		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
2,6-Dinitrotoluene	NELAP	23.7		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
2-Chloronaphthalene	NELAP	23.7		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
2-Chlorophenol	NELAP	33.8		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
2-Methoxy-4-methylphenol		44.0		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
2-Methylnaphthalene	NELAP	23.7		**118**	mg/Kg-dry	10	02/09/2017 13:10	126878
2-Nitroaniline	NELAP	67.7		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
2-Nitrophenol	NELAP	23.7		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
3,3´-Dichlorobenzidine	NELAP	23.7		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
3-Nitroaniline	NELAP	67.7		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
4,6-Dinitro-2-methylphenol	NELAP	67.7		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
4-Bromophenyl phenyl ether	NELAP	23.7		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
4-Chloro-3-methylphenol	NELAP	33.8		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
4-Chloroaniline	NELAP	33.8		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
4-Chlorophenyl phenyl ether	NELAP	23.7		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
4-Nitroaniline	NELAP	33.8		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-004 **Client Sample ID:** CH-FS-02 (17-18)

Matrix: SOLID **Collection Date:** 02/06/2017 10:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
4-Nitrophenol	NELAP	23.7		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
Aniline	NELAP	33.8		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
Azobenzene		23.7		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
Benzoic acid	NELAP	101		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
Benzyl alcohol	NELAP	33.8		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
Bis(2-chloroethoxy)methane	NELAP	23.7		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
Bis(2-chloroethyl)ether	NELAP	33.8		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
Bis(2-chloroisopropyl)ether	NELAP	23.7		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
Bis(2-ethylhexyl)phthalate	NELAP	23.7		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
Butyl benzyl phthalate	NELAP	23.7		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
Carbazole	NELAP	33.8		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
Dibenzofuran	NELAP	23.7		**63.5**	mg/Kg-dry	10	02/09/2017 13:10	126878
Diethyl phthalate	NELAP	33.8		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
Dimethyl phthalate	NELAP	23.7		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
Di-n-butyl phthalate	NELAP	23.7		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
Di-n-octyl phthalate	NELAP	23.7		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
Hexachlorobenzene	NELAP	23.7		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
Hexachlorobutadiene	NELAP	33.8		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
Hexachlorocyclopentadiene	NELAP	23.7		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
Hexachloroethane	NELAP	33.8		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
Isophorone	NELAP	23.7		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
m,p-Cresol	NELAP	33.8		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
Nitrobenzene	NELAP	33.8		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
N-Nitrosodimethylamine	NELAP	33.8		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
N-Nitroso-di-n-propylamine	NELAP	33.8		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
N-Nitrosodiphenylamine	NELAP	33.8		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
o-Cresol	NELAP	33.8		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
Pentachlorophenol	NELAP	135		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
Phenol	NELAP	23.7		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
Pyridine	NELAP	33.8		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
1,2-Diphenylhydrazine		56.8		**ND**	mg/Kg-dry	10	02/09/2017 13:10	126878
Surr: 2,4,6-Tribromophenol		33-115		**88.4**	%REC	10	02/09/2017 13:10	126878
Surr: 2-Fluorobiphenyl		36.5-97.7		**82.2**	%REC	10	02/09/2017 13:10	126878
Surr: 2-Fluorophenol		39.4-92.8		**61.5**	%REC	10	02/09/2017 13:10	126878
Surr: Nitrobenzene-d5		34.7-90.1		**70.7**	%REC	10	02/09/2017 13:10	126878
Surr: Phenol-d5		42.8-106		**61.3**	%REC	10	02/09/2017 13:10	126878
Surr: p-Terphenyl-d14		43.7-124		**95.4**	%REC	10	02/09/2017 13:10	126878
Elevated reporting limit due to sample composition.								
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,1,2-Tetrachloroethane	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
1,1,1-Trichloroethane	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
1,1,2,2-Tetrachloroethane	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
1,1,2-Trichloro-1,2,2-trifluoroethane		43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
1,1,2-Trichloroethane	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
1,1-Dichloro-2-propanone		432000		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
1,1-Dichloroethane	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
1,1-Dichloroethene	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-004 **Client Sample ID:** CH-FS-02 (17-18)

Matrix: SOLID **Collection Date:** 02/06/2017 10:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1-Dichloropropene	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
1,2,3-Trichlorobenzene	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
1,2,3-Trichloropropane	NELAP	86400		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
1,2,3-Trimethylbenzene		43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
1,2,4-Trichlorobenzene	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
1,2,4-Trimethylbenzene	NELAP	43200		**51900**	µg/Kg-dry	5000	02/08/2017 12:45	126894
1,2-Dibromo-3-chloropropane	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
1,2-Dibromoethane	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
1,2-Dichlorobenzene	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
1,2-Dichloroethane	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
1,2-Dichloropropane	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
1,3,5-Trimethylbenzene	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
1,3-Dichlorobenzene	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
1,3-Dichloropropane	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
1,4-Dichlorobenzene	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
1-Chlorobutane	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
2,2-Dichloropropane	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
2-Butanone	NELAP	1730000		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
2-Chlorotoluene	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
2-Hexanone	NELAP	432000		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
2-Nitropropane	NELAP	432000		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
4-Chlorotoluene	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
4-Methyl-2-pentanone	NELAP	432000		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
Acetone	NELAP	432000		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
Acrolein	NELAP	864000		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
Acrylonitrile	NELAP	86400		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
Allyl chloride	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
Benzene	NELAP	8640		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
Bromobenzene	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
Bromochloromethane	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
Bromodichloromethane	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
Bromoform	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
Bromomethane	NELAP	86400		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
Carbon disulfide	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
Carbon tetrachloride	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
Chlorobenzene	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
Chloroethane	NELAP	86400		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
Chloroform	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
Chloromethane	NELAP	86400		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
cis-1,2-Dichloroethene	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
cis-1,3-Dichloropropene	NELAP	34600		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
Cyclohexanone		864000		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
Dibromochloromethane	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
Dibromomethane	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
Dichlorodifluoromethane	NELAP	86400		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
Ethyl ether	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
Ethyl methacrylate	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-004 **Client Sample ID:** CH-FS-02 (17-18)

Matrix: SOLID **Collection Date:** 02/06/2017 10:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Ethylbenzene	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
Hexachlorobutadiene	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
Hexachloroethane	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
Iodomethane	NELAP	86400		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
Isopropylbenzene	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
m,p-Xylenes	NELAP	43200		**75300**	µg/Kg-dry	5000	02/08/2017 12:45	126894
Methacrylonitrile	NELAP	432000		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
Methyl Methacrylate	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
Methyl tert-butyl ether	NELAP	17300		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
Methylacrylate	NELAP	86400		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
Methylene chloride	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
Naphthalene	NELAP	86400		**780000**	µg/Kg-dry	5000	02/08/2017 12:45	126894
n-Butylbenzene	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
n-Heptane		432000		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
n-Hexane		173000		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
Nitrobenzene	NELAP	864000		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
n-Propylbenzene	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
o-Xylene	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
Pentachloroethane	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
p-Isopropyltoluene	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
Propionitrile	NELAP	432000		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
sec-Butylbenzene	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
Styrene	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
tert-Butylbenzene	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
Tetrachloroethene	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
Tetrahydrofuran	NELAP	432000		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
Toluene	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
trans-1,2-Dichloroethene	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
trans-1,3-Dichloropropene	NELAP	34600		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
Trichloroethene	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
Trichlorofluoromethane	NELAP	43200		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
Vinyl acetate	NELAP	432000		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
Vinyl chloride	NELAP	17300		**ND**	µg/Kg-dry	5000	02/08/2017 12:45	126894
Surr: 1,2-Dichloroethane-d4		72.2-131		**108.1**	%REC	5000	02/08/2017 12:45	126894
Surr: 4-Bromofluorobenzene		82.1-116		**102.8**	%REC	5000	02/08/2017 12:45	126894
Surr: Dibromofluoromethane		77.7-120		**100.5**	%REC	5000	02/08/2017 12:45	126894
Surr: Toluene-d8		86-116		**98.8**	%REC	5000	02/08/2017 12:45	126894

LCS and LCSD have analytes that recovered outside upper QC limits. The sample results are below reporting limit. Data is reportable per 2009 TNI Standard (Volume1, Module 4, section 1.7.4.2).

Elevated reporting limit due to high levels of target and/or non-target analytes.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-005 **Client Sample ID:** CH-FS-02 (19-20)

Matrix: SOLID **Collection Date:** 02/06/2017 10:10

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**9.7**	%	1	02/08/2017 17:41	R228981
SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Acenaphthene	NELAP	0.075		**0.126**	mg/Kg-dry	10	02/09/2017 17:09	126904
Acenaphthylene	NELAP	0.075		**0.490**	mg/Kg-dry	10	02/09/2017 17:09	126904
Anthracene	NELAP	0.075		**0.560**	mg/Kg-dry	10	02/09/2017 17:09	126904
Benzo(a)anthracene	NELAP	0.220		**0.384**	mg/Kg-dry	10	02/09/2017 17:09	126904
Benzo(a)pyrene	NELAP	0.075		**0.219**	mg/Kg-dry	10	02/09/2017 17:09	126904
Benzo(b)fluoranthene	NELAP	0.075		**0.244**	mg/Kg-dry	10	02/09/2017 17:09	126904
Benzo(g,h,i)perylene	NELAP	0.075		**ND**	mg/Kg-dry	10	02/09/2017 17:09	126904
Benzo(k)fluoranthene	NELAP	0.075		**0.118**	mg/Kg-dry	10	02/09/2017 17:09	126904
Chrysene	NELAP	0.075		**0.294**	mg/Kg-dry	10	02/09/2017 17:09	126904
Dibenzo(a,h)anthracene	NELAP	0.075		**ND**	mg/Kg-dry	10	02/09/2017 17:09	126904
Fluoranthene	NELAP	0.075		**0.842**	mg/Kg-dry	10	02/09/2017 17:09	126904
Fluorene	NELAP	0.075		**0.702**	mg/Kg-dry	10	02/09/2017 17:09	126904
Indeno(1,2,3-cd)pyrene	NELAP	0.075		**ND**	mg/Kg-dry	10	02/09/2017 17:09	126904
Naphthalene	NELAP	0.075		**1.18**	mg/Kg-dry	10	02/09/2017 17:09	126904
Phenanthrene	NELAP	0.075		**1.50**	mg/Kg-dry	10	02/09/2017 17:09	126904
Pyrene	NELAP	0.075		**0.595**	mg/Kg-dry	10	02/09/2017 17:09	126904
Surr: 2-Fluorobiphenyl		8.85-90.5		**53.8**	%REC	10	02/09/2017 17:09	126904
Surr: Nitrobenzene-d5		5-102		**57.6**	%REC	10	02/09/2017 17:09	126904
Surr: p-Terphenyl-d14		18.4-103		**59.6**	%REC	10	02/09/2017 17:09	126904
Elevated reporting limit due to sample composition.								
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2,4-Trichlorobenzene	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
1,2-Dichlorobenzene	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
1,3-Dichlorobenzene	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
1,4-Dichlorobenzene	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
2,4,5-Trichlorophenol	NELAP	0.770		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
2,4,6-Trichlorophenol	NELAP	0.770		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
2,4-Dichlorophenol	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
2,4-Dimethylphenol	NELAP	1.10		**8.85**	mg/Kg-dry	1	02/09/2017 13:38	126878
2,4-Dinitrophenol	NELAP	2.20		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
2,4-Dinitrotoluene	NELAP	0.770		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
2,6-Dinitrotoluene	NELAP	0.770		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
2-Chloronaphthalene	NELAP	0.770		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
2-Chlorophenol	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
2-Methoxy-4-methylphenol		1.43		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
2-Methylnaphthalene	NELAP	0.770		**0.920**	mg/Kg-dry	1	02/09/2017 13:38	126878
2-Nitroaniline	NELAP	2.20		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
2-Nitrophenol	NELAP	0.770		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
3,3´-Dichlorobenzidine	NELAP	0.770		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
3-Nitroaniline	NELAP	2.20		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
4,6-Dinitro-2-methylphenol	NELAP	2.20		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
4-Bromophenyl phenyl ether	NELAP	0.770		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
4-Chloro-3-methylphenol	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
4-Chloroaniline	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
4-Chlorophenyl phenyl ether	NELAP	0.770		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-005 **Client Sample ID:** CH-FS-02 (19-20)

Matrix: SOLID **Collection Date:** 02/06/2017 10:10

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
4-Nitroaniline	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
4-Nitrophenol	NELAP	0.770		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
Aniline	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
Azobenzene		0.770		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
Benzoic acid	NELAP	3.30		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
Benzyl alcohol	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
Bis(2-chloroethoxy)methane	NELAP	0.770		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
Bis(2-chloroethyl)ether	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
Bis(2-chloroisopropyl)ether	NELAP	0.770		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
Bis(2-ethylhexyl)phthalate	NELAP	0.770		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
Butyl benzyl phthalate	NELAP	0.770		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
Carbazole	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
Dibenzofuran	NELAP	0.770		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
Diethyl phthalate	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
Dimethyl phthalate	NELAP	0.770		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
Di-n-butyl phthalate	NELAP	0.770		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
Di-n-octyl phthalate	NELAP	0.770		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
Hexachlorobenzene	NELAP	0.770		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
Hexachlorobutadiene	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
Hexachlorocyclopentadiene	NELAP	0.770		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
Hexachloroethane	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
Isophorone	NELAP	0.770		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
m,p-Cresol	NELAP	1.10		**8.47**	mg/Kg-dry	1	02/09/2017 13:38	126878
Nitrobenzene	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
N-Nitrosodimethylamine	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
N-Nitroso-di-n-propylamine	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
N-Nitrosodiphenylamine	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
o-Cresol	NELAP	1.10		**2.11**	mg/Kg-dry	1	02/09/2017 13:38	126878
Pentachlorophenol	NELAP	4.40		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
Phenol	NELAP	0.770		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
Pyridine	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
1,2-Diphenylhydrazine		1.85		**ND**	mg/Kg-dry	1	02/09/2017 13:38	126878
Surr: 2,4,6-Tribromophenol		33-115		**78.4**	%REC	1	02/09/2017 13:38	126878
Surr: 2-Fluorobiphenyl		36.5-97.7		**78.3**	%REC	1	02/09/2017 13:38	126878
Surr: 2-Fluorophenol		39.4-92.8		**58.1**	%REC	1	02/09/2017 13:38	126878
Surr: Nitrobenzene-d5		34.7-90.1		**73.1**	%REC	1	02/09/2017 13:38	126878
Surr: Phenol-d5		42.8-106		**74.5**	%REC	1	02/09/2017 13:38	126878
Surr: p-Terphenyl-d14		43.7-124		**90.3**	%REC	1	02/09/2017 13:38	126878
Elevated reporting limit due to sample composition.								
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,1,2-Tetrachloroethane	NELAP	1980		**ND**	µg/Kg-dry	250	02/08/2017 16:45	126894
1,1,1-Trichloroethane	NELAP	1980		**ND**	µg/Kg-dry	250	02/08/2017 16:45	126894
1,1,2,2-Tetrachloroethane	NELAP	1980		**ND**	µg/Kg-dry	250	02/08/2017 16:45	126894
1,1,2-Trichloro-1,2,2-trifluoroethane		1980		**ND**	µg/Kg-dry	250	02/08/2017 16:45	126894
1,1,2-Trichloroethane	NELAP	1980		**ND**	µg/Kg-dry	250	02/08/2017 16:45	126894
1,1-Dichloro-2-propanone		19800		**ND**	µg/Kg-dry	250	02/08/2017 16:45	126894
1,1-Dichloroethane	NELAP	1980		**ND**	µg/Kg-dry	250	02/08/2017 16:45	126894

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-005 **Client Sample ID:** CH-FS-02 (19-20)

Matrix: SOLID **Collection Date:** 02/06/2017 10:10

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1-Dichloroethene	NELAP	1980		ND	µg/Kg-dry	250	02/08/2017 16:45	126894
1,1-Dichloropropene	NELAP	1980		ND	µg/Kg-dry	250	02/08/2017 16:45	126894
1,2,3-Trichlorobenzene	NELAP	1980		ND	µg/Kg-dry	250	02/08/2017 16:45	126894
1,2,3-Trichloropropane	NELAP	3970		ND	µg/Kg-dry	250	02/08/2017 16:45	126894
1,2,3-Trimethylbenzene		1980		ND	µg/Kg-dry	250	02/08/2017 16:45	126894
1,2,4-Trichlorobenzene	NELAP	1980		ND	µg/Kg-dry	250	02/08/2017 16:45	126894
1,2,4-Trimethylbenzene	NELAP	1980		ND	µg/Kg-dry	250	02/08/2017 16:45	126894
1,2-Dibromo-3-chloropropane	NELAP	1980		ND	µg/Kg-dry	250	02/08/2017 16:45	126894
1,2-Dibromoethane	NELAP	1980		ND	µg/Kg-dry	250	02/08/2017 16:45	126894
1,2-Dichlorobenzene	NELAP	1980		ND	µg/Kg-dry	250	02/08/2017 16:45	126894
1,2-Dichloroethane	NELAP	1980		ND	µg/Kg-dry	250	02/08/2017 16:45	126894
1,2-Dichloropropane	NELAP	1980		ND	µg/Kg-dry	250	02/08/2017 16:45	126894
1,3,5-Trimethylbenzene	NELAP	1980		ND	µg/Kg-dry	250	02/08/2017 16:45	126894
1,3-Dichlorobenzene	NELAP	1980		ND	µg/Kg-dry	250	02/08/2017 16:45	126894
1,3-Dichloropropane	NELAP	1980		ND	µg/Kg-dry	250	02/08/2017 16:45	126894
1,4-Dichlorobenzene	NELAP	1980		ND	µg/Kg-dry	250	02/08/2017 16:45	126894
1-Chlorobutane	NELAP	1980		ND	µg/Kg-dry	250	02/08/2017 16:45	126894
2,2-Dichloropropane	NELAP	1980		ND	µg/Kg-dry	250	02/08/2017 16:45	126894
2-Butanone	NELAP	79300		ND	µg/Kg-dry	250	02/08/2017 16:45	126894
2-Chlorotoluene	NELAP	1980		ND	µg/Kg-dry	250	02/08/2017 16:45	126894
2-Hexanone	NELAP	19800		ND	µg/Kg-dry	250	02/08/2017 16:45	126894
2-Nitropropane	NELAP	19800		ND	µg/Kg-dry	250	02/08/2017 16:45	126894
4-Chlorotoluene	NELAP	1980		ND	µg/Kg-dry	250	02/08/2017 16:45	126894
4-Methyl-2-pentanone	NELAP	19800		ND	µg/Kg-dry	250	02/08/2017 16:45	126894
Acetone	NELAP	19800		ND	µg/Kg-dry	250	02/08/2017 16:45	126894
Acrolein	NELAP	39700		ND	µg/Kg-dry	250	02/08/2017 16:45	126894
Acrylonitrile	NELAP	3970		ND	µg/Kg-dry	250	02/08/2017 16:45	126894
Allyl chloride	NELAP	1980		ND	µg/Kg-dry	250	02/08/2017 16:45	126894
Benzene	NELAP	397		2820	µg/Kg-dry	250	02/08/2017 16:45	126894
Bromobenzene	NELAP	1980		ND	µg/Kg-dry	250	02/08/2017 16:45	126894
Bromochloromethane	NELAP	1980		ND	µg/Kg-dry	250	02/08/2017 16:45	126894
Bromodichloromethane	NELAP	1980		ND	µg/Kg-dry	250	02/08/2017 16:45	126894
Bromoform	NELAP	1980		ND	µg/Kg-dry	250	02/08/2017 16:45	126894
Bromomethane	NELAP	3970		ND	µg/Kg-dry	250	02/08/2017 16:45	126894
Carbon disulfide	NELAP	1980		ND	µg/Kg-dry	250	02/08/2017 16:45	126894
Carbon tetrachloride	NELAP	1980		ND	µg/Kg-dry	250	02/08/2017 16:45	126894
Chlorobenzene	NELAP	1980		ND	µg/Kg-dry	250	02/08/2017 16:45	126894
Chloroethane	NELAP	3970		ND	µg/Kg-dry	250	02/08/2017 16:45	126894
Chloroform	NELAP	1980		ND	µg/Kg-dry	250	02/08/2017 16:45	126894
Chloromethane	NELAP	3970		ND	µg/Kg-dry	250	02/08/2017 16:45	126894
cis-1,2-Dichloroethene	NELAP	1980		ND	µg/Kg-dry	250	02/08/2017 16:45	126894
cis-1,3-Dichloropropene	NELAP	1590		ND	µg/Kg-dry	250	02/08/2017 16:45	126894
Cyclohexanone		39700		ND	µg/Kg-dry	250	02/08/2017 16:45	126894
Dibromochloromethane	NELAP	1980		ND	µg/Kg-dry	250	02/08/2017 16:45	126894
Dibromomethane	NELAP	1980		ND	µg/Kg-dry	250	02/08/2017 16:45	126894
Dichlorodifluoromethane	NELAP	3970		ND	µg/Kg-dry	250	02/08/2017 16:45	126894
Ethyl ether	NELAP	1980		ND	µg/Kg-dry	250	02/08/2017 16:45	126894

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-005 **Client Sample ID:** CH-FS-02 (19-20)

Matrix: SOLID **Collection Date:** 02/06/2017 10:10

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Ethyl methacrylate	NELAP	1980		**ND**	µg/Kg-dry	250	02/08/2017 16:45	126894
Ethylbenzene	NELAP	1980		**ND**	µg/Kg-dry	250	02/08/2017 16:45	126894
Hexachlorobutadiene	NELAP	1980		**ND**	µg/Kg-dry	250	02/08/2017 16:45	126894
Hexachloroethane	NELAP	1980		**ND**	µg/Kg-dry	250	02/08/2017 16:45	126894
Iodomethane	NELAP	3970		**ND**	µg/Kg-dry	250	02/08/2017 16:45	126894
Isopropylbenzene	NELAP	1980		**ND**	µg/Kg-dry	250	02/08/2017 16:45	126894
m,p-Xylenes	NELAP	1980		**ND**	µg/Kg-dry	250	02/08/2017 16:45	126894
Methacrylonitrile	NELAP	19800		**ND**	µg/Kg-dry	250	02/08/2017 16:45	126894
Methyl Methacrylate	NELAP	1980		**ND**	µg/Kg-dry	250	02/08/2017 16:45	126894
Methyl tert-butyl ether	NELAP	793		**ND**	µg/Kg-dry	250	02/08/2017 16:45	126894
Methylacrylate	NELAP	3970		**ND**	µg/Kg-dry	250	02/08/2017 16:45	126894
Methylene chloride	NELAP	1980		**ND**	µg/Kg-dry	250	02/08/2017 16:45	126894
Naphthalene	NELAP	3970		**ND**	µg/Kg-dry	250	02/08/2017 16:45	126894
n-Butylbenzene	NELAP	1980		**ND**	µg/Kg-dry	250	02/08/2017 16:45	126894
n-Heptane		19800		**ND**	µg/Kg-dry	250	02/08/2017 16:45	126894
n-Hexane		7930		**ND**	µg/Kg-dry	250	02/08/2017 16:45	126894
Nitrobenzene	NELAP	39700		**ND**	µg/Kg-dry	250	02/08/2017 16:45	126894
n-Propylbenzene	NELAP	1980		**ND**	µg/Kg-dry	250	02/08/2017 16:45	126894
o-Xylene	NELAP	1980		**ND**	µg/Kg-dry	250	02/08/2017 16:45	126894
Pentachloroethane	NELAP	1980		**ND**	µg/Kg-dry	250	02/08/2017 16:45	126894
p-Isopropyltoluene	NELAP	1980		**ND**	µg/Kg-dry	250	02/08/2017 16:45	126894
Propionitrile	NELAP	19800		**ND**	µg/Kg-dry	250	02/08/2017 16:45	126894
sec-Butylbenzene	NELAP	1980		**ND**	µg/Kg-dry	250	02/08/2017 16:45	126894
Styrene	NELAP	1980		**ND**	µg/Kg-dry	250	02/08/2017 16:45	126894
tert-Butylbenzene	NELAP	1980		**ND**	µg/Kg-dry	250	02/08/2017 16:45	126894
Tetrachloroethene	NELAP	1980		**ND**	µg/Kg-dry	250	02/08/2017 16:45	126894
Tetrahydrofuran	NELAP	19800		**ND**	µg/Kg-dry	250	02/08/2017 16:45	126894
Toluene	NELAP	1980		**ND**	µg/Kg-dry	250	02/08/2017 16:45	126894
trans-1,2-Dichloroethene	NELAP	1980		**ND**	µg/Kg-dry	250	02/08/2017 16:45	126894
trans-1,3-Dichloropropene	NELAP	1590		**ND**	µg/Kg-dry	250	02/08/2017 16:45	126894
Trichloroethene	NELAP	1980		**ND**	µg/Kg-dry	250	02/08/2017 16:45	126894
Trichlorofluoromethane	NELAP	1980		**ND**	µg/Kg-dry	250	02/08/2017 16:45	126894
Vinyl acetate	NELAP	19800		**ND**	µg/Kg-dry	250	02/08/2017 16:45	126894
Vinyl chloride	NELAP	793		**ND**	µg/Kg-dry	250	02/08/2017 16:45	126894
Surr: 1,2-Dichloroethane-d4		72.2-131		**108.9**	%REC	250	02/08/2017 16:45	126894
Surr: 4-Bromofluorobenzene		82.1-116		**101.0**	%REC	250	02/08/2017 16:45	126894
Surr: Dibromofluoromethane		77.7-120		**99.0**	%REC	250	02/08/2017 16:45	126894
Surr: Toluene-d8		86-116		**98.0**	%REC	250	02/08/2017 16:45	126894

LCS and LCSD have analytes that recovered outside upper QC limits. The sample results are below reporting limit. Data is reportable per 2009 TNI Standard (Volume1, Module 4, section 1.7.4.2).

Elevated reporting limit due to high levels of target and/or non-target analytes.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-006 **Client Sample ID:** CH-FS-03 (7-8)

Matrix: SOLID **Collection Date:** 02/06/2017 11:25

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**21.4**	%	1	02/08/2017 17:41	R228981
SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Acenaphthene	NELAP	3.06		**5.10**	mg/Kg-dry	25	02/09/2017 22:34	126904
Acenaphthylene	NELAP	3.06		**8.01**	mg/Kg-dry	25	02/09/2017 22:34	126904
Anthracene	NELAP	3.06		**13.4**	mg/Kg-dry	25	02/09/2017 22:34	126904
Benzo(a)anthracene	NELAP	9.00		**11.1**	mg/Kg-dry	25	02/09/2017 22:34	126904
Benzo(a)pyrene	NELAP	3.06		**6.81**	mg/Kg-dry	25	02/09/2017 22:34	126904
Benzo(b)fluoranthene	NELAP	3.06		**7.17**	mg/Kg-dry	25	02/09/2017 22:34	126904
Benzo(g,h,i)perylene	NELAP	3.06		**ND**	mg/Kg-dry	25	02/09/2017 22:34	126904
Benzo(k)fluoranthene	NELAP	3.06		**ND**	mg/Kg-dry	25	02/09/2017 22:34	126904
Chrysene	NELAP	3.06		**7.62**	mg/Kg-dry	25	02/09/2017 22:34	126904
Dibenzo(a,h)anthracene	NELAP	3.06		**ND**	mg/Kg-dry	25	02/09/2017 22:34	126904
Fluoranthene	NELAP	3.06		**21.2**	mg/Kg-dry	25	02/09/2017 22:34	126904
Fluorene	NELAP	3.06		**16.1**	mg/Kg-dry	25	02/09/2017 22:34	126904
Indeno(1,2,3-cd)pyrene	NELAP	3.06		**ND**	mg/Kg-dry	25	02/09/2017 22:34	126904
Naphthalene	NELAP	3.06		**3.84**	mg/Kg-dry	25	02/09/2017 22:34	126904
Phenanthrene	NELAP	3.06		**28.9**	mg/Kg-dry	25	02/09/2017 22:34	126904
Pyrene	NELAP	3.06		**16.6**	mg/Kg-dry	25	02/09/2017 22:34	126904
Surr: 2-Fluorobiphenyl		8.85-90.5		**55.2**	%REC	25	02/09/2017 22:34	126904
Surr: Nitrobenzene-d5		5-102		**68.8**	%REC	25	02/09/2017 22:34	126904
Surr: p-Terphenyl-d14		18.4-103		**53.8**	%REC	25	02/09/2017 22:34	126904
Elevated reporting limit due to sample composition.								
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2,4-Trichlorobenzene	NELAP	18.0		**ND**	mg/Kg-dry	1	02/09/2017 11:30	126878
1,2-Dichlorobenzene	NELAP	18.0		**ND**	mg/Kg-dry	1	02/09/2017 11:30	126878
1,3-Dichlorobenzene	NELAP	18.0		**ND**	mg/Kg-dry	1	02/09/2017 11:30	126878
1,4-Dichlorobenzene	NELAP	18.0		**ND**	mg/Kg-dry	1	02/09/2017 11:30	126878
2,4,5-Trichlorophenol	NELAP	12.6		**ND**	mg/Kg-dry	1	02/09/2017 11:30	126878
2,4,6-Trichlorophenol	NELAP	12.6		**ND**	mg/Kg-dry	1	02/09/2017 11:30	126878
2,4-Dichlorophenol	NELAP	18.0		**ND**	mg/Kg-dry	1	02/09/2017 11:30	126878
2,4-Dimethylphenol	NELAP	18.0		**ND**	mg/Kg-dry	1	02/09/2017 11:30	126878
2,4-Dinitrophenol	NELAP	36.0		**ND**	mg/Kg-dry	1	02/09/2017 11:30	126878
2,4-Dinitrotoluene	NELAP	12.6		**ND**	mg/Kg-dry	1	02/09/2017 11:30	126878
2,6-Dinitrotoluene	NELAP	12.6		**ND**	mg/Kg-dry	1	02/09/2017 11:30	126878
2-Chloronaphthalene	NELAP	12.6		**ND**	mg/Kg-dry	1	02/09/2017 11:30	126878
2-Chlorophenol	NELAP	18.0		**ND**	mg/Kg-dry	1	02/09/2017 11:30	126878
2-Methoxy-4-methylphenol		23.4		**ND**	mg/Kg-dry	1	02/09/2017 11:30	126878
2-Methylnaphthalene	NELAP	12.6		**ND**	mg/Kg-dry	1	02/09/2017 11:30	126878
2-Nitroaniline	NELAP	36.0		**ND**	mg/Kg-dry	1	02/09/2017 11:30	126878
2-Nitrophenol	NELAP	12.6		**ND**	mg/Kg-dry	1	02/09/2017 11:30	126878
3,3´-Dichlorobenzidine	NELAP	12.6		**ND**	mg/Kg-dry	1	02/09/2017 11:30	126878
3-Nitroaniline	NELAP	36.0		**ND**	mg/Kg-dry	1	02/09/2017 11:30	126878
4,6-Dinitro-2-methylphenol	NELAP	36.0		**ND**	mg/Kg-dry	1	02/09/2017 11:30	126878
4-Bromophenyl phenyl ether	NELAP	12.6		**ND**	mg/Kg-dry	1	02/09/2017 11:30	126878
4-Chloro-3-methylphenol	NELAP	18.0		**ND**	mg/Kg-dry	1	02/09/2017 11:30	126878
4-Chloroaniline	NELAP	18.0		**ND**	mg/Kg-dry	1	02/09/2017 11:30	126878
4-Chlorophenyl phenyl ether	NELAP	12.6		**ND**	mg/Kg-dry	1	02/09/2017 11:30	126878

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-006 **Client Sample ID:** CH-FS-03 (7-8)

Matrix: SOLID **Collection Date:** 02/06/2017 11:25

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
4-Nitroaniline	NELAP	18.0		ND	mg/Kg-dry	1	02/09/2017 11:30	126878
4-Nitrophenol	NELAP	12.6		ND	mg/Kg-dry	1	02/09/2017 11:30	126878
Aniline	NELAP	18.0		ND	mg/Kg-dry	1	02/09/2017 11:30	126878
Azobenzene		12.6		ND	mg/Kg-dry	1	02/09/2017 11:30	126878
Benzoic acid	NELAP	54.0		ND	mg/Kg-dry	1	02/09/2017 11:30	126878
Benzyl alcohol	NELAP	18.0		ND	mg/Kg-dry	1	02/09/2017 11:30	126878
Bis(2-chloroethoxy)methane	NELAP	12.6		ND	mg/Kg-dry	1	02/09/2017 11:30	126878
Bis(2-chloroethyl)ether	NELAP	18.0		ND	mg/Kg-dry	1	02/09/2017 11:30	126878
Bis(2-chloroisopropyl)ether	NELAP	12.6		ND	mg/Kg-dry	1	02/09/2017 11:30	126878
Bis(2-ethylhexyl)phthalate	NELAP	12.6		ND	mg/Kg-dry	1	02/09/2017 11:30	126878
Butyl benzyl phthalate	NELAP	12.6		ND	mg/Kg-dry	1	02/09/2017 11:30	126878
Carbazole	NELAP	18.0		ND	mg/Kg-dry	1	02/09/2017 11:30	126878
Dibenzofuran	NELAP	12.6		ND	mg/Kg-dry	1	02/09/2017 11:30	126878
Diethyl phthalate	NELAP	18.0		ND	mg/Kg-dry	1	02/09/2017 11:30	126878
Dimethyl phthalate	NELAP	12.6		ND	mg/Kg-dry	1	02/09/2017 11:30	126878
Di-n-butyl phthalate	NELAP	12.6		ND	mg/Kg-dry	1	02/09/2017 11:30	126878
Di-n-octyl phthalate	NELAP	12.6		ND	mg/Kg-dry	1	02/09/2017 11:30	126878
Hexachlorobenzene	NELAP	12.6		ND	mg/Kg-dry	1	02/09/2017 11:30	126878
Hexachlorobutadiene	NELAP	18.0		ND	mg/Kg-dry	1	02/09/2017 11:30	126878
Hexachlorocyclopentadiene	NELAP	12.6		ND	mg/Kg-dry	1	02/09/2017 11:30	126878
Hexachloroethane	NELAP	18.0		ND	mg/Kg-dry	1	02/09/2017 11:30	126878
Isophorone	NELAP	12.6		ND	mg/Kg-dry	1	02/09/2017 11:30	126878
m,p-Cresol	NELAP	18.0		ND	mg/Kg-dry	1	02/09/2017 11:30	126878
Nitrobenzene	NELAP	18.0		ND	mg/Kg-dry	1	02/09/2017 11:30	126878
N-Nitrosodimethylamine	NELAP	18.0		ND	mg/Kg-dry	1	02/09/2017 11:30	126878
N-Nitroso-di-n-propylamine	NELAP	18.0		ND	mg/Kg-dry	1	02/09/2017 11:30	126878
N-Nitrosodiphenylamine	NELAP	18.0		ND	mg/Kg-dry	1	02/09/2017 11:30	126878
o-Cresol	NELAP	18.0		ND	mg/Kg-dry	1	02/09/2017 11:30	126878
Pentachlorophenol	NELAP	72.0		ND	mg/Kg-dry	1	02/09/2017 11:30	126878
Phenol	NELAP	12.6		ND	mg/Kg-dry	1	02/09/2017 11:30	126878
Pyridine	NELAP	18.0		ND	mg/Kg-dry	1	02/09/2017 11:30	126878
1,2-Diphenylhydrazine		30.3		ND	mg/Kg-dry	1	02/09/2017 11:30	126878
Surr: 2,4,6-Tribromophenol		33-115		70.6	%REC	1	02/09/2017 11:30	126878
Surr: 2-Fluorobiphenyl		36.5-97.7		73.4	%REC	1	02/09/2017 11:30	126878
Surr: 2-Fluorophenol		39.4-92.8		57.6	%REC	1	02/09/2017 11:30	126878
Surr: Nitrobenzene-d5		34.7-90.1		66.3	%REC	1	02/09/2017 11:30	126878
Surr: Phenol-d5		42.8-106		69.0	%REC	1	02/09/2017 11:30	126878
Surr: p-Terphenyl-d14		43.7-124		87.7	%REC	1	02/09/2017 11:30	126878
Elevated reporting limit due to sample composition.								
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,1,2-Tetrachloroethane	NELAP	118		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
1,1,1-Trichloroethane	NELAP	118		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
1,1,2,2-Tetrachloroethane	NELAP	118		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
1,1,2-Trichloro-1,2,2-trifluoroethane		118		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
1,1,2-Trichloroethane	NELAP	118		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
1,1-Dichloro-2-propanone		1180		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
1,1-Dichloroethane	NELAP	118		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-006 **Client Sample ID:** CH-FS-03 (7-8)

Matrix: SOLID **Collection Date:** 02/06/2017 11:25

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1-Dichloroethene	NELAP	118		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
1,1-Dichloropropene	NELAP	118		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
1,2,3-Trichlorobenzene	NELAP	118		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
1,2,3-Trichloropropane	NELAP	236		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
1,2,3-Trimethylbenzene		118		153	µg/Kg-dry	12.5	02/08/2017 17:12	126894
1,2,4-Trichlorobenzene	NELAP	118		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
1,2,4-Trimethylbenzene	NELAP	118		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
1,2-Dibromo-3-chloropropane	NELAP	118		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
1,2-Dibromoethane	NELAP	118		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
1,2-Dichlorobenzene	NELAP	118		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
1,2-Dichloroethane	NELAP	118		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
1,2-Dichloropropane	NELAP	118		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
1,3,5-Trimethylbenzene	NELAP	118		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
1,3-Dichlorobenzene	NELAP	118		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
1,3-Dichloropropane	NELAP	118		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
1,4-Dichlorobenzene	NELAP	118		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
1-Chlorobutane	NELAP	118		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
2,2-Dichloropropane	NELAP	118		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
2-Butanone	NELAP	4730		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
2-Chlorotoluene	NELAP	118		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
2-Hexanone	NELAP	1180		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
2-Nitropropane	NELAP	1180		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
4-Chlorotoluene	NELAP	118		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
4-Methyl-2-pentanone	NELAP	1180		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
Acetone	NELAP	1180		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
Acrolein	NELAP	2360		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
Acrylonitrile	NELAP	236		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
Allyl chloride	NELAP	118		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
Benzene	NELAP	23.6		55.1	µg/Kg-dry	12.5	02/08/2017 17:12	126894
Bromobenzene	NELAP	118		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
Bromochloromethane	NELAP	118		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
Bromodichloromethane	NELAP	118		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
Bromoform	NELAP	118		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
Bromomethane	NELAP	236		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
Carbon disulfide	NELAP	118		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
Carbon tetrachloride	NELAP	118		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
Chlorobenzene	NELAP	118		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
Chloroethane	NELAP	236		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
Chloroform	NELAP	118		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
Chloromethane	NELAP	236		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
cis-1,2-Dichloroethene	NELAP	118		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
cis-1,3-Dichloropropene	NELAP	94.5		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
Cyclohexanone		2360		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
Dibromochloromethane	NELAP	118		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
Dibromomethane	NELAP	118		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
Dichlorodifluoromethane	NELAP	236		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894
Ethyl ether	NELAP	118		ND	µg/Kg-dry	12.5	02/08/2017 17:12	126894

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-006 **Client Sample ID:** CH-FS-03 (7-8)

Matrix: SOLID **Collection Date:** 02/06/2017 11:25

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Ethyl methacrylate	NELAP	118		**ND**	µg/Kg-dry	12.5	02/08/2017 17:12	126894
Ethylbenzene	NELAP	118		**263**	µg/Kg-dry	12.5	02/08/2017 17:12	126894
Hexachlorobutadiene	NELAP	118		**ND**	µg/Kg-dry	12.5	02/08/2017 17:12	126894
Hexachloroethane	NELAP	118		**ND**	µg/Kg-dry	12.5	02/08/2017 17:12	126894
Iodomethane	NELAP	236		**ND**	µg/Kg-dry	12.5	02/08/2017 17:12	126894
Isopropylbenzene	NELAP	118		**208**	µg/Kg-dry	12.5	02/08/2017 17:12	126894
m,p-Xylenes	NELAP	118		**ND**	µg/Kg-dry	12.5	02/08/2017 17:12	126894
Methacrylonitrile	NELAP	1180		**ND**	µg/Kg-dry	12.5	02/08/2017 17:12	126894
Methyl Methacrylate	NELAP	118		**ND**	µg/Kg-dry	12.5	02/08/2017 17:12	126894
Methyl tert-butyl ether	NELAP	47.3		**ND**	µg/Kg-dry	12.5	02/08/2017 17:12	126894
Methylacrylate	NELAP	236		**ND**	µg/Kg-dry	12.5	02/08/2017 17:12	126894
Methylene chloride	NELAP	118		**ND**	µg/Kg-dry	12.5	02/08/2017 17:12	126894
Naphthalene	NELAP	236		**943**	µg/Kg-dry	12.5	02/08/2017 17:12	126894
n-Butylbenzene	NELAP	118		**364**	µg/Kg-dry	12.5	02/08/2017 17:12	126894
n-Heptane		1180		**ND**	µg/Kg-dry	12.5	02/08/2017 17:12	126894
n-Hexane		473		**ND**	µg/Kg-dry	12.5	02/08/2017 17:12	126894
Nitrobenzene	NELAP	2360		**ND**	µg/Kg-dry	12.5	02/08/2017 17:12	126894
n-Propylbenzene	NELAP	118		**213**	µg/Kg-dry	12.5	02/08/2017 17:12	126894
o-Xylene	NELAP	118		**124**	µg/Kg-dry	12.5	02/08/2017 17:12	126894
Pentachloroethane	NELAP	118		**ND**	µg/Kg-dry	12.5	02/08/2017 17:12	126894
p-Isopropyltoluene	NELAP	118		**ND**	µg/Kg-dry	12.5	02/08/2017 17:12	126894
Propionitrile	NELAP	1180		**ND**	µg/Kg-dry	12.5	02/08/2017 17:12	126894
sec-Butylbenzene	NELAP	118		**134**	µg/Kg-dry	12.5	02/08/2017 17:12	126894
Styrene	NELAP	118		**ND**	µg/Kg-dry	12.5	02/08/2017 17:12	126894
tert-Butylbenzene	NELAP	118		**ND**	µg/Kg-dry	12.5	02/08/2017 17:12	126894
Tetrachloroethene	NELAP	118		**ND**	µg/Kg-dry	12.5	02/08/2017 17:12	126894
Tetrahydrofuran	NELAP	1180		**ND**	µg/Kg-dry	12.5	02/08/2017 17:12	126894
Toluene	NELAP	118		**ND**	µg/Kg-dry	12.5	02/08/2017 17:12	126894
trans-1,2-Dichloroethene	NELAP	118		**ND**	µg/Kg-dry	12.5	02/08/2017 17:12	126894
trans-1,3-Dichloropropene	NELAP	94.5		**ND**	µg/Kg-dry	12.5	02/08/2017 17:12	126894
Trichloroethene	NELAP	118		**ND**	µg/Kg-dry	12.5	02/08/2017 17:12	126894
Trichlorofluoromethane	NELAP	118		**ND**	µg/Kg-dry	12.5	02/08/2017 17:12	126894
Vinyl acetate	NELAP	1180		**ND**	µg/Kg-dry	12.5	02/08/2017 17:12	126894
Vinyl chloride	NELAP	47.3		**ND**	µg/Kg-dry	12.5	02/08/2017 17:12	126894
Surr: 1,2-Dichloroethane-d4		72.2-131		**102.6**	%REC	12.5	02/08/2017 17:12	126894
Surr: 4-Bromofluorobenzene		82.1-116		**107.4**	%REC	12.5	02/08/2017 17:12	126894
Surr: Dibromofluoromethane		77.7-120		**94.3**	%REC	12.5	02/08/2017 17:12	126894
Surr: Toluene-d8		86-116		**108.8**	%REC	12.5	02/08/2017 17:12	126894

LCS and LCSD have analytes that recovered outside upper QC limits. The sample results are below reporting limit. Data is reportable per 2009 TNI Standard (Volume1, Module 4, section 1.7.4.2).

Elevated reporting limit due to high levels of target and/or non-target analytes.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-007 **Client Sample ID:** CH-FS-03 (19-20)

Matrix: SOLID **Collection Date:** 02/06/2017 11:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**9.3**	%	1	02/08/2017 17:42	R228981
SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Acenaphthene	NELAP	0.075		**ND**	mg/Kg-dry	10	02/09/2017 17:42	126904
Acenaphthylene	NELAP	0.075		**ND**	mg/Kg-dry	10	02/09/2017 17:42	126904
Anthracene	NELAP	0.075		**0.123**	mg/Kg-dry	10	02/09/2017 17:42	126904
Benzo(a)anthracene	NELAP	0.220		**ND**	mg/Kg-dry	10	02/09/2017 17:42	126904
Benzo(a)pyrene	NELAP	0.075		**ND**	mg/Kg-dry	10	02/09/2017 17:42	126904
Benzo(b)fluoranthene	NELAP	0.075		**ND**	mg/Kg-dry	10	02/09/2017 17:42	126904
Benzo(g,h,i)perylene	NELAP	0.075		**ND**	mg/Kg-dry	10	02/09/2017 17:42	126904
Benzo(k)fluoranthene	NELAP	0.075		**ND**	mg/Kg-dry	10	02/09/2017 17:42	126904
Chrysene	NELAP	0.075		**ND**	mg/Kg-dry	10	02/09/2017 17:42	126904
Dibenzo(a,h)anthracene	NELAP	0.075		**ND**	mg/Kg-dry	10	02/09/2017 17:42	126904
Fluoranthene	NELAP	0.075		**0.169**	mg/Kg-dry	10	02/09/2017 17:42	126904
Fluorene	NELAP	0.075		**0.165**	mg/Kg-dry	10	02/09/2017 17:42	126904
Indeno(1,2,3-cd)pyrene	NELAP	0.075		**ND**	mg/Kg-dry	10	02/09/2017 17:42	126904
Naphthalene	NELAP	0.075		**0.460**	mg/Kg-dry	10	02/09/2017 17:42	126904
Phenanthrene	NELAP	0.075		**0.289**	mg/Kg-dry	10	02/09/2017 17:42	126904
Pyrene	NELAP	0.075		**0.135**	mg/Kg-dry	10	02/09/2017 17:42	126904
Surr: 2-Fluorobiphenyl		8.85-90.5		**49.5**	%REC	10	02/09/2017 17:42	126904
Surr: Nitrobenzene-d5		5-102		**52.2**	%REC	10	02/09/2017 17:42	126904
Surr: p-Terphenyl-d14		18.4-103		**55.6**	%REC	10	02/09/2017 17:42	126904
Elevated reporting limit due to sample composition.								
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2,4-Trichlorobenzene	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
1,2-Dichlorobenzene	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
1,3-Dichlorobenzene	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
1,4-Dichlorobenzene	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
2,4,5-Trichlorophenol	NELAP	0.771		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
2,4,6-Trichlorophenol	NELAP	0.771		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
2,4-Dichlorophenol	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
2,4-Dimethylphenol	NELAP	1.10		**9.59**	mg/Kg-dry	1	02/09/2017 10:22	126878
2,4-Dinitrophenol	NELAP	2.20		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
2,4-Dinitrotoluene	NELAP	0.771		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
2,6-Dinitrotoluene	NELAP	0.771		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
2-Chloronaphthalene	NELAP	0.771		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
2-Chlorophenol	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
2-Methoxy-4-methylphenol		1.43		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
2-Methylnaphthalene	NELAP	0.771		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
2-Nitroaniline	NELAP	2.20		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
2-Nitrophenol	NELAP	0.771		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
3,3´-Dichlorobenzidine	NELAP	0.771		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
3-Nitroaniline	NELAP	2.20		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
4,6-Dinitro-2-methylphenol	NELAP	2.20		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
4-Bromophenyl phenyl ether	NELAP	0.771		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
4-Chloro-3-methylphenol	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
4-Chloroaniline	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
4-Chlorophenyl phenyl ether	NELAP	0.771		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-007 **Client Sample ID:** CH-FS-03 (19-20)

Matrix: SOLID **Collection Date:** 02/06/2017 11:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
4-Nitroaniline	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
4-Nitrophenol	NELAP	0.771		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
Aniline	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
Azobenzene		0.771		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
Benzoic acid	NELAP	3.30		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
Benzyl alcohol	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
Bis(2-chloroethoxy)methane	NELAP	0.771		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
Bis(2-chloroethyl)ether	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
Bis(2-chloroisopropyl)ether	NELAP	0.771		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
Bis(2-ethylhexyl)phthalate	NELAP	0.771		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
Butyl benzyl phthalate	NELAP	0.771		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
Carbazole	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
Dibenzofuran	NELAP	0.771		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
Diethyl phthalate	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
Dimethyl phthalate	NELAP	0.771		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
Di-n-butyl phthalate	NELAP	0.771		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
Di-n-octyl phthalate	NELAP	0.771		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
Hexachlorobenzene	NELAP	0.771		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
Hexachlorobutadiene	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
Hexachlorocyclopentadiene	NELAP	0.771		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
Hexachloroethane	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
Isophorone	NELAP	0.771		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
m,p-Cresol	NELAP	1.10		**9.92**	mg/Kg-dry	1	02/09/2017 10:22	126878
Nitrobenzene	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
N-Nitrosodimethylamine	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
N-Nitroso-di-n-propylamine	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
N-Nitrosodiphenylamine	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
o-Cresol	NELAP	1.10		**4.41**	mg/Kg-dry	1	02/09/2017 10:22	126878
Pentachlorophenol	NELAP	4.41		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
Phenol	NELAP	0.771		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
Pyridine	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
1,2-Diphenylhydrazine		1.85		**ND**	mg/Kg-dry	1	02/09/2017 10:22	126878
Surr: 2,4,6-Tribromophenol		33-115		**59.7**	%REC	1	02/09/2017 10:22	126878
Surr: 2-Fluorobiphenyl		36.5-97.7		**66.1**	%REC	1	02/09/2017 10:22	126878
Surr: 2-Fluorophenol		39.4-92.8		**68.5**	%REC	1	02/09/2017 10:22	126878
Surr: Nitrobenzene-d5		34.7-90.1		**67.8**	%REC	1	02/09/2017 10:22	126878
Surr: Phenol-d5		42.8-106		**76.0**	%REC	1	02/09/2017 10:22	126878
Surr: p-Terphenyl-d14		43.7-124		**73.6**	%REC	1	02/09/2017 10:22	126878
Elevated reporting limit due to sample composition.								
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,1,2-Tetrachloroethane	NELAP	1520		**ND**	µg/Kg-dry	250	02/09/2017 3:22	126941
1,1,1-Trichloroethane	NELAP	1520		**ND**	µg/Kg-dry	250	02/09/2017 3:22	126941
1,1,2,2-Tetrachloroethane	NELAP	1520		**ND**	µg/Kg-dry	250	02/09/2017 3:22	126941
1,1,2-Trichloro-1,2,2-trifluoroethane		1520		**ND**	µg/Kg-dry	250	02/09/2017 3:22	126941
1,1,2-Trichloroethane	NELAP	1520		**ND**	µg/Kg-dry	250	02/09/2017 3:22	126941
1,1-Dichloro-2-propanone		15200		**ND**	µg/Kg-dry	250	02/09/2017 3:22	126941
1,1-Dichloroethane	NELAP	1520		**ND**	µg/Kg-dry	250	02/09/2017 3:22	126941

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-007 **Client Sample ID:** CH-FS-03 (19-20)

Matrix: SOLID **Collection Date:** 02/06/2017 11:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1-Dichloroethene	NELAP	1520		ND	µg/Kg-dry	250	02/09/2017 3:22	126941
1,1-Dichloropropene	NELAP	1520		ND	µg/Kg-dry	250	02/09/2017 3:22	126941
1,2,3-Trichlorobenzene	NELAP	1520		ND	µg/Kg-dry	250	02/09/2017 3:22	126941
1,2,3-Trichloropropane	NELAP	3030		ND	µg/Kg-dry	250	02/09/2017 3:22	126941
1,2,3-Trimethylbenzene		1520		ND	µg/Kg-dry	250	02/09/2017 3:22	126941
1,2,4-Trichlorobenzene	NELAP	1520		ND	µg/Kg-dry	250	02/09/2017 3:22	126941
1,2,4-Trimethylbenzene	NELAP	1520		ND	µg/Kg-dry	250	02/09/2017 3:22	126941
1,2-Dibromo-3-chloropropane	NELAP	1520		ND	µg/Kg-dry	250	02/09/2017 3:22	126941
1,2-Dibromoethane	NELAP	1520		ND	µg/Kg-dry	250	02/09/2017 3:22	126941
1,2-Dichlorobenzene	NELAP	1520		ND	µg/Kg-dry	250	02/09/2017 3:22	126941
1,2-Dichloroethane	NELAP	1520		ND	µg/Kg-dry	250	02/09/2017 3:22	126941
1,2-Dichloropropane	NELAP	1520		ND	µg/Kg-dry	250	02/09/2017 3:22	126941
1,3,5-Trimethylbenzene	NELAP	1520		ND	µg/Kg-dry	250	02/09/2017 3:22	126941
1,3-Dichlorobenzene	NELAP	1520		ND	µg/Kg-dry	250	02/09/2017 3:22	126941
1,3-Dichloropropane	NELAP	1520		ND	µg/Kg-dry	250	02/09/2017 3:22	126941
1,4-Dichlorobenzene	NELAP	1520		ND	µg/Kg-dry	250	02/09/2017 3:22	126941
1-Chlorobutane	NELAP	1520		ND	µg/Kg-dry	250	02/09/2017 3:22	126941
2,2-Dichloropropane	NELAP	1520		ND	µg/Kg-dry	250	02/09/2017 3:22	126941
2-Butanone	NELAP	60700		ND	µg/Kg-dry	250	02/09/2017 3:22	126941
2-Chlorotoluene	NELAP	1520		ND	µg/Kg-dry	250	02/09/2017 3:22	126941
2-Hexanone	NELAP	15200		ND	µg/Kg-dry	250	02/09/2017 3:22	126941
2-Nitropropane	NELAP	15200		ND	µg/Kg-dry	250	02/09/2017 3:22	126941
4-Chlorotoluene	NELAP	1520		ND	µg/Kg-dry	250	02/09/2017 3:22	126941
4-Methyl-2-pentanone	NELAP	15200		ND	µg/Kg-dry	250	02/09/2017 3:22	126941
Acetone	NELAP	15200		ND	µg/Kg-dry	250	02/09/2017 3:22	126941
Acrolein	NELAP	30300		ND	µg/Kg-dry	250	02/09/2017 3:22	126941
Acrylonitrile	NELAP	3030		ND	µg/Kg-dry	250	02/09/2017 3:22	126941
Allyl chloride	NELAP	1520		ND	µg/Kg-dry	250	02/09/2017 3:22	126941
Benzene	NELAP	303		5240	µg/Kg-dry	250	02/09/2017 3:22	126941
Bromobenzene	NELAP	1520		ND	µg/Kg-dry	250	02/09/2017 3:22	126941
Bromochloromethane	NELAP	1520		ND	µg/Kg-dry	250	02/09/2017 3:22	126941
Bromodichloromethane	NELAP	1520		ND	µg/Kg-dry	250	02/09/2017 3:22	126941
Bromoform	NELAP	1520		ND	µg/Kg-dry	250	02/09/2017 3:22	126941
Bromomethane	NELAP	3030		ND	µg/Kg-dry	250	02/09/2017 3:22	126941
Carbon disulfide	NELAP	1520		ND	µg/Kg-dry	250	02/09/2017 3:22	126941
Carbon tetrachloride	NELAP	1520		ND	µg/Kg-dry	250	02/09/2017 3:22	126941
Chlorobenzene	NELAP	1520		ND	µg/Kg-dry	250	02/09/2017 3:22	126941
Chloroethane	NELAP	3030		ND	µg/Kg-dry	250	02/09/2017 3:22	126941
Chloroform	NELAP	1520		ND	µg/Kg-dry	250	02/09/2017 3:22	126941
Chloromethane	NELAP	3030		ND	µg/Kg-dry	250	02/09/2017 3:22	126941
cis-1,2-Dichloroethene	NELAP	1520		ND	µg/Kg-dry	250	02/09/2017 3:22	126941
cis-1,3-Dichloropropene	NELAP	1210		ND	µg/Kg-dry	250	02/09/2017 3:22	126941
Cyclohexanone		30300		ND	µg/Kg-dry	250	02/09/2017 3:22	126941
Dibromochloromethane	NELAP	1520		ND	µg/Kg-dry	250	02/09/2017 3:22	126941
Dibromomethane	NELAP	1520		ND	µg/Kg-dry	250	02/09/2017 3:22	126941
Dichlorodifluoromethane	NELAP	3030		ND	µg/Kg-dry	250	02/09/2017 3:22	126941
Ethyl ether	NELAP	1520		ND	µg/Kg-dry	250	02/09/2017 3:22	126941

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-007 **Client Sample ID:** CH-FS-03 (19-20)

Matrix: SOLID **Collection Date:** 02/06/2017 11:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Ethyl methacrylate	NELAP	1520		**ND**	µg/Kg-dry	250	02/09/2017 3:22	126941
Ethylbenzene	NELAP	1520		**ND**	µg/Kg-dry	250	02/09/2017 3:22	126941
Hexachlorobutadiene	NELAP	1520		**ND**	µg/Kg-dry	250	02/09/2017 3:22	126941
Hexachloroethane	NELAP	1520		**ND**	µg/Kg-dry	250	02/09/2017 3:22	126941
Iodomethane	NELAP	3030		**ND**	µg/Kg-dry	250	02/09/2017 3:22	126941
Isopropylbenzene	NELAP	1520		**ND**	µg/Kg-dry	250	02/09/2017 3:22	126941
m,p-Xylenes	NELAP	1520		**ND**	µg/Kg-dry	250	02/09/2017 3:22	126941
Methacrylonitrile	NELAP	15200		**ND**	µg/Kg-dry	250	02/09/2017 3:22	126941
Methyl Methacrylate	NELAP	1520		**ND**	µg/Kg-dry	250	02/09/2017 3:22	126941
Methyl tert-butyl ether	NELAP	607		**ND**	µg/Kg-dry	250	02/09/2017 3:22	126941
Methylacrylate	NELAP	3030		**ND**	µg/Kg-dry	250	02/09/2017 3:22	126941
Methylene chloride	NELAP	1520		**ND**	µg/Kg-dry	250	02/09/2017 3:22	126941
Naphthalene	NELAP	3030		**ND**	µg/Kg-dry	250	02/09/2017 3:22	126941
n-Butylbenzene	NELAP	1520		**ND**	µg/Kg-dry	250	02/09/2017 3:22	126941
n-Heptane		15200		**ND**	µg/Kg-dry	250	02/09/2017 3:22	126941
n-Hexane		6070		**ND**	µg/Kg-dry	250	02/09/2017 3:22	126941
Nitrobenzene	NELAP	30300		**ND**	µg/Kg-dry	250	02/09/2017 3:22	126941
n-Propylbenzene	NELAP	1520		**ND**	µg/Kg-dry	250	02/09/2017 3:22	126941
o-Xylene	NELAP	1520		**ND**	µg/Kg-dry	250	02/09/2017 3:22	126941
Pentachloroethane	NELAP	1520		**ND**	µg/Kg-dry	250	02/09/2017 3:22	126941
p-Isopropyltoluene	NELAP	1520		**ND**	µg/Kg-dry	250	02/09/2017 3:22	126941
Propionitrile	NELAP	15200		**ND**	µg/Kg-dry	250	02/09/2017 3:22	126941
sec-Butylbenzene	NELAP	1520		**ND**	µg/Kg-dry	250	02/09/2017 3:22	126941
Styrene	NELAP	1520		**ND**	µg/Kg-dry	250	02/09/2017 3:22	126941
tert-Butylbenzene	NELAP	1520		**ND**	µg/Kg-dry	250	02/09/2017 3:22	126941
Tetrachloroethene	NELAP	1520		**ND**	µg/Kg-dry	250	02/09/2017 3:22	126941
Tetrahydrofuran	NELAP	15200		**ND**	µg/Kg-dry	250	02/09/2017 3:22	126941
Toluene	NELAP	1520		**3600**	µg/Kg-dry	250	02/09/2017 3:22	126941
trans-1,2-Dichloroethene	NELAP	1520		**ND**	µg/Kg-dry	250	02/09/2017 3:22	126941
trans-1,3-Dichloropropene	NELAP	1210		**ND**	µg/Kg-dry	250	02/09/2017 3:22	126941
Trichloroethene	NELAP	1520		**ND**	µg/Kg-dry	250	02/09/2017 3:22	126941
Trichlorofluoromethane	NELAP	1520		**ND**	µg/Kg-dry	250	02/09/2017 3:22	126941
Vinyl acetate	NELAP	15200		**ND**	µg/Kg-dry	250	02/09/2017 3:22	126941
Vinyl chloride	NELAP	607		**ND**	µg/Kg-dry	250	02/09/2017 3:22	126941
Surr: 1,2-Dichloroethane-d4		72.2-131		**112.3**	%REC	250	02/09/2017 3:22	126941
Surr: 4-Bromofluorobenzene		82.1-116		**100.7**	%REC	250	02/09/2017 3:22	126941
Surr: Dibromofluoromethane		77.7-120		**98.4**	%REC	250	02/09/2017 3:22	126941
Surr: Toluene-d8		86-116		**97.3**	%REC	250	02/09/2017 3:22	126941

LCS & LCSD recovered outside upper QC limits for multiple compounds. Sample results are below reporting limit. Data is reportable per 2009 TNI Standard (Volume1, Module 4, section 1.7.4.2).

Elevated reporting limit due to high levels of target and/or non-target analytes.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-008 **Client Sample ID:** CH-FS-04 (6-7)

Matrix: SOLID **Collection Date:** 02/06/2017 12:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**17.7**	%	1	02/08/2017 17:42	R228981
SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Acenaphthene	NELAP	2.87		**99.5**	mg/Kg-dry	25	02/09/2017 23:06	126904
Acenaphthylene	NELAP	2.87		**45.1**	mg/Kg-dry	25	02/09/2017 23:06	126904
Anthracene	NELAP	2.87		**165**	mg/Kg-dry	25	02/09/2017 23:06	126904
Benzo(a)anthracene	NELAP	8.44		**103**	mg/Kg-dry	25	02/09/2017 23:06	126904
Benzo(a)pyrene	NELAP	2.87		**103**	mg/Kg-dry	25	02/09/2017 23:06	126904
Benzo(b)fluoranthene	NELAP	2.87		**91.3**	mg/Kg-dry	25	02/09/2017 23:06	126904
Benzo(g,h,i)perylene	NELAP	2.87		**26.5**	mg/Kg-dry	25	02/09/2017 23:06	126904
Benzo(k)fluoranthene	NELAP	2.87		**36.8**	mg/Kg-dry	25	02/09/2017 23:06	126904
Chrysene	NELAP	2.87		**80.4**	mg/Kg-dry	25	02/09/2017 23:06	126904
Dibenzo(a,h)anthracene	NELAP	2.87		**8.02**	mg/Kg-dry	25	02/09/2017 23:06	126904
Fluoranthene	NELAP	2.87		**253**	mg/Kg-dry	25	02/09/2017 23:06	126904
Fluorene	NELAP	2.87		**182**	mg/Kg-dry	25	02/09/2017 23:06	126904
Indeno(1,2,3-cd)pyrene	NELAP	2.87		**25.9**	mg/Kg-dry	25	02/09/2017 23:06	126904
Naphthalene	NELAP	2.87		**52.5**	mg/Kg-dry	25	02/09/2017 23:06	126904
Phenanthrene	NELAP	2.87		**470**	mg/Kg-dry	25	02/09/2017 23:06	126904
Pyrene	NELAP	2.87		**214**	mg/Kg-dry	25	02/09/2017 23:06	126904
Surr: 2-Fluorobiphenyl		8.85-90.5		**64.6**	%REC	25	02/09/2017 23:06	126904
Surr: Nitrobenzene-d5		5-102		**79.0**	%REC	25	02/09/2017 23:06	126904
Surr: p-Terphenyl-d14		18.4-103		**62.8**	%REC	25	02/09/2017 23:06	126904
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2,4-Trichlorobenzene	NELAP	169		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
1,2-Dichlorobenzene	NELAP	169		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
1,3-Dichlorobenzene	NELAP	169		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
1,4-Dichlorobenzene	NELAP	169		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
2,4,5-Trichlorophenol	NELAP	118		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
2,4,6-Trichlorophenol	NELAP	118		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
2,4-Dichlorophenol	NELAP	169		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
2,4-Dimethylphenol	NELAP	169		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
2,4-Dinitrophenol	NELAP	338		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
2,4-Dinitrotoluene	NELAP	118		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
2,6-Dinitrotoluene	NELAP	118		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
2-Chloronaphthalene	NELAP	118		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
2-Chlorophenol	NELAP	169		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
2-Methoxy-4-methylphenol		219		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
2-Methylnaphthalene	NELAP	118		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
2-Nitroaniline	NELAP	338		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
2-Nitrophenol	NELAP	118		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
3,3´-Dichlorobenzidine	NELAP	118		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
3-Nitroaniline	NELAP	338		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
4,6-Dinitro-2-methylphenol	NELAP	338		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
4-Bromophenyl phenyl ether	NELAP	118		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
4-Chloro-3-methylphenol	NELAP	169		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
4-Chloroaniline	NELAP	169		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
4-Chlorophenyl phenyl ether	NELAP	118		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
4-Nitroaniline	NELAP	169		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-008 **Client Sample ID:** CH-FS-04 (6-7)

Matrix: SOLID **Collection Date:** 02/06/2017 12:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
4-Nitrophenol	NELAP	118		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
Aniline	NELAP	169		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
Azobenzene		118		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
Benzoic acid	NELAP	506		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
Benzyl alcohol	NELAP	169		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
Bis(2-chloroethoxy)methane	NELAP	118		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
Bis(2-chloroethyl)ether	NELAP	169		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
Bis(2-chloroisopropyl)ether	NELAP	118		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
Bis(2-ethylhexyl)phthalate	NELAP	118		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
Butyl benzyl phthalate	NELAP	118		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
Carbazole	NELAP	169		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
Dibenzofuran	NELAP	118		**145**	mg/Kg-dry	10	02/09/2017 11:26	126878
Diethyl phthalate	NELAP	169		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
Dimethyl phthalate	NELAP	118		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
Di-n-butyl phthalate	NELAP	118		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
Di-n-octyl phthalate	NELAP	118		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
Hexachlorobenzene	NELAP	118		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
Hexachlorobutadiene	NELAP	169		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
Hexachlorocyclopentadiene	NELAP	118		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
Hexachloroethane	NELAP	169		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
Isophorone	NELAP	118		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
m,p-Cresol	NELAP	169		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
Nitrobenzene	NELAP	169		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
N-Nitrosodimethylamine	NELAP	169		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
N-Nitroso-di-n-propylamine	NELAP	169		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
N-Nitrosodiphenylamine	NELAP	169		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
o-Cresol	NELAP	169		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
Pentachlorophenol	NELAP	675		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
Phenol	NELAP	118		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
Pyridine	NELAP	169		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
1,2-Diphenylhydrazine		284		**ND**	mg/Kg-dry	10	02/09/2017 11:26	126878
Surr: 2,4,6-Tribromophenol		33-115		**59.1**	%REC	10	02/09/2017 11:26	126878
Surr: 2-Fluorobiphenyl		36.5-97.7		**79.8**	%REC	10	02/09/2017 11:26	126878
Surr: 2-Fluorophenol		39.4-92.8		**76.4**	%REC	10	02/09/2017 11:26	126878
Surr: Nitrobenzene-d5		34.7-90.1		**78.6**	%REC	10	02/09/2017 11:26	126878
Surr: Phenol-d5		42.8-106		**82.6**	%REC	10	02/09/2017 11:26	126878
Surr: p-Terphenyl-d14		43.7-124		**82.2**	%REC	10	02/09/2017 11:26	126878
Elevated reporting limit due to sample composition.								
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,1,2-Tetrachloroethane	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
1,1,1-Trichloroethane	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
1,1,2,2-Tetrachloroethane	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
1,1,2-Trichloro-1,2,2-trifluoroethane		698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
1,1,2-Trichloroethane	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
1,1-Dichloro-2-propanone		6980		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
1,1-Dichloroethane	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
1,1-Dichloroethene	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-008 **Client Sample ID:** CH-FS-04 (6-7)

Matrix: SOLID **Collection Date:** 02/06/2017 12:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1-Dichloropropene	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
1,2,3-Trichlorobenzene	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
1,2,3-Trichloropropane	NELAP	1400		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
1,2,3-Trimethylbenzene		698		**3810**	µg/Kg-dry	100	02/09/2017 3:49	126941
1,2,4-Trichlorobenzene	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
1,2,4-Trimethylbenzene	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
1,2-Dibromo-3-chloropropane	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
1,2-Dibromoethane	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
1,2-Dichlorobenzene	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
1,2-Dichloroethane	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
1,2-Dichloropropane	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
1,3,5-Trimethylbenzene	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
1,3-Dichlorobenzene	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
1,3-Dichloropropane	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
1,4-Dichlorobenzene	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
1-Chlorobutane	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
2,2-Dichloropropane	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
2-Butanone	NELAP	27900		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
2-Chlorotoluene	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
2-Hexanone	NELAP	6980		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
2-Nitropropane	NELAP	6980		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
4-Chlorotoluene	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
4-Methyl-2-pentanone	NELAP	6980		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
Acetone	NELAP	6980		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
Acrolein	NELAP	14000		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
Acrylonitrile	NELAP	1400		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
Allyl chloride	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
Benzene	NELAP	140		**144**	µg/Kg-dry	100	02/09/2017 3:49	126941
Bromobenzene	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
Bromochloromethane	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
Bromodichloromethane	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
Bromoform	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
Bromomethane	NELAP	1400		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
Carbon disulfide	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
Carbon tetrachloride	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
Chlorobenzene	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
Chloroethane	NELAP	1400		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
Chloroform	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
Chloromethane	NELAP	1400		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
cis-1,2-Dichloroethene	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
cis-1,3-Dichloropropene	NELAP	559		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
Cyclohexanone		14000		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
Dibromochloromethane	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
Dibromomethane	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
Dichlorodifluoromethane	NELAP	1400		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
Ethyl ether	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
Ethyl methacrylate	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-008 **Client Sample ID:** CH-FS-04 (6-7)

Matrix: SOLID **Collection Date:** 02/06/2017 12:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Ethylbenzene	NELAP	698		**729**	µg/Kg-dry	100	02/09/2017 3:49	126941
Hexachlorobutadiene	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
Hexachloroethane	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
Iodomethane	NELAP	1400		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
Isopropylbenzene	NELAP	698		**725**	µg/Kg-dry	100	02/09/2017 3:49	126941
m,p-Xylenes	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
Methacrylonitrile	NELAP	6980		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
Methyl Methacrylate	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
Methyl tert-butyl ether	NELAP	279		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
Methylacrylate	NELAP	1400		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
Methylene chloride	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
Naphthalene	NELAP	1400		**5420**	µg/Kg-dry	100	02/09/2017 3:49	126941
n-Butylbenzene	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
n-Heptane		6980		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
n-Hexane		2790		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
Nitrobenzene	NELAP	14000		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
n-Propylbenzene	NELAP	698		**941**	µg/Kg-dry	100	02/09/2017 3:49	126941
o-Xylene	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
Pentachloroethane	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
p-Isopropyltoluene	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
Propionitrile	NELAP	6980		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
sec-Butylbenzene	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
Styrene	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
tert-Butylbenzene	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
Tetrachloroethene	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
Tetrahydrofuran	NELAP	6980		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
Toluene	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
trans-1,2-Dichloroethene	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
trans-1,3-Dichloropropene	NELAP	559		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
Trichloroethene	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
Trichlorofluoromethane	NELAP	698		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
Vinyl acetate	NELAP	6980		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
Vinyl chloride	NELAP	279		**ND**	µg/Kg-dry	100	02/09/2017 3:49	126941
Surr: 1,2-Dichloroethane-d4		72.2-131		**118.5**	%REC	100	02/09/2017 3:49	126941
Surr: 4-Bromofluorobenzene		82.1-116		**103.8**	%REC	100	02/09/2017 3:49	126941
Surr: Dibromofluoromethane		77.7-120		**100.8**	%REC	100	02/09/2017 3:49	126941
Surr: Toluene-d8		86-116		**96.6**	%REC	100	02/09/2017 3:49	126941

LCS & LCSD recovered outside upper QC limits for multiple compounds. Sample results are below reporting limit. Data is reportable per 2009 TNI Standard (Volume1, Module 4, section 1.7.4.2).

Elevated reporting limit due to high levels of target and/or non-target analytes.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-009 **Client Sample ID:** CH-FS-04 (11-12)

Matrix: SOLID **Collection Date:** 02/06/2017 12:50

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**12.2**	%	1	02/08/2017 17:42	R228981
SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Acenaphthene	NELAP	0.193		**6.51**	mg/Kg-dry	25	02/09/2017 23:39	126904
Acenaphthylene	NELAP	0.193		**18.0**	mg/Kg-dry	25	02/09/2017 23:39	126904
Anthracene	NELAP	0.193		**34.3**	mg/Kg-dry	25	02/09/2017 23:39	126904
Benzo(a)anthracene	NELAP	0.568		**22.2**	mg/Kg-dry	25	02/09/2017 23:39	126904
Benzo(a)pyrene	NELAP	0.193		**25.5**	mg/Kg-dry	25	02/09/2017 23:39	126904
Benzo(b)fluoranthene	NELAP	0.193		**28.2**	mg/Kg-dry	25	02/09/2017 23:39	126904
Benzo(g,h,i)perylene	NELAP	0.193		**4.90**	mg/Kg-dry	25	02/09/2017 23:39	126904
Benzo(k)fluoranthene	NELAP	0.193		**8.81**	mg/Kg-dry	25	02/09/2017 23:39	126904
Chrysene	NELAP	0.193		**17.8**	mg/Kg-dry	25	02/09/2017 23:39	126904
Dibenzo(a,h)anthracene	NELAP	0.193		**1.73**	mg/Kg-dry	25	02/09/2017 23:39	126904
Fluoranthene	NELAP	0.193		**58.5**	mg/Kg-dry	25	02/09/2017 23:39	126904
Fluorene	NELAP	0.193		**36.0**	mg/Kg-dry	25	02/09/2017 23:39	126904
Indeno(1,2,3-cd)pyrene	NELAP	0.193		**5.30**	mg/Kg-dry	25	02/09/2017 23:39	126904
Naphthalene	NELAP	0.772		**361**	mg/Kg-dry	100	02/10/2017 14:11	126904
Phenanthrene	NELAP	0.772		**127**	mg/Kg-dry	100	02/10/2017 14:11	126904
Pyrene	NELAP	0.193		**51.2**	mg/Kg-dry	25	02/09/2017 23:39	126904
Surr: 2-Fluorobiphenyl		8.85-90.5		**38.6**	%REC	25	02/09/2017 23:39	126904
Surr: Nitrobenzene-d5		5-102		**36.7**	%REC	25	02/09/2017 23:39	126904
Surr: p-Terphenyl-d14		18.4-103		**48.0**	%REC	25	02/09/2017 23:39	126904
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2,4-Trichlorobenzene	NELAP	56.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
1,2-Dichlorobenzene	NELAP	56.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
1,3-Dichlorobenzene	NELAP	56.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
1,4-Dichlorobenzene	NELAP	56.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
2,4,5-Trichlorophenol	NELAP	39.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
2,4,6-Trichlorophenol	NELAP	39.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
2,4-Dichlorophenol	NELAP	56.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
2,4-Dimethylphenol	NELAP	56.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
2,4-Dinitrophenol	NELAP	114		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
2,4-Dinitrotoluene	NELAP	39.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
2,6-Dinitrotoluene	NELAP	39.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
2-Chloronaphthalene	NELAP	39.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
2-Chlorophenol	NELAP	56.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
2-Methoxy-4-methylphenol		73.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
2-Methylnaphthalene	NELAP	39.8		**125**	mg/Kg-dry	50	02/09/2017 10:34	126878
2-Nitroaniline	NELAP	114		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
2-Nitrophenol	NELAP	39.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
3,3´-Dichlorobenzidine	NELAP	39.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
3-Nitroaniline	NELAP	114		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
4,6-Dinitro-2-methylphenol	NELAP	114		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
4-Bromophenyl phenyl ether	NELAP	39.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
4-Chloro-3-methylphenol	NELAP	56.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
4-Chloroaniline	NELAP	56.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
4-Chlorophenyl phenyl ether	NELAP	39.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
4-Nitroaniline	NELAP	56.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-009 **Client Sample ID:** CH-FS-04 (11-12)

Matrix: SOLID **Collection Date:** 02/06/2017 12:50

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
4-Nitrophenol	NELAP	39.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
Aniline	NELAP	56.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
Azobenzene		39.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
Benzoic acid	NELAP	170		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
Benzyl alcohol	NELAP	56.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
Bis(2-chloroethoxy)methane	NELAP	39.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
Bis(2-chloroethyl)ether	NELAP	56.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
Bis(2-chloroisopropyl)ether	NELAP	39.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
Bis(2-ethylhexyl)phthalate	NELAP	39.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
Butyl benzyl phthalate	NELAP	39.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
Carbazole	NELAP	56.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
Dibenzofuran	NELAP	39.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
Diethyl phthalate	NELAP	56.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
Dimethyl phthalate	NELAP	39.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
Di-n-butyl phthalate	NELAP	39.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
Di-n-octyl phthalate	NELAP	39.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
Hexachlorobenzene	NELAP	39.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
Hexachlorobutadiene	NELAP	56.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
Hexachlorocyclopentadiene	NELAP	39.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
Hexachloroethane	NELAP	56.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
Isophorone	NELAP	39.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
m,p-Cresol	NELAP	56.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
Nitrobenzene	NELAP	56.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
N-Nitrosodimethylamine	NELAP	56.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
N-Nitroso-di-n-propylamine	NELAP	56.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
N-Nitrosodiphenylamine	NELAP	56.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
o-Cresol	NELAP	56.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
Pentachlorophenol	NELAP	227		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
Phenol	NELAP	39.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
Pyridine	NELAP	56.8		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
1,2-Diphenylhydrazine		95.4		**ND**	mg/Kg-dry	50	02/09/2017 10:34	126878
Surr: 2,4,6-Tribromophenol		33-115	S	**169.7**	%REC	50	02/09/2017 10:34	126878
Surr: 2-Fluorobiphenyl		36.5-97.7		**61.9**	%REC	50	02/09/2017 10:34	126878
Surr: 2-Fluorophenol		39.4-92.8		**54.9**	%REC	50	02/09/2017 10:34	126878
Surr: Nitrobenzene-d5		34.7-90.1		**67.9**	%REC	50	02/09/2017 10:34	126878
Surr: Phenol-d5		42.8-106		**59.9**	%REC	50	02/09/2017 10:34	126878
Surr: p-Terphenyl-d14		43.7-124		**85.8**	%REC	50	02/09/2017 10:34	126878

Surrogate recovery is outside QC limits due to matrix interference.

Elevated reporting limit due to sample composition.

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,1,2-Tetrachloroethane	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
1,1,1-Trichloroethane	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
1,1,2,2-Tetrachloroethane	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
1,1,2-Trichloro-1,2,2-trifluoroethane		42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
1,1,2-Trichloroethane	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
1,1-Dichloro-2-propanone		420000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
1,1-Dichloroethane	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-009 **Client Sample ID:** CH-FS-04 (11-12)

Matrix: SOLID **Collection Date:** 02/06/2017 12:50

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1-Dichloroethene	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
1,1-Dichloropropene	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
1,2,3-Trichlorobenzene	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
1,2,3-Trichloropropane	NELAP	83900		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
1,2,3-Trimethylbenzene		42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
1,2,4-Trichlorobenzene	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
1,2,4-Trimethylbenzene	NELAP	42000		**114000**	µg/Kg-dry	5000	02/08/2017 15:52	126894
1,2-Dibromo-3-chloropropane	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
1,2-Dibromoethane	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
1,2-Dichlorobenzene	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
1,2-Dichloroethane	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
1,2-Dichloropropane	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
1,3,5-Trimethylbenzene	NELAP	42000		**44300**	µg/Kg-dry	5000	02/08/2017 15:52	126894
1,3-Dichlorobenzene	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
1,3-Dichloropropane	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
1,4-Dichlorobenzene	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
1-Chlorobutane	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
2,2-Dichloropropane	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
2-Butanone	NELAP	1680000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
2-Chlorotoluene	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
2-Hexanone	NELAP	420000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
2-Nitropropane	NELAP	420000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
4-Chlorotoluene	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
4-Methyl-2-pentanone	NELAP	420000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
Acetone	NELAP	420000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
Acrolein	NELAP	839000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
Acrylonitrile	NELAP	83900		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
Allyl chloride	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
Benzene	NELAP	8390		**99600**	µg/Kg-dry	5000	02/08/2017 15:52	126894
Bromobenzene	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
Bromochloromethane	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
Bromodichloromethane	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
Bromoform	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
Bromomethane	NELAP	83900		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
Carbon disulfide	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
Carbon tetrachloride	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
Chlorobenzene	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
Chloroethane	NELAP	83900		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
Chloroform	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
Chloromethane	NELAP	83900		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
cis-1,2-Dichloroethene	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
cis-1,3-Dichloropropene	NELAP	33600		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
Cyclohexanone		839000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
Dibromochloromethane	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
Dibromomethane	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
Dichlorodifluoromethane	NELAP	83900		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
Ethyl ether	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-009 **Client Sample ID:** CH-FS-04 (11-12)

Matrix: SOLID **Collection Date:** 02/06/2017 12:50

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Ethyl methacrylate	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
Ethylbenzene	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
Hexachlorobutadiene	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
Hexachloroethane	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
Iodomethane	NELAP	83900		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
Isopropylbenzene	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
m,p-Xylenes	NELAP	42000		**92500**	µg/Kg-dry	5000	02/08/2017 15:52	126894
Methacrylonitrile	NELAP	420000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
Methyl Methacrylate	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
Methyl tert-butyl ether	NELAP	16800		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
Methylacrylate	NELAP	83900		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
Methylene chloride	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
Naphthalene	NELAP	172000		**3350000**	µg/Kg-dry	10000	02/09/2017 16:39	126995
n-Butylbenzene	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
n-Heptane		420000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
n-Hexane		168000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
Nitrobenzene	NELAP	839000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
n-Propylbenzene	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
o-Xylene	NELAP	42000		**57700**	µg/Kg-dry	5000	02/08/2017 15:52	126894
Pentachloroethane	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
p-Isopropyltoluene	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
Propionitrile	NELAP	420000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
sec-Butylbenzene	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
Styrene	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
tert-Butylbenzene	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
Tetrachloroethene	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
Tetrahydrofuran	NELAP	420000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
Toluene	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
trans-1,2-Dichloroethene	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
trans-1,3-Dichloropropene	NELAP	33600		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
Trichloroethene	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
Trichlorofluoromethane	NELAP	42000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
Vinyl acetate	NELAP	420000		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
Vinyl chloride	NELAP	16800		**ND**	µg/Kg-dry	5000	02/08/2017 15:52	126894
Surr: 1,2-Dichloroethane-d4		72.2-131		**106.4**	%REC	5000	02/08/2017 15:52	126894
Surr: 4-Bromofluorobenzene		82.1-116		**102.5**	%REC	5000	02/08/2017 15:52	126894
Surr: Dibromofluoromethane		77.7-120		**101.4**	%REC	5000	02/08/2017 15:52	126894
Surr: Toluene-d8		86-116		**98.4**	%REC	5000	02/08/2017 15:52	126894

LCS and LCSD have analytes that recovered outside upper QC limits. The sample results are below reporting limit. Data is reportable per 2009 TNI Standard (Volume1, Module 4, section 1.7.4.2).

Elevated reporting limit due to high levels of target and/or non-target analytes.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-010 **Client Sample ID:** CH-FS-04 (16-17)

Matrix: SOLID **Collection Date:** 02/06/2017 12:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**10.3**	%	1	02/08/2017 17:42	R228981
SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Acenaphthene	NELAP	0.075		**0.085**	mg/Kg-dry	10	02/09/2017 18:14	126904
Acenaphthylene	NELAP	0.075		**ND**	mg/Kg-dry	10	02/09/2017 18:14	126904
Anthracene	NELAP	0.075		**0.232**	mg/Kg-dry	10	02/09/2017 18:14	126904
Benzo(a)anthracene	NELAP	0.221		**ND**	mg/Kg-dry	10	02/09/2017 18:14	126904
Benzo(a)pyrene	NELAP	0.075		**0.114**	mg/Kg-dry	10	02/09/2017 18:14	126904
Benzo(b)fluoranthene	NELAP	0.075		**0.116**	mg/Kg-dry	10	02/09/2017 18:14	126904
Benzo(g,h,i)perylene	NELAP	0.075		**ND**	mg/Kg-dry	10	02/09/2017 18:14	126904
Benzo(k)fluoranthene	NELAP	0.075		**ND**	mg/Kg-dry	10	02/09/2017 18:14	126904
Chrysene	NELAP	0.075		**0.146**	mg/Kg-dry	10	02/09/2017 18:14	126904
Dibenzo(a,h)anthracene	NELAP	0.075		**ND**	mg/Kg-dry	10	02/09/2017 18:14	126904
Fluoranthene	NELAP	0.075		**0.350**	mg/Kg-dry	10	02/09/2017 18:14	126904
Fluorene	NELAP	0.075		**0.201**	mg/Kg-dry	10	02/09/2017 18:14	126904
Indeno(1,2,3-cd)pyrene	NELAP	0.075		**ND**	mg/Kg-dry	10	02/09/2017 18:14	126904
Naphthalene	NELAP	0.075		**0.277**	mg/Kg-dry	10	02/09/2017 18:14	126904
Phenanthrene	NELAP	0.075		**0.623**	mg/Kg-dry	10	02/09/2017 18:14	126904
Pyrene	NELAP	0.075		**0.308**	mg/Kg-dry	10	02/09/2017 18:14	126904
Surr: 2-Fluorobiphenyl		8.85-90.5		**61.4**	%REC	10	02/09/2017 18:14	126904
Surr: Nitrobenzene-d5		5-102		**77.0**	%REC	10	02/09/2017 18:14	126904
Surr: p-Terphenyl-d14		18.4-103		**62.9**	%REC	10	02/09/2017 18:14	126904
Elevated reporting limit due to sample composition.								
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2,4-Trichlorobenzene	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 10:54	126878
1,2-Dichlorobenzene	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 10:54	126878
1,3-Dichlorobenzene	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 10:54	126878
1,4-Dichlorobenzene	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 10:54	126878
2,4,5-Trichlorophenol	NELAP	0.773		**ND**	mg/Kg-dry	1	02/09/2017 10:54	126878
2,4,6-Trichlorophenol	NELAP	0.773		**ND**	mg/Kg-dry	1	02/09/2017 10:54	126878
2,4-Dichlorophenol	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 10:54	126878
2,4-Dimethylphenol	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 10:54	126878
2,4-Dinitrophenol	NELAP	2.21		**ND**	mg/Kg-dry	1	02/09/2017 10:54	126878
2,4-Dinitrotoluene	NELAP	0.773		**ND**	mg/Kg-dry	1	02/09/2017 10:54	126878
2,6-Dinitrotoluene	NELAP	0.773		**ND**	mg/Kg-dry	1	02/09/2017 10:54	126878
2-Chloronaphthalene	NELAP	0.773		**ND**	mg/Kg-dry	1	02/09/2017 10:54	126878
2-Chlorophenol	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 10:54	126878
2-Methoxy-4-methylphenol		1.43		**ND**	mg/Kg-dry	1	02/09/2017 10:54	126878
2-Methylnaphthalene	NELAP	0.773		**ND**	mg/Kg-dry	1	02/09/2017 10:54	126878
2-Nitroaniline	NELAP	2.21		**ND**	mg/Kg-dry	1	02/09/2017 10:54	126878
2-Nitrophenol	NELAP	0.773		**ND**	mg/Kg-dry	1	02/09/2017 10:54	126878
3,3´-Dichlorobenzidine	NELAP	0.773		**ND**	mg/Kg-dry	1	02/09/2017 10:54	126878
3-Nitroaniline	NELAP	2.21		**ND**	mg/Kg-dry	1	02/09/2017 10:54	126878
4,6-Dinitro-2-methylphenol	NELAP	2.21		**ND**	mg/Kg-dry	1	02/09/2017 10:54	126878
4-Bromophenyl phenyl ether	NELAP	0.773		**ND**	mg/Kg-dry	1	02/09/2017 10:54	126878
4-Chloro-3-methylphenol	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 10:54	126878
4-Chloroaniline	NELAP	1.10		**ND**	mg/Kg-dry	1	02/09/2017 10:54	126878
4-Chlorophenyl phenyl ether	NELAP	0.773		**ND**	mg/Kg-dry	1	02/09/2017 10:54	126878

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-010 **Client Sample ID:** CH-FS-04 (16-17)

Matrix: SOLID **Collection Date:** 02/06/2017 12:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
4-Nitroaniline	NELAP	1.10		ND	mg/Kg-dry	1	02/09/2017 10:54	126878
4-Nitrophenol	NELAP	0.773		ND	mg/Kg-dry	1	02/09/2017 10:54	126878
Aniline	NELAP	1.10		ND	mg/Kg-dry	1	02/09/2017 10:54	126878
Azobenzene		0.773		ND	mg/Kg-dry	1	02/09/2017 10:54	126878
Benzoic acid	NELAP	3.31		ND	mg/Kg-dry	1	02/09/2017 10:54	126878
Benzyl alcohol	NELAP	1.10		ND	mg/Kg-dry	1	02/09/2017 10:54	126878
Bis(2-chloroethoxy)methane	NELAP	0.773		ND	mg/Kg-dry	1	02/09/2017 10:54	126878
Bis(2-chloroethyl)ether	NELAP	1.10		ND	mg/Kg-dry	1	02/09/2017 10:54	126878
Bis(2-chloroisopropyl)ether	NELAP	0.773		ND	mg/Kg-dry	1	02/09/2017 10:54	126878
Bis(2-ethylhexyl)phthalate	NELAP	0.773		ND	mg/Kg-dry	1	02/09/2017 10:54	126878
Butyl benzyl phthalate	NELAP	0.773		ND	mg/Kg-dry	1	02/09/2017 10:54	126878
Carbazole	NELAP	1.10		ND	mg/Kg-dry	1	02/09/2017 10:54	126878
Dibenzofuran	NELAP	0.773		ND	mg/Kg-dry	1	02/09/2017 10:54	126878
Diethyl phthalate	NELAP	1.10		ND	mg/Kg-dry	1	02/09/2017 10:54	126878
Dimethyl phthalate	NELAP	0.773		ND	mg/Kg-dry	1	02/09/2017 10:54	126878
Di-n-butyl phthalate	NELAP	0.773		ND	mg/Kg-dry	1	02/09/2017 10:54	126878
Di-n-octyl phthalate	NELAP	0.773		ND	mg/Kg-dry	1	02/09/2017 10:54	126878
Hexachlorobenzene	NELAP	0.773		ND	mg/Kg-dry	1	02/09/2017 10:54	126878
Hexachlorobutadiene	NELAP	1.10		ND	mg/Kg-dry	1	02/09/2017 10:54	126878
Hexachlorocyclopentadiene	NELAP	0.773		ND	mg/Kg-dry	1	02/09/2017 10:54	126878
Hexachloroethane	NELAP	1.10		ND	mg/Kg-dry	1	02/09/2017 10:54	126878
Isophorone	NELAP	0.773		ND	mg/Kg-dry	1	02/09/2017 10:54	126878
m,p-Cresol	NELAP	1.10		ND	mg/Kg-dry	1	02/09/2017 10:54	126878
Nitrobenzene	NELAP	1.10		ND	mg/Kg-dry	1	02/09/2017 10:54	126878
N-Nitrosodimethylamine	NELAP	1.10		ND	mg/Kg-dry	1	02/09/2017 10:54	126878
N-Nitroso-di-n-propylamine	NELAP	1.10		ND	mg/Kg-dry	1	02/09/2017 10:54	126878
N-Nitrosodiphenylamine	NELAP	1.10		ND	mg/Kg-dry	1	02/09/2017 10:54	126878
o-Cresol	NELAP	1.10		ND	mg/Kg-dry	1	02/09/2017 10:54	126878
Pentachlorophenol	NELAP	4.42		ND	mg/Kg-dry	1	02/09/2017 10:54	126878
Phenol	NELAP	0.773		ND	mg/Kg-dry	1	02/09/2017 10:54	126878
Pyridine	NELAP	1.10		ND	mg/Kg-dry	1	02/09/2017 10:54	126878
1,2-Diphenylhydrazine		1.85		ND	mg/Kg-dry	1	02/09/2017 10:54	126878
Surr: 2,4,6-Tribromophenol		33-115		62.0	%REC	1	02/09/2017 10:54	126878
Surr: 2-Fluorobiphenyl		36.5-97.7		66.5	%REC	1	02/09/2017 10:54	126878
Surr: 2-Fluorophenol		39.4-92.8		68.1	%REC	1	02/09/2017 10:54	126878
Surr: Nitrobenzene-d5		34.7-90.1		68.5	%REC	1	02/09/2017 10:54	126878
Surr: Phenol-d5		42.8-106		76.9	%REC	1	02/09/2017 10:54	126878
Surr: p-Terphenyl-d14		43.7-124		72.5	%REC	1	02/09/2017 10:54	126878
Elevated reporting limit due to sample composition.								
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,1,2-Tetrachloroethane	NELAP	644		ND	µg/Kg-dry	100	02/08/2017 16:19	126894
1,1,1-Trichloroethane	NELAP	644		ND	µg/Kg-dry	100	02/08/2017 16:19	126894
1,1,2,2-Tetrachloroethane	NELAP	644		ND	µg/Kg-dry	100	02/08/2017 16:19	126894
1,1,2-Trichloro-1,2,2-trifluoroethane		644		ND	µg/Kg-dry	100	02/08/2017 16:19	126894
1,1,2-Trichloroethane	NELAP	644		ND	µg/Kg-dry	100	02/08/2017 16:19	126894
1,1-Dichloro-2-propanone		6440		ND	µg/Kg-dry	100	02/08/2017 16:19	126894
1,1-Dichloroethane	NELAP	644		ND	µg/Kg-dry	100	02/08/2017 16:19	126894

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-010 **Client Sample ID:** CH-FS-04 (16-17)

Matrix: SOLID **Collection Date:** 02/06/2017 12:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1-Dichloroethene	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
1,1-Dichloropropene	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
1,2,3-Trichlorobenzene	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
1,2,3-Trichloropropane	NELAP	1290		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
1,2,3-Trimethylbenzene		644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
1,2,4-Trichlorobenzene	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
1,2,4-Trimethylbenzene	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
1,2-Dibromo-3-chloropropane	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
1,2-Dibromoethane	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
1,2-Dichlorobenzene	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
1,2-Dichloroethane	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
1,2-Dichloropropane	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
1,3,5-Trimethylbenzene	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
1,3-Dichlorobenzene	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
1,3-Dichloropropane	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
1,4-Dichlorobenzene	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
1-Chlorobutane	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
2,2-Dichloropropane	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
2-Butanone	NELAP	25800		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
2-Chlorotoluene	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
2-Hexanone	NELAP	6440		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
2-Nitropropane	NELAP	6440		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
4-Chlorotoluene	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
4-Methyl-2-pentanone	NELAP	6440		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
Acetone	NELAP	6440		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
Acrolein	NELAP	12900		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
Acrylonitrile	NELAP	1290		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
Allyl chloride	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
Benzene	NELAP	330		**27500**	µg/Kg-dry	250	02/09/2017 17:05	126995
Bromobenzene	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
Bromochloromethane	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
Bromodichloromethane	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
Bromoform	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
Bromomethane	NELAP	1290		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
Carbon disulfide	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
Carbon tetrachloride	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
Chlorobenzene	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
Chloroethane	NELAP	1290		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
Chloroform	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
Chloromethane	NELAP	1290		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
cis-1,2-Dichloroethene	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
cis-1,3-Dichloropropene	NELAP	516		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
Cyclohexanone		12900		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
Dibromochloromethane	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
Dibromomethane	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
Dichlorodifluoromethane	NELAP	1290		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
Ethyl ether	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-010 **Client Sample ID:** CH-FS-04 (16-17)

Matrix: SOLID **Collection Date:** 02/06/2017 12:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Ethyl methacrylate	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
Ethylbenzene	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
Hexachlorobutadiene	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
Hexachloroethane	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
Iodomethane	NELAP	1290		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
Isopropylbenzene	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
m,p-Xylenes	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
Methacrylonitrile	NELAP	6440		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
Methyl Methacrylate	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
Methyl tert-butyl ether	NELAP	258		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
Methylacrylate	NELAP	1290		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
Methylene chloride	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
Naphthalene	NELAP	3300		**ND**	µg/Kg-dry	250	02/09/2017 17:05	126995
n-Butylbenzene	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
n-Heptane		6440		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
n-Hexane		2580		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
Nitrobenzene	NELAP	12900		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
n-Propylbenzene	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
o-Xylene	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
Pentachloroethane	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
p-Isopropyltoluene	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
Propionitrile	NELAP	6440		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
sec-Butylbenzene	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
Styrene	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
tert-Butylbenzene	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
Tetrachloroethene	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
Tetrahydrofuran	NELAP	6440		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
Toluene	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
trans-1,2-Dichloroethene	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
trans-1,3-Dichloropropene	NELAP	516		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
Trichloroethene	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
Trichlorofluoromethane	NELAP	644		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
Vinyl acetate	NELAP	6440		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
Vinyl chloride	NELAP	258		**ND**	µg/Kg-dry	100	02/08/2017 16:19	126894
Surr: 1,2-Dichloroethane-d4		72.2-131		**104.1**	%REC	100	02/08/2017 16:19	126894
Surr: 4-Bromofluorobenzene		82.1-116		**102.3**	%REC	100	02/08/2017 16:19	126894
Surr: Dibromofluoromethane		77.7-120		**101.4**	%REC	100	02/08/2017 16:19	126894
Surr: Toluene-d8		86-116		**95.2**	%REC	100	02/08/2017 16:19	126894

LCS and LCSD have analytes that recovered outside upper QC limits. The sample results are below reporting limit. Data is reportable per 2009 TNI Standard (Volume1, Module 4, section 1.7.4.2).

Elevated reporting limit due to high levels of target and/or non-target analytes.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-011 **Client Sample ID:** CH-FS-05 (5-6)

Matrix: SOLID **Collection Date:** 02/06/2017 14:50

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**23.6**	%	1	02/08/2017 17:43	R228981
SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Acenaphthene	NELAP	0.664		**1.04**	mg/Kg-dry	25	02/10/2017 0:11	126904
Acenaphthylene	NELAP	0.664		**1.13**	mg/Kg-dry	25	02/10/2017 0:11	126904
Anthracene	NELAP	0.664		**1.84**	mg/Kg-dry	25	02/10/2017 0:11	126904
Benzo(a)anthracene	NELAP	1.95		**7.24**	mg/Kg-dry	25	02/10/2017 0:11	126904
Benzo(a)pyrene	NELAP	0.664		**5.21**	mg/Kg-dry	25	02/10/2017 0:11	126904
Benzo(b)fluoranthene	NELAP	0.664		**6.87**	mg/Kg-dry	25	02/10/2017 0:11	126904
Benzo(g,h,i)perylene	NELAP	0.664		**0.691**	mg/Kg-dry	25	02/10/2017 0:11	126904
Benzo(k)fluoranthene	NELAP	0.664		**2.31**	mg/Kg-dry	25	02/10/2017 0:11	126904
Chrysene	NELAP	0.664		**6.40**	mg/Kg-dry	25	02/10/2017 0:11	126904
Dibenzo(a,h)anthracene	NELAP	0.664		**ND**	mg/Kg-dry	25	02/10/2017 0:11	126904
Fluoranthene	NELAP	0.664		**9.32**	mg/Kg-dry	25	02/10/2017 0:11	126904
Fluorene	NELAP	0.664		**1.70**	mg/Kg-dry	25	02/10/2017 0:11	126904
Indeno(1,2,3-cd)pyrene	NELAP	0.664		**0.866**	mg/Kg-dry	25	02/10/2017 0:11	126904
Naphthalene	NELAP	0.664		**1.34**	mg/Kg-dry	25	02/10/2017 0:11	126904
Phenanthrene	NELAP	0.664		**1.88**	mg/Kg-dry	25	02/10/2017 0:11	126904
Pyrene	NELAP	0.664		**8.23**	mg/Kg-dry	25	02/10/2017 0:11	126904
Surr: 2-Fluorobiphenyl		8.85-90.5		**58.5**	%REC	25	02/10/2017 0:11	126904
Surr: Nitrobenzene-d5		5-102		**58.7**	%REC	25	02/10/2017 0:11	126904
Surr: p-Terphenyl-d14		18.4-103		**60.0**	%REC	25	02/10/2017 0:11	126904
Elevated reporting limit due to sample composition.								
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2,4-Trichlorobenzene	NELAP	39.1		**ND**	mg/Kg-dry	10	02/09/2017 13:35	126878
1,2-Dichlorobenzene	NELAP	39.1		**ND**	mg/Kg-dry	10	02/09/2017 13:35	126878
1,3-Dichlorobenzene	NELAP	39.1		**ND**	mg/Kg-dry	10	02/09/2017 13:35	126878
1,4-Dichlorobenzene	NELAP	39.1		**ND**	mg/Kg-dry	10	02/09/2017 13:35	126878
2,4,5-Trichlorophenol	NELAP	27.4		**ND**	mg/Kg-dry	10	02/09/2017 13:35	126878
2,4,6-Trichlorophenol	NELAP	27.4		**ND**	mg/Kg-dry	10	02/09/2017 13:35	126878
2,4-Dichlorophenol	NELAP	39.1		**ND**	mg/Kg-dry	10	02/09/2017 13:35	126878
2,4-Dimethylphenol	NELAP	39.1		**ND**	mg/Kg-dry	10	02/09/2017 13:35	126878
2,4-Dinitrophenol	NELAP	78.2		**ND**	mg/Kg-dry	10	02/09/2017 13:35	126878
2,4-Dinitrotoluene	NELAP	27.4		**ND**	mg/Kg-dry	10	02/09/2017 13:35	126878
2,6-Dinitrotoluene	NELAP	27.4		**ND**	mg/Kg-dry	10	02/09/2017 13:35	126878
2-Chloronaphthalene	NELAP	27.4		**ND**	mg/Kg-dry	10	02/09/2017 13:35	126878
2-Chlorophenol	NELAP	39.1		**ND**	mg/Kg-dry	10	02/09/2017 13:35	126878
2-Methoxy-4-methylphenol		50.8		**ND**	mg/Kg-dry	10	02/09/2017 13:35	126878
2-Methylnaphthalene	NELAP	27.4		**ND**	mg/Kg-dry	10	02/09/2017 13:35	126878
2-Nitroaniline	NELAP	78.2		**ND**	mg/Kg-dry	10	02/09/2017 13:35	126878
2-Nitrophenol	NELAP	27.4		**ND**	mg/Kg-dry	10	02/09/2017 13:35	126878
3,3´-Dichlorobenzidine	NELAP	27.4		**ND**	mg/Kg-dry	10	02/09/2017 13:35	126878
3-Nitroaniline	NELAP	78.2		**ND**	mg/Kg-dry	10	02/09/2017 13:35	126878
4,6-Dinitro-2-methylphenol	NELAP	78.2		**ND**	mg/Kg-dry	10	02/09/2017 13:35	126878
4-Bromophenyl phenyl ether	NELAP	27.4		**ND**	mg/Kg-dry	10	02/09/2017 13:35	126878
4-Chloro-3-methylphenol	NELAP	39.1		**ND**	mg/Kg-dry	10	02/09/2017 13:35	126878
4-Chloroaniline	NELAP	39.1		**ND**	mg/Kg-dry	10	02/09/2017 13:35	126878
4-Chlorophenyl phenyl ether	NELAP	27.4		**ND**	mg/Kg-dry	10	02/09/2017 13:35	126878

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-011 **Client Sample ID:** CH-FS-05 (5-6)

Matrix: SOLID **Collection Date:** 02/06/2017 14:50

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
4-Nitroaniline	NELAP	39.1		ND	mg/Kg-dry	10	02/09/2017 13:35	126878
4-Nitrophenol	NELAP	27.4		ND	mg/Kg-dry	10	02/09/2017 13:35	126878
Aniline	NELAP	39.1		ND	mg/Kg-dry	10	02/09/2017 13:35	126878
Azobenzene		27.4		ND	mg/Kg-dry	10	02/09/2017 13:35	126878
Benzoic acid	NELAP	117		ND	mg/Kg-dry	10	02/09/2017 13:35	126878
Benzyl alcohol	NELAP	39.1		ND	mg/Kg-dry	10	02/09/2017 13:35	126878
Bis(2-chloroethoxy)methane	NELAP	27.4		ND	mg/Kg-dry	10	02/09/2017 13:35	126878
Bis(2-chloroethyl)ether	NELAP	39.1		ND	mg/Kg-dry	10	02/09/2017 13:35	126878
Bis(2-chloroisopropyl)ether	NELAP	27.4		ND	mg/Kg-dry	10	02/09/2017 13:35	126878
Bis(2-ethylhexyl)phthalate	NELAP	27.4		ND	mg/Kg-dry	10	02/09/2017 13:35	126878
Butyl benzyl phthalate	NELAP	27.4		ND	mg/Kg-dry	10	02/09/2017 13:35	126878
Carbazole	NELAP	39.1		ND	mg/Kg-dry	10	02/09/2017 13:35	126878
Dibenzofuran	NELAP	27.4		ND	mg/Kg-dry	10	02/09/2017 13:35	126878
Diethyl phthalate	NELAP	39.1		ND	mg/Kg-dry	10	02/09/2017 13:35	126878
Dimethyl phthalate	NELAP	27.4		ND	mg/Kg-dry	10	02/09/2017 13:35	126878
Di-n-butyl phthalate	NELAP	27.4		ND	mg/Kg-dry	10	02/09/2017 13:35	126878
Di-n-octyl phthalate	NELAP	27.4		ND	mg/Kg-dry	10	02/09/2017 13:35	126878
Hexachlorobenzene	NELAP	27.4		ND	mg/Kg-dry	10	02/09/2017 13:35	126878
Hexachlorobutadiene	NELAP	39.1		ND	mg/Kg-dry	10	02/09/2017 13:35	126878
Hexachlorocyclopentadiene	NELAP	27.4		ND	mg/Kg-dry	10	02/09/2017 13:35	126878
Hexachloroethane	NELAP	39.1		ND	mg/Kg-dry	10	02/09/2017 13:35	126878
Isophorone	NELAP	27.4		ND	mg/Kg-dry	10	02/09/2017 13:35	126878
m,p-Cresol	NELAP	39.1		ND	mg/Kg-dry	10	02/09/2017 13:35	126878
Nitrobenzene	NELAP	39.1		ND	mg/Kg-dry	10	02/09/2017 13:35	126878
N-Nitrosodimethylamine	NELAP	39.1		ND	mg/Kg-dry	10	02/09/2017 13:35	126878
N-Nitroso-di-n-propylamine	NELAP	39.1		ND	mg/Kg-dry	10	02/09/2017 13:35	126878
N-Nitrosodiphenylamine	NELAP	39.1		ND	mg/Kg-dry	10	02/09/2017 13:35	126878
o-Cresol	NELAP	39.1		ND	mg/Kg-dry	10	02/09/2017 13:35	126878
Pentachlorophenol	NELAP	156		ND	mg/Kg-dry	10	02/09/2017 13:35	126878
Phenol	NELAP	27.4		ND	mg/Kg-dry	10	02/09/2017 13:35	126878
Pyridine	NELAP	39.1		ND	mg/Kg-dry	10	02/09/2017 13:35	126878
1,2-Diphenylhydrazine		65.7		ND	mg/Kg-dry	10	02/09/2017 13:35	126878
Surr: 2,4,6-Tribromophenol		33-115		52.5	%REC	10	02/09/2017 13:35	126878
Surr: 2-Fluorobiphenyl		36.5-97.7		71.1	%REC	10	02/09/2017 13:35	126878
Surr: 2-Fluorophenol		39.4-92.8		67.1	%REC	10	02/09/2017 13:35	126878
Surr: Nitrobenzene-d5		34.7-90.1		71.5	%REC	10	02/09/2017 13:35	126878
Surr: Phenol-d5		42.8-106		76.0	%REC	10	02/09/2017 13:35	126878
Surr: p-Terphenyl-d14		43.7-124		69.5	%REC	10	02/09/2017 13:35	126878
Elevated reporting limit due to sample composition.								
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,1,2-Tetrachloroethane	NELAP	140		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
1,1,1-Trichloroethane	NELAP	140		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
1,1,2,2-Tetrachloroethane	NELAP	140		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
1,1,2-Trichloro-1,2,2-trifluoroethane		140		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
1,1,2-Trichloroethane	NELAP	140		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
1,1-Dichloro-2-propanone		1400		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
1,1-Dichloroethane	NELAP	140		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-011 **Client Sample ID:** CH-FS-05 (5-6)

Matrix: SOLID **Collection Date:** 02/06/2017 14:50

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1-Dichloroethene	NELAP	140		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
1,1-Dichloropropene	NELAP	140		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
1,2,3-Trichlorobenzene	NELAP	140		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
1,2,3-Trichloropropane	NELAP	281		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
1,2,3-Trimethylbenzene		140		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
1,2,4-Trichlorobenzene	NELAP	140		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
1,2,4-Trimethylbenzene	NELAP	140		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
1,2-Dibromo-3-chloropropane	NELAP	140		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
1,2-Dibromoethane	NELAP	140		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
1,2-Dichlorobenzene	NELAP	140		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
1,2-Dichloroethane	NELAP	140		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
1,2-Dichloropropane	NELAP	140		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
1,3,5-Trimethylbenzene	NELAP	140		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
1,3-Dichlorobenzene	NELAP	140		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
1,3-Dichloropropane	NELAP	140		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
1,4-Dichlorobenzene	NELAP	140		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
1-Chlorobutane	NELAP	140		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
2,2-Dichloropropane	NELAP	140		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
2-Butanone	NELAP	5620		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
2-Chlorotoluene	NELAP	140		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
2-Hexanone	NELAP	1400		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
2-Nitropropane	NELAP	1400		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
4-Chlorotoluene	NELAP	140		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
4-Methyl-2-pentanone	NELAP	1400		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
Acetone	NELAP	1400		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
Acrolein	NELAP	2810		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
Acrylonitrile	NELAP	281		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
Allyl chloride	NELAP	140		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
Benzene	NELAP	28.1		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
Bromobenzene	NELAP	140		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
Bromochloromethane	NELAP	140		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
Bromodichloromethane	NELAP	140		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
Bromoform	NELAP	140		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
Bromomethane	NELAP	281		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
Carbon disulfide	NELAP	140		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
Carbon tetrachloride	NELAP	140		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
Chlorobenzene	NELAP	140		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
Chloroethane	NELAP	281		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
Chloroform	NELAP	140		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
Chloromethane	NELAP	281		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
cis-1,2-Dichloroethene	NELAP	140		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
cis-1,3-Dichloropropene	NELAP	112		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
Cyclohexanone		2810		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
Dibromochloromethane	NELAP	140		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
Dibromomethane	NELAP	140		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
Dichlorodifluoromethane	NELAP	281		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950
Ethyl ether	NELAP	140		ND	µg/Kg-dry	12.5	02/09/2017 19:26	126950

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-011 **Client Sample ID:** CH-FS-05 (5-6)

Matrix: SOLID **Collection Date:** 02/06/2017 14:50

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Ethyl methacrylate	NELAP	140		**ND**	µg/Kg-dry	12.5	02/09/2017 19:26	126950
Ethylbenzene	NELAP	140		**ND**	µg/Kg-dry	12.5	02/09/2017 19:26	126950
Hexachlorobutadiene	NELAP	140		**ND**	µg/Kg-dry	12.5	02/09/2017 19:26	126950
Hexachloroethane	NELAP	140		**ND**	µg/Kg-dry	12.5	02/09/2017 19:26	126950
Iodomethane	NELAP	281		**ND**	µg/Kg-dry	12.5	02/09/2017 19:26	126950
Isopropylbenzene	NELAP	140		**ND**	µg/Kg-dry	12.5	02/09/2017 19:26	126950
m,p-Xylenes	NELAP	140		**ND**	µg/Kg-dry	12.5	02/09/2017 19:26	126950
Methacrylonitrile	NELAP	1400		**ND**	µg/Kg-dry	12.5	02/09/2017 19:26	126950
Methyl Methacrylate	NELAP	140		**ND**	µg/Kg-dry	12.5	02/09/2017 19:26	126950
Methyl tert-butyl ether	NELAP	56.2		**ND**	µg/Kg-dry	12.5	02/09/2017 19:26	126950
Methylacrylate	NELAP	281		**ND**	µg/Kg-dry	12.5	02/09/2017 19:26	126950
Methylene chloride	NELAP	140		**ND**	µg/Kg-dry	12.5	02/09/2017 19:26	126950
Naphthalene	NELAP	281		**ND**	µg/Kg-dry	12.5	02/09/2017 19:26	126950
n-Butylbenzene	NELAP	140		**ND**	µg/Kg-dry	12.5	02/09/2017 19:26	126950
n-Heptane		1400		**ND**	µg/Kg-dry	12.5	02/09/2017 19:26	126950
n-Hexane		562		**ND**	µg/Kg-dry	12.5	02/09/2017 19:26	126950
Nitrobenzene	NELAP	2810		**ND**	µg/Kg-dry	12.5	02/09/2017 19:26	126950
n-Propylbenzene	NELAP	140		**ND**	µg/Kg-dry	12.5	02/09/2017 19:26	126950
o-Xylene	NELAP	140		**ND**	µg/Kg-dry	12.5	02/09/2017 19:26	126950
Pentachloroethane	NELAP	140		**ND**	µg/Kg-dry	12.5	02/09/2017 19:26	126950
p-Isopropyltoluene	NELAP	140		**ND**	µg/Kg-dry	12.5	02/09/2017 19:26	126950
Propionitrile	NELAP	1400		**ND**	µg/Kg-dry	12.5	02/09/2017 19:26	126950
sec-Butylbenzene	NELAP	140		**ND**	µg/Kg-dry	12.5	02/09/2017 19:26	126950
Styrene	NELAP	140		**ND**	µg/Kg-dry	12.5	02/09/2017 19:26	126950
tert-Butylbenzene	NELAP	140		**ND**	µg/Kg-dry	12.5	02/09/2017 19:26	126950
Tetrachloroethene	NELAP	140		**ND**	µg/Kg-dry	12.5	02/09/2017 19:26	126950
Tetrahydrofuran	NELAP	1400		**ND**	µg/Kg-dry	12.5	02/09/2017 19:26	126950
Toluene	NELAP	140		**ND**	µg/Kg-dry	12.5	02/09/2017 19:26	126950
trans-1,2-Dichloroethene	NELAP	140		**ND**	µg/Kg-dry	12.5	02/09/2017 19:26	126950
trans-1,3-Dichloropropene	NELAP	112		**ND**	µg/Kg-dry	12.5	02/09/2017 19:26	126950
Trichloroethene	NELAP	140		**ND**	µg/Kg-dry	12.5	02/09/2017 19:26	126950
Trichlorofluoromethane	NELAP	140		**ND**	µg/Kg-dry	12.5	02/09/2017 19:26	126950
Vinyl acetate	NELAP	1400		**ND**	µg/Kg-dry	12.5	02/09/2017 19:26	126950
Vinyl chloride	NELAP	56.2		**ND**	µg/Kg-dry	12.5	02/09/2017 19:26	126950
Surr: 1,2-Dichloroethane-d4		72.2-131		**100.1**	%REC	12.5	02/09/2017 19:26	126950
Surr: 4-Bromofluorobenzene		82.1-116		**103.8**	%REC	12.5	02/09/2017 19:26	126950
Surr: Dibromofluoromethane		77.7-120		**99.7**	%REC	12.5	02/09/2017 19:26	126950
Surr: Toluene-d8		86-116		**98.1**	%REC	12.5	02/09/2017 19:26	126950

Elevated reporting limits due to high levels of petroleum hydrocarbons.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-012 **Client Sample ID:** CH-FS-05 (16-17)

Matrix: SOLID **Collection Date:** 02/06/2017 14:55

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**11.5**	%	1	02/08/2017 17:43	R228981
SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Acenaphthene	NELAP	0.189		**6.57**	mg/Kg-dry	25	02/10/2017 0:44	126904
Acenaphthylene	NELAP	0.189		**29.3**	mg/Kg-dry	25	02/10/2017 0:44	126904
Anthracene	NELAP	0.189		**27.2**	mg/Kg-dry	25	02/10/2017 0:44	126904
Benzo(a)anthracene	NELAP	0.555		**18.6**	mg/Kg-dry	25	02/10/2017 0:44	126904
Benzo(a)pyrene	NELAP	0.189		**13.9**	mg/Kg-dry	25	02/10/2017 0:44	126904
Benzo(b)fluoranthene	NELAP	0.189		**15.0**	mg/Kg-dry	25	02/10/2017 0:44	126904
Benzo(g,h,i)perylene	NELAP	0.189		**1.80**	mg/Kg-dry	25	02/10/2017 0:44	126904
Benzo(k)fluoranthene	NELAP	0.189		**5.69**	mg/Kg-dry	25	02/10/2017 0:44	126904
Chrysene	NELAP	0.189		**15.5**	mg/Kg-dry	25	02/10/2017 0:44	126904
Dibenzo(a,h)anthracene	NELAP	0.189		**0.916**	mg/Kg-dry	25	02/10/2017 0:44	126904
Fluoranthene	NELAP	0.189		**39.7**	mg/Kg-dry	25	02/10/2017 0:44	126904
Fluorene	NELAP	0.189		**42.6**	mg/Kg-dry	25	02/10/2017 0:44	126904
Indeno(1,2,3-cd)pyrene	NELAP	0.189		**2.31**	mg/Kg-dry	25	02/10/2017 0:44	126904
Naphthalene	NELAP	0.189		**78.3**	mg/Kg-dry	25	02/10/2017 0:44	126904
Phenanthrene	NELAP	0.189		**77.6**	mg/Kg-dry	25	02/10/2017 0:44	126904
Pyrene	NELAP	0.189		**29.4**	mg/Kg-dry	25	02/10/2017 0:44	126904
Surr: 2-Fluorobiphenyl		8.85-90.5		**46.3**	%REC	25	02/10/2017 0:44	126904
Surr: Nitrobenzene-d5		5-102		**40.6**	%REC	25	02/10/2017 0:44	126904
Surr: p-Terphenyl-d14		18.4-103		**61.2**	%REC	25	02/10/2017 0:44	126904
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2,4-Trichlorobenzene	NELAP	27.8		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
1,2-Dichlorobenzene	NELAP	27.8		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
1,3-Dichlorobenzene	NELAP	27.8		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
1,4-Dichlorobenzene	NELAP	27.8		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
2,4,5-Trichlorophenol	NELAP	19.4		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
2,4,6-Trichlorophenol	NELAP	19.4		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
2,4-Dichlorophenol	NELAP	27.8		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
2,4-Dimethylphenol	NELAP	27.8		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
2,4-Dinitrophenol	NELAP	55.5		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
2,4-Dinitrotoluene	NELAP	19.4		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
2,6-Dinitrotoluene	NELAP	19.4		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
2-Chloronaphthalene	NELAP	19.4		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
2-Chlorophenol	NELAP	27.8		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
2-Methoxy-4-methylphenol		36.1		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
2-Methylnaphthalene	NELAP	19.4		**56.8**	mg/Kg-dry	25	02/09/2017 11:02	126878
2-Nitroaniline	NELAP	55.5		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
2-Nitrophenol	NELAP	19.4		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
3,3´-Dichlorobenzidine	NELAP	19.4		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
3-Nitroaniline	NELAP	55.5		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
4,6-Dinitro-2-methylphenol	NELAP	55.5		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
4-Bromophenyl phenyl ether	NELAP	19.4		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
4-Chloro-3-methylphenol	NELAP	27.8		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
4-Chloroaniline	NELAP	27.8		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
4-Chlorophenyl phenyl ether	NELAP	19.4		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
4-Nitroaniline	NELAP	27.8		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-012 **Client Sample ID:** CH-FS-05 (16-17)

Matrix: SOLID **Collection Date:** 02/06/2017 14:55

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
4-Nitrophenol	NELAP	19.4		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
Aniline	NELAP	27.8		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
Azobenzene		19.4		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
Benzoic acid	NELAP	83.3		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
Benzyl alcohol	NELAP	27.8		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
Bis(2-chloroethoxy)methane	NELAP	19.4		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
Bis(2-chloroethyl)ether	NELAP	27.8		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
Bis(2-chloroisopropyl)ether	NELAP	19.4		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
Bis(2-ethylhexyl)phthalate	NELAP	19.4		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
Butyl benzyl phthalate	NELAP	19.4		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
Carbazole	NELAP	27.8		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
Dibenzofuran	NELAP	19.4		**30.0**	mg/Kg-dry	25	02/09/2017 11:02	126878
Diethyl phthalate	NELAP	27.8		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
Dimethyl phthalate	NELAP	19.4		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
Di-n-butyl phthalate	NELAP	19.4		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
Di-n-octyl phthalate	NELAP	19.4		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
Hexachlorobenzene	NELAP	19.4		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
Hexachlorobutadiene	NELAP	27.8		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
Hexachlorocyclopentadiene	NELAP	19.4		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
Hexachloroethane	NELAP	27.8		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
Isophorone	NELAP	19.4		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
m,p-Cresol	NELAP	27.8		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
Nitrobenzene	NELAP	27.8		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
N-Nitrosodimethylamine	NELAP	27.8		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
N-Nitroso-di-n-propylamine	NELAP	27.8		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
N-Nitrosodiphenylamine	NELAP	27.8		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
o-Cresol	NELAP	27.8		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
Pentachlorophenol	NELAP	111		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
Phenol	NELAP	19.4		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
Pyridine	NELAP	27.8		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
1,2-Diphenylhydrazine		46.6		**ND**	mg/Kg-dry	25	02/09/2017 11:02	126878
Surr: 2,4,6-Tribromophenol		33-115	S	**120.3**	%REC	25	02/09/2017 11:02	126878
Surr: 2-Fluorobiphenyl		36.5-97.7		**76.8**	%REC	25	02/09/2017 11:02	126878
Surr: 2-Fluorophenol		39.4-92.8		**60.9**	%REC	25	02/09/2017 11:02	126878
Surr: Nitrobenzene-d5		34.7-90.1		**70.9**	%REC	25	02/09/2017 11:02	126878
Surr: Phenol-d5		42.8-106		**70.9**	%REC	25	02/09/2017 11:02	126878
Surr: p-Terphenyl-d14		43.7-124		**84.8**	%REC	25	02/09/2017 11:02	126878

Surrogate recovery is outside QC limits due to matrix interference.

Elevated reporting limit due to sample composition.

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,1,2-Tetrachloroethane	NELAP	40100		**ND**	µg/Kg-dry	5000	02/08/2017 18:05	126894
1,1,1-Trichloroethane	NELAP	40100		**ND**	µg/Kg-dry	5000	02/08/2017 18:05	126894
1,1,2,2-Tetrachloroethane	NELAP	40100		**ND**	µg/Kg-dry	5000	02/08/2017 18:05	126894
1,1,2-Trichloro-1,2,2-trifluoroethane		40100		**ND**	µg/Kg-dry	5000	02/08/2017 18:05	126894
1,1,2-Trichloroethane	NELAP	40100		**ND**	µg/Kg-dry	5000	02/08/2017 18:05	126894
1,1-Dichloro-2-propanone		401000		**ND**	µg/Kg-dry	5000	02/08/2017 18:05	126894
1,1-Dichloroethane	NELAP	40100		**ND**	µg/Kg-dry	5000	02/08/2017 18:05	126894

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-012 **Client Sample ID:** CH-FS-05 (16-17)

Matrix: SOLID **Collection Date:** 02/06/2017 14:55

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1-Dichloroethene	NELAP	40100		ND	µg/Kg-dry	5000	02/08/2017 18:05	126894
1,1-Dichloropropene	NELAP	40100		ND	µg/Kg-dry	5000	02/08/2017 18:05	126894
1,2,3-Trichlorobenzene	NELAP	40100		ND	µg/Kg-dry	5000	02/08/2017 18:05	126894
1,2,3-Trichloropropane	NELAP	80100		ND	µg/Kg-dry	5000	02/08/2017 18:05	126894
1,2,3-Trimethylbenzene		40100		ND	µg/Kg-dry	5000	02/08/2017 18:05	126894
1,2,4-Trichlorobenzene	NELAP	40100		ND	µg/Kg-dry	5000	02/08/2017 18:05	126894
1,2,4-Trimethylbenzene	NELAP	40100		ND	µg/Kg-dry	5000	02/08/2017 18:05	126894
1,2-Dibromo-3-chloropropane	NELAP	40100		ND	µg/Kg-dry	5000	02/08/2017 18:05	126894
1,2-Dibromoethane	NELAP	40100		ND	µg/Kg-dry	5000	02/08/2017 18:05	126894
1,2-Dichlorobenzene	NELAP	40100		ND	µg/Kg-dry	5000	02/08/2017 18:05	126894
1,2-Dichloroethane	NELAP	40100		ND	µg/Kg-dry	5000	02/08/2017 18:05	126894
1,2-Dichloropropane	NELAP	40100		ND	µg/Kg-dry	5000	02/08/2017 18:05	126894
1,3,5-Trimethylbenzene	NELAP	40100		ND	µg/Kg-dry	5000	02/08/2017 18:05	126894
1,3-Dichlorobenzene	NELAP	40100		ND	µg/Kg-dry	5000	02/08/2017 18:05	126894
1,3-Dichloropropane	NELAP	40100		ND	µg/Kg-dry	5000	02/08/2017 18:05	126894
1,4-Dichlorobenzene	NELAP	40100		ND	µg/Kg-dry	5000	02/08/2017 18:05	126894
1-Chlorobutane	NELAP	40100		ND	µg/Kg-dry	5000	02/08/2017 18:05	126894
2,2-Dichloropropane	NELAP	40100		ND	µg/Kg-dry	5000	02/08/2017 18:05	126894
2-Butanone	NELAP	1600000		ND	µg/Kg-dry	5000	02/08/2017 18:05	126894
2-Chlorotoluene	NELAP	40100		ND	µg/Kg-dry	5000	02/08/2017 18:05	126894
2-Hexanone	NELAP	401000		ND	µg/Kg-dry	5000	02/08/2017 18:05	126894
2-Nitropropane	NELAP	401000		ND	µg/Kg-dry	5000	02/08/2017 18:05	126894
4-Chlorotoluene	NELAP	40100		ND	µg/Kg-dry	5000	02/08/2017 18:05	126894
4-Methyl-2-pentanone	NELAP	401000		ND	µg/Kg-dry	5000	02/08/2017 18:05	126894
Acetone	NELAP	401000		ND	µg/Kg-dry	5000	02/08/2017 18:05	126894
Acrolein	NELAP	801000		ND	µg/Kg-dry	5000	02/08/2017 18:05	126894
Acrylonitrile	NELAP	80100		ND	µg/Kg-dry	5000	02/08/2017 18:05	126894
Allyl chloride	NELAP	40100		ND	µg/Kg-dry	5000	02/08/2017 18:05	126894
Benzene	NELAP	8010		ND	µg/Kg-dry	5000	02/08/2017 18:05	126894
Bromobenzene	NELAP	40100		ND	µg/Kg-dry	5000	02/08/2017 18:05	126894
Bromochloromethane	NELAP	40100		ND	µg/Kg-dry	5000	02/08/2017 18:05	126894
Bromodichloromethane	NELAP	40100		ND	µg/Kg-dry	5000	02/08/2017 18:05	126894
Bromoform	NELAP	40100		ND	µg/Kg-dry	5000	02/08/2017 18:05	126894
Bromomethane	NELAP	80100		ND	µg/Kg-dry	5000	02/08/2017 18:05	126894
Carbon disulfide	NELAP	40100		ND	µg/Kg-dry	5000	02/08/2017 18:05	126894
Carbon tetrachloride	NELAP	40100		ND	µg/Kg-dry	5000	02/08/2017 18:05	126894
Chlorobenzene	NELAP	40100		ND	µg/Kg-dry	5000	02/08/2017 18:05	126894
Chloroethane	NELAP	80100		ND	µg/Kg-dry	5000	02/08/2017 18:05	126894
Chloroform	NELAP	40100		ND	µg/Kg-dry	5000	02/08/2017 18:05	126894
Chloromethane	NELAP	80100		ND	µg/Kg-dry	5000	02/08/2017 18:05	126894
cis-1,2-Dichloroethene	NELAP	40100		ND	µg/Kg-dry	5000	02/08/2017 18:05	126894
cis-1,3-Dichloropropene	NELAP	32100		ND	µg/Kg-dry	5000	02/08/2017 18:05	126894
Cyclohexanone		801000		ND	µg/Kg-dry	5000	02/08/2017 18:05	126894
Dibromochloromethane	NELAP	40100		ND	µg/Kg-dry	5000	02/08/2017 18:05	126894
Dibromomethane	NELAP	40100		ND	µg/Kg-dry	5000	02/08/2017 18:05	126894
Dichlorodifluoromethane	NELAP	80100		ND	µg/Kg-dry	5000	02/08/2017 18:05	126894
Ethyl ether	NELAP	40100		ND	µg/Kg-dry	5000	02/08/2017 18:05	126894

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-012 **Client Sample ID:** CH-FS-05 (16-17)

Matrix: SOLID **Collection Date:** 02/06/2017 14:55

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Ethyl methacrylate	NELAP	40100		**ND**	µg/Kg-dry	5000	02/08/2017 18:05	126894
Ethylbenzene	NELAP	40100		**ND**	µg/Kg-dry	5000	02/08/2017 18:05	126894
Hexachlorobutadiene	NELAP	40100		**ND**	µg/Kg-dry	5000	02/08/2017 18:05	126894
Hexachloroethane	NELAP	40100		**ND**	µg/Kg-dry	5000	02/08/2017 18:05	126894
Iodomethane	NELAP	80100		**ND**	µg/Kg-dry	5000	02/08/2017 18:05	126894
Isopropylbenzene	NELAP	40100		**ND**	µg/Kg-dry	5000	02/08/2017 18:05	126894
m,p-Xylenes	NELAP	40100		**ND**	µg/Kg-dry	5000	02/08/2017 18:05	126894
Methacrylonitrile	NELAP	401000		**ND**	µg/Kg-dry	5000	02/08/2017 18:05	126894
Methyl Methacrylate	NELAP	40100		**ND**	µg/Kg-dry	5000	02/08/2017 18:05	126894
Methyl tert-butyl ether	NELAP	16000		**ND**	µg/Kg-dry	5000	02/08/2017 18:05	126894
Methylacrylate	NELAP	80100		**ND**	µg/Kg-dry	5000	02/08/2017 18:05	126894
Methylene chloride	NELAP	40100		**ND**	µg/Kg-dry	5000	02/08/2017 18:05	126894
Naphthalene	NELAP	80100		**191000**	µg/Kg-dry	5000	02/08/2017 18:05	126894
n-Butylbenzene	NELAP	40100		**ND**	µg/Kg-dry	5000	02/08/2017 18:05	126894
n-Heptane		401000		**ND**	µg/Kg-dry	5000	02/08/2017 18:05	126894
n-Hexane		160000		**ND**	µg/Kg-dry	5000	02/08/2017 18:05	126894
Nitrobenzene	NELAP	801000		**ND**	µg/Kg-dry	5000	02/08/2017 18:05	126894
n-Propylbenzene	NELAP	40100		**ND**	µg/Kg-dry	5000	02/08/2017 18:05	126894
o-Xylene	NELAP	40100		**ND**	µg/Kg-dry	5000	02/08/2017 18:05	126894
Pentachloroethane	NELAP	40100		**ND**	µg/Kg-dry	5000	02/08/2017 18:05	126894
p-Isopropyltoluene	NELAP	40100		**ND**	µg/Kg-dry	5000	02/08/2017 18:05	126894
Propionitrile	NELAP	401000		**ND**	µg/Kg-dry	5000	02/08/2017 18:05	126894
sec-Butylbenzene	NELAP	40100		**ND**	µg/Kg-dry	5000	02/08/2017 18:05	126894
Styrene	NELAP	40100		**ND**	µg/Kg-dry	5000	02/08/2017 18:05	126894
tert-Butylbenzene	NELAP	40100		**ND**	µg/Kg-dry	5000	02/08/2017 18:05	126894
Tetrachloroethene	NELAP	40100		**ND**	µg/Kg-dry	5000	02/08/2017 18:05	126894
Tetrahydrofuran	NELAP	401000		**ND**	µg/Kg-dry	5000	02/08/2017 18:05	126894
Toluene	NELAP	40100		**ND**	µg/Kg-dry	5000	02/08/2017 18:05	126894
trans-1,2-Dichloroethene	NELAP	40100		**ND**	µg/Kg-dry	5000	02/08/2017 18:05	126894
trans-1,3-Dichloropropene	NELAP	32100		**ND**	µg/Kg-dry	5000	02/08/2017 18:05	126894
Trichloroethene	NELAP	40100		**ND**	µg/Kg-dry	5000	02/08/2017 18:05	126894
Trichlorofluoromethane	NELAP	40100		**ND**	µg/Kg-dry	5000	02/08/2017 18:05	126894
Vinyl acetate	NELAP	401000		**ND**	µg/Kg-dry	5000	02/08/2017 18:05	126894
Vinyl chloride	NELAP	16000		**ND**	µg/Kg-dry	5000	02/08/2017 18:05	126894
Surr: 1,2-Dichloroethane-d4		72.2-131		**106.7**	%REC	5000	02/08/2017 18:05	126894
Surr: 4-Bromofluorobenzene		82.1-116		**106.8**	%REC	5000	02/08/2017 18:05	126894
Surr: Dibromofluoromethane		77.7-120		**98.1**	%REC	5000	02/08/2017 18:05	126894
Surr: Toluene-d8		86-116		**98.9**	%REC	5000	02/08/2017 18:05	126894

LCS and LCSD have analytes that recovered outside upper QC limits. The sample results are below reporting limit. Data is reportable per 2009 TNI Standard (Volume1, Module 4, section 1.7.4.2).

Elevated reporting limit due to high levels of target and/or non-target analytes.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-013 **Client Sample ID:** CH-FS-06 (18-19)

Matrix: SOLID **Collection Date:** 02/06/2017 16:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**12.9**	%	1	02/08/2017 17:43	R228981
SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Acenaphthene	NELAP	1.09		**ND**	mg/Kg-dry	10	02/09/2017 18:47	126904
Acenaphthylene	NELAP	1.09		**ND**	mg/Kg-dry	10	02/09/2017 18:47	126904
Anthracene	NELAP	1.09		**ND**	mg/Kg-dry	10	02/09/2017 18:47	126904
Benzo(a)anthracene	NELAP	3.22		**ND**	mg/Kg-dry	10	02/09/2017 18:47	126904
Benzo(a)pyrene	NELAP	1.09		**ND**	mg/Kg-dry	10	02/09/2017 18:47	126904
Benzo(b)fluoranthene	NELAP	1.09		**ND**	mg/Kg-dry	10	02/09/2017 18:47	126904
Benzo(g,h,i)perylene	NELAP	1.09		**ND**	mg/Kg-dry	10	02/09/2017 18:47	126904
Benzo(k)fluoranthene	NELAP	1.09		**ND**	mg/Kg-dry	10	02/09/2017 18:47	126904
Chrysene	NELAP	1.09		**ND**	mg/Kg-dry	10	02/09/2017 18:47	126904
Dibenzo(a,h)anthracene	NELAP	1.09		**ND**	mg/Kg-dry	10	02/09/2017 18:47	126904
Fluoranthene	NELAP	1.09		**ND**	mg/Kg-dry	10	02/09/2017 18:47	126904
Fluorene	NELAP	1.09		**ND**	mg/Kg-dry	10	02/09/2017 18:47	126904
Indeno(1,2,3-cd)pyrene	NELAP	1.09		**ND**	mg/Kg-dry	10	02/09/2017 18:47	126904
Naphthalene	NELAP	1.09		**3.59**	mg/Kg-dry	10	02/09/2017 18:47	126904
Phenanthrene	NELAP	1.09		**2.75**	mg/Kg-dry	10	02/09/2017 18:47	126904
Pyrene	NELAP	1.09		**ND**	mg/Kg-dry	10	02/09/2017 18:47	126904
Surr: 2-Fluorobiphenyl		8.85-90.5		**61.1**	%REC	10	02/09/2017 18:47	126904
Surr: Nitrobenzene-d5		5-102		**74.6**	%REC	10	02/09/2017 18:47	126904
Surr: p-Terphenyl-d14		18.4-103		**59.1**	%REC	10	02/09/2017 18:47	126904
Elevated reporting limit due to sample composition.								
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2,4-Trichlorobenzene	NELAP	16.1		**ND**	mg/Kg-dry	1	02/09/2017 11:58	126878
1,2-Dichlorobenzene	NELAP	16.1		**ND**	mg/Kg-dry	1	02/09/2017 11:58	126878
1,3-Dichlorobenzene	NELAP	16.1		**ND**	mg/Kg-dry	1	02/09/2017 11:58	126878
1,4-Dichlorobenzene	NELAP	16.1		**ND**	mg/Kg-dry	1	02/09/2017 11:58	126878
2,4,5-Trichlorophenol	NELAP	11.3		**ND**	mg/Kg-dry	1	02/09/2017 11:58	126878
2,4,6-Trichlorophenol	NELAP	11.3		**ND**	mg/Kg-dry	1	02/09/2017 11:58	126878
2,4-Dichlorophenol	NELAP	16.1		**ND**	mg/Kg-dry	1	02/09/2017 11:58	126878
2,4-Dimethylphenol	NELAP	16.1		**ND**	mg/Kg-dry	1	02/09/2017 11:58	126878
2,4-Dinitrophenol	NELAP	32.2		**ND**	mg/Kg-dry	1	02/09/2017 11:58	126878
2,4-Dinitrotoluene	NELAP	11.3		**ND**	mg/Kg-dry	1	02/09/2017 11:58	126878
2,6-Dinitrotoluene	NELAP	11.3		**ND**	mg/Kg-dry	1	02/09/2017 11:58	126878
2-Chloronaphthalene	NELAP	11.3		**ND**	mg/Kg-dry	1	02/09/2017 11:58	126878
2-Chlorophenol	NELAP	16.1		**ND**	mg/Kg-dry	1	02/09/2017 11:58	126878
2-Methoxy-4-methylphenol		20.9		**ND**	mg/Kg-dry	1	02/09/2017 11:58	126878
2-Methylnaphthalene	NELAP	11.3		**ND**	mg/Kg-dry	1	02/09/2017 11:58	126878
2-Nitroaniline	NELAP	32.2		**ND**	mg/Kg-dry	1	02/09/2017 11:58	126878
2-Nitrophenol	NELAP	11.3		**ND**	mg/Kg-dry	1	02/09/2017 11:58	126878
3,3´-Dichlorobenzidine	NELAP	11.3		**ND**	mg/Kg-dry	1	02/09/2017 11:58	126878
3-Nitroaniline	NELAP	32.2		**ND**	mg/Kg-dry	1	02/09/2017 11:58	126878
4,6-Dinitro-2-methylphenol	NELAP	32.2		**ND**	mg/Kg-dry	1	02/09/2017 11:58	126878
4-Bromophenyl phenyl ether	NELAP	11.3		**ND**	mg/Kg-dry	1	02/09/2017 11:58	126878
4-Chloro-3-methylphenol	NELAP	16.1		**ND**	mg/Kg-dry	1	02/09/2017 11:58	126878
4-Chloroaniline	NELAP	16.1		**ND**	mg/Kg-dry	1	02/09/2017 11:58	126878
4-Chlorophenyl phenyl ether	NELAP	11.3		**ND**	mg/Kg-dry	1	02/09/2017 11:58	126878

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-013 **Client Sample ID:** CH-FS-06 (18-19)

Matrix: SOLID **Collection Date:** 02/06/2017 16:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
4-Nitroaniline	NELAP	16.1		ND	mg/Kg-dry	1	02/09/2017 11:58	126878
4-Nitrophenol	NELAP	11.3		ND	mg/Kg-dry	1	02/09/2017 11:58	126878
Aniline	NELAP	16.1		ND	mg/Kg-dry	1	02/09/2017 11:58	126878
Azobenzene		11.3		ND	mg/Kg-dry	1	02/09/2017 11:58	126878
Benzoic acid	NELAP	48.3		ND	mg/Kg-dry	1	02/09/2017 11:58	126878
Benzyl alcohol	NELAP	16.1		ND	mg/Kg-dry	1	02/09/2017 11:58	126878
Bis(2-chloroethoxy)methane	NELAP	11.3		ND	mg/Kg-dry	1	02/09/2017 11:58	126878
Bis(2-chloroethyl)ether	NELAP	16.1		ND	mg/Kg-dry	1	02/09/2017 11:58	126878
Bis(2-chloroisopropyl)ether	NELAP	11.3		ND	mg/Kg-dry	1	02/09/2017 11:58	126878
Bis(2-ethylhexyl)phthalate	NELAP	11.3		ND	mg/Kg-dry	1	02/09/2017 11:58	126878
Butyl benzyl phthalate	NELAP	11.3		ND	mg/Kg-dry	1	02/09/2017 11:58	126878
Carbazole	NELAP	16.1		ND	mg/Kg-dry	1	02/09/2017 11:58	126878
Dibenzofuran	NELAP	11.3		ND	mg/Kg-dry	1	02/09/2017 11:58	126878
Diethyl phthalate	NELAP	16.1		ND	mg/Kg-dry	1	02/09/2017 11:58	126878
Dimethyl phthalate	NELAP	11.3		ND	mg/Kg-dry	1	02/09/2017 11:58	126878
Di-n-butyl phthalate	NELAP	11.3		ND	mg/Kg-dry	1	02/09/2017 11:58	126878
Di-n-octyl phthalate	NELAP	11.3		ND	mg/Kg-dry	1	02/09/2017 11:58	126878
Hexachlorobenzene	NELAP	11.3		ND	mg/Kg-dry	1	02/09/2017 11:58	126878
Hexachlorobutadiene	NELAP	16.1		ND	mg/Kg-dry	1	02/09/2017 11:58	126878
Hexachlorocyclopentadiene	NELAP	11.3		ND	mg/Kg-dry	1	02/09/2017 11:58	126878
Hexachloroethane	NELAP	16.1		ND	mg/Kg-dry	1	02/09/2017 11:58	126878
Isophorone	NELAP	11.3		ND	mg/Kg-dry	1	02/09/2017 11:58	126878
m,p-Cresol	NELAP	16.1		ND	mg/Kg-dry	1	02/09/2017 11:58	126878
Nitrobenzene	NELAP	16.1		ND	mg/Kg-dry	1	02/09/2017 11:58	126878
N-Nitrosodimethylamine	NELAP	16.1		ND	mg/Kg-dry	1	02/09/2017 11:58	126878
N-Nitroso-di-n-propylamine	NELAP	16.1		ND	mg/Kg-dry	1	02/09/2017 11:58	126878
N-Nitrosodiphenylamine	NELAP	16.1		ND	mg/Kg-dry	1	02/09/2017 11:58	126878
o-Cresol	NELAP	16.1		ND	mg/Kg-dry	1	02/09/2017 11:58	126878
Pentachlorophenol	NELAP	64.4		ND	mg/Kg-dry	1	02/09/2017 11:58	126878
Phenol	NELAP	11.3		ND	mg/Kg-dry	1	02/09/2017 11:58	126878
Pyridine	NELAP	16.1		ND	mg/Kg-dry	1	02/09/2017 11:58	126878
1,2-Diphenylhydrazine		27.0		ND	mg/Kg-dry	1	02/09/2017 11:58	126878
Surr: 2,4,6-Tribromophenol		33-115		64.6	%REC	1	02/09/2017 11:58	126878
Surr: 2-Fluorobiphenyl		36.5-97.7		69.7	%REC	1	02/09/2017 11:58	126878
Surr: 2-Fluorophenol		39.4-92.8		65.7	%REC	1	02/09/2017 11:58	126878
Surr: Nitrobenzene-d5		34.7-90.1		69.1	%REC	1	02/09/2017 11:58	126878
Surr: Phenol-d5		42.8-106		75.8	%REC	1	02/09/2017 11:58	126878
Surr: p-Terphenyl-d14		43.7-124		74.3	%REC	1	02/09/2017 11:58	126878
Elevated reporting limit due to sample composition.								
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,1,2-Tetrachloroethane	NELAP	856		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
1,1,1-Trichloroethane	NELAP	856		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
1,1,2,2-Tetrachloroethane	NELAP	856		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
1,1,2-Trichloro-1,2,2-trifluoroethane		856		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
1,1,2-Trichloroethane	NELAP	856		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
1,1-Dichloro-2-propanone		8560		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
1,1-Dichloroethane	NELAP	856		ND	µg/Kg-dry	100	02/08/2017 18:31	126894

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-013 **Client Sample ID:** CH-FS-06 (18-19)

Matrix: SOLID **Collection Date:** 02/06/2017 16:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1-Dichloroethene	NELAP	856		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
1,1-Dichloropropene	NELAP	856		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
1,2,3-Trichlorobenzene	NELAP	856		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
1,2,3-Trichloropropane	NELAP	1710		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
1,2,3-Trimethylbenzene		856		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
1,2,4-Trichlorobenzene	NELAP	856		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
1,2,4-Trimethylbenzene	NELAP	856		1950	µg/Kg-dry	100	02/08/2017 18:31	126894
1,2-Dibromo-3-chloropropane	NELAP	856		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
1,2-Dibromoethane	NELAP	856		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
1,2-Dichlorobenzene	NELAP	856		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
1,2-Dichloroethane	NELAP	856		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
1,2-Dichloropropane	NELAP	856		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
1,3,5-Trimethylbenzene	NELAP	856		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
1,3-Dichlorobenzene	NELAP	856		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
1,3-Dichloropropane	NELAP	856		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
1,4-Dichlorobenzene	NELAP	856		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
1-Chlorobutane	NELAP	856		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
2,2-Dichloropropane	NELAP	856		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
2-Butanone	NELAP	34200		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
2-Chlorotoluene	NELAP	856		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
2-Hexanone	NELAP	8560		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
2-Nitropropane	NELAP	8560		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
4-Chlorotoluene	NELAP	856		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
4-Methyl-2-pentanone	NELAP	8560		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
Acetone	NELAP	8560		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
Acrolein	NELAP	17100		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
Acrylonitrile	NELAP	1710		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
Allyl chloride	NELAP	856		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
Benzene	NELAP	171		308	µg/Kg-dry	100	02/08/2017 18:31	126894
Bromobenzene	NELAP	856		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
Bromochloromethane	NELAP	856		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
Bromodichloromethane	NELAP	856		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
Bromoform	NELAP	856		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
Bromomethane	NELAP	1710		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
Carbon disulfide	NELAP	856		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
Carbon tetrachloride	NELAP	856		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
Chlorobenzene	NELAP	856		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
Chloroethane	NELAP	1710		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
Chloroform	NELAP	856		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
Chloromethane	NELAP	1710		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
cis-1,2-Dichloroethene	NELAP	856		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
cis-1,3-Dichloropropene	NELAP	684		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
Cyclohexanone		17100		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
Dibromochloromethane	NELAP	856		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
Dibromomethane	NELAP	856		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
Dichlorodifluoromethane	NELAP	1710		ND	µg/Kg-dry	100	02/08/2017 18:31	126894
Ethyl ether	NELAP	856		ND	µg/Kg-dry	100	02/08/2017 18:31	126894

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Lab ID: 17020460-013 **Client Sample ID:** CH-FS-06 (18-19)

Matrix: SOLID **Collection Date:** 02/06/2017 16:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Ethyl methacrylate	NELAP	856		**ND**	µg/Kg-dry	100	02/08/2017 18:31	126894
Ethylbenzene	NELAP	856		**1480**	µg/Kg-dry	100	02/08/2017 18:31	126894
Hexachlorobutadiene	NELAP	856		**ND**	µg/Kg-dry	100	02/08/2017 18:31	126894
Hexachloroethane	NELAP	856		**ND**	µg/Kg-dry	100	02/08/2017 18:31	126894
Iodomethane	NELAP	1710		**ND**	µg/Kg-dry	100	02/08/2017 18:31	126894
Isopropylbenzene	NELAP	856		**ND**	µg/Kg-dry	100	02/08/2017 18:31	126894
m,p-Xylenes	NELAP	856		**ND**	µg/Kg-dry	100	02/08/2017 18:31	126894
Methacrylonitrile	NELAP	8560		**ND**	µg/Kg-dry	100	02/08/2017 18:31	126894
Methyl Methacrylate	NELAP	856		**ND**	µg/Kg-dry	100	02/08/2017 18:31	126894
Methyl tert-butyl ether	NELAP	342		**ND**	µg/Kg-dry	100	02/08/2017 18:31	126894
Methylacrylate	NELAP	1710		**ND**	µg/Kg-dry	100	02/08/2017 18:31	126894
Methylene chloride	NELAP	856		**ND**	µg/Kg-dry	100	02/08/2017 18:31	126894
Naphthalene	NELAP	1710		**19600**	µg/Kg-dry	100	02/08/2017 18:31	126894
n-Butylbenzene	NELAP	856		**ND**	µg/Kg-dry	100	02/08/2017 18:31	126894
n-Heptane		8560		**ND**	µg/Kg-dry	100	02/08/2017 18:31	126894
n-Hexane		3420		**ND**	µg/Kg-dry	100	02/08/2017 18:31	126894
Nitrobenzene	NELAP	17100		**ND**	µg/Kg-dry	100	02/08/2017 18:31	126894
n-Propylbenzene	NELAP	856		**ND**	µg/Kg-dry	100	02/08/2017 18:31	126894
o-Xylene	NELAP	856		**ND**	µg/Kg-dry	100	02/08/2017 18:31	126894
Pentachloroethane	NELAP	856		**ND**	µg/Kg-dry	100	02/08/2017 18:31	126894
p-Isopropyltoluene	NELAP	856		**ND**	µg/Kg-dry	100	02/08/2017 18:31	126894
Propionitrile	NELAP	8560		**ND**	µg/Kg-dry	100	02/08/2017 18:31	126894
sec-Butylbenzene	NELAP	856		**ND**	µg/Kg-dry	100	02/08/2017 18:31	126894
Styrene	NELAP	856		**ND**	µg/Kg-dry	100	02/08/2017 18:31	126894
tert-Butylbenzene	NELAP	856		**ND**	µg/Kg-dry	100	02/08/2017 18:31	126894
Tetrachloroethene	NELAP	856		**ND**	µg/Kg-dry	100	02/08/2017 18:31	126894
Tetrahydrofuran	NELAP	8560		**ND**	µg/Kg-dry	100	02/08/2017 18:31	126894
Toluene	NELAP	856		**ND**	µg/Kg-dry	100	02/08/2017 18:31	126894
trans-1,2-Dichloroethene	NELAP	856		**ND**	µg/Kg-dry	100	02/08/2017 18:31	126894
trans-1,3-Dichloropropene	NELAP	684		**ND**	µg/Kg-dry	100	02/08/2017 18:31	126894
Trichloroethene	NELAP	856		**ND**	µg/Kg-dry	100	02/08/2017 18:31	126894
Trichlorofluoromethane	NELAP	856		**ND**	µg/Kg-dry	100	02/08/2017 18:31	126894
Vinyl acetate	NELAP	8560		**ND**	µg/Kg-dry	100	02/08/2017 18:31	126894
Vinyl chloride	NELAP	342		**ND**	µg/Kg-dry	100	02/08/2017 18:31	126894
Surr: 1,2-Dichloroethane-d4		72.2-131		**108.3**	%REC	100	02/08/2017 18:31	126894
Surr: 4-Bromofluorobenzene		82.1-116		**98.4**	%REC	100	02/08/2017 18:31	126894
Surr: Dibromofluoromethane		77.7-120		**101.3**	%REC	100	02/08/2017 18:31	126894
Surr: Toluene-d8		86-116		**97.7**	%REC	100	02/08/2017 18:31	126894

LCS and LCSD have analytes that recovered outside upper QC limits. The sample results are below reporting limit. Data is reportable per 2009 TNI Standard (Volume1, Module 4, section 1.7.4.2).

Elevated reporting limit due to high levels of target and/or non-target analytes.

Client: PSC Industrial Outsourcing, LP
Work Order: 17020460
Client Project: Champaign Soil Residual IRM 624-1610-001-J0055
Report Date: 14-Feb-17

Lab Sample ID	Client Sample ID	Matrix	Fractions	Collection Date
17020460-001	CH-FS-01 (14-15)	Solid	4	02/06/2017 8:55
17020460-002	CH-FS-01 (17-18)	Solid	4	02/06/2017 9:00
17020460-003	CH-FS-02 (8-9)	Solid	4	02/06/2017 10:15
17020460-004	CH-FS-02 (17-18)	Solid	4	02/06/2017 10:00
17020460-005	CH-FS-02 (19-20)	Solid	4	02/06/2017 10:10
17020460-006	CH-FS-03 (7-8)	Solid	4	02/06/2017 11:25
17020460-007	CH-FS-03 (19-20)	Solid	4	02/06/2017 11:30
17020460-008	CH-FS-04 (6-7)	Solid	4	02/06/2017 12:40
17020460-009	CH-FS-04 (11-12)	Solid	4	02/06/2017 12:50
17020460-010	CH-FS-04 (16-17)	Solid	4	02/06/2017 12:30
17020460-011	CH-FS-05 (5-6)	Solid	4	02/06/2017 14:50
17020460-012	CH-FS-05 (16-17)	Solid	4	02/06/2017 14:55
17020460-013	CH-FS-06 (18-19)	Solid	4	02/06/2017 16:00

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			Prep Date/Time	Analysis Date/Time
17020460-001A	CH-FS-01 (14-15)	02/06/2017 8:55	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/08/2017 17:39
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/08/2017 15:13	02/09/2017 19:19
	SW-846 3550B, 8270C, Semi-Volatile Organic Compounds by GC/MS			02/08/2017 15:06	02/09/2017 12:42
	SW-846 3550B, 8270C, Semi-Volatile Organic Compounds by GC/MS			02/08/2017 15:06	02/09/2017 14:34
17020460-001D	CH-FS-01 (14-15)	02/06/2017 8:55	02/08/2017 8:02		
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/08/2017 11:24
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/08/2017 14:06
17020460-002A	CH-FS-01 (17-18)	02/06/2017 9:00	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/08/2017 17:40
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/08/2017 15:13	02/09/2017 20:56
	SW-846 3550B, 8270C, Semi-Volatile Organic Compounds by GC/MS			02/08/2017 15:06	02/09/2017 14:07
17020460-002D	CH-FS-01 (17-18)	02/06/2017 9:00	02/08/2017 8:02		
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/08/2017 11:52
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/08/2017 14:32
17020460-003A	CH-FS-02 (8-9)	02/06/2017 10:15	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/08/2017 17:40
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/08/2017 15:13	02/09/2017 21:29
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/08/2017 15:13	02/10/2017 13:39
	SW-846 3550B, 8270C, Semi-Volatile Organic Compounds by GC/MS			02/08/2017 15:06	02/09/2017 11:58
17020460-003D	CH-FS-02 (8-9)	02/06/2017 10:15	02/08/2017 8:02		
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/08/2017 12:18
17020460-004A	CH-FS-02 (17-18)	02/06/2017 10:00	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/08/2017 17:41
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/08/2017 15:13	02/09/2017 22:01
	SW-846 3550B, 8270C, Semi-Volatile Organic Compounds by GC/MS			02/08/2017 15:06	02/09/2017 13:10
17020460-004D	CH-FS-02 (17-18)	02/06/2017 10:00	02/08/2017 8:02		
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/08/2017 12:45
17020460-005A	CH-FS-02 (19-20)	02/06/2017 10:10	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/08/2017 17:41
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/08/2017 15:13	02/09/2017 17:09
	SW-846 3550B, 8270C, Semi-Volatile Organic Compounds by GC/MS			02/08/2017 15:06	02/09/2017 13:38
17020460-005D	CH-FS-02 (19-20)	02/06/2017 10:10	02/08/2017 8:02		
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/08/2017 16:45
17020460-006A	CH-FS-03 (7-8)	02/06/2017 11:25	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/08/2017 17:41

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			Prep Date/Time	Analysis Date/Time
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/08/2017 15:13	02/09/2017 22:34
	SW-846 3550B, 8270C, Semi-Volatile Organic Compounds by GC/MS			02/08/2017 15:06	02/09/2017 11:30
17020460-006D	CH-FS-03 (7-8)	02/06/2017 11:25	02/08/2017 8:02		
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/08/2017 17:12
17020460-007A	CH-FS-03 (19-20)	02/06/2017 11:30	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/08/2017 17:42
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/08/2017 15:13	02/09/2017 17:42
	SW-846 3550B, 8270C, Semi-Volatile Organic Compounds by GC/MS			02/08/2017 15:06	02/09/2017 10:22
17020460-007D	CH-FS-03 (19-20)	02/06/2017 11:30	02/08/2017 8:02		
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/09/2017 3:22
17020460-008A	CH-FS-04 (6-7)	02/06/2017 12:40	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/08/2017 17:42
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/08/2017 15:13	02/09/2017 23:06
	SW-846 3550B, 8270C, Semi-Volatile Organic Compounds by GC/MS			02/08/2017 15:06	02/09/2017 11:26
17020460-008D	CH-FS-04 (6-7)	02/06/2017 12:40	02/08/2017 8:02		
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/09/2017 3:49
17020460-009A	CH-FS-04 (11-12)	02/06/2017 12:50	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/08/2017 17:42
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/08/2017 15:13	02/09/2017 23:39
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/08/2017 15:13	02/10/2017 14:11
	SW-846 3550B, 8270C, Semi-Volatile Organic Compounds by GC/MS			02/08/2017 15:06	02/09/2017 10:34
17020460-009D	CH-FS-04 (11-12)	02/06/2017 12:50	02/08/2017 8:02		
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/08/2017 15:52
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/09/2017 16:39
17020460-010A	CH-FS-04 (16-17)	02/06/2017 12:30	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/08/2017 17:42
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/08/2017 15:13	02/09/2017 18:14
	SW-846 3550B, 8270C, Semi-Volatile Organic Compounds by GC/MS			02/08/2017 15:06	02/09/2017 10:54
17020460-010D	CH-FS-04 (16-17)	02/06/2017 12:30	02/08/2017 8:02		
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/08/2017 16:19
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/09/2017 17:05
17020460-011A	CH-FS-05 (5-6)	02/06/2017 14:50	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/08/2017 17:43
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/08/2017 15:13	02/10/2017 0:11
	SW-846 3550B, 8270C, Semi-Volatile Organic Compounds by GC/MS			02/08/2017 15:06	02/09/2017 13:35
17020460-011D	CH-FS-05 (5-6)	02/06/2017 14:50	02/08/2017 8:02		

Client: PSC Industrial Outsourcing, LP
Work Order: 17020460
Client Project: Champaign Soil Residual IRM 624-1610-001-J0055
Report Date: 14-Feb-17

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/09/2017 19:26
17020460-012A	CH-FS-05 (16-17)	02/06/2017 14:55	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/08/2017 17:43
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/08/2017 15:13	02/10/2017 0:44
	SW-846 3550B, 8270C, Semi-Volatile Organic Compounds by GC/MS			02/08/2017 15:06	02/09/2017 11:02
17020460-012D	CH-FS-05 (16-17)	02/06/2017 14:55	02/08/2017 8:02		
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/08/2017 18:05
17020460-013A	CH-FS-06 (18-19)	02/06/2017 16:00	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/08/2017 17:43
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/08/2017 15:13	02/09/2017 18:47
	SW-846 3550B, 8270C, Semi-Volatile Organic Compounds by GC/MS			02/08/2017 15:06	02/09/2017 11:58
17020460-013D	CH-FS-06 (18-19)	02/06/2017 16:00	02/08/2017 8:02		
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/08/2017 18:31

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

EPA SW846 3550C, 5035A, ASTM D2974

Batch R228981 **SampType:** LCS Units %

SampID: LCS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	02/08/2017

Batch R228981 **SampType:** LCSQC Units %

SampID: LCSQC

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	02/08/2017

SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126904 **SampType:** MBLK Units mg/Kg

SampID: MBLK-126904

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Acenaphthene	0.003		**ND**						02/09/2017
Acenaphthylene	0.003		**ND**						02/09/2017
Anthracene	0.003		**ND**						02/09/2017
Benzo(a)anthracene	0.010		**ND**						02/09/2017
Benzo(a)pyrene	0.003		**ND**						02/09/2017
Benzo(b)fluoranthene	0.003		**ND**						02/09/2017
Benzo(g,h,i)perylene	0.003		**ND**						02/09/2017
Benzo(k)fluoranthene	0.003		**ND**						02/09/2017
Chrysene	0.003		**ND**						02/09/2017
Dibenzo(a,h)anthracene	0.003		**ND**						02/09/2017
Fluoranthene	0.003		**ND**						02/09/2017
Fluorene	0.003		**ND**						02/09/2017
Indeno(1,2,3-cd)pyrene	0.003		**ND**						02/09/2017
Naphthalene	0.003		**ND**						02/09/2017
Phenanthrene	0.003		**ND**						02/09/2017
Pyrene	0.003		**ND**						02/09/2017
Surr: 2-Fluorobiphenyl			**0.122**	0.1670		73.3	30	101	02/09/2017
Surr: Nitrobenzene-d5			**0.149**	0.1670		89.2	24.4	112	02/09/2017
Surr: p-Terphenyl-d14			**0.125**	0.1670		75.1	31.9	121	02/09/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126904 **SampType:** LCS Units **mg/Kg**

SampID: LCS-126904

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Acenaphthene	0.003		**0.112**	0.1670	0	67.2	47.9	103	02/09/2017
Acenaphthylene	0.003		**0.114**	0.1670	0	68.5	47.3	104	02/09/2017
Anthracene	0.003		**0.111**	0.1670	0	66.2	42.1	98.1	02/09/2017
Benzo(a)anthracene	0.010		**0.116**	0.1670	0	69.3	41.4	107	02/09/2017
Benzo(a)pyrene	0.003		**0.121**	0.1670	0	72.3	43.1	102	02/09/2017
Benzo(b)fluoranthene	0.003		**0.122**	0.1670	0	72.8	40.9	109	02/09/2017
Benzo(g,h,i)perylene	0.003		**0.115**	0.1670	0	68.8	36.2	113	02/09/2017
Benzo(k)fluoranthene	0.003		**0.122**	0.1670	0	73.3	45.4	107	02/09/2017
Chrysene	0.003		**0.107**	0.1670	0	63.8	47.9	107	02/09/2017
Dibenzo(a,h)anthracene	0.003		**0.118**	0.1670	0	70.6	41.2	112	02/09/2017
Fluoranthene	0.003		**0.118**	0.1670	0	70.4	45	104	02/09/2017
Fluorene	0.003		**0.121**	0.1670	0	72.7	47.8	106	02/09/2017
Indeno(1,2,3-cd)pyrene	0.003		**0.117**	0.1670	0	70.3	40	112	02/09/2017
Naphthalene	0.003		**0.105**	0.1670	0	63.0	42.9	93.3	02/09/2017
Phenanthrene	0.003		**0.112**	0.1670	0	67.1	44.2	99.2	02/09/2017
Pyrene	0.003		**0.117**	0.1670	0	69.9	41.3	103	02/09/2017
Surr: 2-Fluorobiphenyl			**0.086**	0.1670		51.3	30	101	02/09/2017
Surr: Nitrobenzene-d5			**0.092**	0.1670		55.1	24.4	112	02/09/2017
Surr: p-Terphenyl-d14			**0.112**	0.1670		66.9	31.9	121	02/09/2017

Batch 126904 **SampType:** MS Units **mg/Kg-dry**

SampID: 17020460-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Acenaphthene	0.202	S	**0.656**	0.3973	0.8495	-48.7	30.6	109	02/09/2017
Acenaphthylene	0.202	S	**0.729**	0.3973	1.014	-71.6	28	110	02/09/2017
Anthracene	0.202	S	**1.77**	0.3973	3.061	-325.0	41.4	94.3	02/09/2017
Benzo(a)anthracene	0.595	S	**1.35**	0.3973	1.945	-150.9	28.6	113	02/09/2017
Benzo(a)pyrene	0.202	S	**1.02**	0.3973	1.485	-117.7	37.9	102	02/09/2017
Benzo(b)fluoranthene	0.202	S	**0.934**	0.3973	1.328	-99.3	37.1	112	02/09/2017
Benzo(g,h,i)perylene	0.202	S	**0.502**	0.3973	0.5249	-5.9	7.28	119	02/09/2017
Benzo(k)fluoranthene	0.202	S	**0.500**	0.3973	0.5710	-18.0	34	115	02/09/2017
Chrysene	0.202	S	**1.02**	0.3973	1.537	-128.8	23.1	116	02/09/2017
Dibenzo(a,h)anthracene	0.202		**0.262**	0.3973	0.1402	30.6	23.9	110	02/09/2017
Fluoranthene	0.202	S	**2.42**	0.3973	4.263	-464.4	20.8	124	02/09/2017
Fluorene	0.202	S	**2.22**	0.3973	4.013	-450.3	44.3	96.6	02/09/2017
Indeno(1,2,3-cd)pyrene	0.202	S	**0.454**	0.3973	0.4428	2.8	12.6	119	02/09/2017
Naphthalene	0.202	S	**16.5**	0.3973	38.46	-5528	17.8	110	02/09/2017
Phenanthrene	0.202	S	**4.86**	0.3973	9.414	-1147	22.3	117	02/09/2017
Pyrene	0.202	S	**2.45**	0.3973	4.301	-466.0	20.6	121	02/09/2017
Surr: 2-Fluorobiphenyl			**0.230**	0.3973		57.9	8.85	90.5	02/09/2017
Surr: Nitrobenzene-d5			**0.220**	0.3973		55.4	5	102	02/09/2017
Surr: p-Terphenyl-d14			**0.256**	0.3973		64.4	18.4	103	02/09/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126904 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **49.7**

SampID: 17020460-001AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Acenaphthene	0.204	S	**0.966**	0.4002	0.8495	29.2	0.6561	38.25	02/09/2017
Acenaphthylene	0.204	SR	**1.11**	0.4002	1.014	25.1	0.7295	41.73	02/09/2017
Anthracene	0.204	S	**2.91**	0.4002	3.061	-37.0	1.770	48.81	02/09/2017
Benzo(a)anthracene	0.599	SR	**2.06**	0.4002	1.945	28.3	1.346	41.87	02/09/2017
Benzo(a)pyrene	0.204	S	**1.58**	0.4002	1.485	22.7	1.017	43.09	02/09/2017
Benzo(b)fluoranthene	0.204	S	**1.45**	0.4002	1.328	31.3	0.9337	43.56	02/09/2017
Benzo(g,h,i)perylene	0.204	R	**0.727**	0.4002	0.5249	50.5	0.5015	36.68	02/09/2017
Benzo(k)fluoranthene	0.204		**0.715**	0.4002	0.5710	36.0	0.4995	35.46	02/09/2017
Chrysene	0.204	S	**1.58**	0.4002	1.537	11.2	1.025	42.71	02/09/2017
Dibenzo(a,h)anthracene	0.204		**0.335**	0.4002	0.1402	48.8	0.2617	24.72	02/09/2017
Fluoranthene	0.204	S	**4.09**	0.4002	4.263	-44.5	2.418	51.26	02/09/2017
Fluorene	0.204	S	**3.54**	0.4002	4.013	-117.6	2.224	45.72	02/09/2017
Indeno(1,2,3-cd)pyrene	0.204	R	**0.701**	0.4002	0.4428	64.5	0.4539	42.76	02/09/2017
Naphthalene	0.204	SR	**29.2**	0.4002	38.46	-2303	16.50	55.71	02/09/2017
Phenanthrene	0.204	SR	**8.26**	0.4002	9.414	-287.7	4.857	51.92	02/09/2017
Pyrene	0.204	S	**3.99**	0.4002	4.301	-78.4	2.450	47.76	02/09/2017
Surr: 2-Fluorobiphenyl			**0.210**	0.4002		52.4			02/09/2017
Surr: Nitrobenzene-d5			**0.200**	0.4002		49.9			02/09/2017
Surr: p-Terphenyl-d14			**0.232**	0.4002		57.9			02/09/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126878 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK-126878

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,2,4-Trichlorobenzene	0.500		ND						02/08/2017
1,2-Dichlorobenzene	0.500		ND						02/08/2017
1,3-Dichlorobenzene	0.500		ND						02/08/2017
1,4-Dichlorobenzene	0.500		ND						02/08/2017
2,4,5-Trichlorophenol	0.350		ND						02/08/2017
2,4,6-Trichlorophenol	0.350		ND						02/08/2017
2,4-Dichlorophenol	0.500		ND						02/08/2017
2,4-Dimethylphenol	0.500		ND						02/08/2017
2,4-Dinitrophenol	1.00		ND						02/08/2017
2,4-Dinitrotoluene	0.350		ND						02/08/2017
2,6-Dinitrotoluene	0.350		ND						02/08/2017
2-Chloronaphthalene	0.350		ND						02/08/2017
2-Chlorophenol	0.500		ND						02/08/2017
2-Methoxy-4-methylphenol	0.650		ND						02/08/2017
2-Methylnaphthalene	0.350		ND						02/08/2017
2-Nitroaniline	1.00		ND						02/08/2017
2-Nitrophenol	0.350		ND						02/08/2017
3,3´-Dichlorobenzidine	0.350		ND						02/08/2017
3-Nitroaniline	1.00		ND						02/08/2017
4,6-Dinitro-2-methylphenol	1.00		ND						02/08/2017
4-Bromophenyl phenyl ether	0.350		ND						02/08/2017
4-Chloro-3-methylphenol	0.500		ND						02/08/2017
4-Chloroaniline	0.500		ND						02/08/2017
4-Chlorophenyl phenyl ether	0.350		ND						02/08/2017
4-Nitroaniline	0.500		ND						02/08/2017
4-Nitrophenol	0.350		ND						02/08/2017
Aniline	0.500		ND						02/08/2017
Azobenzene	0.350		ND						02/08/2017
Benzoic acid	1.50		ND						02/08/2017
Benzyl alcohol	0.500		ND						02/08/2017
Bis(2-chloroethoxy)methane	0.350		ND						02/08/2017
Bis(2-chloroethyl)ether	0.500		ND						02/08/2017
Bis(2-chloroisopropyl)ether	0.350		ND						02/08/2017
Bis(2-ethylhexyl)phthalate	0.350		ND						02/08/2017
Butyl benzyl phthalate	0.350		ND						02/08/2017
Carbazole	0.500		ND						02/08/2017
Dibenzofuran	0.350		ND						02/08/2017
Diethyl phthalate	0.500		ND						02/08/2017
Dimethyl phthalate	0.350		ND						02/08/2017
Di-n-butyl phthalate	0.350		ND						02/08/2017
Di-n-octyl phthalate	0.350		ND						02/08/2017
Hexachlorobenzene	0.350		ND						02/08/2017
Hexachlorobutadiene	0.500		ND						02/08/2017
Hexachlorocyclopentadiene	0.350		ND						02/08/2017
Hexachloroethane	0.500		ND						02/08/2017
Isophorone	0.350		ND						02/08/2017
m,p-Cresol	0.500		ND						02/08/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126878 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK-126878

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Nitrobenzene	0.500		**ND**						02/08/2017
N-Nitrosodimethylamine	0.500		**ND**						02/08/2017
N-Nitroso-di-n-propylamine	0.500		**ND**						02/08/2017
N-Nitrosodiphenylamine	0.500		**ND**						02/08/2017
o-Cresol	0.500		**ND**						02/08/2017
Pentachlorophenol	2.00		**ND**						02/08/2017
Phenol	0.350		**ND**						02/08/2017
Pyridine	0.500		**ND**						02/08/2017
1,2-Diphenylhydrazine	0.840		**ND**						02/08/2017
Surr: 2,4,6-Tribromophenol			**1.37**	1.670		82.1	50.5	116	02/08/2017
Surr: 2-Fluorobiphenyl			**0.817**	0.8350		97.8	47.4	102	02/08/2017
Surr: 2-Fluorophenol			**1.34**	1.670		80.5	43.7	98.6	02/08/2017
Surr: Nitrobenzene-d5			**0.777**	0.8350		93.1	39	97.3	02/08/2017
Surr: Phenol-d5			**1.63**	1.670		97.7	48.1	104	02/08/2017
Surr: p-Terphenyl-d14			**0.858**	0.8350		102.8	53.2	119	02/08/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126878 **SampType:** LCS Units **mg/Kg**

SampID: LCS-126878

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,2,4-Trichlorobenzene	0.500		**1.40**	1.670	0	83.8	52.4	102	02/08/2017
1,4-Dichlorobenzene	0.500		**1.31**	1.670	0	78.6	43	86.1	02/08/2017
2,4,5-Trichlorophenol	0.350		**1.47**	1.670	0	88.1	55.1	106	02/08/2017
2,4,6-Trichlorophenol	0.350		**1.47**	1.670	0	87.9	54	105	02/08/2017
2,4-Dimethylphenol	0.500		**1.28**	1.670	0	76.4	46.8	103	02/08/2017
2,4-Dinitrophenol	1.00		**1.06**	1.670	0	63.2	38	95.6	02/08/2017
2,4-Dinitrotoluene	0.350		**1.49**	1.670	0	89.4	55.6	109	02/08/2017
2-Chlorophenol	0.500		**1.19**	1.670	0	71.0	51.1	92.4	02/08/2017
4-Chloro-3-methylphenol	0.500		**1.47**	1.670	0	87.8	52	97.3	02/08/2017
4-Nitrophenol	0.350		**1.17**	1.670	0	70.1	48	99.6	02/08/2017
Bis(2-ethylhexyl)phthalate	0.350		**1.29**	1.670	0	77.3	48.3	106	02/08/2017
Diethyl phthalate	0.500		**1.62**	1.670	0	97.0	56.9	103	02/08/2017
Dimethyl phthalate	0.350		**1.47**	1.670	0	87.8	56.4	98.1	02/08/2017
Di-n-butyl phthalate	0.350		**1.45**	1.670	0	86.7	54.8	100	02/08/2017
Hexachlorobenzene	0.350		**1.50**	1.670	0	89.8	54.1	102	02/08/2017
Hexachlorobutadiene	0.500		**1.38**	1.670	0	82.6	46	103	02/08/2017
Hexachloroethane	0.500		**1.33**	1.670	0	79.7	45	90	02/08/2017
m,p-Cresol	0.500		**1.39**	1.670	0	83.1	53	98.5	02/08/2017
Nitrobenzene	0.500		**1.25**	1.670	0	74.6	44.4	86.6	02/08/2017
N-Nitroso-di-n-propylamine	0.500		**1.54**	1.670	0	92.0	39.8	94.3	02/08/2017
o-Cresol	0.500		**1.32**	1.670	0	79.2	52.1	96.4	02/08/2017
Pentachlorophenol	2.00		**ND**	1.670	0	68.2	37	91.7	02/08/2017
Phenol	0.350		**1.26**	1.670	0	75.6	52.9	95.6	02/08/2017
Pyridine	0.500		**0.904**	1.670	0	54.1	30	77.1	02/08/2017
Surr: 2,4,6-Tribromophenol			**1.26**	1.670		75.5	50.5	116	02/08/2017
Surr: 2-Fluorobiphenyl			**0.697**	0.8350		83.4	47.4	102	02/08/2017
Surr: 2-Fluorophenol			**1.20**	1.670		72.0	43.7	98.6	02/08/2017
Surr: Nitrobenzene-d5			**0.628**	0.8350		75.2	39	97.3	02/08/2017
Surr: Phenol-d5			**1.29**	1.670		77.4	48.1	104	02/08/2017
Surr: p-Terphenyl-d14			**0.756**	0.8350		90.5	53.2	119	02/08/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126878 **SampType:** MS Units **mg/Kg-dry**

SampID: 17020460-013AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,2,4-Trichlorobenzene	14.6		**38.6**	48.75	0	79.1	35.9	102	02/09/2017
1,4-Dichlorobenzene	14.6		**36.5**	48.75	0	74.9	29.8	95.5	02/09/2017
2,4,5-Trichlorophenol	10.2		**40.6**	48.75	0	83.4	38.6	123	02/09/2017
2,4,6-Trichlorophenol	10.2		**40.2**	48.75	0	82.5	35.9	123	02/09/2017
2,4-Dimethylphenol	14.6		**41.3**	48.75	0	84.8	38.3	88	02/09/2017
2,4-Dinitrophenol	29.2		**ND**	48.75	0	57.7	1.88	162	02/09/2017
2,4-Dinitrotoluene	10.2		**46.3**	48.75	0	94.9	37.5	107	02/09/2017
2-Chlorophenol	14.6		**35.4**	48.75	0	72.6	22.6	108	02/09/2017
4-Chloro-3-methylphenol	14.6		**40.0**	48.75	0	82.0	19.3	131	02/09/2017
4-Nitrophenol	10.2		**47.6**	48.75	0	97.7	27.6	123	02/09/2017
Bis(2-ethylhexyl)phthalate	10.2		**47.6**	48.75	0	97.7	56.3	109	02/09/2017
Diethyl phthalate	14.6		**44.7**	48.75	0	91.7	51.7	106	02/09/2017
Dimethyl phthalate	10.2		**44.1**	48.75	0	90.4	58.8	104	02/09/2017
Di-n-butyl phthalate	10.2		**45.7**	48.75	0	93.7	54.3	105	02/09/2017
Hexachlorobenzene	10.2		**41.9**	48.75	0	86.0	55.9	106	02/09/2017
Hexachlorobutadiene	14.6		**37.0**	48.75	0	75.9	35.7	100	02/09/2017
Hexachloroethane	14.6		**36.5**	48.75	0	74.8	38.9	89.9	02/09/2017
m,p-Cresol	14.6		**35.7**	48.75	0	73.2	37.6	93.7	02/09/2017
Nitrobenzene	14.6		**33.5**	48.75	0	68.6	51.8	104	02/09/2017
N-Nitroso-di-n-propylamine	14.6		**40.5**	48.75	0	83.2	45.5	99.1	02/09/2017
o-Cresol	14.6		**36.9**	48.75	0	75.7	43	101	02/09/2017
Pentachlorophenol	58.4		**ND**	48.75	0	96.8	18.5	113	02/09/2017
Phenol	10.2		**37.1**	48.75	0	76.1	20.8	110	02/09/2017
Pyridine	14.6		**ND**	48.75	0	15.6	3.61	74.3	02/09/2017
Surr: 2,4,6-Tribromophenol			**37.5**	48.75		76.8	33	115	02/09/2017
Surr: 2-Fluorobiphenyl			**18.4**	24.38		75.6	36.5	97.7	02/09/2017
Surr: 2-Fluorophenol			**35.0**	48.75		71.8	39.4	92.8	02/09/2017
Surr: Nitrobenzene-d5			**18.1**	24.38		74.1	34.7	90.1	02/09/2017
Surr: Phenol-d5			**40.1**	48.75		82.2	42.8	106	02/09/2017
Surr: p-Terphenyl-d14			**20.3**	24.38		83.2	43.7	124	02/09/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126878 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **40**

SampID: 17020460-013AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
1,2,4-Trichlorobenzene	16.7		**44.6**	55.85	0	79.8	38.57	14.45	02/09/2017
1,4-Dichlorobenzene	16.7		**42.8**	55.85	0	76.6	36.50	15.91	02/09/2017
2,4,5-Trichlorophenol	11.7		**46.9**	55.85	0	84.0	40.65	14.26	02/09/2017
2,4,6-Trichlorophenol	11.7		**46.0**	55.85	0	82.3	40.24	13.29	02/09/2017
2,4-Dimethylphenol	16.7		**46.2**	55.85	0	82.7	41.32	11.18	02/09/2017
2,4-Dinitrophenol	33.4		**ND**	55.85	0	52.3	28.12	0.00	02/09/2017
2,4-Dinitrotoluene	11.7		**51.5**	55.85	0	92.2	46.28	10.71	02/09/2017
2-Chlorophenol	16.7		**40.6**	55.85	0	72.7	35.37	13.79	02/09/2017
4-Chloro-3-methylphenol	16.7		**44.5**	55.85	0	79.7	39.98	10.75	02/09/2017
4-Nitrophenol	11.7		**55.5**	55.85	0	99.4	47.63	15.33	02/09/2017
Bis(2-ethylhexyl)phthalate	11.7		**51.6**	55.85	0	92.3	47.63	7.94	02/09/2017
Diethyl phthalate	16.7		**51.0**	55.85	0	91.3	44.69	13.18	02/09/2017
Dimethyl phthalate	11.7		**49.5**	55.85	0	88.6	44.07	11.53	02/09/2017
Di-n-butyl phthalate	11.7		**50.9**	55.85	0	91.2	45.67	10.89	02/09/2017
Hexachlorobenzene	11.7		**46.5**	55.85	0	83.3	41.91	10.43	02/09/2017
Hexachlorobutadiene	16.7		**42.5**	55.85	0	76.0	37.03	13.65	02/09/2017
Hexachloroethane	16.7		**41.7**	55.85	0	74.7	36.47	13.42	02/09/2017
m,p-Cresol	16.7		**42.3**	55.85	0	75.7	35.69	16.91	02/09/2017
Nitrobenzene	16.7		**39.6**	55.85	0	70.9	33.46	16.76	02/09/2017
N-Nitroso-di-n-propylamine	16.7		**49.1**	55.85	0	87.9	40.54	19.05	02/09/2017
o-Cresol	16.7		**41.6**	55.85	0	74.5	36.93	11.88	02/09/2017
Pentachlorophenol	66.9		**ND**	55.85	0	104.7	47.20	0.00	02/09/2017
Phenol	11.7		**42.0**	55.85	0	75.2	37.09	12.42	02/09/2017
Pyridine	16.7		**ND**	55.85	0	15.9	7.629	0.00	02/09/2017
Surr: 2,4,6-Tribromophenol			**41.0**	55.85		73.4			02/09/2017
Surr: 2-Fluorobiphenyl			**20.6**	27.93		73.8			02/09/2017
Surr: 2-Fluorophenol			**39.9**	55.85		71.5			02/09/2017
Surr: Nitrobenzene-d5			**19.7**	27.93		70.5			02/09/2017
Surr: Phenol-d5			**45.7**	55.85		81.8			02/09/2017
Surr: p-Terphenyl-d14			**21.6**	27.93		77.3			02/09/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126894 **SampType:** MBLK Units µg/Kg

SampID: MBLK-F170208A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		ND						02/08/2017
1,1,1-Trichloroethane	5.0		ND						02/08/2017
1,1,2,2-Tetrachloroethane	5.0		ND						02/08/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		ND						02/08/2017
1,1,2-Trichloroethane	5.0		ND						02/08/2017
1,1-Dichloro-2-propanone	50.0		ND						02/08/2017
1,1-Dichloroethane	5.0		ND						02/08/2017
1,1-Dichloroethene	5.0		ND						02/08/2017
1,1-Dichloropropene	5.0		ND						02/08/2017
1,2,3-Trichlorobenzene	5.0		ND						02/08/2017
1,2,3-Trichloropropane	10.0		ND						02/08/2017
1,2,3-Trimethylbenzene	5.0		ND						02/08/2017
1,2,4-Trichlorobenzene	5.0		ND						02/08/2017
1,2,4-Trimethylbenzene	5.0		ND						02/08/2017
1,2-Dibromo-3-chloropropane	5.0		ND						02/08/2017
1,2-Dibromoethane	5.0		ND						02/08/2017
1,2-Dichlorobenzene	5.0		ND						02/08/2017
1,2-Dichloroethane	5.0		ND						02/08/2017
1,2-Dichloropropane	5.0		ND						02/08/2017
1,3,5-Trimethylbenzene	5.0		ND						02/08/2017
1,3-Dichlorobenzene	5.0		ND						02/08/2017
1,3-Dichloropropane	5.0		ND						02/08/2017
1,4-Dichlorobenzene	5.0		ND						02/08/2017
1-Chlorobutane	5.0		ND						02/08/2017
2,2-Dichloropropane	5.0		ND						02/08/2017
2-Butanone	50.0		ND						02/08/2017
2-Chlorotoluene	5.0		ND						02/08/2017
2-Hexanone	50.0		ND						02/08/2017
2-Nitropropane	50.0		ND						02/08/2017
4-Chlorotoluene	5.0		ND						02/08/2017
4-Methyl-2-pentanone	50.0		ND						02/08/2017
Acetone	50.0		ND						02/08/2017
Acrolein	100		ND						02/08/2017
Acrylonitrile	10.0		ND						02/08/2017
Allyl chloride	5.0		ND						02/08/2017
Benzene	1.0		ND						02/08/2017
Bromobenzene	5.0		ND						02/08/2017
Bromochloromethane	5.0		ND						02/08/2017
Bromodichloromethane	5.0		ND						02/08/2017
Bromoform	5.0		ND						02/08/2017
Bromomethane	10.0		ND						02/08/2017
Carbon disulfide	5.0		ND						02/08/2017
Carbon tetrachloride	5.0		ND						02/08/2017
Chlorobenzene	5.0		ND						02/08/2017
Chloroethane	10.0		ND						02/08/2017
Chloroform	5.0		ND						02/08/2017
Chloromethane	10.0		ND						02/08/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126894 **SampType:** MBLK Units µg/Kg

SampID: MBLK-F170208A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		ND						02/08/2017
cis-1,3-Dichloropropene	4.0		ND						02/08/2017
Cyclohexanone	100		ND						02/08/2017
Dibromochloromethane	5.0		ND						02/08/2017
Dibromomethane	5.0		ND						02/08/2017
Dichlorodifluoromethane	10.0		ND						02/08/2017
Ethyl ether	5.0		ND						02/08/2017
Ethyl methacrylate	5.0		ND						02/08/2017
Ethylbenzene	5.0		ND						02/08/2017
Hexachlorobutadiene	5.0		ND						02/08/2017
Hexachloroethane	5.0		ND						02/08/2017
Iodomethane	10.0		ND						02/08/2017
Isopropylbenzene	5.0		ND						02/08/2017
m,p-Xylenes	5.0		ND						02/08/2017
Methacrylonitrile	50.0		ND						02/08/2017
Methyl Methacrylate	5.0		ND						02/08/2017
Methyl tert-butyl ether	2.0		ND						02/08/2017
Methylacrylate	10.0		ND						02/08/2017
Methylene chloride	5.0		ND						02/08/2017
Naphthalene	10.0		ND						02/08/2017
n-Butylbenzene	5.0		ND						02/08/2017
n-Heptane	20.0		ND						02/08/2017
n-Hexane	20.0		ND						02/08/2017
Nitrobenzene	100		ND						02/08/2017
n-Propylbenzene	5.0		ND						02/08/2017
o-Xylene	5.0		ND						02/08/2017
Pentachloroethane	5.0		ND						02/08/2017
p-Isopropyltoluene	5.0		ND						02/08/2017
Propionitrile	50.0		ND						02/08/2017
sec-Butylbenzene	5.0		ND						02/08/2017
Styrene	5.0		ND						02/08/2017
tert-Butylbenzene	5.0		ND						02/08/2017
Tetrachloroethene	5.0		ND						02/08/2017
Tetrahydrofuran	50.0		ND						02/08/2017
Toluene	5.0		ND						02/08/2017
trans-1,2-Dichloroethene	5.0		ND						02/08/2017
trans-1,3-Dichloropropene	4.0		ND						02/08/2017
Trichloroethene	5.0		ND						02/08/2017
Trichlorofluoromethane	5.0		ND						02/08/2017
Vinyl acetate	50.0		ND						02/08/2017
Vinyl chloride	2.0		ND						02/08/2017
Surr: 1,2-Dichloroethane-d4			**53.6**	50.00		107.2	72.2	131	02/08/2017
Surr: 4-Bromofluorobenzene			**52.2**	50.00		104.4	82.1	116	02/08/2017
Surr: Dibromofluoromethane			**50.0**	50.00		100.0	77.7	120	02/08/2017
Surr: Toluene-d8			**49.2**	50.00		98.5	86	116	02/08/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126894 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-F170208A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		**53.0**	50.00	0	106.0	50.92	3.97	02/08/2017
1,1,1-Trichloroethane	5.0		**54.9**	50.00	0	109.7	55.72	1.54	02/08/2017
1,1,2,2-Tetrachloroethane	5.0		**51.9**	50.00	0	103.8	52.00	0.19	02/08/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		**54.1**	50.00	0	108.1	54.46	0.74	02/08/2017
1,1,2-Trichloroethane	5.0		**51.3**	50.00	0	102.7	49.93	2.77	02/08/2017
1,1-Dichloro-2-propanone	50.0		**141**	125.0	0	113.0	115.4	20.11	02/08/2017
1,1-Dichloroethane	5.0		**54.2**	50.00	0	108.5	54.34	0.18	02/08/2017
1,1-Dichloroethene	5.0		**55.6**	50.00	0	111.2	55.58	0.07	02/08/2017
1,1-Dichloropropene	5.0		**54.4**	50.00	0	108.8	53.21	2.19	02/08/2017
1,2,3-Trichlorobenzene	5.0		**53.3**	50.00	0	106.6	52.38	1.74	02/08/2017
1,2,3-Trichloropropane	10.0		**50.3**	50.00	0	100.6	51.57	2.51	02/08/2017
1,2,3-Trimethylbenzene	5.0		**52.6**	50.00	0	105.3	52.66	0.04	02/08/2017
1,2,4-Trichlorobenzene	5.0		**57.4**	50.00	0	114.7	56.74	1.07	02/08/2017
1,2,4-Trimethylbenzene	5.0		**54.0**	50.00	0	108.1	53.43	1.12	02/08/2017
1,2-Dibromo-3-chloropropane	5.0		**53.4**	50.00	0	106.8	52.48	1.72	02/08/2017
1,2-Dibromoethane	5.0		**49.7**	50.00	0	99.3	49.42	0.48	02/08/2017
1,2-Dichlorobenzene	5.0		**51.2**	50.00	0	102.3	49.76	2.75	02/08/2017
1,2-Dichloroethane	5.0		**57.8**	50.00	0	115.6	58.72	1.61	02/08/2017
1,2-Dichloropropane	5.0		**53.3**	50.00	0	106.7	53.34	0.00	02/08/2017
1,3,5-Trimethylbenzene	5.0		**54.4**	50.00	0	108.7	52.17	4.13	02/08/2017
1,3-Dichlorobenzene	5.0		**53.0**	50.00	0	106.0	52.32	1.33	02/08/2017
1,3-Dichloropropane	5.0		**51.6**	50.00	0	103.2	50.85	1.44	02/08/2017
1,4-Dichlorobenzene	5.0		**51.8**	50.00	0	103.5	51.21	1.09	02/08/2017
1-Chlorobutane	5.0		**53.9**	50.00	0	107.9	52.84	2.04	02/08/2017
2,2-Dichloropropane	5.0		**57.3**	50.00	0	114.6	56.06	2.15	02/08/2017
2-Butanone	50.0		**135**	125.0	0	107.8	175.7	26.42	02/08/2017
2-Chlorotoluene	5.0		**53.9**	50.00	0	107.8	52.93	1.85	02/08/2017
2-Hexanone	50.0		**137**	125.0	0	109.9	154.9	11.94	02/08/2017
2-Nitropropane	50.0		**617**	500.0	0	123.5	615.2	0.36	02/08/2017
4-Chlorotoluene	5.0		**49.3**	50.00	0	98.6	49.75	0.93	02/08/2017
4-Methyl-2-pentanone	50.0		**138**	125.0	0	110.3	142.6	3.34	02/08/2017
Acetone	50.0	R	**101**	125.0	0	80.8	178.6	55.50	02/08/2017
Acrolein	100		**396**	500.0	0	79.2	396.3	0.09	02/08/2017
Acrylonitrile	10.0		**56.8**	50.00	0	113.6	57.17	0.68	02/08/2017
Allyl chloride	5.0		**52.5**	50.00	0	104.9	55.09	4.89	02/08/2017
Benzene	1.0		**51.5**	50.00	0	103.0	51.36	0.31	02/08/2017
Bromobenzene	5.0		**52.8**	50.00	0	105.6	52.68	0.27	02/08/2017
Bromochloromethane	5.0		**53.8**	50.00	0	107.5	53.34	0.78	02/08/2017
Bromodichloromethane	5.0		**54.8**	50.00	0	109.6	53.99	1.51	02/08/2017
Bromoform	5.0		**56.3**	50.00	0	112.6	53.91	4.34	02/08/2017
Bromomethane	10.0		**39.6**	50.00	0	79.3	32.33	20.29	02/08/2017
Carbon disulfide	5.0		**48.7**	50.00	0	97.4	48.28	0.87	02/08/2017
Carbon tetrachloride	5.0		**57.2**	50.00	0	114.4	55.82	2.48	02/08/2017
Chlorobenzene	5.0		**51.0**	50.00	0	101.9	50.41	1.10	02/08/2017
Chloroethane	10.0		**53.1**	50.00	0	106.3	52.60	1.02	02/08/2017
Chloroform	5.0		**54.3**	50.00	0	108.6	52.63	3.16	02/08/2017
Chloromethane	10.0		**58.9**	50.00	0	117.7	57.01	3.19	02/08/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126894 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-F170208A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
cis-1,2-Dichloroethene	5.0		**57.0**	50.00	0	114.0	56.04	1.66	02/08/2017
cis-1,3-Dichloropropene	4.0		**55.3**	50.00	0	110.6	55.42	0.18	02/08/2017
Cyclohexanone	100		**473**	500.0	0	94.5	496.9	5.02	02/08/2017
Dibromochloromethane	5.0		**53.9**	50.00	0	107.7	53.12	1.38	02/08/2017
Dibromomethane	5.0		**53.9**	50.00	0	107.9	53.67	0.50	02/08/2017
Dichlorodifluoromethane	10.0		**48.4**	50.00	0	96.8	48.11	0.60	02/08/2017
Ethyl ether	5.0		**54.7**	50.00	0	109.3	52.04	4.91	02/08/2017
Ethyl methacrylate	5.0		**55.1**	50.00	0	110.2	54.64	0.80	02/08/2017
Ethylbenzene	5.0		**54.2**	50.00	0	108.5	52.33	3.58	02/08/2017
Hexachlorobutadiene	5.0		**54.6**	50.00	0	109.2	54.63	0.04	02/08/2017
Hexachloroethane	5.0		**55.4**	50.00	0	110.9	55.72	0.50	02/08/2017
Iodomethane	10.0		**44.2**	50.00	0	88.3	42.66	3.46	02/08/2017
Isopropylbenzene	5.0		**53.7**	50.00	0	107.4	52.29	2.70	02/08/2017
m,p-Xylenes	5.0		**109**	100.0	0	108.8	105.8	2.75	02/08/2017
Methacrylonitrile	50.0		**58.0**	50.00	0	116.0	53.92	7.29	02/08/2017
Methyl Methacrylate	5.0		**57.0**	50.00	0	114.0	57.20	0.37	02/08/2017
Methyl tert-butyl ether	2.0		**56.4**	50.00	0	112.8	54.58	3.28	02/08/2017
Methylacrylate	10.0		**53.2**	50.00	0	106.3	51.34	3.46	02/08/2017
Methylene chloride	5.0		**53.4**	50.00	0	106.8	51.99	2.68	02/08/2017
Naphthalene	10.0		**52.8**	50.00	0	105.7	53.51	1.26	02/08/2017
n-Butylbenzene	5.0		**56.3**	50.00	0	112.6	55.65	1.16	02/08/2017
n-Heptane	20.0		**61.1**	50.00	0	122.1	63.85	4.47	02/08/2017
n-Hexane	20.0		**57.3**	50.00	0	114.7	58.49	2.00	02/08/2017
Nitrobenzene	100		**476**	500.0	0	95.1	491.8	3.34	02/08/2017
n-Propylbenzene	5.0		**54.4**	50.00	0	108.8	54.17	0.41	02/08/2017
o-Xylene	5.0		**53.9**	50.00	0	107.9	52.26	3.16	02/08/2017
Pentachloroethane	5.0		**59.1**	50.00	0	118.1	57.20	3.20	02/08/2017
p-Isopropyltoluene	5.0		**55.4**	50.00	0	110.8	55.12	0.54	02/08/2017
Propionitrile	50.0		**575**	500.0	0	114.9	584.2	1.66	02/08/2017
sec-Butylbenzene	5.0		**54.8**	50.00	0	109.7	53.87	1.78	02/08/2017
Styrene	5.0		**53.8**	50.00	0	107.7	52.21	3.07	02/08/2017
tert-Butylbenzene	5.0		**51.3**	50.00	0	102.6	50.57	1.41	02/08/2017
Tetrachloroethene	5.0		**50.4**	50.00	0	100.9	50.11	0.68	02/08/2017
Tetrahydrofuran	50.0		**56.3**	50.00	0	112.6	58.96	4.63	02/08/2017
Toluene	5.0		**50.5**	50.00	0	101.0	48.78	3.46	02/08/2017
trans-1,2-Dichloroethene	5.0		**54.4**	50.00	0	108.8	52.58	3.38	02/08/2017
trans-1,3-Dichloropropene	4.0		**56.7**	50.00	0	113.3	54.58	3.74	02/08/2017
Trichloroethene	5.0		**54.4**	50.00	0	108.8	53.63	1.39	02/08/2017
Trichlorofluoromethane	5.0		**56.3**	50.00	0	112.7	55.91	0.75	02/08/2017
Vinyl acetate	50.0	S	**63.7**	50.00	0	127.4	61.96	2.74	02/08/2017
Vinyl chloride	2.0		**50.7**	50.00	0	101.4	49.43	2.54	02/08/2017
Surr: 1,2-Dichloroethane-d4			**54.0**	50.00		107.9			02/08/2017
Surr: 4-Bromofluorobenzene			**51.1**	50.00		102.1			02/08/2017
Surr: Dibromofluoromethane			**51.4**	50.00		102.8			02/08/2017
Surr: Toluene-d8			**48.8**	50.00		97.6			02/08/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126894 **SampType:** LCS Units µg/Kg

SampID: LCS-F170208A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		**50.9**	50.00	0	101.8	83.1	114	02/08/2017
1,1,1-Trichloroethane	5.0		**55.7**	50.00	0	111.4	78.5	119	02/08/2017
1,1,2,2-Tetrachloroethane	5.0		**52.0**	50.00	0	104.0	67.4	120	02/08/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		**54.5**	50.00	0	108.9	75.4	121	02/08/2017
1,1,2-Trichloroethane	5.0		**49.9**	50.00	0	99.9	81.1	111	02/08/2017
1,1-Dichloro-2-propanone	50.0		**115**	125.0	0	92.4	55.4	131	02/08/2017
1,1-Dichloroethane	5.0		**54.3**	50.00	0	108.7	80.1	116	02/08/2017
1,1-Dichloroethene	5.0		**55.6**	50.00	0	111.2	73.1	121	02/08/2017
1,1-Dichloropropene	5.0		**53.2**	50.00	0	106.4	82.2	114	02/08/2017
1,2,3-Trichlorobenzene	5.0		**52.4**	50.00	0	104.8	81.7	130	02/08/2017
1,2,3-Trichloropropane	10.0		**51.6**	50.00	0	103.1	67.8	118	02/08/2017
1,2,3-Trimethylbenzene	5.0		**52.7**	50.00	0	105.3	82.1	127	02/08/2017
1,2,4-Trichlorobenzene	5.0		**56.7**	50.00	0	113.5	72.3	141	02/08/2017
1,2,4-Trimethylbenzene	5.0		**53.4**	50.00	0	106.9	79.7	123	02/08/2017
1,2-Dibromo-3-chloropropane	5.0		**52.5**	50.00	0	105.0	62.1	123	02/08/2017
1,2-Dibromoethane	5.0		**49.4**	50.00	0	98.8	82.4	112	02/08/2017
1,2-Dichlorobenzene	5.0		**49.8**	50.00	0	99.5	82.7	119	02/08/2017
1,2-Dichloroethane	5.0		**58.7**	50.00	0	117.4	72.8	120	02/08/2017
1,2-Dichloropropane	5.0		**53.3**	50.00	0	106.7	80	116	02/08/2017
1,3,5-Trimethylbenzene	5.0		**52.2**	50.00	0	104.3	81.5	125	02/08/2017
1,3-Dichlorobenzene	5.0		**52.3**	50.00	0	104.6	82	124	02/08/2017
1,3-Dichloropropane	5.0		**50.8**	50.00	0	101.7	79.8	113	02/08/2017
1,4-Dichlorobenzene	5.0		**51.2**	50.00	0	102.4	81.1	124	02/08/2017
1-Chlorobutane	5.0		**52.8**	50.00	0	105.7	77.2	113	02/08/2017
2,2-Dichloropropane	5.0		**56.1**	50.00	0	112.1	76.6	121	02/08/2017
2-Butanone	50.0	S	**176**	125.0	0	140.6	62.8	131	02/08/2017
2-Chlorotoluene	5.0		**52.9**	50.00	0	105.9	78.8	121	02/08/2017
2-Hexanone	50.0		**155**	125.0	0	123.9	63.1	125	02/08/2017
2-Nitropropane	50.0		**615**	500.0	0	123.0	61.2	129	02/08/2017
4-Chlorotoluene	5.0		**49.8**	50.00	0	99.5	77.6	124	02/08/2017
4-Methyl-2-pentanone	50.0		**143**	125.0	0	114.1	60.6	126	02/08/2017
Acetone	50.0		**179**	125.0	0	142.9	39.5	159	02/08/2017
Acrolein	100		**396**	500.0	0	79.3	1	167	02/08/2017
Acrylonitrile	10.0		**57.2**	50.00	0	114.3	67	124	02/08/2017
Allyl chloride	5.0		**55.1**	50.00	0	110.2	58.5	129	02/08/2017
Benzene	1.0		**51.4**	50.00	0	102.7	80.8	117	02/08/2017
Bromobenzene	5.0		**52.7**	50.00	0	105.4	79.6	117	02/08/2017
Bromochloromethane	5.0		**53.3**	50.00	0	106.7	70.7	121	02/08/2017
Bromodichloromethane	5.0		**54.0**	50.00	0	108.0	80.7	121	02/08/2017
Bromoform	5.0		**53.9**	50.00	0	107.8	79.8	118	02/08/2017
Bromomethane	10.0		**32.3**	50.00	0	64.7	1	175	02/08/2017
Carbon disulfide	5.0		**48.3**	50.00	0	96.6	62.8	123	02/08/2017
Carbon tetrachloride	5.0		**55.8**	50.00	0	111.6	77.6	123	02/08/2017
Chlorobenzene	5.0		**50.4**	50.00	0	100.8	85.6	116	02/08/2017
Chloroethane	10.0		**52.6**	50.00	0	105.2	60.2	125	02/08/2017
Chloroform	5.0		**52.6**	50.00	0	105.3	77.9	116	02/08/2017
Chloromethane	10.0		**57.0**	50.00	0	114.0	29.9	157	02/08/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126894 **SampType:** LCS Units µg/Kg

SampID: LCS-F170208A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		**56.0**	50.00	0	112.1	80.1	116	02/08/2017
cis-1,3-Dichloropropene	4.0		**55.4**	50.00	0	110.8	80.5	121	02/08/2017
Cyclohexanone	100		**497**	500.0	0	99.4	45.4	128	02/08/2017
Dibromochloromethane	5.0		**53.1**	50.00	0	106.2	84.3	116	02/08/2017
Dibromomethane	5.0		**53.7**	50.00	0	107.3	76.6	115	02/08/2017
Dichlorodifluoromethane	10.0		**48.1**	50.00	0	96.2	1	200	02/08/2017
Ethyl ether	5.0		**52.0**	50.00	0	104.1	73.4	116	02/08/2017
Ethyl methacrylate	5.0		**54.6**	50.00	0	109.3	76.2	120	02/08/2017
Ethylbenzene	5.0		**52.3**	50.00	0	104.7	84.8	116	02/08/2017
Hexachlorobutadiene	5.0		**54.6**	50.00	0	109.3	74	135	02/08/2017
Hexachloroethane	5.0		**55.7**	50.00	0	111.4	76.4	121	02/08/2017
Iodomethane	10.0		**42.7**	50.00	0	85.3	38.7	161	02/08/2017
Isopropylbenzene	5.0		**52.3**	50.00	0	104.6	85	125	02/08/2017
m,p-Xylenes	5.0		**106**	100.0	0	105.8	85.3	120	02/08/2017
Methacrylonitrile	50.0		**53.9**	50.00	0	107.8	65.7	120	02/08/2017
Methyl Methacrylate	5.0	S	**57.2**	50.00	0	114.4	69.1	114	02/08/2017
Methyl tert-butyl ether	2.0		**54.6**	50.00	0	109.2	66.6	125	02/08/2017
Methylacrylate	10.0		**51.3**	50.00	0	102.7	69.7	121	02/08/2017
Methylene chloride	5.0		**52.0**	50.00	0	104.0	73.4	115	02/08/2017
Naphthalene	10.0		**53.5**	50.00	0	107.0	70.1	134	02/08/2017
n-Butylbenzene	5.0		**55.6**	50.00	0	111.3	78.4	138	02/08/2017
n-Heptane	20.0	S	**63.8**	50.00	0	127.7	74.3	125	02/08/2017
n-Hexane	20.0		**58.5**	50.00	0	117.0	66.3	129	02/08/2017
Nitrobenzene	100		**492**	500.0	0	98.4	20.1	165	02/08/2017
n-Propylbenzene	5.0		**54.2**	50.00	0	108.3	79.1	125	02/08/2017
o-Xylene	5.0		**52.3**	50.00	0	104.5	81.9	118	02/08/2017
Pentachloroethane	5.0		**57.2**	50.00	0	114.4	72.7	123	02/08/2017
p-Isopropyltoluene	5.0		**55.1**	50.00	0	110.2	82.7	129	02/08/2017
Propionitrile	50.0		**584**	500.0	0	116.8	64.3	121	02/08/2017
sec-Butylbenzene	5.0		**53.9**	50.00	0	107.7	81.3	125	02/08/2017
Styrene	5.0		**52.2**	50.00	0	104.4	88.2	122	02/08/2017
tert-Butylbenzene	5.0		**50.6**	50.00	0	101.1	74.8	125	02/08/2017
Tetrachloroethene	5.0		**50.1**	50.00	0	100.2	84.2	122	02/08/2017
Tetrahydrofuran	50.0		**59.0**	50.00	0	117.9	61	118	02/08/2017
Toluene	5.0		**48.8**	50.00	0	97.6	81.3	113	02/08/2017
trans-1,2-Dichloroethene	5.0		**52.6**	50.00	0	105.2	78.2	118	02/08/2017
trans-1,3-Dichloropropene	4.0		**54.6**	50.00	0	109.2	81.7	124	02/08/2017
Trichloroethene	5.0		**53.6**	50.00	0	107.3	81	123	02/08/2017
Trichlorofluoromethane	5.0		**55.9**	50.00	0	111.8	66.8	131	02/08/2017
Vinyl acetate	50.0	S	**62.0**	50.00	0	123.9	64.3	122	02/08/2017
Vinyl chloride	2.0		**49.4**	50.00	0	98.9	45.2	140	02/08/2017
Surr: 1,2-Dichloroethane-d4			**57.0**	50.00		113.9	72.2	131	02/08/2017
Surr: 4-Bromofluorobenzene			**50.7**	50.00		101.4	82.1	116	02/08/2017
Surr: Dibromofluoromethane			**53.6**	50.00		107.2	77.7	120	02/08/2017
Surr: Toluene-d8			**49.0**	50.00		98.1	86	116	02/08/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126941 **SampType:** MBLK Units µg/Kg

SampID: MBLK-F170208A-2

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		ND						02/08/2017
1,1,1-Trichloroethane	5.0		ND						02/08/2017
1,1,2,2-Tetrachloroethane	5.0		ND						02/08/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		ND						02/08/2017
1,1,2-Trichloroethane	5.0		ND						02/08/2017
1,1-Dichloro-2-propanone	50.0		ND						02/08/2017
1,1-Dichloroethane	5.0		ND						02/08/2017
1,1-Dichloroethene	5.0		ND						02/08/2017
1,1-Dichloropropene	5.0		ND						02/08/2017
1,2,3-Trichlorobenzene	5.0		ND						02/08/2017
1,2,3-Trichloropropane	10.0		ND						02/08/2017
1,2,3-Trimethylbenzene	5.0		ND						02/08/2017
1,2,4-Trichlorobenzene	5.0		ND						02/08/2017
1,2,4-Trimethylbenzene	5.0		ND						02/08/2017
1,2-Dibromo-3-chloropropane	5.0		ND						02/08/2017
1,2-Dibromoethane	5.0		ND						02/08/2017
1,2-Dichlorobenzene	5.0		ND						02/08/2017
1,2-Dichloroethane	5.0		ND						02/08/2017
1,2-Dichloropropane	5.0		ND						02/08/2017
1,3,5-Trimethylbenzene	5.0		ND						02/08/2017
1,3-Dichlorobenzene	5.0		ND						02/08/2017
1,3-Dichloropropane	5.0		ND						02/08/2017
1,4-Dichlorobenzene	5.0		ND						02/08/2017
1-Chlorobutane	5.0		ND						02/08/2017
2,2-Dichloropropane	5.0		ND						02/08/2017
2-Butanone	50.0		ND						02/08/2017
2-Chlorotoluene	5.0		ND						02/08/2017
2-Hexanone	50.0		ND						02/08/2017
2-Nitropropane	50.0		ND						02/08/2017
4-Chlorotoluene	5.0		ND						02/08/2017
4-Methyl-2-pentanone	50.0		ND						02/08/2017
Acetone	50.0		ND						02/08/2017
Acrolein	100		ND						02/08/2017
Acrylonitrile	10.0		ND						02/08/2017
Allyl chloride	5.0		ND						02/08/2017
Benzene	1.0		ND						02/08/2017
Bromobenzene	5.0		ND						02/08/2017
Bromochloromethane	5.0		ND						02/08/2017
Bromodichloromethane	5.0		ND						02/08/2017
Bromoform	5.0		ND						02/08/2017
Bromomethane	10.0		ND						02/08/2017
Carbon disulfide	5.0		ND						02/08/2017
Carbon tetrachloride	5.0		ND						02/08/2017
Chlorobenzene	5.0		ND						02/08/2017
Chloroethane	10.0		ND						02/08/2017
Chloroform	5.0		ND						02/08/2017
Chloromethane	10.0		ND						02/08/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126941 **SampType:** MBLK Units µg/Kg

SampID: MBLK-F170208A-2

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		ND						02/08/2017
cis-1,3-Dichloropropene	4.0		ND						02/08/2017
Cyclohexanone	100		ND						02/08/2017
Dibromochloromethane	5.0		ND						02/08/2017
Dibromomethane	5.0		ND						02/08/2017
Dichlorodifluoromethane	10.0		ND						02/08/2017
Ethyl ether	5.0		ND						02/08/2017
Ethyl methacrylate	5.0		ND						02/08/2017
Ethylbenzene	5.0		ND						02/08/2017
Hexachlorobutadiene	5.0		ND						02/08/2017
Hexachloroethane	5.0		ND						02/08/2017
Iodomethane	10.0		ND						02/08/2017
Isopropylbenzene	5.0		ND						02/08/2017
m,p-Xylenes	5.0		ND						02/08/2017
Methacrylonitrile	50.0		ND						02/08/2017
Methyl Methacrylate	5.0		ND						02/08/2017
Methyl tert-butyl ether	2.0		ND						02/08/2017
Methylacrylate	10.0		ND						02/08/2017
Methylene chloride	5.0		ND						02/08/2017
Naphthalene	10.0		ND						02/08/2017
n-Butylbenzene	5.0		ND						02/08/2017
n-Heptane	20.0		ND						02/08/2017
n-Hexane	20.0		ND						02/08/2017
Nitrobenzene	100		ND						02/08/2017
n-Propylbenzene	5.0		ND						02/08/2017
o-Xylene	5.0		ND						02/08/2017
Pentachloroethane	5.0		ND						02/08/2017
p-Isopropyltoluene	5.0		ND						02/08/2017
Propionitrile	50.0		ND						02/08/2017
sec-Butylbenzene	5.0		ND						02/08/2017
Styrene	5.0		ND						02/08/2017
tert-Butylbenzene	5.0		ND						02/08/2017
Tetrachloroethene	5.0		ND						02/08/2017
Tetrahydrofuran	50.0		ND						02/08/2017
Toluene	5.0		ND						02/08/2017
trans-1,2-Dichloroethene	5.0		ND						02/08/2017
trans-1,3-Dichloropropene	4.0		ND						02/08/2017
Trichloroethene	5.0		ND						02/08/2017
Trichlorofluoromethane	5.0		ND						02/08/2017
Vinyl acetate	50.0		ND						02/08/2017
Vinyl chloride	2.0		ND						02/08/2017
Surr: 1,2-Dichloroethane-d4			**58.9**	50.00		117.7	72.2	131	02/08/2017
Surr: 4-Bromofluorobenzene			**51.9**	50.00		103.9	82.1	116	02/08/2017
Surr: Dibromofluoromethane			**49.2**	50.00		98.4	77.7	120	02/08/2017
Surr: Toluene-d8			**48.6**	50.00		97.3	86	116	02/08/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126941 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-F170208A-2

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		**50.1**	50.00	0	100.3	49.86	0.54	02/08/2017
1,1,1-Trichloroethane	5.0		**52.7**	50.00	0	105.3	52.58	0.17	02/08/2017
1,1,2,2-Tetrachloroethane	5.0		**57.4**	50.00	0	114.9	53.25	7.57	02/08/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		**48.9**	50.00	0	97.8	53.95	9.86	02/08/2017
1,1,2-Trichloroethane	5.0		**51.9**	50.00	0	103.8	51.65	0.44	02/08/2017
1,1-Dichloro-2-propanone	50.0	S	**197**	125.0	0	157.6	137.6	35.53	02/08/2017
1,1-Dichloroethane	5.0		**53.1**	50.00	0	106.3	51.97	2.21	02/08/2017
1,1-Dichloroethene	5.0		**52.5**	50.00	0	105.0	54.65	4.03	02/08/2017
1,1-Dichloropropene	5.0		**51.3**	50.00	0	102.6	54.09	5.33	02/08/2017
1,2,3-Trichlorobenzene	5.0		**47.5**	50.00	0	95.1	56.92	17.98	02/08/2017
1,2,3-Trichloropropane	10.0		**58.6**	50.00	0	117.3	53.25	9.62	02/08/2017
1,2,3-Trimethylbenzene	5.0		**49.0**	50.00	0	97.9	53.37	8.62	02/08/2017
1,2,4-Trichlorobenzene	5.0		**45.9**	50.00	0	91.7	60.99	28.32	02/08/2017
1,2,4-Trimethylbenzene	5.0		**47.1**	50.00	0	94.2	55.76	16.88	02/08/2017
1,2-Dibromo-3-chloropropane	5.0	S	**66.3**	50.00	0	132.6	61.76	7.08	02/08/2017
1,2-Dibromoethane	5.0		**54.2**	50.00	0	108.4	51.28	5.57	02/08/2017
1,2-Dichlorobenzene	5.0		**45.5**	50.00	0	91.0	51.03	11.41	02/08/2017
1,2-Dichloroethane	5.0	S	**61.1**	50.00	0	122.2	57.39	6.23	02/08/2017
1,2-Dichloropropane	5.0		**53.8**	50.00	0	107.6	50.87	5.60	02/08/2017
1,3,5-Trimethylbenzene	5.0		**48.0**	50.00	0	96.1	55.17	13.82	02/08/2017
1,3-Dichlorobenzene	5.0		**45.2**	50.00	0	90.4	51.06	12.13	02/08/2017
1,3-Dichloropropane	5.0		**51.9**	50.00	0	103.7	52.63	1.45	02/08/2017
1,4-Dichlorobenzene	5.0		**44.8**	50.00	0	89.6	51.31	13.57	02/08/2017
1-Chlorobutane	5.0		**53.8**	50.00	0	107.7	54.04	0.35	02/08/2017
2,2-Dichloropropane	5.0		**51.7**	50.00	0	103.4	54.40	5.11	02/08/2017
2-Butanone	50.0	S	**189**	125.0	0	151.0	230.2	19.76	02/08/2017
2-Chlorotoluene	5.0		**46.8**	50.00	0	93.6	54.12	14.53	02/08/2017
2-Hexanone	50.0	S	**174**	125.0	0	139.0	181.0	4.12	02/08/2017
2-Nitropropane	50.0	S	**785**	500.0	0	157.0	672.1	15.52	02/08/2017
4-Chlorotoluene	5.0		**43.2**	50.00	0	86.4	50.20	15.04	02/08/2017
4-Methyl-2-pentanone	50.0	S	**172**	125.0	0	137.6	161.5	6.29	02/08/2017
Acetone	50.0	R	**141**	125.0	0	112.7	265.8	61.41	02/08/2017
Acrolein	100		**484**	500.0	0	96.8	437.4	10.13	02/08/2017
Acrylonitrile	10.0	S	**72.2**	50.00	0	144.5	64.90	10.69	02/08/2017
Allyl chloride	5.0		**52.2**	50.00	0	104.4	55.35	5.90	02/08/2017
Benzene	1.0		**51.4**	50.00	0	102.7	49.64	3.39	02/08/2017
Bromobenzene	5.0		**50.5**	50.00	0	101.1	52.96	4.70	02/08/2017
Bromochloromethane	5.0		**55.4**	50.00	0	110.9	54.53	1.64	02/08/2017
Bromodichloromethane	5.0		**55.5**	50.00	0	111.0	52.76	5.08	02/08/2017
Bromoform	5.0		**58.8**	50.00	0	117.6	49.31	17.52	02/08/2017
Bromomethane	10.0		**ND**	50.00	0	16.9	8.580	0.00	02/08/2017
Carbon disulfide	5.0		**44.4**	50.00	0	88.9	46.50	4.55	02/08/2017
Carbon tetrachloride	5.0		**54.0**	50.00	0	108.0	54.92	1.67	02/08/2017
Chlorobenzene	5.0		**47.4**	50.00	0	94.8	47.93	1.11	02/08/2017
Chloroethane	10.0		**47.5**	50.00	0	95.0	38.13	21.86	02/08/2017
Chloroform	5.0		**53.0**	50.00	0	105.9	51.02	3.73	02/08/2017
Chloromethane	10.0		**50.4**	50.00	0	100.7	66.36	27.44	02/08/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126941 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-F170208A-2

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
cis-1,2-Dichloroethene	5.0		**53.9**	50.00	0	107.8	54.26	0.70	02/08/2017
cis-1,3-Dichloropropene	4.0		**53.3**	50.00	0	106.6	54.40	2.06	02/08/2017
Cyclohexanone	100		**640**	500.0	0	128.0	563.7	12.71	02/08/2017
Dibromochloromethane	5.0		**54.0**	50.00	0	108.1	52.61	2.68	02/08/2017
Dibromomethane	5.0	S	**58.4**	50.00	0	116.8	55.04	5.89	02/08/2017
Dichlorodifluoromethane	10.0		**41.7**	50.00	0	83.4	41.52	0.46	02/08/2017
Ethyl ether	5.0		**56.4**	50.00	0	112.8	53.95	4.46	02/08/2017
Ethyl methacrylate	5.0		**59.8**	50.00	0	119.5	58.48	2.17	02/08/2017
Ethylbenzene	5.0		**48.0**	50.00	0	96.1	53.48	10.74	02/08/2017
Hexachlorobutadiene	5.0		**45.5**	50.00	0	91.1	53.39	15.87	02/08/2017
Hexachloroethane	5.0		**52.5**	50.00	0	104.9	53.49	1.93	02/08/2017
Iodomethane	10.0		**26.6**	50.00	0	53.2	20.29	26.88	02/08/2017
Isopropylbenzene	5.0		**47.9**	50.00	0	95.8	50.48	5.20	02/08/2017
m,p-Xylenes	5.0		**96.1**	100.0	0	96.1	103.2	7.09	02/08/2017
Methacrylonitrile	50.0	S	**69.5**	50.00	0	139.0	63.91	8.39	02/08/2017
Methyl Methacrylate	5.0	S	**68.3**	50.00	0	136.6	63.08	7.93	02/08/2017
Methyl tert-butyl ether	2.0		**61.6**	50.00	0	123.3	59.16	4.11	02/08/2017
Methylacrylate	10.0	S	**64.0**	50.00	0	127.9	58.34	9.19	02/08/2017
Methylene chloride	5.0		**52.5**	50.00	0	104.9	51.01	2.80	02/08/2017
Naphthalene	10.0		**60.8**	50.00	0	121.5	61.09	0.56	02/08/2017
n-Butylbenzene	5.0		**46.0**	50.00	0	91.9	60.48	27.28	02/08/2017
n-Heptane	20.0		**56.1**	50.00	0	112.2	65.11	14.83	02/08/2017
n-Hexane	20.0		**51.0**	50.00	0	101.9	59.81	15.96	02/08/2017
Nitrobenzene	100		**610**	500.0	0	122.0	565.0	7.63	02/08/2017
n-Propylbenzene	5.0		**47.5**	50.00	0	95.0	58.50	20.73	02/08/2017
o-Xylene	5.0		**49.4**	50.00	0	98.8	50.23	1.65	02/08/2017
Pentachloroethane	5.0		**52.8**	50.00	0	105.7	53.30	0.89	02/08/2017
p-Isopropyltoluene	5.0		**47.4**	50.00	0	94.7	55.00	14.95	02/08/2017
Propionitrile	50.0	S	**762**	500.0	0	152.4	652.2	15.52	02/08/2017
sec-Butylbenzene	5.0		**48.4**	50.00	0	96.9	55.52	13.62	02/08/2017
Styrene	5.0		**49.3**	50.00	0	98.6	48.48	1.66	02/08/2017
tert-Butylbenzene	5.0		**46.3**	50.00	0	92.5	53.47	14.46	02/08/2017
Tetrachloroethene	5.0		**44.6**	50.00	0	89.3	50.65	12.59	02/08/2017
Tetrahydrofuran	50.0	S	**77.8**	50.00	0	155.7	68.88	12.23	02/08/2017
Toluene	5.0		**45.0**	50.00	0	90.0	51.31	13.06	02/08/2017
trans-1,2-Dichloroethene	5.0		**50.6**	50.00	0	101.3	53.54	5.59	02/08/2017
trans-1,3-Dichloropropene	4.0		**53.7**	50.00	0	107.5	58.03	7.68	02/08/2017
Trichloroethene	5.0		**51.0**	50.00	0	101.9	52.35	2.71	02/08/2017
Trichlorofluoromethane	5.0		**51.4**	50.00	0	102.8	49.22	4.37	02/08/2017
Vinyl acetate	50.0	S	**71.7**	50.00	0	143.4	68.57	4.43	02/08/2017
Vinyl chloride	2.0	R	**43.7**	50.00	0	87.4	73.73	51.12	02/08/2017
Surr: 1,2-Dichloroethane-d4			**59.8**	50.00		119.6			02/08/2017
Surr: 4-Bromofluorobenzene			**52.1**	50.00		104.1			02/08/2017
Surr: Dibromofluoromethane			**51.9**	50.00		103.8			02/08/2017
Surr: Toluene-d8			**46.7**	50.00		93.3			02/08/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126941 **SampType:** LCS Units µg/Kg

SampID: LCS-F170208A-2

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		**49.9**	50.00	0	99.7	83.1	114	02/09/2017
1,1,1-Trichloroethane	5.0		**52.6**	50.00	0	105.2	78.5	119	02/09/2017
1,1,2,2-Tetrachloroethane	5.0		**53.2**	50.00	0	106.5	67.4	120	02/09/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		**54.0**	50.00	0	107.9	75.4	121	02/09/2017
1,1,2-Trichloroethane	5.0		**51.6**	50.00	0	103.3	81.1	111	02/09/2017
1,1-Dichloro-2-propanone	50.0		**138**	125.0	0	110.0	55.4	131	02/09/2017
1,1-Dichloroethane	5.0		**52.0**	50.00	0	103.9	80.1	116	02/09/2017
1,1-Dichloroethene	5.0		**54.6**	50.00	0	109.3	73.1	121	02/09/2017
1,1-Dichloropropene	5.0		**54.1**	50.00	0	108.2	82.2	114	02/09/2017
1,2,3-Trichlorobenzene	5.0		**56.9**	50.00	0	113.8	81.7	130	02/09/2017
1,2,3-Trichloropropane	10.0		**53.2**	50.00	0	106.5	67.8	118	02/09/2017
1,2,3-Trimethylbenzene	5.0		**53.4**	50.00	0	106.7	82.1	127	02/09/2017
1,2,4-Trichlorobenzene	5.0		**61.0**	50.00	0	122.0	72.3	141	02/09/2017
1,2,4-Trimethylbenzene	5.0		**55.8**	50.00	0	111.5	79.7	123	02/09/2017
1,2-Dibromo-3-chloropropane	5.0	S	**61.8**	50.00	0	123.5	62.1	123	02/09/2017
1,2-Dibromoethane	5.0		**51.3**	50.00	0	102.6	82.4	112	02/09/2017
1,2-Dichlorobenzene	5.0		**51.0**	50.00	0	102.1	82.7	119	02/09/2017
1,2-Dichloroethane	5.0		**57.4**	50.00	0	114.8	72.8	120	02/09/2017
1,2-Dichloropropane	5.0		**50.9**	50.00	0	101.7	80	116	02/09/2017
1,3,5-Trimethylbenzene	5.0		**55.2**	50.00	0	110.3	81.5	125	02/09/2017
1,3-Dichlorobenzene	5.0		**51.1**	50.00	0	102.1	82	124	02/09/2017
1,3-Dichloropropane	5.0		**52.6**	50.00	0	105.3	79.8	113	02/09/2017
1,4-Dichlorobenzene	5.0		**51.3**	50.00	0	102.6	81.1	124	02/09/2017
1-Chlorobutane	5.0		**54.0**	50.00	0	108.1	77.2	113	02/09/2017
2,2-Dichloropropane	5.0		**54.4**	50.00	0	108.8	76.6	121	02/09/2017
2-Butanone	50.0	S	**230**	125.0	0	184.1	62.8	131	02/09/2017
2-Chlorotoluene	5.0		**54.1**	50.00	0	108.2	78.8	121	02/09/2017
2-Hexanone	50.0	S	**181**	125.0	0	144.8	63.1	125	02/09/2017
2-Nitropropane	50.0	S	**672**	500.0	0	134.4	61.2	129	02/09/2017
4-Chlorotoluene	5.0		**50.2**	50.00	0	100.4	77.6	124	02/09/2017
4-Methyl-2-pentanone	50.0	S	**161**	125.0	0	129.2	60.6	126	02/09/2017
Acetone	50.0	S	**266**	125.0	0	212.7	39.5	159	02/09/2017
Acrolein	100		**437**	500.0	0	87.5	1	167	02/09/2017
Acrylonitrile	10.0	S	**64.9**	50.00	0	129.8	67	124	02/09/2017
Allyl chloride	5.0		**55.4**	50.00	0	110.7	58.5	129	02/09/2017
Benzene	1.0		**49.6**	50.00	0	99.3	80.8	117	02/09/2017
Bromobenzene	5.0		**53.0**	50.00	0	105.9	79.6	117	02/09/2017
Bromochloromethane	5.0		**54.5**	50.00	0	109.1	70.7	121	02/09/2017
Bromodichloromethane	5.0		**52.8**	50.00	0	105.5	80.7	121	02/09/2017
Bromoform	5.0		**49.3**	50.00	0	98.6	79.8	118	02/09/2017
Bromomethane	10.0		**ND**	50.00	0	17.2	1	175	02/09/2017
Carbon disulfide	5.0		**46.5**	50.00	0	93.0	62.8	123	02/09/2017
Carbon tetrachloride	5.0		**54.9**	50.00	0	109.8	77.6	123	02/09/2017
Chlorobenzene	5.0		**47.9**	50.00	0	95.9	85.6	116	02/09/2017
Chloroethane	10.0		**38.1**	50.00	0	76.3	60.2	125	02/09/2017
Chloroform	5.0		**51.0**	50.00	0	102.0	77.9	116	02/09/2017
Chloromethane	10.0		**66.4**	50.00	0	132.7	29.9	157	02/09/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126941 **SampType:** LCS Units µg/Kg

SampID: LCS-F170208A-2

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		**54.3**	50.00	0	108.5	80.1	116	02/09/2017
cis-1,3-Dichloropropene	4.0		**54.4**	50.00	0	108.8	80.5	121	02/09/2017
Cyclohexanone	100		**564**	500.0	0	112.7	45.4	128	02/09/2017
Dibromochloromethane	5.0		**52.6**	50.00	0	105.2	84.3	116	02/09/2017
Dibromomethane	5.0		**55.0**	50.00	0	110.1	76.6	115	02/09/2017
Dichlorodifluoromethane	10.0		**41.5**	50.00	0	83.0	1	200	02/09/2017
Ethyl ether	5.0		**54.0**	50.00	0	107.9	73.4	116	02/09/2017
Ethyl methacrylate	5.0		**58.5**	50.00	0	117.0	76.2	120	02/09/2017
Ethylbenzene	5.0		**53.5**	50.00	0	107.0	84.8	116	02/09/2017
Hexachlorobutadiene	5.0		**53.4**	50.00	0	106.8	74	135	02/09/2017
Hexachloroethane	5.0		**53.5**	50.00	0	107.0	76.4	121	02/09/2017
Iodomethane	10.0		**20.3**	50.00	0	40.6	38.7	161	02/09/2017
Isopropylbenzene	5.0		**50.5**	50.00	0	101.0	85	125	02/09/2017
m,p-Xylenes	5.0		**103**	100.0	0	103.2	85.3	120	02/09/2017
Methacrylonitrile	50.0	S	**63.9**	50.00	0	127.8	65.7	120	02/09/2017
Methyl Methacrylate	5.0	S	**63.1**	50.00	0	126.2	69.1	114	02/09/2017
Methyl tert-butyl ether	2.0		**59.2**	50.00	0	118.3	66.6	125	02/09/2017
Methylacrylate	10.0		**58.3**	50.00	0	116.7	69.7	121	02/09/2017
Methylene chloride	5.0		**51.0**	50.00	0	102.0	73.4	115	02/09/2017
Naphthalene	10.0		**61.1**	50.00	0	122.2	70.1	134	02/09/2017
n-Butylbenzene	5.0		**60.5**	50.00	0	121.0	78.4	138	02/09/2017
n-Heptane	20.0	S	**65.1**	50.00	0	130.2	74.3	125	02/09/2017
n-Hexane	20.0		**59.8**	50.00	0	119.6	66.3	129	02/09/2017
Nitrobenzene	100		**565**	500.0	0	113.0	20.1	165	02/09/2017
n-Propylbenzene	5.0		**58.5**	50.00	0	117.0	79.1	125	02/09/2017
o-Xylene	5.0		**50.2**	50.00	0	100.5	81.9	118	02/09/2017
Pentachloroethane	5.0		**53.3**	50.00	0	106.6	72.7	123	02/09/2017
p-Isopropyltoluene	5.0		**55.0**	50.00	0	110.0	82.7	129	02/09/2017
Propionitrile	50.0	S	**652**	500.0	0	130.4	64.3	121	02/09/2017
sec-Butylbenzene	5.0		**55.5**	50.00	0	111.0	81.3	125	02/09/2017
Styrene	5.0		**48.5**	50.00	0	97.0	88.2	122	02/09/2017
tert-Butylbenzene	5.0		**53.5**	50.00	0	106.9	74.8	125	02/09/2017
Tetrachloroethene	5.0		**50.6**	50.00	0	101.3	84.2	122	02/09/2017
Tetrahydrofuran	50.0	S	**68.9**	50.00	0	137.8	61	118	02/09/2017
Toluene	5.0		**51.3**	50.00	0	102.6	81.3	113	02/09/2017
trans-1,2-Dichloroethene	5.0		**53.5**	50.00	0	107.1	78.2	118	02/09/2017
trans-1,3-Dichloropropene	4.0		**58.0**	50.00	0	116.1	81.7	124	02/09/2017
Trichloroethene	5.0		**52.4**	50.00	0	104.7	81	123	02/09/2017
Trichlorofluoromethane	5.0		**49.2**	50.00	0	98.4	66.8	131	02/09/2017
Vinyl acetate	50.0	S	**68.6**	50.00	0	137.1	64.3	122	02/09/2017
Vinyl chloride	2.0	S	**73.7**	50.00	0	147.5	45.2	140	02/09/2017
Surr: 1,2-Dichloroethane-d4			**57.3**	50.00		114.6	72.2	131	02/09/2017
Surr: 4-Bromofluorobenzene			**56.3**	50.00		112.6	82.1	116	02/09/2017
Surr: Dibromofluoromethane			**51.4**	50.00		102.9	77.7	120	02/09/2017
Surr: Toluene-d8			**50.7**	50.00		101.4	86	116	02/09/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126950 **SampType:** MBLK Units µg/Kg

SampID: MBLK-Y170209A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		ND						02/09/2017
1,1,1-Trichloroethane	5.0		ND						02/09/2017
1,1,2,2-Tetrachloroethane	5.0		ND						02/09/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		ND						02/09/2017
1,1,2-Trichloroethane	5.0		ND						02/09/2017
1,1-Dichloro-2-propanone	50.0		ND						02/09/2017
1,1-Dichloroethane	5.0		ND						02/09/2017
1,1-Dichloroethene	5.0		ND						02/09/2017
1,1-Dichloropropene	5.0		ND						02/09/2017
1,2,3-Trichlorobenzene	5.0		ND						02/09/2017
1,2,3-Trichloropropane	10.0		ND						02/09/2017
1,2,3-Trimethylbenzene	5.0		ND						02/09/2017
1,2,4-Trichlorobenzene	5.0		ND						02/09/2017
1,2,4-Trimethylbenzene	5.0		ND						02/09/2017
1,2-Dibromo-3-chloropropane	5.0		ND						02/09/2017
1,2-Dibromoethane	5.0		ND						02/09/2017
1,2-Dichlorobenzene	5.0		ND						02/09/2017
1,2-Dichloroethane	5.0		ND						02/09/2017
1,2-Dichloropropane	5.0		ND						02/09/2017
1,3,5-Trimethylbenzene	5.0		ND						02/09/2017
1,3-Dichlorobenzene	5.0		ND						02/09/2017
1,3-Dichloropropane	5.0		ND						02/09/2017
1,4-Dichlorobenzene	5.0		ND						02/09/2017
1-Chlorobutane	5.0		ND						02/09/2017
2,2-Dichloropropane	5.0		ND						02/09/2017
2-Butanone	50.0		ND						02/09/2017
2-Chlorotoluene	5.0		ND						02/09/2017
2-Hexanone	50.0		ND						02/09/2017
2-Nitropropane	50.0		ND						02/09/2017
4-Chlorotoluene	5.0		ND						02/09/2017
4-Methyl-2-pentanone	50.0		ND						02/09/2017
Acetone	50.0		ND						02/09/2017
Acrolein	100		ND						02/09/2017
Acrylonitrile	10.0		ND						02/09/2017
Allyl chloride	5.0		ND						02/09/2017
Benzene	1.0		ND						02/09/2017
Bromobenzene	5.0		ND						02/09/2017
Bromochloromethane	5.0		ND						02/09/2017
Bromodichloromethane	5.0		ND						02/09/2017
Bromoform	5.0		ND						02/09/2017
Bromomethane	10.0		ND						02/09/2017
Carbon disulfide	5.0		ND						02/09/2017
Carbon tetrachloride	5.0		ND						02/09/2017
Chlorobenzene	5.0		ND						02/09/2017
Chloroethane	10.0		ND						02/09/2017
Chloroform	5.0		ND						02/09/2017
Chloromethane	10.0		ND						02/09/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126950 **SampType:** MBLK Units µg/Kg

SampID: MBLK-Y170209A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		ND						02/09/2017
cis-1,3-Dichloropropene	4.0		ND						02/09/2017
Cyclohexanone	100		ND						02/09/2017
Dibromochloromethane	5.0		ND						02/09/2017
Dibromomethane	5.0		ND						02/09/2017
Dichlorodifluoromethane	10.0		ND						02/09/2017
Ethyl ether	5.0		ND						02/09/2017
Ethyl methacrylate	5.0		ND						02/09/2017
Ethylbenzene	5.0		ND						02/09/2017
Hexachlorobutadiene	5.0		ND						02/09/2017
Hexachloroethane	5.0		ND						02/09/2017
Iodomethane	10.0		ND						02/09/2017
Isopropylbenzene	5.0		ND						02/09/2017
m,p-Xylenes	5.0		ND						02/09/2017
Methacrylonitrile	50.0		ND						02/09/2017
Methyl Methacrylate	5.0		ND						02/09/2017
Methyl tert-butyl ether	2.0		ND						02/09/2017
Methylacrylate	10.0		ND						02/09/2017
Methylene chloride	5.0		ND						02/09/2017
Naphthalene	10.0		ND						02/09/2017
n-Butylbenzene	5.0		ND						02/09/2017
n-Heptane	20.0		ND						02/09/2017
n-Hexane	20.0		ND						02/09/2017
Nitrobenzene	100		ND						02/09/2017
n-Propylbenzene	5.0		ND						02/09/2017
o-Xylene	5.0		ND						02/09/2017
Pentachloroethane	5.0		ND						02/09/2017
p-Isopropyltoluene	5.0		ND						02/09/2017
Propionitrile	50.0		ND						02/09/2017
sec-Butylbenzene	5.0		ND						02/09/2017
Styrene	5.0		ND						02/09/2017
tert-Butylbenzene	5.0		ND						02/09/2017
Tetrachloroethene	5.0		ND						02/09/2017
Tetrahydrofuran	50.0		ND						02/09/2017
Toluene	5.0		ND						02/09/2017
trans-1,2-Dichloroethene	5.0		ND						02/09/2017
trans-1,3-Dichloropropene	4.0		ND						02/09/2017
Trichloroethene	5.0		ND						02/09/2017
Trichlorofluoromethane	5.0		ND						02/09/2017
Vinyl acetate	50.0		ND						02/09/2017
Vinyl chloride	2.0		ND						02/09/2017
Surr: 1,2-Dichloroethane-d4			**50.5**	50.00		101.1	72.2	131	02/09/2017
Surr: 4-Bromofluorobenzene			**49.6**	50.00		99.3	82.1	116	02/09/2017
Surr: Dibromofluoromethane			**50.2**	50.00		100.3	77.7	120	02/09/2017
Surr: Toluene-d8			**49.6**	50.00		99.2	86	116	02/09/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126950 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-Y170209A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		**47.9**	50.00	0	95.8	45.97	4.13	02/09/2017
1,1,1-Trichloroethane	5.0		**52.1**	50.00	0	104.3	49.86	4.45	02/09/2017
1,1,2,2-Tetrachloroethane	5.0		**48.9**	50.00	0	97.8	47.88	2.11	02/09/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		**52.0**	50.00	0	103.9	49.62	4.63	02/09/2017
1,1,2-Trichloroethane	5.0		**47.1**	50.00	0	94.1	45.05	4.39	02/09/2017
1,1-Dichloro-2-propanone	50.0		**123**	125.0	0	98.1	117.0	4.70	02/09/2017
1,1-Dichloroethane	5.0		**54.8**	50.00	0	109.5	52.12	4.96	02/09/2017
1,1-Dichloroethene	5.0		**52.8**	50.00	0	105.7	50.18	5.15	02/09/2017
1,1-Dichloropropene	5.0		**52.3**	50.00	0	104.6	50.04	4.44	02/09/2017
1,2,3-Trichlorobenzene	5.0		**50.0**	50.00	0	100.0	48.43	3.17	02/09/2017
1,2,3-Trichloropropane	10.0		**47.7**	50.00	0	95.4	46.39	2.76	02/09/2017
1,2,3-Trimethylbenzene	5.0		**51.2**	50.00	0	102.4	49.58	3.23	02/09/2017
1,2,4-Trichlorobenzene	5.0		**54.1**	50.00	0	108.2	53.18	1.75	02/09/2017
1,2,4-Trimethylbenzene	5.0		**52.2**	50.00	0	104.3	50.80	2.64	02/09/2017
1,2-Dibromo-3-chloropropane	5.0		**49.2**	50.00	0	98.4	47.35	3.83	02/09/2017
1,2-Dibromoethane	5.0		**50.8**	50.00	0	101.7	48.64	4.44	02/09/2017
1,2-Dichlorobenzene	5.0		**50.1**	50.00	0	100.3	49.27	1.73	02/09/2017
1,2-Dichloroethane	5.0		**50.8**	50.00	0	101.6	48.32	5.04	02/09/2017
1,2-Dichloropropane	5.0		**51.3**	50.00	0	102.5	48.60	5.35	02/09/2017
1,3,5-Trimethylbenzene	5.0		**51.5**	50.00	0	103.0	50.43	2.08	02/09/2017
1,3-Dichlorobenzene	5.0		**51.0**	50.00	0	102.1	51.04	0.02	02/09/2017
1,3-Dichloropropane	5.0		**48.0**	50.00	0	96.1	46.04	4.23	02/09/2017
1,4-Dichlorobenzene	5.0		**51.0**	50.00	0	102.1	50.11	1.82	02/09/2017
1-Chlorobutane	5.0		**53.2**	50.00	0	106.5	50.16	5.98	02/09/2017
2,2-Dichloropropane	5.0		**53.0**	50.00	0	105.9	50.46	4.82	02/09/2017
2-Butanone	50.0		**137**	125.0	0	109.6	143.1	4.36	02/09/2017
2-Chlorotoluene	5.0		**50.8**	50.00	0	101.5	49.87	1.75	02/09/2017
2-Hexanone	50.0		**127**	125.0	0	101.4	131.8	3.95	02/09/2017
2-Nitropropane	50.0		**535**	500.0	0	107.0	516.3	3.59	02/09/2017
4-Chlorotoluene	5.0		**47.8**	50.00	0	95.5	47.28	1.01	02/09/2017
4-Methyl-2-pentanone	50.0		**125**	125.0	0	100.0	124.2	0.63	02/09/2017
Acetone	50.0		**134**	125.0	0	107.6	142.8	6.02	02/09/2017
Acrolein	100		**407**	500.0	0	81.3	409.2	0.61	02/09/2017
Acrylonitrile	10.0		**51.5**	50.00	0	103.0	48.76	5.45	02/09/2017
Allyl chloride	5.0		**52.3**	50.00	0	104.6	49.93	4.62	02/09/2017
Benzene	1.0		**50.8**	50.00	0	101.6	48.24	5.19	02/09/2017
Bromobenzene	5.0		**50.6**	50.00	0	101.2	49.04	3.15	02/09/2017
Bromochloromethane	5.0		**52.3**	50.00	0	104.6	49.91	4.66	02/09/2017
Bromodichloromethane	5.0		**51.3**	50.00	0	102.5	48.66	5.22	02/09/2017
Bromoform	5.0		**48.0**	50.00	0	95.9	45.83	4.54	02/09/2017
Bromomethane	10.0		**32.8**	50.00	0	65.6	33.95	3.38	02/09/2017
Carbon disulfide	5.0		**48.8**	50.00	0	97.5	46.54	4.64	02/09/2017
Carbon tetrachloride	5.0		**52.8**	50.00	0	105.7	50.53	4.47	02/09/2017
Chlorobenzene	5.0		**50.7**	50.00	0	101.4	48.73	3.94	02/09/2017
Chloroethane	10.0		**46.2**	50.00	0	92.3	44.18	4.41	02/09/2017
Chloroform	5.0		**52.8**	50.00	0	105.5	49.62	6.12	02/09/2017
Chloromethane	10.0		**45.9**	50.00	0	91.7	44.57	2.87	02/09/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126950 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-Y170209A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
cis-1,2-Dichloroethene	5.0		**52.8**	50.00	0	105.5	50.33	4.73	02/09/2017
cis-1,3-Dichloropropene	4.0		**52.6**	50.00	0	105.3	49.89	5.38	02/09/2017
Cyclohexanone	100		**457**	500.0	0	91.5	472.2	3.19	02/09/2017
Dibromochloromethane	5.0		**48.9**	50.00	0	97.8	46.93	4.15	02/09/2017
Dibromomethane	5.0		**51.2**	50.00	0	102.5	48.70	5.10	02/09/2017
Dichlorodifluoromethane	10.0		**36.6**	50.00	0	73.2	35.74	2.32	02/09/2017
Ethyl ether	5.0		**50.1**	50.00	0	100.3	48.12	4.11	02/09/2017
Ethyl methacrylate	5.0		**49.2**	50.00	0	98.3	47.63	3.16	02/09/2017
Ethylbenzene	5.0		**51.5**	50.00	0	103.0	49.34	4.25	02/09/2017
Hexachlorobutadiene	5.0		**53.3**	50.00	0	106.6	51.58	3.32	02/09/2017
Hexachloroethane	5.0		**54.8**	50.00	0	109.6	51.90	5.42	02/09/2017
Iodomethane	10.0		**56.0**	50.00	0	112.0	53.14	5.28	02/09/2017
Isopropylbenzene	5.0		**51.7**	50.00	0	103.4	49.45	4.45	02/09/2017
m,p-Xylenes	5.0		**102**	100.0	0	102.1	98.34	3.79	02/09/2017
Methacrylonitrile	50.0		**50.2**	50.00	0	100.4	49.22	2.01	02/09/2017
Methyl Methacrylate	5.0		**51.3**	50.00	0	102.5	49.70	3.11	02/09/2017
Methyl tert-butyl ether	2.0		**50.2**	50.00	0	100.3	48.11	4.17	02/09/2017
Methylacrylate	10.0		**51.9**	50.00	0	103.7	49.46	4.74	02/09/2017
Methylene chloride	5.0		**51.4**	50.00	0	102.7	48.40	5.93	02/09/2017
Naphthalene	10.0		**51.0**	50.00	0	102.1	48.85	4.38	02/09/2017
n-Butylbenzene	5.0		**53.8**	50.00	0	107.6	53.53	0.47	02/09/2017
n-Heptane	20.0		**56.2**	50.00	0	112.4	54.51	3.07	02/09/2017
n-Hexane	20.0		**53.0**	50.00	0	105.9	50.64	4.46	02/09/2017
Nitrobenzene	100		**540**	500.0	0	107.9	538.8	0.15	02/09/2017
n-Propylbenzene	5.0		**51.6**	50.00	0	103.2	51.04	1.05	02/09/2017
o-Xylene	5.0		**50.3**	50.00	0	100.6	48.94	2.78	02/09/2017
Pentachloroethane	5.0		**52.5**	50.00	0	105.0	49.81	5.24	02/09/2017
p-Isopropyltoluene	5.0		**53.3**	50.00	0	106.7	51.90	2.72	02/09/2017
Propionitrile	50.0		**530**	500.0	0	106.0	513.9	3.08	02/09/2017
sec-Butylbenzene	5.0		**52.7**	50.00	0	105.4	50.92	3.40	02/09/2017
Styrene	5.0		**49.4**	50.00	0	98.9	47.82	3.35	02/09/2017
tert-Butylbenzene	5.0		**50.3**	50.00	0	100.6	48.84	2.91	02/09/2017
Tetrachloroethene	5.0		**47.3**	50.00	0	94.5	45.14	4.61	02/09/2017
Tetrahydrofuran	50.0		**52.4**	50.00	0	104.7	50.65	3.32	02/09/2017
Toluene	5.0		**49.7**	50.00	0	99.5	47.85	3.87	02/09/2017
trans-1,2-Dichloroethene	5.0		**53.4**	50.00	0	106.9	50.17	6.33	02/09/2017
trans-1,3-Dichloropropene	4.0		**50.2**	50.00	0	100.3	48.07	4.26	02/09/2017
Trichloroethene	5.0		**52.5**	50.00	0	105.0	50.34	4.22	02/09/2017
Trichlorofluoromethane	5.0		**50.6**	50.00	0	101.2	47.46	6.42	02/09/2017
Vinyl acetate	50.0		**51.8**	50.00	0	103.6	50.12	3.28	02/09/2017
Vinyl chloride	2.0		**44.6**	50.00	0	89.3	41.80	6.57	02/09/2017
Surr: 1,2-Dichloroethane-d4			**50.7**	50.00		101.4			02/09/2017
Surr: 4-Bromofluorobenzene			**50.2**	50.00		100.3			02/09/2017
Surr: Dibromofluoromethane			**51.9**	50.00		103.8			02/09/2017
Surr: Toluene-d8			**47.8**	50.00		95.6			02/09/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126950 **SampType:** LCS Units µg/Kg

SampID: LCS-Y170209A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		**46.0**	50.00	0	91.9	83.1	114	02/09/2017
1,1,1-Trichloroethane	5.0		**49.9**	50.00	0	99.7	78.5	119	02/09/2017
1,1,2,2-Tetrachloroethane	5.0		**47.9**	50.00	0	95.8	67.4	120	02/09/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		**49.6**	50.00	0	99.2	75.4	121	02/09/2017
1,1,2-Trichloroethane	5.0		**45.0**	50.00	0	90.1	81.1	111	02/09/2017
1,1-Dichloro-2-propanone	50.0		**117**	125.0	0	93.6	55.4	131	02/09/2017
1,1-Dichloroethane	5.0		**52.1**	50.00	0	104.2	80.1	116	02/09/2017
1,1-Dichloroethene	5.0		**50.2**	50.00	0	100.4	73.1	121	02/09/2017
1,1-Dichloropropene	5.0		**50.0**	50.00	0	100.1	82.2	114	02/09/2017
1,2,3-Trichlorobenzene	5.0		**48.4**	50.00	0	96.9	81.7	130	02/09/2017
1,2,3-Trichloropropane	10.0		**46.4**	50.00	0	92.8	67.8	118	02/09/2017
1,2,3-Trimethylbenzene	5.0		**49.6**	50.00	0	99.2	82.1	127	02/09/2017
1,2,4-Trichlorobenzene	5.0		**53.2**	50.00	0	106.4	72.3	141	02/09/2017
1,2,4-Trimethylbenzene	5.0		**50.8**	50.00	0	101.6	79.7	123	02/09/2017
1,2-Dibromo-3-chloropropane	5.0		**47.4**	50.00	0	94.7	62.1	123	02/09/2017
1,2-Dibromoethane	5.0		**48.6**	50.00	0	97.3	82.4	112	02/09/2017
1,2-Dichlorobenzene	5.0		**49.3**	50.00	0	98.5	82.7	119	02/09/2017
1,2-Dichloroethane	5.0		**48.3**	50.00	0	96.6	72.8	120	02/09/2017
1,2-Dichloropropane	5.0		**48.6**	50.00	0	97.2	80	116	02/09/2017
1,3,5-Trimethylbenzene	5.0		**50.4**	50.00	0	100.9	81.5	125	02/09/2017
1,3-Dichlorobenzene	5.0		**51.0**	50.00	0	102.1	82	124	02/09/2017
1,3-Dichloropropane	5.0		**46.0**	50.00	0	92.1	79.8	113	02/09/2017
1,4-Dichlorobenzene	5.0		**50.1**	50.00	0	100.2	81.1	124	02/09/2017
1-Chlorobutane	5.0		**50.2**	50.00	0	100.3	77.2	113	02/09/2017
2,2-Dichloropropane	5.0		**50.5**	50.00	0	100.9	76.6	121	02/09/2017
2-Butanone	50.0		**143**	125.0	0	114.5	62.8	131	02/09/2017
2-Chlorotoluene	5.0		**49.9**	50.00	0	99.7	78.8	121	02/09/2017
2-Hexanone	50.0		**132**	125.0	0	105.5	63.1	125	02/09/2017
2-Nitropropane	50.0		**516**	500.0	0	103.3	61.2	129	02/09/2017
4-Chlorotoluene	5.0		**47.3**	50.00	0	94.6	77.6	124	02/09/2017
4-Methyl-2-pentanone	50.0		**124**	125.0	0	99.4	60.6	126	02/09/2017
Acetone	50.0		**143**	125.0	0	114.3	39.5	159	02/09/2017
Acrolein	100		**409**	500.0	0	81.8	1	167	02/09/2017
Acrylonitrile	10.0		**48.8**	50.00	0	97.5	67	124	02/09/2017
Allyl chloride	5.0		**49.9**	50.00	0	99.9	58.5	129	02/09/2017
Benzene	1.0		**48.2**	50.00	0	96.5	80.8	117	02/09/2017
Bromobenzene	5.0		**49.0**	50.00	0	98.1	79.6	117	02/09/2017
Bromochloromethane	5.0		**49.9**	50.00	0	99.8	70.7	121	02/09/2017
Bromodichloromethane	5.0		**48.7**	50.00	0	97.3	80.7	121	02/09/2017
Bromoform	5.0		**45.8**	50.00	0	91.7	79.8	118	02/09/2017
Bromomethane	10.0		**34.0**	50.00	0	67.9	1	175	02/09/2017
Carbon disulfide	5.0		**46.5**	50.00	0	93.1	62.8	123	02/09/2017
Carbon tetrachloride	5.0		**50.5**	50.00	0	101.1	77.6	123	02/09/2017
Chlorobenzene	5.0		**48.7**	50.00	0	97.5	85.6	116	02/09/2017
Chloroethane	10.0		**44.2**	50.00	0	88.4	60.2	125	02/09/2017
Chloroform	5.0		**49.6**	50.00	0	99.2	77.9	116	02/09/2017
Chloromethane	10.0		**44.6**	50.00	0	89.1	29.9	157	02/09/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126950 **SampType:** LCS Units µg/Kg

SampID: LCS-Y170209A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		**50.3**	50.00	0	100.7	80.1	116	02/09/2017
cis-1,3-Dichloropropene	4.0		**49.9**	50.00	0	99.8	80.5	121	02/09/2017
Cyclohexanone	100		**472**	500.0	0	94.4	45.4	128	02/09/2017
Dibromochloromethane	5.0		**46.9**	50.00	0	93.9	84.3	116	02/09/2017
Dibromomethane	5.0		**48.7**	50.00	0	97.4	76.6	115	02/09/2017
Dichlorodifluoromethane	10.0		**35.7**	50.00	0	71.5	1	200	02/09/2017
Ethyl ether	5.0		**48.1**	50.00	0	96.2	73.4	116	02/09/2017
Ethyl methacrylate	5.0		**47.6**	50.00	0	95.3	76.2	120	02/09/2017
Ethylbenzene	5.0		**49.3**	50.00	0	98.7	84.8	116	02/09/2017
Hexachlorobutadiene	5.0		**51.6**	50.00	0	103.2	74	135	02/09/2017
Hexachloroethane	5.0		**51.9**	50.00	0	103.8	76.4	121	02/09/2017
Iodomethane	10.0		**53.1**	50.00	0	106.3	38.7	161	02/09/2017
Isopropylbenzene	5.0		**49.4**	50.00	0	98.9	85	125	02/09/2017
m,p-Xylenes	5.0		**98.3**	100.0	0	98.3	85.3	120	02/09/2017
Methacrylonitrile	50.0		**ND**	50.00	0	98.4	65.7	120	02/09/2017
Methyl Methacrylate	5.0		**49.7**	50.00	0	99.4	69.1	114	02/09/2017
Methyl tert-butyl ether	2.0		**48.1**	50.00	0	96.2	66.6	125	02/09/2017
Methylacrylate	10.0		**49.5**	50.00	0	98.9	69.7	121	02/09/2017
Methylene chloride	5.0		**48.4**	50.00	0	96.8	73.4	115	02/09/2017
Naphthalene	10.0		**48.8**	50.00	0	97.7	70.1	134	02/09/2017
n-Butylbenzene	5.0		**53.5**	50.00	0	107.1	78.4	138	02/09/2017
n-Heptane	20.0		**54.5**	50.00	0	109.0	74.3	125	02/09/2017
n-Hexane	20.0		**50.6**	50.00	0	101.3	66.3	129	02/09/2017
Nitrobenzene	100		**539**	500.0	0	107.8	20.1	165	02/09/2017
n-Propylbenzene	5.0		**51.0**	50.00	0	102.1	79.1	125	02/09/2017
o-Xylene	5.0		**48.9**	50.00	0	97.9	81.9	118	02/09/2017
Pentachloroethane	5.0		**49.8**	50.00	0	99.6	72.7	123	02/09/2017
p-Isopropyltoluene	5.0		**51.9**	50.00	0	103.8	82.7	129	02/09/2017
Propionitrile	50.0		**514**	500.0	0	102.8	64.3	121	02/09/2017
sec-Butylbenzene	5.0		**50.9**	50.00	0	101.8	81.3	125	02/09/2017
Styrene	5.0		**47.8**	50.00	0	95.6	88.2	122	02/09/2017
tert-Butylbenzene	5.0		**48.8**	50.00	0	97.7	74.8	125	02/09/2017
Tetrachloroethene	5.0		**45.1**	50.00	0	90.3	84.2	122	02/09/2017
Tetrahydrofuran	50.0		**50.6**	50.00	0	101.3	61	118	02/09/2017
Toluene	5.0		**47.8**	50.00	0	95.7	81.3	113	02/09/2017
trans-1,2-Dichloroethene	5.0		**50.2**	50.00	0	100.3	78.2	118	02/09/2017
trans-1,3-Dichloropropene	4.0		**48.1**	50.00	0	96.1	81.7	124	02/09/2017
Trichloroethene	5.0		**50.3**	50.00	0	100.7	81	123	02/09/2017
Trichlorofluoromethane	5.0		**47.5**	50.00	0	94.9	66.8	131	02/09/2017
Vinyl acetate	50.0		**50.1**	50.00	0	100.2	64.3	122	02/09/2017
Vinyl chloride	2.0		**41.8**	50.00	0	83.6	45.2	140	02/09/2017
Surr: 1,2-Dichloroethane-d4			**50.4**	50.00		100.7	72.2	131	02/09/2017
Surr: 4-Bromofluorobenzene			**50.4**	50.00		100.8	82.1	116	02/09/2017
Surr: Dibromofluoromethane			**51.3**	50.00		102.7	77.7	120	02/09/2017
Surr: Toluene-d8			**47.7**	50.00		95.5	86	116	02/09/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126950 **SampType:** LCSGD Units %REC RPD Limit 0

SampID: LCSGD-Y170209A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Surr: 1,2-Dichloroethane-d4			**51.1**	50.00		102.1			02/09/2017
Surr: 4-Bromofluorobenzene			**50.9**	50.00		101.8			02/09/2017
Surr: Dibromofluoromethane			**50.2**	50.00		100.3			02/09/2017
Surr: Toluene-d8			**50.1**	50.00		100.2			02/09/2017

Batch 126950 **SampType:** LCSG Units %REC

SampID: LCSG-Y170209A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Surr: 1,2-Dichloroethane-d4			**50.8**	50.00		101.7	72.2	131	02/09/2017
Surr: 4-Bromofluorobenzene			**50.4**	50.00		100.8	82.1	116	02/09/2017
Surr: Dibromofluoromethane			**50.5**	50.00		101.0	77.7	120	02/09/2017
Surr: Toluene-d8			**50.3**	50.00		100.6	86	116	02/09/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126995 **SampType:** MBLK Units µg/Kg

SampID: MBLK-F170209A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		ND						02/09/2017
1,1,1-Trichloroethane	5.0		ND						02/09/2017
1,1,2,2-Tetrachloroethane	5.0		ND						02/09/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		ND						02/09/2017
1,1,2-Trichloroethane	5.0		ND						02/09/2017
1,1-Dichloro-2-propanone	50.0		ND						02/09/2017
1,1-Dichloroethane	5.0		ND						02/09/2017
1,1-Dichloroethene	5.0		ND						02/09/2017
1,1-Dichloropropene	5.0		ND						02/09/2017
1,2,3-Trichlorobenzene	5.0		ND						02/09/2017
1,2,3-Trichloropropane	10.0		ND						02/09/2017
1,2,3-Trimethylbenzene	5.0		ND						02/09/2017
1,2,4-Trichlorobenzene	5.0		ND						02/09/2017
1,2,4-Trimethylbenzene	5.0		ND						02/09/2017
1,2-Dibromo-3-chloropropane	5.0		ND						02/09/2017
1,2-Dibromoethane	5.0		ND						02/09/2017
1,2-Dichlorobenzene	5.0		ND						02/09/2017
1,2-Dichloroethane	5.0		ND						02/09/2017
1,2-Dichloropropane	5.0		ND						02/09/2017
1,3,5-Trimethylbenzene	5.0		ND						02/09/2017
1,3-Dichlorobenzene	5.0		ND						02/09/2017
1,3-Dichloropropane	5.0		ND						02/09/2017
1,4-Dichlorobenzene	5.0		ND						02/09/2017
1-Chlorobutane	5.0		ND						02/09/2017
2,2-Dichloropropane	5.0		ND						02/09/2017
2-Butanone	50.0		ND						02/09/2017
2-Chlorotoluene	5.0		ND						02/09/2017
2-Hexanone	50.0		ND						02/09/2017
2-Nitropropane	50.0		ND						02/09/2017
4-Chlorotoluene	5.0		ND						02/09/2017
4-Methyl-2-pentanone	50.0		ND						02/09/2017
Acetone	50.0		ND						02/09/2017
Acrolein	100		ND						02/09/2017
Acrylonitrile	10.0		ND						02/09/2017
Allyl chloride	5.0		ND						02/09/2017
Benzene	1.0		ND						02/09/2017
Bromobenzene	5.0		ND						02/09/2017
Bromochloromethane	5.0		ND						02/09/2017
Bromodichloromethane	5.0		ND						02/09/2017
Bromoform	5.0		ND						02/09/2017
Bromomethane	10.0		ND						02/09/2017
Carbon disulfide	5.0		ND						02/09/2017
Carbon tetrachloride	5.0		ND						02/09/2017
Chlorobenzene	5.0		ND						02/09/2017
Chloroethane	10.0		ND						02/09/2017
Chloroform	5.0		ND						02/09/2017
Chloromethane	10.0		ND						02/09/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126995 **SampType:** MBLK Units µg/Kg

SampID: MBLK-F170209A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		ND						02/09/2017
cis-1,3-Dichloropropene	4.0		ND						02/09/2017
Cyclohexanone	100		ND						02/09/2017
Dibromochloromethane	5.0		ND						02/09/2017
Dibromomethane	5.0		ND						02/09/2017
Dichlorodifluoromethane	10.0		ND						02/09/2017
Ethyl ether	5.0		ND						02/09/2017
Ethyl methacrylate	5.0		ND						02/09/2017
Ethylbenzene	5.0		ND						02/09/2017
Hexachlorobutadiene	5.0		ND						02/09/2017
Hexachloroethane	5.0		ND						02/09/2017
Iodomethane	10.0		ND						02/09/2017
Isopropylbenzene	5.0		ND						02/09/2017
m,p-Xylenes	5.0		ND						02/09/2017
Methacrylonitrile	50.0		ND						02/09/2017
Methyl Methacrylate	5.0		ND						02/09/2017
Methyl tert-butyl ether	2.0		ND						02/09/2017
Methylacrylate	10.0		ND						02/09/2017
Methylene chloride	5.0		ND						02/09/2017
Naphthalene	10.0		ND						02/09/2017
n-Butylbenzene	5.0		ND						02/09/2017
n-Heptane	20.0		ND						02/09/2017
n-Hexane	20.0		ND						02/09/2017
Nitrobenzene	100		ND						02/09/2017
n-Propylbenzene	5.0		ND						02/09/2017
o-Xylene	5.0		ND						02/09/2017
Pentachloroethane	5.0		ND						02/09/2017
p-Isopropyltoluene	5.0		ND						02/09/2017
Propionitrile	50.0		ND						02/09/2017
sec-Butylbenzene	5.0		ND						02/09/2017
Styrene	5.0		ND						02/09/2017
tert-Butylbenzene	5.0		ND						02/09/2017
Tetrachloroethene	5.0		ND						02/09/2017
Tetrahydrofuran	50.0		ND						02/09/2017
Toluene	5.0		ND						02/09/2017
trans-1,2-Dichloroethene	5.0		ND						02/09/2017
trans-1,3-Dichloropropene	4.0		ND						02/09/2017
Trichloroethene	5.0		ND						02/09/2017
Trichlorofluoromethane	5.0		ND						02/09/2017
Vinyl acetate	50.0		ND						02/09/2017
Vinyl chloride	2.0		ND						02/09/2017
Surr: 1,2-Dichloroethane-d4			**51.8**	50.00		103.7	72.2	131	02/09/2017
Surr: 4-Bromofluorobenzene			**52.0**	50.00		104.0	82.1	116	02/09/2017
Surr: Dibromofluoromethane			**47.1**	50.00		94.1	77.7	120	02/09/2017
Surr: Toluene-d8			**54.5**	50.00		109.1	86	116	02/09/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126995 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-F170209A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		**53.4**	50.00	0	106.7	50.63	5.25	02/09/2017
1,1,1-Trichloroethane	5.0		**45.4**	50.00	0	90.8	45.05	0.75	02/09/2017
1,1,2,2-Tetrachloroethane	5.0		**51.3**	50.00	0	102.6	48.96	4.67	02/09/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		**44.1**	50.00	0	88.3	43.34	1.83	02/09/2017
1,1,2-Trichloroethane	5.0		**51.4**	50.00	0	102.8	48.91	5.00	02/09/2017
1,1-Dichloro-2-propanone	50.0		**138**	125.0	0	110.5	128.7	7.09	02/09/2017
1,1-Dichloroethane	5.0		**44.6**	50.00	0	89.1	43.58	2.22	02/09/2017
1,1-Dichloroethene	5.0		**45.7**	50.00	0	91.4	44.92	1.74	02/09/2017
1,1-Dichloropropene	5.0		**44.6**	50.00	0	89.2	44.36	0.52	02/09/2017
1,2,3-Trichlorobenzene	5.0		**57.7**	50.00	0	115.5	57.37	0.63	02/09/2017
1,2,3-Trichloropropane	10.0		**50.9**	50.00	0	101.8	51.03	0.29	02/09/2017
1,2,3-Trimethylbenzene	5.0		**55.9**	50.00	0	111.7	51.47	8.18	02/09/2017
1,2,4-Trichlorobenzene	5.0		**61.3**	50.00	0	122.6	59.93	2.24	02/09/2017
1,2,4-Trimethylbenzene	5.0		**55.7**	50.00	0	111.4	53.12	4.71	02/09/2017
1,2-Dibromo-3-chloropropane	5.0		**52.9**	50.00	0	105.8	53.33	0.85	02/09/2017
1,2-Dibromoethane	5.0		**50.9**	50.00	0	101.9	49.00	3.86	02/09/2017
1,2-Dichlorobenzene	5.0		**52.1**	50.00	0	104.2	50.96	2.23	02/09/2017
1,2-Dichloroethane	5.0		**47.4**	50.00	0	94.8	45.55	3.94	02/09/2017
1,2-Dichloropropane	5.0		**43.9**	50.00	0	87.8	41.82	4.90	02/09/2017
1,3,5-Trimethylbenzene	5.0		**53.3**	50.00	0	106.6	51.33	3.80	02/09/2017
1,3-Dichlorobenzene	5.0		**54.6**	50.00	0	109.2	52.02	4.84	02/09/2017
1,3-Dichloropropane	5.0		**53.9**	50.00	0	107.8	49.62	8.29	02/09/2017
1,4-Dichlorobenzene	5.0		**54.8**	50.00	0	109.7	51.59	6.09	02/09/2017
1-Chlorobutane	5.0		**45.7**	50.00	0	91.3	44.38	2.84	02/09/2017
2,2-Dichloropropane	5.0		**46.8**	50.00	0	93.6	44.57	4.92	02/09/2017
2-Butanone	50.0		**131**	125.0	0	104.7	140.9	7.38	02/09/2017
2-Chlorotoluene	5.0		**52.6**	50.00	0	105.2	51.90	1.32	02/09/2017
2-Hexanone	50.0		**144**	125.0	0	115.6	151.3	4.60	02/09/2017
2-Nitropropane	50.0		**496**	500.0	0	99.2	503.0	1.42	02/09/2017
4-Chlorotoluene	5.0		**50.1**	50.00	0	100.3	48.57	3.16	02/09/2017
4-Methyl-2-pentanone	50.0		**140**	125.0	0	112.2	134.2	4.41	02/09/2017
Acetone	50.0		**133**	125.0	0	106.5	147.4	10.21	02/09/2017
Acrolein	100		**312**	500.0	0	62.5	323.4	3.50	02/09/2017
Acrylonitrile	10.0		**46.7**	50.00	0	93.4	47.08	0.77	02/09/2017
Allyl chloride	5.0		**42.8**	50.00	0	85.6	43.89	2.51	02/09/2017
Benzene	1.0		**43.5**	50.00	0	86.9	41.91	3.65	02/09/2017
Bromobenzene	5.0		**53.9**	50.00	0	107.7	51.28	4.93	02/09/2017
Bromochloromethane	5.0		**46.7**	50.00	0	93.4	45.43	2.78	02/09/2017
Bromodichloromethane	5.0		**46.2**	50.00	0	92.3	45.02	2.48	02/09/2017
Bromoform	5.0		**54.7**	50.00	0	109.4	53.23	2.71	02/09/2017
Bromomethane	10.0		**20.0**	50.00	0	40.0	15.03	28.33	02/09/2017
Carbon disulfide	5.0		**39.8**	50.00	0	79.6	38.36	3.71	02/09/2017
Carbon tetrachloride	5.0		**47.2**	50.00	0	94.5	45.92	2.85	02/09/2017
Chlorobenzene	5.0		**50.3**	50.00	0	100.5	48.62	3.34	02/09/2017
Chloroethane	10.0		**43.1**	50.00	0	86.2	39.87	7.79	02/09/2017
Chloroform	5.0		**44.9**	50.00	0	89.8	43.91	2.21	02/09/2017
Chloromethane	10.0		**42.2**	50.00	0	84.4	40.46	4.21	02/09/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126995 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-F170209A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
cis-1,2-Dichloroethene	5.0		**46.2**	50.00	0	92.3	44.49	3.71	02/09/2017
cis-1,3-Dichloropropene	4.0		**46.8**	50.00	0	93.6	45.47	2.86	02/09/2017
Cyclohexanone	100		**471**	500.0	0	94.2	500.8	6.14	02/09/2017
Dibromochloromethane	5.0		**54.3**	50.00	0	108.7	51.49	5.39	02/09/2017
Dibromomethane	5.0		**44.9**	50.00	0	89.8	44.42	1.03	02/09/2017
Dichlorodifluoromethane	10.0		**33.0**	50.00	0	66.1	31.90	3.51	02/09/2017
Ethyl ether	5.0		**43.6**	50.00	0	87.2	43.59	0.07	02/09/2017
Ethyl methacrylate	5.0		**54.9**	50.00	0	109.8	52.80	3.94	02/09/2017
Ethylbenzene	5.0		**53.5**	50.00	0	107.0	50.36	6.07	02/09/2017
Hexachlorobutadiene	5.0		**58.4**	50.00	0	116.9	58.94	0.83	02/09/2017
Hexachloroethane	5.0		**58.9**	50.00	0	117.8	56.67	3.86	02/09/2017
Iodomethane	10.0		**31.2**	50.00	0	62.4	28.16	10.21	02/09/2017
Isopropylbenzene	5.0		**54.6**	50.00	0	109.2	50.62	7.60	02/09/2017
m,p-Xylenes	5.0		**107**	100.0	0	107.5	100.2	7.04	02/09/2017
Methacrylonitrile	50.0		**ND**	50.00	0	93.8	48.63	0.00	02/09/2017
Methyl Methacrylate	5.0		**49.0**	50.00	0	98.1	47.93	2.29	02/09/2017
Methyl tert-butyl ether	2.0		**46.7**	50.00	0	93.5	45.49	2.71	02/09/2017
Methylacrylate	10.0		**53.3**	50.00	0	106.6	44.50	18.03	02/09/2017
Methylene chloride	5.0		**44.6**	50.00	0	89.2	42.92	3.84	02/09/2017
Naphthalene	10.0		**59.7**	50.00	0	119.4	57.48	3.81	02/09/2017
n-Butylbenzene	5.0		**56.1**	50.00	0	112.2	56.81	1.28	02/09/2017
n-Heptane	20.0		**51.5**	50.00	0	103.0	51.56	0.10	02/09/2017
n-Hexane	20.0		**46.8**	50.00	0	93.6	47.47	1.44	02/09/2017
Nitrobenzene	100		**488**	500.0	0	97.6	493.8	1.16	02/09/2017
n-Propylbenzene	5.0		**55.4**	50.00	0	110.9	53.19	4.12	02/09/2017
o-Xylene	5.0		**55.1**	50.00	0	110.2	51.58	6.62	02/09/2017
Pentachloroethane	5.0		**41.1**	50.00	0	82.2	31.12	27.61	02/09/2017
p-Isopropyltoluene	5.0		**56.4**	50.00	0	112.9	54.35	3.76	02/09/2017
Propionitrile	50.0		**461**	500.0	0	92.1	464.8	0.93	02/09/2017
sec-Butylbenzene	5.0		**56.5**	50.00	0	113.1	53.20	6.07	02/09/2017
Styrene	5.0		**54.4**	50.00	0	108.9	52.01	4.55	02/09/2017
tert-Butylbenzene	5.0		**53.0**	50.00	0	105.9	51.25	3.26	02/09/2017
Tetrachloroethene	5.0	S	**62.8**	50.00	0	125.5	63.04	0.45	02/09/2017
Tetrahydrofuran	50.0		**ND**	50.00	0	95.0	47.68	0.00	02/09/2017
Toluene	5.0		**50.5**	50.00	0	101.1	47.87	5.43	02/09/2017
trans-1,2-Dichloroethene	5.0		**45.4**	50.00	0	90.8	44.16	2.73	02/09/2017
trans-1,3-Dichloropropene	4.0		**55.7**	50.00	0	111.5	53.03	4.98	02/09/2017
Trichloroethene	5.0		**46.0**	50.00	0	91.9	44.46	3.30	02/09/2017
Trichlorofluoromethane	5.0		**45.4**	50.00	0	90.8	44.26	2.52	02/09/2017
Vinyl acetate	50.0		**ND**	50.00	0	97.3	49.06	0.00	02/09/2017
Vinyl chloride	2.0		**39.2**	50.00	0	78.4	37.55	4.33	02/09/2017
Surr: 1,2-Dichloroethane-d4			**52.7**	50.00		105.3			02/09/2017
Surr: 4-Bromofluorobenzene			**51.5**	50.00		103.0			02/09/2017
Surr: Dibromofluoromethane			**47.6**	50.00		95.1			02/09/2017
Surr: Toluene-d8			**55.2**	50.00		110.3			02/09/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126995 **SampType:** LCS Units µg/Kg

SampID: LCS-F170209A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		**50.6**	50.00	0	101.3	83.1	114	02/09/2017
1,1,1-Trichloroethane	5.0		**45.0**	50.00	0	90.1	78.5	119	02/09/2017
1,1,2,2-Tetrachloroethane	5.0		**49.0**	50.00	0	97.9	67.4	120	02/09/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		**43.3**	50.00	0	86.7	75.4	121	02/09/2017
1,1,2-Trichloroethane	5.0		**48.9**	50.00	0	97.8	81.1	111	02/09/2017
1,1-Dichloro-2-propanone	50.0		**129**	125.0	0	102.9	55.4	131	02/09/2017
1,1-Dichloroethane	5.0		**43.6**	50.00	0	87.2	80.1	116	02/09/2017
1,1-Dichloroethene	5.0		**44.9**	50.00	0	89.8	73.1	121	02/09/2017
1,1-Dichloropropene	5.0		**44.4**	50.00	0	88.7	82.2	114	02/09/2017
1,2,3-Trichlorobenzene	5.0		**57.4**	50.00	0	114.7	81.7	130	02/09/2017
1,2,3-Trichloropropane	10.0		**51.0**	50.00	0	102.1	67.8	118	02/09/2017
1,2,3-Trimethylbenzene	5.0		**51.5**	50.00	0	102.9	82.1	127	02/09/2017
1,2,4-Trichlorobenzene	5.0		**59.9**	50.00	0	119.9	72.3	141	02/09/2017
1,2,4-Trimethylbenzene	5.0		**53.1**	50.00	0	106.2	79.7	123	02/09/2017
1,2-Dibromo-3-chloropropane	5.0		**53.3**	50.00	0	106.7	62.1	123	02/09/2017
1,2-Dibromoethane	5.0		**49.0**	50.00	0	98.0	82.4	112	02/09/2017
1,2-Dichlorobenzene	5.0		**51.0**	50.00	0	101.9	82.7	119	02/09/2017
1,2-Dichloroethane	5.0		**45.6**	50.00	0	91.1	72.8	120	02/09/2017
1,2-Dichloropropane	5.0		**41.8**	50.00	0	83.6	80	116	02/09/2017
1,3,5-Trimethylbenzene	5.0		**51.3**	50.00	0	102.7	81.5	125	02/09/2017
1,3-Dichlorobenzene	5.0		**52.0**	50.00	0	104.0	82	124	02/09/2017
1,3-Dichloropropane	5.0		**49.6**	50.00	0	99.2	79.8	113	02/09/2017
1,4-Dichlorobenzene	5.0		**51.6**	50.00	0	103.2	81.1	124	02/09/2017
1-Chlorobutane	5.0		**44.4**	50.00	0	88.8	77.2	113	02/09/2017
2,2-Dichloropropane	5.0		**44.6**	50.00	0	89.1	76.6	121	02/09/2017
2-Butanone	50.0		**141**	125.0	0	112.7	62.8	131	02/09/2017
2-Chlorotoluene	5.0		**51.9**	50.00	0	103.8	78.8	121	02/09/2017
2-Hexanone	50.0		**151**	125.0	0	121.0	63.1	125	02/09/2017
2-Nitropropane	50.0		**503**	500.0	0	100.6	61.2	129	02/09/2017
4-Chlorotoluene	5.0		**48.6**	50.00	0	97.1	77.6	124	02/09/2017
4-Methyl-2-pentanone	50.0		**134**	125.0	0	107.4	60.6	126	02/09/2017
Acetone	50.0		**147**	125.0	0	117.9	39.5	159	02/09/2017
Acrolein	100		**323**	500.0	0	64.7	1	167	02/09/2017
Acrylonitrile	10.0		**47.1**	50.00	0	94.2	67	124	02/09/2017
Allyl chloride	5.0		**43.9**	50.00	0	87.8	58.5	129	02/09/2017
Benzene	1.0		**41.9**	50.00	0	83.8	80.8	117	02/09/2017
Bromobenzene	5.0		**51.3**	50.00	0	102.6	79.6	117	02/09/2017
Bromochloromethane	5.0		**45.4**	50.00	0	90.9	70.7	121	02/09/2017
Bromodichloromethane	5.0		**45.0**	50.00	0	90.0	80.7	121	02/09/2017
Bromoform	5.0		**53.2**	50.00	0	106.5	79.8	118	02/09/2017
Bromomethane	10.0		**15.0**	50.00	0	30.1	1	175	02/09/2017
Carbon disulfide	5.0		**38.4**	50.00	0	76.7	62.8	123	02/09/2017
Carbon tetrachloride	5.0		**45.9**	50.00	0	91.8	77.6	123	02/09/2017
Chlorobenzene	5.0		**48.6**	50.00	0	97.2	85.6	116	02/09/2017
Chloroethane	10.0		**39.9**	50.00	0	79.7	60.2	125	02/09/2017
Chloroform	5.0		**43.9**	50.00	0	87.8	77.9	116	02/09/2017
Chloromethane	10.0		**40.5**	50.00	0	80.9	29.9	157	02/09/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020460

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 14-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126995 **SampType:** LCS Units µg/Kg

SampID: LCS-F170209A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		**44.5**	50.00	0	89.0	80.1	116	02/09/2017
cis-1,3-Dichloropropene	4.0		**45.5**	50.00	0	90.9	80.5	121	02/09/2017
Cyclohexanone	100		**501**	500.0	0	100.2	45.4	128	02/09/2017
Dibromochloromethane	5.0		**51.5**	50.00	0	103.0	84.3	116	02/09/2017
Dibromomethane	5.0		**44.4**	50.00	0	88.8	76.6	115	02/09/2017
Dichlorodifluoromethane	10.0		**31.9**	50.00	0	63.8	1	200	02/09/2017
Ethyl ether	5.0		**43.6**	50.00	0	87.2	73.4	116	02/09/2017
Ethyl methacrylate	5.0		**52.8**	50.00	0	105.6	76.2	120	02/09/2017
Ethylbenzene	5.0		**50.4**	50.00	0	100.7	84.8	116	02/09/2017
Hexachlorobutadiene	5.0		**58.9**	50.00	0	117.9	74	135	02/09/2017
Hexachloroethane	5.0		**56.7**	50.00	0	113.3	76.4	121	02/09/2017
Iodomethane	10.0		**28.2**	50.00	0	56.3	38.7	161	02/09/2017
Isopropylbenzene	5.0		**50.6**	50.00	0	101.2	85	125	02/09/2017
m,p-Xylenes	5.0		**100**	100.0	0	100.2	85.3	120	02/09/2017
Methacrylonitrile	50.0		**ND**	50.00	0	97.3	65.7	120	02/09/2017
Methyl Methacrylate	5.0		**47.9**	50.00	0	95.9	69.1	114	02/09/2017
Methyl tert-butyl ether	2.0		**45.5**	50.00	0	91.0	66.6	125	02/09/2017
Methylacrylate	10.0		**44.5**	50.00	0	89.0	69.7	121	02/09/2017
Methylene chloride	5.0		**42.9**	50.00	0	85.8	73.4	115	02/09/2017
Naphthalene	10.0		**57.5**	50.00	0	115.0	70.1	134	02/09/2017
n-Butylbenzene	5.0		**56.8**	50.00	0	113.6	78.4	138	02/09/2017
n-Heptane	20.0		**51.6**	50.00	0	103.1	74.3	125	02/09/2017
n-Hexane	20.0		**47.5**	50.00	0	94.9	66.3	129	02/09/2017
Nitrobenzene	100		**494**	500.0	0	98.8	20.1	165	02/09/2017
n-Propylbenzene	5.0		**53.2**	50.00	0	106.4	79.1	125	02/09/2017
o-Xylene	5.0		**51.6**	50.00	0	103.2	81.9	118	02/09/2017
Pentachloroethane	5.0	S	**31.1**	50.00	0	62.2	72.7	123	02/09/2017
p-Isopropyltoluene	5.0		**54.4**	50.00	0	108.7	82.7	129	02/09/2017
Propionitrile	50.0		**465**	500.0	0	93.0	64.3	121	02/09/2017
sec-Butylbenzene	5.0		**53.2**	50.00	0	106.4	81.3	125	02/09/2017
Styrene	5.0		**52.0**	50.00	0	104.0	88.2	122	02/09/2017
tert-Butylbenzene	5.0		**51.2**	50.00	0	102.5	74.8	125	02/09/2017
Tetrachloroethene	5.0	S	**63.0**	50.00	0	126.1	84.2	122	02/09/2017
Tetrahydrofuran	50.0		**ND**	50.00	0	95.4	61	118	02/09/2017
Toluene	5.0		**47.9**	50.00	0	95.7	81.3	113	02/09/2017
trans-1,2-Dichloroethene	5.0		**44.2**	50.00	0	88.3	78.2	118	02/09/2017
trans-1,3-Dichloropropene	4.0		**53.0**	50.00	0	106.1	81.7	124	02/09/2017
Trichloroethene	5.0		**44.5**	50.00	0	88.9	81	123	02/09/2017
Trichlorofluoromethane	5.0		**44.3**	50.00	0	88.5	66.8	131	02/09/2017
Vinyl acetate	50.0		**ND**	50.00	0	98.1	64.3	122	02/09/2017
Vinyl chloride	2.0		**37.6**	50.00	0	75.1	45.2	140	02/09/2017
Surr: 1,2-Dichloroethane-d4			**54.1**	50.00		108.2	72.2	131	02/09/2017
Surr: 4-Bromofluorobenzene			**51.3**	50.00		102.6	82.1	116	02/09/2017
Surr: Dibromofluoromethane			**49.0**	50.00		98.0	77.7	120	02/09/2017
Surr: Toluene-d8			**51.0**	50.00		102.0	86	116	02/09/2017

Receiving Check List

http://www.teklabinc.com/

Client: PSC Industrial Outsourcing, LP
Work Order: 17020460
Client Project: Champaign Soil Residual IRM 624-1610-001-J0055
Report Date: 14-Feb-17

Carrier: Employee
Received By: AMD

Completed by: Laurie A. Langdon
On: 08-Feb-17

Reviewed by: Elizabeth A. Hurley
On: 08-Feb-17

Pages to follow: Chain of custody 2 Extra pages included 0

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C	1.82
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice	☐
Chain of custody present?	Yes ☑	No ☐			
Chain of custody signed when relinquished and received?	Yes ☑	No ☐			
Chain of custody agrees with sample labels?	Yes ☑	No ☐			
Samples in proper container/bottle?	Yes ☑	No ☐			
Sample containers intact?	Yes ☑	No ☐			
Sufficient sample volume for indicated test?	Yes ☑	No ☐			
All samples received within holding time?	Yes ☑	No ☐			
Reported field parameters measured:	Field ☐	Lab ☐	NA ☑		
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐			

When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.

Water – at least one vial per sample has zero headspace?	Yes ☐	No ☐	No VOA vials ☑
Water - TOX containers have zero headspace?	Yes ☐	No ☐	No TOX containers ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	NA ☑
NPDES/CWA TCN interferences checked/treated in the field?	Yes ☐	No ☐	NA ☑

Any No responses must be detailed below or on the COC.

Samples were for volatile organic dulition selectoin upon arrival at the laboratory. LL 2/8/17

CHAIN OF CUSTODY

pg. 4 of 9 Work order # 1702046

TEKLAB, INC. 5445 Horseshoe Lake Road - Collinsville, IL 62234 - Phone: (618) 344-1004 - Fax: (618) 344-1005

Client:	PSC Industrial Outsourcing, LP
Address:	210 West Sand Bank Road
City / State / Zip	Columbia, IL 62236-0230
Contact:	Michael Crutcher
Phone:	(618) 281-7173
E-Mail:	mcrutcher@pscnow.com
Fax:	(618) 281-5120

Samples on: ☒ ICE ☐ BLUE ICE ☐ NO ICE 1.8 °C

Preserved in: ☐ LAB ☐ FIELD

FOR LAB USE ONLY

Lab Notes

Client Comments: 24-Hr TAT

ONE DAY TAT

Are these samples known to be involved in litigation? If yes, a surcharge will apply ☐ Yes ☒ No

Are these samples known to be hazardous? ☐ Yes ☒ No

Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section. ☐ Yes ☒ No

Project Name/Number
Champaign Soil Residual IRM 624-1610-01-J0055

Sample Collector's Name
Katelyn Bertels

Results Requested
☐ Standard ☒ 1-2 Day (100% Surcharge)
☐ Other ____ ☐ 3 Day (50% Surcharge)

Billing Instructions
PSC

Lab Use Only	Sample Identification	Date/Time Sampled	# and Type of Containers: UNPRES	HNO3	NaOH	H2SO4	HCl	MeOH	NaHSO4	OTHER	MATRIX: Aqueous	Drinking Water	Soil	Sludge	Special Waste	Groundwater	INDICATE ANALYSIS REQUESTED: Amenable Cyanide	OA2 8015	PAH 8270 SIM	pH	SVOC 8270 (No PAH)	Total 8 RCRA Metals Tcgn	Total Cyanide	VOC 8260
1702046-001	CH-FS-01 (14-15)	2/6/17 8:55	3					1	2				X						X		X			X
002	CH-FS-01 (17-18)	2/6/17 9:00	3					1	2				X						X		X			X
003	CH-FS-02 (8-9)	2/6/17 10:15	3					1	2				X						X		X			X
004	CH-FS-02 (17-18)	2/6/17 10:00	3					1	2				X						X		X			X
005	CH-FS-02 (19-20)	2/6/17 10:10	3					1	2				X						X		X			X
006	CH-FS-03 (7-8)	2/6/17 11:25	3					1	2				X						X		X			X
007	CH-FS-03 (19-20)	2/6/17 11:30	3					1	2				X						X		X			X
008	CH-FS-04 (6-7)	2/6/17 12:40	3					1	2				X						X		X			X
009	CH-FS-04 (11-12)	2/6/17 12:50	3					1	2				X						X		X			X
010	CH-FS-04 (16-17)	2/6/17 12:30	3					1	2				X						X		X			X

Relinquished By	Date/Time	Received By	Date/Time
Katelyn Bertels	2/8/17 8:02	[illegible]	2/8/17 802

The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions.

BottleOrder: 35826

CHAIN OF CUSTODY

pg. 5 of 9 Work order # 17020460

TEKLAB, INC. 5445 Horseshoe Lake Road - Collinsville, IL 62234 - Phone: (618) 344-1004 - Fax: (618) 344-1005

Client:	PSC Industrial Outsourcing, LP		
Address:	210 West Sand Bank Road		
City / State / Zip	Columbia, IL 62236-0230		
Contact:	Michael Crutcher	**Phone:**	(618) 281-7173
E-Mail:	mcrutcher@pscnow.com	**Fax:**	(618) 281-5120

Samples on: ☒ ICE ☒ BLUE ICE ☒ NO ICE _____ °C

Preserved in: ☒ LAB ☐ FIELD

FOR LAB USE ONLY

Lab Notes

Client Comments: 24-Hr TAT

Are these samples known to be involved in litigation? If yes, a surcharge will apply ☐ Yes ☒ No

Are these samples known to be hazardous? ☐ Yes ☒ No

Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section. ☐ Yes ☒ No

Project Name/Number
Champaign Soil Residual IRM 624-1610-001-J0055

Sample Collector's Name
Katelyn Bertels

Results Requested
☐ Standard ☒ 1-2 Day (100% Surcharge)
☐ Other ____ ☐ 3 Day (50% Surcharge)

Billing Instructions
PSC

Lab Use Only	Sample Identification	Date/Time Sampled	# and Type of Containers: UNPRES	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	OTHER	MATRIX: Aqueous	Drinking Water	Soil	Sludge	Special Waste	Groundwater	INDICATE ANALYSIS REQUESTED: Amenable Cyanide	OA2 8015	PAH 8270 SIM	pH	SVOC 8270 (No PAH)	Total 8 RCRA Metals Taco	Total Cyanide	VOC 8260
17020460-011	CH-FS-05 (5-6)	2/6/17 14:50	3					1	2				X						X		X			X
012	CH-FS-05 (16-17)	2/6/17 14:55	3					1	2				X						X		X			X
013	CH-FS-06 (18-19)	2/6/17 16:00	3					1	2				X						X		X			X

Relinquished By	Date/Time	Received By	Date/Time
Kathlyn Bertels	2/8/17 8:02	[illegible]	2/8/17 802

The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions.

BottleOrder: 35826

February 10, 2017

Michael Crutcher
PSC Industrial Outsourcing, LP
210 West Sand Bank Road
Columbia, IL 62236-0230
TEL: (618) 281-7173
FAX: (618) 281-5120

RE: Champaign Soil Residual IRM 624-1610-001-J0055 **WorkOrder:** 17020461

Dear Michael Crutcher:

TEKLAB, INC received 13 samples on 2/8/2017 8:02:00 AM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Michael L. Austin
Project Manager
(618)344-1004 ex 16
MAustin@teklabinc.com

Client: PSC Industrial Outsourcing, LP
Work Order: 17020461
Client Project: Champaign Soil Residual IRM 624-1610-001-J0055
Report Date: 10-Feb-17

This reporting package includes the following:

Cover Letter	1
Report Contents	2
Definitions	3
Case Narrative	4
Laboratory Results	5
Sample Summary	18
Dates Report	19
Quality Control Results	21
Receiving Check List	22
Chain of Custody	Appended

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020461

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 10-Feb-17

Abbr Definition

CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilutions factors.
DNI	Did not ignite
DUP	Laboratory duplicate is an aliquot of a sample taken from the same container under laboratory conditions for independent processing and analysis independently of the original aliquot.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample, spiked with verified known amounts of analytes, is analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system. The acceptable recovery range is in the QC Package (provided upon request).
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MBLK	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	Method detection limit means the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero.
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions. The acceptable recovery range is listed in the QC Package (provided upon request).
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TIC	Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
TNTC	Too numerous to count (> 200 CFU)

Qualifiers

# -	Unknown hydrocarbon
B -	Analyte detected in associated Method Blank
E -	Value above quantitation range
H -	Holding times exceeded
I -	Associated internal standard was outside method criteria
M -	Manual Integration used to determine area response
ND -	Not Detected at the Reporting Limit
R -	RPD outside accepted recovery limits
S -	Spike Recovery outside recovery limits
T -	TIC(Tentatively identified compound)
X -	Value exceeds Maximum Contaminant Level	

Case Narrative

http://www.teklabinc.com/

Client: PSC Industrial Outsourcing, LP
Work Order: 17020461
Client Project: Champaign Soil Residual IRM 624-1610-001-J0055
Report Date: 10-Feb-17

Cooler Receipt Temp: 1.82 °C

Locations and Accreditations

	Collinsville	Springfield	Kansas City	Collinsville Air
Address	5445 Horseshoe Lake Road	3920 Pintail Dr	8421 Nieman Road	5445 Horseshoe Lake Road
	Collinsville, IL 62234-7425	Springfield, IL 62711-9415	Lenexa, KS 66214	Collinsville, IL 62234-7425
Phone	(618) 344-1004	(217) 698-1004	(913) 541-1998	(618) 344-1004
Fax	(618) 344-1005	(217) 698-1005	(913) 541-1998	(618) 344-1005
Email	jhriley@teklabinc.com	KKlostermann@teklabinc.com	Ryoungstrom@teklabinc.com	EHurley@teklabinc.com

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2018	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2017	Collinsville
Louisiana	LDEQ	166493	NELAP	6/30/2017	Collinsville
Louisiana	LDEQ	166578	NELAP	6/30/2017	Collinsville
Texas	TCEQ	T104704515-12-1	NELAP	7/31/2017	Collinsville
Arkansas	ADEQ	88-0966		3/14/2017	Collinsville
Illinois	IDPH	17584		5/31/2017	Collinsville
Kentucky	KDEP	98006		12/31/2017	Collinsville
Kentucky	UST	0073		1/31/2018	Collinsville
Missouri	MDNR	00930		5/31/2017	Collinsville
Missouri	MDNR	930		1/31/2018	Collinsville
Oklahoma	ODEQ	9978		8/31/2017	Collinsville

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020461

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 10-Feb-17

Lab ID: 17020461-001 **Client Sample ID:** CH-FS-01 (14-15)

Matrix: SOLID **Collection Date:** 02/06/2017 8:55

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**16.1**	%	1	02/08/2017 18:43	R228981
SW-846 3550B, 8015B, TOTAL PETROLEUM HYDROCARBONS (OA-2) BY GC/FID								
Diesel	NELAP	148	#	**2220**	mg/Kg-dry	25	02/09/2017 13:45	126864
Kerosene	NELAP	59.4		**ND**	mg/Kg-dry	10	02/08/2017 19:22	126864
Mineral Spirits	NELAP	59.4		**ND**	mg/Kg-dry	10	02/08/2017 19:22	126864
Motor Oil	NELAP	59.4	#	**816**	mg/Kg-dry	10	02/08/2017 19:22	126864
Surr: n-Tetracontane		20-152	S	**206.5**	%REC	10	02/08/2017 19:22	126864

Surrogate recovery is outside QC limits due to sample dilution.

Elevated reporting limit due to sample extract composition.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020461

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 10-Feb-17

Lab ID: 17020461-002 **Client Sample ID:** CH-FS-01 (17-18)

Matrix: SOLID **Collection Date:** 02/06/2017 9:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**16.8**	%	1	02/08/2017 18:43	R228981
SW-846 3550B, 8015B, TOTAL PETROLEUM HYDROCARBONS (OA-2) BY GC/FID								
Diesel	NELAP	5.86	#	**19.6**	mg/Kg-dry	1	02/08/2017 15:29	126864
Kerosene	NELAP	5.86		**ND**	mg/Kg-dry	1	02/08/2017 15:29	126864
Mineral Spirits	NELAP	5.86		**ND**	mg/Kg-dry	1	02/08/2017 15:29	126864
Motor Oil	NELAP	5.86	#	**9.70**	mg/Kg-dry	1	02/08/2017 15:29	126864
Surr: n-Tetracontane		20-152		**96.4**	%REC	1	02/08/2017 15:29	126864

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020461

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 10-Feb-17

Lab ID: 17020461-003 **Client Sample ID:** CH-FS-02 (8-9)

Matrix: SOLID **Collection Date:** 02/06/2017 10:15

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**16.0**	%	1	02/08/2017 18:44	R228981
SW-846 3550B, 8015B, TOTAL PETROLEUM HYDROCARBONS (OA-2) BY GC/FID								
Diesel	NELAP	1830	#	**26800**	mg/Kg-dry	25	02/09/2017 14:05	126864
Kerosene	NELAP	732		**ND**	mg/Kg-dry	10	02/08/2017 19:41	126864
Mineral Spirits	NELAP	732		**ND**	mg/Kg-dry	10	02/08/2017 19:41	126864
Motor Oil	NELAP	732	#	**7930**	mg/Kg-dry	10	02/08/2017 19:41	126864
Surr: n-Tetracontane		20-152	S	**198.7**	%REC	10	02/08/2017 19:41	126864

Surrogate recovery is outside QC limits due to sample dilution.

Elevated reporting limit due to sample composition.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020461

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 10-Feb-17

Lab ID: 17020461-004 **Client Sample ID:** CH-FS-02 (17-18)

Matrix: SOLID **Collection Date:** 02/06/2017 10:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**14.6**	%	1	02/08/2017 18:44	R228981
SW-846 3550B, 8015B, TOTAL PETROLEUM HYDROCARBONS (OA-2) BY GC/FID								
Diesel	NELAP	436	#	**7380**	mg/Kg-dry	25	02/09/2017 14:24	126864
Kerosene	NELAP	175		**ND**	mg/Kg-dry	10	02/08/2017 20:00	126864
Mineral Spirits	NELAP	175		**ND**	mg/Kg-dry	10	02/08/2017 20:00	126864
Motor Oil	NELAP	175	#	**2910**	mg/Kg-dry	10	02/08/2017 20:00	126864
Surr: n-Tetracontane		20-152	S	**207.5**	%REC	10	02/08/2017 20:00	126864

Surrogate recovery is outside QC limits due to sample dilution.

Elevated reporting limit due to sample composition.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020461

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 10-Feb-17

Lab ID: 17020461-005 **Client Sample ID:** CH-FS-02 (19-20)

Matrix: SOLID **Collection Date:** 02/06/2017 10:10

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**9.9**	%	1	02/08/2017 18:44	R228981
SW-846 3550B, 8015B, TOTAL PETROLEUM HYDROCARBONS (OA-2) BY GC/FID								
Diesel	NELAP	5.50	#	**110**	mg/Kg-dry	1	02/08/2017 20:19	126864
Kerosene	NELAP	5.50		**ND**	mg/Kg-dry	1	02/08/2017 20:19	126864
Mineral Spirits	NELAP	5.50		**ND**	mg/Kg-dry	1	02/08/2017 20:19	126864
Motor Oil	NELAP	5.50	#	**43.0**	mg/Kg-dry	1	02/08/2017 20:19	126864
Surr: n-Tetracontane		20-152		**80.3**	%REC	1	02/08/2017 20:19	126864

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020461

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 10-Feb-17

Lab ID: 17020461-006 **Client Sample ID:** CH-FS-03 (7-8)

Matrix: SOLID **Collection Date:** 02/06/2017 11:25

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**21.2**	%	1	02/08/2017 18:44	R228981
SW-846 3550B, 8015B, TOTAL PETROLEUM HYDROCARBONS (OA-2) BY GC/FID								
Diesel	NELAP	185	#	**3720**	mg/Kg-dry	10	02/08/2017 20:38	126864
Kerosene	NELAP	185		**ND**	mg/Kg-dry	10	02/08/2017 20:38	126864
Mineral Spirits	NELAP	185		**ND**	mg/Kg-dry	10	02/08/2017 20:38	126864
Motor Oil	NELAP	185	#	**1820**	mg/Kg-dry	10	02/08/2017 20:38	126864
Surr: n-Tetracontane		20-152	S	**195.6**	%REC	10	02/08/2017 20:38	126864

Surrogate recovery is outside QC limits due to sample dilution.

Elevated reporting limit due to sample composition.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020461

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 10-Feb-17

Lab ID: 17020461-007 **Client Sample ID:** CH-FS-03 (19-20)

Matrix: SOLID **Collection Date:** 02/06/2017 11:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**10.2**	%	1	02/08/2017 18:45	R228981
SW-846 3550B, 8015B, TOTAL PETROLEUM HYDROCARBONS (OA-2) BY GC/FID								
Diesel	NELAP	5.49	#	**68.4**	mg/Kg-dry	1	02/08/2017 15:49	126864
Kerosene	NELAP	5.49		**ND**	mg/Kg-dry	1	02/08/2017 15:49	126864
Mineral Spirits	NELAP	5.49		**ND**	mg/Kg-dry	1	02/08/2017 15:49	126864
Motor Oil	NELAP	5.49	#	**13.1**	mg/Kg-dry	1	02/08/2017 15:49	126864
Surr: n-Tetracontane		20-152		**87.0**	%REC	1	02/08/2017 15:49	126864

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020461

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 10-Feb-17

Lab ID: 17020461-008 **Client Sample ID:** CH-FS-04 (6-7)

Matrix: SOLID **Collection Date:** 02/06/2017 12:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**20.5**	%	1	02/08/2017 18:45	R228981
SW-846 3550B, 8015B, TOTAL PETROLEUM HYDROCARBONS (OA-2) BY GC/FID								
Diesel	NELAP	182	#	**2150**	mg/Kg-dry	10	02/08/2017 20:57	126864
Kerosene	NELAP	182		**ND**	mg/Kg-dry	10	02/08/2017 20:57	126864
Mineral Spirits	NELAP	182		**ND**	mg/Kg-dry	10	02/08/2017 20:57	126864
Motor Oil	NELAP	182	#	**1120**	mg/Kg-dry	10	02/08/2017 20:57	126864
Surr: n-Tetracontane		20-152	S	**203.8**	%REC	10	02/08/2017 20:57	126864

Surrogate recovery is outside QC limits due to sample dilution.

Elevated reporting limit due to sample composition.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020461

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 10-Feb-17

Lab ID: 17020461-009 **Client Sample ID:** CH-FS-04 (11-12)

Matrix: SOLID **Collection Date:** 02/06/2017 12:50

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**11.8**	%	1	02/08/2017 18:46	R228981
SW-846 3550B, 8015B, TOTAL PETROLEUM HYDROCARBONS (OA-2) BY GC/FID								
Diesel	NELAP	158	#	**2260**	mg/Kg-dry	10	02/08/2017 21:16	126864
Kerosene	NELAP	158		**ND**	mg/Kg-dry	10	02/08/2017 21:16	126864
Mineral Spirits	NELAP	158		**ND**	mg/Kg-dry	10	02/08/2017 21:16	126864
Motor Oil	NELAP	158	#	**1050**	mg/Kg-dry	10	02/08/2017 21:16	126864
Surr: n-Tetracontane		20-152	S	**193.4**	%REC	10	02/08/2017 21:16	126864

Surrogate recovery is outside QC limits due to sample dilution.

Elevated reporting limit due to sample composition.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020461

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 10-Feb-17

Lab ID: 17020461-010 **Client Sample ID:** CH-FS-04 (16-17)

Matrix: SOLID **Collection Date:** 02/06/2017 12:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**10.6**	%	1	02/08/2017 18:46	R228981
SW-846 3550B, 8015B, TOTAL PETROLEUM HYDROCARBONS (OA-2) BY GC/FID								
Diesel	NELAP	5.54	#	**28.5**	mg/Kg-dry	1	02/08/2017 16:08	126864
Kerosene	NELAP	5.54		**ND**	mg/Kg-dry	1	02/08/2017 16:08	126864
Mineral Spirits	NELAP	5.54		**ND**	mg/Kg-dry	1	02/08/2017 16:08	126864
Motor Oil	NELAP	5.54	#	**16.2**	mg/Kg-dry	1	02/08/2017 16:08	126864
Surr: n-Tetracontane		20-152		**104.5**	%REC	1	02/08/2017 16:08	126864

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020461

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 10-Feb-17

Lab ID: 17020461-011 **Client Sample ID:** CH-FS-05 (5-6)

Matrix: SOLID **Collection Date:** 02/06/2017 14:50

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**25.4**	%	1	02/08/2017 18:46	R228981
SW-846 3550B, 8015B, TOTAL PETROLEUM HYDROCARBONS (OA-2) BY GC/FID								
Diesel	NELAP	2440	#	**39200**	mg/Kg-dry	25	02/08/2017 21:55	126864
Kerosene	NELAP	2440		**ND**	mg/Kg-dry	25	02/08/2017 21:55	126864
Mineral Spirits	NELAP	2440		**ND**	mg/Kg-dry	25	02/08/2017 21:55	126864
Motor Oil	NELAP	2440	#	**28800**	mg/Kg-dry	25	02/08/2017 21:55	126864
Surr: n-Tetracontane		20-152	S	**377.5**	%REC	25	02/08/2017 21:55	126864

Surrogate recovery is outside QC limits due to sample dilution.

Elevated reporting limit due to sample composition.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020461

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 10-Feb-17

Lab ID: 17020461-012 **Client Sample ID:** CH-FS-05 (16-17)

Matrix: SOLID **Collection Date:** 02/06/2017 14:55

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**11.7**	%	1	02/08/2017 18:46	R228981
SW-846 3550B, 8015B, TOTAL PETROLEUM HYDROCARBONS (OA-2) BY GC/FID								
Diesel	NELAP	140	#	**2300**	mg/Kg-dry	25	02/09/2017 14:43	126864
Kerosene	NELAP	56.1		**ND**	mg/Kg-dry	10	02/08/2017 21:36	126864
Mineral Spirits	NELAP	56.1		**ND**	mg/Kg-dry	10	02/08/2017 21:36	126864
Motor Oil	NELAP	56.1	#	**1660**	mg/Kg-dry	10	02/08/2017 21:36	126864
Surr: n-Tetracontane		20-152	S	**333.9**	%REC	10	02/08/2017 21:36	126864

Surrogate recovery is outside QC limits due to sample dilution.

Elevated reporting limit due to sample extract composition.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020461

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 10-Feb-17

Lab ID: 17020461-013 **Client Sample ID:** CH-FS-06 (18-19)

Matrix: SOLID **Collection Date:** 02/06/2017 16:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**14.2**	%	1	02/08/2017 18:47	R228981
SW-846 3550B, 8015B, TOTAL PETROLEUM HYDROCARBONS (OA-2) BY GC/FID								
Diesel	NELAP	17.4	#	**96.2**	mg/Kg-dry	1	02/08/2017 16:28	126864
Kerosene	NELAP	17.4		**ND**	mg/Kg-dry	1	02/08/2017 16:28	126864
Mineral Spirits	NELAP	17.4		**ND**	mg/Kg-dry	1	02/08/2017 16:28	126864
Motor Oil	NELAP	17.4	#	**31.1**	mg/Kg-dry	1	02/08/2017 16:28	126864
Surr: n-Tetracontane		20-152		**83.4**	%REC	1	02/08/2017 16:28	126864

Elevated reporting limit due to sample composition.

Client: PSC Industrial Outsourcing, LP
Work Order: 17020461
Client Project: Champaign Soil Residual IRM 624-1610-001-J0055
Report Date: 10-Feb-17

Lab Sample ID	Client Sample ID	Matrix	Fractions	Collection Date
17020461-001	CH-FS-01 (14-15)	Solid	1	02/06/2017 8:55
17020461-002	CH-FS-01 (17-18)	Solid	1	02/06/2017 9:00
17020461-003	CH-FS-02 (8-9)	Solid	1	02/06/2017 10:15
17020461-004	CH-FS-02 (17-18)	Solid	1	02/06/2017 10:00
17020461-005	CH-FS-02 (19-20)	Solid	1	02/06/2017 10:10
17020461-006	CH-FS-03 (7-8)	Solid	1	02/06/2017 11:25
17020461-007	CH-FS-03 (19-20)	Solid	1	02/06/2017 11:30
17020461-008	CH-FS-04 (6-7)	Solid	1	02/06/2017 12:40
17020461-009	CH-FS-04 (11-12)	Solid	1	02/06/2017 12:50
17020461-010	CH-FS-04 (16-17)	Solid	1	02/06/2017 12:30
17020461-011	CH-FS-05 (5-6)	Solid	1	02/06/2017 14:50
17020461-012	CH-FS-05 (16-17)	Solid	1	02/06/2017 14:55
17020461-013	CH-FS-06 (18-19)	Solid	1	02/06/2017 16:00

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020461

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 10-Feb-17

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			Prep Date/Time	Analysis Date/Time
17020461-001A	CH-FS-01 (14-15)	02/06/2017 8:55	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/08/2017 18:43
	SW-846 3550B, 8015B, Total Petroleum Hydrocarbons (OA-2) by GC/FID			02/08/2017 12:15	02/08/2017 19:22
	SW-846 3550B, 8015B, Total Petroleum Hydrocarbons (OA-2) by GC/FID			02/08/2017 12:15	02/09/2017 13:45
17020461-002A	CH-FS-01 (17-18)	02/06/2017 9:00	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/08/2017 18:43
	SW-846 3550B, 8015B, Total Petroleum Hydrocarbons (OA-2) by GC/FID			02/08/2017 12:15	02/08/2017 15:29
17020461-003A	CH-FS-02 (8-9)	02/06/2017 10:15	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/08/2017 18:44
	SW-846 3550B, 8015B, Total Petroleum Hydrocarbons (OA-2) by GC/FID			02/08/2017 12:15	02/08/2017 19:41
	SW-846 3550B, 8015B, Total Petroleum Hydrocarbons (OA-2) by GC/FID			02/08/2017 12:15	02/09/2017 14:05
17020461-004A	CH-FS-02 (17-18)	02/06/2017 10:00	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/08/2017 18:44
	SW-846 3550B, 8015B, Total Petroleum Hydrocarbons (OA-2) by GC/FID			02/08/2017 12:15	02/08/2017 20:00
	SW-846 3550B, 8015B, Total Petroleum Hydrocarbons (OA-2) by GC/FID			02/08/2017 12:15	02/09/2017 14:24
17020461-005A	CH-FS-02 (19-20)	02/06/2017 10:10	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/08/2017 18:44
	SW-846 3550B, 8015B, Total Petroleum Hydrocarbons (OA-2) by GC/FID			02/08/2017 12:15	02/08/2017 20:19
17020461-006A	CH-FS-03 (7-8)	02/06/2017 11:25	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/08/2017 18:44
	SW-846 3550B, 8015B, Total Petroleum Hydrocarbons (OA-2) by GC/FID			02/08/2017 12:15	02/08/2017 20:38
17020461-007A	CH-FS-03 (19-20)	02/06/2017 11:30	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/08/2017 18:45
	SW-846 3550B, 8015B, Total Petroleum Hydrocarbons (OA-2) by GC/FID			02/08/2017 12:15	02/08/2017 15:49
17020461-008A	CH-FS-04 (6-7)	02/06/2017 12:40	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/08/2017 18:45
	SW-846 3550B, 8015B, Total Petroleum Hydrocarbons (OA-2) by GC/FID			02/08/2017 12:15	02/08/2017 20:57
17020461-009A	CH-FS-04 (11-12)	02/06/2017 12:50	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/08/2017 18:46
	SW-846 3550B, 8015B, Total Petroleum Hydrocarbons (OA-2) by GC/FID			02/08/2017 12:15	02/08/2017 21:16
17020461-010A	CH-FS-04 (16-17)	02/06/2017 12:30	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/08/2017 18:46
	SW-846 3550B, 8015B, Total Petroleum Hydrocarbons (OA-2) by GC/FID			02/08/2017 12:15	02/08/2017 16:08
17020461-011A	CH-FS-05 (5-6)	02/06/2017 14:50	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/08/2017 18:46
	SW-846 3550B, 8015B, Total Petroleum Hydrocarbons (OA-2) by GC/FID			02/08/2017 12:15	02/08/2017 21:55

Client: PSC Industrial Outsourcing, LP
Work Order: 17020461
Client Project: Champaign Soil Residual IRM 624-1610-001-J0055
Report Date: 10-Feb-17

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
17020461-012A	CH-FS-05 (16-17)	02/06/2017 14:55	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/08/2017 18:46
	SW-846 3550B, 8015B, Total Petroleum Hydrocarbons (OA-2) by GC/FID			02/08/2017 12:15	02/08/2017 21:36
	SW-846 3550B, 8015B, Total Petroleum Hydrocarbons (OA-2) by GC/FID			02/08/2017 12:15	02/09/2017 14:43
17020461-013A	CH-FS-06 (18-19)	02/06/2017 16:00	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/08/2017 18:47
	SW-846 3550B, 8015B, Total Petroleum Hydrocarbons (OA-2) by GC/FID			02/08/2017 12:15	02/08/2017 16:28

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020461

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 10-Feb-17

EPA SW846 3550C, 5035A, ASTM D2974

Batch R228981 **SampType:** LCS Units **%**

SampID: LCS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	02/08/2017

Batch R228981 **SampType:** LCSQC Units **%**

SampID: LCSQC

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	02/08/2017

SW-846 3550B, 8015B, TOTAL PETROLEUM HYDROCARBONS (OA-2) BY GC/FID

Batch 126864 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK-126864

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Diesel	5.00		**ND**						02/08/2017
Kerosene	5.00		**ND**						02/08/2017
Mineral Spirits	5.00		**ND**						02/08/2017
Motor Oil	5.00		**ND**						02/08/2017
Surr: n-Tetracontane			**0.65**	0.6700		97.0	33.4	140	02/08/2017

Batch 126864 **SampType:** LCS Units **mg/Kg**

SampID: LCS-126864

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Diesel	5.00		**15.9**	16.70	0	95.0	35.2	131	02/08/2017
Surr: n-Tetracontane			**0.61**	0.6700		91.1	33.4	140	02/08/2017

Receiving Check List

http://www.teklabinc.com/

Client: PSC Industrial Outsourcing, LP
Work Order: 17020461
Client Project: Champaign Soil Residual IRM 624-1610-001-J0055
Report Date: 10-Feb-17

Carrier: Employee
Received By: AMD

Completed by: Amber M. Dilallo
On: 08-Feb-17

Reviewed by: Elizabeth A. Hurley
On: 08-Feb-17

Pages to follow: Chain of custody 2 Extra pages included 0

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C	1.82
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice	☐
Chain of custody present?	Yes ☑	No ☐			
Chain of custody signed when relinquished and received?	Yes ☑	No ☐			
Chain of custody agrees with sample labels?	Yes ☑	No ☐			
Samples in proper container/bottle?	Yes ☑	No ☐			
Sample containers intact?	Yes ☑	No ☐			
Sufficient sample volume for indicated test?	Yes ☑	No ☐			
All samples received within holding time?	Yes ☑	No ☐			
Reported field parameters measured:	Field ☐	Lab ☐	NA ☑		
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐			

When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.

Water – at least one vial per sample has zero headspace?	Yes ☐	No ☐	No VOA vials ☑
Water - TOX containers have zero headspace?	Yes ☐	No ☐	No TOX containers ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	NA ☑
NPDES/CWA TCN interferences checked/treated in the field?	Yes ☐	No ☐	NA ☑

Any No responses must be detailed below or on the COC.

CHAIN OF CUSTODY

pg. 1 of 9 Work order # T020401

TEKLAB, INC. 5445 Horseshoe Lake Road - Collinsville, IL 62234 - Phone: (618) 344-1004 - Fax: (618) 344-1005

Client:	PSC Industrial Outsourcing, LP
Address:	210 West Sand Bank Road
City / State / Zip	Columbia, IL 62236-0230
Contact:	Michael Crutcher
Phone:	(618) 281-7173
E-Mail:	mcrutcher@pscnow.com
Fax:	(618) 281-5120

Samples on: ☒ ICE ☐ BLUE ICE ☐ NO ICE 1.8 °C

Preserved in: ☐ LAB ☐ FIELD

FOR LAB USE ONLY

Lab Notes

Client Comments: 24-Hr TAT

ONE DAY TAT

Are these samples known to be involved in litigation? If yes, a surcharge will apply ☐ Yes ☒ No

Are these samples known to be hazardous? ☐ Yes ☒ No

Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section. ☐ Yes ☒ No

Project Name/Number: Champaign Soil Residual IRM 624-1610-001-J0055

Sample Collector's Name: Katelyn Bertels

Results Requested: ☐ Standard ☒ 1-2 Day (100% Surcharge) ☐ 3 Day (50% Surcharge) ☐ Other ____

Billing Instructions: PSC

Lab Use Only	Sample Identification	Date/Time Sampled	# and Type of Containers: UNPRES	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	OTHER	MATRIX: Aqueous	Drinking Water	Soil	Sludge	Special Waste	Groundwater	INDICATE ANALYSIS REQUESTED: Amenable Cyanide	OA2 8015	PAH 8270 SIM	pH	SVOC 8270 (No PAH)	Total 8 RCRA Metals Tacp	Total Cyanide	VOC 8260
T020401-001	CH-FS-01 (14-15)	2/6/17 8:55	3					1	2				X					X						
002	CH-FS-01 (17-18)	2/6/17 9:00	3					1	2				X					X						
003	CH-FS-02 (8-9)	2/6/17 10:15	3					1	2				X					X						
004	CH-FS-02 (17-18)	2/6/17 10:00	3					1	2				X					X						
005	CH-FS-02 (19-20)	2/6/17 10:10	3					1	2				X					X						
006	CH-FS-03 (7-8)	2/6/17 11:25	3					1	2				X					X						
007	CH-FS-03 (19-20)	2/6/17 11:30	3					1	2				X					X						
008	CH-FS-04 (6-7)	2/6/17 12:40	3					1	2				X					X						
009	CH-FS-04 (11-12)	2/6/17 12:50	3					1	2				X					X						
010	CH-FS-04 (16-17)	2/6/17 12:30	3					1	2				X					X						

Relinquished By	Date/Time	Received By	Date/Time
Katelyn Bertels	2/8/17 8:02		2/8/17 802

BottleOrder: 35826

The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions.

CHAIN OF CUSTODY

pg. 2 of 9 Work order # 1702041

TEKLAB, INC. 5445 Horseshoe Lake Road - Collinsville, IL 62234 - Phone: (618) 344-1004 - Fax: (618) 344-1005

Client:	PSC Industrial Outsourcing, LP		
Address:	210 West Sand Bank Road		
City / State / Zip	Columbia, IL 62236-0230		
Contact:	Michael Crutcher	**Phone:**	(618) 281-7173
E-Mail:	mcrutcher@pscnow.com	**Fax:**	(618) 281-5120

Samples on: ☒ ICE ☒ BLUE ICE ☒ NO ICE _____ °C

Preserved in: ☒ LAB ☒ FIELD

FOR LAB USE ONLY

Lab Notes

Client Comments: 24 Hr-TAT

Are these samples known to be involved in litigation? If yes, a surcharge will apply ☐ Yes ☒ No

Are these samples known to be hazardous? ☐ Yes ☒ No

Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section. ☐ Yes ☒ No

Project Name/Number: Champaign Soil Residual IRM 624-1610-001-J0055

Sample Collector's Name: Katelyn Bertels

Results Requested: ☐ Standard ☒ 1-2 Day (100% Surcharge) ☐ Other ____ ☐ 3 Day (50% Surcharge)

Billing Instructions: PSC

Lab Use Only	Sample Identification	Date/Time Sampled	# and Type of Containers: UNPRES	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	OTHER	MATRIX: Aqueous	Drinking Water	Soil	Sludge	Special Waste	Groundwater	INDICATE ANALYSIS REQUESTED: Amenable Cyanide	OA2 8015	PAH 8270 SIM	pH	SVOC 8270 (No PAH)	Total 8 RCRA Metals Tacp	Total Cyanide	VOC 8260
1702041-01	CH-FS-05 (5-6)	2/6/17 14:50	3					1	2				X					X						
02	CH-FS-05 (16-17)	2/6/17 14:55	3					1	2				X					X						
03	CH-FS-06 (18-19)	2/6/17 16:00	3					1	2				X					X						

Relinquished By	Date/Time	Received By	Date/Time
Katelyn Bertels	2/8/17 8:02	[illegible]	2/8/17 802

The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions.

BottleOrder: 35826

February 17, 2017

Michael Crutcher
PSC Industrial Outsourcing, LP
210 West Sand Bank Road
Columbia, IL 62236-0230
TEL: (618) 281-1583
FAX: (618) 281-5120

RE: Champaign Soil Residual IRM 624-1610-001 / J0055 **WorkOrder:** 17020462

Dear Michael Crutcher:

TEKLAB, INC received 5 samples on 2/8/2017 8:02:00 AM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Michael L. Austin
Project Manager
(618)344-1004 ex 16
MAustin@teklabinc.com

Client: PSC Industrial Outsourcing, LP
Work Order: 17020462
Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055
Report Date: 17-Feb-17

This reporting package includes the following:

Cover Letter	1
Report Contents	2
Definitions	3
Case Narrative	4
Laboratory Results	5
Sample Summary	10
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Quality Control Results	13
Receiving Check List	17
Chain of Custody	Appended

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020462

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 17-Feb-17

Abbr Definition

CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilutions factors.
DNI	Did not ignite
DUP	Laboratory duplicate is an aliquot of a sample taken from the same container under laboratory conditions for independent processing and analysis independently of the original aliquot.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample, spiked with verified known amounts of analytes, is analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system. The acceptable recovery range is in the QC Package (provided upon request).
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MBLK	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	Method detection limit means the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero.
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions. The acceptable recovery range is listed in the QC Package (provided upon request).
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TIC	Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
TNTC	Too numerous to count (> 200 CFU)

Qualifiers

# -	Unknown hydrocarbon	B -	Analyte detected in associated Method Blank
E -	Value above quantitation range	H -	Holding times exceeded
I -	Associated internal standard was outside method criteria	M -	Manual Integration used to determine area response
ND -	Not Detected at the Reporting Limit	R -	RPD outside accepted recovery limits
S -	Spike Recovery outside recovery limits	T -	TIC(Tentatively identified compound)
X -	Value exceeds Maximum Contaminant Level		

Case Narrative

http://www.teklabinc.com/

Client: PSC Industrial Outsourcing, LP
Work Order: 17020462
Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055
Report Date: 17-Feb-17

Cooler Receipt Temp: 1.82 °C

Locations and Accreditations

	Collinsville	Springfield	Kansas City	Collinsville Air
Address	5445 Horseshoe Lake Road	3920 Pintail Dr	8421 Nieman Road	5445 Horseshoe Lake Road
	Collinsville, IL 62234-7425	Springfield, IL 62711-9415	Lenexa, KS 66214	Collinsville, IL 62234-7425
Phone	(618) 344-1004	(217) 698-1004	(913) 541-1998	(618) 344-1004
Fax	(618) 344-1005	(217) 698-1005	(913) 541-1998	(618) 344-1005
Email	jhriley@teklabinc.com	KKlostermann@teklabinc.com	Ryoungstrom@teklabinc.com	EHurley@teklabinc.com

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2018	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2017	Collinsville
Louisiana	LDEQ	166493	NELAP	6/30/2017	Collinsville
Louisiana	LDEQ	166578	NELAP	6/30/2017	Collinsville
Texas	TCEQ	T104704515-12-1	NELAP	7/31/2017	Collinsville
Arkansas	ADEQ	88-0966		3/14/2017	Collinsville
Illinois	IDPH	17584		5/31/2017	Collinsville
Kentucky	KDEP	98006		12/31/2017	Collinsville
Kentucky	UST	0073		1/31/2018	Collinsville
Missouri	MDNR	00930		5/31/2017	Collinsville
Missouri	MDNR	930		1/31/2018	Collinsville
Oklahoma	ODEQ	9978		8/31/2017	Collinsville

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020462

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 17-Feb-17

Lab ID: 17020462-001 **Client Sample ID:** ISW-RES-REM-W7 (10)

Matrix: SOLID **Collection Date:** 02/06/2017 11:15

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**20.9**	%	1	02/10/2017 15:59	R229078
SW-846 9012A								
Cyanide, Amenable to Chlorination		0.28		**Interference**	mg/Kg-dry	1	02/10/2017 0:00	126979
SW-846 9012A (TOTAL)								
Cyanide	NELAP	0.26		**0.82**	mg/Kg-dry	1	02/10/2017 15:27	126977
SW-846 9045C								
pH (1:1)	NELAP	1.00		**8.12**		1	02/08/2017 21:49	R228964
SW-846 3050B, 6010B, METALS BY ICP								
Arsenic	NELAP	2.40		**7.74**	mg/Kg-dry	1	02/10/2017 22:05	126937
Barium	NELAP	0.24		**54.8**	mg/Kg-dry	1	02/10/2017 22:05	126937
Cadmium	NELAP	0.19		**0.21**	mg/Kg-dry	1	02/10/2017 22:05	126937
Chromium	NELAP	0.48		**17.4**	mg/Kg-dry	1	02/10/2017 22:05	126937
Lead	NELAP	1.44		**12.1**	mg/Kg-dry	1	02/10/2017 22:05	126937
Silver	NELAP	0.48		**< 0.48**	mg/Kg-dry	1	02/10/2017 22:05	126937
SW-846 3050B, 6020A, METALS BY ICPMS								
Selenium	NELAP	0.96		**< 0.96**	mg/Kg-dry	10	02/16/2017 1:44	126938
SW-846 7471B								
Mercury	NELAP	0.013		**< 0.013**	mg/Kg-dry	1	02/08/2017 15:04	126892

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020462

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 17-Feb-17

Lab ID: 17020462-002 **Client Sample ID:** ISW-RES-REM-W6 (10)

Matrix: SOLID **Collection Date:** 02/06/2017 11:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**16.0**	%	1	02/10/2017 15:59	R229078
SW-846 9012A								
Cyanide, Amenable to Chlorination		0.28		**Interference**	mg/Kg-dry	1	02/10/2017 0:00	126979
SW-846 9012A (TOTAL)								
Cyanide	NELAP	0.28		**< 0.28**	mg/Kg-dry	1	02/10/2017 15:32	126977
SW-846 9045C								
pH (1:1)	NELAP	1.00		**8.46**		1	02/08/2017 21:54	R228964
SW-846 3050B, 6010B, METALS BY ICP								
Arsenic	NELAP	2.45		**5.61**	mg/Kg-dry	1	02/10/2017 22:09	126937
Barium	NELAP	0.25		**10.3**	mg/Kg-dry	1	02/10/2017 22:09	126937
Cadmium	NELAP	0.20		**< 0.20**	mg/Kg-dry	1	02/10/2017 22:09	126937
Chromium	NELAP	0.49		**5.82**	mg/Kg-dry	1	02/10/2017 22:09	126937
Lead	NELAP	1.47		**9.85**	mg/Kg-dry	1	02/10/2017 22:09	126937
Silver	NELAP	0.49		**< 0.49**	mg/Kg-dry	1	02/10/2017 22:09	126937
SW-846 3050B, 6020A, METALS BY ICPMS								
Selenium	NELAP	0.98		**< 0.98**	mg/Kg-dry	10	02/16/2017 1:52	126938
SW-846 7471B								
Mercury	NELAP	0.012		**0.063**	mg/Kg-dry	1	02/08/2017 15:06	126892

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020462

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 17-Feb-17

Lab ID: 17020462-003 **Client Sample ID:** ISW-RES-REM-W6 (3)

Matrix: SOLID **Collection Date:** 02/06/2017 13:45

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**22.3**	%	1	02/10/2017 16:00	R229078
SW-846 9012A								
Cyanide, Amenable to Chlorination		0.30		**Interference**	mg/Kg-dry	1	02/10/2017 0:00	126979
SW-846 9012A (TOTAL)								
Cyanide	NELAP	0.30		**0.80**	mg/Kg-dry	1	02/10/2017 15:36	126977
SW-846 9045C								
pH (1:1)	NELAP	1.00		**8.10**		1	02/08/2017 21:59	R228964
SW-846 3050B, 6010B, METALS BY ICP								
Arsenic	NELAP	2.45		**10.9**	mg/Kg-dry	1	02/10/2017 22:13	126937
Barium	NELAP	0.25		**148**	mg/Kg-dry	1	02/10/2017 22:13	126937
Cadmium	NELAP	0.20		**0.24**	mg/Kg-dry	1	02/10/2017 22:13	126937
Chromium	NELAP	0.49		**24.0**	mg/Kg-dry	1	02/10/2017 22:13	126937
Lead	NELAP	1.47		**17.2**	mg/Kg-dry	1	02/10/2017 22:13	126937
Silver	NELAP	0.49		**< 0.49**	mg/Kg-dry	1	02/10/2017 22:13	126937
SW-846 3050B, 6020A, METALS BY ICPMS								
Selenium	NELAP	0.98		**< 0.98**	mg/Kg-dry	10	02/16/2017 2:00	126938
SW-846 7471B								
Mercury	NELAP	0.013		**0.045**	mg/Kg-dry	1	02/08/2017 15:09	126892

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020462

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 17-Feb-17

Lab ID: 17020462-004 **Client Sample ID:** ISW-RES-REM-W5 (10)

Matrix: SOLID **Collection Date:** 02/06/2017 15:15

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**19.9**	%	1	02/10/2017 16:00	R229078
SW-846 9012A								
Cyanide, Amenable to Chlorination		0.58		**Interference**	mg/Kg-dry	2	02/10/2017 0:00	126979
SW-846 9012A (TOTAL)								
Cyanide	NELAP	0.29		**1.86**	mg/Kg-dry	1	02/10/2017 15:58	126977
SW-846 9045C								
pH (1:1)	NELAP	1.00		**7.99**		1	02/08/2017 22:01	R228964
SW-846 3050B, 6010B, METALS BY ICP								
Arsenic	NELAP	2.50		**7.39**	mg/Kg-dry	1	02/10/2017 22:16	126937
Barium	NELAP	0.25		**69.1**	mg/Kg-dry	1	02/10/2017 22:16	126937
Cadmium	NELAP	0.20		**0.39**	mg/Kg-dry	1	02/10/2017 22:16	126937
Chromium	NELAP	0.50		**13.0**	mg/Kg-dry	1	02/10/2017 22:16	126937
Lead	NELAP	1.50		**12.4**	mg/Kg-dry	1	02/10/2017 22:16	126937
Silver	NELAP	0.50		**< 0.50**	mg/Kg-dry	1	02/10/2017 22:16	126937
SW-846 3050B, 6020A, METALS BY ICPMS								
Selenium	NELAP	1.00		**< 1.00**	mg/Kg-dry	10	02/16/2017 2:08	126938
SW-846 7471B								
Mercury	NELAP	0.012		**0.015**	mg/Kg-dry	1	02/08/2017 15:20	126892

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020462

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 17-Feb-17

Lab ID: 17020462-005 **Client Sample ID:** ISW-RES-REM-W5 (3)

Matrix: SOLID **Collection Date:** 02/06/2017 17:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**23.0**	%	1	02/10/2017 16:01	R229078
SW-846 9012A								
Cyanide, Amenable to Chlorination		3.04		**9.35**	mg/Kg-dry	10	02/10/2017 0:00	126979
SW-846 9012A (TOTAL)								
Cyanide	NELAP	3.04	SR	**9.35**	mg/Kg-dry	10	02/15/2017 20:55	127181
RPD, MS and MSD recovery did not recover within control limits due to sample composition.Verified by re-prep and re-analysis.								
SW-846 9045C								
pH (1:1)	NELAP	1.00		**7.28**		1	02/08/2017 22:04	R228964
SW-846 3050B, 6010B, METALS BY ICP								
Arsenic	NELAP	2.40		**6.00**	mg/Kg-dry	1	02/10/2017 22:38	126937
Barium	NELAP	0.24		**97.0**	mg/Kg-dry	1	02/10/2017 22:38	126937
Cadmium	NELAP	0.19		**0.20**	mg/Kg-dry	1	02/10/2017 22:38	126937
Chromium	NELAP	0.48		**13.6**	mg/Kg-dry	1	02/10/2017 22:38	126937
Lead	NELAP	1.44		**11.1**	mg/Kg-dry	1	02/10/2017 22:38	126937
Silver	NELAP	0.48		**< 0.48**	mg/Kg-dry	1	02/10/2017 22:38	126937
SW-846 3050B, 6020A, METALS BY ICPMS								
Selenium	NELAP	0.96		**< 0.96**	mg/Kg-dry	10	02/16/2017 2:32	126938
SW-846 7471B								
Mercury	NELAP	0.013		**0.099**	mg/Kg-dry	1	02/08/2017 15:22	126892

Sample Summary

Client: PSC Industrial Outsourcing, LP
Work Order: 17020462
Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055
Report Date: 17-Feb-17

Lab Sample ID	Client Sample ID	Matrix	Fractions	Collection Date
17020462-001	ISW-RES-REM-W7 (10)	Solid	1	02/06/2017 11:15
17020462-002	ISW-RES-REM-W6 (10)	Solid	1	02/06/2017 11:30
17020462-003	ISW-RES-REM-W6 (3)	Solid	1	02/06/2017 13:45
17020462-004	ISW-RES-REM-W5 (10)	Solid	1	02/06/2017 15:15
17020462-005	ISW-RES-REM-W5 (3)	Solid	1	02/06/2017 17:00

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020462

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 17-Feb-17

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			Prep Date/Time	Analysis Date/Time
17020462-001A	ISW-RES-REM-W7 (10)	02/06/2017 11:15	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/10/2017 15:59
	SW-846 3050B, 6010B, Metals by ICP			02/09/2017 8:53	02/10/2017 22:05
	SW-846 3050B, 6020A, Metals by ICPMS			02/09/2017 8:54	02/16/2017 1:44
	SW-846 7471B			02/08/2017 12:00	02/08/2017 15:04
	SW-846 9012A			02/09/2017 20:30	02/10/2017 0:00
	SW-846 9012A (Total)			02/09/2017 17:00	02/10/2017 15:27
	SW-846 9045C				02/08/2017 21:49
17020462-002A	ISW-RES-REM-W6 (10)	02/06/2017 11:30	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/10/2017 15:59
	SW-846 3050B, 6010B, Metals by ICP			02/09/2017 8:53	02/10/2017 22:09
	SW-846 3050B, 6020A, Metals by ICPMS			02/09/2017 8:54	02/16/2017 1:52
	SW-846 7471B			02/08/2017 12:00	02/08/2017 15:06
	SW-846 9012A			02/09/2017 20:30	02/10/2017 0:00
	SW-846 9012A (Total)			02/09/2017 17:00	02/10/2017 15:32
	SW-846 9045C				02/08/2017 21:54
17020462-003A	ISW-RES-REM-W6 (3)	02/06/2017 13:45	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/10/2017 16:00
	SW-846 3050B, 6010B, Metals by ICP			02/09/2017 8:53	02/10/2017 22:13
	SW-846 3050B, 6020A, Metals by ICPMS			02/09/2017 8:54	02/16/2017 2:00
	SW-846 7471B			02/08/2017 12:00	02/08/2017 15:09
	SW-846 9012A			02/09/2017 20:30	02/10/2017 0:00
	SW-846 9012A (Total)			02/09/2017 17:00	02/10/2017 15:36
	SW-846 9045C				02/08/2017 21:59
17020462-004A	ISW-RES-REM-W5 (10)	02/06/2017 15:15	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/10/2017 16:00
	SW-846 3050B, 6010B, Metals by ICP			02/09/2017 8:53	02/10/2017 22:16
	SW-846 3050B, 6020A, Metals by ICPMS			02/09/2017 8:54	02/16/2017 2:08
	SW-846 7471B			02/08/2017 12:00	02/08/2017 15:20
	SW-846 9012A			02/09/2017 20:30	02/10/2017 0:00
	SW-846 9012A (Total)			02/09/2017 17:00	02/10/2017 15:58
	SW-846 9045C				02/08/2017 22:01
17020462-005A	ISW-RES-REM-W5 (3)	02/06/2017 17:00	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/10/2017 16:01
	SW-846 3050B, 6010B, Metals by ICP			02/09/2017 8:53	02/10/2017 22:38
	SW-846 3050B, 6020A, Metals by ICPMS			02/09/2017 8:54	02/16/2017 2:32
	SW-846 7471B			02/08/2017 12:00	02/08/2017 15:22

Client: PSC Industrial Outsourcing, LP
Work Order: 17020462
Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055
Report Date: 17-Feb-17

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
	SW-846 9012A			02/09/2017 20:30	02/10/2017 0:00
	SW-846 9012A (Total)			02/15/2017 14:10	02/15/2017 20:55
	SW-846 9045C				02/08/2017 22:04

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020462

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 17-Feb-17

EPA SW846 3550C, 5035A, ASTM D2974

Batch R229078 **SampType:** LCS Units **%**

SampID: LCS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	02/10/2017

Batch R229078 **SampType:** LCSQC Units **%**

SampID: LCSQC

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	02/10/2017

SW-846 9012A (TOTAL)

Batch 126977 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK 170209 TCN1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cyanide	0.25		**< 0.25**						02/10/2017

Batch 126977 **SampType:** LCS Units **mg/Kg**

SampID: LCS 170209 TCN1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cyanide	0.25		**1.30**	1.250	0	104.2	85	115	02/10/2017

Batch 127181 **SampType:** MS Units **mg/Kg-dry**

SampID: 17020462-005AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cyanide	3.09	S	**12.6**	1.547	9.353	209.5	75	125	02/15/2017

Batch 127181 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **15**

SampID: 17020462-005AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Cyanide	3.18	SR	**10.5**	1.592	9.353	74.8	12.59	17.72	02/15/2017

SW-846 9045C

Batch R228964 **SampType:** LCS Units

SampID: LCS-R228964

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
pH (1:1)	1.00		**6.98**	7.000	0	99.7	99.1	100.8	02/08/2017

Batch R228964 **SampType:** DUP Units RPD Limit **10**

SampID: 17020462-001ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)	1.00		**8.24**				8.120	1.47	02/08/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020462

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 17-Feb-17

SW-846 9045C

Batch R228964 **SampType:** DUP Units RPD Limit 10

SampID: 17020462-002ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)	1.00		**8.51**				8.460	0.59	02/08/2017

Batch R228964 **SampType:** DUP Units RPD Limit 10

SampID: 17020462-003ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)	1.00		**8.09**				8.100	0.12	02/08/2017

Batch R228964 **SampType:** DUP Units RPD Limit 10

SampID: 17020462-004ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)	1.00		**8.02**				7.990	0.37	02/08/2017

Batch R228964 **SampType:** DUP Units RPD Limit 10

SampID: 17020462-005ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)	1.00		**7.28**				7.280	0.00	02/08/2017

SW-846 3050B, 6010B, METALS BY ICP

Batch 126937 **SampType:** MBLK Units **mg/Kg-dry**

SampID: MBLK-126937

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	2.50		**< 2.50**	2.500	0	0	-100	100	02/10/2017
Barium	0.25		**< 0.25**	0.2500	0	0	-100	100	02/10/2017
Cadmium	0.20		**< 0.20**	0.2000	0	0	-100	100	02/10/2017
Chromium	0.50		**< 0.50**	0.5000	0	0	-100	100	02/10/2017
Lead	1.50		**< 1.50**	1.500	0	0	-100	100	02/10/2017
Silver	0.50		**< 0.50**	0.5000	0	0	-100	100	02/10/2017

Batch 126937 **SampType:** LCS Units **mg/Kg-dry**

SampID: LCS-126937

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	2.50		**47.2**	50.00	0	94.5	85	115	02/10/2017
Barium	0.25		**213**	200.0	0	106.4	85	115	02/10/2017
Cadmium	0.20		**5.08**	5.000	0	101.6	85	115	02/10/2017
Chromium	0.50		**20.6**	20.00	0	102.8	85	115	02/10/2017
Lead	1.50		**52.5**	50.00	0	105.1	85	115	02/10/2017
Silver	0.50		**5.06**	5.000	0	101.2	85	115	02/10/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020462

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 17-Feb-17

SW-846 3050B, 6010B, METALS BY ICP

Batch 126937 **SampType:** MS Units **mg/Kg-dry**

SampID: 17020462-004AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	2.45		**44.7**	49.02	7.390	76.1	75	125	02/10/2017
Barium	0.25		**233**	196.1	69.13	83.8	75	125	02/10/2017
Cadmium	0.20		**4.37**	4.902	0.3900	81.2	75	125	02/10/2017
Chromium	0.49		**29.0**	19.61	13.04	81.5	75	125	02/10/2017
Lead	1.47		**52.5**	49.02	12.42	81.7	75	125	02/10/2017
Silver	0.49		**4.06**	4.902	0	82.8	75	125	02/10/2017

Batch 126937 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **20**

SampID: 17020462-004AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Arsenic	2.45		**53.2**	49.02	7.390	93.4	44.72	17.30	02/10/2017
Barium	0.25		**272**	196.1	69.13	103.6	233.4	15.39	02/10/2017
Cadmium	0.20		**5.13**	4.902	0.3900	96.6	4.373	15.89	02/10/2017
Chromium	0.49		**33.5**	19.61	13.04	104.5	29.03	14.42	02/10/2017
Lead	1.47		**60.8**	49.02	12.42	98.8	52.45	14.80	02/10/2017
Silver	0.49		**4.83**	4.902	0	98.6	4.059	17.42	02/10/2017

SW-846 3050B, 6020A, METALS BY ICPMS

Batch 126938 **SampType:** MBLK Units **mg/Kg-dry**

SampID: MBLK-126938

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Selenium	1.00		**< 1.00**	1.000	0	0	-100	100	02/16/2017

Batch 126938 **SampType:** LCS Units **mg/Kg-dry**

SampID: LCS-126938

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Selenium	1.00		**50.5**	50.00	0	101.1	80	120	02/16/2017

Batch 126938 **SampType:** MS Units **mg/Kg-dry**

SampID: 17020462-004AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Selenium	0.98		**49.5**	49.02	0	101.0	75	125	02/16/2017

Batch 126938 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **20**

SampID: 17020462-004AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Selenium	0.98		**48.8**	49.02	0	99.5	49.51	1.50	02/16/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020462

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 17-Feb-17

SW-846 7471B

Batch 126892 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK-126892

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.010		**< 0.010**	0.01000	0	0	-100	100	02/08/2017

Batch 126892 **SampType:** LCS Units **mg/Kg**

SampID: LCS-126892

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.010		**0.270**	0.2500	0	107.9	85	115	02/08/2017

Batch 126892 **SampType:** MS Units **mg/Kg-dry**

SampID: 17020462-003AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.013		**0.434**	0.3218	0.04538	120.7	75	125	02/08/2017

Batch 126892 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **15**

SampID: 17020462-003AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Mercury	0.013		**0.439**	0.3218	0.04538	122.2	0.4337	1.14	02/08/2017

Receiving Check List

http://www.teklabinc.com/

Client: PSC Industrial Outsourcing, LP
Work Order: 17020462
Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055
Report Date: 17-Feb-17

Carrier: Employee
Received By: AMD

Completed by: Amber M. Dilallo
On: 08-Feb-17

Reviewed by: Elizabeth A. Hurley
On: 08-Feb-17

Pages to follow: Chain of custody 1 Extra pages included 0

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C 1.82
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice ☐
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☐	No ☑		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Reported field parameters measured:	Field ☐	Lab ☐	NA ☑	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐		

When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.

Water – at least one vial per sample has zero headspace?	Yes ☐	No ☐	No VOA vials ☑
Water - TOX containers have zero headspace?	Yes ☐	No ☐	No TOX containers ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	NA ☑
NPDES/CWA TCN interferences checked/treated in the field?	Yes ☐	No ☐	NA ☑

Any No responses must be detailed below or on the COC.

ISW-RES-REM-W6 (3) is labeled as ISW-RES-REM-W7 (3). Per Michael Crutcher, report the sample ID as listed on the chain of custody. AMD 2/8/17

Chain of Custody Record

210 West Sand Bank Road | Columbia, IL 62236 | P (618) 281-7173 | F (618) 281-7020

COC Serial No. ICMP-004

17020462

Project Name: Champaign Residual IRM Project Mgr.: Crutcher

Project Number: 624-1610-0001 / J0055

Sampler(s): M. Flora

Laboratory: Name: Teklab, Inc. Location: Collinsville, IL

Temperature: 1.82 ice

Analyses by Method Name and Number

Sample Number and (depth)	Date	Time	Matrix: Soil	Water	Air	Wipes	Other	Total Number of Containers	Total CYANIDE (9012)	Amenable CYANIDE (9012)	RCRA Metals	pH (9045)						Comments	Lab ID
1020462 001 ISW-RES-REM-W7 (10)	2/6/17	11:15	X					1	X	X	X	X						STD TAT	17020462-001
002 ISW-RES-REM-W6 (10)	2/6/17	11:30	X					1	X	X	X	X						STD TAT	002
003 ISW-RES-REM-W6 (3)	2/6/17	13:45	X					1	X	X	X	X						STD TAT	003
004 ISW-RES-REM-W5 (10)	2/6/17	15:15	X					1	X	X	X	X						STD TAT	004
005 ISW-RES-REM-W5 (3)	2/6/17	17:00	X					1	X	X	X	X						STD TAT	005

Samples Iced: [X] Yes No [ ]

Preservatives

- [ ] Volatile Organics (Soil - 5035)..... Sodium Bisulfate / Methanol
- [ ] Volatile Organics (Aqueous)..... Hydrochloric Acid (HCl)
- [ ] TPH (8015) ..... HCl and/or Sulfuric Acid
- [ ] Metals ..... Nitric Acid (HNO_3)
- [ ] Cyanide ..... Sodium Hydroxide (NaOH)
- [ ] Other (Specify) .....

Lab Directives:

Requested TAT: [ ] 24-Hours [ ] 2-3 Days [X] STD [ ] Other

Fax and Mail Results to: mike.crutcher@pscnow.com / mike.flora@pscnow.com

Send Invoice to: **Michael Crutcher (PSC)**

QC Deliverable requested: [ ] Results + QC [X] EDD [ ] Other

Special Guidelines:

Reporting Limits: IL IAC 740/742 Tier 1

* Special: labeled W7(3) OM 2/8/17

Shipping:

Carrier / Airbill No.

Relinquished by:

Signature	Date	Time
Michael Flora	2/7/17	17:00
Kathy Butels	2/8/17	8:02

Received by:

Signature	Date	Time
Kathy Butels	2/7/17	17:00
Omar Villalba	2/8/17	802

Distribution: WHITE to Lab; YELLOW to PM; PINK to QA/QC; GREEN to Sampler.

* Shaded Areas to be Completed by Lab

February 15, 2017

Michael Crutcher
PSC Industrial Outsourcing, LP
210 West Sand Bank Road
Columbia, IL 62236-0230
TEL: (618) 281-7173
FAX: (618) 281-5120

RE: Champaign Soil Residual IRM 624-1610-001 / J0055 **WorkOrder:** 17020463

Dear Michael Crutcher:

TEKLAB, INC received 5 samples on 2/8/2017 8:02:00 AM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Michael L. Austin
Project Manager
(618)344-1004 ex 16
MAustin@teklabinc.com

Client: PSC Industrial Outsourcing, LP
Work Order: 17020463
Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055
Report Date: 15-Feb-17

This reporting package includes the following:

Cover Letter	1
Report Contents	2
Definitions	3
Case Narrative	4
Laboratory Results	5
Sample Summary	25
Dates Report	26
Quality Control Results	27
Receiving Check List	66
Chain of Custody	Appended

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

Abbr Definition

CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilutions factors.
DNI	Did not ignite
DUP	Laboratory duplicate is an aliquot of a sample taken from the same container under laboratory conditions for independent processing and analysis independently of the original aliquot.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample, spiked with verified known amounts of analytes, is analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system. The acceptable recovery range is in the QC Package (provided upon request).
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MBLK	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	Method detection limit means the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero.
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions. The acceptable recovery range is listed in the QC Package (provided upon request).
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TIC	Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
TNTC	Too numerous to count (> 200 CFU)

Qualifiers

# -	Unknown hydrocarbon
B -	Analyte detected in associated Method Blank
E -	Value above quantitation range
H -	Holding times exceeded
I -	Associated internal standard was outside method criteria
M -	Manual Integration used to determine area response
ND -	Not Detected at the Reporting Limit
R -	RPD outside accepted recovery limits
S -	Spike Recovery outside recovery limits
T -	TIC(Tentatively identified compound)
X -	Value exceeds Maximum Contaminant Level	

Case Narrative

http://www.teklabinc.com/

Client: PSC Industrial Outsourcing, LP
Work Order: 17020463
Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055
Report Date: 15-Feb-17

Cooler Receipt Temp: 1.82 °C

Locations and Accreditations

	Collinsville	Springfield	Kansas City	Collinsville Air
Address	5445 Horseshoe Lake Road	3920 Pintail Dr	8421 Nieman Road	5445 Horseshoe Lake Road
	Collinsville, IL 62234-7425	Springfield, IL 62711-9415	Lenexa, KS 66214	Collinsville, IL 62234-7425
Phone	(618) 344-1004	(217) 698-1004	(913) 541-1998	(618) 344-1004
Fax	(618) 344-1005	(217) 698-1005	(913) 541-1998	(618) 344-1005
Email	jhriley@teklabinc.com	KKlostermann@teklabinc.com	Ryoungstrom@teklabinc.com	EHurley@teklabinc.com

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2018	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2017	Collinsville
Louisiana	LDEQ	166493	NELAP	6/30/2017	Collinsville
Louisiana	LDEQ	166578	NELAP	6/30/2017	Collinsville
Texas	TCEQ	T104704515-12-1	NELAP	7/31/2017	Collinsville
Arkansas	ADEQ	88-0966		3/14/2017	Collinsville
Illinois	IDPH	17584		5/31/2017	Collinsville
Kentucky	KDEP	98006		12/31/2017	Collinsville
Kentucky	UST	0073		1/31/2018	Collinsville
Missouri	MDNR	00930		5/31/2017	Collinsville
Missouri	MDNR	930		1/31/2018	Collinsville
Oklahoma	ODEQ	9978		8/31/2017	Collinsville

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

Lab ID: 17020463-001 **Client Sample ID:** SW-RES-REM-W7 (10)

Matrix: SOLID **Collection Date:** 02/06/2017 11:15

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**21.4**	%	1	02/10/2017 16:01	R229078
SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Acenaphthene	NELAP	0.026		**0.456**	mg/Kg-dry	1	02/13/2017 14:24	126991
Acenaphthylene	NELAP	0.026	S	**2.77**	mg/Kg-dry	1	02/13/2017 14:24	126991
Anthracene	NELAP	0.026	S	**0.600**	mg/Kg-dry	1	02/13/2017 14:24	126991
Benzo(a)anthracene	NELAP	0.076	S	**1.50**	mg/Kg-dry	1	02/13/2017 14:24	126991
Benzo(a)pyrene	NELAP	0.026	S	**1.78**	mg/Kg-dry	1	02/13/2017 14:24	126991
Benzo(b)fluoranthene	NELAP	0.026	S	**1.17**	mg/Kg-dry	1	02/13/2017 14:24	126991
Benzo(g,h,i)perylene	NELAP	0.026		**0.439**	mg/Kg-dry	1	02/13/2017 14:24	126991
Benzo(k)fluoranthene	NELAP	0.026		**0.369**	mg/Kg-dry	1	02/13/2017 14:24	126991
Chrysene	NELAP	0.026	S	**1.17**	mg/Kg-dry	1	02/13/2017 14:24	126991
Dibenzo(a,h)anthracene	NELAP	0.026		**0.112**	mg/Kg-dry	1	02/13/2017 14:24	126991
Fluoranthene	NELAP	0.026	S	**2.14**	mg/Kg-dry	1	02/13/2017 14:24	126991
Fluorene	NELAP	0.026	S	**1.92**	mg/Kg-dry	1	02/13/2017 14:24	126991
Indeno(1,2,3-cd)pyrene	NELAP	0.026		**0.361**	mg/Kg-dry	1	02/13/2017 14:24	126991
Naphthalene	NELAP	0.026		**0.110**	mg/Kg-dry	1	02/13/2017 14:24	126991
Phenanthrene	NELAP	0.026		**0.094**	mg/Kg-dry	1	02/13/2017 14:24	126991
Pyrene	NELAP	0.026	S	**3.44**	mg/Kg-dry	1	02/13/2017 14:24	126991
Surr: 2-Fluorobiphenyl		8.85-90.5		**72.7**	%REC	1	02/13/2017 14:24	126991
Surr: Nitrobenzene-d5		5-102		**91.4**	%REC	1	02/13/2017 14:24	126991
Surr: p-Terphenyl-d14		18.4-103		**76.3**	%REC	1	02/13/2017 14:24	126991
MS and MSD did not recover within control limits due to sample composition.								
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2,4-Trichlorobenzene	NELAP	3.80		**ND**	mg/Kg-dry	1	02/13/2017 0:04	126968
1,2-Dichlorobenzene	NELAP	3.80		**ND**	mg/Kg-dry	1	02/13/2017 0:04	126968
1,3-Dichlorobenzene	NELAP	3.80		**ND**	mg/Kg-dry	1	02/13/2017 0:04	126968
1,4-Dichlorobenzene	NELAP	3.80		**ND**	mg/Kg-dry	1	02/13/2017 0:04	126968
2,4,5-Trichlorophenol	NELAP	2.66		**ND**	mg/Kg-dry	1	02/13/2017 0:04	126968
2,4,6-Trichlorophenol	NELAP	2.66		**ND**	mg/Kg-dry	1	02/13/2017 0:04	126968
2,4-Dichlorophenol	NELAP	3.80		**ND**	mg/Kg-dry	1	02/13/2017 0:04	126968
2,4-Dimethylphenol	NELAP	3.80		**ND**	mg/Kg-dry	1	02/13/2017 0:04	126968
2,4-Dinitrophenol	NELAP	7.61		**ND**	mg/Kg-dry	1	02/13/2017 0:04	126968
2,4-Dinitrotoluene	NELAP	2.66		**ND**	mg/Kg-dry	1	02/13/2017 0:04	126968
2,6-Dinitrotoluene	NELAP	2.66		**ND**	mg/Kg-dry	1	02/13/2017 0:04	126968
2-Chloronaphthalene	NELAP	2.66		**ND**	mg/Kg-dry	1	02/13/2017 0:04	126968
2-Chlorophenol	NELAP	3.80		**ND**	mg/Kg-dry	1	02/13/2017 0:04	126968
2-Methoxy-4-methylphenol		4.94		**ND**	mg/Kg-dry	1	02/13/2017 0:04	126968
2-Methylnaphthalene	NELAP	2.66		**ND**	mg/Kg-dry	1	02/13/2017 0:04	126968
2-Nitroaniline	NELAP	7.61		**ND**	mg/Kg-dry	1	02/13/2017 0:04	126968
2-Nitrophenol	NELAP	2.66		**ND**	mg/Kg-dry	1	02/13/2017 0:04	126968
3,3´-Dichlorobenzidine	NELAP	2.66		**ND**	mg/Kg-dry	1	02/13/2017 0:04	126968
3-Nitroaniline	NELAP	7.61		**ND**	mg/Kg-dry	1	02/13/2017 0:04	126968
4,6-Dinitro-2-methylphenol	NELAP	7.61		**ND**	mg/Kg-dry	1	02/13/2017 0:04	126968
4-Bromophenyl phenyl ether	NELAP	2.66		**ND**	mg/Kg-dry	1	02/13/2017 0:04	126968
4-Chloro-3-methylphenol	NELAP	3.80		**ND**	mg/Kg-dry	1	02/13/2017 0:04	126968
4-Chloroaniline	NELAP	3.80		**ND**	mg/Kg-dry	1	02/13/2017 0:04	126968
4-Chlorophenyl phenyl ether	NELAP	2.66		**ND**	mg/Kg-dry	1	02/13/2017 0:04	126968

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

Lab ID: 17020463-001 **Client Sample ID:** SW-RES-REM-W7 (10)

Matrix: SOLID **Collection Date:** 02/06/2017 11:15

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
4-Nitroaniline	NELAP	3.80		ND	mg/Kg-dry	1	02/13/2017 0:04	126968
4-Nitrophenol	NELAP	2.66		ND	mg/Kg-dry	1	02/13/2017 0:04	126968
Aniline	NELAP	3.80		ND	mg/Kg-dry	1	02/13/2017 0:04	126968
Azobenzene		2.66		ND	mg/Kg-dry	1	02/13/2017 0:04	126968
Benzoic acid	NELAP	11.4		ND	mg/Kg-dry	1	02/13/2017 0:04	126968
Benzyl alcohol	NELAP	3.80		ND	mg/Kg-dry	1	02/13/2017 0:04	126968
Bis(2-chloroethoxy)methane	NELAP	2.66		ND	mg/Kg-dry	1	02/13/2017 0:04	126968
Bis(2-chloroethyl)ether	NELAP	3.80		ND	mg/Kg-dry	1	02/13/2017 0:04	126968
Bis(2-chloroisopropyl)ether	NELAP	2.66		ND	mg/Kg-dry	1	02/13/2017 0:04	126968
Bis(2-ethylhexyl)phthalate	NELAP	2.66		ND	mg/Kg-dry	1	02/13/2017 0:04	126968
Butyl benzyl phthalate	NELAP	2.66		ND	mg/Kg-dry	1	02/13/2017 0:04	126968
Carbazole	NELAP	3.80		ND	mg/Kg-dry	1	02/13/2017 0:04	126968
Dibenzofuran	NELAP	2.66		ND	mg/Kg-dry	1	02/13/2017 0:04	126968
Diethyl phthalate	NELAP	3.80		ND	mg/Kg-dry	1	02/13/2017 0:04	126968
Dimethyl phthalate	NELAP	2.66		ND	mg/Kg-dry	1	02/13/2017 0:04	126968
Di-n-butyl phthalate	NELAP	2.66		ND	mg/Kg-dry	1	02/13/2017 0:04	126968
Di-n-octyl phthalate	NELAP	2.66		ND	mg/Kg-dry	1	02/13/2017 0:04	126968
Hexachlorobenzene	NELAP	2.66		ND	mg/Kg-dry	1	02/13/2017 0:04	126968
Hexachlorobutadiene	NELAP	3.80		ND	mg/Kg-dry	1	02/13/2017 0:04	126968
Hexachlorocyclopentadiene	NELAP	2.66		ND	mg/Kg-dry	1	02/13/2017 0:04	126968
Hexachloroethane	NELAP	3.80		ND	mg/Kg-dry	1	02/13/2017 0:04	126968
Isophorone	NELAP	2.66		ND	mg/Kg-dry	1	02/13/2017 0:04	126968
m,p-Cresol	NELAP	3.80		ND	mg/Kg-dry	1	02/13/2017 0:04	126968
Nitrobenzene	NELAP	3.80		ND	mg/Kg-dry	1	02/13/2017 0:04	126968
N-Nitrosodimethylamine	NELAP	3.80		ND	mg/Kg-dry	1	02/13/2017 0:04	126968
N-Nitroso-di-n-propylamine	NELAP	3.80		ND	mg/Kg-dry	1	02/13/2017 0:04	126968
N-Nitrosodiphenylamine	NELAP	3.80		ND	mg/Kg-dry	1	02/13/2017 0:04	126968
o-Cresol	NELAP	3.80		ND	mg/Kg-dry	1	02/13/2017 0:04	126968
Pentachlorophenol	NELAP	15.2		ND	mg/Kg-dry	1	02/13/2017 0:04	126968
Phenol	NELAP	2.66		ND	mg/Kg-dry	1	02/13/2017 0:04	126968
Pyridine	NELAP	3.80		ND	mg/Kg-dry	1	02/13/2017 0:04	126968
1,2-Diphenylhydrazine		6.39		ND	mg/Kg-dry	1	02/13/2017 0:04	126968
Surr: 2,4,6-Tribromophenol		33-115		91.1	%REC	1	02/13/2017 0:04	126968
Surr: 2-Fluorobiphenyl		36.5-97.7		80.2	%REC	1	02/13/2017 0:04	126968
Surr: 2-Fluorophenol		39.4-92.8		65.3	%REC	1	02/13/2017 0:04	126968
Surr: Nitrobenzene-d5		34.7-90.1		81.2	%REC	1	02/13/2017 0:04	126968
Surr: Phenol-d5		42.8-106		78.7	%REC	1	02/13/2017 0:04	126968
Surr: p-Terphenyl-d14		43.7-124		90.1	%REC	1	02/13/2017 0:04	126968
Elevated reporting limit due to sample composition.								
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,1,2-Tetrachloroethane	NELAP	449		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
1,1,1-Trichloroethane	NELAP	449		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
1,1,2,2-Tetrachloroethane	NELAP	449		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
1,1,2-Trichloro-1,2,2-trifluoroethane		449		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
1,1,2-Trichloroethane	NELAP	449		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
1,1-Dichloro-2-propanone		4490		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
1,1-Dichloroethane	NELAP	449		ND	µg/Kg-dry	50	02/08/2017 18:58	126894

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

Lab ID: 17020463-001 **Client Sample ID:** SW-RES-REM-W7 (10)

Matrix: SOLID **Collection Date:** 02/06/2017 11:15

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1-Dichloroethene	NELAP	449		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
1,1-Dichloropropene	NELAP	449		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
1,2,3-Trichlorobenzene	NELAP	449		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
1,2,3-Trichloropropane	NELAP	898		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
1,2,3-Trimethylbenzene		449		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
1,2,4-Trichlorobenzene	NELAP	449		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
1,2,4-Trimethylbenzene	NELAP	449		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
1,2-Dibromo-3-chloropropane	NELAP	449		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
1,2-Dibromoethane	NELAP	449		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
1,2-Dichlorobenzene	NELAP	449		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
1,2-Dichloroethane	NELAP	449		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
1,2-Dichloropropane	NELAP	449		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
1,3,5-Trimethylbenzene	NELAP	449		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
1,3-Dichlorobenzene	NELAP	449		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
1,3-Dichloropropane	NELAP	449		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
1,4-Dichlorobenzene	NELAP	449		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
1-Chlorobutane	NELAP	449		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
2,2-Dichloropropane	NELAP	449		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
2-Butanone	NELAP	18000		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
2-Chlorotoluene	NELAP	449		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
2-Hexanone	NELAP	4490		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
2-Nitropropane	NELAP	4490		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
4-Chlorotoluene	NELAP	449		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
4-Methyl-2-pentanone	NELAP	4490		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
Acetone	NELAP	4490		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
Acrolein	NELAP	8980		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
Acrylonitrile	NELAP	898		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
Allyl chloride	NELAP	449		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
Benzene	NELAP	89.8		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
Bromobenzene	NELAP	449		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
Bromochloromethane	NELAP	449		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
Bromodichloromethane	NELAP	449		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
Bromoform	NELAP	449		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
Bromomethane	NELAP	898		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
Carbon disulfide	NELAP	449		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
Carbon tetrachloride	NELAP	449		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
Chlorobenzene	NELAP	449		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
Chloroethane	NELAP	898		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
Chloroform	NELAP	449		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
Chloromethane	NELAP	898		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
cis-1,2-Dichloroethene	NELAP	449		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
cis-1,3-Dichloropropene	NELAP	359		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
Cyclohexanone		8980		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
Dibromochloromethane	NELAP	449		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
Dibromomethane	NELAP	449		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
Dichlorodifluoromethane	NELAP	898		ND	µg/Kg-dry	50	02/08/2017 18:58	126894
Ethyl ether	NELAP	449		ND	µg/Kg-dry	50	02/08/2017 18:58	126894

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

Lab ID: 17020463-001 **Client Sample ID:** SW-RES-REM-W7 (10)

Matrix: SOLID **Collection Date:** 02/06/2017 11:15

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Ethyl methacrylate	NELAP	449		**ND**	µg/Kg-dry	50	02/08/2017 18:58	126894
Ethylbenzene	NELAP	449		**ND**	µg/Kg-dry	50	02/08/2017 18:58	126894
Hexachlorobutadiene	NELAP	449		**ND**	µg/Kg-dry	50	02/08/2017 18:58	126894
Hexachloroethane	NELAP	449		**ND**	µg/Kg-dry	50	02/08/2017 18:58	126894
Iodomethane	NELAP	898		**ND**	µg/Kg-dry	50	02/08/2017 18:58	126894
Isopropylbenzene	NELAP	449		**ND**	µg/Kg-dry	50	02/08/2017 18:58	126894
m,p-Xylenes	NELAP	449		**ND**	µg/Kg-dry	50	02/08/2017 18:58	126894
Methacrylonitrile	NELAP	4490		**ND**	µg/Kg-dry	50	02/08/2017 18:58	126894
Methyl Methacrylate	NELAP	449		**ND**	µg/Kg-dry	50	02/08/2017 18:58	126894
Methyl tert-butyl ether	NELAP	180		**ND**	µg/Kg-dry	50	02/08/2017 18:58	126894
Methylacrylate	NELAP	898		**ND**	µg/Kg-dry	50	02/08/2017 18:58	126894
Methylene chloride	NELAP	449		**ND**	µg/Kg-dry	50	02/08/2017 18:58	126894
Naphthalene	NELAP	898		**1270**	µg/Kg-dry	50	02/08/2017 18:58	126894
n-Butylbenzene	NELAP	449		**ND**	µg/Kg-dry	50	02/08/2017 18:58	126894
n-Heptane		4490		**ND**	µg/Kg-dry	50	02/08/2017 18:58	126894
n-Hexane		1800		**ND**	µg/Kg-dry	50	02/08/2017 18:58	126894
Nitrobenzene	NELAP	8980		**ND**	µg/Kg-dry	50	02/08/2017 18:58	126894
n-Propylbenzene	NELAP	449		**ND**	µg/Kg-dry	50	02/08/2017 18:58	126894
o-Xylene	NELAP	449		**ND**	µg/Kg-dry	50	02/08/2017 18:58	126894
Pentachloroethane	NELAP	449		**ND**	µg/Kg-dry	50	02/08/2017 18:58	126894
p-Isopropyltoluene	NELAP	449		**ND**	µg/Kg-dry	50	02/08/2017 18:58	126894
Propionitrile	NELAP	4490		**ND**	µg/Kg-dry	50	02/08/2017 18:58	126894
sec-Butylbenzene	NELAP	449		**ND**	µg/Kg-dry	50	02/08/2017 18:58	126894
Styrene	NELAP	449		**ND**	µg/Kg-dry	50	02/08/2017 18:58	126894
tert-Butylbenzene	NELAP	449		**ND**	µg/Kg-dry	50	02/08/2017 18:58	126894
Tetrachloroethene	NELAP	449		**ND**	µg/Kg-dry	50	02/08/2017 18:58	126894
Tetrahydrofuran	NELAP	4490		**ND**	µg/Kg-dry	50	02/08/2017 18:58	126894
Toluene	NELAP	449		**ND**	µg/Kg-dry	50	02/08/2017 18:58	126894
trans-1,2-Dichloroethene	NELAP	449		**ND**	µg/Kg-dry	50	02/08/2017 18:58	126894
trans-1,3-Dichloropropene	NELAP	359		**ND**	µg/Kg-dry	50	02/08/2017 18:58	126894
Trichloroethene	NELAP	449		**ND**	µg/Kg-dry	50	02/08/2017 18:58	126894
Trichlorofluoromethane	NELAP	449		**ND**	µg/Kg-dry	50	02/08/2017 18:58	126894
Vinyl acetate	NELAP	4490		**ND**	µg/Kg-dry	50	02/08/2017 18:58	126894
Vinyl chloride	NELAP	180		**ND**	µg/Kg-dry	50	02/08/2017 18:58	126894
Surr: 1,2-Dichloroethane-d4		72.2-131		**107.5**	%REC	50	02/08/2017 18:58	126894
Surr: 4-Bromofluorobenzene		82.1-116		**103.1**	%REC	50	02/08/2017 18:58	126894
Surr: Dibromofluoromethane		77.7-120		**97.9**	%REC	50	02/08/2017 18:58	126894
Surr: Toluene-d8		86-116		**97.5**	%REC	50	02/08/2017 18:58	126894

LCS and LCSD have analytes that recovered outside upper QC limits. The sample results are below reporting limit. Data is reportable per 2009 TNI Standard (Volume1, Module 4, section 1.7.4.2).

Elevated reporting limit due to high levels of target and/or non-target analytes.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

Lab ID: 17020463-002 **Client Sample ID:** SW-RES-REM-W6 (10)

Matrix: SOLID **Collection Date:** 02/06/2017 11:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**15.8**	%	1	02/10/2017 16:02	R229078
SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Acenaphthene	NELAP	1.18		**56.7**	mg/Kg-dry	10	02/13/2017 16:02	126991
Acenaphthylene	NELAP	1.18		**18.3**	mg/Kg-dry	10	02/13/2017 16:02	126991
Anthracene	NELAP	1.18		**46.7**	mg/Kg-dry	10	02/13/2017 16:02	126991
Benzo(a)anthracene	NELAP	3.46		**19.9**	mg/Kg-dry	10	02/13/2017 16:02	126991
Benzo(a)pyrene	NELAP	1.18		**24.5**	mg/Kg-dry	10	02/13/2017 16:02	126991
Benzo(b)fluoranthene	NELAP	1.18		**22.8**	mg/Kg-dry	10	02/13/2017 16:02	126991
Benzo(g,h,i)perylene	NELAP	1.18		**7.38**	mg/Kg-dry	10	02/13/2017 16:02	126991
Benzo(k)fluoranthene	NELAP	1.18		**7.15**	mg/Kg-dry	10	02/13/2017 16:02	126991
Chrysene	NELAP	1.18		**22.3**	mg/Kg-dry	10	02/13/2017 16:02	126991
Dibenzo(a,h)anthracene	NELAP	1.18		**1.75**	mg/Kg-dry	10	02/13/2017 16:02	126991
Fluoranthene	NELAP	1.18		**56.2**	mg/Kg-dry	10	02/13/2017 16:02	126991
Fluorene	NELAP	1.18		**64.5**	mg/Kg-dry	10	02/13/2017 16:02	126991
Indeno(1,2,3-cd)pyrene	NELAP	1.18		**6.06**	mg/Kg-dry	10	02/13/2017 16:02	126991
Naphthalene	NELAP	2.94		**618**	mg/Kg-dry	25	02/14/2017 9:42	126991
Phenanthrene	NELAP	1.18		**142**	mg/Kg-dry	10	02/13/2017 16:02	126991
Pyrene	NELAP	1.18		**71.3**	mg/Kg-dry	10	02/13/2017 16:02	126991
Surr: 2-Fluorobiphenyl		8.85-90.5		**64.6**	%REC	10	02/13/2017 16:02	126991
Surr: Nitrobenzene-d5		5-102		**68.9**	%REC	10	02/13/2017 16:02	126991
Surr: p-Terphenyl-d14		18.4-103		**64.5**	%REC	10	02/13/2017 16:02	126991
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2,4-Trichlorobenzene	NELAP	17.3		**ND**	mg/Kg-dry	1	02/12/2017 23:35	126968
1,2-Dichlorobenzene	NELAP	17.3		**ND**	mg/Kg-dry	1	02/12/2017 23:35	126968
1,3-Dichlorobenzene	NELAP	17.3		**ND**	mg/Kg-dry	1	02/12/2017 23:35	126968
1,4-Dichlorobenzene	NELAP	17.3		**ND**	mg/Kg-dry	1	02/12/2017 23:35	126968
2,4,5-Trichlorophenol	NELAP	12.1		**ND**	mg/Kg-dry	1	02/12/2017 23:35	126968
2,4,6-Trichlorophenol	NELAP	12.1		**ND**	mg/Kg-dry	1	02/12/2017 23:35	126968
2,4-Dichlorophenol	NELAP	17.3		**ND**	mg/Kg-dry	1	02/12/2017 23:35	126968
2,4-Dimethylphenol	NELAP	17.3		**ND**	mg/Kg-dry	1	02/12/2017 23:35	126968
2,4-Dinitrophenol	NELAP	34.6		**ND**	mg/Kg-dry	1	02/12/2017 23:35	126968
2,4-Dinitrotoluene	NELAP	12.1		**ND**	mg/Kg-dry	1	02/12/2017 23:35	126968
2,6-Dinitrotoluene	NELAP	12.1		**ND**	mg/Kg-dry	1	02/12/2017 23:35	126968
2-Chloronaphthalene	NELAP	12.1		**ND**	mg/Kg-dry	1	02/12/2017 23:35	126968
2-Chlorophenol	NELAP	17.3		**ND**	mg/Kg-dry	1	02/12/2017 23:35	126968
2-Methoxy-4-methylphenol		22.5		**ND**	mg/Kg-dry	1	02/12/2017 23:35	126968
2-Methylnaphthalene	NELAP	121		**331**	mg/Kg-dry	10	02/13/2017 14:23	126968
2-Nitroaniline	NELAP	34.6		**ND**	mg/Kg-dry	1	02/12/2017 23:35	126968
2-Nitrophenol	NELAP	12.1		**ND**	mg/Kg-dry	1	02/12/2017 23:35	126968
3,3´-Dichlorobenzidine	NELAP	12.1		**ND**	mg/Kg-dry	1	02/12/2017 23:35	126968
3-Nitroaniline	NELAP	34.6		**ND**	mg/Kg-dry	1	02/12/2017 23:35	126968
4,6-Dinitro-2-methylphenol	NELAP	34.6		**ND**	mg/Kg-dry	1	02/12/2017 23:35	126968
4-Bromophenyl phenyl ether	NELAP	12.1		**ND**	mg/Kg-dry	1	02/12/2017 23:35	126968
4-Chloro-3-methylphenol	NELAP	17.3		**ND**	mg/Kg-dry	1	02/12/2017 23:35	126968
4-Chloroaniline	NELAP	17.3		**ND**	mg/Kg-dry	1	02/12/2017 23:35	126968
4-Chlorophenyl phenyl ether	NELAP	12.1		**ND**	mg/Kg-dry	1	02/12/2017 23:35	126968
4-Nitroaniline	NELAP	17.3		**ND**	mg/Kg-dry	1	02/12/2017 23:35	126968

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

Lab ID: 17020463-002 **Client Sample ID:** SW-RES-REM-W6 (10)

Matrix: SOLID **Collection Date:** 02/06/2017 11:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
4-Nitrophenol	NELAP	12.1		ND	mg/Kg-dry	1	02/12/2017 23:35	126968
Aniline	NELAP	17.3		ND	mg/Kg-dry	1	02/12/2017 23:35	126968
Azobenzene		12.1		ND	mg/Kg-dry	1	02/12/2017 23:35	126968
Benzoic acid	NELAP	51.9		ND	mg/Kg-dry	1	02/12/2017 23:35	126968
Benzyl alcohol	NELAP	17.3		ND	mg/Kg-dry	1	02/12/2017 23:35	126968
Bis(2-chloroethoxy)methane	NELAP	12.1		ND	mg/Kg-dry	1	02/12/2017 23:35	126968
Bis(2-chloroethyl)ether	NELAP	17.3		ND	mg/Kg-dry	1	02/12/2017 23:35	126968
Bis(2-chloroisopropyl)ether	NELAP	12.1		ND	mg/Kg-dry	1	02/12/2017 23:35	126968
Bis(2-ethylhexyl)phthalate	NELAP	12.1		24.9	mg/Kg-dry	1	02/12/2017 23:35	126968
Butyl benzyl phthalate	NELAP	12.1		ND	mg/Kg-dry	1	02/12/2017 23:35	126968
Carbazole	NELAP	17.3		ND	mg/Kg-dry	1	02/12/2017 23:35	126968
Dibenzofuran	NELAP	12.1		22.2	mg/Kg-dry	1	02/12/2017 23:35	126968
Diethyl phthalate	NELAP	17.3		ND	mg/Kg-dry	1	02/12/2017 23:35	126968
Dimethyl phthalate	NELAP	12.1		ND	mg/Kg-dry	1	02/12/2017 23:35	126968
Di-n-butyl phthalate	NELAP	12.1		ND	mg/Kg-dry	1	02/12/2017 23:35	126968
Di-n-octyl phthalate	NELAP	12.1		ND	mg/Kg-dry	1	02/12/2017 23:35	126968
Hexachlorobenzene	NELAP	12.1		ND	mg/Kg-dry	1	02/12/2017 23:35	126968
Hexachlorobutadiene	NELAP	17.3		ND	mg/Kg-dry	1	02/12/2017 23:35	126968
Hexachlorocyclopentadiene	NELAP	12.1		ND	mg/Kg-dry	1	02/12/2017 23:35	126968
Hexachloroethane	NELAP	17.3		ND	mg/Kg-dry	1	02/12/2017 23:35	126968
Isophorone	NELAP	12.1		ND	mg/Kg-dry	1	02/12/2017 23:35	126968
m,p-Cresol	NELAP	17.3		ND	mg/Kg-dry	1	02/12/2017 23:35	126968
Nitrobenzene	NELAP	17.3		ND	mg/Kg-dry	1	02/12/2017 23:35	126968
N-Nitrosodimethylamine	NELAP	17.3		ND	mg/Kg-dry	1	02/12/2017 23:35	126968
N-Nitroso-di-n-propylamine	NELAP	17.3		ND	mg/Kg-dry	1	02/12/2017 23:35	126968
N-Nitrosodiphenylamine	NELAP	17.3		ND	mg/Kg-dry	1	02/12/2017 23:35	126968
o-Cresol	NELAP	17.3		ND	mg/Kg-dry	1	02/12/2017 23:35	126968
Pentachlorophenol	NELAP	69.2		ND	mg/Kg-dry	1	02/12/2017 23:35	126968
Phenol	NELAP	12.1		ND	mg/Kg-dry	1	02/12/2017 23:35	126968
Pyridine	NELAP	17.3		ND	mg/Kg-dry	1	02/12/2017 23:35	126968
1,2-Diphenylhydrazine		29.0		ND	mg/Kg-dry	1	02/12/2017 23:35	126968
Surr: 2,4,6-Tribromophenol		33-115		78.8	%REC	1	02/12/2017 23:35	126968
Surr: 2-Fluorobiphenyl		36.5-97.7		79.4	%REC	1	02/12/2017 23:35	126968
Surr: 2-Fluorophenol		39.4-92.8		60.4	%REC	1	02/12/2017 23:35	126968
Surr: Nitrobenzene-d5		34.7-90.1		80.7	%REC	1	02/12/2017 23:35	126968
Surr: Phenol-d5		42.8-106		77.7	%REC	1	02/12/2017 23:35	126968
Surr: p-Terphenyl-d14		43.7-124		87.5	%REC	1	02/12/2017 23:35	126968
Elevated reporting limit due to sample composition.								
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,1,2-Tetrachloroethane	NELAP	44200		ND	µg/Kg-dry	5000	02/08/2017 19:25	126894
1,1,1-Trichloroethane	NELAP	44200		ND	µg/Kg-dry	5000	02/08/2017 19:25	126894
1,1,2,2-Tetrachloroethane	NELAP	44200		ND	µg/Kg-dry	5000	02/08/2017 19:25	126894
1,1,2-Trichloro-1,2,2-trifluoroethane		44200		ND	µg/Kg-dry	5000	02/08/2017 19:25	126894
1,1,2-Trichloroethane	NELAP	44200		ND	µg/Kg-dry	5000	02/08/2017 19:25	126894
1,1-Dichloro-2-propanone		442000		ND	µg/Kg-dry	5000	02/08/2017 19:25	126894
1,1-Dichloroethane	NELAP	44200		ND	µg/Kg-dry	5000	02/08/2017 19:25	126894
1,1-Dichloroethene	NELAP	44200		ND	µg/Kg-dry	5000	02/08/2017 19:25	126894

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

Lab ID: 17020463-002 **Client Sample ID:** SW-RES-REM-W6 (10)

Matrix: SOLID **Collection Date:** 02/06/2017 11:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1-Dichloropropene	NELAP	44200		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
1,2,3-Trichlorobenzene	NELAP	44200		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
1,2,3-Trichloropropane	NELAP	88500		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
1,2,3-Trimethylbenzene		44200		**58100**	µg/Kg-dry	5000	02/08/2017 19:25	126894
1,2,4-Trichlorobenzene	NELAP	44200		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
1,2,4-Trimethylbenzene	NELAP	44200		**158000**	µg/Kg-dry	5000	02/08/2017 19:25	126894
1,2-Dibromo-3-chloropropane	NELAP	44200		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
1,2-Dibromoethane	NELAP	44200		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
1,2-Dichlorobenzene	NELAP	44200		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
1,2-Dichloroethane	NELAP	44200		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
1,2-Dichloropropane	NELAP	44200		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
1,3,5-Trimethylbenzene	NELAP	44200		**45600**	µg/Kg-dry	5000	02/08/2017 19:25	126894
1,3-Dichlorobenzene	NELAP	44200		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
1,3-Dichloropropane	NELAP	44200		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
1,4-Dichlorobenzene	NELAP	44200		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
1-Chlorobutane	NELAP	44200		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
2,2-Dichloropropane	NELAP	44200		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
2-Butanone	NELAP	1770000		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
2-Chlorotoluene	NELAP	44200		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
2-Hexanone	NELAP	442000		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
2-Nitropropane	NELAP	442000		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
4-Chlorotoluene	NELAP	44200		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
4-Methyl-2-pentanone	NELAP	442000		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
Acetone	NELAP	442000		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
Acrolein	NELAP	885000		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
Acrylonitrile	NELAP	88500		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
Allyl chloride	NELAP	44200		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
Benzene	NELAP	8850		**40300**	µg/Kg-dry	5000	02/08/2017 19:25	126894
Bromobenzene	NELAP	44200		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
Bromochloromethane	NELAP	44200		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
Bromodichloromethane	NELAP	44200		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
Bromoform	NELAP	44200		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
Bromomethane	NELAP	88500		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
Carbon disulfide	NELAP	44200		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
Carbon tetrachloride	NELAP	44200		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
Chlorobenzene	NELAP	44200		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
Chloroethane	NELAP	88500		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
Chloroform	NELAP	44200		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
Chloromethane	NELAP	88500		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
cis-1,2-Dichloroethene	NELAP	44200		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
cis-1,3-Dichloropropene	NELAP	35400		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
Cyclohexanone		885000		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
Dibromochloromethane	NELAP	44200		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
Dibromomethane	NELAP	44200		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
Dichlorodifluoromethane	NELAP	88500		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
Ethyl ether	NELAP	44200		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
Ethyl methacrylate	NELAP	44200		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

Lab ID: 17020463-002 **Client Sample ID:** SW-RES-REM-W6 (10)

Matrix: SOLID **Collection Date:** 02/06/2017 11:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Ethylbenzene	NELAP	44200		**60900**	µg/Kg-dry	5000	02/08/2017 19:25	126894
Hexachlorobutadiene	NELAP	44200		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
Hexachloroethane	NELAP	44200		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
Iodomethane	NELAP	88500		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
Isopropylbenzene	NELAP	44200		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
m,p-Xylenes	NELAP	44200		**271000**	µg/Kg-dry	5000	02/08/2017 19:25	126894
Methacrylonitrile	NELAP	442000		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
Methyl Methacrylate	NELAP	44200		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
Methyl tert-butyl ether	NELAP	17700		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
Methylacrylate	NELAP	88500		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
Methylene chloride	NELAP	44200		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
Naphthalene	NELAP	177000		**3400000**	µg/Kg-dry	10000	02/09/2017 17:32	126995
n-Butylbenzene	NELAP	44200		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
n-Heptane		442000		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
n-Hexane		177000		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
Nitrobenzene	NELAP	885000		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
n-Propylbenzene	NELAP	44200		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
o-Xylene	NELAP	44200		**125000**	µg/Kg-dry	5000	02/08/2017 19:25	126894
Pentachloroethane	NELAP	44200		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
p-Isopropyltoluene	NELAP	44200		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
Propionitrile	NELAP	442000		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
sec-Butylbenzene	NELAP	44200		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
Styrene	NELAP	44200		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
tert-Butylbenzene	NELAP	44200		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
Tetrachloroethene	NELAP	44200		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
Tetrahydrofuran	NELAP	442000		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
Toluene	NELAP	44200		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
trans-1,2-Dichloroethene	NELAP	44200		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
trans-1,3-Dichloropropene	NELAP	35400		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
Trichloroethene	NELAP	44200		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
Trichlorofluoromethane	NELAP	44200		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
Vinyl acetate	NELAP	442000		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
Vinyl chloride	NELAP	17700		**ND**	µg/Kg-dry	5000	02/08/2017 19:25	126894
Surr: 1,2-Dichloroethane-d4		72.2-131		**107.2**	%REC	5000	02/08/2017 19:25	126894
Surr: 4-Bromofluorobenzene		82.1-116		**106.4**	%REC	5000	02/08/2017 19:25	126894
Surr: Dibromofluoromethane		77.7-120		**100.8**	%REC	5000	02/08/2017 19:25	126894
Surr: Toluene-d8		86-116		**100.2**	%REC	5000	02/08/2017 19:25	126894

LCS and LCSD have analytes that recovered outside upper QC limits. The sample results are below reporting limit. Data is reportable per 2009 TNI Standard (Volume1, Module 4, section 1.7.4.2).

Elevated reporting limit due to high levels of target and/or non-target analytes.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

Lab ID: 17020463-003 **Client Sample ID:** SW-RES-REM-W6 (3)

Matrix: SOLID **Collection Date:** 02/06/2017 13:45

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**21.8**	%	1	02/10/2017 16:03	R229078
SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Acenaphthene	NELAP	0.004		**ND**	mg/Kg-dry	1	02/13/2017 13:18	126991
Acenaphthylene	NELAP	0.004		**ND**	mg/Kg-dry	1	02/13/2017 13:18	126991
Anthracene	NELAP	0.004		**ND**	mg/Kg-dry	1	02/13/2017 13:18	126991
Benzo(a)anthracene	NELAP	0.013		**ND**	mg/Kg-dry	1	02/13/2017 13:18	126991
Benzo(a)pyrene	NELAP	0.004		**ND**	mg/Kg-dry	1	02/13/2017 13:18	126991
Benzo(b)fluoranthene	NELAP	0.004		**ND**	mg/Kg-dry	1	02/13/2017 13:18	126991
Benzo(g,h,i)perylene	NELAP	0.004		**ND**	mg/Kg-dry	1	02/13/2017 13:18	126991
Benzo(k)fluoranthene	NELAP	0.004		**ND**	mg/Kg-dry	1	02/13/2017 13:18	126991
Chrysene	NELAP	0.004		**ND**	mg/Kg-dry	1	02/13/2017 13:18	126991
Dibenzo(a,h)anthracene	NELAP	0.004		**ND**	mg/Kg-dry	1	02/13/2017 13:18	126991
Fluoranthene	NELAP	0.004		**ND**	mg/Kg-dry	1	02/13/2017 13:18	126991
Fluorene	NELAP	0.004		**ND**	mg/Kg-dry	1	02/13/2017 13:18	126991
Indeno(1,2,3-cd)pyrene	NELAP	0.004		**ND**	mg/Kg-dry	1	02/13/2017 13:18	126991
Naphthalene	NELAP	0.004		**0.012**	mg/Kg-dry	1	02/13/2017 13:18	126991
Phenanthrene	NELAP	0.004		**ND**	mg/Kg-dry	1	02/13/2017 13:18	126991
Pyrene	NELAP	0.004		**ND**	mg/Kg-dry	1	02/13/2017 13:18	126991
Surr: 2-Fluorobiphenyl		8.85-90.5		**75.2**	%REC	1	02/13/2017 13:18	126991
Surr: Nitrobenzene-d5		5-102		**90.3**	%REC	1	02/13/2017 13:18	126991
Surr: p-Terphenyl-d14		18.4-103		**74.4**	%REC	1	02/13/2017 13:18	126991
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2,4-Trichlorobenzene	NELAP	0.644		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
1,2-Dichlorobenzene	NELAP	0.644		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
1,3-Dichlorobenzene	NELAP	0.644		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
1,4-Dichlorobenzene	NELAP	0.644		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
2,4,5-Trichlorophenol	NELAP	0.451		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
2,4,6-Trichlorophenol	NELAP	0.451		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
2,4-Dichlorophenol	NELAP	0.644		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
2,4-Dimethylphenol	NELAP	0.644		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
2,4-Dinitrophenol	NELAP	1.29		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
2,4-Dinitrotoluene	NELAP	0.451		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
2,6-Dinitrotoluene	NELAP	0.451		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
2-Chloronaphthalene	NELAP	0.451		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
2-Chlorophenol	NELAP	0.644		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
2-Methoxy-4-methylphenol		0.837		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
2-Methylnaphthalene	NELAP	0.451		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
2-Nitroaniline	NELAP	1.29		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
2-Nitrophenol	NELAP	0.451		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
3,3´-Dichlorobenzidine	NELAP	0.451		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
3-Nitroaniline	NELAP	1.29		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
4,6-Dinitro-2-methylphenol	NELAP	1.29		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
4-Bromophenyl phenyl ether	NELAP	0.451		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
4-Chloro-3-methylphenol	NELAP	0.644		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
4-Chloroaniline	NELAP	0.644		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
4-Chlorophenyl phenyl ether	NELAP	0.451		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
4-Nitroaniline	NELAP	0.644		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

Lab ID: 17020463-003 **Client Sample ID:** SW-RES-REM-W6 (3)

Matrix: SOLID **Collection Date:** 02/06/2017 13:45

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
4-Nitrophenol	NELAP	0.451		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
Aniline	NELAP	0.644		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
Azobenzene		0.451		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
Benzoic acid	NELAP	1.93		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
Benzyl alcohol	NELAP	0.644		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
Bis(2-chloroethoxy)methane	NELAP	0.451		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
Bis(2-chloroethyl)ether	NELAP	0.644		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
Bis(2-chloroisopropyl)ether	NELAP	0.451		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
Bis(2-ethylhexyl)phthalate	NELAP	0.451		**0.559**	mg/Kg-dry	1	02/12/2017 21:42	126968
Butyl benzyl phthalate	NELAP	0.451		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
Carbazole	NELAP	0.644		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
Dibenzofuran	NELAP	0.451		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
Diethyl phthalate	NELAP	0.644		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
Dimethyl phthalate	NELAP	0.451		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
Di-n-butyl phthalate	NELAP	0.451		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
Di-n-octyl phthalate	NELAP	0.451		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
Hexachlorobenzene	NELAP	0.451		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
Hexachlorobutadiene	NELAP	0.644		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
Hexachlorocyclopentadiene	NELAP	0.451		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
Hexachloroethane	NELAP	0.644		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
Isophorone	NELAP	0.451		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
m,p-Cresol	NELAP	0.644		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
Nitrobenzene	NELAP	0.644		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
N-Nitrosodimethylamine	NELAP	0.644		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
N-Nitroso-di-n-propylamine	NELAP	0.644		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
N-Nitrosodiphenylamine	NELAP	0.644		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
o-Cresol	NELAP	0.644		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
Pentachlorophenol	NELAP	2.57		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
Phenol	NELAP	0.451		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
Pyridine	NELAP	0.644		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
1,2-Diphenylhydrazine		1.08		**ND**	mg/Kg-dry	1	02/12/2017 21:42	126968
Surr: 2,4,6-Tribromophenol		33-115		**85.7**	%REC	1	02/12/2017 21:42	126968
Surr: 2-Fluorobiphenyl		36.5-97.7		**81.7**	%REC	1	02/12/2017 21:42	126968
Surr: 2-Fluorophenol		39.4-92.8		**68.2**	%REC	1	02/12/2017 21:42	126968
Surr: Nitrobenzene-d5		34.7-90.1		**81.4**	%REC	1	02/12/2017 21:42	126968
Surr: Phenol-d5		42.8-106		**83.3**	%REC	1	02/12/2017 21:42	126968
Surr: p-Terphenyl-d14		43.7-124		**91.7**	%REC	1	02/12/2017 21:42	126968
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,1,2-Tetrachloroethane	NELAP	159		**ND**	µg/Kg-dry	12.5	02/14/2017 12:44	127123
1,1,1-Trichloroethane	NELAP	159		**ND**	µg/Kg-dry	12.5	02/14/2017 12:44	127123
1,1,2,2-Tetrachloroethane	NELAP	159		**ND**	µg/Kg-dry	12.5	02/14/2017 12:44	127123
1,1,2-Trichloro-1,2,2-trifluoroethane		159		**ND**	µg/Kg-dry	12.5	02/14/2017 12:44	127123
1,1,2-Trichloroethane	NELAP	159		**ND**	µg/Kg-dry	12.5	02/14/2017 12:44	127123
1,1-Dichloro-2-propanone		1590		**ND**	µg/Kg-dry	12.5	02/14/2017 12:44	127123
1,1-Dichloroethane	NELAP	159		**ND**	µg/Kg-dry	12.5	02/14/2017 12:44	127123
1,1-Dichloroethene	NELAP	159		**ND**	µg/Kg-dry	12.5	02/14/2017 12:44	127123
1,1-Dichloropropene	NELAP	159		**ND**	µg/Kg-dry	12.5	02/14/2017 12:44	127123

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

Lab ID: 17020463-003 **Client Sample ID:** SW-RES-REM-W6 (3)

Matrix: SOLID **Collection Date:** 02/06/2017 13:45

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2,3-Trichlorobenzene	NELAP	159		ND	µg/Kg-dry	12.5	02/14/2017 12:44	127123
1,2,3-Trichloropropane	NELAP	318		ND	µg/Kg-dry	12.5	02/14/2017 12:44	127123
1,2,3-Trimethylbenzene		159		ND	µg/Kg-dry	12.5	02/14/2017 12:44	127123
1,2,4-Trichlorobenzene	NELAP	159		ND	µg/Kg-dry	12.5	02/14/2017 12:44	127123
1,2,4-Trimethylbenzene	NELAP	159		ND	µg/Kg-dry	12.5	02/14/2017 12:44	127123
1,2-Dibromo-3-chloropropane	NELAP	159		ND	µg/Kg-dry	12.5	02/14/2017 12:44	127123
1,2-Dibromoethane	NELAP	159		ND	µg/Kg-dry	12.5	02/14/2017 12:44	127123
1,2-Dichlorobenzene	NELAP	159		ND	µg/Kg-dry	12.5	02/14/2017 12:44	127123
1,2-Dichloroethane	NELAP	159		ND	µg/Kg-dry	12.5	02/14/2017 12:44	127123
1,2-Dichloropropane	NELAP	159		ND	µg/Kg-dry	12.5	02/14/2017 12:44	127123
1,3,5-Trimethylbenzene	NELAP	159		ND	µg/Kg-dry	12.5	02/14/2017 12:44	127123
1,3-Dichlorobenzene	NELAP	159		ND	µg/Kg-dry	12.5	02/14/2017 12:44	127123
1,3-Dichloropropane	NELAP	159		ND	µg/Kg-dry	12.5	02/14/2017 12:44	127123
1,4-Dichlorobenzene	NELAP	159		ND	µg/Kg-dry	12.5	02/14/2017 12:44	127123
1-Chlorobutane	NELAP	159		ND	µg/Kg-dry	12.5	02/14/2017 12:44	127123
2,2-Dichloropropane	NELAP	159		ND	µg/Kg-dry	12.5	02/14/2017 12:44	127123
2-Butanone	NELAP	6370		ND	µg/Kg-dry	12.5	02/14/2017 12:44	127123
2-Chlorotoluene	NELAP	159		ND	µg/Kg-dry	12.5	02/14/2017 12:44	127123
2-Hexanone	NELAP	1590		ND	µg/Kg-dry	12.5	02/14/2017 12:44	127123
2-Nitropropane	NELAP	1590		ND	µg/Kg-dry	12.5	02/14/2017 12:44	127123
4-Chlorotoluene	NELAP	159		ND	µg/Kg-dry	12.5	02/14/2017 12:44	127123
4-Methyl-2-pentanone	NELAP	1590		ND	µg/Kg-dry	12.5	02/14/2017 12:44	127123
Acetone	NELAP	1590		ND	µg/Kg-dry	12.5	02/14/2017 12:44	127123
Acrolein	NELAP	3180		ND	µg/Kg-dry	12.5	02/14/2017 12:44	127123
Acrylonitrile	NELAP	318		ND	µg/Kg-dry	12.5	02/14/2017 12:44	127123
Allyl chloride	NELAP	159		ND	µg/Kg-dry	12.5	02/14/2017 12:44	127123
Benzene	NELAP	31.8		ND	µg/Kg-dry	12.5	02/14/2017 12:44	127123
Bromobenzene	NELAP	159		ND	µg/Kg-dry	12.5	02/14/2017 12:44	127123
Bromochloromethane	NELAP	159		ND	µg/Kg-dry	12.5	02/14/2017 12:44	127123
Bromodichloromethane	NELAP	159		ND	µg/Kg-dry	12.5	02/14/2017 12:44	127123
Bromoform	NELAP	159		ND	µg/Kg-dry	12.5	02/14/2017 12:44	127123
Bromomethane	NELAP	318		ND	µg/Kg-dry	12.5	02/14/2017 12:44	127123
Carbon disulfide	NELAP	159		ND	µg/Kg-dry	12.5	02/14/2017 12:44	127123
Carbon tetrachloride	NELAP	159		ND	µg/Kg-dry	12.5	02/14/2017 12:44	127123
Chlorobenzene	NELAP	159		ND	µg/Kg-dry	12.5	02/14/2017 12:44	127123
Chloroethane	NELAP	318		ND	µg/Kg-dry	12.5	02/14/2017 12:44	127123
Chloroform	NELAP	159		ND	µg/Kg-dry	12.5	02/14/2017 12:44	127123
Chloromethane	NELAP	318		ND	µg/Kg-dry	12.5	02/14/2017 12:44	127123
cis-1,2-Dichloroethene	NELAP	159		ND	µg/Kg-dry	12.5	02/14/2017 12:44	127123
cis-1,3-Dichloropropene	NELAP	127		ND	µg/Kg-dry	12.5	02/14/2017 12:44	127123
Cyclohexanone		3180		ND	µg/Kg-dry	12.5	02/14/2017 12:44	127123
Dibromochloromethane	NELAP	159		ND	µg/Kg-dry	12.5	02/14/2017 12:44	127123
Dibromomethane	NELAP	159		ND	µg/Kg-dry	12.5	02/14/2017 12:44	127123
Dichlorodifluoromethane	NELAP	318		ND	µg/Kg-dry	12.5	02/14/2017 12:44	127123
Ethyl ether	NELAP	159		ND	µg/Kg-dry	12.5	02/14/2017 12:44	127123
Ethyl methacrylate	NELAP	159		ND	µg/Kg-dry	12.5	02/14/2017 12:44	127123
Ethylbenzene	NELAP	159		ND	µg/Kg-dry	12.5	02/14/2017 12:44	127123

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

Lab ID: 17020463-003 **Client Sample ID:** SW-RES-REM-W6 (3)

Matrix: SOLID **Collection Date:** 02/06/2017 13:45

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Hexachlorobutadiene	NELAP	159		**ND**	µg/Kg-dry	12.5	02/14/2017 12:44	127123
Hexachloroethane	NELAP	159		**ND**	µg/Kg-dry	12.5	02/14/2017 12:44	127123
Iodomethane	NELAP	318		**ND**	µg/Kg-dry	12.5	02/14/2017 12:44	127123
Isopropylbenzene	NELAP	159		**ND**	µg/Kg-dry	12.5	02/14/2017 12:44	127123
m,p-Xylenes	NELAP	159		**ND**	µg/Kg-dry	12.5	02/14/2017 12:44	127123
Methacrylonitrile	NELAP	1590		**ND**	µg/Kg-dry	12.5	02/14/2017 12:44	127123
Methyl Methacrylate	NELAP	159		**ND**	µg/Kg-dry	12.5	02/14/2017 12:44	127123
Methyl tert-butyl ether	NELAP	63.7		**ND**	µg/Kg-dry	12.5	02/14/2017 12:44	127123
Methylacrylate	NELAP	318		**ND**	µg/Kg-dry	12.5	02/14/2017 12:44	127123
Methylene chloride	NELAP	159		**ND**	µg/Kg-dry	12.5	02/14/2017 12:44	127123
Naphthalene	NELAP	318		**ND**	µg/Kg-dry	12.5	02/14/2017 12:44	127123
n-Butylbenzene	NELAP	159		**ND**	µg/Kg-dry	12.5	02/14/2017 12:44	127123
n-Heptane		1590		**ND**	µg/Kg-dry	12.5	02/14/2017 12:44	127123
n-Hexane		637		**ND**	µg/Kg-dry	12.5	02/14/2017 12:44	127123
Nitrobenzene	NELAP	3180		**ND**	µg/Kg-dry	12.5	02/14/2017 12:44	127123
n-Propylbenzene	NELAP	159		**ND**	µg/Kg-dry	12.5	02/14/2017 12:44	127123
o-Xylene	NELAP	159		**ND**	µg/Kg-dry	12.5	02/14/2017 12:44	127123
Pentachloroethane	NELAP	159		**ND**	µg/Kg-dry	12.5	02/14/2017 12:44	127123
p-Isopropyltoluene	NELAP	159		**ND**	µg/Kg-dry	12.5	02/14/2017 12:44	127123
Propionitrile	NELAP	1590		**ND**	µg/Kg-dry	12.5	02/14/2017 12:44	127123
sec-Butylbenzene	NELAP	159		**ND**	µg/Kg-dry	12.5	02/14/2017 12:44	127123
Styrene	NELAP	159		**ND**	µg/Kg-dry	12.5	02/14/2017 12:44	127123
tert-Butylbenzene	NELAP	159		**ND**	µg/Kg-dry	12.5	02/14/2017 12:44	127123
Tetrachloroethene	NELAP	159		**ND**	µg/Kg-dry	12.5	02/14/2017 12:44	127123
Tetrahydrofuran	NELAP	1590		**ND**	µg/Kg-dry	12.5	02/14/2017 12:44	127123
Toluene	NELAP	159		**ND**	µg/Kg-dry	12.5	02/14/2017 12:44	127123
trans-1,2-Dichloroethene	NELAP	159		**ND**	µg/Kg-dry	12.5	02/14/2017 12:44	127123
trans-1,3-Dichloropropene	NELAP	127		**ND**	µg/Kg-dry	12.5	02/14/2017 12:44	127123
Trichloroethene	NELAP	159		**ND**	µg/Kg-dry	12.5	02/14/2017 12:44	127123
Trichlorofluoromethane	NELAP	159		**ND**	µg/Kg-dry	12.5	02/14/2017 12:44	127123
Vinyl acetate	NELAP	1590		**ND**	µg/Kg-dry	12.5	02/14/2017 12:44	127123
Vinyl chloride	NELAP	63.7		**ND**	µg/Kg-dry	12.5	02/14/2017 12:44	127123
Surr: 1,2-Dichloroethane-d4		72.2-131		**104.1**	%REC	12.5	02/14/2017 12:44	127123
Surr: 4-Bromofluorobenzene		82.1-116		**103.9**	%REC	12.5	02/14/2017 12:44	127123
Surr: Dibromofluoromethane		77.7-120		**90.3**	%REC	12.5	02/14/2017 12:44	127123
Surr: Toluene-d8		86-116		**112.4**	%REC	12.5	02/14/2017 12:44	127123

LCS & LCSD recovered outside upper QC limits for multiple compounds. Sample results are below reporting limit. Data is reportable per 2009 TNI Standard (Volume1, Module 4, section 1.7.4.2).

Elevated reporting limit due to matrix interference.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

Lab ID: 17020463-004 **Client Sample ID:** SW-RES-REM-W5 (10)

Matrix: SOLID **Collection Date:** 02/06/2017 15:15

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**19.1**	%	1	02/10/2017 16:03	R229078
SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Acenaphthene	NELAP	0.122		**2.63**	mg/Kg-dry	1	02/13/2017 13:51	126991
Acenaphthylene	NELAP	0.122		**20.7**	mg/Kg-dry	1	02/13/2017 13:51	126991
Anthracene	NELAP	0.122		**15.0**	mg/Kg-dry	1	02/13/2017 13:51	126991
Benzo(a)anthracene	NELAP	0.360		**6.01**	mg/Kg-dry	1	02/13/2017 13:51	126991
Benzo(a)pyrene	NELAP	0.122		**5.95**	mg/Kg-dry	1	02/13/2017 13:51	126991
Benzo(b)fluoranthene	NELAP	0.122		**5.49**	mg/Kg-dry	1	02/13/2017 13:51	126991
Benzo(g,h,i)perylene	NELAP	0.122		**1.76**	mg/Kg-dry	1	02/13/2017 13:51	126991
Benzo(k)fluoranthene	NELAP	0.122		**1.49**	mg/Kg-dry	1	02/13/2017 13:51	126991
Chrysene	NELAP	0.122		**4.92**	mg/Kg-dry	1	02/13/2017 13:51	126991
Dibenzo(a,h)anthracene	NELAP	0.122		**0.425**	mg/Kg-dry	1	02/13/2017 13:51	126991
Fluoranthene	NELAP	0.122		**12.7**	mg/Kg-dry	1	02/13/2017 13:51	126991
Fluorene	NELAP	0.122		**19.7**	mg/Kg-dry	1	02/13/2017 13:51	126991
Indeno(1,2,3-cd)pyrene	NELAP	0.122		**1.49**	mg/Kg-dry	1	02/13/2017 13:51	126991
Naphthalene	NELAP	1.22		**226**	mg/Kg-dry	10	02/14/2017 9:09	126991
Phenanthrene	NELAP	0.122		**37.5**	mg/Kg-dry	1	02/13/2017 13:51	126991
Pyrene	NELAP	0.122		**17.4**	mg/Kg-dry	1	02/13/2017 13:51	126991
Surr: 2-Fluorobiphenyl		8.85-90.5		**44.3**	%REC	1	02/13/2017 13:51	126991
Surr: Nitrobenzene-d5		5-102		**47.7**	%REC	1	02/13/2017 13:51	126991
Surr: p-Terphenyl-d14		18.4-103		**56.0**	%REC	1	02/13/2017 13:51	126991
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2,4-Trichlorobenzene	NELAP	18.0		**ND**	mg/Kg-dry	1	02/12/2017 22:11	126968
1,2-Dichlorobenzene	NELAP	18.0		**ND**	mg/Kg-dry	1	02/12/2017 22:11	126968
1,3-Dichlorobenzene	NELAP	18.0		**ND**	mg/Kg-dry	1	02/12/2017 22:11	126968
1,4-Dichlorobenzene	NELAP	18.0		**ND**	mg/Kg-dry	1	02/12/2017 22:11	126968
2,4,5-Trichlorophenol	NELAP	12.6		**ND**	mg/Kg-dry	1	02/12/2017 22:11	126968
2,4,6-Trichlorophenol	NELAP	12.6		**ND**	mg/Kg-dry	1	02/12/2017 22:11	126968
2,4-Dichlorophenol	NELAP	18.0		**ND**	mg/Kg-dry	1	02/12/2017 22:11	126968
2,4-Dimethylphenol	NELAP	18.0		**ND**	mg/Kg-dry	1	02/12/2017 22:11	126968
2,4-Dinitrophenol	NELAP	36.0		**ND**	mg/Kg-dry	1	02/12/2017 22:11	126968
2,4-Dinitrotoluene	NELAP	12.6		**ND**	mg/Kg-dry	1	02/12/2017 22:11	126968
2,6-Dinitrotoluene	NELAP	12.6		**ND**	mg/Kg-dry	1	02/12/2017 22:11	126968
2-Chloronaphthalene	NELAP	12.6		**ND**	mg/Kg-dry	1	02/12/2017 22:11	126968
2-Chlorophenol	NELAP	18.0		**ND**	mg/Kg-dry	1	02/12/2017 22:11	126968
2-Methoxy-4-methylphenol		23.4		**ND**	mg/Kg-dry	1	02/12/2017 22:11	126968
2-Methylnaphthalene	NELAP	12.6		**80.2**	mg/Kg-dry	1	02/12/2017 22:11	126968
2-Nitroaniline	NELAP	36.0		**ND**	mg/Kg-dry	1	02/12/2017 22:11	126968
2-Nitrophenol	NELAP	12.6		**ND**	mg/Kg-dry	1	02/12/2017 22:11	126968
3,3´-Dichlorobenzidine	NELAP	12.6		**ND**	mg/Kg-dry	1	02/12/2017 22:11	126968
3-Nitroaniline	NELAP	36.0		**ND**	mg/Kg-dry	1	02/12/2017 22:11	126968
4,6-Dinitro-2-methylphenol	NELAP	36.0		**ND**	mg/Kg-dry	1	02/12/2017 22:11	126968
4-Bromophenyl phenyl ether	NELAP	12.6		**ND**	mg/Kg-dry	1	02/12/2017 22:11	126968
4-Chloro-3-methylphenol	NELAP	18.0		**ND**	mg/Kg-dry	1	02/12/2017 22:11	126968
4-Chloroaniline	NELAP	18.0		**ND**	mg/Kg-dry	1	02/12/2017 22:11	126968
4-Chlorophenyl phenyl ether	NELAP	12.6		**ND**	mg/Kg-dry	1	02/12/2017 22:11	126968
4-Nitroaniline	NELAP	18.0		**ND**	mg/Kg-dry	1	02/12/2017 22:11	126968

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

Lab ID: 17020463-004 **Client Sample ID:** SW-RES-REM-W5 (10)

Matrix: SOLID **Collection Date:** 02/06/2017 15:15

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
4-Nitrophenol	NELAP	12.6		ND	mg/Kg-dry	1	02/12/2017 22:11	126968
Aniline	NELAP	18.0		ND	mg/Kg-dry	1	02/12/2017 22:11	126968
Azobenzene		12.6		ND	mg/Kg-dry	1	02/12/2017 22:11	126968
Benzoic acid	NELAP	54.0		ND	mg/Kg-dry	1	02/12/2017 22:11	126968
Benzyl alcohol	NELAP	18.0		ND	mg/Kg-dry	1	02/12/2017 22:11	126968
Bis(2-chloroethoxy)methane	NELAP	12.6		ND	mg/Kg-dry	1	02/12/2017 22:11	126968
Bis(2-chloroethyl)ether	NELAP	18.0		ND	mg/Kg-dry	1	02/12/2017 22:11	126968
Bis(2-chloroisopropyl)ether	NELAP	12.6		ND	mg/Kg-dry	1	02/12/2017 22:11	126968
Bis(2-ethylhexyl)phthalate	NELAP	12.6		ND	mg/Kg-dry	1	02/12/2017 22:11	126968
Butyl benzyl phthalate	NELAP	12.6		ND	mg/Kg-dry	1	02/12/2017 22:11	126968
Carbazole	NELAP	18.0		ND	mg/Kg-dry	1	02/12/2017 22:11	126968
Dibenzofuran	NELAP	12.6		ND	mg/Kg-dry	1	02/12/2017 22:11	126968
Diethyl phthalate	NELAP	18.0		ND	mg/Kg-dry	1	02/12/2017 22:11	126968
Dimethyl phthalate	NELAP	12.6		ND	mg/Kg-dry	1	02/12/2017 22:11	126968
Di-n-butyl phthalate	NELAP	12.6		ND	mg/Kg-dry	1	02/12/2017 22:11	126968
Di-n-octyl phthalate	NELAP	12.6		ND	mg/Kg-dry	1	02/12/2017 22:11	126968
Hexachlorobenzene	NELAP	12.6		ND	mg/Kg-dry	1	02/12/2017 22:11	126968
Hexachlorobutadiene	NELAP	18.0		ND	mg/Kg-dry	1	02/12/2017 22:11	126968
Hexachlorocyclopentadiene	NELAP	12.6		ND	mg/Kg-dry	1	02/12/2017 22:11	126968
Hexachloroethane	NELAP	18.0		ND	mg/Kg-dry	1	02/12/2017 22:11	126968
Isophorone	NELAP	12.6		ND	mg/Kg-dry	1	02/12/2017 22:11	126968
m,p-Cresol	NELAP	18.0		ND	mg/Kg-dry	1	02/12/2017 22:11	126968
Nitrobenzene	NELAP	18.0		ND	mg/Kg-dry	1	02/12/2017 22:11	126968
N-Nitrosodimethylamine	NELAP	18.0		ND	mg/Kg-dry	1	02/12/2017 22:11	126968
N-Nitroso-di-n-propylamine	NELAP	18.0		ND	mg/Kg-dry	1	02/12/2017 22:11	126968
N-Nitrosodiphenylamine	NELAP	18.0		ND	mg/Kg-dry	1	02/12/2017 22:11	126968
o-Cresol	NELAP	18.0		ND	mg/Kg-dry	1	02/12/2017 22:11	126968
Pentachlorophenol	NELAP	72.0		ND	mg/Kg-dry	1	02/12/2017 22:11	126968
Phenol	NELAP	12.6		ND	mg/Kg-dry	1	02/12/2017 22:11	126968
Pyridine	NELAP	18.0		ND	mg/Kg-dry	1	02/12/2017 22:11	126968
1,2-Diphenylhydrazine		30.2		ND	mg/Kg-dry	1	02/12/2017 22:11	126968
Surr: 2,4,6-Tribromophenol		33-115		77.7	%REC	1	02/12/2017 22:11	126968
Surr: 2-Fluorobiphenyl		36.5-97.7		78.0	%REC	1	02/12/2017 22:11	126968
Surr: 2-Fluorophenol		39.4-92.8		62.5	%REC	1	02/12/2017 22:11	126968
Surr: Nitrobenzene-d5		34.7-90.1		76.4	%REC	1	02/12/2017 22:11	126968
Surr: Phenol-d5		42.8-106		69.8	%REC	1	02/12/2017 22:11	126968
Surr: p-Terphenyl-d14		43.7-124		86.6	%REC	1	02/12/2017 22:11	126968
Elevated reporting limit due to sample composition.								
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,1,2-Tetrachloroethane	NELAP	25400		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
1,1,1-Trichloroethane	NELAP	25400		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
1,1,2,2-Tetrachloroethane	NELAP	25400		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
1,1,2-Trichloro-1,2,2-trifluoroethane		25400		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
1,1,2-Trichloroethane	NELAP	25400		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
1,1-Dichloro-2-propanone		254000		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
1,1-Dichloroethane	NELAP	25400		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
1,1-Dichloroethene	NELAP	25400		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

Lab ID: 17020463-004 **Client Sample ID:** SW-RES-REM-W5 (10)

Matrix: SOLID **Collection Date:** 02/06/2017 15:15

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1-Dichloropropene	NELAP	25400		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
1,2,3-Trichlorobenzene	NELAP	25400		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
1,2,3-Trichloropropane	NELAP	50800		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
1,2,3-Trimethylbenzene		25400		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
1,2,4-Trichlorobenzene	NELAP	25400		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
1,2,4-Trimethylbenzene	NELAP	25400		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
1,2-Dibromo-3-chloropropane	NELAP	25400		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
1,2-Dibromoethane	NELAP	25400		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
1,2-Dichlorobenzene	NELAP	25400		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
1,2-Dichloroethane	NELAP	25400		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
1,2-Dichloropropane	NELAP	25400		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
1,3,5-Trimethylbenzene	NELAP	25400		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
1,3-Dichlorobenzene	NELAP	25400		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
1,3-Dichloropropane	NELAP	25400		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
1,4-Dichlorobenzene	NELAP	25400		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
1-Chlorobutane	NELAP	25400		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
2,2-Dichloropropane	NELAP	25400		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
2-Butanone	NELAP	1020000		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
2-Chlorotoluene	NELAP	25400		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
2-Hexanone	NELAP	254000		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
2-Nitropropane	NELAP	254000		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
4-Chlorotoluene	NELAP	25400		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
4-Methyl-2-pentanone	NELAP	254000		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
Acetone	NELAP	254000		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
Acrolein	NELAP	508000		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
Acrylonitrile	NELAP	50800		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
Allyl chloride	NELAP	25400		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
Benzene	NELAP	5080		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
Bromobenzene	NELAP	25400		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
Bromochloromethane	NELAP	25400		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
Bromodichloromethane	NELAP	25400		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
Bromoform	NELAP	25400		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
Bromomethane	NELAP	50800		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
Carbon disulfide	NELAP	25400		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
Carbon tetrachloride	NELAP	25400		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
Chlorobenzene	NELAP	25400		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
Chloroethane	NELAP	50800		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
Chloroform	NELAP	25400		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
Chloromethane	NELAP	50800		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
cis-1,2-Dichloroethene	NELAP	25400		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
cis-1,3-Dichloropropene	NELAP	20300		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
Cyclohexanone		508000		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
Dibromochloromethane	NELAP	25400		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
Dibromomethane	NELAP	25400		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
Dichlorodifluoromethane	NELAP	50800		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
Ethyl ether	NELAP	25400		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007
Ethyl methacrylate	NELAP	25400		ND	µg/Kg-dry	2500	02/10/2017 17:57	127007

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

Lab ID: 17020463-004 **Client Sample ID:** SW-RES-REM-W5 (10)

Matrix: SOLID **Collection Date:** 02/06/2017 15:15

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Ethylbenzene	NELAP	25400		**ND**	µg/Kg-dry	2500	02/10/2017 17:57	127007
Hexachlorobutadiene	NELAP	25400		**ND**	µg/Kg-dry	2500	02/10/2017 17:57	127007
Hexachloroethane	NELAP	25400		**ND**	µg/Kg-dry	2500	02/10/2017 17:57	127007
Iodomethane	NELAP	50800		**ND**	µg/Kg-dry	2500	02/10/2017 17:57	127007
Isopropylbenzene	NELAP	25400		**ND**	µg/Kg-dry	2500	02/10/2017 17:57	127007
m,p-Xylenes	NELAP	25400		**31900**	µg/Kg-dry	2500	02/10/2017 17:57	127007
Methacrylonitrile	NELAP	254000		**ND**	µg/Kg-dry	2500	02/10/2017 17:57	127007
Methyl Methacrylate	NELAP	25400		**ND**	µg/Kg-dry	2500	02/10/2017 17:57	127007
Methyl tert-butyl ether	NELAP	10200		**ND**	µg/Kg-dry	2500	02/10/2017 17:57	127007
Methylacrylate	NELAP	50800		**ND**	µg/Kg-dry	2500	02/10/2017 17:57	127007
Methylene chloride	NELAP	25400		**ND**	µg/Kg-dry	2500	02/10/2017 17:57	127007
Naphthalene	NELAP	50800		**839000**	µg/Kg-dry	2500	02/10/2017 17:57	127007
n-Butylbenzene	NELAP	25400		**ND**	µg/Kg-dry	2500	02/10/2017 17:57	127007
n-Heptane		254000		**ND**	µg/Kg-dry	2500	02/10/2017 17:57	127007
n-Hexane		102000		**ND**	µg/Kg-dry	2500	02/10/2017 17:57	127007
Nitrobenzene	NELAP	508000		**ND**	µg/Kg-dry	2500	02/10/2017 17:57	127007
n-Propylbenzene	NELAP	25400		**ND**	µg/Kg-dry	2500	02/10/2017 17:57	127007
o-Xylene	NELAP	25400		**ND**	µg/Kg-dry	2500	02/10/2017 17:57	127007
Pentachloroethane	NELAP	25400		**ND**	µg/Kg-dry	2500	02/10/2017 17:57	127007
p-Isopropyltoluene	NELAP	25400		**ND**	µg/Kg-dry	2500	02/10/2017 17:57	127007
Propionitrile	NELAP	254000		**ND**	µg/Kg-dry	2500	02/10/2017 17:57	127007
sec-Butylbenzene	NELAP	25400		**ND**	µg/Kg-dry	2500	02/10/2017 17:57	127007
Styrene	NELAP	25400		**ND**	µg/Kg-dry	2500	02/10/2017 17:57	127007
tert-Butylbenzene	NELAP	25400		**ND**	µg/Kg-dry	2500	02/10/2017 17:57	127007
Tetrachloroethene	NELAP	25400		**ND**	µg/Kg-dry	2500	02/10/2017 17:57	127007
Tetrahydrofuran	NELAP	254000		**ND**	µg/Kg-dry	2500	02/10/2017 17:57	127007
Toluene	NELAP	25400		**ND**	µg/Kg-dry	2500	02/10/2017 17:57	127007
trans-1,2-Dichloroethene	NELAP	25400		**ND**	µg/Kg-dry	2500	02/10/2017 17:57	127007
trans-1,3-Dichloropropene	NELAP	20300		**ND**	µg/Kg-dry	2500	02/10/2017 17:57	127007
Trichloroethene	NELAP	25400		**ND**	µg/Kg-dry	2500	02/10/2017 17:57	127007
Trichlorofluoromethane	NELAP	25400		**ND**	µg/Kg-dry	2500	02/10/2017 17:57	127007
Vinyl acetate	NELAP	254000		**ND**	µg/Kg-dry	2500	02/10/2017 17:57	127007
Vinyl chloride	NELAP	10200		**ND**	µg/Kg-dry	2500	02/10/2017 17:57	127007
Surr: 1,2-Dichloroethane-d4		72.2-131		**111.4**	%REC	2500	02/10/2017 17:57	127007
Surr: 4-Bromofluorobenzene		82.1-116		**99.8**	%REC	2500	02/10/2017 17:57	127007
Surr: Dibromofluoromethane		77.7-120		**96.4**	%REC	2500	02/10/2017 17:57	127007
Surr: Toluene-d8		86-116		**107.6**	%REC	2500	02/10/2017 17:57	127007

LCS recovered outside upper QC limits on 2-Hexanone and Hexachloroethane. Sample results are below reporting limit. Data is reportable per 2009 TNI Standard (Volume1, Module 4, section 1.7.4.2).

Elevated reporting limit due to high levels of target and/or non-target analytes.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

Lab ID: 17020463-005 **Client Sample ID:** SW-RES-REM-W5 (3)

Matrix: SOLID **Collection Date:** 02/06/2017 17:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**23.1**	%	1	02/10/2017 16:03	R229078
SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Acenaphthene	NELAP	0.109		**3.17**	mg/Kg-dry	25	02/13/2017 16:35	126991
Acenaphthylene	NELAP	0.109		**8.03**	mg/Kg-dry	25	02/13/2017 16:35	126991
Anthracene	NELAP	0.109		**3.25**	mg/Kg-dry	25	02/13/2017 16:35	126991
Benzo(a)anthracene	NELAP	0.322		**6.63**	mg/Kg-dry	25	02/13/2017 16:35	126991
Benzo(a)pyrene	NELAP	0.109		**15.0**	mg/Kg-dry	25	02/13/2017 16:35	126991
Benzo(b)fluoranthene	NELAP	0.109		**19.1**	mg/Kg-dry	25	02/13/2017 16:35	126991
Benzo(g,h,i)perylene	NELAP	0.109		**4.58**	mg/Kg-dry	25	02/13/2017 16:35	126991
Benzo(k)fluoranthene	NELAP	0.109		**4.45**	mg/Kg-dry	25	02/13/2017 16:35	126991
Chrysene	NELAP	0.109		**8.67**	mg/Kg-dry	25	02/13/2017 16:35	126991
Dibenzo(a,h)anthracene	NELAP	0.109		**1.61**	mg/Kg-dry	25	02/13/2017 16:35	126991
Fluoranthene	NELAP	0.109		**17.0**	mg/Kg-dry	25	02/13/2017 16:35	126991
Fluorene	NELAP	0.109		**1.79**	mg/Kg-dry	25	02/13/2017 16:35	126991
Indeno(1,2,3-cd)pyrene	NELAP	0.109		**4.50**	mg/Kg-dry	25	02/13/2017 16:35	126991
Naphthalene	NELAP	0.109		**3.04**	mg/Kg-dry	25	02/13/2017 16:35	126991
Phenanthrene	NELAP	0.109		**10.9**	mg/Kg-dry	25	02/13/2017 16:35	126991
Pyrene	NELAP	0.109		**23.7**	mg/Kg-dry	25	02/13/2017 16:35	126991
Surr: 2-Fluorobiphenyl		8.85-90.5		**68.6**	%REC	25	02/13/2017 16:35	126991
Surr: Nitrobenzene-d5		5-102		**72.6**	%REC	25	02/13/2017 16:35	126991
Surr: p-Terphenyl-d14		18.4-103		**67.0**	%REC	25	02/13/2017 16:35	126991
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2,4-Trichlorobenzene	NELAP	32.2		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
1,2-Dichlorobenzene	NELAP	32.2		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
1,3-Dichlorobenzene	NELAP	32.2		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
1,4-Dichlorobenzene	NELAP	32.2		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
2,4,5-Trichlorophenol	NELAP	22.5		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
2,4,6-Trichlorophenol	NELAP	22.5		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
2,4-Dichlorophenol	NELAP	32.2		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
2,4-Dimethylphenol	NELAP	32.2		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
2,4-Dinitrophenol	NELAP	64.3		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
2,4-Dinitrotoluene	NELAP	22.5		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
2,6-Dinitrotoluene	NELAP	22.5		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
2-Chloronaphthalene	NELAP	22.5		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
2-Chlorophenol	NELAP	32.2		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
2-Methoxy-4-methylphenol		41.8		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
2-Methylnaphthalene	NELAP	22.5		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
2-Nitroaniline	NELAP	64.3		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
2-Nitrophenol	NELAP	22.5		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
3,3´-Dichlorobenzidine	NELAP	22.5		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
3-Nitroaniline	NELAP	64.3		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
4,6-Dinitro-2-methylphenol	NELAP	64.3		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
4-Bromophenyl phenyl ether	NELAP	22.5		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
4-Chloro-3-methylphenol	NELAP	32.2		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
4-Chloroaniline	NELAP	32.2		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
4-Chlorophenyl phenyl ether	NELAP	22.5		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
4-Nitroaniline	NELAP	32.2		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

Lab ID: 17020463-005 **Client Sample ID:** SW-RES-REM-W5 (3)

Matrix: SOLID **Collection Date:** 02/06/2017 17:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
4-Nitrophenol	NELAP	22.5		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
Aniline	NELAP	32.2		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
Azobenzene		22.5		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
Benzoic acid	NELAP	96.5		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
Benzyl alcohol	NELAP	32.2		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
Bis(2-chloroethoxy)methane	NELAP	22.5		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
Bis(2-chloroethyl)ether	NELAP	32.2		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
Bis(2-chloroisopropyl)ether	NELAP	22.5		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
Bis(2-ethylhexyl)phthalate	NELAP	22.5		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
Butyl benzyl phthalate	NELAP	22.5		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
Carbazole	NELAP	32.2		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
Dibenzofuran	NELAP	22.5		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
Diethyl phthalate	NELAP	32.2		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
Dimethyl phthalate	NELAP	22.5		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
Di-n-butyl phthalate	NELAP	22.5		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
Di-n-octyl phthalate	NELAP	22.5		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
Hexachlorobenzene	NELAP	22.5		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
Hexachlorobutadiene	NELAP	32.2		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
Hexachlorocyclopentadiene	NELAP	22.5		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
Hexachloroethane	NELAP	32.2		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
Isophorone	NELAP	22.5		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
m,p-Cresol	NELAP	32.2		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
Nitrobenzene	NELAP	32.2		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
N-Nitrosodimethylamine	NELAP	32.2		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
N-Nitroso-di-n-propylamine	NELAP	32.2		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
N-Nitrosodiphenylamine	NELAP	32.2		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
o-Cresol	NELAP	32.2		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
Pentachlorophenol	NELAP	129		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
Phenol	NELAP	22.5		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
Pyridine	NELAP	32.2		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
1,2-Diphenylhydrazine		54.0		**ND**	mg/Kg-dry	50	02/13/2017 0:32	126968
Surr: 2,4,6-Tribromophenol		33-115	S	**183.6**	%REC	50	02/13/2017 0:32	126968
Surr: 2-Fluorobiphenyl		36.5-97.7		**87.8**	%REC	50	02/13/2017 0:32	126968
Surr: 2-Fluorophenol		39.4-92.8		**83.8**	%REC	50	02/13/2017 0:32	126968
Surr: Nitrobenzene-d5		34.7-90.1		**75.8**	%REC	50	02/13/2017 0:32	126968
Surr: Phenol-d5		42.8-106		**80.8**	%REC	50	02/13/2017 0:32	126968
Surr: p-Terphenyl-d14		43.7-124		**91.8**	%REC	50	02/13/2017 0:32	126968

Surrogate recovery is outside QC limits due to matrix interference.

Elevated reporting limit due to sample extract composition.

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,1,2-Tetrachloroethane	NELAP	149		**ND**	µg/Kg-dry	12.5	02/10/2017 17:31	127007
1,1,1-Trichloroethane	NELAP	149		**ND**	µg/Kg-dry	12.5	02/10/2017 17:31	127007
1,1,2,2-Tetrachloroethane	NELAP	149		**ND**	µg/Kg-dry	12.5	02/10/2017 17:31	127007
1,1,2-Trichloro-1,2,2-trifluoroethane		149		**ND**	µg/Kg-dry	12.5	02/10/2017 17:31	127007
1,1,2-Trichloroethane	NELAP	149		**ND**	µg/Kg-dry	12.5	02/10/2017 17:31	127007
1,1-Dichloro-2-propanone		1490		**ND**	µg/Kg-dry	12.5	02/10/2017 17:31	127007
1,1-Dichloroethane	NELAP	149		**ND**	µg/Kg-dry	12.5	02/10/2017 17:31	127007

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

Lab ID: 17020463-005 **Client Sample ID:** SW-RES-REM-W5 (3)

Matrix: SOLID **Collection Date:** 02/06/2017 17:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1-Dichloroethene	NELAP	149		ND	µg/Kg-dry	12.5	02/10/2017 17:31	127007
1,1-Dichloropropene	NELAP	149		ND	µg/Kg-dry	12.5	02/10/2017 17:31	127007
1,2,3-Trichlorobenzene	NELAP	149		ND	µg/Kg-dry	12.5	02/10/2017 17:31	127007
1,2,3-Trichloropropane	NELAP	298		ND	µg/Kg-dry	12.5	02/10/2017 17:31	127007
1,2,3-Trimethylbenzene		149		ND	µg/Kg-dry	12.5	02/10/2017 17:31	127007
1,2,4-Trichlorobenzene	NELAP	149		ND	µg/Kg-dry	12.5	02/10/2017 17:31	127007
1,2,4-Trimethylbenzene	NELAP	149		ND	µg/Kg-dry	12.5	02/10/2017 17:31	127007
1,2-Dibromo-3-chloropropane	NELAP	149		ND	µg/Kg-dry	12.5	02/10/2017 17:31	127007
1,2-Dibromoethane	NELAP	149		ND	µg/Kg-dry	12.5	02/10/2017 17:31	127007
1,2-Dichlorobenzene	NELAP	149		ND	µg/Kg-dry	12.5	02/10/2017 17:31	127007
1,2-Dichloroethane	NELAP	149		ND	µg/Kg-dry	12.5	02/10/2017 17:31	127007
1,2-Dichloropropane	NELAP	149		ND	µg/Kg-dry	12.5	02/10/2017 17:31	127007
1,3,5-Trimethylbenzene	NELAP	149		ND	µg/Kg-dry	12.5	02/10/2017 17:31	127007
1,3-Dichlorobenzene	NELAP	149		ND	µg/Kg-dry	12.5	02/10/2017 17:31	127007
1,3-Dichloropropane	NELAP	149		ND	µg/Kg-dry	12.5	02/10/2017 17:31	127007
1,4-Dichlorobenzene	NELAP	149		ND	µg/Kg-dry	12.5	02/10/2017 17:31	127007
1-Chlorobutane	NELAP	149		ND	µg/Kg-dry	12.5	02/10/2017 17:31	127007
2,2-Dichloropropane	NELAP	149		ND	µg/Kg-dry	12.5	02/10/2017 17:31	127007
2-Butanone	NELAP	5960		ND	µg/Kg-dry	12.5	02/10/2017 17:31	127007
2-Chlorotoluene	NELAP	149		ND	µg/Kg-dry	12.5	02/10/2017 17:31	127007
2-Hexanone	NELAP	1490		ND	µg/Kg-dry	12.5	02/10/2017 17:31	127007
2-Nitropropane	NELAP	1490		ND	µg/Kg-dry	12.5	02/10/2017 17:31	127007
4-Chlorotoluene	NELAP	149		ND	µg/Kg-dry	12.5	02/10/2017 17:31	127007
4-Methyl-2-pentanone	NELAP	1490		ND	µg/Kg-dry	12.5	02/10/2017 17:31	127007
Acetone	NELAP	1490		ND	µg/Kg-dry	12.5	02/10/2017 17:31	127007
Acrolein	NELAP	2980		ND	µg/Kg-dry	12.5	02/10/2017 17:31	127007
Acrylonitrile	NELAP	298		ND	µg/Kg-dry	12.5	02/10/2017 17:31	127007
Allyl chloride	NELAP	149		ND	µg/Kg-dry	12.5	02/10/2017 17:31	127007
Benzene	NELAP	29.8		ND	µg/Kg-dry	12.5	02/10/2017 17:31	127007
Bromobenzene	NELAP	149		ND	µg/Kg-dry	12.5	02/10/2017 17:31	127007
Bromochloromethane	NELAP	149		ND	µg/Kg-dry	12.5	02/10/2017 17:31	127007
Bromodichloromethane	NELAP	149		ND	µg/Kg-dry	12.5	02/10/2017 17:31	127007
Bromoform	NELAP	149		ND	µg/Kg-dry	12.5	02/10/2017 17:31	127007
Bromomethane	NELAP	298		ND	µg/Kg-dry	12.5	02/10/2017 17:31	127007
Carbon disulfide	NELAP	149		ND	µg/Kg-dry	12.5	02/10/2017 17:31	127007
Carbon tetrachloride	NELAP	149		ND	µg/Kg-dry	12.5	02/10/2017 17:31	127007
Chlorobenzene	NELAP	149		ND	µg/Kg-dry	12.5	02/10/2017 17:31	127007
Chloroethane	NELAP	298		ND	µg/Kg-dry	12.5	02/10/2017 17:31	127007
Chloroform	NELAP	149		ND	µg/Kg-dry	12.5	02/10/2017 17:31	127007
Chloromethane	NELAP	298		ND	µg/Kg-dry	12.5	02/10/2017 17:31	127007
cis-1,2-Dichloroethene	NELAP	149		ND	µg/Kg-dry	12.5	02/10/2017 17:31	127007
cis-1,3-Dichloropropene	NELAP	119		ND	µg/Kg-dry	12.5	02/10/2017 17:31	127007
Cyclohexanone		2980		ND	µg/Kg-dry	12.5	02/10/2017 17:31	127007
Dibromochloromethane	NELAP	149		ND	µg/Kg-dry	12.5	02/10/2017 17:31	127007
Dibromomethane	NELAP	149		ND	µg/Kg-dry	12.5	02/10/2017 17:31	127007
Dichlorodifluoromethane	NELAP	298		ND	µg/Kg-dry	12.5	02/10/2017 17:31	127007
Ethyl ether	NELAP	149		ND	µg/Kg-dry	12.5	02/10/2017 17:31	127007

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

Lab ID: 17020463-005 **Client Sample ID:** SW-RES-REM-W5 (3)

Matrix: SOLID **Collection Date:** 02/06/2017 17:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Ethyl methacrylate	NELAP	149		**ND**	µg/Kg-dry	12.5	02/10/2017 17:31	127007
Ethylbenzene	NELAP	149		**ND**	µg/Kg-dry	12.5	02/10/2017 17:31	127007
Hexachlorobutadiene	NELAP	149		**ND**	µg/Kg-dry	12.5	02/10/2017 17:31	127007
Hexachloroethane	NELAP	149		**ND**	µg/Kg-dry	12.5	02/10/2017 17:31	127007
Iodomethane	NELAP	298		**ND**	µg/Kg-dry	12.5	02/10/2017 17:31	127007
Isopropylbenzene	NELAP	149		**ND**	µg/Kg-dry	12.5	02/10/2017 17:31	127007
m,p-Xylenes	NELAP	149		**ND**	µg/Kg-dry	12.5	02/10/2017 17:31	127007
Methacrylonitrile	NELAP	1490		**ND**	µg/Kg-dry	12.5	02/10/2017 17:31	127007
Methyl Methacrylate	NELAP	149		**ND**	µg/Kg-dry	12.5	02/10/2017 17:31	127007
Methyl tert-butyl ether	NELAP	59.6		**ND**	µg/Kg-dry	12.5	02/10/2017 17:31	127007
Methylacrylate	NELAP	298		**ND**	µg/Kg-dry	12.5	02/10/2017 17:31	127007
Methylene chloride	NELAP	149		**ND**	µg/Kg-dry	12.5	02/10/2017 17:31	127007
Naphthalene	NELAP	298		**679**	µg/Kg-dry	12.5	02/10/2017 17:31	127007
n-Butylbenzene	NELAP	149		**ND**	µg/Kg-dry	12.5	02/10/2017 17:31	127007
n-Heptane		1490		**ND**	µg/Kg-dry	12.5	02/10/2017 17:31	127007
n-Hexane		596		**ND**	µg/Kg-dry	12.5	02/10/2017 17:31	127007
Nitrobenzene	NELAP	2980		**ND**	µg/Kg-dry	12.5	02/10/2017 17:31	127007
n-Propylbenzene	NELAP	149		**ND**	µg/Kg-dry	12.5	02/10/2017 17:31	127007
o-Xylene	NELAP	149		**ND**	µg/Kg-dry	12.5	02/10/2017 17:31	127007
Pentachloroethane	NELAP	149		**ND**	µg/Kg-dry	12.5	02/10/2017 17:31	127007
p-Isopropyltoluene	NELAP	149		**ND**	µg/Kg-dry	12.5	02/10/2017 17:31	127007
Propionitrile	NELAP	1490		**ND**	µg/Kg-dry	12.5	02/10/2017 17:31	127007
sec-Butylbenzene	NELAP	149		**ND**	µg/Kg-dry	12.5	02/10/2017 17:31	127007
Styrene	NELAP	149		**ND**	µg/Kg-dry	12.5	02/10/2017 17:31	127007
tert-Butylbenzene	NELAP	149		**ND**	µg/Kg-dry	12.5	02/10/2017 17:31	127007
Tetrachloroethene	NELAP	149		**ND**	µg/Kg-dry	12.5	02/10/2017 17:31	127007
Tetrahydrofuran	NELAP	1490		**ND**	µg/Kg-dry	12.5	02/10/2017 17:31	127007
Toluene	NELAP	149		**ND**	µg/Kg-dry	12.5	02/10/2017 17:31	127007
trans-1,2-Dichloroethene	NELAP	149		**ND**	µg/Kg-dry	12.5	02/10/2017 17:31	127007
trans-1,3-Dichloropropene	NELAP	119		**ND**	µg/Kg-dry	12.5	02/10/2017 17:31	127007
Trichloroethene	NELAP	149		**ND**	µg/Kg-dry	12.5	02/10/2017 17:31	127007
Trichlorofluoromethane	NELAP	149		**ND**	µg/Kg-dry	12.5	02/10/2017 17:31	127007
Vinyl acetate	NELAP	1490		**ND**	µg/Kg-dry	12.5	02/10/2017 17:31	127007
Vinyl chloride	NELAP	59.6		**ND**	µg/Kg-dry	12.5	02/10/2017 17:31	127007
Surr: 1,2-Dichloroethane-d4		72.2-131		**102.9**	%REC	12.5	02/10/2017 17:31	127007
Surr: 4-Bromofluorobenzene		82.1-116		**104.2**	%REC	12.5	02/10/2017 17:31	127007
Surr: Dibromofluoromethane		77.7-120		**92.1**	%REC	12.5	02/10/2017 17:31	127007
Surr: Toluene-d8		86-116		**112.8**	%REC	12.5	02/10/2017 17:31	127007

LCS recovered outside upper QC limits on 2-Hexanone and Hexachloroethane. Sample results are below reporting limit. Data is reportable per 2009 TNI Standard (Volume1, Module 4, section 1.7.4.2).

Elevated reporting limit due to high levels of target and/or non-target analytes.

Client: PSC Industrial Outsourcing, LP
Work Order: 17020463
Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055
Report Date: 15-Feb-17

Lab Sample ID	Client Sample ID	Matrix	Fractions	Collection Date
17020463-001	SW-RES-REM-W7 (10)	Solid	4	02/06/2017 11:15
17020463-002	SW-RES-REM-W6 (10)	Solid	4	02/06/2017 11:30
17020463-003	SW-RES-REM-W6 (3)	Solid	4	02/06/2017 13:45
17020463-004	SW-RES-REM-W5 (10)	Solid	4	02/06/2017 15:15
17020463-005	SW-RES-REM-W5 (3)	Solid	4	02/06/2017 17:00

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			Prep Date/Time	Analysis Date/Time
17020463-001A	SW-RES-REM-W7 (10)	02/06/2017 11:15	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/10/2017 16:01
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/10/2017 13:43	02/13/2017 14:24
	SW-846 3550B, 8270C, Semi-Volatile Organic Compounds by GC/MS			02/10/2017 13:37	02/13/2017 0:04
17020463-001D	SW-RES-REM-W7 (10)	02/06/2017 11:15	02/08/2017 8:02		
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/08/2017 18:58
17020463-002A	SW-RES-REM-W6 (10)	02/06/2017 11:30	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/10/2017 16:02
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/10/2017 13:43	02/13/2017 16:02
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/10/2017 13:43	02/14/2017 9:42
	SW-846 3550B, 8270C, Semi-Volatile Organic Compounds by GC/MS			02/10/2017 13:37	02/12/2017 23:35
	SW-846 3550B, 8270C, Semi-Volatile Organic Compounds by GC/MS			02/10/2017 13:37	02/13/2017 14:23
17020463-002D	SW-RES-REM-W6 (10)	02/06/2017 11:30	02/08/2017 8:02		
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/08/2017 19:25
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/09/2017 17:32
17020463-003A	SW-RES-REM-W6 (3)	02/06/2017 13:45	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/10/2017 16:03
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/10/2017 13:43	02/13/2017 13:18
	SW-846 3550B, 8270C, Semi-Volatile Organic Compounds by GC/MS			02/10/2017 13:37	02/12/2017 21:42
17020463-003D	SW-RES-REM-W6 (3)	02/06/2017 13:45	02/08/2017 8:02		
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/14/2017 12:44
17020463-004A	SW-RES-REM-W5 (10)	02/06/2017 15:15	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/10/2017 16:03
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/10/2017 13:43	02/13/2017 13:51
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/10/2017 13:43	02/14/2017 9:09
	SW-846 3550B, 8270C, Semi-Volatile Organic Compounds by GC/MS			02/10/2017 13:37	02/12/2017 22:11
17020463-004D	SW-RES-REM-W5 (10)	02/06/2017 15:15	02/08/2017 8:02		
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/10/2017 17:57
17020463-005A	SW-RES-REM-W5 (3)	02/06/2017 17:00	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/10/2017 16:03
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/10/2017 13:43	02/13/2017 16:35
	SW-846 3550B, 8270C, Semi-Volatile Organic Compounds by GC/MS			02/10/2017 13:37	02/13/2017 0:32
17020463-005D	SW-RES-REM-W5 (3)	02/06/2017 17:00	02/08/2017 8:02		
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/10/2017 17:31

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

EPA SW846 3550C, 5035A, ASTM D2974

Batch R229078 **SampType:** LCS Units %

SampID: LCS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	02/10/2017

Batch R229078 **SampType:** LCSQC Units %

SampID: LCSQC

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	02/10/2017

SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126968 **SampType:** MBLK Units %REC

SampID: MBLK-126968

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Surr: 2-Fluorobiphenyl			**0.509**	0.8350		60.9	47.8	104	02/10/2017
Surr: Nitrobenzene-d5			**0.367**	0.8350		43.9	26.9	114	02/10/2017
Surr: p-Terphenyl-d14			**0.425**	0.8350		50.9	50.7	129	02/10/2017

Batch 126968 **SampType:** LCS Units %REC

SampID: LCS-126968

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Surr: 2-Fluorobiphenyl			**0.618**	0.8350		74.0	47.8	104	02/10/2017
Surr: Nitrobenzene-d5			**0.519**	0.8350		62.2	26.9	114	02/10/2017
Surr: p-Terphenyl-d14			**0.488**	0.8350		58.4	50.7	129	02/10/2017

Batch 126968 **SampType:** LCSG Units %REC

SampID: LCSDRO-126968

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Surr: 2-Fluorobiphenyl			**0.586**	0.8350		70.1	47.8	104	02/10/2017
Surr: Nitrobenzene-d5			**0.435**	0.8350		52.1	26.9	114	02/10/2017
Surr: p-Terphenyl-d14			**0.501**	0.8350		60.1	50.7	129	02/10/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126991 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK-126991

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Acenaphthene	0.003		ND						02/10/2017
Acenaphthylene	0.003		ND						02/10/2017
Anthracene	0.003		ND						02/10/2017
Benzo(a)anthracene	0.010		ND						02/10/2017
Benzo(a)pyrene	0.003		ND						02/10/2017
Benzo(b)fluoranthene	0.003		ND						02/10/2017
Benzo(g,h,i)perylene	0.003		ND						02/10/2017
Benzo(k)fluoranthene	0.003		ND						02/10/2017
Chrysene	0.003		ND						02/10/2017
Dibenzo(a,h)anthracene	0.003		ND						02/10/2017
Fluoranthene	0.003		ND						02/10/2017
Fluorene	0.003		ND						02/10/2017
Indeno(1,2,3-cd)pyrene	0.003		ND						02/10/2017
Naphthalene	0.003		ND						02/10/2017
Phenanthrene	0.003		ND						02/10/2017
Pyrene	0.003		ND						02/10/2017
Surr: 2-Fluorobiphenyl			**0.118**	0.1670		70.9	30	101	02/10/2017
Surr: Nitrobenzene-d5			**0.162**	0.1670		96.7	24.4	112	02/10/2017
Surr: p-Terphenyl-d14			**0.113**	0.1670		67.5	31.9	121	02/10/2017

Batch 126991 **SampType:** LCS Units **mg/Kg**

SampID: LCS-126991

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Acenaphthene	0.003		**0.129**	0.1670	0	77.2	47.9	103	02/10/2017
Acenaphthylene	0.003		**0.130**	0.1670	0	77.6	47.3	104	02/10/2017
Anthracene	0.003		**0.119**	0.1670	0	71.4	42.1	98.1	02/10/2017
Benzo(a)anthracene	0.010		**0.144**	0.1670	0	86.0	41.4	107	02/10/2017
Benzo(a)pyrene	0.003		**0.143**	0.1670	0	85.5	43.1	102	02/10/2017
Benzo(b)fluoranthene	0.003		**0.141**	0.1670	0	84.4	40.9	109	02/10/2017
Benzo(g,h,i)perylene	0.003		**0.135**	0.1670	0	81.0	36.2	113	02/10/2017
Benzo(k)fluoranthene	0.003		**0.140**	0.1670	0	83.8	45.4	107	02/10/2017
Chrysene	0.003		**0.135**	0.1670	0	80.8	47.9	107	02/10/2017
Dibenzo(a,h)anthracene	0.003		**0.134**	0.1670	0	80.3	41.2	112	02/10/2017
Fluoranthene	0.003		**0.132**	0.1670	0	78.9	45	104	02/10/2017
Fluorene	0.003		**0.137**	0.1670	0	81.9	47.8	106	02/10/2017
Indeno(1,2,3-cd)pyrene	0.003		**0.134**	0.1670	0	80.1	40	112	02/10/2017
Naphthalene	0.003		**0.116**	0.1670	0	69.5	42.9	93.3	02/10/2017
Phenanthrene	0.003		**0.124**	0.1670	0	74.2	44.2	99.2	02/10/2017
Pyrene	0.003		**0.127**	0.1670	0	76.2	41.3	103	02/10/2017
Surr: 2-Fluorobiphenyl			**0.121**	0.1670		72.5	30	101	02/10/2017
Surr: Nitrobenzene-d5			**0.086**	0.1670		51.7	24.4	112	02/10/2017
Surr: p-Terphenyl-d14			**0.121**	0.1670		72.6	31.9	121	02/10/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126991 **SampType:** MS Units **mg/Kg-dry**

SampID: 17020463-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Acenaphthene	0.026		**1.08**	1.273	0.4556	49.3	30.6	109	02/13/2017
Acenaphthylene	0.026	S	**1.60**	1.273	2.765	-91.2	28	110	02/13/2017
Anthracene	0.026	S	**1.10**	1.273	0.5999	39.1	41.4	94.3	02/13/2017
Benzo(a)anthracene	0.076	S	**1.29**	1.273	1.496	-16.5	28.6	113	02/13/2017
Benzo(a)pyrene	0.026	S	**1.49**	1.273	1.779	-22.5	37.9	102	02/13/2017
Benzo(b)fluoranthene	0.026	S	**1.23**	1.273	1.172	5.0	37.1	112	02/13/2017
Benzo(g,h,i)perylene	0.026		**0.759**	1.273	0.4394	25.1	7.28	119	02/13/2017
Benzo(k)fluoranthene	0.026		**1.02**	1.273	0.3689	51.5	34	115	02/13/2017
Chrysene	0.026	S	**1.11**	1.273	1.170	-5.1	23.1	116	02/13/2017
Dibenzo(a,h)anthracene	0.026		**0.711**	1.273	0.1121	47.0	23.9	110	02/13/2017
Fluoranthene	0.026	S	**1.64**	1.273	2.136	-39.1	20.8	124	02/13/2017
Fluorene	0.026	S	**1.87**	1.273	1.925	-4.6	44.3	96.6	02/13/2017
Indeno(1,2,3-cd)pyrene	0.026		**0.752**	1.273	0.3610	30.7	12.6	119	02/13/2017
Naphthalene	0.026		**0.798**	1.273	0.1103	54.1	17.8	110	02/13/2017
Phenanthrene	0.026		**0.844**	1.273	0.09432	58.9	22.3	117	02/13/2017
Pyrene	0.026	S	**2.03**	1.273	3.441	-110.9	20.6	121	02/13/2017
Surr: 2-Fluorobiphenyl			**0.716**	1.273		56.2	8.85	90.5	02/13/2017
Surr: Nitrobenzene-d5			**0.841**	1.273		66.0	5	102	02/13/2017
Surr: p-Terphenyl-d14			**0.766**	1.273		60.2	18.4	103	02/13/2017

Batch 126991 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **49.7**

SampID: 17020463-001AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Acenaphthene	0.026		**1.09**	1.258	0.4556	50.7	1.082	0.95	02/13/2017
Acenaphthylene	0.026	S	**1.22**	1.258	2.765	-123.0	1.604	27.40	02/13/2017
Anthracene	0.026		**1.13**	1.258	0.5999	42.4	1.098	3.11	02/13/2017
Benzo(a)anthracene	0.075	S	**1.13**	1.258	1.496	-29.4	1.286	13.21	02/13/2017
Benzo(a)pyrene	0.026	S	**1.30**	1.258	1.779	-37.7	1.492	13.40	02/13/2017
Benzo(b)fluoranthene	0.026	S	**1.15**	1.258	1.172	-1.5	1.235	6.88	02/13/2017
Benzo(g,h,i)perylene	0.026		**0.657**	1.258	0.4394	17.3	0.7588	14.39	02/13/2017
Benzo(k)fluoranthene	0.026		**1.05**	1.258	0.3689	54.3	1.024	2.70	02/13/2017
Chrysene	0.026	S	**0.992**	1.258	1.170	-14.1	1.106	10.80	02/13/2017
Dibenzo(a,h)anthracene	0.026		**0.724**	1.258	0.1121	48.6	0.7108	1.80	02/13/2017
Fluoranthene	0.026	S	**1.53**	1.258	2.136	-48.4	1.638	6.98	02/13/2017
Fluorene	0.026	S	**1.73**	1.258	1.925	-15.8	1.866	7.86	02/13/2017
Indeno(1,2,3-cd)pyrene	0.026		**0.712**	1.258	0.3610	27.9	0.7520	5.47	02/13/2017
Naphthalene	0.026		**0.884**	1.258	0.1103	61.6	0.7985	10.21	02/13/2017
Phenanthrene	0.026		**0.887**	1.258	0.09432	63.1	0.8439	5.02	02/13/2017
Pyrene	0.026	S	**1.77**	1.258	3.441	-133.0	2.029	13.77	02/13/2017
Surr: 2-Fluorobiphenyl			**0.758**	1.258		60.2			02/13/2017
Surr: Nitrobenzene-d5			**0.840**	1.258		66.8			02/13/2017
Surr: p-Terphenyl-d14			**0.847**	1.258		67.4			02/13/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126968 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK-126968

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,2,4-Trichlorobenzene	0.500		ND						02/10/2017
1,2-Dichlorobenzene	0.500		ND						02/10/2017
1,3-Dichlorobenzene	0.500		ND						02/10/2017
1,4-Dichlorobenzene	0.500		ND						02/10/2017
2,4,5-Trichlorophenol	0.350		ND						02/10/2017
2,4,6-Trichlorophenol	0.350		ND						02/10/2017
2,4-Dichlorophenol	0.500		ND						02/10/2017
2,4-Dimethylphenol	0.500		ND						02/10/2017
2,4-Dinitrophenol	1.00		ND						02/10/2017
2,4-Dinitrotoluene	0.350		ND						02/10/2017
2,6-Dinitrotoluene	0.350		ND						02/10/2017
2-Chloronaphthalene	0.350		ND						02/10/2017
2-Chlorophenol	0.500		ND						02/10/2017
2-Methoxy-4-methylphenol	0.650		ND						02/10/2017
2-Methylnaphthalene	0.350		ND						02/10/2017
2-Nitroaniline	1.00		ND						02/10/2017
2-Nitrophenol	0.350		ND						02/10/2017
3,3´-Dichlorobenzidine	0.350		ND						02/10/2017
3-Nitroaniline	1.00		ND						02/10/2017
4,6-Dinitro-2-methylphenol	1.00		ND						02/10/2017
4-Bromophenyl phenyl ether	0.350		ND						02/10/2017
4-Chloro-3-methylphenol	0.500		ND						02/10/2017
4-Chloroaniline	0.500		ND						02/10/2017
4-Chlorophenyl phenyl ether	0.350		ND						02/10/2017
4-Nitroaniline	0.500		ND						02/10/2017
4-Nitrophenol	0.350		ND						02/10/2017
Aniline	0.500		ND						02/10/2017
Azobenzene	0.350		ND						02/10/2017
Benzoic acid	1.50		ND						02/10/2017
Benzyl alcohol	0.500		ND						02/10/2017
Bis(2-chloroethoxy)methane	0.350		ND						02/10/2017
Bis(2-chloroethyl)ether	0.500		ND						02/10/2017
Bis(2-chloroisopropyl)ether	0.350		ND						02/10/2017
Bis(2-ethylhexyl)phthalate	0.350		ND						02/10/2017
Butyl benzyl phthalate	0.350		ND						02/10/2017
Carbazole	0.500		ND						02/10/2017
Dibenzofuran	0.350		ND						02/10/2017
Diethyl phthalate	0.500		ND						02/10/2017
Dimethyl phthalate	0.350		ND						02/10/2017
Di-n-butyl phthalate	0.350		ND						02/10/2017
Di-n-octyl phthalate	0.350		ND						02/10/2017
Hexachlorobenzene	0.350		ND						02/10/2017
Hexachlorobutadiene	0.500		ND						02/10/2017
Hexachlorocyclopentadiene	0.350		ND						02/10/2017
Hexachloroethane	0.500		ND						02/10/2017
Isophorone	0.350		ND						02/10/2017
m,p-Cresol	0.500		ND						02/10/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126968 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK-126968

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Nitrobenzene	0.500		**ND**						02/10/2017
N-Nitrosodimethylamine	0.500		**ND**						02/10/2017
N-Nitroso-di-n-propylamine	0.500		**ND**						02/10/2017
N-Nitrosodiphenylamine	0.500		**ND**						02/10/2017
o-Cresol	0.500		**ND**						02/10/2017
Pentachlorophenol	2.00		**ND**						02/10/2017
Phenol	0.350		**ND**						02/10/2017
Pyridine	0.500		**ND**						02/10/2017
1,2-Diphenylhydrazine	0.840		**ND**						02/10/2017
Surr: 2,4,6-Tribromophenol			**1.22**	1.670		72.8	50.5	116	02/10/2017
Surr: 2-Fluorobiphenyl			**0.729**	0.8350		87.3	47.4	102	02/10/2017
Surr: 2-Fluorophenol			**1.12**	1.670		66.9	43.7	98.6	02/10/2017
Surr: Nitrobenzene-d5			**0.681**	0.8350		81.6	39	97.3	02/10/2017
Surr: Phenol-d5			**1.27**	1.670		76.3	48.1	104	02/10/2017
Surr: p-Terphenyl-d14			**0.762**	0.8350		91.2	53.2	119	02/10/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126968 **SampType:** LCS Units **mg/Kg**

SampID: LCS-126968

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,2,4-Trichlorobenzene	0.500		**1.21**	1.670	0	72.7	52.4	102	02/10/2017
1,4-Dichlorobenzene	0.500		**1.28**	1.670	0	76.7	43	86.1	02/10/2017
2,4,5-Trichlorophenol	0.350		**1.26**	1.670	0	75.3	55.1	106	02/10/2017
2,4,6-Trichlorophenol	0.350		**1.27**	1.670	0	75.9	54	105	02/10/2017
2,4-Dimethylphenol	0.500		**1.11**	1.670	0	66.3	46.8	103	02/10/2017
2,4-Dinitrophenol	1.00		**ND**	1.670	0	57.5	38	95.6	02/10/2017
2,4-Dinitrotoluene	0.350		**1.33**	1.670	0	79.6	55.6	109	02/10/2017
2-Chlorophenol	0.500		**1.17**	1.670	0	70.1	51.1	92.4	02/10/2017
4-Chloro-3-methylphenol	0.500		**1.20**	1.670	0	71.6	52	97.3	02/10/2017
4-Nitrophenol	0.350		**1.06**	1.670	0	63.6	48	99.6	02/10/2017
Bis(2-ethylhexyl)phthalate	0.350		**1.06**	1.670	0	63.2	48.3	106	02/10/2017
Diethyl phthalate	0.500		**1.41**	1.670	0	84.5	56.9	103	02/10/2017
Dimethyl phthalate	0.350		**1.35**	1.670	0	80.6	56.4	98.1	02/10/2017
Di-n-butyl phthalate	0.350		**1.25**	1.670	0	74.8	54.8	100	02/10/2017
Hexachlorobenzene	0.350		**1.26**	1.670	0	75.4	54.1	102	02/10/2017
Hexachlorobutadiene	0.500		**1.21**	1.670	0	72.3	46	103	02/10/2017
Hexachloroethane	0.500		**1.32**	1.670	0	79.0	45	90	02/10/2017
m,p-Cresol	0.500		**1.28**	1.670	0	76.5	53	98.5	02/10/2017
Nitrobenzene	0.500		**1.05**	1.670	0	63.1	44.4	86.6	02/10/2017
N-Nitroso-di-n-propylamine	0.500		**1.42**	1.670	0	84.9	39.8	94.3	02/10/2017
o-Cresol	0.500		**1.29**	1.670	0	77.1	52.1	96.4	02/10/2017
Pentachlorophenol	2.00		**ND**	1.670	0	57.5	37	91.7	02/10/2017
Phenol	0.350		**1.28**	1.670	0	76.6	52.9	95.6	02/10/2017
Pyridine	0.500		**0.959**	1.670	0	57.4	30	77.1	02/10/2017
Surr: 2,4,6-Tribromophenol			**1.10**	1.670		65.7	50.5	116	02/10/2017
Surr: 2-Fluorobiphenyl			**0.630**	0.8350		75.4	47.4	102	02/10/2017
Surr: 2-Fluorophenol			**1.23**	1.670		73.4	43.7	98.6	02/10/2017
Surr: Nitrobenzene-d5			**0.552**	0.8350		66.1	39	97.3	02/10/2017
Surr: Phenol-d5			**1.36**	1.670		81.7	48.1	104	02/10/2017
Surr: p-Terphenyl-d14			**0.681**	0.8350		81.6	53.2	119	02/10/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126968 **SampType:** MS Units **mg/Kg-dry**

SampID: 17020463-004AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,2,4-Trichlorobenzene	18.5		**49.4**	61.93	0	79.7	35.9	102	02/12/2017
1,4-Dichlorobenzene	18.5		**44.7**	61.93	0	72.2	29.8	95.5	02/12/2017
2,4,5-Trichlorophenol	13.0		**52.3**	61.93	0	84.4	38.6	123	02/12/2017
2,4,6-Trichlorophenol	13.0		**52.8**	61.93	0	85.3	35.9	123	02/12/2017
2,4-Dimethylphenol	18.5		**48.2**	61.93	0	77.8	38.3	88	02/12/2017
2,4-Dinitrophenol	37.1		**ND**	61.93	0	29.1	1.88	162	02/12/2017
2,4-Dinitrotoluene	13.0		**55.4**	61.93	0	89.4	37.5	107	02/12/2017
2-Chlorophenol	18.5		**44.4**	61.93	0	71.6	22.6	108	02/12/2017
4-Chloro-3-methylphenol	18.5		**52.6**	61.93	0	84.9	19.3	131	02/12/2017
4-Nitrophenol	13.0		**46.3**	61.93	0	74.8	27.6	123	02/12/2017
Bis(2-ethylhexyl)phthalate	13.0		**52.3**	61.93	0	84.4	56.3	109	02/12/2017
Diethyl phthalate	18.5		**58.4**	61.93	0	94.3	51.7	106	02/12/2017
Dimethyl phthalate	13.0		**55.5**	61.93	0	89.6	58.8	104	02/12/2017
Di-n-butyl phthalate	13.0		**49.5**	61.93	0	80.0	54.3	105	02/12/2017
Hexachlorobenzene	13.0		**48.6**	61.93	0	78.5	55.9	106	02/12/2017
Hexachlorobutadiene	18.5		**46.6**	61.93	0	75.2	35.7	100	02/12/2017
Hexachloroethane	18.5		**46.5**	61.93	0	75.1	38.9	89.9	02/12/2017
m,p-Cresol	18.5		**49.7**	61.93	0	80.2	37.6	93.7	02/12/2017
Nitrobenzene	18.5		**41.2**	61.93	0	66.5	51.8	104	02/12/2017
N-Nitroso-di-n-propylamine	18.5		**56.0**	61.93	0	90.5	45.5	99.1	02/12/2017
o-Cresol	18.5		**48.6**	61.93	0	78.4	43	101	02/12/2017
Pentachlorophenol	74.2		**ND**	61.93	0	61.9	18.5	113	02/12/2017
Phenol	13.0		**46.6**	61.93	0	75.2	20.8	110	02/12/2017
Pyridine	18.5		**19.7**	61.93	0	31.8	3.61	74.3	02/12/2017
Surr: 2,4,6-Tribromophenol			**52.2**	61.93		84.3	33	115	02/12/2017
Surr: 2-Fluorobiphenyl			**24.1**	30.96		77.8	36.5	97.7	02/12/2017
Surr: 2-Fluorophenol			**34.0**	61.93		54.9	39.4	92.8	02/12/2017
Surr: Nitrobenzene-d5			**21.8**	30.96		70.3	34.7	90.1	02/12/2017
Surr: Phenol-d5			**49.4**	61.93		79.8	42.8	106	02/12/2017
Surr: p-Terphenyl-d14			**27.7**	30.96		89.6	43.7	124	02/12/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126968 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **40**

SampID: 17020463-004AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
1,2,4-Trichlorobenzene	17.2		**48.3**	57.34	0	84.2	49.38	2.29	02/12/2017
1,4-Dichlorobenzene	17.2		**43.0**	57.34	0	75.0	44.68	3.79	02/12/2017
2,4,5-Trichlorophenol	12.0		**50.1**	57.34	0	87.4	52.27	4.19	02/12/2017
2,4,6-Trichlorophenol	12.0		**49.0**	57.34	0	85.4	52.82	7.51	02/12/2017
2,4-Dimethylphenol	17.2		**45.4**	57.34	0	79.3	48.21	5.89	02/12/2017
2,4-Dinitrophenol	34.3		**ND**	57.34	0	29.8	18.01	0.00	02/12/2017
2,4-Dinitrotoluene	12.0		**50.1**	57.34	0	87.4	55.38	9.97	02/12/2017
2-Chlorophenol	17.2		**44.5**	57.34	0	77.5	44.36	0.23	02/12/2017
4-Chloro-3-methylphenol	17.2		**52.0**	57.34	0	90.8	52.58	1.04	02/12/2017
4-Nitrophenol	12.0		**41.5**	57.34	0	72.4	46.34	11.05	02/12/2017
Bis(2-ethylhexyl)phthalate	12.0		**52.5**	57.34	0	91.5	52.27	0.36	02/12/2017
Diethyl phthalate	17.2		**53.4**	57.34	0	93.1	58.39	8.95	02/12/2017
Dimethyl phthalate	12.0		**50.8**	57.34	0	88.6	55.50	8.83	02/12/2017
Di-n-butyl phthalate	12.0		**46.9**	57.34	0	81.7	49.53	5.52	02/12/2017
Hexachlorobenzene	12.0		**49.6**	57.34	0	86.5	48.59	2.04	02/12/2017
Hexachlorobutadiene	17.2		**45.7**	57.34	0	79.7	46.58	1.87	02/12/2017
Hexachloroethane	17.2		**46.7**	57.34	0	81.4	46.49	0.35	02/12/2017
m,p-Cresol	17.2		**50.5**	57.34	0	88.1	49.69	1.61	02/12/2017
Nitrobenzene	17.2		**40.2**	57.34	0	70.1	41.20	2.41	02/12/2017
N-Nitroso-di-n-propylamine	17.2		**54.7**	57.34	0	95.3	56.02	2.45	02/12/2017
o-Cresol	17.2		**46.8**	57.34	0	81.6	48.57	3.68	02/12/2017
Pentachlorophenol	68.7		**ND**	57.34	0	67.2	38.36	0.00	02/12/2017
Phenol	12.0		**45.1**	57.34	0	78.6	46.60	3.29	02/12/2017
Pyridine	17.2		**23.6**	57.34	0	41.2	19.72	18.03	02/12/2017
Surr: 2,4,6-Tribromophenol			**45.7**	57.34		79.7			02/12/2017
Surr: 2-Fluorobiphenyl			**23.2**	28.67		81.0			02/12/2017
Surr: 2-Fluorophenol			**34.7**	57.34		60.5			02/12/2017
Surr: Nitrobenzene-d5			**19.7**	28.67		68.7			02/12/2017
Surr: Phenol-d5			**44.4**	57.34		77.4			02/12/2017
Surr: p-Terphenyl-d14			**26.9**	28.67		93.9			02/12/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126894 **SampType:** MBLK Units µg/Kg

SampID: MBLK-F170208A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		ND						02/08/2017
1,1,1-Trichloroethane	5.0		ND						02/08/2017
1,1,2,2-Tetrachloroethane	5.0		ND						02/08/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		ND						02/08/2017
1,1,2-Trichloroethane	5.0		ND						02/08/2017
1,1-Dichloro-2-propanone	50.0		ND						02/08/2017
1,1-Dichloroethane	5.0		ND						02/08/2017
1,1-Dichloroethene	5.0		ND						02/08/2017
1,1-Dichloropropene	5.0		ND						02/08/2017
1,2,3-Trichlorobenzene	5.0		ND						02/08/2017
1,2,3-Trichloropropane	10.0		ND						02/08/2017
1,2,3-Trimethylbenzene	5.0		ND						02/08/2017
1,2,4-Trichlorobenzene	5.0		ND						02/08/2017
1,2,4-Trimethylbenzene	5.0		ND						02/08/2017
1,2-Dibromo-3-chloropropane	5.0		ND						02/08/2017
1,2-Dibromoethane	5.0		ND						02/08/2017
1,2-Dichlorobenzene	5.0		ND						02/08/2017
1,2-Dichloroethane	5.0		ND						02/08/2017
1,2-Dichloropropane	5.0		ND						02/08/2017
1,3,5-Trimethylbenzene	5.0		ND						02/08/2017
1,3-Dichlorobenzene	5.0		ND						02/08/2017
1,3-Dichloropropane	5.0		ND						02/08/2017
1,4-Dichlorobenzene	5.0		ND						02/08/2017
1-Chlorobutane	5.0		ND						02/08/2017
2,2-Dichloropropane	5.0		ND						02/08/2017
2-Butanone	50.0		ND						02/08/2017
2-Chlorotoluene	5.0		ND						02/08/2017
2-Hexanone	50.0		ND						02/08/2017
2-Nitropropane	50.0		ND						02/08/2017
4-Chlorotoluene	5.0		ND						02/08/2017
4-Methyl-2-pentanone	50.0		ND						02/08/2017
Acetone	50.0		ND						02/08/2017
Acrolein	100		ND						02/08/2017
Acrylonitrile	10.0		ND						02/08/2017
Allyl chloride	5.0		ND						02/08/2017
Benzene	1.0		ND						02/08/2017
Bromobenzene	5.0		ND						02/08/2017
Bromochloromethane	5.0		ND						02/08/2017
Bromodichloromethane	5.0		ND						02/08/2017
Bromoform	5.0		ND						02/08/2017
Bromomethane	10.0		ND						02/08/2017
Carbon disulfide	5.0		ND						02/08/2017
Carbon tetrachloride	5.0		ND						02/08/2017
Chlorobenzene	5.0		ND						02/08/2017
Chloroethane	10.0		ND						02/08/2017
Chloroform	5.0		ND						02/08/2017
Chloromethane	10.0		ND						02/08/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126894 **SampType:** MBLK Units µg/Kg

SampID: MBLK-F170208A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		ND						02/08/2017
cis-1,3-Dichloropropene	4.0		ND						02/08/2017
Cyclohexanone	100		ND						02/08/2017
Dibromochloromethane	5.0		ND						02/08/2017
Dibromomethane	5.0		ND						02/08/2017
Dichlorodifluoromethane	10.0		ND						02/08/2017
Ethyl ether	5.0		ND						02/08/2017
Ethyl methacrylate	5.0		ND						02/08/2017
Ethylbenzene	5.0		ND						02/08/2017
Hexachlorobutadiene	5.0		ND						02/08/2017
Hexachloroethane	5.0		ND						02/08/2017
Iodomethane	10.0		ND						02/08/2017
Isopropylbenzene	5.0		ND						02/08/2017
m,p-Xylenes	5.0		ND						02/08/2017
Methacrylonitrile	50.0		ND						02/08/2017
Methyl Methacrylate	5.0		ND						02/08/2017
Methyl tert-butyl ether	2.0		ND						02/08/2017
Methylacrylate	10.0		ND						02/08/2017
Methylene chloride	5.0		ND						02/08/2017
Naphthalene	10.0		ND						02/08/2017
n-Butylbenzene	5.0		ND						02/08/2017
n-Heptane	20.0		ND						02/08/2017
n-Hexane	20.0		ND						02/08/2017
Nitrobenzene	100		ND						02/08/2017
n-Propylbenzene	5.0		ND						02/08/2017
o-Xylene	5.0		ND						02/08/2017
Pentachloroethane	5.0		ND						02/08/2017
p-Isopropyltoluene	5.0		ND						02/08/2017
Propionitrile	50.0		ND						02/08/2017
sec-Butylbenzene	5.0		ND						02/08/2017
Styrene	5.0		ND						02/08/2017
tert-Butylbenzene	5.0		ND						02/08/2017
Tetrachloroethene	5.0		ND						02/08/2017
Tetrahydrofuran	50.0		ND						02/08/2017
Toluene	5.0		ND						02/08/2017
trans-1,2-Dichloroethene	5.0		ND						02/08/2017
trans-1,3-Dichloropropene	4.0		ND						02/08/2017
Trichloroethene	5.0		ND						02/08/2017
Trichlorofluoromethane	5.0		ND						02/08/2017
Vinyl acetate	50.0		ND						02/08/2017
Vinyl chloride	2.0		ND						02/08/2017
Surr: 1,2-Dichloroethane-d4			**53.6**	50.00		107.2	72.2	131	02/08/2017
Surr: 4-Bromofluorobenzene			**52.2**	50.00		104.4	82.1	116	02/08/2017
Surr: Dibromofluoromethane			**50.0**	50.00		100.0	77.7	120	02/08/2017
Surr: Toluene-d8			**49.2**	50.00		98.5	86	116	02/08/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126894 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-F170208A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		**53.0**	50.00	0	106.0	50.92	3.97	02/08/2017
1,1,1-Trichloroethane	5.0		**54.9**	50.00	0	109.7	55.72	1.54	02/08/2017
1,1,2,2-Tetrachloroethane	5.0		**51.9**	50.00	0	103.8	52.00	0.19	02/08/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		**54.1**	50.00	0	108.1	54.46	0.74	02/08/2017
1,1,2-Trichloroethane	5.0		**51.3**	50.00	0	102.7	49.93	2.77	02/08/2017
1,1-Dichloro-2-propanone	50.0		**141**	125.0	0	113.0	115.4	20.11	02/08/2017
1,1-Dichloroethane	5.0		**54.2**	50.00	0	108.5	54.34	0.18	02/08/2017
1,1-Dichloroethene	5.0		**55.6**	50.00	0	111.2	55.58	0.07	02/08/2017
1,1-Dichloropropene	5.0		**54.4**	50.00	0	108.8	53.21	2.19	02/08/2017
1,2,3-Trichlorobenzene	5.0		**53.3**	50.00	0	106.6	52.38	1.74	02/08/2017
1,2,3-Trichloropropane	10.0		**50.3**	50.00	0	100.6	51.57	2.51	02/08/2017
1,2,3-Trimethylbenzene	5.0		**52.6**	50.00	0	105.3	52.66	0.04	02/08/2017
1,2,4-Trichlorobenzene	5.0		**57.4**	50.00	0	114.7	56.74	1.07	02/08/2017
1,2,4-Trimethylbenzene	5.0		**54.0**	50.00	0	108.1	53.43	1.12	02/08/2017
1,2-Dibromo-3-chloropropane	5.0		**53.4**	50.00	0	106.8	52.48	1.72	02/08/2017
1,2-Dibromoethane	5.0		**49.7**	50.00	0	99.3	49.42	0.48	02/08/2017
1,2-Dichlorobenzene	5.0		**51.2**	50.00	0	102.3	49.76	2.75	02/08/2017
1,2-Dichloroethane	5.0		**57.8**	50.00	0	115.6	58.72	1.61	02/08/2017
1,2-Dichloropropane	5.0		**53.3**	50.00	0	106.7	53.34	0.00	02/08/2017
1,3,5-Trimethylbenzene	5.0		**54.4**	50.00	0	108.7	52.17	4.13	02/08/2017
1,3-Dichlorobenzene	5.0		**53.0**	50.00	0	106.0	52.32	1.33	02/08/2017
1,3-Dichloropropane	5.0		**51.6**	50.00	0	103.2	50.85	1.44	02/08/2017
1,4-Dichlorobenzene	5.0		**51.8**	50.00	0	103.5	51.21	1.09	02/08/2017
1-Chlorobutane	5.0		**53.9**	50.00	0	107.9	52.84	2.04	02/08/2017
2,2-Dichloropropane	5.0		**57.3**	50.00	0	114.6	56.06	2.15	02/08/2017
2-Butanone	50.0		**135**	125.0	0	107.8	175.7	26.42	02/08/2017
2-Chlorotoluene	5.0		**53.9**	50.00	0	107.8	52.93	1.85	02/08/2017
2-Hexanone	50.0		**137**	125.0	0	109.9	154.9	11.94	02/08/2017
2-Nitropropane	50.0		**617**	500.0	0	123.5	615.2	0.36	02/08/2017
4-Chlorotoluene	5.0		**49.3**	50.00	0	98.6	49.75	0.93	02/08/2017
4-Methyl-2-pentanone	50.0		**138**	125.0	0	110.3	142.6	3.34	02/08/2017
Acetone	50.0	R	**101**	125.0	0	80.8	178.6	55.50	02/08/2017
Acrolein	100		**396**	500.0	0	79.2	396.3	0.09	02/08/2017
Acrylonitrile	10.0		**56.8**	50.00	0	113.6	57.17	0.68	02/08/2017
Allyl chloride	5.0		**52.5**	50.00	0	104.9	55.09	4.89	02/08/2017
Benzene	1.0		**51.5**	50.00	0	103.0	51.36	0.31	02/08/2017
Bromobenzene	5.0		**52.8**	50.00	0	105.6	52.68	0.27	02/08/2017
Bromochloromethane	5.0		**53.8**	50.00	0	107.5	53.34	0.78	02/08/2017
Bromodichloromethane	5.0		**54.8**	50.00	0	109.6	53.99	1.51	02/08/2017
Bromoform	5.0		**56.3**	50.00	0	112.6	53.91	4.34	02/08/2017
Bromomethane	10.0		**39.6**	50.00	0	79.3	32.33	20.29	02/08/2017
Carbon disulfide	5.0		**48.7**	50.00	0	97.4	48.28	0.87	02/08/2017
Carbon tetrachloride	5.0		**57.2**	50.00	0	114.4	55.82	2.48	02/08/2017
Chlorobenzene	5.0		**51.0**	50.00	0	101.9	50.41	1.10	02/08/2017
Chloroethane	10.0		**53.1**	50.00	0	106.3	52.60	1.02	02/08/2017
Chloroform	5.0		**54.3**	50.00	0	108.6	52.63	3.16	02/08/2017
Chloromethane	10.0		**58.9**	50.00	0	117.7	57.01	3.19	02/08/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126894 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-F170208A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
cis-1,2-Dichloroethene	5.0		**57.0**	50.00	0	114.0	56.04	1.66	02/08/2017
cis-1,3-Dichloropropene	4.0		**55.3**	50.00	0	110.6	55.42	0.18	02/08/2017
Cyclohexanone	100		**473**	500.0	0	94.5	496.9	5.02	02/08/2017
Dibromochloromethane	5.0		**53.9**	50.00	0	107.7	53.12	1.38	02/08/2017
Dibromomethane	5.0		**53.9**	50.00	0	107.9	53.67	0.50	02/08/2017
Dichlorodifluoromethane	10.0		**48.4**	50.00	0	96.8	48.11	0.60	02/08/2017
Ethyl ether	5.0		**54.7**	50.00	0	109.3	52.04	4.91	02/08/2017
Ethyl methacrylate	5.0		**55.1**	50.00	0	110.2	54.64	0.80	02/08/2017
Ethylbenzene	5.0		**54.2**	50.00	0	108.5	52.33	3.58	02/08/2017
Hexachlorobutadiene	5.0		**54.6**	50.00	0	109.2	54.63	0.04	02/08/2017
Hexachloroethane	5.0		**55.4**	50.00	0	110.9	55.72	0.50	02/08/2017
Iodomethane	10.0		**44.2**	50.00	0	88.3	42.66	3.46	02/08/2017
Isopropylbenzene	5.0		**53.7**	50.00	0	107.4	52.29	2.70	02/08/2017
m,p-Xylenes	5.0		**109**	100.0	0	108.8	105.8	2.75	02/08/2017
Methacrylonitrile	50.0		**58.0**	50.00	0	116.0	53.92	7.29	02/08/2017
Methyl Methacrylate	5.0		**57.0**	50.00	0	114.0	57.20	0.37	02/08/2017
Methyl tert-butyl ether	2.0		**56.4**	50.00	0	112.8	54.58	3.28	02/08/2017
Methylacrylate	10.0		**53.2**	50.00	0	106.3	51.34	3.46	02/08/2017
Methylene chloride	5.0		**53.4**	50.00	0	106.8	51.99	2.68	02/08/2017
Naphthalene	10.0		**52.8**	50.00	0	105.7	53.51	1.26	02/08/2017
n-Butylbenzene	5.0		**56.3**	50.00	0	112.6	55.65	1.16	02/08/2017
n-Heptane	20.0		**61.1**	50.00	0	122.1	63.85	4.47	02/08/2017
n-Hexane	20.0		**57.3**	50.00	0	114.7	58.49	2.00	02/08/2017
Nitrobenzene	100		**476**	500.0	0	95.1	491.8	3.34	02/08/2017
n-Propylbenzene	5.0		**54.4**	50.00	0	108.8	54.17	0.41	02/08/2017
o-Xylene	5.0		**53.9**	50.00	0	107.9	52.26	3.16	02/08/2017
Pentachloroethane	5.0		**59.1**	50.00	0	118.1	57.20	3.20	02/08/2017
p-Isopropyltoluene	5.0		**55.4**	50.00	0	110.8	55.12	0.54	02/08/2017
Propionitrile	50.0		**575**	500.0	0	114.9	584.2	1.66	02/08/2017
sec-Butylbenzene	5.0		**54.8**	50.00	0	109.7	53.87	1.78	02/08/2017
Styrene	5.0		**53.8**	50.00	0	107.7	52.21	3.07	02/08/2017
tert-Butylbenzene	5.0		**51.3**	50.00	0	102.6	50.57	1.41	02/08/2017
Tetrachloroethene	5.0		**50.4**	50.00	0	100.9	50.11	0.68	02/08/2017
Tetrahydrofuran	50.0		**56.3**	50.00	0	112.6	58.96	4.63	02/08/2017
Toluene	5.0		**50.5**	50.00	0	101.0	48.78	3.46	02/08/2017
trans-1,2-Dichloroethene	5.0		**54.4**	50.00	0	108.8	52.58	3.38	02/08/2017
trans-1,3-Dichloropropene	4.0		**56.7**	50.00	0	113.3	54.58	3.74	02/08/2017
Trichloroethene	5.0		**54.4**	50.00	0	108.8	53.63	1.39	02/08/2017
Trichlorofluoromethane	5.0		**56.3**	50.00	0	112.7	55.91	0.75	02/08/2017
Vinyl acetate	50.0	S	**63.7**	50.00	0	127.4	61.96	2.74	02/08/2017
Vinyl chloride	2.0		**50.7**	50.00	0	101.4	49.43	2.54	02/08/2017
Surr: 1,2-Dichloroethane-d4			**54.0**	50.00		107.9			02/08/2017
Surr: 4-Bromofluorobenzene			**51.1**	50.00		102.1			02/08/2017
Surr: Dibromofluoromethane			**51.4**	50.00		102.8			02/08/2017
Surr: Toluene-d8			**48.8**	50.00		97.6			02/08/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126894 **SampType:** LCS Units µg/Kg

SampID: LCS-F170208A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		**50.9**	50.00	0	101.8	83.1	114	02/08/2017
1,1,1-Trichloroethane	5.0		**55.7**	50.00	0	111.4	78.5	119	02/08/2017
1,1,2,2-Tetrachloroethane	5.0		**52.0**	50.00	0	104.0	67.4	120	02/08/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		**54.5**	50.00	0	108.9	75.4	121	02/08/2017
1,1,2-Trichloroethane	5.0		**49.9**	50.00	0	99.9	81.1	111	02/08/2017
1,1-Dichloro-2-propanone	50.0		**115**	125.0	0	92.4	55.4	131	02/08/2017
1,1-Dichloroethane	5.0		**54.3**	50.00	0	108.7	80.1	116	02/08/2017
1,1-Dichloroethene	5.0		**55.6**	50.00	0	111.2	73.1	121	02/08/2017
1,1-Dichloropropene	5.0		**53.2**	50.00	0	106.4	82.2	114	02/08/2017
1,2,3-Trichlorobenzene	5.0		**52.4**	50.00	0	104.8	81.7	130	02/08/2017
1,2,3-Trichloropropane	10.0		**51.6**	50.00	0	103.1	67.8	118	02/08/2017
1,2,3-Trimethylbenzene	5.0		**52.7**	50.00	0	105.3	82.1	127	02/08/2017
1,2,4-Trichlorobenzene	5.0		**56.7**	50.00	0	113.5	72.3	141	02/08/2017
1,2,4-Trimethylbenzene	5.0		**53.4**	50.00	0	106.9	79.7	123	02/08/2017
1,2-Dibromo-3-chloropropane	5.0		**52.5**	50.00	0	105.0	62.1	123	02/08/2017
1,2-Dibromoethane	5.0		**49.4**	50.00	0	98.8	82.4	112	02/08/2017
1,2-Dichlorobenzene	5.0		**49.8**	50.00	0	99.5	82.7	119	02/08/2017
1,2-Dichloroethane	5.0		**58.7**	50.00	0	117.4	72.8	120	02/08/2017
1,2-Dichloropropane	5.0		**53.3**	50.00	0	106.7	80	116	02/08/2017
1,3,5-Trimethylbenzene	5.0		**52.2**	50.00	0	104.3	81.5	125	02/08/2017
1,3-Dichlorobenzene	5.0		**52.3**	50.00	0	104.6	82	124	02/08/2017
1,3-Dichloropropane	5.0		**50.8**	50.00	0	101.7	79.8	113	02/08/2017
1,4-Dichlorobenzene	5.0		**51.2**	50.00	0	102.4	81.1	124	02/08/2017
1-Chlorobutane	5.0		**52.8**	50.00	0	105.7	77.2	113	02/08/2017
2,2-Dichloropropane	5.0		**56.1**	50.00	0	112.1	76.6	121	02/08/2017
2-Butanone	50.0	S	**176**	125.0	0	140.6	62.8	131	02/08/2017
2-Chlorotoluene	5.0		**52.9**	50.00	0	105.9	78.8	121	02/08/2017
2-Hexanone	50.0		**155**	125.0	0	123.9	63.1	125	02/08/2017
2-Nitropropane	50.0		**615**	500.0	0	123.0	61.2	129	02/08/2017
4-Chlorotoluene	5.0		**49.8**	50.00	0	99.5	77.6	124	02/08/2017
4-Methyl-2-pentanone	50.0		**143**	125.0	0	114.1	60.6	126	02/08/2017
Acetone	50.0		**179**	125.0	0	142.9	39.5	159	02/08/2017
Acrolein	100		**396**	500.0	0	79.3	1	167	02/08/2017
Acrylonitrile	10.0		**57.2**	50.00	0	114.3	67	124	02/08/2017
Allyl chloride	5.0		**55.1**	50.00	0	110.2	58.5	129	02/08/2017
Benzene	1.0		**51.4**	50.00	0	102.7	80.8	117	02/08/2017
Bromobenzene	5.0		**52.7**	50.00	0	105.4	79.6	117	02/08/2017
Bromochloromethane	5.0		**53.3**	50.00	0	106.7	70.7	121	02/08/2017
Bromodichloromethane	5.0		**54.0**	50.00	0	108.0	80.7	121	02/08/2017
Bromoform	5.0		**53.9**	50.00	0	107.8	79.8	118	02/08/2017
Bromomethane	10.0		**32.3**	50.00	0	64.7	1	175	02/08/2017
Carbon disulfide	5.0		**48.3**	50.00	0	96.6	62.8	123	02/08/2017
Carbon tetrachloride	5.0		**55.8**	50.00	0	111.6	77.6	123	02/08/2017
Chlorobenzene	5.0		**50.4**	50.00	0	100.8	85.6	116	02/08/2017
Chloroethane	10.0		**52.6**	50.00	0	105.2	60.2	125	02/08/2017
Chloroform	5.0		**52.6**	50.00	0	105.3	77.9	116	02/08/2017
Chloromethane	10.0		**57.0**	50.00	0	114.0	29.9	157	02/08/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126894 **SampType:** LCS Units µg/Kg

SampID: LCS-F170208A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		**56.0**	50.00	0	112.1	80.1	116	02/08/2017
cis-1,3-Dichloropropene	4.0		**55.4**	50.00	0	110.8	80.5	121	02/08/2017
Cyclohexanone	100		**497**	500.0	0	99.4	45.4	128	02/08/2017
Dibromochloromethane	5.0		**53.1**	50.00	0	106.2	84.3	116	02/08/2017
Dibromomethane	5.0		**53.7**	50.00	0	107.3	76.6	115	02/08/2017
Dichlorodifluoromethane	10.0		**48.1**	50.00	0	96.2	1	200	02/08/2017
Ethyl ether	5.0		**52.0**	50.00	0	104.1	73.4	116	02/08/2017
Ethyl methacrylate	5.0		**54.6**	50.00	0	109.3	76.2	120	02/08/2017
Ethylbenzene	5.0		**52.3**	50.00	0	104.7	84.8	116	02/08/2017
Hexachlorobutadiene	5.0		**54.6**	50.00	0	109.3	74	135	02/08/2017
Hexachloroethane	5.0		**55.7**	50.00	0	111.4	76.4	121	02/08/2017
Iodomethane	10.0		**42.7**	50.00	0	85.3	38.7	161	02/08/2017
Isopropylbenzene	5.0		**52.3**	50.00	0	104.6	85	125	02/08/2017
m,p-Xylenes	5.0		**106**	100.0	0	105.8	85.3	120	02/08/2017
Methacrylonitrile	50.0		**53.9**	50.00	0	107.8	65.7	120	02/08/2017
Methyl Methacrylate	5.0	S	**57.2**	50.00	0	114.4	69.1	114	02/08/2017
Methyl tert-butyl ether	2.0		**54.6**	50.00	0	109.2	66.6	125	02/08/2017
Methylacrylate	10.0		**51.3**	50.00	0	102.7	69.7	121	02/08/2017
Methylene chloride	5.0		**52.0**	50.00	0	104.0	73.4	115	02/08/2017
Naphthalene	10.0		**53.5**	50.00	0	107.0	70.1	134	02/08/2017
n-Butylbenzene	5.0		**55.6**	50.00	0	111.3	78.4	138	02/08/2017
n-Heptane	20.0	S	**63.8**	50.00	0	127.7	74.3	125	02/08/2017
n-Hexane	20.0		**58.5**	50.00	0	117.0	66.3	129	02/08/2017
Nitrobenzene	100		**492**	500.0	0	98.4	20.1	165	02/08/2017
n-Propylbenzene	5.0		**54.2**	50.00	0	108.3	79.1	125	02/08/2017
o-Xylene	5.0		**52.3**	50.00	0	104.5	81.9	118	02/08/2017
Pentachloroethane	5.0		**57.2**	50.00	0	114.4	72.7	123	02/08/2017
p-Isopropyltoluene	5.0		**55.1**	50.00	0	110.2	82.7	129	02/08/2017
Propionitrile	50.0		**584**	500.0	0	116.8	64.3	121	02/08/2017
sec-Butylbenzene	5.0		**53.9**	50.00	0	107.7	81.3	125	02/08/2017
Styrene	5.0		**52.2**	50.00	0	104.4	88.2	122	02/08/2017
tert-Butylbenzene	5.0		**50.6**	50.00	0	101.1	74.8	125	02/08/2017
Tetrachloroethene	5.0		**50.1**	50.00	0	100.2	84.2	122	02/08/2017
Tetrahydrofuran	50.0		**59.0**	50.00	0	117.9	61	118	02/08/2017
Toluene	5.0		**48.8**	50.00	0	97.6	81.3	113	02/08/2017
trans-1,2-Dichloroethene	5.0		**52.6**	50.00	0	105.2	78.2	118	02/08/2017
trans-1,3-Dichloropropene	4.0		**54.6**	50.00	0	109.2	81.7	124	02/08/2017
Trichloroethene	5.0		**53.6**	50.00	0	107.3	81	123	02/08/2017
Trichlorofluoromethane	5.0		**55.9**	50.00	0	111.8	66.8	131	02/08/2017
Vinyl acetate	50.0	S	**62.0**	50.00	0	123.9	64.3	122	02/08/2017
Vinyl chloride	2.0		**49.4**	50.00	0	98.9	45.2	140	02/08/2017
Surr: 1,2-Dichloroethane-d4			**57.0**	50.00		113.9	72.2	131	02/08/2017
Surr: 4-Bromofluorobenzene			**50.7**	50.00		101.4	82.1	116	02/08/2017
Surr: Dibromofluoromethane			**53.6**	50.00		107.2	77.7	120	02/08/2017
Surr: Toluene-d8			**49.0**	50.00		98.1	86	116	02/08/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126941 **SampType:** MBLK Units µg/Kg

SampID: MBLK-F170208A-2

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		ND						02/08/2017
1,1,1-Trichloroethane	5.0		ND						02/08/2017
1,1,2,2-Tetrachloroethane	5.0		ND						02/08/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		ND						02/08/2017
1,1,2-Trichloroethane	5.0		ND						02/08/2017
1,1-Dichloro-2-propanone	50.0		ND						02/08/2017
1,1-Dichloroethane	5.0		ND						02/08/2017
1,1-Dichloroethene	5.0		ND						02/08/2017
1,1-Dichloropropene	5.0		ND						02/08/2017
1,2,3-Trichlorobenzene	5.0		ND						02/08/2017
1,2,3-Trichloropropane	10.0		ND						02/08/2017
1,2,3-Trimethylbenzene	5.0		ND						02/08/2017
1,2,4-Trichlorobenzene	5.0		ND						02/08/2017
1,2,4-Trimethylbenzene	5.0		ND						02/08/2017
1,2-Dibromo-3-chloropropane	5.0		ND						02/08/2017
1,2-Dibromoethane	5.0		ND						02/08/2017
1,2-Dichlorobenzene	5.0		ND						02/08/2017
1,2-Dichloroethane	5.0		ND						02/08/2017
1,2-Dichloropropane	5.0		ND						02/08/2017
1,3,5-Trimethylbenzene	5.0		ND						02/08/2017
1,3-Dichlorobenzene	5.0		ND						02/08/2017
1,3-Dichloropropane	5.0		ND						02/08/2017
1,4-Dichlorobenzene	5.0		ND						02/08/2017
1-Chlorobutane	5.0		ND						02/08/2017
2,2-Dichloropropane	5.0		ND						02/08/2017
2-Butanone	50.0		ND						02/08/2017
2-Chlorotoluene	5.0		ND						02/08/2017
2-Hexanone	50.0		ND						02/08/2017
2-Nitropropane	50.0		ND						02/08/2017
4-Chlorotoluene	5.0		ND						02/08/2017
4-Methyl-2-pentanone	50.0		ND						02/08/2017
Acetone	50.0		ND						02/08/2017
Acrolein	100		ND						02/08/2017
Acrylonitrile	10.0		ND						02/08/2017
Allyl chloride	5.0		ND						02/08/2017
Benzene	1.0		ND						02/08/2017
Bromobenzene	5.0		ND						02/08/2017
Bromochloromethane	5.0		ND						02/08/2017
Bromodichloromethane	5.0		ND						02/08/2017
Bromoform	5.0		ND						02/08/2017
Bromomethane	10.0		ND						02/08/2017
Carbon disulfide	5.0		ND						02/08/2017
Carbon tetrachloride	5.0		ND						02/08/2017
Chlorobenzene	5.0		ND						02/08/2017
Chloroethane	10.0		ND						02/08/2017
Chloroform	5.0		ND						02/08/2017
Chloromethane	10.0		ND						02/08/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126941 **SampType:** MBLK Units µg/Kg

SampID: MBLK-F170208A-2

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		ND						02/08/2017
cis-1,3-Dichloropropene	4.0		ND						02/08/2017
Cyclohexanone	100		ND						02/08/2017
Dibromochloromethane	5.0		ND						02/08/2017
Dibromomethane	5.0		ND						02/08/2017
Dichlorodifluoromethane	10.0		ND						02/08/2017
Ethyl ether	5.0		ND						02/08/2017
Ethyl methacrylate	5.0		ND						02/08/2017
Ethylbenzene	5.0		ND						02/08/2017
Hexachlorobutadiene	5.0		ND						02/08/2017
Hexachloroethane	5.0		ND						02/08/2017
Iodomethane	10.0		ND						02/08/2017
Isopropylbenzene	5.0		ND						02/08/2017
m,p-Xylenes	5.0		ND						02/08/2017
Methacrylonitrile	50.0		ND						02/08/2017
Methyl Methacrylate	5.0		ND						02/08/2017
Methyl tert-butyl ether	2.0		ND						02/08/2017
Methylacrylate	10.0		ND						02/08/2017
Methylene chloride	5.0		ND						02/08/2017
Naphthalene	10.0		ND						02/08/2017
n-Butylbenzene	5.0		ND						02/08/2017
n-Heptane	20.0		ND						02/08/2017
n-Hexane	20.0		ND						02/08/2017
Nitrobenzene	100		ND						02/08/2017
n-Propylbenzene	5.0		ND						02/08/2017
o-Xylene	5.0		ND						02/08/2017
Pentachloroethane	5.0		ND						02/08/2017
p-Isopropyltoluene	5.0		ND						02/08/2017
Propionitrile	50.0		ND						02/08/2017
sec-Butylbenzene	5.0		ND						02/08/2017
Styrene	5.0		ND						02/08/2017
tert-Butylbenzene	5.0		ND						02/08/2017
Tetrachloroethene	5.0		ND						02/08/2017
Tetrahydrofuran	50.0		ND						02/08/2017
Toluene	5.0		ND						02/08/2017
trans-1,2-Dichloroethene	5.0		ND						02/08/2017
trans-1,3-Dichloropropene	4.0		ND						02/08/2017
Trichloroethene	5.0		ND						02/08/2017
Trichlorofluoromethane	5.0		ND						02/08/2017
Vinyl acetate	50.0		ND						02/08/2017
Vinyl chloride	2.0		ND						02/08/2017
Surr: 1,2-Dichloroethane-d4			**58.9**	50.00		117.7	72.2	131	02/08/2017
Surr: 4-Bromofluorobenzene			**51.9**	50.00		103.9	82.1	116	02/08/2017
Surr: Dibromofluoromethane			**49.2**	50.00		98.4	77.7	120	02/08/2017
Surr: Toluene-d8			**48.6**	50.00		97.3	86	116	02/08/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126941 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-F170208A-2

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		**50.1**	50.00	0	100.3	49.86	0.54	02/08/2017
1,1,1-Trichloroethane	5.0		**52.7**	50.00	0	105.3	52.58	0.17	02/08/2017
1,1,2,2-Tetrachloroethane	5.0		**57.4**	50.00	0	114.9	53.25	7.57	02/08/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		**48.9**	50.00	0	97.8	53.95	9.86	02/08/2017
1,1,2-Trichloroethane	5.0		**51.9**	50.00	0	103.8	51.65	0.44	02/08/2017
1,1-Dichloro-2-propanone	50.0	S	**197**	125.0	0	157.6	137.6	35.53	02/08/2017
1,1-Dichloroethane	5.0		**53.1**	50.00	0	106.3	51.97	2.21	02/08/2017
1,1-Dichloroethene	5.0		**52.5**	50.00	0	105.0	54.65	4.03	02/08/2017
1,1-Dichloropropene	5.0		**51.3**	50.00	0	102.6	54.09	5.33	02/08/2017
1,2,3-Trichlorobenzene	5.0		**47.5**	50.00	0	95.1	56.92	17.98	02/08/2017
1,2,3-Trichloropropane	10.0		**58.6**	50.00	0	117.3	53.25	9.62	02/08/2017
1,2,3-Trimethylbenzene	5.0		**49.0**	50.00	0	97.9	53.37	8.62	02/08/2017
1,2,4-Trichlorobenzene	5.0		**45.9**	50.00	0	91.7	60.99	28.32	02/08/2017
1,2,4-Trimethylbenzene	5.0		**47.1**	50.00	0	94.2	55.76	16.88	02/08/2017
1,2-Dibromo-3-chloropropane	5.0	S	**66.3**	50.00	0	132.6	61.76	7.08	02/08/2017
1,2-Dibromoethane	5.0		**54.2**	50.00	0	108.4	51.28	5.57	02/08/2017
1,2-Dichlorobenzene	5.0		**45.5**	50.00	0	91.0	51.03	11.41	02/08/2017
1,2-Dichloroethane	5.0	S	**61.1**	50.00	0	122.2	57.39	6.23	02/08/2017
1,2-Dichloropropane	5.0		**53.8**	50.00	0	107.6	50.87	5.60	02/08/2017
1,3,5-Trimethylbenzene	5.0		**48.0**	50.00	0	96.1	55.17	13.82	02/08/2017
1,3-Dichlorobenzene	5.0		**45.2**	50.00	0	90.4	51.06	12.13	02/08/2017
1,3-Dichloropropane	5.0		**51.9**	50.00	0	103.7	52.63	1.45	02/08/2017
1,4-Dichlorobenzene	5.0		**44.8**	50.00	0	89.6	51.31	13.57	02/08/2017
1-Chlorobutane	5.0		**53.8**	50.00	0	107.7	54.04	0.35	02/08/2017
2,2-Dichloropropane	5.0		**51.7**	50.00	0	103.4	54.40	5.11	02/08/2017
2-Butanone	50.0	S	**189**	125.0	0	151.0	230.2	19.76	02/08/2017
2-Chlorotoluene	5.0		**46.8**	50.00	0	93.6	54.12	14.53	02/08/2017
2-Hexanone	50.0	S	**174**	125.0	0	139.0	181.0	4.12	02/08/2017
2-Nitropropane	50.0	S	**785**	500.0	0	157.0	672.1	15.52	02/08/2017
4-Chlorotoluene	5.0		**43.2**	50.00	0	86.4	50.20	15.04	02/08/2017
4-Methyl-2-pentanone	50.0	S	**172**	125.0	0	137.6	161.5	6.29	02/08/2017
Acetone	50.0	R	**141**	125.0	0	112.7	265.8	61.41	02/08/2017
Acrolein	100		**484**	500.0	0	96.8	437.4	10.13	02/08/2017
Acrylonitrile	10.0	S	**72.2**	50.00	0	144.5	64.90	10.69	02/08/2017
Allyl chloride	5.0		**52.2**	50.00	0	104.4	55.35	5.90	02/08/2017
Benzene	1.0		**51.4**	50.00	0	102.7	49.64	3.39	02/08/2017
Bromobenzene	5.0		**50.5**	50.00	0	101.1	52.96	4.70	02/08/2017
Bromochloromethane	5.0		**55.4**	50.00	0	110.9	54.53	1.64	02/08/2017
Bromodichloromethane	5.0		**55.5**	50.00	0	111.0	52.76	5.08	02/08/2017
Bromoform	5.0		**58.8**	50.00	0	117.6	49.31	17.52	02/08/2017
Bromomethane	10.0		**ND**	50.00	0	16.9	8.580	0.00	02/08/2017
Carbon disulfide	5.0		**44.4**	50.00	0	88.9	46.50	4.55	02/08/2017
Carbon tetrachloride	5.0		**54.0**	50.00	0	108.0	54.92	1.67	02/08/2017
Chlorobenzene	5.0		**47.4**	50.00	0	94.8	47.93	1.11	02/08/2017
Chloroethane	10.0		**47.5**	50.00	0	95.0	38.13	21.86	02/08/2017
Chloroform	5.0		**53.0**	50.00	0	105.9	51.02	3.73	02/08/2017
Chloromethane	10.0		**50.4**	50.00	0	100.7	66.36	27.44	02/08/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126941 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-F170208A-2

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
cis-1,2-Dichloroethene	5.0		**53.9**	50.00	0	107.8	54.26	0.70	02/08/2017
cis-1,3-Dichloropropene	4.0		**53.3**	50.00	0	106.6	54.40	2.06	02/08/2017
Cyclohexanone	100		**640**	500.0	0	128.0	563.7	12.71	02/08/2017
Dibromochloromethane	5.0		**54.0**	50.00	0	108.1	52.61	2.68	02/08/2017
Dibromomethane	5.0	S	**58.4**	50.00	0	116.8	55.04	5.89	02/08/2017
Dichlorodifluoromethane	10.0		**41.7**	50.00	0	83.4	41.52	0.46	02/08/2017
Ethyl ether	5.0		**56.4**	50.00	0	112.8	53.95	4.46	02/08/2017
Ethyl methacrylate	5.0		**59.8**	50.00	0	119.5	58.48	2.17	02/08/2017
Ethylbenzene	5.0		**48.0**	50.00	0	96.1	53.48	10.74	02/08/2017
Hexachlorobutadiene	5.0		**45.5**	50.00	0	91.1	53.39	15.87	02/08/2017
Hexachloroethane	5.0		**52.5**	50.00	0	104.9	53.49	1.93	02/08/2017
Iodomethane	10.0		**26.6**	50.00	0	53.2	20.29	26.88	02/08/2017
Isopropylbenzene	5.0		**47.9**	50.00	0	95.8	50.48	5.20	02/08/2017
m,p-Xylenes	5.0		**96.1**	100.0	0	96.1	103.2	7.09	02/08/2017
Methacrylonitrile	50.0	S	**69.5**	50.00	0	139.0	63.91	8.39	02/08/2017
Methyl Methacrylate	5.0	S	**68.3**	50.00	0	136.6	63.08	7.93	02/08/2017
Methyl tert-butyl ether	2.0		**61.6**	50.00	0	123.3	59.16	4.11	02/08/2017
Methylacrylate	10.0	S	**64.0**	50.00	0	127.9	58.34	9.19	02/08/2017
Methylene chloride	5.0		**52.5**	50.00	0	104.9	51.01	2.80	02/08/2017
Naphthalene	10.0		**60.8**	50.00	0	121.5	61.09	0.56	02/08/2017
n-Butylbenzene	5.0		**46.0**	50.00	0	91.9	60.48	27.28	02/08/2017
n-Heptane	20.0		**56.1**	50.00	0	112.2	65.11	14.83	02/08/2017
n-Hexane	20.0		**51.0**	50.00	0	101.9	59.81	15.96	02/08/2017
Nitrobenzene	100		**610**	500.0	0	122.0	565.0	7.63	02/08/2017
n-Propylbenzene	5.0		**47.5**	50.00	0	95.0	58.50	20.73	02/08/2017
o-Xylene	5.0		**49.4**	50.00	0	98.8	50.23	1.65	02/08/2017
Pentachloroethane	5.0		**52.8**	50.00	0	105.7	53.30	0.89	02/08/2017
p-Isopropyltoluene	5.0		**47.4**	50.00	0	94.7	55.00	14.95	02/08/2017
Propionitrile	50.0	S	**762**	500.0	0	152.4	652.2	15.52	02/08/2017
sec-Butylbenzene	5.0		**48.4**	50.00	0	96.9	55.52	13.62	02/08/2017
Styrene	5.0		**49.3**	50.00	0	98.6	48.48	1.66	02/08/2017
tert-Butylbenzene	5.0		**46.3**	50.00	0	92.5	53.47	14.46	02/08/2017
Tetrachloroethene	5.0		**44.6**	50.00	0	89.3	50.65	12.59	02/08/2017
Tetrahydrofuran	50.0	S	**77.8**	50.00	0	155.7	68.88	12.23	02/08/2017
Toluene	5.0		**45.0**	50.00	0	90.0	51.31	13.06	02/08/2017
trans-1,2-Dichloroethene	5.0		**50.6**	50.00	0	101.3	53.54	5.59	02/08/2017
trans-1,3-Dichloropropene	4.0		**53.7**	50.00	0	107.5	58.03	7.68	02/08/2017
Trichloroethene	5.0		**51.0**	50.00	0	101.9	52.35	2.71	02/08/2017
Trichlorofluoromethane	5.0		**51.4**	50.00	0	102.8	49.22	4.37	02/08/2017
Vinyl acetate	50.0	S	**71.7**	50.00	0	143.4	68.57	4.43	02/08/2017
Vinyl chloride	2.0	R	**43.7**	50.00	0	87.4	73.73	51.12	02/08/2017
Surr: 1,2-Dichloroethane-d4			**59.8**	50.00		119.6			02/08/2017
Surr: 4-Bromofluorobenzene			**52.1**	50.00		104.1			02/08/2017
Surr: Dibromofluoromethane			**51.9**	50.00		103.8			02/08/2017
Surr: Toluene-d8			**46.7**	50.00		93.3			02/08/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126941 **SampType:** LCS Units µg/Kg

SampID: LCS-F170208A-2

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		49.9	50.00	0	99.7	83.1	114	02/09/2017
1,1,1-Trichloroethane	5.0		52.6	50.00	0	105.2	78.5	119	02/09/2017
1,1,2,2-Tetrachloroethane	5.0		53.2	50.00	0	106.5	67.4	120	02/09/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		54.0	50.00	0	107.9	75.4	121	02/09/2017
1,1,2-Trichloroethane	5.0		51.6	50.00	0	103.3	81.1	111	02/09/2017
1,1-Dichloro-2-propanone	50.0		138	125.0	0	110.0	55.4	131	02/09/2017
1,1-Dichloroethane	5.0		52.0	50.00	0	103.9	80.1	116	02/09/2017
1,1-Dichloroethene	5.0		54.6	50.00	0	109.3	73.1	121	02/09/2017
1,1-Dichloropropene	5.0		54.1	50.00	0	108.2	82.2	114	02/09/2017
1,2,3-Trichlorobenzene	5.0		56.9	50.00	0	113.8	81.7	130	02/09/2017
1,2,3-Trichloropropane	10.0		53.2	50.00	0	106.5	67.8	118	02/09/2017
1,2,3-Trimethylbenzene	5.0		53.4	50.00	0	106.7	82.1	127	02/09/2017
1,2,4-Trichlorobenzene	5.0		61.0	50.00	0	122.0	72.3	141	02/09/2017
1,2,4-Trimethylbenzene	5.0		55.8	50.00	0	111.5	79.7	123	02/09/2017
1,2-Dibromo-3-chloropropane	5.0	S	61.8	50.00	0	123.5	62.1	123	02/09/2017
1,2-Dibromoethane	5.0		51.3	50.00	0	102.6	82.4	112	02/09/2017
1,2-Dichlorobenzene	5.0		51.0	50.00	0	102.1	82.7	119	02/09/2017
1,2-Dichloroethane	5.0		57.4	50.00	0	114.8	72.8	120	02/09/2017
1,2-Dichloropropane	5.0		50.9	50.00	0	101.7	80	116	02/09/2017
1,3,5-Trimethylbenzene	5.0		55.2	50.00	0	110.3	81.5	125	02/09/2017
1,3-Dichlorobenzene	5.0		51.1	50.00	0	102.1	82	124	02/09/2017
1,3-Dichloropropane	5.0		52.6	50.00	0	105.3	79.8	113	02/09/2017
1,4-Dichlorobenzene	5.0		51.3	50.00	0	102.6	81.1	124	02/09/2017
1-Chlorobutane	5.0		54.0	50.00	0	108.1	77.2	113	02/09/2017
2,2-Dichloropropane	5.0		54.4	50.00	0	108.8	76.6	121	02/09/2017
2-Butanone	50.0	S	230	125.0	0	184.1	62.8	131	02/09/2017
2-Chlorotoluene	5.0		54.1	50.00	0	108.2	78.8	121	02/09/2017
2-Hexanone	50.0	S	181	125.0	0	144.8	63.1	125	02/09/2017
2-Nitropropane	50.0	S	672	500.0	0	134.4	61.2	129	02/09/2017
4-Chlorotoluene	5.0		50.2	50.00	0	100.4	77.6	124	02/09/2017
4-Methyl-2-pentanone	50.0	S	161	125.0	0	129.2	60.6	126	02/09/2017
Acetone	50.0	S	266	125.0	0	212.7	39.5	159	02/09/2017
Acrolein	100		437	500.0	0	87.5	1	167	02/09/2017
Acrylonitrile	10.0	S	64.9	50.00	0	129.8	67	124	02/09/2017
Allyl chloride	5.0		55.4	50.00	0	110.7	58.5	129	02/09/2017
Benzene	1.0		49.6	50.00	0	99.3	80.8	117	02/09/2017
Bromobenzene	5.0		53.0	50.00	0	105.9	79.6	117	02/09/2017
Bromochloromethane	5.0		54.5	50.00	0	109.1	70.7	121	02/09/2017
Bromodichloromethane	5.0		52.8	50.00	0	105.5	80.7	121	02/09/2017
Bromoform	5.0		49.3	50.00	0	98.6	79.8	118	02/09/2017
Bromomethane	10.0		ND	50.00	0	17.2	1	175	02/09/2017
Carbon disulfide	5.0		46.5	50.00	0	93.0	62.8	123	02/09/2017
Carbon tetrachloride	5.0		54.9	50.00	0	109.8	77.6	123	02/09/2017
Chlorobenzene	5.0		47.9	50.00	0	95.9	85.6	116	02/09/2017
Chloroethane	10.0		38.1	50.00	0	76.3	60.2	125	02/09/2017
Chloroform	5.0		51.0	50.00	0	102.0	77.9	116	02/09/2017
Chloromethane	10.0		66.4	50.00	0	132.7	29.9	157	02/09/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126941 **SampType:** LCS Units µg/Kg

SampID: LCS-F170208A-2

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		**54.3**	50.00	0	108.5	80.1	116	02/09/2017
cis-1,3-Dichloropropene	4.0		**54.4**	50.00	0	108.8	80.5	121	02/09/2017
Cyclohexanone	100		**564**	500.0	0	112.7	45.4	128	02/09/2017
Dibromochloromethane	5.0		**52.6**	50.00	0	105.2	84.3	116	02/09/2017
Dibromomethane	5.0		**55.0**	50.00	0	110.1	76.6	115	02/09/2017
Dichlorodifluoromethane	10.0		**41.5**	50.00	0	83.0	1	200	02/09/2017
Ethyl ether	5.0		**54.0**	50.00	0	107.9	73.4	116	02/09/2017
Ethyl methacrylate	5.0		**58.5**	50.00	0	117.0	76.2	120	02/09/2017
Ethylbenzene	5.0		**53.5**	50.00	0	107.0	84.8	116	02/09/2017
Hexachlorobutadiene	5.0		**53.4**	50.00	0	106.8	74	135	02/09/2017
Hexachloroethane	5.0		**53.5**	50.00	0	107.0	76.4	121	02/09/2017
Iodomethane	10.0		**20.3**	50.00	0	40.6	38.7	161	02/09/2017
Isopropylbenzene	5.0		**50.5**	50.00	0	101.0	85	125	02/09/2017
m,p-Xylenes	5.0		**103**	100.0	0	103.2	85.3	120	02/09/2017
Methacrylonitrile	50.0	S	**63.9**	50.00	0	127.8	65.7	120	02/09/2017
Methyl Methacrylate	5.0	S	**63.1**	50.00	0	126.2	69.1	114	02/09/2017
Methyl tert-butyl ether	2.0		**59.2**	50.00	0	118.3	66.6	125	02/09/2017
Methylacrylate	10.0		**58.3**	50.00	0	116.7	69.7	121	02/09/2017
Methylene chloride	5.0		**51.0**	50.00	0	102.0	73.4	115	02/09/2017
Naphthalene	10.0		**61.1**	50.00	0	122.2	70.1	134	02/09/2017
n-Butylbenzene	5.0		**60.5**	50.00	0	121.0	78.4	138	02/09/2017
n-Heptane	20.0	S	**65.1**	50.00	0	130.2	74.3	125	02/09/2017
n-Hexane	20.0		**59.8**	50.00	0	119.6	66.3	129	02/09/2017
Nitrobenzene	100		**565**	500.0	0	113.0	20.1	165	02/09/2017
n-Propylbenzene	5.0		**58.5**	50.00	0	117.0	79.1	125	02/09/2017
o-Xylene	5.0		**50.2**	50.00	0	100.5	81.9	118	02/09/2017
Pentachloroethane	5.0		**53.3**	50.00	0	106.6	72.7	123	02/09/2017
p-Isopropyltoluene	5.0		**55.0**	50.00	0	110.0	82.7	129	02/09/2017
Propionitrile	50.0	S	**652**	500.0	0	130.4	64.3	121	02/09/2017
sec-Butylbenzene	5.0		**55.5**	50.00	0	111.0	81.3	125	02/09/2017
Styrene	5.0		**48.5**	50.00	0	97.0	88.2	122	02/09/2017
tert-Butylbenzene	5.0		**53.5**	50.00	0	106.9	74.8	125	02/09/2017
Tetrachloroethene	5.0		**50.6**	50.00	0	101.3	84.2	122	02/09/2017
Tetrahydrofuran	50.0	S	**68.9**	50.00	0	137.8	61	118	02/09/2017
Toluene	5.0		**51.3**	50.00	0	102.6	81.3	113	02/09/2017
trans-1,2-Dichloroethene	5.0		**53.5**	50.00	0	107.1	78.2	118	02/09/2017
trans-1,3-Dichloropropene	4.0		**58.0**	50.00	0	116.1	81.7	124	02/09/2017
Trichloroethene	5.0		**52.4**	50.00	0	104.7	81	123	02/09/2017
Trichlorofluoromethane	5.0		**49.2**	50.00	0	98.4	66.8	131	02/09/2017
Vinyl acetate	50.0	S	**68.6**	50.00	0	137.1	64.3	122	02/09/2017
Vinyl chloride	2.0	S	**73.7**	50.00	0	147.5	45.2	140	02/09/2017
Surr: 1,2-Dichloroethane-d4			**57.3**	50.00		114.6	72.2	131	02/09/2017
Surr: 4-Bromofluorobenzene			**56.3**	50.00		112.6	82.1	116	02/09/2017
Surr: Dibromofluoromethane			**51.4**	50.00		102.9	77.7	120	02/09/2017
Surr: Toluene-d8			**50.7**	50.00		101.4	86	116	02/09/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126995 **SampType:** MBLK Units µg/Kg

SampID: MBLK-F170209A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		ND						02/09/2017
1,1,1-Trichloroethane	5.0		ND						02/09/2017
1,1,2,2-Tetrachloroethane	5.0		ND						02/09/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		ND						02/09/2017
1,1,2-Trichloroethane	5.0		ND						02/09/2017
1,1-Dichloro-2-propanone	50.0		ND						02/09/2017
1,1-Dichloroethane	5.0		ND						02/09/2017
1,1-Dichloroethene	5.0		ND						02/09/2017
1,1-Dichloropropene	5.0		ND						02/09/2017
1,2,3-Trichlorobenzene	5.0		ND						02/09/2017
1,2,3-Trichloropropane	10.0		ND						02/09/2017
1,2,3-Trimethylbenzene	5.0		ND						02/09/2017
1,2,4-Trichlorobenzene	5.0		ND						02/09/2017
1,2,4-Trimethylbenzene	5.0		ND						02/09/2017
1,2-Dibromo-3-chloropropane	5.0		ND						02/09/2017
1,2-Dibromoethane	5.0		ND						02/09/2017
1,2-Dichlorobenzene	5.0		ND						02/09/2017
1,2-Dichloroethane	5.0		ND						02/09/2017
1,2-Dichloropropane	5.0		ND						02/09/2017
1,3,5-Trimethylbenzene	5.0		ND						02/09/2017
1,3-Dichlorobenzene	5.0		ND						02/09/2017
1,3-Dichloropropane	5.0		ND						02/09/2017
1,4-Dichlorobenzene	5.0		ND						02/09/2017
1-Chlorobutane	5.0		ND						02/09/2017
2,2-Dichloropropane	5.0		ND						02/09/2017
2-Butanone	50.0		ND						02/09/2017
2-Chlorotoluene	5.0		ND						02/09/2017
2-Hexanone	50.0		ND						02/09/2017
2-Nitropropane	50.0		ND						02/09/2017
4-Chlorotoluene	5.0		ND						02/09/2017
4-Methyl-2-pentanone	50.0		ND						02/09/2017
Acetone	50.0		ND						02/09/2017
Acrolein	100		ND						02/09/2017
Acrylonitrile	10.0		ND						02/09/2017
Allyl chloride	5.0		ND						02/09/2017
Benzene	1.0		ND						02/09/2017
Bromobenzene	5.0		ND						02/09/2017
Bromochloromethane	5.0		ND						02/09/2017
Bromodichloromethane	5.0		ND						02/09/2017
Bromoform	5.0		ND						02/09/2017
Bromomethane	10.0		ND						02/09/2017
Carbon disulfide	5.0		ND						02/09/2017
Carbon tetrachloride	5.0		ND						02/09/2017
Chlorobenzene	5.0		ND						02/09/2017
Chloroethane	10.0		ND						02/09/2017
Chloroform	5.0		ND						02/09/2017
Chloromethane	10.0		ND						02/09/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126995 **SampType:** MBLK Units µg/Kg

SampID: MBLK-F170209A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		ND						02/09/2017
cis-1,3-Dichloropropene	4.0		ND						02/09/2017
Cyclohexanone	100		ND						02/09/2017
Dibromochloromethane	5.0		ND						02/09/2017
Dibromomethane	5.0		ND						02/09/2017
Dichlorodifluoromethane	10.0		ND						02/09/2017
Ethyl ether	5.0		ND						02/09/2017
Ethyl methacrylate	5.0		ND						02/09/2017
Ethylbenzene	5.0		ND						02/09/2017
Hexachlorobutadiene	5.0		ND						02/09/2017
Hexachloroethane	5.0		ND						02/09/2017
Iodomethane	10.0		ND						02/09/2017
Isopropylbenzene	5.0		ND						02/09/2017
m,p-Xylenes	5.0		ND						02/09/2017
Methacrylonitrile	50.0		ND						02/09/2017
Methyl Methacrylate	5.0		ND						02/09/2017
Methyl tert-butyl ether	2.0		ND						02/09/2017
Methylacrylate	10.0		ND						02/09/2017
Methylene chloride	5.0		ND						02/09/2017
Naphthalene	10.0		ND						02/09/2017
n-Butylbenzene	5.0		ND						02/09/2017
n-Heptane	20.0		ND						02/09/2017
n-Hexane	20.0		ND						02/09/2017
Nitrobenzene	100		ND						02/09/2017
n-Propylbenzene	5.0		ND						02/09/2017
o-Xylene	5.0		ND						02/09/2017
Pentachloroethane	5.0		ND						02/09/2017
p-Isopropyltoluene	5.0		ND						02/09/2017
Propionitrile	50.0		ND						02/09/2017
sec-Butylbenzene	5.0		ND						02/09/2017
Styrene	5.0		ND						02/09/2017
tert-Butylbenzene	5.0		ND						02/09/2017
Tetrachloroethene	5.0		ND						02/09/2017
Tetrahydrofuran	50.0		ND						02/09/2017
Toluene	5.0		ND						02/09/2017
trans-1,2-Dichloroethene	5.0		ND						02/09/2017
trans-1,3-Dichloropropene	4.0		ND						02/09/2017
Trichloroethene	5.0		ND						02/09/2017
Trichlorofluoromethane	5.0		ND						02/09/2017
Vinyl acetate	50.0		ND						02/09/2017
Vinyl chloride	2.0		ND						02/09/2017
Surr: 1,2-Dichloroethane-d4			**51.8**	50.00		103.7	72.2	131	02/09/2017
Surr: 4-Bromofluorobenzene			**52.0**	50.00		104.0	82.1	116	02/09/2017
Surr: Dibromofluoromethane			**47.1**	50.00		94.1	77.7	120	02/09/2017
Surr: Toluene-d8			**54.5**	50.00		109.1	86	116	02/09/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126995 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-F170209A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		**53.4**	50.00	0	106.7	50.63	5.25	02/09/2017
1,1,1-Trichloroethane	5.0		**45.4**	50.00	0	90.8	45.05	0.75	02/09/2017
1,1,2,2-Tetrachloroethane	5.0		**51.3**	50.00	0	102.6	48.96	4.67	02/09/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		**44.1**	50.00	0	88.3	43.34	1.83	02/09/2017
1,1,2-Trichloroethane	5.0		**51.4**	50.00	0	102.8	48.91	5.00	02/09/2017
1,1-Dichloro-2-propanone	50.0		**138**	125.0	0	110.5	128.7	7.09	02/09/2017
1,1-Dichloroethane	5.0		**44.6**	50.00	0	89.1	43.58	2.22	02/09/2017
1,1-Dichloroethene	5.0		**45.7**	50.00	0	91.4	44.92	1.74	02/09/2017
1,1-Dichloropropene	5.0		**44.6**	50.00	0	89.2	44.36	0.52	02/09/2017
1,2,3-Trichlorobenzene	5.0		**57.7**	50.00	0	115.5	57.37	0.63	02/09/2017
1,2,3-Trichloropropane	10.0		**50.9**	50.00	0	101.8	51.03	0.29	02/09/2017
1,2,3-Trimethylbenzene	5.0		**55.9**	50.00	0	111.7	51.47	8.18	02/09/2017
1,2,4-Trichlorobenzene	5.0		**61.3**	50.00	0	122.6	59.93	2.24	02/09/2017
1,2,4-Trimethylbenzene	5.0		**55.7**	50.00	0	111.4	53.12	4.71	02/09/2017
1,2-Dibromo-3-chloropropane	5.0		**52.9**	50.00	0	105.8	53.33	0.85	02/09/2017
1,2-Dibromoethane	5.0		**50.9**	50.00	0	101.9	49.00	3.86	02/09/2017
1,2-Dichlorobenzene	5.0		**52.1**	50.00	0	104.2	50.96	2.23	02/09/2017
1,2-Dichloroethane	5.0		**47.4**	50.00	0	94.8	45.55	3.94	02/09/2017
1,2-Dichloropropane	5.0		**43.9**	50.00	0	87.8	41.82	4.90	02/09/2017
1,3,5-Trimethylbenzene	5.0		**53.3**	50.00	0	106.6	51.33	3.80	02/09/2017
1,3-Dichlorobenzene	5.0		**54.6**	50.00	0	109.2	52.02	4.84	02/09/2017
1,3-Dichloropropane	5.0		**53.9**	50.00	0	107.8	49.62	8.29	02/09/2017
1,4-Dichlorobenzene	5.0		**54.8**	50.00	0	109.7	51.59	6.09	02/09/2017
1-Chlorobutane	5.0		**45.7**	50.00	0	91.3	44.38	2.84	02/09/2017
2,2-Dichloropropane	5.0		**46.8**	50.00	0	93.6	44.57	4.92	02/09/2017
2-Butanone	50.0		**131**	125.0	0	104.7	140.9	7.38	02/09/2017
2-Chlorotoluene	5.0		**52.6**	50.00	0	105.2	51.90	1.32	02/09/2017
2-Hexanone	50.0		**144**	125.0	0	115.6	151.3	4.60	02/09/2017
2-Nitropropane	50.0		**496**	500.0	0	99.2	503.0	1.42	02/09/2017
4-Chlorotoluene	5.0		**50.1**	50.00	0	100.3	48.57	3.16	02/09/2017
4-Methyl-2-pentanone	50.0		**140**	125.0	0	112.2	134.2	4.41	02/09/2017
Acetone	50.0		**133**	125.0	0	106.5	147.4	10.21	02/09/2017
Acrolein	100		**312**	500.0	0	62.5	323.4	3.50	02/09/2017
Acrylonitrile	10.0		**46.7**	50.00	0	93.4	47.08	0.77	02/09/2017
Allyl chloride	5.0		**42.8**	50.00	0	85.6	43.89	2.51	02/09/2017
Benzene	1.0		**43.5**	50.00	0	86.9	41.91	3.65	02/09/2017
Bromobenzene	5.0		**53.9**	50.00	0	107.7	51.28	4.93	02/09/2017
Bromochloromethane	5.0		**46.7**	50.00	0	93.4	45.43	2.78	02/09/2017
Bromodichloromethane	5.0		**46.2**	50.00	0	92.3	45.02	2.48	02/09/2017
Bromoform	5.0		**54.7**	50.00	0	109.4	53.23	2.71	02/09/2017
Bromomethane	10.0		**20.0**	50.00	0	40.0	15.03	28.33	02/09/2017
Carbon disulfide	5.0		**39.8**	50.00	0	79.6	38.36	3.71	02/09/2017
Carbon tetrachloride	5.0		**47.2**	50.00	0	94.5	45.92	2.85	02/09/2017
Chlorobenzene	5.0		**50.3**	50.00	0	100.5	48.62	3.34	02/09/2017
Chloroethane	10.0		**43.1**	50.00	0	86.2	39.87	7.79	02/09/2017
Chloroform	5.0		**44.9**	50.00	0	89.8	43.91	2.21	02/09/2017
Chloromethane	10.0		**42.2**	50.00	0	84.4	40.46	4.21	02/09/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126995 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-F170209A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
cis-1,2-Dichloroethene	5.0		**46.2**	50.00	0	92.3	44.49	3.71	02/09/2017
cis-1,3-Dichloropropene	4.0		**46.8**	50.00	0	93.6	45.47	2.86	02/09/2017
Cyclohexanone	100		**471**	500.0	0	94.2	500.8	6.14	02/09/2017
Dibromochloromethane	5.0		**54.3**	50.00	0	108.7	51.49	5.39	02/09/2017
Dibromomethane	5.0		**44.9**	50.00	0	89.8	44.42	1.03	02/09/2017
Dichlorodifluoromethane	10.0		**33.0**	50.00	0	66.1	31.90	3.51	02/09/2017
Ethyl ether	5.0		**43.6**	50.00	0	87.2	43.59	0.07	02/09/2017
Ethyl methacrylate	5.0		**54.9**	50.00	0	109.8	52.80	3.94	02/09/2017
Ethylbenzene	5.0		**53.5**	50.00	0	107.0	50.36	6.07	02/09/2017
Hexachlorobutadiene	5.0		**58.4**	50.00	0	116.9	58.94	0.83	02/09/2017
Hexachloroethane	5.0		**58.9**	50.00	0	117.8	56.67	3.86	02/09/2017
Iodomethane	10.0		**31.2**	50.00	0	62.4	28.16	10.21	02/09/2017
Isopropylbenzene	5.0		**54.6**	50.00	0	109.2	50.62	7.60	02/09/2017
m,p-Xylenes	5.0		**107**	100.0	0	107.5	100.2	7.04	02/09/2017
Methacrylonitrile	50.0		**ND**	50.00	0	93.8	48.63	0.00	02/09/2017
Methyl Methacrylate	5.0		**49.0**	50.00	0	98.1	47.93	2.29	02/09/2017
Methyl tert-butyl ether	2.0		**46.7**	50.00	0	93.5	45.49	2.71	02/09/2017
Methylacrylate	10.0		**53.3**	50.00	0	106.6	44.50	18.03	02/09/2017
Methylene chloride	5.0		**44.6**	50.00	0	89.2	42.92	3.84	02/09/2017
Naphthalene	10.0		**59.7**	50.00	0	119.4	57.48	3.81	02/09/2017
n-Butylbenzene	5.0		**56.1**	50.00	0	112.2	56.81	1.28	02/09/2017
n-Heptane	20.0		**51.5**	50.00	0	103.0	51.56	0.10	02/09/2017
n-Hexane	20.0		**46.8**	50.00	0	93.6	47.47	1.44	02/09/2017
Nitrobenzene	100		**488**	500.0	0	97.6	493.8	1.16	02/09/2017
n-Propylbenzene	5.0		**55.4**	50.00	0	110.9	53.19	4.12	02/09/2017
o-Xylene	5.0		**55.1**	50.00	0	110.2	51.58	6.62	02/09/2017
Pentachloroethane	5.0		**41.1**	50.00	0	82.2	31.12	27.61	02/09/2017
p-Isopropyltoluene	5.0		**56.4**	50.00	0	112.9	54.35	3.76	02/09/2017
Propionitrile	50.0		**461**	500.0	0	92.1	464.8	0.93	02/09/2017
sec-Butylbenzene	5.0		**56.5**	50.00	0	113.1	53.20	6.07	02/09/2017
Styrene	5.0		**54.4**	50.00	0	108.9	52.01	4.55	02/09/2017
tert-Butylbenzene	5.0		**53.0**	50.00	0	105.9	51.25	3.26	02/09/2017
Tetrachloroethene	5.0	S	**62.8**	50.00	0	125.5	63.04	0.45	02/09/2017
Tetrahydrofuran	50.0		**ND**	50.00	0	95.0	47.68	0.00	02/09/2017
Toluene	5.0		**50.5**	50.00	0	101.1	47.87	5.43	02/09/2017
trans-1,2-Dichloroethene	5.0		**45.4**	50.00	0	90.8	44.16	2.73	02/09/2017
trans-1,3-Dichloropropene	4.0		**55.7**	50.00	0	111.5	53.03	4.98	02/09/2017
Trichloroethene	5.0		**46.0**	50.00	0	91.9	44.46	3.30	02/09/2017
Trichlorofluoromethane	5.0		**45.4**	50.00	0	90.8	44.26	2.52	02/09/2017
Vinyl acetate	50.0		**ND**	50.00	0	97.3	49.06	0.00	02/09/2017
Vinyl chloride	2.0		**39.2**	50.00	0	78.4	37.55	4.33	02/09/2017
Surr: 1,2-Dichloroethane-d4			**52.7**	50.00		105.3			02/09/2017
Surr: 4-Bromofluorobenzene			**51.5**	50.00		103.0			02/09/2017
Surr: Dibromofluoromethane			**47.6**	50.00		95.1			02/09/2017
Surr: Toluene-d8			**55.2**	50.00		110.3			02/09/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126995 **SampType:** LCS Units µg/Kg

SampID: LCS-F170209A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		**50.6**	50.00	0	101.3	83.1	114	02/09/2017
1,1,1-Trichloroethane	5.0		**45.0**	50.00	0	90.1	78.5	119	02/09/2017
1,1,2,2-Tetrachloroethane	5.0		**49.0**	50.00	0	97.9	67.4	120	02/09/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		**43.3**	50.00	0	86.7	75.4	121	02/09/2017
1,1,2-Trichloroethane	5.0		**48.9**	50.00	0	97.8	81.1	111	02/09/2017
1,1-Dichloro-2-propanone	50.0		**129**	125.0	0	102.9	55.4	131	02/09/2017
1,1-Dichloroethane	5.0		**43.6**	50.00	0	87.2	80.1	116	02/09/2017
1,1-Dichloroethene	5.0		**44.9**	50.00	0	89.8	73.1	121	02/09/2017
1,1-Dichloropropene	5.0		**44.4**	50.00	0	88.7	82.2	114	02/09/2017
1,2,3-Trichlorobenzene	5.0		**57.4**	50.00	0	114.7	81.7	130	02/09/2017
1,2,3-Trichloropropane	10.0		**51.0**	50.00	0	102.1	67.8	118	02/09/2017
1,2,3-Trimethylbenzene	5.0		**51.5**	50.00	0	102.9	82.1	127	02/09/2017
1,2,4-Trichlorobenzene	5.0		**59.9**	50.00	0	119.9	72.3	141	02/09/2017
1,2,4-Trimethylbenzene	5.0		**53.1**	50.00	0	106.2	79.7	123	02/09/2017
1,2-Dibromo-3-chloropropane	5.0		**53.3**	50.00	0	106.7	62.1	123	02/09/2017
1,2-Dibromoethane	5.0		**49.0**	50.00	0	98.0	82.4	112	02/09/2017
1,2-Dichlorobenzene	5.0		**51.0**	50.00	0	101.9	82.7	119	02/09/2017
1,2-Dichloroethane	5.0		**45.6**	50.00	0	91.1	72.8	120	02/09/2017
1,2-Dichloropropane	5.0		**41.8**	50.00	0	83.6	80	116	02/09/2017
1,3,5-Trimethylbenzene	5.0		**51.3**	50.00	0	102.7	81.5	125	02/09/2017
1,3-Dichlorobenzene	5.0		**52.0**	50.00	0	104.0	82	124	02/09/2017
1,3-Dichloropropane	5.0		**49.6**	50.00	0	99.2	79.8	113	02/09/2017
1,4-Dichlorobenzene	5.0		**51.6**	50.00	0	103.2	81.1	124	02/09/2017
1-Chlorobutane	5.0		**44.4**	50.00	0	88.8	77.2	113	02/09/2017
2,2-Dichloropropane	5.0		**44.6**	50.00	0	89.1	76.6	121	02/09/2017
2-Butanone	50.0		**141**	125.0	0	112.7	62.8	131	02/09/2017
2-Chlorotoluene	5.0		**51.9**	50.00	0	103.8	78.8	121	02/09/2017
2-Hexanone	50.0		**151**	125.0	0	121.0	63.1	125	02/09/2017
2-Nitropropane	50.0		**503**	500.0	0	100.6	61.2	129	02/09/2017
4-Chlorotoluene	5.0		**48.6**	50.00	0	97.1	77.6	124	02/09/2017
4-Methyl-2-pentanone	50.0		**134**	125.0	0	107.4	60.6	126	02/09/2017
Acetone	50.0		**147**	125.0	0	117.9	39.5	159	02/09/2017
Acrolein	100		**323**	500.0	0	64.7	1	167	02/09/2017
Acrylonitrile	10.0		**47.1**	50.00	0	94.2	67	124	02/09/2017
Allyl chloride	5.0		**43.9**	50.00	0	87.8	58.5	129	02/09/2017
Benzene	1.0		**41.9**	50.00	0	83.8	80.8	117	02/09/2017
Bromobenzene	5.0		**51.3**	50.00	0	102.6	79.6	117	02/09/2017
Bromochloromethane	5.0		**45.4**	50.00	0	90.9	70.7	121	02/09/2017
Bromodichloromethane	5.0		**45.0**	50.00	0	90.0	80.7	121	02/09/2017
Bromoform	5.0		**53.2**	50.00	0	106.5	79.8	118	02/09/2017
Bromomethane	10.0		**15.0**	50.00	0	30.1	1	175	02/09/2017
Carbon disulfide	5.0		**38.4**	50.00	0	76.7	62.8	123	02/09/2017
Carbon tetrachloride	5.0		**45.9**	50.00	0	91.8	77.6	123	02/09/2017
Chlorobenzene	5.0		**48.6**	50.00	0	97.2	85.6	116	02/09/2017
Chloroethane	10.0		**39.9**	50.00	0	79.7	60.2	125	02/09/2017
Chloroform	5.0		**43.9**	50.00	0	87.8	77.9	116	02/09/2017
Chloromethane	10.0		**40.5**	50.00	0	80.9	29.9	157	02/09/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 126995 **SampType:** LCS Units µg/Kg

SampID: LCS-F170209A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		44.5	50.00	0	89.0	80.1	116	02/09/2017
cis-1,3-Dichloropropene	4.0		45.5	50.00	0	90.9	80.5	121	02/09/2017
Cyclohexanone	100		501	500.0	0	100.2	45.4	128	02/09/2017
Dibromochloromethane	5.0		51.5	50.00	0	103.0	84.3	116	02/09/2017
Dibromomethane	5.0		44.4	50.00	0	88.8	76.6	115	02/09/2017
Dichlorodifluoromethane	10.0		31.9	50.00	0	63.8	1	200	02/09/2017
Ethyl ether	5.0		43.6	50.00	0	87.2	73.4	116	02/09/2017
Ethyl methacrylate	5.0		52.8	50.00	0	105.6	76.2	120	02/09/2017
Ethylbenzene	5.0		50.4	50.00	0	100.7	84.8	116	02/09/2017
Hexachlorobutadiene	5.0		58.9	50.00	0	117.9	74	135	02/09/2017
Hexachloroethane	5.0		56.7	50.00	0	113.3	76.4	121	02/09/2017
Iodomethane	10.0		28.2	50.00	0	56.3	38.7	161	02/09/2017
Isopropylbenzene	5.0		50.6	50.00	0	101.2	85	125	02/09/2017
m,p-Xylenes	5.0		100	100.0	0	100.2	85.3	120	02/09/2017
Methacrylonitrile	50.0		ND	50.00	0	97.3	65.7	120	02/09/2017
Methyl Methacrylate	5.0		47.9	50.00	0	95.9	69.1	114	02/09/2017
Methyl tert-butyl ether	2.0		45.5	50.00	0	91.0	66.6	125	02/09/2017
Methylacrylate	10.0		44.5	50.00	0	89.0	69.7	121	02/09/2017
Methylene chloride	5.0		42.9	50.00	0	85.8	73.4	115	02/09/2017
Naphthalene	10.0		57.5	50.00	0	115.0	70.1	134	02/09/2017
n-Butylbenzene	5.0		56.8	50.00	0	113.6	78.4	138	02/09/2017
n-Heptane	20.0		51.6	50.00	0	103.1	74.3	125	02/09/2017
n-Hexane	20.0		47.5	50.00	0	94.9	66.3	129	02/09/2017
Nitrobenzene	100		494	500.0	0	98.8	20.1	165	02/09/2017
n-Propylbenzene	5.0		53.2	50.00	0	106.4	79.1	125	02/09/2017
o-Xylene	5.0		51.6	50.00	0	103.2	81.9	118	02/09/2017
Pentachloroethane	5.0	S	31.1	50.00	0	62.2	72.7	123	02/09/2017
p-Isopropyltoluene	5.0		54.4	50.00	0	108.7	82.7	129	02/09/2017
Propionitrile	50.0		465	500.0	0	93.0	64.3	121	02/09/2017
sec-Butylbenzene	5.0		53.2	50.00	0	106.4	81.3	125	02/09/2017
Styrene	5.0		52.0	50.00	0	104.0	88.2	122	02/09/2017
tert-Butylbenzene	5.0		51.2	50.00	0	102.5	74.8	125	02/09/2017
Tetrachloroethene	5.0	S	63.0	50.00	0	126.1	84.2	122	02/09/2017
Tetrahydrofuran	50.0		ND	50.00	0	95.4	61	118	02/09/2017
Toluene	5.0		47.9	50.00	0	95.7	81.3	113	02/09/2017
trans-1,2-Dichloroethene	5.0		44.2	50.00	0	88.3	78.2	118	02/09/2017
trans-1,3-Dichloropropene	4.0		53.0	50.00	0	106.1	81.7	124	02/09/2017
Trichloroethene	5.0		44.5	50.00	0	88.9	81	123	02/09/2017
Trichlorofluoromethane	5.0		44.3	50.00	0	88.5	66.8	131	02/09/2017
Vinyl acetate	50.0		ND	50.00	0	98.1	64.3	122	02/09/2017
Vinyl chloride	2.0		37.6	50.00	0	75.1	45.2	140	02/09/2017
Surr: 1,2-Dichloroethane-d4			54.1	50.00		108.2	72.2	131	02/09/2017
Surr: 4-Bromofluorobenzene			51.3	50.00		102.6	82.1	116	02/09/2017
Surr: Dibromofluoromethane			49.0	50.00		98.0	77.7	120	02/09/2017
Surr: Toluene-d8			51.0	50.00		102.0	86	116	02/09/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127007 **SampType:** MBLK Units µg/Kg

SampID: MBLK-F170210A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		ND						02/10/2017
1,1,1-Trichloroethane	5.0		ND						02/10/2017
1,1,2,2-Tetrachloroethane	5.0		ND						02/10/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		ND						02/10/2017
1,1,2-Trichloroethane	5.0		ND						02/10/2017
1,1-Dichloro-2-propanone	50.0		ND						02/10/2017
1,1-Dichloroethane	5.0		ND						02/10/2017
1,1-Dichloroethene	5.0		ND						02/10/2017
1,1-Dichloropropene	5.0		ND						02/10/2017
1,2,3-Trichlorobenzene	5.0		ND						02/10/2017
1,2,3-Trichloropropane	10.0		ND						02/10/2017
1,2,3-Trimethylbenzene	5.0		ND						02/10/2017
1,2,4-Trichlorobenzene	5.0		ND						02/10/2017
1,2,4-Trimethylbenzene	5.0		ND						02/10/2017
1,2-Dibromo-3-chloropropane	5.0		ND						02/10/2017
1,2-Dibromoethane	5.0		ND						02/10/2017
1,2-Dichlorobenzene	5.0		ND						02/10/2017
1,2-Dichloroethane	5.0		ND						02/10/2017
1,2-Dichloropropane	5.0		ND						02/10/2017
1,3,5-Trimethylbenzene	5.0		ND						02/10/2017
1,3-Dichlorobenzene	5.0		ND						02/10/2017
1,3-Dichloropropane	5.0		ND						02/10/2017
1,4-Dichlorobenzene	5.0		ND						02/10/2017
1-Chlorobutane	5.0		ND						02/10/2017
2,2-Dichloropropane	5.0		ND						02/10/2017
2-Butanone	50.0		ND						02/10/2017
2-Chlorotoluene	5.0		ND						02/10/2017
2-Hexanone	50.0		ND						02/10/2017
2-Nitropropane	50.0		ND						02/10/2017
4-Chlorotoluene	5.0		ND						02/10/2017
4-Methyl-2-pentanone	50.0		ND						02/10/2017
Acetone	50.0		ND						02/10/2017
Acrolein	100		ND						02/10/2017
Acrylonitrile	10.0		ND						02/10/2017
Allyl chloride	5.0		ND						02/10/2017
Benzene	1.0		ND						02/10/2017
Bromobenzene	5.0		ND						02/10/2017
Bromochloromethane	5.0		ND						02/10/2017
Bromodichloromethane	5.0		ND						02/10/2017
Bromoform	5.0		ND						02/10/2017
Bromomethane	10.0		ND						02/10/2017
Carbon disulfide	5.0		ND						02/10/2017
Carbon tetrachloride	5.0		ND						02/10/2017
Chlorobenzene	5.0		ND						02/10/2017
Chloroethane	10.0		ND						02/10/2017
Chloroform	5.0		ND						02/10/2017
Chloromethane	10.0		ND						02/10/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127007 **SampType:** MBLK Units µg/Kg

SampID: MBLK-F170210A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		ND						02/10/2017
cis-1,3-Dichloropropene	4.0		ND						02/10/2017
Cyclohexanone	100		ND						02/10/2017
Dibromochloromethane	5.0		ND						02/10/2017
Dibromomethane	5.0		ND						02/10/2017
Dichlorodifluoromethane	10.0		ND						02/10/2017
Ethyl ether	5.0		ND						02/10/2017
Ethyl methacrylate	5.0		ND						02/10/2017
Ethylbenzene	5.0		ND						02/10/2017
Hexachlorobutadiene	5.0		ND						02/10/2017
Hexachloroethane	5.0		ND						02/10/2017
Iodomethane	10.0		ND						02/10/2017
Isopropylbenzene	5.0		ND						02/10/2017
m,p-Xylenes	5.0		ND						02/10/2017
Methacrylonitrile	50.0		ND						02/10/2017
Methyl Methacrylate	5.0		ND						02/10/2017
Methyl tert-butyl ether	2.0		ND						02/10/2017
Methylacrylate	10.0		ND						02/10/2017
Methylene chloride	5.0		ND						02/10/2017
Naphthalene	10.0		ND						02/10/2017
n-Butylbenzene	5.0		ND						02/10/2017
n-Heptane	20.0		ND						02/10/2017
n-Hexane	20.0		ND						02/10/2017
Nitrobenzene	100		ND						02/10/2017
n-Propylbenzene	5.0		ND						02/10/2017
o-Xylene	5.0		ND						02/10/2017
Pentachloroethane	5.0		ND						02/10/2017
p-Isopropyltoluene	5.0		ND						02/10/2017
Propionitrile	50.0		ND						02/10/2017
sec-Butylbenzene	5.0		ND						02/10/2017
Styrene	5.0		ND						02/10/2017
tert-Butylbenzene	5.0		ND						02/10/2017
Tetrachloroethene	5.0		ND						02/10/2017
Tetrahydrofuran	50.0		ND						02/10/2017
Toluene	5.0		ND						02/10/2017
trans-1,2-Dichloroethene	5.0		ND						02/10/2017
trans-1,3-Dichloropropene	4.0		ND						02/10/2017
Trichloroethene	5.0		ND						02/10/2017
Trichlorofluoromethane	5.0		ND						02/10/2017
Vinyl acetate	50.0		ND						02/10/2017
Vinyl chloride	2.0		ND						02/10/2017
Surr: 1,2-Dichloroethane-d4			**53.0**	50.00		106.0	72.2	131	02/10/2017
Surr: 4-Bromofluorobenzene			**51.5**	50.00		103.0	82.1	116	02/10/2017
Surr: Dibromofluoromethane			**47.1**	50.00		94.2	77.7	120	02/10/2017
Surr: Toluene-d8			**52.1**	50.00		104.3	86	116	02/10/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127007 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-F170210A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		53.2	50.00	0	106.3	53.02	0.26	02/10/2017
1,1,1-Trichloroethane	5.0		47.6	50.00	0	95.2	46.21	2.94	02/10/2017
1,1,2,2-Tetrachloroethane	5.0		53.6	50.00	0	107.2	55.95	4.29	02/10/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		44.0	50.00	0	88.1	44.33	0.66	02/10/2017
1,1,2-Trichloroethane	5.0		43.8	50.00	0	87.6	50.93	15.03	02/10/2017
1,1-Dichloro-2-propanone	50.0		135	125.0	0	108.4	148.2	8.97	02/10/2017
1,1-Dichloroethane	5.0		45.6	50.00	0	91.2	45.25	0.73	02/10/2017
1,1-Dichloroethene	5.0		46.2	50.00	0	92.4	46.45	0.56	02/10/2017
1,1-Dichloropropene	5.0		45.4	50.00	0	90.7	44.73	1.38	02/10/2017
1,2,3-Trichlorobenzene	5.0		55.9	50.00	0	111.7	58.63	4.82	02/10/2017
1,2,3-Trichloropropane	10.0		51.4	50.00	0	102.9	54.81	6.32	02/10/2017
1,2,3-Trimethylbenzene	5.0		55.6	50.00	0	111.1	57.67	3.71	02/10/2017
1,2,4-Trichlorobenzene	5.0		59.1	50.00	0	118.1	64.03	8.08	02/10/2017
1,2,4-Trimethylbenzene	5.0		56.2	50.00	0	112.5	57.24	1.78	02/10/2017
1,2-Dibromo-3-chloropropane	5.0		54.7	50.00	0	109.5	60.04	9.24	02/10/2017
1,2-Dibromoethane	5.0		50.4	50.00	0	100.9	50.40	0.08	02/10/2017
1,2-Dichlorobenzene	5.0		54.3	50.00	0	108.6	56.20	3.40	02/10/2017
1,2-Dichloroethane	5.0		48.4	50.00	0	96.8	48.23	0.39	02/10/2017
1,2-Dichloropropane	5.0		42.4	50.00	0	84.8	43.71	3.02	02/10/2017
1,3,5-Trimethylbenzene	5.0		56.3	50.00	0	112.6	57.90	2.84	02/10/2017
1,3-Dichlorobenzene	5.0		54.6	50.00	0	109.3	56.37	3.14	02/10/2017
1,3-Dichloropropane	5.0		51.0	50.00	0	102.0	52.52	2.94	02/10/2017
1,4-Dichlorobenzene	5.0		54.0	50.00	0	108.0	55.83	3.31	02/10/2017
1-Chlorobutane	5.0		46.1	50.00	0	92.2	46.52	0.86	02/10/2017
2,2-Dichloropropane	5.0		47.2	50.00	0	94.5	46.87	0.79	02/10/2017
2-Butanone	50.0		126	125.0	0	100.8	154.8	20.54	02/10/2017
2-Chlorotoluene	5.0		56.0	50.00	0	112.0	56.88	1.58	02/10/2017
2-Hexanone	50.0		144	125.0	0	114.9	170.4	17.10	02/10/2017
2-Nitropropane	50.0		492	500.0	0	98.4	538.6	9.07	02/10/2017
4-Chlorotoluene	5.0		51.2	50.00	0	102.4	53.48	4.40	02/10/2017
4-Methyl-2-pentanone	50.0		131	125.0	0	104.9	143.1	8.76	02/10/2017
Acetone	50.0		133	125.0	0	106.2	177.1	28.58	02/10/2017
Acrolein	100		319	500.0	0	63.8	324.1	1.55	02/10/2017
Acrylonitrile	10.0		46.7	50.00	0	93.5	47.42	1.44	02/10/2017
Allyl chloride	5.0		44.6	50.00	0	89.2	45.17	1.23	02/10/2017
Benzene	1.0		44.1	50.00	0	88.3	43.61	1.21	02/10/2017
Bromobenzene	5.0		54.9	50.00	0	109.7	56.33	2.63	02/10/2017
Bromochloromethane	5.0		47.8	50.00	0	95.7	46.47	2.91	02/10/2017
Bromodichloromethane	5.0		46.5	50.00	0	93.0	46.25	0.50	02/10/2017
Bromoform	5.0		53.4	50.00	0	106.7	56.63	5.93	02/10/2017
Bromomethane	10.0	R	31.0	50.00	0	62.1	18.07	52.85	02/10/2017
Carbon disulfide	5.0		40.3	50.00	0	80.7	39.30	2.59	02/10/2017
Carbon tetrachloride	5.0		48.1	50.00	0	96.3	48.09	0.08	02/10/2017
Chlorobenzene	5.0		51.3	50.00	0	102.6	50.71	1.18	02/10/2017
Chloroethane	10.0		43.6	50.00	0	87.2	42.10	3.52	02/10/2017
Chloroform	5.0		45.4	50.00	0	90.9	45.08	0.82	02/10/2017
Chloromethane	10.0		42.8	50.00	0	85.6	41.62	2.80	02/10/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127007 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-F170210A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
cis-1,2-Dichloroethene	5.0		**46.9**	50.00	0	93.8	45.76	2.46	02/10/2017
cis-1,3-Dichloropropene	4.0		**46.7**	50.00	0	93.5	46.11	1.34	02/10/2017
Cyclohexanone	100		**450**	500.0	0	90.0	494.1	9.36	02/10/2017
Dibromochloromethane	5.0		**53.6**	50.00	0	107.1	53.44	0.22	02/10/2017
Dibromomethane	5.0		**44.7**	50.00	0	89.4	43.82	1.97	02/10/2017
Dichlorodifluoromethane	10.0		**30.3**	50.00	0	60.7	31.60	4.10	02/10/2017
Ethyl ether	5.0		**44.7**	50.00	0	89.5	43.72	2.28	02/10/2017
Ethyl methacrylate	5.0		**52.0**	50.00	0	104.0	55.72	6.93	02/10/2017
Ethylbenzene	5.0		**53.5**	50.00	0	106.9	54.61	2.11	02/10/2017
Hexachlorobutadiene	5.0		**59.8**	50.00	0	119.7	60.76	1.53	02/10/2017
Hexachloroethane	5.0		**59.8**	50.00	0	119.6	62.65	4.65	02/10/2017
Iodomethane	10.0		**33.5**	50.00	0	66.9	31.38	6.45	02/10/2017
Isopropylbenzene	5.0		**52.6**	50.00	0	105.1	53.64	2.03	02/10/2017
m,p-Xylenes	5.0		**108**	100.0	0	108.1	109.5	1.36	02/10/2017
Methacrylonitrile	50.0		**ND**	50.00	0	91.8	48.46	0.00	02/10/2017
Methyl Methacrylate	5.0		**47.5**	50.00	0	95.0	47.65	0.27	02/10/2017
Methyl tert-butyl ether	2.0		**46.3**	50.00	0	92.5	47.05	1.67	02/10/2017
Methylacrylate	10.0		**52.2**	50.00	0	104.5	55.71	6.41	02/10/2017
Methylene chloride	5.0		**45.2**	50.00	0	90.3	44.38	1.76	02/10/2017
Naphthalene	10.0		**56.2**	50.00	0	112.4	61.72	9.34	02/10/2017
n-Butylbenzene	5.0		**60.4**	50.00	0	120.7	61.43	1.74	02/10/2017
n-Heptane	20.0		**50.3**	50.00	0	100.6	54.13	7.30	02/10/2017
n-Hexane	20.0		**47.4**	50.00	0	94.8	47.82	0.84	02/10/2017
Nitrobenzene	100		**534**	500.0	0	106.7	603.2	12.22	02/10/2017
n-Propylbenzene	5.0		**57.3**	50.00	0	114.7	58.22	1.52	02/10/2017
o-Xylene	5.0		**53.3**	50.00	0	106.7	54.36	1.89	02/10/2017
Pentachloroethane	5.0		**60.5**	50.00	0	121.1	60.39	0.23	02/10/2017
p-Isopropyltoluene	5.0		**56.9**	50.00	0	113.8	59.32	4.16	02/10/2017
Propionitrile	50.0		**449**	500.0	0	89.9	488.6	8.36	02/10/2017
sec-Butylbenzene	5.0		**57.4**	50.00	0	114.8	59.05	2.82	02/10/2017
Styrene	5.0		**53.0**	50.00	0	106.1	53.61	1.07	02/10/2017
tert-Butylbenzene	5.0		**56.9**	50.00	0	113.8	57.34	0.74	02/10/2017
Tetrachloroethene	5.0		**50.4**	50.00	0	100.8	52.60	4.29	02/10/2017
Tetrahydrofuran	50.0		**ND**	50.00	0	94.3	50.15	0.00	02/10/2017
Toluene	5.0		**50.3**	50.00	0	100.7	49.55	1.58	02/10/2017
trans-1,2-Dichloroethene	5.0		**46.4**	50.00	0	92.8	45.67	1.56	02/10/2017
trans-1,3-Dichloropropene	4.0		**54.2**	50.00	0	108.3	54.90	1.36	02/10/2017
Trichloroethene	5.0		**44.0**	50.00	0	88.1	43.23	1.86	02/10/2017
Trichlorofluoromethane	5.0		**46.2**	50.00	0	92.4	45.54	1.48	02/10/2017
Vinyl acetate	50.0		**ND**	50.00	0	98.5	54.38	0.00	02/10/2017
Vinyl chloride	2.0		**38.0**	50.00	0	76.0	39.04	2.70	02/10/2017
Surr: 1,2-Dichloroethane-d4			**52.6**	50.00		105.3			02/10/2017
Surr: 4-Bromofluorobenzene			**50.9**	50.00		101.8			02/10/2017
Surr: Dibromofluoromethane			**49.0**	50.00		98.0			02/10/2017
Surr: Toluene-d8			**54.4**	50.00		108.8			02/10/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127007 **SampType:** LCS Units µg/Kg

SampID: LCS-F170210A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		**53.0**	50.00	0	106.0	83.1	114	02/10/2017
1,1,1-Trichloroethane	5.0		**46.2**	50.00	0	92.4	78.5	119	02/10/2017
1,1,2,2-Tetrachloroethane	5.0		**56.0**	50.00	0	111.9	67.4	120	02/10/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		**44.3**	50.00	0	88.7	75.4	121	02/10/2017
1,1,2-Trichloroethane	5.0		**50.9**	50.00	0	101.9	81.1	111	02/10/2017
1,1-Dichloro-2-propanone	50.0		**148**	125.0	0	118.5	55.4	131	02/10/2017
1,1-Dichloroethane	5.0		**45.2**	50.00	0	90.5	80.1	116	02/10/2017
1,1-Dichloroethene	5.0		**46.4**	50.00	0	92.9	73.1	121	02/10/2017
1,1-Dichloropropene	5.0		**44.7**	50.00	0	89.5	82.2	114	02/10/2017
1,2,3-Trichlorobenzene	5.0		**58.6**	50.00	0	117.3	81.7	130	02/10/2017
1,2,3-Trichloropropane	10.0		**54.8**	50.00	0	109.6	67.8	118	02/10/2017
1,2,3-Trimethylbenzene	5.0		**57.7**	50.00	0	115.3	82.1	127	02/10/2017
1,2,4-Trichlorobenzene	5.0		**64.0**	50.00	0	128.1	72.3	141	02/10/2017
1,2,4-Trimethylbenzene	5.0		**57.2**	50.00	0	114.5	79.7	123	02/10/2017
1,2-Dibromo-3-chloropropane	5.0		**60.0**	50.00	0	120.1	62.1	123	02/10/2017
1,2-Dibromoethane	5.0		**50.4**	50.00	0	100.8	82.4	112	02/10/2017
1,2-Dichlorobenzene	5.0		**56.2**	50.00	0	112.4	82.7	119	02/10/2017
1,2-Dichloroethane	5.0		**48.2**	50.00	0	96.5	72.8	120	02/10/2017
1,2-Dichloropropane	5.0		**43.7**	50.00	0	87.4	80	116	02/10/2017
1,3,5-Trimethylbenzene	5.0		**57.9**	50.00	0	115.8	81.5	125	02/10/2017
1,3-Dichlorobenzene	5.0		**56.4**	50.00	0	112.7	82	124	02/10/2017
1,3-Dichloropropane	5.0		**52.5**	50.00	0	105.0	79.8	113	02/10/2017
1,4-Dichlorobenzene	5.0		**55.8**	50.00	0	111.7	81.1	124	02/10/2017
1-Chlorobutane	5.0		**46.5**	50.00	0	93.0	77.2	113	02/10/2017
2,2-Dichloropropane	5.0		**46.9**	50.00	0	93.7	76.6	121	02/10/2017
2-Butanone	50.0		**155**	125.0	0	123.9	62.8	131	02/10/2017
2-Chlorotoluene	5.0		**56.9**	50.00	0	113.8	78.8	121	02/10/2017
2-Hexanone	50.0	S	**170**	125.0	0	136.4	63.1	125	02/10/2017
2-Nitropropane	50.0		**539**	500.0	0	107.7	61.2	129	02/10/2017
4-Chlorotoluene	5.0		**53.5**	50.00	0	107.0	77.6	124	02/10/2017
4-Methyl-2-pentanone	50.0		**143**	125.0	0	114.5	60.6	126	02/10/2017
Acetone	50.0		**177**	125.0	0	141.7	39.5	159	02/10/2017
Acrolein	100		**324**	500.0	0	64.8	1	167	02/10/2017
Acrylonitrile	10.0		**47.4**	50.00	0	94.8	67	124	02/10/2017
Allyl chloride	5.0		**45.2**	50.00	0	90.3	58.5	129	02/10/2017
Benzene	1.0		**43.6**	50.00	0	87.2	80.8	117	02/10/2017
Bromobenzene	5.0		**56.3**	50.00	0	112.7	79.6	117	02/10/2017
Bromochloromethane	5.0		**46.5**	50.00	0	92.9	70.7	121	02/10/2017
Bromodichloromethane	5.0		**46.2**	50.00	0	92.5	80.7	121	02/10/2017
Bromoform	5.0		**56.6**	50.00	0	113.3	79.8	118	02/10/2017
Bromomethane	10.0		**18.1**	50.00	0	36.1	1	175	02/10/2017
Carbon disulfide	5.0		**39.3**	50.00	0	78.6	62.8	123	02/10/2017
Carbon tetrachloride	5.0		**48.1**	50.00	0	96.2	77.6	123	02/10/2017
Chlorobenzene	5.0		**50.7**	50.00	0	101.4	85.6	116	02/10/2017
Chloroethane	10.0		**42.1**	50.00	0	84.2	60.2	125	02/10/2017
Chloroform	5.0		**45.1**	50.00	0	90.2	77.9	116	02/10/2017
Chloromethane	10.0		**41.6**	50.00	0	83.2	29.9	157	02/10/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127007 **SampType:** LCS Units µg/Kg

SampID: LCS-F170210A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		**45.8**	50.00	0	91.5	80.1	116	02/10/2017
cis-1,3-Dichloropropene	4.0		**46.1**	50.00	0	92.2	80.5	121	02/10/2017
Cyclohexanone	100		**494**	500.0	0	98.8	45.4	128	02/10/2017
Dibromochloromethane	5.0		**53.4**	50.00	0	106.9	84.3	116	02/10/2017
Dibromomethane	5.0		**43.8**	50.00	0	87.6	76.6	115	02/10/2017
Dichlorodifluoromethane	10.0		**31.6**	50.00	0	63.2	1	200	02/10/2017
Ethyl ether	5.0		**43.7**	50.00	0	87.4	73.4	116	02/10/2017
Ethyl methacrylate	5.0		**55.7**	50.00	0	111.4	76.2	120	02/10/2017
Ethylbenzene	5.0		**54.6**	50.00	0	109.2	84.8	116	02/10/2017
Hexachlorobutadiene	5.0		**60.8**	50.00	0	121.5	74	135	02/10/2017
Hexachloroethane	5.0	S	**62.6**	50.00	0	125.3	76.4	121	02/10/2017
Iodomethane	10.0		**31.4**	50.00	0	62.8	38.7	161	02/10/2017
Isopropylbenzene	5.0		**53.6**	50.00	0	107.3	85	125	02/10/2017
m,p-Xylenes	5.0		**110**	100.0	0	109.5	85.3	120	02/10/2017
Methacrylonitrile	50.0		**ND**	50.00	0	96.9	65.7	120	02/10/2017
Methyl Methacrylate	5.0		**47.6**	50.00	0	95.3	69.1	114	02/10/2017
Methyl tert-butyl ether	2.0		**47.0**	50.00	0	94.1	66.6	125	02/10/2017
Methylacrylate	10.0		**55.7**	50.00	0	111.4	69.7	121	02/10/2017
Methylene chloride	5.0		**44.4**	50.00	0	88.8	73.4	115	02/10/2017
Naphthalene	10.0		**61.7**	50.00	0	123.4	70.1	134	02/10/2017
n-Butylbenzene	5.0		**61.4**	50.00	0	122.9	78.4	138	02/10/2017
n-Heptane	20.0		**54.1**	50.00	0	108.3	74.3	125	02/10/2017
n-Hexane	20.0		**47.8**	50.00	0	95.6	66.3	129	02/10/2017
Nitrobenzene	100		**603**	500.0	0	120.6	20.1	165	02/10/2017
n-Propylbenzene	5.0		**58.2**	50.00	0	116.4	79.1	125	02/10/2017
o-Xylene	5.0		**54.4**	50.00	0	108.7	81.9	118	02/10/2017
Pentachloroethane	5.0		**60.4**	50.00	0	120.8	72.7	123	02/10/2017
p-Isopropyltoluene	5.0		**59.3**	50.00	0	118.6	82.7	129	02/10/2017
Propionitrile	50.0		**489**	500.0	0	97.7	64.3	121	02/10/2017
sec-Butylbenzene	5.0		**59.0**	50.00	0	118.1	81.3	125	02/10/2017
Styrene	5.0		**53.6**	50.00	0	107.2	88.2	122	02/10/2017
tert-Butylbenzene	5.0		**57.3**	50.00	0	114.7	74.8	125	02/10/2017
Tetrachloroethene	5.0		**52.6**	50.00	0	105.2	84.2	122	02/10/2017
Tetrahydrofuran	50.0		**50.2**	50.00	0	100.3	61	118	02/10/2017
Toluene	5.0		**49.6**	50.00	0	99.1	81.3	113	02/10/2017
trans-1,2-Dichloroethene	5.0		**45.7**	50.00	0	91.3	78.2	118	02/10/2017
trans-1,3-Dichloropropene	4.0		**54.9**	50.00	0	109.8	81.7	124	02/10/2017
Trichloroethene	5.0		**43.2**	50.00	0	86.5	81	123	02/10/2017
Trichlorofluoromethane	5.0		**45.5**	50.00	0	91.1	66.8	131	02/10/2017
Vinyl acetate	50.0		**54.4**	50.00	0	108.8	64.3	122	02/10/2017
Vinyl chloride	2.0		**39.0**	50.00	0	78.1	45.2	140	02/10/2017
Surr: 1,2-Dichloroethane-d4			**53.4**	50.00		106.8	72.2	131	02/10/2017
Surr: 4-Bromofluorobenzene			**51.2**	50.00		102.3	82.1	116	02/10/2017
Surr: Dibromofluoromethane			**48.2**	50.00		96.3	77.7	120	02/10/2017
Surr: Toluene-d8			**51.4**	50.00		102.9	86	116	02/10/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127123 **SampType:** MBLK Units µg/Kg

SampID: MBLK-F170214A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		ND						02/14/2017
1,1,1-Trichloroethane	5.0		ND						02/14/2017
1,1,2,2-Tetrachloroethane	5.0		ND						02/14/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		ND						02/14/2017
1,1,2-Trichloroethane	5.0		ND						02/14/2017
1,1-Dichloro-2-propanone	50.0		ND						02/14/2017
1,1-Dichloroethane	5.0		ND						02/14/2017
1,1-Dichloroethene	5.0		ND						02/14/2017
1,1-Dichloropropene	5.0		ND						02/14/2017
1,2,3-Trichlorobenzene	5.0		ND						02/14/2017
1,2,3-Trichloropropane	10.0		ND						02/14/2017
1,2,3-Trimethylbenzene	5.0		ND						02/14/2017
1,2,4-Trichlorobenzene	5.0		ND						02/14/2017
1,2,4-Trimethylbenzene	5.0		ND						02/14/2017
1,2-Dibromo-3-chloropropane	5.0		ND						02/14/2017
1,2-Dibromoethane	5.0		ND						02/14/2017
1,2-Dichlorobenzene	5.0		ND						02/14/2017
1,2-Dichloroethane	5.0		ND						02/14/2017
1,2-Dichloropropane	5.0		ND						02/14/2017
1,3,5-Trimethylbenzene	5.0		ND						02/14/2017
1,3-Dichlorobenzene	5.0		ND						02/14/2017
1,3-Dichloropropane	5.0		ND						02/14/2017
1,4-Dichlorobenzene	5.0		ND						02/14/2017
1-Chlorobutane	5.0		ND						02/14/2017
2,2-Dichloropropane	5.0		ND						02/14/2017
2-Butanone	50.0		ND						02/14/2017
2-Chlorotoluene	5.0		ND						02/14/2017
2-Hexanone	50.0		ND						02/14/2017
2-Nitropropane	50.0		ND						02/14/2017
4-Chlorotoluene	5.0		ND						02/14/2017
4-Methyl-2-pentanone	50.0		ND						02/14/2017
Acetone	50.0		ND						02/14/2017
Acrolein	100		ND						02/14/2017
Acrylonitrile	10.0		ND						02/14/2017
Allyl chloride	5.0		ND						02/14/2017
Benzene	1.0		ND						02/14/2017
Bromobenzene	5.0		ND						02/14/2017
Bromochloromethane	5.0		ND						02/14/2017
Bromodichloromethane	5.0		ND						02/14/2017
Bromoform	5.0		ND						02/14/2017
Bromomethane	10.0		ND						02/14/2017
Carbon disulfide	5.0		ND						02/14/2017
Carbon tetrachloride	5.0		ND						02/14/2017
Chlorobenzene	5.0		ND						02/14/2017
Chloroethane	10.0		ND						02/14/2017
Chloroform	5.0		ND						02/14/2017
Chloromethane	10.0		ND						02/14/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127123 **SampType:** MBLK Units µg/Kg

SampID: MBLK-F170214A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		ND						02/14/2017
cis-1,3-Dichloropropene	4.0		ND						02/14/2017
Cyclohexanone	100		ND						02/14/2017
Dibromochloromethane	5.0		ND						02/14/2017
Dibromomethane	5.0		ND						02/14/2017
Dichlorodifluoromethane	10.0		ND						02/14/2017
Ethyl ether	5.0		ND						02/14/2017
Ethyl methacrylate	5.0		ND						02/14/2017
Ethylbenzene	5.0		ND						02/14/2017
Hexachlorobutadiene	5.0		ND						02/14/2017
Hexachloroethane	5.0		ND						02/14/2017
Iodomethane	10.0		ND						02/14/2017
Isopropylbenzene	5.0		ND						02/14/2017
m,p-Xylenes	5.0		ND						02/14/2017
Methacrylonitrile	50.0		ND						02/14/2017
Methyl Methacrylate	5.0		ND						02/14/2017
Methyl tert-butyl ether	2.0		ND						02/14/2017
Methylacrylate	10.0		ND						02/14/2017
Methylene chloride	5.0		ND						02/14/2017
Naphthalene	10.0		ND						02/14/2017
n-Butylbenzene	5.0		ND						02/14/2017
n-Heptane	20.0		ND						02/14/2017
n-Hexane	20.0		ND						02/14/2017
Nitrobenzene	100		ND						02/14/2017
n-Propylbenzene	5.0		ND						02/14/2017
o-Xylene	5.0		ND						02/14/2017
Pentachloroethane	5.0		ND						02/14/2017
p-Isopropyltoluene	5.0		ND						02/14/2017
Propionitrile	50.0		ND						02/14/2017
sec-Butylbenzene	5.0		ND						02/14/2017
Styrene	5.0		ND						02/14/2017
tert-Butylbenzene	5.0		ND						02/14/2017
Tetrachloroethene	5.0		ND						02/14/2017
Tetrahydrofuran	50.0		ND						02/14/2017
Toluene	5.0		ND						02/14/2017
trans-1,2-Dichloroethene	5.0		ND						02/14/2017
trans-1,3-Dichloropropene	4.0		ND						02/14/2017
Trichloroethene	5.0		ND						02/14/2017
Trichlorofluoromethane	5.0		ND						02/14/2017
Vinyl acetate	50.0		ND						02/14/2017
Vinyl chloride	2.0		ND						02/14/2017
Surr: 1,2-Dichloroethane-d4			**52.8**	50.00		105.6	72.2	131	02/14/2017
Surr: 4-Bromofluorobenzene			**52.0**	50.00		104.0	82.1	116	02/14/2017
Surr: Dibromofluoromethane			**46.1**	50.00		92.1	77.7	120	02/14/2017
Surr: Toluene-d8			**53.6**	50.00		107.2	86	116	02/14/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127123 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-F170214A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		**54.4**	50.00	0	108.8	51.55	5.36	02/14/2017
1,1,1-Trichloroethane	5.0		**49.0**	50.00	0	97.9	46.71	4.72	02/14/2017
1,1,2,2-Tetrachloroethane	5.0		**53.7**	50.00	0	107.4	55.90	4.03	02/14/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		**47.8**	50.00	0	95.6	46.45	2.89	02/14/2017
1,1,2-Trichloroethane	5.0		**50.7**	50.00	0	101.5	51.01	0.53	02/14/2017
1,1-Dichloro-2-propanone	50.0		**129**	125.0	0	103.0	161.0	22.27	02/14/2017
1,1-Dichloroethane	5.0		**47.3**	50.00	0	94.5	45.98	2.77	02/14/2017
1,1-Dichloroethene	5.0		**49.9**	50.00	0	99.9	47.85	4.25	02/14/2017
1,1-Dichloropropene	5.0		**47.2**	50.00	0	94.4	46.02	2.55	02/14/2017
1,2,3-Trichlorobenzene	5.0		**56.8**	50.00	0	113.7	57.47	1.08	02/14/2017
1,2,3-Trichloropropane	10.0		**54.3**	50.00	0	108.7	56.80	4.45	02/14/2017
1,2,3-Trimethylbenzene	5.0		**55.0**	50.00	0	109.9	55.35	0.73	02/14/2017
1,2,4-Trichlorobenzene	5.0		**60.0**	50.00	0	120.0	61.87	3.05	02/14/2017
1,2,4-Trimethylbenzene	5.0		**57.0**	50.00	0	114.0	55.72	2.27	02/14/2017
1,2-Dibromo-3-chloropropane	5.0		**56.3**	50.00	0	112.5	59.81	6.10	02/14/2017
1,2-Dibromoethane	5.0		**52.1**	50.00	0	104.2	52.80	1.32	02/14/2017
1,2-Dichlorobenzene	5.0		**53.5**	50.00	0	107.0	54.98	2.69	02/14/2017
1,2-Dichloroethane	5.0		**50.0**	50.00	0	100.0	48.84	2.39	02/14/2017
1,2-Dichloropropane	5.0		**45.0**	50.00	0	90.1	44.06	2.18	02/14/2017
1,3,5-Trimethylbenzene	5.0		**57.1**	50.00	0	114.2	55.30	3.24	02/14/2017
1,3-Dichlorobenzene	5.0		**54.3**	50.00	0	108.6	56.23	3.46	02/14/2017
1,3-Dichloropropane	5.0		**52.7**	50.00	0	105.5	52.58	0.28	02/14/2017
1,4-Dichlorobenzene	5.0		**54.4**	50.00	0	108.8	54.46	0.15	02/14/2017
1-Chlorobutane	5.0		**48.7**	50.00	0	97.5	46.44	4.81	02/14/2017
2,2-Dichloropropane	5.0		**49.2**	50.00	0	98.4	47.51	3.47	02/14/2017
2-Butanone	50.0		**148**	125.0	0	118.3	144.7	2.19	02/14/2017
2-Chlorotoluene	5.0		**56.8**	50.00	0	113.5	55.94	1.44	02/14/2017
2-Hexanone	50.0		**154**	125.0	0	123.3	156.2	1.33	02/14/2017
2-Nitropropane	50.0		**553**	500.0	0	110.6	556.0	0.57	02/14/2017
4-Chlorotoluene	5.0		**51.1**	50.00	0	102.2	52.52	2.78	02/14/2017
4-Methyl-2-pentanone	50.0		**133**	125.0	0	106.1	145.6	9.37	02/14/2017
Acetone	50.0		**158**	125.0	0	126.7	131.0	18.93	02/14/2017
Acrolein	100	SE	**2730**	500.0	0	545.1	2778	1.91	02/14/2017
Acrylonitrile	10.0		**49.4**	50.00	0	98.8	51.69	4.55	02/14/2017
Allyl chloride	5.0		**48.2**	50.00	0	96.4	46.42	3.80	02/14/2017
Benzene	1.0		**45.4**	50.00	0	90.7	44.02	2.98	02/14/2017
Bromobenzene	5.0		**54.5**	50.00	0	109.1	54.58	0.07	02/14/2017
Bromochloromethane	5.0		**47.4**	50.00	0	94.8	44.99	5.24	02/14/2017
Bromodichloromethane	5.0		**48.5**	50.00	0	96.9	46.19	4.82	02/14/2017
Bromoform	5.0		**54.9**	50.00	0	109.8	57.33	4.31	02/14/2017
Bromomethane	10.0		**13.5**	50.00	0	27.0	10.78	22.55	02/14/2017
Carbon disulfide	5.0		**45.1**	50.00	0	90.2	42.31	6.43	02/14/2017
Carbon tetrachloride	5.0		**51.0**	50.00	0	102.1	48.62	4.84	02/14/2017
Chlorobenzene	5.0		**52.6**	50.00	0	105.1	50.76	3.47	02/14/2017
Chloroethane	10.0		**46.1**	50.00	0	92.2	40.52	12.84	02/14/2017
Chloroform	5.0		**46.8**	50.00	0	93.7	44.75	4.56	02/14/2017
Chloromethane	10.0		**53.0**	50.00	0	105.9	48.73	8.32	02/14/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127123 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-F170214A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
cis-1,2-Dichloroethene	5.0		**47.9**	50.00	0	95.7	46.98	1.88	02/14/2017
cis-1,3-Dichloropropene	4.0		**48.4**	50.00	0	96.9	46.46	4.17	02/14/2017
Cyclohexanone	100		**493**	500.0	0	98.7	521.8	5.57	02/14/2017
Dibromochloromethane	5.0		**55.6**	50.00	0	111.1	54.54	1.85	02/14/2017
Dibromomethane	5.0		**46.1**	50.00	0	92.3	45.51	1.35	02/14/2017
Dichlorodifluoromethane	10.0		**54.3**	50.00	0	108.7	48.44	11.46	02/14/2017
Ethyl ether	5.0		**47.8**	50.00	0	95.6	45.90	4.10	02/14/2017
Ethyl methacrylate	5.0		**55.2**	50.00	0	110.4	56.54	2.43	02/14/2017
Ethylbenzene	5.0		**53.9**	50.00	0	107.8	52.15	3.30	02/14/2017
Hexachlorobutadiene	5.0		**59.2**	50.00	0	118.3	58.16	1.69	02/14/2017
Hexachloroethane	5.0	S	**61.2**	50.00	0	122.5	59.79	2.38	02/14/2017
Iodomethane	10.0		**21.8**	50.00	0	43.6	19.88	9.30	02/14/2017
Isopropylbenzene	5.0		**53.6**	50.00	0	107.2	51.45	4.13	02/14/2017
m,p-Xylenes	5.0		**111**	100.0	0	111.0	104.0	6.47	02/14/2017
Methacrylonitrile	50.0		**ND**	50.00	0	98.9	49.18	0.00	02/14/2017
Methyl Methacrylate	5.0		**48.2**	50.00	0	96.4	51.87	7.29	02/14/2017
Methyl tert-butyl ether	2.0		**48.0**	50.00	0	96.1	44.31	8.10	02/14/2017
Methylacrylate	10.0		**58.3**	50.00	0	116.6	59.74	2.42	02/14/2017
Methylene chloride	5.0		**47.3**	50.00	0	94.6	45.33	4.23	02/14/2017
Naphthalene	10.0		**58.2**	50.00	0	116.5	60.89	4.47	02/14/2017
n-Butylbenzene	5.0		**59.7**	50.00	0	119.4	61.09	2.32	02/14/2017
n-Heptane	20.0		**56.1**	50.00	0	112.3	56.54	0.73	02/14/2017
n-Hexane	20.0		**52.5**	50.00	0	105.0	52.25	0.48	02/14/2017
Nitrobenzene	100		**532**	500.0	0	106.4	583.8	9.26	02/14/2017
n-Propylbenzene	5.0		**56.7**	50.00	0	113.4	57.01	0.55	02/14/2017
o-Xylene	5.0		**54.5**	50.00	0	109.1	52.87	3.09	02/14/2017
Pentachloroethane	5.0	S	**61.6**	50.00	0	123.3	60.34	2.13	02/14/2017
p-Isopropyltoluene	5.0		**56.6**	50.00	0	113.3	58.44	3.15	02/14/2017
Propionitrile	50.0		**486**	500.0	0	97.1	512.7	5.44	02/14/2017
sec-Butylbenzene	5.0		**56.9**	50.00	0	113.8	55.32	2.78	02/14/2017
Styrene	5.0		**54.5**	50.00	0	109.0	51.85	5.02	02/14/2017
tert-Butylbenzene	5.0		**55.8**	50.00	0	111.5	53.75	3.67	02/14/2017
Tetrachloroethene	5.0		**52.0**	50.00	0	103.9	49.81	4.21	02/14/2017
Tetrahydrofuran	50.0		**50.3**	50.00	0	100.6	50.34	0.10	02/14/2017
Toluene	5.0		**50.8**	50.00	0	101.6	48.22	5.25	02/14/2017
trans-1,2-Dichloroethene	5.0		**47.9**	50.00	0	95.8	46.11	3.83	02/14/2017
trans-1,3-Dichloropropene	4.0		**56.4**	50.00	0	112.8	55.47	1.64	02/14/2017
Trichloroethene	5.0		**46.2**	50.00	0	92.3	45.46	1.51	02/14/2017
Trichlorofluoromethane	5.0		**49.8**	50.00	0	99.7	44.65	10.97	02/14/2017
Vinyl acetate	50.0		**51.6**	50.00	0	103.3	58.60	12.65	02/14/2017
Vinyl chloride	2.0		**45.7**	50.00	0	91.4	42.55	7.14	02/14/2017
Surr: 1,2-Dichloroethane-d4			**53.8**	50.00		107.6			02/14/2017
Surr: 4-Bromofluorobenzene			**52.0**	50.00		103.9			02/14/2017
Surr: Dibromofluoromethane			**49.6**	50.00		99.2			02/14/2017
Surr: Toluene-d8			**52.9**	50.00		105.8			02/14/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127123 **SampType:** LCS Units µg/Kg

SampID: LCS-F170214A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		**51.6**	50.00	0	103.1	83.1	114	02/14/2017
1,1,1-Trichloroethane	5.0		**46.7**	50.00	0	93.4	78.5	119	02/14/2017
1,1,2,2-Tetrachloroethane	5.0		**55.9**	50.00	0	111.8	67.4	120	02/14/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		**46.4**	50.00	0	92.9	75.4	121	02/14/2017
1,1,2-Trichloroethane	5.0		**51.0**	50.00	0	102.0	81.1	111	02/14/2017
1,1-Dichloro-2-propanone	50.0		**161**	125.0	0	128.8	55.4	131	02/14/2017
1,1-Dichloroethane	5.0		**46.0**	50.00	0	92.0	80.1	116	02/14/2017
1,1-Dichloroethene	5.0		**47.8**	50.00	0	95.7	73.1	121	02/14/2017
1,1-Dichloropropene	5.0		**46.0**	50.00	0	92.0	82.2	114	02/14/2017
1,2,3-Trichlorobenzene	5.0		**57.5**	50.00	0	114.9	81.7	130	02/14/2017
1,2,3-Trichloropropane	10.0		**56.8**	50.00	0	113.6	67.8	118	02/14/2017
1,2,3-Trimethylbenzene	5.0		**55.4**	50.00	0	110.7	82.1	127	02/14/2017
1,2,4-Trichlorobenzene	5.0		**61.9**	50.00	0	123.7	72.3	141	02/14/2017
1,2,4-Trimethylbenzene	5.0		**55.7**	50.00	0	111.4	79.7	123	02/14/2017
1,2-Dibromo-3-chloropropane	5.0		**59.8**	50.00	0	119.6	62.1	123	02/14/2017
1,2-Dibromoethane	5.0		**52.8**	50.00	0	105.6	82.4	112	02/14/2017
1,2-Dichlorobenzene	5.0		**55.0**	50.00	0	110.0	82.7	119	02/14/2017
1,2-Dichloroethane	5.0		**48.8**	50.00	0	97.7	72.8	120	02/14/2017
1,2-Dichloropropane	5.0		**44.1**	50.00	0	88.1	80	116	02/14/2017
1,3,5-Trimethylbenzene	5.0		**55.3**	50.00	0	110.6	81.5	125	02/14/2017
1,3-Dichlorobenzene	5.0		**56.2**	50.00	0	112.5	82	124	02/14/2017
1,3-Dichloropropane	5.0		**52.6**	50.00	0	105.2	79.8	113	02/14/2017
1,4-Dichlorobenzene	5.0		**54.5**	50.00	0	108.9	81.1	124	02/14/2017
1-Chlorobutane	5.0		**46.4**	50.00	0	92.9	77.2	113	02/14/2017
2,2-Dichloropropane	5.0		**47.5**	50.00	0	95.0	76.6	121	02/14/2017
2-Butanone	50.0		**145**	125.0	0	115.8	62.8	131	02/14/2017
2-Chlorotoluene	5.0		**55.9**	50.00	0	111.9	78.8	121	02/14/2017
2-Hexanone	50.0		**156**	125.0	0	124.9	63.1	125	02/14/2017
2-Nitropropane	50.0		**556**	500.0	0	111.2	61.2	129	02/14/2017
4-Chlorotoluene	5.0		**52.5**	50.00	0	105.0	77.6	124	02/14/2017
4-Methyl-2-pentanone	50.0		**146**	125.0	0	116.5	60.6	126	02/14/2017
Acetone	50.0		**131**	125.0	0	104.8	39.5	159	02/14/2017
Acrolein	100	SE	**2780**	500.0	0	555.6	1	167	02/14/2017
Acrylonitrile	10.0		**51.7**	50.00	0	103.4	67	124	02/14/2017
Allyl chloride	5.0		**46.4**	50.00	0	92.8	58.5	129	02/14/2017
Benzene	1.0		**44.0**	50.00	0	88.0	80.8	117	02/14/2017
Bromobenzene	5.0		**54.6**	50.00	0	109.2	79.6	117	02/14/2017
Bromochloromethane	5.0		**45.0**	50.00	0	90.0	70.7	121	02/14/2017
Bromodichloromethane	5.0		**46.2**	50.00	0	92.4	80.7	121	02/14/2017
Bromoform	5.0		**57.3**	50.00	0	114.7	79.8	118	02/14/2017
Bromomethane	10.0		**10.8**	50.00	0	21.6	1	175	02/14/2017
Carbon disulfide	5.0		**42.3**	50.00	0	84.6	62.8	123	02/14/2017
Carbon tetrachloride	5.0		**48.6**	50.00	0	97.2	77.6	123	02/14/2017
Chlorobenzene	5.0		**50.8**	50.00	0	101.5	85.6	116	02/14/2017
Chloroethane	10.0		**40.5**	50.00	0	81.0	60.2	125	02/14/2017
Chloroform	5.0		**44.8**	50.00	0	89.5	77.9	116	02/14/2017
Chloromethane	10.0		**48.7**	50.00	0	97.5	29.9	157	02/14/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127123 **SampType:** LCS Units µg/Kg

SampID: LCS-F170214A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		**47.0**	50.00	0	94.0	80.1	116	02/14/2017
cis-1,3-Dichloropropene	4.0		**46.5**	50.00	0	92.9	80.5	121	02/14/2017
Cyclohexanone	100		**522**	500.0	0	104.4	45.4	128	02/14/2017
Dibromochloromethane	5.0		**54.5**	50.00	0	109.1	84.3	116	02/14/2017
Dibromomethane	5.0		**45.5**	50.00	0	91.0	76.6	115	02/14/2017
Dichlorodifluoromethane	10.0		**48.4**	50.00	0	96.9	1	200	02/14/2017
Ethyl ether	5.0		**45.9**	50.00	0	91.8	73.4	116	02/14/2017
Ethyl methacrylate	5.0		**56.5**	50.00	0	113.1	76.2	120	02/14/2017
Ethylbenzene	5.0		**52.2**	50.00	0	104.3	84.8	116	02/14/2017
Hexachlorobutadiene	5.0		**58.2**	50.00	0	116.3	74	135	02/14/2017
Hexachloroethane	5.0		**59.8**	50.00	0	119.6	76.4	121	02/14/2017
Iodomethane	10.0		**19.9**	50.00	0	39.8	38.7	161	02/14/2017
Isopropylbenzene	5.0		**51.4**	50.00	0	102.9	85	125	02/14/2017
m,p-Xylenes	5.0		**104**	100.0	0	104.0	85.3	120	02/14/2017
Methacrylonitrile	50.0		**ND**	50.00	0	98.4	65.7	120	02/14/2017
Methyl Methacrylate	5.0		**51.9**	50.00	0	103.7	69.1	114	02/14/2017
Methyl tert-butyl ether	2.0		**44.3**	50.00	0	88.6	66.6	125	02/14/2017
Methylacrylate	10.0		**59.7**	50.00	0	119.5	69.7	121	02/14/2017
Methylene chloride	5.0		**45.3**	50.00	0	90.7	73.4	115	02/14/2017
Naphthalene	10.0		**60.9**	50.00	0	121.8	70.1	134	02/14/2017
n-Butylbenzene	5.0		**61.1**	50.00	0	122.2	78.4	138	02/14/2017
n-Heptane	20.0		**56.5**	50.00	0	113.1	74.3	125	02/14/2017
n-Hexane	20.0		**52.2**	50.00	0	104.5	66.3	129	02/14/2017
Nitrobenzene	100		**584**	500.0	0	116.8	20.1	165	02/14/2017
n-Propylbenzene	5.0		**57.0**	50.00	0	114.0	79.1	125	02/14/2017
o-Xylene	5.0		**52.9**	50.00	0	105.7	81.9	118	02/14/2017
Pentachloroethane	5.0		**60.3**	50.00	0	120.7	72.7	123	02/14/2017
p-Isopropyltoluene	5.0		**58.4**	50.00	0	116.9	82.7	129	02/14/2017
Propionitrile	50.0		**513**	500.0	0	102.5	64.3	121	02/14/2017
sec-Butylbenzene	5.0		**55.3**	50.00	0	110.6	81.3	125	02/14/2017
Styrene	5.0		**51.8**	50.00	0	103.7	88.2	122	02/14/2017
tert-Butylbenzene	5.0		**53.8**	50.00	0	107.5	74.8	125	02/14/2017
Tetrachloroethene	5.0		**49.8**	50.00	0	99.6	84.2	122	02/14/2017
Tetrahydrofuran	50.0		**50.3**	50.00	0	100.7	61	118	02/14/2017
Toluene	5.0		**48.2**	50.00	0	96.4	81.3	113	02/14/2017
trans-1,2-Dichloroethene	5.0		**46.1**	50.00	0	92.2	78.2	118	02/14/2017
trans-1,3-Dichloropropene	4.0		**55.5**	50.00	0	110.9	81.7	124	02/14/2017
Trichloroethene	5.0		**45.5**	50.00	0	90.9	81	123	02/14/2017
Trichlorofluoromethane	5.0		**44.6**	50.00	0	89.3	66.8	131	02/14/2017
Vinyl acetate	50.0		**58.6**	50.00	0	117.2	64.3	122	02/14/2017
Vinyl chloride	2.0		**42.6**	50.00	0	85.1	45.2	140	02/14/2017
Surr: 1,2-Dichloroethane-d4			**54.5**	50.00		108.9	72.2	131	02/14/2017
Surr: 4-Bromofluorobenzene			**52.3**	50.00		104.6	82.1	116	02/14/2017
Surr: Dibromofluoromethane			**48.6**	50.00		97.3	77.7	120	02/14/2017
Surr: Toluene-d8			**51.2**	50.00		102.5	86	116	02/14/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020463

Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055 **Report Date:** 15-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127123 **SampType:** LCSGD Units %REC RPD Limit 0

SampID: LCSGD-F170214A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Surr: 1,2-Dichloroethane-d4			**53.3**	50.00		106.6			02/14/2017
Surr: 4-Bromofluorobenzene			**50.9**	50.00		101.7			02/14/2017
Surr: Dibromofluoromethane			**48.1**	50.00		96.3			02/14/2017
Surr: Toluene-d8			**53.7**	50.00		107.4			02/14/2017

Batch 127123 **SampType:** LCSG Units %REC

SampID: LCSG-F170214A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Surr: 1,2-Dichloroethane-d4			**52.9**	50.00		105.8	72.2	131	02/14/2017
Surr: 4-Bromofluorobenzene			**52.5**	50.00		105.0	82.1	116	02/14/2017
Surr: Dibromofluoromethane			**47.4**	50.00		94.8	77.7	120	02/14/2017
Surr: Toluene-d8			**53.0**	50.00		106.1	86	116	02/14/2017

Receiving Check List

http://www.teklabinc.com/

Client: PSC Industrial Outsourcing, LP
Work Order: 17020463
Client Project: Champaign Soil Residual IRM 624-1610-001 / J0055
Report Date: 15-Feb-17

Carrier: Employee
Received By: AMD

Completed by: Amber M. Dilallo
On: 08-Feb-17

Reviewed by: Elizabeth A. Hurley
On: 08-Feb-17

Pages to follow: Chain of custody 1 Extra pages included 0

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C 1.82
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice ☐
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☐	No ☑		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Reported field parameters measured:	Field ☐	Lab ☐	NA ☑	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐		
When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.				
Water – at least one vial per sample has zero headspace?	Yes ☐	No ☐	No VOA vials ☑	
Water - TOX containers have zero headspace?	Yes ☐	No ☐	No TOX containers ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	NA ☑	
NPDES/CWA TCN interferences checked/treated in the field?	Yes ☐	No ☐	NA ☑	

Any No responses must be detailed below or on the COC.

SW-RES-REM-W6 (3) is labeled as SW-RES-REM-W7 (3). Per Michael Crutcher, report the sample ID as listed on the chain of custody. AMD 2/8/17

SW-RES-REM-W7 (10), SW-RES-REM-W6 (10), and SW-RES-REM-W5 (10) were split upon arrival at the laboratory. AMD 2/8/17

Chain of Custody Record

210 West Sand Bank Road | Columbia, IL 62236 | P (618) 281-7173 | F (618) 281-7020

COC Serial No. CMP-004

17020463

Project Name:	Champaign Residual IRM
Project Mgr.:	Crutcher
Project Number:	624-1610-0001 / J0055
Sampler(s):	M. Flora
Laboratory Name:	Teklab, Inc.
Laboratory Location:	Collinsville, IL

Temperature: 1.8° Cool

Sample Number and (depth)	Date	Time	Matrix: Soil	Water	Air	Wipes	Other	Total Number of Containers	VOC (8260/5035)	SVOC (8270)	PAH (8270 SIM)	TPH (8015 OA2)	Comments	Lab ID
001 SW-RES-REM-W7 (10)	2/6/17	11:15	X					4	X	X	X	X	Std TAT	17020463-001
002 SW-RES-REM-W6 (10)	2/6/17	11:30	X					4	X	X	X	X	Std TAT	002
003 SW-RES-REM-W6 (3)	2/6/17	13:45	X					4	X	X	X	X	Std TAT	003
004 SW-RES-REM-W5 (10)	2/6/17	15:15	X					4	X	X	X	X	Std TAT	004
005 SW-RES-REM-W5 (3)	2/6/17	17:00	X					4	X	X	X	X	Std TAT	005

Samples Iced: [X] Yes [ ] No

Preservatives

[X]	Volatile Organics (Soil - 5035).....	Sodium Bisulfate / Methanol
[ ]	Volatile Organics (Aqueous).....	Hydrochloric Acid (HCl)
[ ]	TPH (8015)	HCl and/or Sulfuric Acid
[ ]	Metals	Nitric Acid (HNO_3)
[ ]	Cyanide	Sodium Hydroxide (NaOH)
[ ]	Other (Specify)	

Lab Directives:

Requested TAT: [X] 24-Hours [ ] 2-3 Days [X] STD [ ] Other

Fax and Mail Results to: mike.crutcher@pscnow.com / mike.flora@pscnow.com

Send Invoice to: **Michael Crutcher (PSC)**

QC Deliverable requested: [ ] Results + QC [X] EDD [ ] Other

Special Guidelines:

Reporting Limits: IL IAC 740/742 Tier 1

* Special: Labeled 007 (3) QM 2/8/17

Shipping:

Carrier / Airbill No.

Relinquished by:

Signature	Date	Time
Michael Flora	2/7/17	1700
Kaitlyn Batula	2/8/17	8:02

Received by:

Signature	Date	Time
Kaitlyn Batula	2/7/17	17:00
QM Olcella	2/8/17	802

Distribution: WHITE to Lab; YELLOW to PM; PINK to QA/QC; GREEN to Sampler.

* Shaded Areas to be Completed by Lab

February 16, 2017

Michael Crutcher
PSC Industrial Outsourcing, LP
210 West Sand Bank Road
Columbia, IL 62236-0230
TEL: (618) 281-7173
FAX: (618) 281-5120

RE: Champaign Soil Residual IRM 624-1610-001-J0055 **WorkOrder:** 17020465

Dear Michael Crutcher:

TEKLAB, INC received 9 samples on 2/8/2017 8:02:00 AM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Michael L. Austin
Project Manager
(618)344-1004 ex 16
MAustin@teklabinc.com

Client: PSC Industrial Outsourcing, LP
Work Order: 17020465
Client Project: Champaign Soil Residual IRM 624-1610-001-J0055
Report Date: 16-Feb-17

This reporting package includes the following:

Cover Letter	1
Report Contents	2
Definitions	3
Case Narrative	4
Laboratory Results	5
Sample Summary	13
Dates Report	14
Quality Control Results	15
Receiving Check List	16
Chain of Custody	Appended

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020465

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 16-Feb-17

Abbr Definition

CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilutions factors.
DNI	Did not ignite
DUP	Laboratory duplicate is an aliquot of a sample taken from the same container under laboratory conditions for independent processing and analysis independently of the original aliquot.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample, spiked with verified known amounts of analytes, is analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system. The acceptable recovery range is in the QC Package (provided upon request).
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MBLK	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	Method detection limit means the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero.
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions. The acceptable recovery range is listed in the QC Package (provided upon request).
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TIC	Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
TNTC	Too numerous to count (> 200 CFU)

Qualifiers

# -	Unknown hydrocarbon	B -	Analyte detected in associated Method Blank
E -	Value above quantitation range	H -	Holding times exceeded
I -	Associated internal standard was outside method criteria	M -	Manual Integration used to determine area response
ND -	Not Detected at the Reporting Limit	R -	RPD outside accepted recovery limits
S -	Spike Recovery outside recovery limits	T -	TIC(Tentatively identified compound)
X -	Value exceeds Maximum Contaminant Level		

Case Narrative

http://www.teklabinc.com/

Client: PSC Industrial Outsourcing, LP
Work Order: 17020465
Client Project: Champaign Soil Residual IRM 624-1610-001-J0055
Report Date: 16-Feb-17

Cooler Receipt Temp: 1.82 °C

Per Michael Crutcher, remove the following samples from hold and analyze on a 1-day rush basis: CH-FS-07 (7-8), CH-FS-07 (16-17), CH-FS-07 (19-20), CH-FS-08 (8-9), CH-FS-08 (12-13), CH-FS-09 (8-9), CH-FS-11 (8-9), and CH-FS-11 (11-12). EAH 2/14/17

Per Michael Crutcher, Cancel sample CH-FS-10 (14-15 ft) (Lab ID 17020465-007). (MAustin - 2/16/2017 3:40:49 PM)

Locations and Accreditations

	Collinsville	Springfield	Kansas City	Collinsville Air
Address	5445 Horseshoe Lake Road	3920 Pintail Dr	8421 Nieman Road	5445 Horseshoe Lake Road
	Collinsville, IL 62234-7425	Springfield, IL 62711-9415	Lenexa, KS 66214	Collinsville, IL 62234-7425
Phone	(618) 344-1004	(217) 698-1004	(913) 541-1998	(618) 344-1004
Fax	(618) 344-1005	(217) 698-1005	(913) 541-1998	(618) 344-1005
Email	jhriley@teklabinc.com	KKlostermann@teklabinc.com	Ryoungstrom@teklabinc.com	EHurley@teklabinc.com

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2018	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2017	Collinsville
Louisiana	LDEQ	166493	NELAP	6/30/2017	Collinsville
Louisiana	LDEQ	166578	NELAP	6/30/2017	Collinsville
Texas	TCEQ	T104704515-12-1	NELAP	7/31/2017	Collinsville
Arkansas	ADEQ	88-0966		3/14/2017	Collinsville
Illinois	IDPH	17584		5/31/2017	Collinsville
Kentucky	KDEP	98006		12/31/2017	Collinsville
Kentucky	UST	0073		1/31/2018	Collinsville
Missouri	MDNR	00930		5/31/2017	Collinsville
Missouri	MDNR	930		1/31/2018	Collinsville
Oklahoma	ODEQ	9978		8/31/2017	Collinsville

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020465

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 16-Feb-17

Lab ID: 17020465-001 **Client Sample ID:** CH-FS-07 (7-8)

Matrix: SOLID **Collection Date:** 02/07/2017 9:45

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**17.9**	%	1	02/14/2017 16:41	R229210
SW-846 3550B, 8015B, TOTAL PETROLEUM HYDROCARBONS (OA-2) BY GC/FID								
Diesel	NELAP	6.08		**ND**	mg/Kg-dry	1	02/15/2017 10:33	127136
Kerosene	NELAP	6.08		**ND**	mg/Kg-dry	1	02/15/2017 10:33	127136
Mineral Spirits	NELAP	6.08		**ND**	mg/Kg-dry	1	02/15/2017 10:33	127136
Motor Oil	NELAP	6.08		**ND**	mg/Kg-dry	1	02/15/2017 10:33	127136
Surr: n-Tetracontane		20-152		**103.8**	%REC	1	02/15/2017 10:33	127136

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020465

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 16-Feb-17

Lab ID: 17020465-002 **Client Sample ID:** CH-FS-07 (16-17)

Matrix: SOLID **Collection Date:** 02/07/2017 9:35

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**13.8**	%	1	02/14/2017 16:42	R229210
SW-846 3550B, 8015B, TOTAL PETROLEUM HYDROCARBONS (OA-2) BY GC/FID								
Diesel	NELAP	431	#	**10400**	mg/Kg-dry	25	02/15/2017 12:10	127136
Kerosene	NELAP	431		**ND**	mg/Kg-dry	25	02/15/2017 12:10	127136
Mineral Spirits	NELAP	431		**ND**	mg/Kg-dry	25	02/15/2017 12:10	127136
Motor Oil	NELAP	431	#	**4270**	mg/Kg-dry	25	02/15/2017 12:10	127136
Surr: n-Tetracontane		20-152	S	**335.0**	%REC	25	02/15/2017 12:10	127136

Surrogate recovery is outside QC limits due to sample dilution.

Elevated reporting limit due to sample composition.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020465

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 16-Feb-17

Lab ID: 17020465-003 **Client Sample ID:** CH-FS-07 (19-20)

Matrix: SOLID **Collection Date:** 02/07/2017 9:25

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**9.6**	%	1	02/14/2017 16:42	R229210
SW-846 3550B, 8015B, TOTAL PETROLEUM HYDROCARBONS (OA-2) BY GC/FID								
Diesel	NELAP	5.50	#	**9.70**	mg/Kg-dry	1	02/15/2017 10:52	127136
Kerosene	NELAP	5.50		**ND**	mg/Kg-dry	1	02/15/2017 10:52	127136
Mineral Spirits	NELAP	5.50		**ND**	mg/Kg-dry	1	02/15/2017 10:52	127136
Motor Oil	NELAP	5.50		**ND**	mg/Kg-dry	1	02/15/2017 10:52	127136
Surr: n-Tetracontane		20-152		**102.5**	%REC	1	02/15/2017 10:52	127136

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020465

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 16-Feb-17

Lab ID: 17020465-004 **Client Sample ID:** CH-FS-08 (8-9)

Matrix: SOLID **Collection Date:** 02/07/2017 10:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**13.6**	%	1	02/14/2017 16:42	R229210
SW-846 3550B, 8015B, TOTAL PETROLEUM HYDROCARBONS (OA-2) BY GC/FID								
Diesel	NELAP	81.7	#	**806**	mg/Kg-dry	5	02/15/2017 12:30	127136
Kerosene	NELAP	81.7		**ND**	mg/Kg-dry	5	02/15/2017 12:30	127136
Mineral Spirits	NELAP	81.7		**ND**	mg/Kg-dry	5	02/15/2017 12:30	127136
Motor Oil	NELAP	81.7	#	**336**	mg/Kg-dry	5	02/15/2017 12:30	127136
Surr: n-Tetracontane		20-152	S	**154.1**	%REC	5	02/15/2017 12:30	127136

Surrogate recovery is outside QC limits due to sample dilution.

Elevated reporting limit due to sample composition.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020465

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 16-Feb-17

Lab ID: 17020465-005 **Client Sample ID:** CH-FS-08 (12-13)

Matrix: SOLID **Collection Date:** 02/07/2017 10:50

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**12.1**	%	1	02/14/2017 16:43	R229210
SW-846 3550B, 8015B, TOTAL PETROLEUM HYDROCARBONS (OA-2) BY GC/FID								
Diesel	NELAP	56.6	#	**455**	mg/Kg-dry	10	02/15/2017 12:49	127136
Kerosene	NELAP	56.6		**ND**	mg/Kg-dry	10	02/15/2017 12:49	127136
Mineral Spirits	NELAP	56.6		**ND**	mg/Kg-dry	10	02/15/2017 12:49	127136
Motor Oil	NELAP	56.6	#	**189**	mg/Kg-dry	10	02/15/2017 12:49	127136
Surr: n-Tetracontane		20-152	S	**193.4**	%REC	10	02/15/2017 12:49	127136

Surrogate recovery is outside QC limits due to sample dilution.

Elevated reporting limit due to sample extract composition.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020465

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 16-Feb-17

Lab ID: 17020465-006 **Client Sample ID:** CH-FS-09 (8-9)

Matrix: SOLID **Collection Date:** 02/07/2017 11:50

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**20.7**	%	1	02/14/2017 16:43	R229210
SW-846 3550B, 8015B, TOTAL PETROLEUM HYDROCARBONS (OA-2) BY GC/FID								
Diesel	NELAP	6.29		**ND**	mg/Kg-dry	1	02/15/2017 11:12	127136
Kerosene	NELAP	6.29		**ND**	mg/Kg-dry	1	02/15/2017 11:12	127136
Mineral Spirits	NELAP	6.29		**ND**	mg/Kg-dry	1	02/15/2017 11:12	127136
Motor Oil	NELAP	6.29		**ND**	mg/Kg-dry	1	02/15/2017 11:12	127136
Surr: n-Tetracontane		20-152		**103.9**	%REC	1	02/15/2017 11:12	127136

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020465

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 16-Feb-17

Lab ID: 17020465-008 **Client Sample ID:** CH-FS-11 (8-9)

Matrix: SOLID **Collection Date:** 02/07/2017 15:55

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**20.1**	%	1	02/14/2017 16:44	R229210
SW-846 3550B, 8015B, TOTAL PETROLEUM HYDROCARBONS (OA-2) BY GC/FID								
Diesel	NELAP	423	#	**2690**	mg/Kg-dry	5	02/15/2017 13:09	127136
Kerosene	NELAP	423		**ND**	mg/Kg-dry	5	02/15/2017 13:09	127136
Mineral Spirits	NELAP	423		**ND**	mg/Kg-dry	5	02/15/2017 13:09	127136
Motor Oil	NELAP	423	#	**613**	mg/Kg-dry	5	02/15/2017 13:09	127136
Surr: n-Tetracontane		20-152		**129.4**	%REC	5	02/15/2017 13:09	127136

Elevated reporting limit due to sample composition.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020465

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 16-Feb-17

Lab ID: 17020465-009 **Client Sample ID:** CH-FS-11 (11-12)

Matrix: SOLID **Collection Date:** 02/07/2017 16:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**11.9**	%	1	02/14/2017 16:44	R229210
SW-846 3550B, 8015B, TOTAL PETROLEUM HYDROCARBONS (OA-2) BY GC/FID								
Diesel	NELAP	139	#	**2140**	mg/Kg-dry	25	02/15/2017 13:28	127136
Kerosene	NELAP	139		**ND**	mg/Kg-dry	25	02/15/2017 13:28	127136
Mineral Spirits	NELAP	139		**ND**	mg/Kg-dry	25	02/15/2017 13:28	127136
Motor Oil	NELAP	139	#	**903**	mg/Kg-dry	25	02/15/2017 13:28	127136
Surr: n-Tetracontane		20-152	S	**369.2**	%REC	25	02/15/2017 13:28	127136

Surrogate recovery is outside QC limits due to sample dilution.

Elevated reporting limit due to sample extract composition.

Client: PSC Industrial Outsourcing, LP
Work Order: 17020465
Client Project: Champaign Soil Residual IRM 624-1610-001-J0055
Report Date: 16-Feb-17

Lab Sample ID	Client Sample ID	Matrix	Fractions	Collection Date
17020465-001	CH-FS-07 (7-8)	Solid	1	02/07/2017 9:45
17020465-002	CH-FS-07 (16-17)	Solid	1	02/07/2017 9:35
17020465-003	CH-FS-07 (19-20)	Solid	1	02/07/2017 9:25
17020465-004	CH-FS-08 (8-9)	Solid	1	02/07/2017 10:40
17020465-005	CH-FS-08 (12-13)	Solid	1	02/07/2017 10:50
17020465-006	CH-FS-09 (8-9)	Solid	1	02/07/2017 11:50
17020465-007	CH-FS-10 (14-15)	Solid	1	02/07/2017 12:40
17020465-008	CH-FS-11 (8-9)	Solid	1	02/07/2017 15:55
17020465-009	CH-FS-11 (11-12)	Solid	1	02/07/2017 16:00

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020465

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 16-Feb-17

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			Prep Date/Time	Analysis Date/Time
17020465-001A	CH-FS-07 (7-8)	02/07/2017 9:45	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/14/2017 16:41
	SW-846 3550B, 8015B, Total Petroleum Hydrocarbons (OA-2) by GC/FID			02/14/2017 17:28	02/15/2017 10:33
17020465-002A	CH-FS-07 (16-17)	02/07/2017 9:35	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/14/2017 16:42
	SW-846 3550B, 8015B, Total Petroleum Hydrocarbons (OA-2) by GC/FID			02/14/2017 17:28	02/15/2017 12:10
17020465-003A	CH-FS-07 (19-20)	02/07/2017 9:25	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/14/2017 16:42
	SW-846 3550B, 8015B, Total Petroleum Hydrocarbons (OA-2) by GC/FID			02/14/2017 17:28	02/15/2017 10:52
17020465-004A	CH-FS-08 (8-9)	02/07/2017 10:40	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/14/2017 16:42
	SW-846 3550B, 8015B, Total Petroleum Hydrocarbons (OA-2) by GC/FID			02/14/2017 17:28	02/15/2017 12:30
17020465-005A	CH-FS-08 (12-13)	02/07/2017 10:50	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/14/2017 16:43
	SW-846 3550B, 8015B, Total Petroleum Hydrocarbons (OA-2) by GC/FID			02/14/2017 17:28	02/15/2017 12:49
17020465-006A	CH-FS-09 (8-9)	02/07/2017 11:50	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/14/2017 16:43
	SW-846 3550B, 8015B, Total Petroleum Hydrocarbons (OA-2) by GC/FID			02/14/2017 17:28	02/15/2017 11:12
17020465-008A	CH-FS-11 (8-9)	02/07/2017 15:55	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/14/2017 16:44
	SW-846 3550B, 8015B, Total Petroleum Hydrocarbons (OA-2) by GC/FID			02/14/2017 17:28	02/15/2017 13:09
17020465-009A	CH-FS-11 (11-12)	02/07/2017 16:00	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/14/2017 16:44
	SW-846 3550B, 8015B, Total Petroleum Hydrocarbons (OA-2) by GC/FID			02/14/2017 17:28	02/15/2017 13:28

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020465

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 16-Feb-17

EPA SW846 3550C, 5035A, ASTM D2974

Batch R229210 **SampType:** LCS Units **%**

SampID: LCS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	02/14/2017

Batch R229210 **SampType:** LCSQC Units **%**

SampID: LCSQC

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	02/14/2017

SW-846 3550B, 8015B, TOTAL PETROLEUM HYDROCARBONS (OA-2) BY GC/FID

Batch 127136 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK-127136

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Diesel	5.00		**ND**						02/15/2017
Kerosene	5.00		**ND**						02/15/2017
Mineral Spirits	5.00		**ND**						02/15/2017
Motor Oil	5.00		**ND**						02/15/2017
Surr: n-Tetracontane			**0.76**	0.6700		113.8	33.4	140	02/15/2017

Batch 127136 **SampType:** LCS Units **mg/Kg**

SampID: LCS-127136

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Diesel	5.00		**17.3**	16.70	0	103.9	35.2	131	02/15/2017
Surr: n-Tetracontane			**0.72**	0.6700		107.7	33.4	140	02/15/2017

Batch 127136 **SampType:** MS Units **mg/Kg-dry**

SampID: 17020465-006AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Diesel	6.25		**18.3**	20.89	0	87.4	20.3	167	02/15/2017
Surr: n-Tetracontane			**0.83**	0.8381		99.1	20	152	02/15/2017

Batch 127136 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **34**

SampID: 17020465-006AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Diesel	6.27		**21.6**	20.94	0	103.0	18.26	16.61	02/15/2017
Surr: n-Tetracontane			**0.84**	0.8401		100.1			02/15/2017

Receiving Check List

http://www.teklabinc.com/

Client: PSC Industrial Outsourcing, LP
Work Order: 17020465
Client Project: Champaign Soil Residual IRM 624-1610-001-J0055
Report Date: 16-Feb-17

Carrier: Employee
Received By: AMD

Completed by: Amber M. Dilallo
On: 08-Feb-17

Reviewed by: Elizabeth A. Hurley
On: 08-Feb-17

Pages to follow: Chain of custody 1 Extra pages included 0

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C 1.82
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice ☐
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Reported field parameters measured:	Field ☐	Lab ☐	NA ☑	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐		

When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.

Water – at least one vial per sample has zero headspace?	Yes ☐	No ☐	No VOA vials ☑
Water - TOX containers have zero headspace?	Yes ☐	No ☐	No TOX containers ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	NA ☑
NPDES/CWA TCN interferences checked/treated in the field?	Yes ☐	No ☐	NA ☑

Any No responses must be detailed below or on the COC.

CHAIN OF CUSTODY

pg. 3 of 9 Work order # 1702465

TEKLAB, INC. 5445 Horseshoe Lake Road - Collinsville, IL 62234 - Phone: (618) 344-1004 - Fax: (618) 344-1005

Client:	PSC Industrial Outsourcing, LP		
Address:	210 West Sand Bank Road		
City / State / Zip	Columbia, IL 62236-0230		
Contact:	Michael Crutcher	**Phone:**	(618) 281-7173
E-Mail:	mcrutcher@pscnow.com	**Fax:**	(618) 281-5120

Samples on: ☒ ICE ☐ BLUE ICE ☐ NO ICE 1.8 °C

Preserved in: ☐ LAB ☐ FIELD

FOR LAB USE ONLY

Lab Notes

Client Comments: HOLD - per M. Crutcher

Are these samples known to be involved in litigation? If yes, a surcharge will apply ☐ Yes ☒ No

Are these samples known to be hazardous? ☐ Yes ☒ No

Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section. ☐ Yes ☒ No

Project Name/Number
Champaign Soil Residual IRM 624-1610-001-J0055

Sample Collector's Name
Katilyn Bertels

Results Requested
☐ Standard ☐ 1-2 Day (100% Surcharge)
☒ Other Hold ☐ 3 Day (50% Surcharge)

Billing Instructions
PSC

 # and Type of Containers

MATRIX

INDICATE ANALYSIS REQUESTED

Lab Use Only	Sample Identification	Date/Time Sampled	UNPRES	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	OTHER	Aqueous	Drinking Water	Soil	Sludge	Special Waste	Groundwater	Amenable Cyanide	OA2 8015	PAH 8270 SIM	pH	SVOC 8270 (No PAH)	Total 8 RCRA Metals Tacp	Total Cyanide	VOC 8260
1702465-001	CH-FS-07 (7-8)	2/7/17 9:45	3					1	2				X					X						
002	CH-FS-07 (16-17)	2/7/17 9:35	3					1	2				X					X						
003	CH-FS-07 (19-20)	2/7/17 9:25	3					1	2				X					X						
004	CH-FS-08 (8-9)	2/7/17 10:40	3					1	2				X					X						
005	CH-FS-08 (12-13)	2/7/17 10:50	3					1	2				X					X						
006	CH-FS-09 (8-9)	2/7/17 11:50	3					1	2				X					X						
007	CH-FS-10 (14-15)	2/7/17 12:40	3					1	2				X					X						
008	CH-FS-11 (8-9)	2/7/17 15:55	3					1	2				X					X						
009	CH-FS-11 (11-12)	2/7/17 16:00	3					1	2				X					X						

Relinquished By	Date/Time	Received By	Date/Time
Katilyn Bertels	2/8/17 8:02		2/8/17 800

The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions.

BottleOrder: 35826

February 17, 2017

Michael Crutcher
PSC Industrial Outsourcing, LP
210 West Sand Bank Road
Columbia, IL 62236-0230
TEL: (618) 281-1583
FAX: (618) 281-5120

RE: Champaign Soil Residual IRM 624-1610-001-J0055 **WorkOrder:** 17020466

Dear Michael Crutcher:

TEKLAB, INC received 9 samples on 2/8/2017 8:02:00 AM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Michael L. Austin
Project Manager
(618)344-1004 ex 16
MAustin@teklabinc.com

Client: PSC Industrial Outsourcing, LP
Work Order: 17020466
Client Project: Champaign Soil Residual IRM 624-1610-001-J0055
Report Date: 17-Feb-17

This reporting package includes the following:

Cover Letter	1
Report Contents	2
Definitions	3
Case Narrative	4
Laboratory Results	5
Sample Summary	41
Dates Report	42
Quality Control Results	44
Receiving Check List	78
Chain of Custody	Appended

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

Abbr Definition

CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilutions factors.
DNI	Did not ignite
DUP	Laboratory duplicate is an aliquot of a sample taken from the same container under laboratory conditions for independent processing and analysis independently of the original aliquot.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample, spiked with verified known amounts of analytes, is analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system. The acceptable recovery range is in the QC Package (provided upon request).
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MBLK	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	Method detection limit means the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero.
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions. The acceptable recovery range is listed in the QC Package (provided upon request).
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TIC	Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
TNTC	Too numerous to count (> 200 CFU)

Qualifiers

# -	Unknown hydrocarbon	B -	Analyte detected in associated Method Blank
E -	Value above quantitation range	H -	Holding times exceeded
I -	Associated internal standard was outside method criteria	M -	Manual Integration used to determine area response
ND -	Not Detected at the Reporting Limit	R -	RPD outside accepted recovery limits
S -	Spike Recovery outside recovery limits	T -	TIC(Tentatively identified compound)
X -	Value exceeds Maximum Contaminant Level		

Case Narrative

http://www.teklabinc.com/

Client: PSC Industrial Outsourcing, LP
Work Order: 17020466
Client Project: Champaign Soil Residual IRM 624-1610-001-J0055
Report Date: 17-Feb-17

Cooler Receipt Temp: 1.82 °C

Per Michael Crutcher, remove the following samples from hold and analyze on a 1-day rush basis: CH-FS-07 (7-8), CH-FS-07 (16-17), CH-FS-07 (19-20), CH-FS-08 (8-9), CH-FS-08 (12-13), CH-FS-09 (8-9), CH-FS-11 (8-9), and CH-FS-11 (11-12). EAH 2/14/17

Locations and Accreditations

	Collinsville	Springfield	Kansas City	Collinsville Air
Address	5445 Horseshoe Lake Road	3920 Pintail Dr	8421 Nieman Road	5445 Horseshoe Lake Road
	Collinsville, IL 62234-7425	Springfield, IL 62711-9415	Lenexa, KS 66214	Collinsville, IL 62234-7425
Phone	(618) 344-1004	(217) 698-1004	(913) 541-1998	(618) 344-1004
Fax	(618) 344-1005	(217) 698-1005	(913) 541-1998	(618) 344-1005
Email	jhriley@teklabinc.com	KKlostermann@teklabinc.com	Ryoungstrom@teklabinc.com	EHurley@teklabinc.com

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2018	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2017	Collinsville
Louisiana	LDEQ	166493	NELAP	6/30/2017	Collinsville
Louisiana	LDEQ	166578	NELAP	6/30/2017	Collinsville
Texas	TCEQ	T104704515-12-1	NELAP	7/31/2017	Collinsville
Arkansas	ADEQ	88-0966		3/14/2017	Collinsville
Illinois	IDPH	17584		5/31/2017	Collinsville
Kentucky	KDEP	98006		12/31/2017	Collinsville
Kentucky	UST	0073		1/31/2018	Collinsville
Missouri	MDNR	00930		5/31/2017	Collinsville
Missouri	MDNR	930		1/31/2018	Collinsville
Oklahoma	ODEQ	9978		8/31/2017	Collinsville

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

Lab ID: 17020466-001 **Client Sample ID:** CH-FS-07 (7-8)

Matrix: SOLID **Collection Date:** 02/07/2017 9:45

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**18.2**	%	1	02/14/2017 16:44	R229210
SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Acenaphthene	NELAP	0.004		**ND**	mg/Kg-dry	1	02/15/2017 9:10	127131
Acenaphthylene	NELAP	0.004		**ND**	mg/Kg-dry	1	02/15/2017 9:10	127131
Anthracene	NELAP	0.004		**ND**	mg/Kg-dry	1	02/15/2017 9:10	127131
Benzo(a)anthracene	NELAP	0.012		**ND**	mg/Kg-dry	1	02/15/2017 9:10	127131
Benzo(a)pyrene	NELAP	0.004		**ND**	mg/Kg-dry	1	02/15/2017 9:10	127131
Benzo(b)fluoranthene	NELAP	0.004		**ND**	mg/Kg-dry	1	02/15/2017 9:10	127131
Benzo(g,h,i)perylene	NELAP	0.004		**ND**	mg/Kg-dry	1	02/15/2017 9:10	127131
Benzo(k)fluoranthene	NELAP	0.004		**ND**	mg/Kg-dry	1	02/15/2017 9:10	127131
Chrysene	NELAP	0.004		**ND**	mg/Kg-dry	1	02/15/2017 9:10	127131
Dibenzo(a,h)anthracene	NELAP	0.004		**ND**	mg/Kg-dry	1	02/15/2017 9:10	127131
Fluoranthene	NELAP	0.004		**ND**	mg/Kg-dry	1	02/15/2017 9:10	127131
Fluorene	NELAP	0.004		**ND**	mg/Kg-dry	1	02/15/2017 9:10	127131
Indeno(1,2,3-cd)pyrene	NELAP	0.004		**ND**	mg/Kg-dry	1	02/15/2017 9:10	127131
Naphthalene	NELAP	0.004		**0.173**	mg/Kg-dry	1	02/15/2017 9:10	127131
Phenanthrene	NELAP	0.004		**0.005**	mg/Kg-dry	1	02/15/2017 9:10	127131
Pyrene	NELAP	0.004		**ND**	mg/Kg-dry	1	02/15/2017 9:10	127131
Surr: 2-Fluorobiphenyl		8.85-90.5		**76.2**	%REC	1	02/15/2017 9:10	127131
Surr: Nitrobenzene-d5		5-102		**86.1**	%REC	1	02/15/2017 9:10	127131
Surr: p-Terphenyl-d14		18.4-103		**78.1**	%REC	1	02/15/2017 9:10	127131
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2,4-Trichlorobenzene	NELAP	0.611		**ND**	mg/Kg-dry	1	02/15/2017 10:30	127103
1,2-Dichlorobenzene	NELAP	0.611		**ND**	mg/Kg-dry	1	02/15/2017 10:30	127103
1,3-Dichlorobenzene	NELAP	0.611		**ND**	mg/Kg-dry	1	02/15/2017 10:30	127103
1,4-Dichlorobenzene	NELAP	0.611		**ND**	mg/Kg-dry	1	02/15/2017 10:30	127103
2,4,5-Trichlorophenol	NELAP	0.427		**ND**	mg/Kg-dry	1	02/15/2017 10:30	127103
2,4,6-Trichlorophenol	NELAP	0.427		**ND**	mg/Kg-dry	1	02/15/2017 10:30	127103
2,4-Dichlorophenol	NELAP	0.611		**ND**	mg/Kg-dry	1	02/15/2017 10:30	127103
2,4-Dimethylphenol	NELAP	0.611		**ND**	mg/Kg-dry	1	02/15/2017 10:30	127103
2,4-Dinitrophenol	NELAP	1.22		**ND**	mg/Kg-dry	1	02/15/2017 10:30	127103
2,4-Dinitrotoluene	NELAP	0.427		**ND**	mg/Kg-dry	1	02/15/2017 10:30	127103
2,6-Dinitrotoluene	NELAP	0.427		**ND**	mg/Kg-dry	1	02/15/2017 10:30	127103
2-Chloronaphthalene	NELAP	0.427		**ND**	mg/Kg-dry	1	02/15/2017 10:30	127103
2-Chlorophenol	NELAP	0.611		**ND**	mg/Kg-dry	1	02/15/2017 10:30	127103
2-Methoxy-4-methylphenol		0.794		**ND**	mg/Kg-dry	1	02/15/2017 10:30	127103
2-Methylnaphthalene	NELAP	0.427		**ND**	mg/Kg-dry	1	02/15/2017 10:30	127103
2-Nitroaniline	NELAP	1.22		**ND**	mg/Kg-dry	1	02/15/2017 10:30	127103
2-Nitrophenol	NELAP	0.427		**ND**	mg/Kg-dry	1	02/15/2017 10:30	127103
3,3´-Dichlorobenzidine	NELAP	0.427		**ND**	mg/Kg-dry	1	02/15/2017 10:30	127103
3-Nitroaniline	NELAP	1.22		**ND**	mg/Kg-dry	1	02/15/2017 10:30	127103
4,6-Dinitro-2-methylphenol	NELAP	1.22		**ND**	mg/Kg-dry	1	02/15/2017 10:30	127103
4-Bromophenyl phenyl ether	NELAP	0.427		**ND**	mg/Kg-dry	1	02/15/2017 10:30	127103
4-Chloro-3-methylphenol	NELAP	0.611		**ND**	mg/Kg-dry	1	02/15/2017 10:30	127103
4-Chloroaniline	NELAP	0.611		**ND**	mg/Kg-dry	1	02/15/2017 10:30	127103
4-Chlorophenyl phenyl ether	NELAP	0.427		**ND**	mg/Kg-dry	1	02/15/2017 10:30	127103
4-Nitroaniline	NELAP	0.611		**ND**	mg/Kg-dry	1	02/15/2017 10:30	127103

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

Lab ID: 17020466-001 **Client Sample ID:** CH-FS-07 (7-8)

Matrix: SOLID **Collection Date:** 02/07/2017 9:45

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
4-Nitrophenol	NELAP	0.427		ND	mg/Kg-dry	1	02/15/2017 10:30	127103
Aniline	NELAP	0.611		ND	mg/Kg-dry	1	02/15/2017 10:30	127103
Azobenzene		0.427		ND	mg/Kg-dry	1	02/15/2017 10:30	127103
Benzoic acid	NELAP	1.83		ND	mg/Kg-dry	1	02/15/2017 10:30	127103
Benzyl alcohol	NELAP	0.611		ND	mg/Kg-dry	1	02/15/2017 10:30	127103
Bis(2-chloroethoxy)methane	NELAP	0.427		ND	mg/Kg-dry	1	02/15/2017 10:30	127103
Bis(2-chloroethyl)ether	NELAP	0.611		ND	mg/Kg-dry	1	02/15/2017 10:30	127103
Bis(2-chloroisopropyl)ether	NELAP	0.427		ND	mg/Kg-dry	1	02/15/2017 10:30	127103
Bis(2-ethylhexyl)phthalate	NELAP	0.427		ND	mg/Kg-dry	1	02/15/2017 10:30	127103
Butyl benzyl phthalate	NELAP	0.427		ND	mg/Kg-dry	1	02/15/2017 10:30	127103
Carbazole	NELAP	0.611		ND	mg/Kg-dry	1	02/15/2017 10:30	127103
Dibenzofuran	NELAP	0.427		ND	mg/Kg-dry	1	02/15/2017 10:30	127103
Diethyl phthalate	NELAP	0.611		ND	mg/Kg-dry	1	02/15/2017 10:30	127103
Dimethyl phthalate	NELAP	0.427		ND	mg/Kg-dry	1	02/15/2017 10:30	127103
Di-n-butyl phthalate	NELAP	0.427		ND	mg/Kg-dry	1	02/15/2017 10:30	127103
Di-n-octyl phthalate	NELAP	0.427		ND	mg/Kg-dry	1	02/15/2017 10:30	127103
Hexachlorobenzene	NELAP	0.427		ND	mg/Kg-dry	1	02/15/2017 10:30	127103
Hexachlorobutadiene	NELAP	0.611		ND	mg/Kg-dry	1	02/15/2017 10:30	127103
Hexachlorocyclopentadiene	NELAP	0.427		ND	mg/Kg-dry	1	02/15/2017 10:30	127103
Hexachloroethane	NELAP	0.611		ND	mg/Kg-dry	1	02/15/2017 10:30	127103
Isophorone	NELAP	0.427		ND	mg/Kg-dry	1	02/15/2017 10:30	127103
m,p-Cresol	NELAP	0.611		ND	mg/Kg-dry	1	02/15/2017 10:30	127103
Nitrobenzene	NELAP	0.611		ND	mg/Kg-dry	1	02/15/2017 10:30	127103
N-Nitrosodimethylamine	NELAP	0.611		ND	mg/Kg-dry	1	02/15/2017 10:30	127103
N-Nitroso-di-n-propylamine	NELAP	0.611		ND	mg/Kg-dry	1	02/15/2017 10:30	127103
N-Nitrosodiphenylamine	NELAP	0.611		ND	mg/Kg-dry	1	02/15/2017 10:30	127103
o-Cresol	NELAP	0.611		ND	mg/Kg-dry	1	02/15/2017 10:30	127103
Pentachlorophenol	NELAP	2.44		ND	mg/Kg-dry	1	02/15/2017 10:30	127103
Phenol	NELAP	0.427		ND	mg/Kg-dry	1	02/15/2017 10:30	127103
Pyridine	NELAP	0.611		ND	mg/Kg-dry	1	02/15/2017 10:30	127103
1,2-Diphenylhydrazine		1.03		ND	mg/Kg-dry	1	02/15/2017 10:30	127103
Surr: 2,4,6-Tribromophenol		33-115		74.0	%REC	1	02/15/2017 10:30	127103
Surr: 2-Fluorobiphenyl		36.5-97.7		81.2	%REC	1	02/15/2017 10:30	127103
Surr: 2-Fluorophenol		39.4-92.8		70.0	%REC	1	02/15/2017 10:30	127103
Surr: Nitrobenzene-d5		34.7-90.1		79.6	%REC	1	02/15/2017 10:30	127103
Surr: Phenol-d5		42.8-106		84.1	%REC	1	02/15/2017 10:30	127103
Surr: p-Terphenyl-d14		43.7-124		95.0	%REC	1	02/15/2017 10:30	127103
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,1,2-Tetrachloroethane	NELAP	112		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
1,1,1-Trichloroethane	NELAP	112		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
1,1,2,2-Tetrachloroethane	NELAP	112		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
1,1,2-Trichloro-1,2,2-trifluoroethane		112		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
1,1,2-Trichloroethane	NELAP	112		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
1,1-Dichloro-2-propanone		1120		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
1,1-Dichloroethane	NELAP	112		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
1,1-Dichloroethene	NELAP	112		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
1,1-Dichloropropene	NELAP	112		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

Lab ID: 17020466-001 **Client Sample ID:** CH-FS-07 (7-8)

Matrix: SOLID **Collection Date:** 02/07/2017 9:45

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2,3-Trichlorobenzene	NELAP	112		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
1,2,3-Trichloropropane	NELAP	223		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
1,2,3-Trimethylbenzene		112		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
1,2,4-Trichlorobenzene	NELAP	112		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
1,2,4-Trimethylbenzene	NELAP	112		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
1,2-Dibromo-3-chloropropane	NELAP	112		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
1,2-Dibromoethane	NELAP	112		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
1,2-Dichlorobenzene	NELAP	112		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
1,2-Dichloroethane	NELAP	112		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
1,2-Dichloropropane	NELAP	112		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
1,3,5-Trimethylbenzene	NELAP	112		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
1,3-Dichlorobenzene	NELAP	112		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
1,3-Dichloropropane	NELAP	112		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
1,4-Dichlorobenzene	NELAP	112		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
1-Chlorobutane	NELAP	112		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
2,2-Dichloropropane	NELAP	112		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
2-Butanone	NELAP	4470		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
2-Chlorotoluene	NELAP	112		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
2-Hexanone	NELAP	1120		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
2-Nitropropane	NELAP	1120		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
4-Chlorotoluene	NELAP	112		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
4-Methyl-2-pentanone	NELAP	1120		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
Acetone	NELAP	1120		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
Acrolein	NELAP	2230		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
Acrylonitrile	NELAP	223		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
Allyl chloride	NELAP	112		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
Benzene	NELAP	22.3		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
Bromobenzene	NELAP	112		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
Bromochloromethane	NELAP	112		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
Bromodichloromethane	NELAP	112		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
Bromoform	NELAP	112		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
Bromomethane	NELAP	223		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
Carbon disulfide	NELAP	112		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
Carbon tetrachloride	NELAP	112		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
Chlorobenzene	NELAP	112		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
Chloroethane	NELAP	223		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
Chloroform	NELAP	112		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
Chloromethane	NELAP	223		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
cis-1,2-Dichloroethene	NELAP	112		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
cis-1,3-Dichloropropene	NELAP	89.3		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
Cyclohexanone		2230		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
Dibromochloromethane	NELAP	112		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
Dibromomethane	NELAP	112		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
Dichlorodifluoromethane	NELAP	223		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
Ethyl ether	NELAP	112		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
Ethyl methacrylate	NELAP	112		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123
Ethylbenzene	NELAP	112		ND	µg/Kg-dry	12.5	02/14/2017 16:44	127123

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

Lab ID: 17020466-001 **Client Sample ID:** CH-FS-07 (7-8)

Matrix: SOLID **Collection Date:** 02/07/2017 9:45

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Hexachlorobutadiene	NELAP	112		**ND**	µg/Kg-dry	12.5	02/14/2017 16:44	127123
Hexachloroethane	NELAP	112		**ND**	µg/Kg-dry	12.5	02/14/2017 16:44	127123
Iodomethane	NELAP	223		**ND**	µg/Kg-dry	12.5	02/14/2017 16:44	127123
Isopropylbenzene	NELAP	112		**ND**	µg/Kg-dry	12.5	02/14/2017 16:44	127123
m,p-Xylenes	NELAP	112		**ND**	µg/Kg-dry	12.5	02/14/2017 16:44	127123
Methacrylonitrile	NELAP	1120		**ND**	µg/Kg-dry	12.5	02/14/2017 16:44	127123
Methyl Methacrylate	NELAP	112		**ND**	µg/Kg-dry	12.5	02/14/2017 16:44	127123
Methyl tert-butyl ether	NELAP	44.7		**ND**	µg/Kg-dry	12.5	02/14/2017 16:44	127123
Methylacrylate	NELAP	223		**ND**	µg/Kg-dry	12.5	02/14/2017 16:44	127123
Methylene chloride	NELAP	112		**ND**	µg/Kg-dry	12.5	02/14/2017 16:44	127123
Naphthalene	NELAP	223		**ND**	µg/Kg-dry	12.5	02/14/2017 16:44	127123
n-Butylbenzene	NELAP	112		**ND**	µg/Kg-dry	12.5	02/14/2017 16:44	127123
n-Heptane		1120		**ND**	µg/Kg-dry	12.5	02/14/2017 16:44	127123
n-Hexane		447		**ND**	µg/Kg-dry	12.5	02/14/2017 16:44	127123
Nitrobenzene	NELAP	2230		**ND**	µg/Kg-dry	12.5	02/14/2017 16:44	127123
n-Propylbenzene	NELAP	112		**ND**	µg/Kg-dry	12.5	02/14/2017 16:44	127123
o-Xylene	NELAP	112		**ND**	µg/Kg-dry	12.5	02/14/2017 16:44	127123
Pentachloroethane	NELAP	112		**ND**	µg/Kg-dry	12.5	02/14/2017 16:44	127123
p-Isopropyltoluene	NELAP	112		**ND**	µg/Kg-dry	12.5	02/14/2017 16:44	127123
Propionitrile	NELAP	1120		**ND**	µg/Kg-dry	12.5	02/14/2017 16:44	127123
sec-Butylbenzene	NELAP	112		**ND**	µg/Kg-dry	12.5	02/14/2017 16:44	127123
Styrene	NELAP	112		**ND**	µg/Kg-dry	12.5	02/14/2017 16:44	127123
tert-Butylbenzene	NELAP	112		**ND**	µg/Kg-dry	12.5	02/14/2017 16:44	127123
Tetrachloroethene	NELAP	112		**ND**	µg/Kg-dry	12.5	02/14/2017 16:44	127123
Tetrahydrofuran	NELAP	1120		**ND**	µg/Kg-dry	12.5	02/14/2017 16:44	127123
Toluene	NELAP	112		**ND**	µg/Kg-dry	12.5	02/14/2017 16:44	127123
trans-1,2-Dichloroethene	NELAP	112		**ND**	µg/Kg-dry	12.5	02/14/2017 16:44	127123
trans-1,3-Dichloropropene	NELAP	89.3		**ND**	µg/Kg-dry	12.5	02/14/2017 16:44	127123
Trichloroethene	NELAP	112		**ND**	µg/Kg-dry	12.5	02/14/2017 16:44	127123
Trichlorofluoromethane	NELAP	112		**ND**	µg/Kg-dry	12.5	02/14/2017 16:44	127123
Vinyl acetate	NELAP	1120		**ND**	µg/Kg-dry	12.5	02/14/2017 16:44	127123
Vinyl chloride	NELAP	44.7		**ND**	µg/Kg-dry	12.5	02/14/2017 16:44	127123
Surr: 1,2-Dichloroethane-d4		72.2-131		**103.5**	%REC	12.5	02/14/2017 16:44	127123
Surr: 4-Bromofluorobenzene		82.1-116		**100.0**	%REC	12.5	02/14/2017 16:44	127123
Surr: Dibromofluoromethane		77.7-120		**90.4**	%REC	12.5	02/14/2017 16:44	127123
Surr: Toluene-d8		86-116		**109.0**	%REC	12.5	02/14/2017 16:44	127123

LCS & LCSD recovered outside upper QC limits for multiple compounds. Sample results are below reporting limit. Data is reportable per 2009 TNI Standard (Volume1, Module 4, section 1.7.4.2).

Elevated reporting limit due to matrix interference.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

Lab ID: 17020466-002 **Client Sample ID:** CH-FS-07 (16-17)

Matrix: SOLID **Collection Date:** 02/07/2017 9:35

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**14.4**	%	1	02/14/2017 16:45	R229210
SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Acenaphthene	NELAP	1.17		**432**	mg/Kg-dry	10	02/15/2017 11:20	127131
Acenaphthylene	NELAP	1.17		**151**	mg/Kg-dry	10	02/15/2017 11:20	127131
Anthracene	NELAP	1.17		**290**	mg/Kg-dry	10	02/15/2017 11:20	127131
Benzo(a)anthracene	NELAP	3.44		**121**	mg/Kg-dry	10	02/15/2017 11:20	127131
Benzo(a)pyrene	NELAP	1.17		**133**	mg/Kg-dry	10	02/15/2017 11:20	127131
Benzo(b)fluoranthene	NELAP	1.17		**78.9**	mg/Kg-dry	10	02/15/2017 11:20	127131
Benzo(g,h,i)perylene	NELAP	1.17		**39.8**	mg/Kg-dry	10	02/15/2017 11:20	127131
Benzo(k)fluoranthene	NELAP	1.17		**55.3**	mg/Kg-dry	10	02/15/2017 11:20	127131
Chrysene	NELAP	1.17		**128**	mg/Kg-dry	10	02/15/2017 11:20	127131
Dibenzo(a,h)anthracene	NELAP	1.17		**17.5**	mg/Kg-dry	10	02/15/2017 11:20	127131
Fluoranthene	NELAP	1.17		**477**	mg/Kg-dry	10	02/15/2017 11:20	127131
Fluorene	NELAP	1.17		**415**	mg/Kg-dry	10	02/15/2017 11:20	127131
Indeno(1,2,3-cd)pyrene	NELAP	1.17		**45.5**	mg/Kg-dry	10	02/15/2017 11:20	127131
Naphthalene	NELAP	11.7		**2420**	mg/Kg-dry	100	02/15/2017 15:10	127131
Phenanthrene	NELAP	11.7		**842**	mg/Kg-dry	100	02/15/2017 15:10	127131
Pyrene	NELAP	1.17		**424**	mg/Kg-dry	10	02/15/2017 11:20	127131
Surr: 2-Fluorobiphenyl		8.85-90.5		**58.9**	%REC	10	02/15/2017 11:20	127131
Surr: Nitrobenzene-d5		5-102		**53.3**	%REC	10	02/15/2017 11:20	127131
Surr: p-Terphenyl-d14		18.4-103		**88.6**	%REC	10	02/15/2017 11:20	127131
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2,4-Trichlorobenzene	NELAP	430		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
1,2-Dichlorobenzene	NELAP	430		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
1,3-Dichlorobenzene	NELAP	430		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
1,4-Dichlorobenzene	NELAP	430		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
2,4,5-Trichlorophenol	NELAP	301		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
2,4,6-Trichlorophenol	NELAP	301		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
2,4-Dichlorophenol	NELAP	430		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
2,4-Dimethylphenol	NELAP	430		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
2,4-Dinitrophenol	NELAP	861		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
2,4-Dinitrotoluene	NELAP	301		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
2,6-Dinitrotoluene	NELAP	301		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
2-Chloronaphthalene	NELAP	301		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
2-Chlorophenol	NELAP	430		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
2-Methoxy-4-methylphenol		560		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
2-Methylnaphthalene	NELAP	301		**1050**	mg/Kg-dry	25	02/15/2017 12:51	127103
2-Nitroaniline	NELAP	861		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
2-Nitrophenol	NELAP	301		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
3,3´-Dichlorobenzidine	NELAP	301		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
3-Nitroaniline	NELAP	861		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
4,6-Dinitro-2-methylphenol	NELAP	861		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
4-Bromophenyl phenyl ether	NELAP	301		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
4-Chloro-3-methylphenol	NELAP	430		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
4-Chloroaniline	NELAP	430		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
4-Chlorophenyl phenyl ether	NELAP	301		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
4-Nitroaniline	NELAP	430		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

Lab ID: 17020466-002 **Client Sample ID:** CH-FS-07 (16-17)

Matrix: SOLID **Collection Date:** 02/07/2017 9:35

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
4-Nitrophenol	NELAP	301		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
Aniline	NELAP	430		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
Azobenzene		301		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
Benzoic acid	NELAP	1290		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
Benzyl alcohol	NELAP	430		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
Bis(2-chloroethoxy)methane	NELAP	301		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
Bis(2-chloroethyl)ether	NELAP	430		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
Bis(2-chloroisopropyl)ether	NELAP	301		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
Bis(2-ethylhexyl)phthalate	NELAP	301		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
Butyl benzyl phthalate	NELAP	301		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
Carbazole	NELAP	430		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
Dibenzofuran	NELAP	301		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
Diethyl phthalate	NELAP	430		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
Dimethyl phthalate	NELAP	301		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
Di-n-butyl phthalate	NELAP	301		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
Di-n-octyl phthalate	NELAP	301		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
Hexachlorobenzene	NELAP	301		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
Hexachlorobutadiene	NELAP	430		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
Hexachlorocyclopentadiene	NELAP	301		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
Hexachloroethane	NELAP	430		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
Isophorone	NELAP	301		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
m,p-Cresol	NELAP	430		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
Nitrobenzene	NELAP	430		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
N-Nitrosodimethylamine	NELAP	430		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
N-Nitroso-di-n-propylamine	NELAP	430		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
N-Nitrosodiphenylamine	NELAP	430		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
o-Cresol	NELAP	430		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
Pentachlorophenol	NELAP	1720		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
Phenol	NELAP	301		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
Pyridine	NELAP	430		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
1,2-Diphenylhydrazine		723		**ND**	mg/Kg-dry	25	02/15/2017 12:51	127103
Surr: 2,4,6-Tribromophenol		33-115	S	**354.3**	%REC	25	02/15/2017 12:51	127103
Surr: 2-Fluorobiphenyl		36.5-97.7		**84.8**	%REC	25	02/15/2017 12:51	127103
Surr: 2-Fluorophenol		39.4-92.8		**69.9**	%REC	25	02/15/2017 12:51	127103
Surr: Nitrobenzene-d5		34.7-90.1		**89.8**	%REC	25	02/15/2017 12:51	127103
Surr: Phenol-d5		42.8-106		**82.3**	%REC	25	02/15/2017 12:51	127103
Surr: p-Terphenyl-d14		43.7-124	S	**129.7**	%REC	25	02/15/2017 12:51	127103

Surrogate recovery is outside QC limits due to matrix interference.

Elevated reporting limit due to sample composition.

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,1,2-Tetrachloroethane	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
1,1,1-Trichloroethane	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
1,1,2,2-Tetrachloroethane	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
1,1,2-Trichloro-1,2,2-trifluoroethane		9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
1,1,2-Trichloroethane	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
1,1-Dichloro-2-propanone		90200		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
1,1-Dichloroethane	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

Lab ID: 17020466-002 **Client Sample ID:** CH-FS-07 (16-17)

Matrix: SOLID **Collection Date:** 02/07/2017 9:35

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1-Dichloroethene	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
1,1-Dichloropropene	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
1,2,3-Trichlorobenzene	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
1,2,3-Trichloropropane	NELAP	18000		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
1,2,3-Trimethylbenzene		9020		**93100**	µg/Kg-dry	1000	02/14/2017 13:37	127123
1,2,4-Trichlorobenzene	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
1,2,4-Trimethylbenzene	NELAP	9020		**282000**	µg/Kg-dry	1000	02/14/2017 13:37	127123
1,2-Dibromo-3-chloropropane	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
1,2-Dibromoethane	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
1,2-Dichlorobenzene	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
1,2-Dichloroethane	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
1,2-Dichloropropane	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
1,3,5-Trimethylbenzene	NELAP	9020		**105000**	µg/Kg-dry	1000	02/14/2017 13:37	127123
1,3-Dichlorobenzene	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
1,3-Dichloropropane	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
1,4-Dichlorobenzene	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
1-Chlorobutane	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
2,2-Dichloropropane	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
2-Butanone	NELAP	361000		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
2-Chlorotoluene	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
2-Hexanone	NELAP	90200		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
2-Nitropropane	NELAP	90200		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
4-Chlorotoluene	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
4-Methyl-2-pentanone	NELAP	90200		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
Acetone	NELAP	90200		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
Acrolein	NELAP	180000		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
Acrylonitrile	NELAP	18000		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
Allyl chloride	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
Benzene	NELAP	1800		**44200**	µg/Kg-dry	1000	02/14/2017 13:37	127123
Bromobenzene	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
Bromochloromethane	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
Bromodichloromethane	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
Bromoform	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
Bromomethane	NELAP	18000		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
Carbon disulfide	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
Carbon tetrachloride	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
Chlorobenzene	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
Chloroethane	NELAP	18000		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
Chloroform	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
Chloromethane	NELAP	18000		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
cis-1,2-Dichloroethene	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
cis-1,3-Dichloropropene	NELAP	7210		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
Cyclohexanone		180000		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
Dibromochloromethane	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
Dibromomethane	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
Dichlorodifluoromethane	NELAP	18000		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
Ethyl ether	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

Lab ID: 17020466-002 **Client Sample ID:** CH-FS-07 (16-17)

Matrix: SOLID **Collection Date:** 02/07/2017 9:35

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Ethyl methacrylate	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
Ethylbenzene	NELAP	9020		**115000**	µg/Kg-dry	1000	02/14/2017 13:37	127123
Hexachlorobutadiene	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
Hexachloroethane	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
Iodomethane	NELAP	18000		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
Isopropylbenzene	NELAP	9020		**10200**	µg/Kg-dry	1000	02/14/2017 13:37	127123
m,p-Xylenes	NELAP	9020		**363000**	µg/Kg-dry	1000	02/14/2017 13:37	127123
Methacrylonitrile	NELAP	90200		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
Methyl Methacrylate	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
Methyl tert-butyl ether	NELAP	3610		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
Methylacrylate	NELAP	18000		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
Methylene chloride	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
Naphthalene	NELAP	452000		**4500000**	µg/Kg-dry	25000	02/15/2017 11:02	127158
n-Butylbenzene	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
n-Heptane		90200		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
n-Hexane		36100		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
Nitrobenzene	NELAP	180000		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
n-Propylbenzene	NELAP	9020		**11500**	µg/Kg-dry	1000	02/14/2017 13:37	127123
o-Xylene	NELAP	9020		**165000**	µg/Kg-dry	1000	02/14/2017 13:37	127123
Pentachloroethane	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
p-Isopropyltoluene	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
Propionitrile	NELAP	90200		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
sec-Butylbenzene	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
Styrene	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
tert-Butylbenzene	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
Tetrachloroethene	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
Tetrahydrofuran	NELAP	90200		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
Toluene	NELAP	9020		**137000**	µg/Kg-dry	1000	02/14/2017 13:37	127123
trans-1,2-Dichloroethene	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
trans-1,3-Dichloropropene	NELAP	7210		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
Trichloroethene	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
Trichlorofluoromethane	NELAP	9020		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
Vinyl acetate	NELAP	90200		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
Vinyl chloride	NELAP	3610		**ND**	µg/Kg-dry	1000	02/14/2017 13:37	127123
Surr: 1,2-Dichloroethane-d4		72.2-131		**105.6**	%REC	1000	02/14/2017 13:37	127123
Surr: 4-Bromofluorobenzene		82.1-116		**108.0**	%REC	1000	02/14/2017 13:37	127123
Surr: Dibromofluoromethane		77.7-120		**93.8**	%REC	1000	02/14/2017 13:37	127123
Surr: Toluene-d8		86-116		**108.5**	%REC	1000	02/14/2017 13:37	127123

LCS & LCSD recovered outside upper QC limits for multiple compounds. Sample results are below reporting limit. Data is reportable per 2009 TNI Standard (Volume1, Module 4, section 1.7.4.2).

Elevated reporting limit due to high levels of target and/or non-target analytes.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

Lab ID: 17020466-003 **Client Sample ID:** CH-FS-07 (19-20)

Matrix: SOLID **Collection Date:** 02/07/2017 9:25

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**9.4**	%	1	02/14/2017 16:45	R229210
SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Acenaphthene	NELAP	0.004		**0.013**	mg/Kg-dry	1	02/15/2017 9:42	127131
Acenaphthylene	NELAP	0.004		**0.005**	mg/Kg-dry	1	02/15/2017 9:42	127131
Anthracene	NELAP	0.004		**0.010**	mg/Kg-dry	1	02/15/2017 9:42	127131
Benzo(a)anthracene	NELAP	0.011		**ND**	mg/Kg-dry	1	02/15/2017 9:42	127131
Benzo(a)pyrene	NELAP	0.004		**0.009**	mg/Kg-dry	1	02/15/2017 9:42	127131
Benzo(b)fluoranthene	NELAP	0.004		**0.008**	mg/Kg-dry	1	02/15/2017 9:42	127131
Benzo(g,h,i)perylene	NELAP	0.004		**0.005**	mg/Kg-dry	1	02/15/2017 9:42	127131
Benzo(k)fluoranthene	NELAP	0.004		**ND**	mg/Kg-dry	1	02/15/2017 9:42	127131
Chrysene	NELAP	0.004		**0.009**	mg/Kg-dry	1	02/15/2017 9:42	127131
Dibenzo(a,h)anthracene	NELAP	0.004		**ND**	mg/Kg-dry	1	02/15/2017 9:42	127131
Fluoranthene	NELAP	0.004		**0.021**	mg/Kg-dry	1	02/15/2017 9:42	127131
Fluorene	NELAP	0.004		**0.012**	mg/Kg-dry	1	02/15/2017 9:42	127131
Indeno(1,2,3-cd)pyrene	NELAP	0.004		**ND**	mg/Kg-dry	1	02/15/2017 9:42	127131
Naphthalene	NELAP	0.004		**0.707**	mg/Kg-dry	1	02/15/2017 9:42	127131
Phenanthrene	NELAP	0.004		**0.041**	mg/Kg-dry	1	02/15/2017 9:42	127131
Pyrene	NELAP	0.004		**0.020**	mg/Kg-dry	1	02/15/2017 9:42	127131
Surr: 2-Fluorobiphenyl		8.85-90.5		**70.5**	%REC	1	02/15/2017 9:42	127131
Surr: Nitrobenzene-d5		5-102		**73.4**	%REC	1	02/15/2017 9:42	127131
Surr: p-Terphenyl-d14		18.4-103		**74.0**	%REC	1	02/15/2017 9:42	127131
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2,4-Trichlorobenzene	NELAP	0.546		**ND**	mg/Kg-dry	1	02/15/2017 10:58	127103
1,2-Dichlorobenzene	NELAP	0.546		**ND**	mg/Kg-dry	1	02/15/2017 10:58	127103
1,3-Dichlorobenzene	NELAP	0.546		**ND**	mg/Kg-dry	1	02/15/2017 10:58	127103
1,4-Dichlorobenzene	NELAP	0.546		**ND**	mg/Kg-dry	1	02/15/2017 10:58	127103
2,4,5-Trichlorophenol	NELAP	0.382		**ND**	mg/Kg-dry	1	02/15/2017 10:58	127103
2,4,6-Trichlorophenol	NELAP	0.382		**ND**	mg/Kg-dry	1	02/15/2017 10:58	127103
2,4-Dichlorophenol	NELAP	0.546		**ND**	mg/Kg-dry	1	02/15/2017 10:58	127103
2,4-Dimethylphenol	NELAP	0.546		**ND**	mg/Kg-dry	1	02/15/2017 10:58	127103
2,4-Dinitrophenol	NELAP	1.09		**ND**	mg/Kg-dry	1	02/15/2017 10:58	127103
2,4-Dinitrotoluene	NELAP	0.382		**ND**	mg/Kg-dry	1	02/15/2017 10:58	127103
2,6-Dinitrotoluene	NELAP	0.382		**ND**	mg/Kg-dry	1	02/15/2017 10:58	127103
2-Chloronaphthalene	NELAP	0.382		**ND**	mg/Kg-dry	1	02/15/2017 10:58	127103
2-Chlorophenol	NELAP	0.546		**ND**	mg/Kg-dry	1	02/15/2017 10:58	127103
2-Methoxy-4-methylphenol		0.710		**ND**	mg/Kg-dry	1	02/15/2017 10:58	127103
2-Methylnaphthalene	NELAP	0.382		**ND**	mg/Kg-dry	1	02/15/2017 10:58	127103
2-Nitroaniline	NELAP	1.09		**ND**	mg/Kg-dry	1	02/15/2017 10:58	127103
2-Nitrophenol	NELAP	0.382		**ND**	mg/Kg-dry	1	02/15/2017 10:58	127103
3,3´-Dichlorobenzidine	NELAP	0.382		**ND**	mg/Kg-dry	1	02/15/2017 10:58	127103
3-Nitroaniline	NELAP	1.09		**ND**	mg/Kg-dry	1	02/15/2017 10:58	127103
4,6-Dinitro-2-methylphenol	NELAP	1.09		**ND**	mg/Kg-dry	1	02/15/2017 10:58	127103
4-Bromophenyl phenyl ether	NELAP	0.382		**ND**	mg/Kg-dry	1	02/15/2017 10:58	127103
4-Chloro-3-methylphenol	NELAP	0.546		**ND**	mg/Kg-dry	1	02/15/2017 10:58	127103
4-Chloroaniline	NELAP	0.546		**ND**	mg/Kg-dry	1	02/15/2017 10:58	127103
4-Chlorophenyl phenyl ether	NELAP	0.382		**ND**	mg/Kg-dry	1	02/15/2017 10:58	127103
4-Nitroaniline	NELAP	0.546		**ND**	mg/Kg-dry	1	02/15/2017 10:58	127103

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

Lab ID: 17020466-003 **Client Sample ID:** CH-FS-07 (19-20)

Matrix: SOLID **Collection Date:** 02/07/2017 9:25

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
4-Nitrophenol	NELAP	0.382		ND	mg/Kg-dry	1	02/15/2017 10:58	127103
Aniline	NELAP	0.546		ND	mg/Kg-dry	1	02/15/2017 10:58	127103
Azobenzene		0.382		ND	mg/Kg-dry	1	02/15/2017 10:58	127103
Benzoic acid	NELAP	1.64		ND	mg/Kg-dry	1	02/15/2017 10:58	127103
Benzyl alcohol	NELAP	0.546		ND	mg/Kg-dry	1	02/15/2017 10:58	127103
Bis(2-chloroethoxy)methane	NELAP	0.382		ND	mg/Kg-dry	1	02/15/2017 10:58	127103
Bis(2-chloroethyl)ether	NELAP	0.546		ND	mg/Kg-dry	1	02/15/2017 10:58	127103
Bis(2-chloroisopropyl)ether	NELAP	0.382		ND	mg/Kg-dry	1	02/15/2017 10:58	127103
Bis(2-ethylhexyl)phthalate	NELAP	0.382		ND	mg/Kg-dry	1	02/15/2017 10:58	127103
Butyl benzyl phthalate	NELAP	0.382		ND	mg/Kg-dry	1	02/15/2017 10:58	127103
Carbazole	NELAP	0.546		ND	mg/Kg-dry	1	02/15/2017 10:58	127103
Dibenzofuran	NELAP	0.382		ND	mg/Kg-dry	1	02/15/2017 10:58	127103
Diethyl phthalate	NELAP	0.546		ND	mg/Kg-dry	1	02/15/2017 10:58	127103
Dimethyl phthalate	NELAP	0.382		ND	mg/Kg-dry	1	02/15/2017 10:58	127103
Di-n-butyl phthalate	NELAP	0.382		ND	mg/Kg-dry	1	02/15/2017 10:58	127103
Di-n-octyl phthalate	NELAP	0.382		ND	mg/Kg-dry	1	02/15/2017 10:58	127103
Hexachlorobenzene	NELAP	0.382		ND	mg/Kg-dry	1	02/15/2017 10:58	127103
Hexachlorobutadiene	NELAP	0.546		ND	mg/Kg-dry	1	02/15/2017 10:58	127103
Hexachlorocyclopentadiene	NELAP	0.382		ND	mg/Kg-dry	1	02/15/2017 10:58	127103
Hexachloroethane	NELAP	0.546		ND	mg/Kg-dry	1	02/15/2017 10:58	127103
Isophorone	NELAP	0.382		ND	mg/Kg-dry	1	02/15/2017 10:58	127103
m,p-Cresol	NELAP	0.546		ND	mg/Kg-dry	1	02/15/2017 10:58	127103
Nitrobenzene	NELAP	0.546		ND	mg/Kg-dry	1	02/15/2017 10:58	127103
N-Nitrosodimethylamine	NELAP	0.546		ND	mg/Kg-dry	1	02/15/2017 10:58	127103
N-Nitroso-di-n-propylamine	NELAP	0.546		ND	mg/Kg-dry	1	02/15/2017 10:58	127103
N-Nitrosodiphenylamine	NELAP	0.546		ND	mg/Kg-dry	1	02/15/2017 10:58	127103
o-Cresol	NELAP	0.546		ND	mg/Kg-dry	1	02/15/2017 10:58	127103
Pentachlorophenol	NELAP	2.18		ND	mg/Kg-dry	1	02/15/2017 10:58	127103
Phenol	NELAP	0.382		ND	mg/Kg-dry	1	02/15/2017 10:58	127103
Pyridine	NELAP	0.546		ND	mg/Kg-dry	1	02/15/2017 10:58	127103
1,2-Diphenylhydrazine		0.918		ND	mg/Kg-dry	1	02/15/2017 10:58	127103
Surr: 2,4,6-Tribromophenol		33-115		55.3	%REC	1	02/15/2017 10:58	127103
Surr: 2-Fluorobiphenyl		36.5-97.7		72.2	%REC	1	02/15/2017 10:58	127103
Surr: 2-Fluorophenol		39.4-92.8		60.4	%REC	1	02/15/2017 10:58	127103
Surr: Nitrobenzene-d5		34.7-90.1		67.3	%REC	1	02/15/2017 10:58	127103
Surr: Phenol-d5		42.8-106		71.0	%REC	1	02/15/2017 10:58	127103
Surr: p-Terphenyl-d14		43.7-124		85.4	%REC	1	02/15/2017 10:58	127103
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,1,2-Tetrachloroethane	NELAP	192		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
1,1,1-Trichloroethane	NELAP	192		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
1,1,2,2-Tetrachloroethane	NELAP	192		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
1,1,2-Trichloro-1,2,2-trifluoroethane		192		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
1,1,2-Trichloroethane	NELAP	192		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
1,1-Dichloro-2-propanone		1920		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
1,1-Dichloroethane	NELAP	192		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
1,1-Dichloroethene	NELAP	192		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
1,1-Dichloropropene	NELAP	192		ND	µg/Kg-dry	25	02/14/2017 17:37	127123

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

Lab ID: 17020466-003 **Client Sample ID:** CH-FS-07 (19-20)

Matrix: SOLID **Collection Date:** 02/07/2017 9:25

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2,3-Trichlorobenzene	NELAP	192		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
1,2,3-Trichloropropane	NELAP	384		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
1,2,3-Trimethylbenzene		192		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
1,2,4-Trichlorobenzene	NELAP	192		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
1,2,4-Trimethylbenzene	NELAP	192		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
1,2-Dibromo-3-chloropropane	NELAP	192		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
1,2-Dibromoethane	NELAP	192		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
1,2-Dichlorobenzene	NELAP	192		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
1,2-Dichloroethane	NELAP	192		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
1,2-Dichloropropane	NELAP	192		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
1,3,5-Trimethylbenzene	NELAP	192		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
1,3-Dichlorobenzene	NELAP	192		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
1,3-Dichloropropane	NELAP	192		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
1,4-Dichlorobenzene	NELAP	192		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
1-Chlorobutane	NELAP	192		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
2,2-Dichloropropane	NELAP	192		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
2-Butanone	NELAP	7680		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
2-Chlorotoluene	NELAP	192		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
2-Hexanone	NELAP	1920		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
2-Nitropropane	NELAP	1920		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
4-Chlorotoluene	NELAP	192		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
4-Methyl-2-pentanone	NELAP	1920		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
Acetone	NELAP	1920		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
Acrolein	NELAP	3840		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
Acrylonitrile	NELAP	384		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
Allyl chloride	NELAP	192		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
Benzene	NELAP	38.4		399	µg/Kg-dry	25	02/14/2017 17:37	127123
Bromobenzene	NELAP	192		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
Bromochloromethane	NELAP	192		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
Bromodichloromethane	NELAP	192		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
Bromoform	NELAP	192		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
Bromomethane	NELAP	384		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
Carbon disulfide	NELAP	192		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
Carbon tetrachloride	NELAP	192		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
Chlorobenzene	NELAP	192		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
Chloroethane	NELAP	384		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
Chloroform	NELAP	192		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
Chloromethane	NELAP	384		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
cis-1,2-Dichloroethene	NELAP	192		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
cis-1,3-Dichloropropene	NELAP	154		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
Cyclohexanone		3840		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
Dibromochloromethane	NELAP	192		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
Dibromomethane	NELAP	192		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
Dichlorodifluoromethane	NELAP	384		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
Ethyl ether	NELAP	192		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
Ethyl methacrylate	NELAP	192		ND	µg/Kg-dry	25	02/14/2017 17:37	127123
Ethylbenzene	NELAP	192		ND	µg/Kg-dry	25	02/14/2017 17:37	127123

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

Lab ID: 17020466-003 **Client Sample ID:** CH-FS-07 (19-20)

Matrix: SOLID **Collection Date:** 02/07/2017 9:25

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Hexachlorobutadiene	NELAP	192		**ND**	µg/Kg-dry	25	02/14/2017 17:37	127123
Hexachloroethane	NELAP	192		**ND**	µg/Kg-dry	25	02/14/2017 17:37	127123
Iodomethane	NELAP	384		**ND**	µg/Kg-dry	25	02/14/2017 17:37	127123
Isopropylbenzene	NELAP	192		**ND**	µg/Kg-dry	25	02/14/2017 17:37	127123
m,p-Xylenes	NELAP	192		**375**	µg/Kg-dry	25	02/14/2017 17:37	127123
Methacrylonitrile	NELAP	1920		**ND**	µg/Kg-dry	25	02/14/2017 17:37	127123
Methyl Methacrylate	NELAP	192		**ND**	µg/Kg-dry	25	02/14/2017 17:37	127123
Methyl tert-butyl ether	NELAP	76.8		**ND**	µg/Kg-dry	25	02/14/2017 17:37	127123
Methylacrylate	NELAP	384		**ND**	µg/Kg-dry	25	02/14/2017 17:37	127123
Methylene chloride	NELAP	192		**ND**	µg/Kg-dry	25	02/14/2017 17:37	127123
Naphthalene	NELAP	384		**703**	µg/Kg-dry	25	02/14/2017 17:37	127123
n-Butylbenzene	NELAP	192		**ND**	µg/Kg-dry	25	02/14/2017 17:37	127123
n-Heptane		1920		**ND**	µg/Kg-dry	25	02/14/2017 17:37	127123
n-Hexane		768		**ND**	µg/Kg-dry	25	02/14/2017 17:37	127123
Nitrobenzene	NELAP	3840		**ND**	µg/Kg-dry	25	02/14/2017 17:37	127123
n-Propylbenzene	NELAP	192		**ND**	µg/Kg-dry	25	02/14/2017 17:37	127123
o-Xylene	NELAP	192		**486**	µg/Kg-dry	25	02/14/2017 17:37	127123
Pentachloroethane	NELAP	192		**ND**	µg/Kg-dry	25	02/14/2017 17:37	127123
p-Isopropyltoluene	NELAP	192		**ND**	µg/Kg-dry	25	02/14/2017 17:37	127123
Propionitrile	NELAP	1920		**ND**	µg/Kg-dry	25	02/14/2017 17:37	127123
sec-Butylbenzene	NELAP	192		**ND**	µg/Kg-dry	25	02/14/2017 17:37	127123
Styrene	NELAP	192		**ND**	µg/Kg-dry	25	02/14/2017 17:37	127123
tert-Butylbenzene	NELAP	192		**ND**	µg/Kg-dry	25	02/14/2017 17:37	127123
Tetrachloroethene	NELAP	192		**ND**	µg/Kg-dry	25	02/14/2017 17:37	127123
Tetrahydrofuran	NELAP	1920		**ND**	µg/Kg-dry	25	02/14/2017 17:37	127123
Toluene	NELAP	192		**628**	µg/Kg-dry	25	02/14/2017 17:37	127123
trans-1,2-Dichloroethene	NELAP	192		**ND**	µg/Kg-dry	25	02/14/2017 17:37	127123
trans-1,3-Dichloropropene	NELAP	154		**ND**	µg/Kg-dry	25	02/14/2017 17:37	127123
Trichloroethene	NELAP	192		**ND**	µg/Kg-dry	25	02/14/2017 17:37	127123
Trichlorofluoromethane	NELAP	192		**ND**	µg/Kg-dry	25	02/14/2017 17:37	127123
Vinyl acetate	NELAP	1920		**ND**	µg/Kg-dry	25	02/14/2017 17:37	127123
Vinyl chloride	NELAP	76.8		**ND**	µg/Kg-dry	25	02/14/2017 17:37	127123
Surr: 1,2-Dichloroethane-d4		72.2-131		**102.9**	%REC	25	02/14/2017 17:37	127123
Surr: 4-Bromofluorobenzene		82.1-116		**105.0**	%REC	25	02/14/2017 17:37	127123
Surr: Dibromofluoromethane		77.7-120		**91.4**	%REC	25	02/14/2017 17:37	127123
Surr: Toluene-d8		86-116		**109.6**	%REC	25	02/14/2017 17:37	127123

LCS & LCSD recovered outside upper QC limits for multiple compounds. Sample results are below reporting limit. Data is reportable per 2009 TNI Standard (Volume1, Module 4, section 1.7.4.2).

Elevated reporting limit due to high levels of target and/or non-target analytes.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

Lab ID: 17020466-004 **Client Sample ID:** CH-FS-08 (8-9)

Matrix: SOLID **Collection Date:** 02/07/2017 10:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**14.7**	%	1	02/14/2017 16:46	R229210
SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Acenaphthene	NELAP	2.37		**42.0**	mg/Kg-dry	100	02/15/2017 15:43	127131
Acenaphthylene	NELAP	0.118		**8.62**	mg/Kg-dry	5	02/15/2017 10:48	127131
Anthracene	NELAP	0.118		**31.6**	mg/Kg-dry	5	02/15/2017 10:48	127131
Benzo(a)anthracene	NELAP	0.348		**14.1**	mg/Kg-dry	5	02/15/2017 10:48	127131
Benzo(a)pyrene	NELAP	0.118		**14.0**	mg/Kg-dry	5	02/15/2017 10:48	127131
Benzo(b)fluoranthene	NELAP	0.118		**11.1**	mg/Kg-dry	5	02/15/2017 10:48	127131
Benzo(g,h,i)perylene	NELAP	0.118		**3.91**	mg/Kg-dry	5	02/15/2017 10:48	127131
Benzo(k)fluoranthene	NELAP	0.118		**5.82**	mg/Kg-dry	5	02/15/2017 10:48	127131
Chrysene	NELAP	0.118		**14.8**	mg/Kg-dry	5	02/15/2017 10:48	127131
Dibenzo(a,h)anthracene	NELAP	0.118		**1.93**	mg/Kg-dry	5	02/15/2017 10:48	127131
Fluoranthene	NELAP	0.118		**56.8**	mg/Kg-dry	5	02/15/2017 10:48	127131
Fluorene	NELAP	0.118		**52.5**	mg/Kg-dry	5	02/15/2017 10:48	127131
Indeno(1,2,3-cd)pyrene	NELAP	0.118		**3.27**	mg/Kg-dry	5	02/15/2017 10:48	127131
Naphthalene	NELAP	2.37		**77.7**	mg/Kg-dry	100	02/15/2017 15:43	127131
Phenanthrene	NELAP	2.37		**83.5**	mg/Kg-dry	100	02/15/2017 15:43	127131
Pyrene	NELAP	0.118		**47.2**	mg/Kg-dry	5	02/15/2017 10:48	127131
Surr: 2-Fluorobiphenyl		8.85-90.5		**70.5**	%REC	5	02/15/2017 10:48	127131
Surr: Nitrobenzene-d5		5-102		**70.8**	%REC	5	02/15/2017 10:48	127131
Surr: p-Terphenyl-d14		18.4-103		**76.0**	%REC	5	02/15/2017 10:48	127131
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2,4-Trichlorobenzene	NELAP	87.1		**ND**	mg/Kg-dry	25	02/15/2017 13:19	127103
1,2-Dichlorobenzene	NELAP	87.1		**ND**	mg/Kg-dry	25	02/15/2017 13:19	127103
1,3-Dichlorobenzene	NELAP	87.1		**ND**	mg/Kg-dry	25	02/15/2017 13:19	127103
1,4-Dichlorobenzene	NELAP	87.1		**ND**	mg/Kg-dry	25	02/15/2017 13:19	127103
2,4,5-Trichlorophenol	NELAP	61.0		**ND**	mg/Kg-dry	25	02/15/2017 13:19	127103
2,4,6-Trichlorophenol	NELAP	61.0		**ND**	mg/Kg-dry	25	02/15/2017 13:19	127103
2,4-Dichlorophenol	NELAP	87.1		**ND**	mg/Kg-dry	25	02/15/2017 13:19	127103
2,4-Dimethylphenol	NELAP	87.1		**ND**	mg/Kg-dry	25	02/15/2017 13:19	127103
2,4-Dinitrophenol	NELAP	174		**ND**	mg/Kg-dry	25	02/15/2017 13:19	127103
2,4-Dinitrotoluene	NELAP	61.0		**ND**	mg/Kg-dry	25	02/15/2017 13:19	127103
2,6-Dinitrotoluene	NELAP	61.0		**ND**	mg/Kg-dry	25	02/15/2017 13:19	127103
2-Chloronaphthalene	NELAP	61.0		**ND**	mg/Kg-dry	25	02/15/2017 13:19	127103
2-Chlorophenol	NELAP	87.1		**ND**	mg/Kg-dry	25	02/15/2017 13:19	127103
2-Methoxy-4-methylphenol		113		**ND**	mg/Kg-dry	25	02/15/2017 13:19	127103
2-Methylnaphthalene	NELAP	61.0		**69.7**	mg/Kg-dry	25	02/15/2017 13:19	127103
2-Nitroaniline	NELAP	174		**ND**	mg/Kg-dry	25	02/15/2017 13:19	127103
2-Nitrophenol	NELAP	61.0		**ND**	mg/Kg-dry	25	02/15/2017 13:19	127103
3,3´-Dichlorobenzidine	NELAP	61.0		**ND**	mg/Kg-dry	25	02/15/2017 13:19	127103
3-Nitroaniline	NELAP	174		**ND**	mg/Kg-dry	25	02/15/2017 13:19	127103
4,6-Dinitro-2-methylphenol	NELAP	174		**ND**	mg/Kg-dry	25	02/15/2017 13:19	127103
4-Bromophenyl phenyl ether	NELAP	61.0		**ND**	mg/Kg-dry	25	02/15/2017 13:19	127103
4-Chloro-3-methylphenol	NELAP	87.1		**ND**	mg/Kg-dry	25	02/15/2017 13:19	127103
4-Chloroaniline	NELAP	87.1		**ND**	mg/Kg-dry	25	02/15/2017 13:19	127103
4-Chlorophenyl phenyl ether	NELAP	61.0		**ND**	mg/Kg-dry	25	02/15/2017 13:19	127103
4-Nitroaniline	NELAP	87.1		**ND**	mg/Kg-dry	25	02/15/2017 13:19	127103

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

Lab ID: 17020466-004 **Client Sample ID:** CH-FS-08 (8-9)

Matrix: SOLID **Collection Date:** 02/07/2017 10:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
4-Nitrophenol	NELAP	61.0		ND	mg/Kg-dry	25	02/15/2017 13:19	127103
Aniline	NELAP	87.1		ND	mg/Kg-dry	25	02/15/2017 13:19	127103
Azobenzene		61.0		ND	mg/Kg-dry	25	02/15/2017 13:19	127103
Benzoic acid	NELAP	261		ND	mg/Kg-dry	25	02/15/2017 13:19	127103
Benzyl alcohol	NELAP	87.1		ND	mg/Kg-dry	25	02/15/2017 13:19	127103
Bis(2-chloroethoxy)methane	NELAP	61.0		ND	mg/Kg-dry	25	02/15/2017 13:19	127103
Bis(2-chloroethyl)ether	NELAP	87.1		ND	mg/Kg-dry	25	02/15/2017 13:19	127103
Bis(2-chloroisopropyl)ether	NELAP	61.0		ND	mg/Kg-dry	25	02/15/2017 13:19	127103
Bis(2-ethylhexyl)phthalate	NELAP	61.0		ND	mg/Kg-dry	25	02/15/2017 13:19	127103
Butyl benzyl phthalate	NELAP	61.0		ND	mg/Kg-dry	25	02/15/2017 13:19	127103
Carbazole	NELAP	87.1		ND	mg/Kg-dry	25	02/15/2017 13:19	127103
Dibenzofuran	NELAP	61.0		ND	mg/Kg-dry	25	02/15/2017 13:19	127103
Diethyl phthalate	NELAP	87.1		ND	mg/Kg-dry	25	02/15/2017 13:19	127103
Dimethyl phthalate	NELAP	61.0		ND	mg/Kg-dry	25	02/15/2017 13:19	127103
Di-n-butyl phthalate	NELAP	61.0		ND	mg/Kg-dry	25	02/15/2017 13:19	127103
Di-n-octyl phthalate	NELAP	61.0		ND	mg/Kg-dry	25	02/15/2017 13:19	127103
Hexachlorobenzene	NELAP	61.0		ND	mg/Kg-dry	25	02/15/2017 13:19	127103
Hexachlorobutadiene	NELAP	87.1		ND	mg/Kg-dry	25	02/15/2017 13:19	127103
Hexachlorocyclopentadiene	NELAP	61.0		ND	mg/Kg-dry	25	02/15/2017 13:19	127103
Hexachloroethane	NELAP	87.1		ND	mg/Kg-dry	25	02/15/2017 13:19	127103
Isophorone	NELAP	61.0		ND	mg/Kg-dry	25	02/15/2017 13:19	127103
m,p-Cresol	NELAP	87.1		ND	mg/Kg-dry	25	02/15/2017 13:19	127103
Nitrobenzene	NELAP	87.1		ND	mg/Kg-dry	25	02/15/2017 13:19	127103
N-Nitrosodimethylamine	NELAP	87.1		ND	mg/Kg-dry	25	02/15/2017 13:19	127103
N-Nitroso-di-n-propylamine	NELAP	87.1		ND	mg/Kg-dry	25	02/15/2017 13:19	127103
N-Nitrosodiphenylamine	NELAP	87.1		ND	mg/Kg-dry	25	02/15/2017 13:19	127103
o-Cresol	NELAP	87.1		ND	mg/Kg-dry	25	02/15/2017 13:19	127103
Pentachlorophenol	NELAP	348		ND	mg/Kg-dry	25	02/15/2017 13:19	127103
Phenol	NELAP	61.0		ND	mg/Kg-dry	25	02/15/2017 13:19	127103
Pyridine	NELAP	87.1		ND	mg/Kg-dry	25	02/15/2017 13:19	127103
1,2-Diphenylhydrazine		146		ND	mg/Kg-dry	25	02/15/2017 13:19	127103
Surr: 2,4,6-Tribromophenol		33-115		98.8	%REC	25	02/15/2017 13:19	127103
Surr: 2-Fluorobiphenyl		36.5-97.7		78.8	%REC	25	02/15/2017 13:19	127103
Surr: 2-Fluorophenol		39.4-92.8		62.4	%REC	25	02/15/2017 13:19	127103
Surr: Nitrobenzene-d5		34.7-90.1		61.9	%REC	25	02/15/2017 13:19	127103
Surr: Phenol-d5		42.8-106		78.8	%REC	25	02/15/2017 13:19	127103
Surr: p-Terphenyl-d14		43.7-124		83.8	%REC	25	02/15/2017 13:19	127103
Elevated reporting limit due to sample composition.								
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,1,2-Tetrachloroethane	NELAP	8130		ND	µg/Kg-dry	1000	02/14/2017 14:31	127123
1,1,1-Trichloroethane	NELAP	8130		ND	µg/Kg-dry	1000	02/14/2017 14:31	127123
1,1,2,2-Tetrachloroethane	NELAP	8130		ND	µg/Kg-dry	1000	02/14/2017 14:31	127123
1,1,2-Trichloro-1,2,2-trifluoroethane		8130		ND	µg/Kg-dry	1000	02/14/2017 14:31	127123
1,1,2-Trichloroethane	NELAP	8130		ND	µg/Kg-dry	1000	02/14/2017 14:31	127123
1,1-Dichloro-2-propanone		81300		ND	µg/Kg-dry	1000	02/14/2017 14:31	127123
1,1-Dichloroethane	NELAP	8130		ND	µg/Kg-dry	1000	02/14/2017 14:31	127123
1,1-Dichloroethene	NELAP	8130		ND	µg/Kg-dry	1000	02/14/2017 14:31	127123

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

Lab ID: 17020466-004 **Client Sample ID:** CH-FS-08 (8-9)

Matrix: SOLID **Collection Date:** 02/07/2017 10:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1-Dichloropropene	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
1,2,3-Trichlorobenzene	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
1,2,3-Trichloropropane	NELAP	16300		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
1,2,3-Trimethylbenzene		8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
1,2,4-Trichlorobenzene	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
1,2,4-Trimethylbenzene	NELAP	8130		**8510**	µg/Kg-dry	1000	02/14/2017 14:31	127123
1,2-Dibromo-3-chloropropane	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
1,2-Dibromoethane	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
1,2-Dichlorobenzene	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
1,2-Dichloroethane	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
1,2-Dichloropropane	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
1,3,5-Trimethylbenzene	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
1,3-Dichlorobenzene	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
1,3-Dichloropropane	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
1,4-Dichlorobenzene	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
1-Chlorobutane	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
2,2-Dichloropropane	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
2-Butanone	NELAP	325000		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
2-Chlorotoluene	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
2-Hexanone	NELAP	81300		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
2-Nitropropane	NELAP	81300		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
4-Chlorotoluene	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
4-Methyl-2-pentanone	NELAP	81300		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
Acetone	NELAP	81300		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
Acrolein	NELAP	163000		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
Acrylonitrile	NELAP	16300		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
Allyl chloride	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
Benzene	NELAP	1630		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
Bromobenzene	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
Bromochloromethane	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
Bromodichloromethane	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
Bromoform	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
Bromomethane	NELAP	16300		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
Carbon disulfide	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
Carbon tetrachloride	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
Chlorobenzene	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
Chloroethane	NELAP	16300		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
Chloroform	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
Chloromethane	NELAP	16300		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
cis-1,2-Dichloroethene	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
cis-1,3-Dichloropropene	NELAP	6510		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
Cyclohexanone		163000		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
Dibromochloromethane	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
Dibromomethane	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
Dichlorodifluoromethane	NELAP	16300		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
Ethyl ether	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
Ethyl methacrylate	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

Lab ID: 17020466-004 **Client Sample ID:** CH-FS-08 (8-9)

Matrix: SOLID **Collection Date:** 02/07/2017 10:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Ethylbenzene	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
Hexachlorobutadiene	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
Hexachloroethane	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
Iodomethane	NELAP	16300		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
Isopropylbenzene	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
m,p-Xylenes	NELAP	8130		**8960**	µg/Kg-dry	1000	02/14/2017 14:31	127123
Methacrylonitrile	NELAP	81300		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
Methyl Methacrylate	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
Methyl tert-butyl ether	NELAP	3250		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
Methylacrylate	NELAP	16300		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
Methylene chloride	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
Naphthalene	NELAP	16300		**154000**	µg/Kg-dry	1000	02/14/2017 14:31	127123
n-Butylbenzene	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
n-Heptane		81300		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
n-Hexane		32500		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
Nitrobenzene	NELAP	163000		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
n-Propylbenzene	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
o-Xylene	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
Pentachloroethane	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
p-Isopropyltoluene	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
Propionitrile	NELAP	81300		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
sec-Butylbenzene	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
Styrene	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
tert-Butylbenzene	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
Tetrachloroethene	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
Tetrahydrofuran	NELAP	81300		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
Toluene	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
trans-1,2-Dichloroethene	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
trans-1,3-Dichloropropene	NELAP	6510		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
Trichloroethene	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
Trichlorofluoromethane	NELAP	8130		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
Vinyl acetate	NELAP	81300		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
Vinyl chloride	NELAP	3250		**ND**	µg/Kg-dry	1000	02/14/2017 14:31	127123
Surr: 1,2-Dichloroethane-d4		72.2-131		**105.4**	%REC	1000	02/14/2017 14:31	127123
Surr: 4-Bromofluorobenzene		82.1-116		**104.2**	%REC	1000	02/14/2017 14:31	127123
Surr: Dibromofluoromethane		77.7-120		**93.0**	%REC	1000	02/14/2017 14:31	127123
Surr: Toluene-d8		86-116		**101.8**	%REC	1000	02/14/2017 14:31	127123

LCS & LCSD recovered outside upper QC limits for multiple compounds. Sample results are below reporting limit. Data is reportable per 2009 TNI Standard (Volume1, Module 4, section 1.7.4.2).

Elevated reporting limit due to high levels of target and/or non-target analytes.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

Lab ID: 17020466-005 **Client Sample ID:** CH-FS-08 (12-13)

Matrix: SOLID **Collection Date:** 02/07/2017 10:50

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**12.7**	%	1	02/14/2017 16:46	R229210
SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Acenaphthene	NELAP	0.076		**24.3**	mg/Kg-dry	10	02/15/2017 11:53	127131
Acenaphthylene	NELAP	0.076		**7.55**	mg/Kg-dry	10	02/15/2017 11:53	127131
Anthracene	NELAP	0.076		**16.4**	mg/Kg-dry	10	02/15/2017 11:53	127131
Benzo(a)anthracene	NELAP	0.224		**7.39**	mg/Kg-dry	10	02/15/2017 11:53	127131
Benzo(a)pyrene	NELAP	0.076		**7.34**	mg/Kg-dry	10	02/15/2017 11:53	127131
Benzo(b)fluoranthene	NELAP	0.076		**5.61**	mg/Kg-dry	10	02/15/2017 11:53	127131
Benzo(g,h,i)perylene	NELAP	0.076		**1.80**	mg/Kg-dry	10	02/15/2017 11:53	127131
Benzo(k)fluoranthene	NELAP	0.076		**3.23**	mg/Kg-dry	10	02/15/2017 11:53	127131
Chrysene	NELAP	0.076		**8.00**	mg/Kg-dry	10	02/15/2017 11:53	127131
Dibenzo(a,h)anthracene	NELAP	0.076		**0.943**	mg/Kg-dry	10	02/15/2017 11:53	127131
Fluoranthene	NELAP	0.076		**28.2**	mg/Kg-dry	10	02/15/2017 11:53	127131
Fluorene	NELAP	0.076		**26.1**	mg/Kg-dry	10	02/15/2017 11:53	127131
Indeno(1,2,3-cd)pyrene	NELAP	0.076		**2.25**	mg/Kg-dry	10	02/15/2017 11:53	127131
Naphthalene	NELAP	0.763		**92.5**	mg/Kg-dry	100	02/15/2017 16:15	127131
Phenanthrene	NELAP	0.763		**54.0**	mg/Kg-dry	100	02/15/2017 16:15	127131
Pyrene	NELAP	0.076		**23.3**	mg/Kg-dry	10	02/15/2017 11:53	127131
Surr: 2-Fluorobiphenyl		8.85-90.5		**44.2**	%REC	10	02/15/2017 11:53	127131
Surr: Nitrobenzene-d5		5-102		**47.4**	%REC	10	02/15/2017 11:53	127131
Surr: p-Terphenyl-d14		18.4-103		**61.0**	%REC	10	02/15/2017 11:53	127131
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2,4-Trichlorobenzene	NELAP	28.1		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
1,2-Dichlorobenzene	NELAP	28.1		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
1,3-Dichlorobenzene	NELAP	28.1		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
1,4-Dichlorobenzene	NELAP	28.1		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
2,4,5-Trichlorophenol	NELAP	19.6		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
2,4,6-Trichlorophenol	NELAP	19.6		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
2,4-Dichlorophenol	NELAP	28.1		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
2,4-Dimethylphenol	NELAP	28.1		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
2,4-Dinitrophenol	NELAP	56.1		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
2,4-Dinitrotoluene	NELAP	19.6		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
2,6-Dinitrotoluene	NELAP	19.6		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
2-Chloronaphthalene	NELAP	19.6		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
2-Chlorophenol	NELAP	28.1		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
2-Methoxy-4-methylphenol		36.5		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
2-Methylnaphthalene	NELAP	19.6		**52.0**	mg/Kg-dry	25	02/15/2017 13:48	127103
2-Nitroaniline	NELAP	56.1		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
2-Nitrophenol	NELAP	19.6		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
3,3´-Dichlorobenzidine	NELAP	19.6		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
3-Nitroaniline	NELAP	56.1		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
4,6-Dinitro-2-methylphenol	NELAP	56.1		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
4-Bromophenyl phenyl ether	NELAP	19.6		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
4-Chloro-3-methylphenol	NELAP	28.1		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
4-Chloroaniline	NELAP	28.1		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
4-Chlorophenyl phenyl ether	NELAP	19.6		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
4-Nitroaniline	NELAP	28.1		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

Lab ID: 17020466-005 **Client Sample ID:** CH-FS-08 (12-13)

Matrix: SOLID **Collection Date:** 02/07/2017 10:50

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
4-Nitrophenol	NELAP	19.6		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
Aniline	NELAP	28.1		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
Azobenzene		19.6		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
Benzoic acid	NELAP	84.2		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
Benzyl alcohol	NELAP	28.1		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
Bis(2-chloroethoxy)methane	NELAP	19.6		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
Bis(2-chloroethyl)ether	NELAP	28.1		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
Bis(2-chloroisopropyl)ether	NELAP	19.6		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
Bis(2-ethylhexyl)phthalate	NELAP	19.6		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
Butyl benzyl phthalate	NELAP	19.6		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
Carbazole	NELAP	28.1		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
Dibenzofuran	NELAP	19.6		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
Diethyl phthalate	NELAP	28.1		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
Dimethyl phthalate	NELAP	19.6		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
Di-n-butyl phthalate	NELAP	19.6		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
Di-n-octyl phthalate	NELAP	19.6		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
Hexachlorobenzene	NELAP	19.6		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
Hexachlorobutadiene	NELAP	28.1		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
Hexachlorocyclopentadiene	NELAP	19.6		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
Hexachloroethane	NELAP	28.1		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
Isophorone	NELAP	19.6		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
m,p-Cresol	NELAP	28.1		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
Nitrobenzene	NELAP	28.1		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
N-Nitrosodimethylamine	NELAP	28.1		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
N-Nitroso-di-n-propylamine	NELAP	28.1		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
N-Nitrosodiphenylamine	NELAP	28.1		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
o-Cresol	NELAP	28.1		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
Pentachlorophenol	NELAP	112		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
Phenol	NELAP	19.6		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
Pyridine	NELAP	28.1		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
1,2-Diphenylhydrazine		47.1		**ND**	mg/Kg-dry	25	02/15/2017 13:48	127103
Surr: 2,4,6-Tribromophenol		33-115	S	**115.3**	%REC	25	02/15/2017 13:48	127103
Surr: 2-Fluorobiphenyl		36.5-97.7		**65.9**	%REC	25	02/15/2017 13:48	127103
Surr: 2-Fluorophenol		39.4-92.8		**55.4**	%REC	25	02/15/2017 13:48	127103
Surr: Nitrobenzene-d5		34.7-90.1		**72.9**	%REC	25	02/15/2017 13:48	127103
Surr: Phenol-d5		42.8-106		**65.9**	%REC	25	02/15/2017 13:48	127103
Surr: p-Terphenyl-d14		43.7-124		**75.8**	%REC	25	02/15/2017 13:48	127103

Surrogate recovery is outside QC limits due to matrix interference.

Elevated reporting limit due to sample composition.

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,1,2-Tetrachloroethane	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
1,1,1-Trichloroethane	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
1,1,2,2-Tetrachloroethane	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
1,1,2-Trichloro-1,2,2-trifluoroethane		7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
1,1,2-Trichloroethane	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
1,1-Dichloro-2-propanone		77300		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
1,1-Dichloroethane	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

Lab ID: 17020466-005 **Client Sample ID:** CH-FS-08 (12-13)

Matrix: SOLID **Collection Date:** 02/07/2017 10:50

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1-Dichloroethene	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
1,1-Dichloropropene	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
1,2,3-Trichlorobenzene	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
1,2,3-Trichloropropane	NELAP	15500		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
1,2,3-Trimethylbenzene		7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
1,2,4-Trichlorobenzene	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
1,2,4-Trimethylbenzene	NELAP	7730		**16000**	µg/Kg-dry	1000	02/14/2017 14:57	127123
1,2-Dibromo-3-chloropropane	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
1,2-Dibromoethane	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
1,2-Dichlorobenzene	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
1,2-Dichloroethane	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
1,2-Dichloropropane	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
1,3,5-Trimethylbenzene	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
1,3-Dichlorobenzene	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
1,3-Dichloropropane	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
1,4-Dichlorobenzene	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
1-Chlorobutane	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
2,2-Dichloropropane	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
2-Butanone	NELAP	309000		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
2-Chlorotoluene	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
2-Hexanone	NELAP	77300		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
2-Nitropropane	NELAP	77300		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
4-Chlorotoluene	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
4-Methyl-2-pentanone	NELAP	77300		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
Acetone	NELAP	77300		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
Acrolein	NELAP	155000		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
Acrylonitrile	NELAP	15500		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
Allyl chloride	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
Benzene	NELAP	1550		**2550**	µg/Kg-dry	1000	02/14/2017 14:57	127123
Bromobenzene	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
Bromochloromethane	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
Bromodichloromethane	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
Bromoform	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
Bromomethane	NELAP	15500		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
Carbon disulfide	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
Carbon tetrachloride	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
Chlorobenzene	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
Chloroethane	NELAP	15500		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
Chloroform	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
Chloromethane	NELAP	15500		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
cis-1,2-Dichloroethene	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
cis-1,3-Dichloropropene	NELAP	6180		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
Cyclohexanone		155000		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
Dibromochloromethane	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
Dibromomethane	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
Dichlorodifluoromethane	NELAP	15500		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
Ethyl ether	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

Lab ID: 17020466-005 **Client Sample ID:** CH-FS-08 (12-13)

Matrix: SOLID **Collection Date:** 02/07/2017 10:50

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Ethyl methacrylate	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
Ethylbenzene	NELAP	7730		**8500**	µg/Kg-dry	1000	02/14/2017 14:57	127123
Hexachlorobutadiene	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
Hexachloroethane	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
Iodomethane	NELAP	15500		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
Isopropylbenzene	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
m,p-Xylenes	NELAP	7730		**19200**	µg/Kg-dry	1000	02/14/2017 14:57	127123
Methacrylonitrile	NELAP	77300		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
Methyl Methacrylate	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
Methyl tert-butyl ether	NELAP	3090		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
Methylacrylate	NELAP	15500		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
Methylene chloride	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
Naphthalene	NELAP	15500		**288000**	µg/Kg-dry	1000	02/14/2017 14:57	127123
n-Butylbenzene	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
n-Heptane		77300		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
n-Hexane		30900		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
Nitrobenzene	NELAP	155000		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
n-Propylbenzene	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
o-Xylene	NELAP	7730		**9520**	µg/Kg-dry	1000	02/14/2017 14:57	127123
Pentachloroethane	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
p-Isopropyltoluene	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
Propionitrile	NELAP	77300		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
sec-Butylbenzene	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
Styrene	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
tert-Butylbenzene	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
Tetrachloroethene	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
Tetrahydrofuran	NELAP	77300		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
Toluene	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
trans-1,2-Dichloroethene	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
trans-1,3-Dichloropropene	NELAP	6180		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
Trichloroethene	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
Trichlorofluoromethane	NELAP	7730		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
Vinyl acetate	NELAP	77300		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
Vinyl chloride	NELAP	3090		**ND**	µg/Kg-dry	1000	02/14/2017 14:57	127123
Surr: 1,2-Dichloroethane-d4		72.2-131		**104.9**	%REC	1000	02/14/2017 14:57	127123
Surr: 4-Bromofluorobenzene		82.1-116		**102.5**	%REC	1000	02/14/2017 14:57	127123
Surr: Dibromofluoromethane		77.7-120		**91.6**	%REC	1000	02/14/2017 14:57	127123
Surr: Toluene-d8		86-116		**107.6**	%REC	1000	02/14/2017 14:57	127123

LCS & LCSD recovered outside upper QC limits for multiple compounds. Sample results are below reporting limit. Data is reportable per 2009 TNI Standard (Volume1, Module 4, section 1.7.4.2).

Elevated reporting limit due to high levels of target and/or non-target analytes.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

Lab ID: 17020466-006 **Client Sample ID:** CH-FS-09 (8-9)

Matrix: SOLID **Collection Date:** 02/07/2017 11:50

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
ASTM D2974								
FOC (0.58 conversion factor)		0.10		**1.25**	wt%	1	02/16/2017 18:11	R229313
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**20.5**	%	1	02/14/2017 16:46	R229210
SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Acenaphthene	NELAP	0.004		**ND**	mg/Kg-dry	1	02/15/2017 10:15	127131
Acenaphthylene	NELAP	0.004		**ND**	mg/Kg-dry	1	02/15/2017 10:15	127131
Anthracene	NELAP	0.004		**ND**	mg/Kg-dry	1	02/15/2017 10:15	127131
Benzo(a)anthracene	NELAP	0.012		**ND**	mg/Kg-dry	1	02/15/2017 10:15	127131
Benzo(a)pyrene	NELAP	0.004		**ND**	mg/Kg-dry	1	02/15/2017 10:15	127131
Benzo(b)fluoranthene	NELAP	0.004		**ND**	mg/Kg-dry	1	02/15/2017 10:15	127131
Benzo(g,h,i)perylene	NELAP	0.004		**ND**	mg/Kg-dry	1	02/15/2017 10:15	127131
Benzo(k)fluoranthene	NELAP	0.004		**ND**	mg/Kg-dry	1	02/15/2017 10:15	127131
Chrysene	NELAP	0.004		**ND**	mg/Kg-dry	1	02/15/2017 10:15	127131
Dibenzo(a,h)anthracene	NELAP	0.004		**ND**	mg/Kg-dry	1	02/15/2017 10:15	127131
Fluoranthene	NELAP	0.004		**ND**	mg/Kg-dry	1	02/15/2017 10:15	127131
Fluorene	NELAP	0.004		**ND**	mg/Kg-dry	1	02/15/2017 10:15	127131
Indeno(1,2,3-cd)pyrene	NELAP	0.004		**ND**	mg/Kg-dry	1	02/15/2017 10:15	127131
Naphthalene	NELAP	0.004		**0.030**	mg/Kg-dry	1	02/15/2017 10:15	127131
Phenanthrene	NELAP	0.004		**0.004**	mg/Kg-dry	1	02/15/2017 10:15	127131
Pyrene	NELAP	0.004		**ND**	mg/Kg-dry	1	02/15/2017 10:15	127131
Surr: 2-Fluorobiphenyl		8.85-90.5		**67.3**	%REC	1	02/15/2017 10:15	127131
Surr: Nitrobenzene-d5		5-102		**88.8**	%REC	1	02/15/2017 10:15	127131
Surr: p-Terphenyl-d14		18.4-103		**71.7**	%REC	1	02/15/2017 10:15	127131
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2,4-Trichlorobenzene	NELAP	0.624		**ND**	mg/Kg-dry	1	02/15/2017 11:26	127103
1,2-Dichlorobenzene	NELAP	0.624		**ND**	mg/Kg-dry	1	02/15/2017 11:26	127103
1,3-Dichlorobenzene	NELAP	0.624		**ND**	mg/Kg-dry	1	02/15/2017 11:26	127103
1,4-Dichlorobenzene	NELAP	0.624		**ND**	mg/Kg-dry	1	02/15/2017 11:26	127103
2,4,5-Trichlorophenol	NELAP	0.437		**ND**	mg/Kg-dry	1	02/15/2017 11:26	127103
2,4,6-Trichlorophenol	NELAP	0.437		**ND**	mg/Kg-dry	1	02/15/2017 11:26	127103
2,4-Dichlorophenol	NELAP	0.624		**ND**	mg/Kg-dry	1	02/15/2017 11:26	127103
2,4-Dimethylphenol	NELAP	0.624		**ND**	mg/Kg-dry	1	02/15/2017 11:26	127103
2,4-Dinitrophenol	NELAP	1.25		**ND**	mg/Kg-dry	1	02/15/2017 11:26	127103
2,4-Dinitrotoluene	NELAP	0.437		**ND**	mg/Kg-dry	1	02/15/2017 11:26	127103
2,6-Dinitrotoluene	NELAP	0.437		**ND**	mg/Kg-dry	1	02/15/2017 11:26	127103
2-Chloronaphthalene	NELAP	0.437		**ND**	mg/Kg-dry	1	02/15/2017 11:26	127103
2-Chlorophenol	NELAP	0.624		**ND**	mg/Kg-dry	1	02/15/2017 11:26	127103
2-Methoxy-4-methylphenol		0.811		**ND**	mg/Kg-dry	1	02/15/2017 11:26	127103
2-Methylnaphthalene	NELAP	0.437		**ND**	mg/Kg-dry	1	02/15/2017 11:26	127103
2-Nitroaniline	NELAP	1.25		**ND**	mg/Kg-dry	1	02/15/2017 11:26	127103
2-Nitrophenol	NELAP	0.437		**ND**	mg/Kg-dry	1	02/15/2017 11:26	127103
3,3´-Dichlorobenzidine	NELAP	0.437		**ND**	mg/Kg-dry	1	02/15/2017 11:26	127103
3-Nitroaniline	NELAP	1.25		**ND**	mg/Kg-dry	1	02/15/2017 11:26	127103
4,6-Dinitro-2-methylphenol	NELAP	1.25		**ND**	mg/Kg-dry	1	02/15/2017 11:26	127103
4-Bromophenyl phenyl ether	NELAP	0.437		**ND**	mg/Kg-dry	1	02/15/2017 11:26	127103
4-Chloro-3-methylphenol	NELAP	0.624		**ND**	mg/Kg-dry	1	02/15/2017 11:26	127103
4-Chloroaniline	NELAP	0.624		**ND**	mg/Kg-dry	1	02/15/2017 11:26	127103

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

Lab ID: 17020466-006 **Client Sample ID:** CH-FS-09 (8-9)

Matrix: SOLID **Collection Date:** 02/07/2017 11:50

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
4-Chlorophenyl phenyl ether	NELAP	0.437		ND	mg/Kg-dry	1	02/15/2017 11:26	127103
4-Nitroaniline	NELAP	0.624		ND	mg/Kg-dry	1	02/15/2017 11:26	127103
4-Nitrophenol	NELAP	0.437		ND	mg/Kg-dry	1	02/15/2017 11:26	127103
Aniline	NELAP	0.624		ND	mg/Kg-dry	1	02/15/2017 11:26	127103
Azobenzene		0.437		ND	mg/Kg-dry	1	02/15/2017 11:26	127103
Benzoic acid	NELAP	1.87		ND	mg/Kg-dry	1	02/15/2017 11:26	127103
Benzyl alcohol	NELAP	0.624		ND	mg/Kg-dry	1	02/15/2017 11:26	127103
Bis(2-chloroethoxy)methane	NELAP	0.437		ND	mg/Kg-dry	1	02/15/2017 11:26	127103
Bis(2-chloroethyl)ether	NELAP	0.624		ND	mg/Kg-dry	1	02/15/2017 11:26	127103
Bis(2-chloroisopropyl)ether	NELAP	0.437		ND	mg/Kg-dry	1	02/15/2017 11:26	127103
Bis(2-ethylhexyl)phthalate	NELAP	0.437		ND	mg/Kg-dry	1	02/15/2017 11:26	127103
Butyl benzyl phthalate	NELAP	0.437		ND	mg/Kg-dry	1	02/15/2017 11:26	127103
Carbazole	NELAP	0.624		ND	mg/Kg-dry	1	02/15/2017 11:26	127103
Dibenzofuran	NELAP	0.437		ND	mg/Kg-dry	1	02/15/2017 11:26	127103
Diethyl phthalate	NELAP	0.624		ND	mg/Kg-dry	1	02/15/2017 11:26	127103
Dimethyl phthalate	NELAP	0.437		ND	mg/Kg-dry	1	02/15/2017 11:26	127103
Di-n-butyl phthalate	NELAP	0.437		ND	mg/Kg-dry	1	02/15/2017 11:26	127103
Di-n-octyl phthalate	NELAP	0.437		ND	mg/Kg-dry	1	02/15/2017 11:26	127103
Hexachlorobenzene	NELAP	0.437		ND	mg/Kg-dry	1	02/15/2017 11:26	127103
Hexachlorobutadiene	NELAP	0.624		ND	mg/Kg-dry	1	02/15/2017 11:26	127103
Hexachlorocyclopentadiene	NELAP	0.437		ND	mg/Kg-dry	1	02/15/2017 11:26	127103
Hexachloroethane	NELAP	0.624		ND	mg/Kg-dry	1	02/15/2017 11:26	127103
Isophorone	NELAP	0.437		ND	mg/Kg-dry	1	02/15/2017 11:26	127103
m,p-Cresol	NELAP	0.624		ND	mg/Kg-dry	1	02/15/2017 11:26	127103
Nitrobenzene	NELAP	0.624		ND	mg/Kg-dry	1	02/15/2017 11:26	127103
N-Nitrosodimethylamine	NELAP	0.624		ND	mg/Kg-dry	1	02/15/2017 11:26	127103
N-Nitroso-di-n-propylamine	NELAP	0.624		ND	mg/Kg-dry	1	02/15/2017 11:26	127103
N-Nitrosodiphenylamine	NELAP	0.624		ND	mg/Kg-dry	1	02/15/2017 11:26	127103
o-Cresol	NELAP	0.624		ND	mg/Kg-dry	1	02/15/2017 11:26	127103
Pentachlorophenol	NELAP	2.49		ND	mg/Kg-dry	1	02/15/2017 11:26	127103
Phenol	NELAP	0.437		ND	mg/Kg-dry	1	02/15/2017 11:26	127103
Pyridine	NELAP	0.624		ND	mg/Kg-dry	1	02/15/2017 11:26	127103
1,2-Diphenylhydrazine		1.05		ND	mg/Kg-dry	1	02/15/2017 11:26	127103
Surr: 2,4,6-Tribromophenol		33-115		69.2	%REC	1	02/15/2017 11:26	127103
Surr: 2-Fluorobiphenyl		36.5-97.7		72.9	%REC	1	02/15/2017 11:26	127103
Surr: 2-Fluorophenol		39.4-92.8		64.3	%REC	1	02/15/2017 11:26	127103
Surr: Nitrobenzene-d5		34.7-90.1		72.9	%REC	1	02/15/2017 11:26	127103
Surr: Phenol-d5		42.8-106		74.4	%REC	1	02/15/2017 11:26	127103
Surr: p-Terphenyl-d14		43.7-124		80.0	%REC	1	02/15/2017 11:26	127103
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,1,2-Tetrachloroethane	NELAP	124		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
1,1,1-Trichloroethane	NELAP	124		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
1,1,2,2-Tetrachloroethane	NELAP	124		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
1,1,2-Trichloro-1,2,2-trifluoroethane		124		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
1,1,2-Trichloroethane	NELAP	124		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
1,1-Dichloro-2-propanone		1240		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
1,1-Dichloroethane	NELAP	124		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

Lab ID: 17020466-006 **Client Sample ID:** CH-FS-09 (8-9)

Matrix: SOLID **Collection Date:** 02/07/2017 11:50

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1-Dichloroethene	NELAP	124		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
1,1-Dichloropropene	NELAP	124		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
1,2,3-Trichlorobenzene	NELAP	124		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
1,2,3-Trichloropropane	NELAP	248		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
1,2,3-Trimethylbenzene		124		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
1,2,4-Trichlorobenzene	NELAP	124		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
1,2,4-Trimethylbenzene	NELAP	124		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
1,2-Dibromo-3-chloropropane	NELAP	124		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
1,2-Dibromoethane	NELAP	124		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
1,2-Dichlorobenzene	NELAP	124		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
1,2-Dichloroethane	NELAP	124		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
1,2-Dichloropropane	NELAP	124		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
1,3,5-Trimethylbenzene	NELAP	124		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
1,3-Dichlorobenzene	NELAP	124		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
1,3-Dichloropropane	NELAP	124		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
1,4-Dichlorobenzene	NELAP	124		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
1-Chlorobutane	NELAP	124		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
2,2-Dichloropropane	NELAP	124		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
2-Butanone	NELAP	4960		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
2-Chlorotoluene	NELAP	124		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
2-Hexanone	NELAP	1240		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
2-Nitropropane	NELAP	1240		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
4-Chlorotoluene	NELAP	124		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
4-Methyl-2-pentanone	NELAP	1240		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
Acetone	NELAP	1240		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
Acrolein	NELAP	2480		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
Acrylonitrile	NELAP	248		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
Allyl chloride	NELAP	124		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
Benzene	NELAP	24.8		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
Bromobenzene	NELAP	124		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
Bromochloromethane	NELAP	124		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
Bromodichloromethane	NELAP	124		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
Bromoform	NELAP	124		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
Bromomethane	NELAP	248		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
Carbon disulfide	NELAP	124		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
Carbon tetrachloride	NELAP	124		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
Chlorobenzene	NELAP	124		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
Chloroethane	NELAP	248		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
Chloroform	NELAP	124		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
Chloromethane	NELAP	248		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
cis-1,2-Dichloroethene	NELAP	124		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
cis-1,3-Dichloropropene	NELAP	99.2		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
Cyclohexanone		2480		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
Dibromochloromethane	NELAP	124		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
Dibromomethane	NELAP	124		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
Dichlorodifluoromethane	NELAP	248		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158
Ethyl ether	NELAP	124		ND	µg/Kg-dry	12.5	02/15/2017 11:29	127158

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

Lab ID: 17020466-006 **Client Sample ID:** CH-FS-09 (8-9)

Matrix: SOLID **Collection Date:** 02/07/2017 11:50

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Ethyl methacrylate	NELAP	124		**ND**	µg/Kg-dry	12.5	02/15/2017 11:29	127158
Ethylbenzene	NELAP	124		**ND**	µg/Kg-dry	12.5	02/15/2017 11:29	127158
Hexachlorobutadiene	NELAP	124		**ND**	µg/Kg-dry	12.5	02/15/2017 11:29	127158
Hexachloroethane	NELAP	124		**ND**	µg/Kg-dry	12.5	02/15/2017 11:29	127158
Iodomethane	NELAP	248		**ND**	µg/Kg-dry	12.5	02/15/2017 11:29	127158
Isopropylbenzene	NELAP	124		**ND**	µg/Kg-dry	12.5	02/15/2017 11:29	127158
m,p-Xylenes	NELAP	124		**ND**	µg/Kg-dry	12.5	02/15/2017 11:29	127158
Methacrylonitrile	NELAP	1240		**ND**	µg/Kg-dry	12.5	02/15/2017 11:29	127158
Methyl Methacrylate	NELAP	124		**ND**	µg/Kg-dry	12.5	02/15/2017 11:29	127158
Methyl tert-butyl ether	NELAP	49.6		**ND**	µg/Kg-dry	12.5	02/15/2017 11:29	127158
Methylacrylate	NELAP	248		**ND**	µg/Kg-dry	12.5	02/15/2017 11:29	127158
Methylene chloride	NELAP	124		**ND**	µg/Kg-dry	12.5	02/15/2017 11:29	127158
Naphthalene	NELAP	248		**ND**	µg/Kg-dry	12.5	02/15/2017 11:29	127158
n-Butylbenzene	NELAP	124		**ND**	µg/Kg-dry	12.5	02/15/2017 11:29	127158
n-Heptane		1240		**ND**	µg/Kg-dry	12.5	02/15/2017 11:29	127158
n-Hexane		496		**ND**	µg/Kg-dry	12.5	02/15/2017 11:29	127158
Nitrobenzene	NELAP	2480		**ND**	µg/Kg-dry	12.5	02/15/2017 11:29	127158
n-Propylbenzene	NELAP	124		**ND**	µg/Kg-dry	12.5	02/15/2017 11:29	127158
o-Xylene	NELAP	124		**ND**	µg/Kg-dry	12.5	02/15/2017 11:29	127158
Pentachloroethane	NELAP	124		**ND**	µg/Kg-dry	12.5	02/15/2017 11:29	127158
p-Isopropyltoluene	NELAP	124		**ND**	µg/Kg-dry	12.5	02/15/2017 11:29	127158
Propionitrile	NELAP	1240		**ND**	µg/Kg-dry	12.5	02/15/2017 11:29	127158
sec-Butylbenzene	NELAP	124		**ND**	µg/Kg-dry	12.5	02/15/2017 11:29	127158
Styrene	NELAP	124		**ND**	µg/Kg-dry	12.5	02/15/2017 11:29	127158
tert-Butylbenzene	NELAP	124		**ND**	µg/Kg-dry	12.5	02/15/2017 11:29	127158
Tetrachloroethene	NELAP	124		**ND**	µg/Kg-dry	12.5	02/15/2017 11:29	127158
Tetrahydrofuran	NELAP	1240		**ND**	µg/Kg-dry	12.5	02/15/2017 11:29	127158
Toluene	NELAP	124		**ND**	µg/Kg-dry	12.5	02/15/2017 11:29	127158
trans-1,2-Dichloroethene	NELAP	124		**ND**	µg/Kg-dry	12.5	02/15/2017 11:29	127158
trans-1,3-Dichloropropene	NELAP	99.2		**ND**	µg/Kg-dry	12.5	02/15/2017 11:29	127158
Trichloroethene	NELAP	124		**ND**	µg/Kg-dry	12.5	02/15/2017 11:29	127158
Trichlorofluoromethane	NELAP	124		**ND**	µg/Kg-dry	12.5	02/15/2017 11:29	127158
Vinyl acetate	NELAP	1240		**ND**	µg/Kg-dry	12.5	02/15/2017 11:29	127158
Vinyl chloride	NELAP	49.6		**ND**	µg/Kg-dry	12.5	02/15/2017 11:29	127158
Surr: 1,2-Dichloroethane-d4		72.2-131		**102.1**	%REC	12.5	02/15/2017 11:29	127158
Surr: 4-Bromofluorobenzene		82.1-116		**104.6**	%REC	12.5	02/15/2017 11:29	127158
Surr: Dibromofluoromethane		77.7-120		**88.6**	%REC	12.5	02/15/2017 11:29	127158
Surr: Toluene-d8		86-116		**113.5**	%REC	12.5	02/15/2017 11:29	127158

LCS recovered outside upper QC limits for 2-hexanone. Sample results are below reporting limit. Data is reportable per 2009 TNI Standard (Volume1, Module 4, section 1.7.4.2).

LCS & LCSD recovered outside upper QC limits for acrolein. Sample results are below reporting limit. Data is reportable per 2009 TNI Standard (Volume1, Module 4, section 1.7.4.2).

Elevated reporting limit due to matrix interference.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

Lab ID: 17020466-007 **Client Sample ID:** CH-FS-10 (14-15)

Matrix: SOLID **Collection Date:** 02/07/2017 12:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
ASTM D2974								
FOC (0.58 conversion factor)		0.10		**0.57**	wt%	1	02/16/2017 18:12	R229313
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**17.4**	%	1	02/16/2017 18:12	R229313
SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Acenaphthene	NELAP	0.025		**ND**	mg/Kg-dry	1	02/17/2017 10:01	127244
Acenaphthylene	NELAP	0.025		**ND**	mg/Kg-dry	1	02/17/2017 10:01	127244
Anthracene	NELAP	0.025		**ND**	mg/Kg-dry	1	02/17/2017 10:01	127244
Benzo(a)anthracene	NELAP	0.072		**ND**	mg/Kg-dry	1	02/17/2017 10:01	127244
Benzo(a)pyrene	NELAP	0.025		**ND**	mg/Kg-dry	1	02/17/2017 10:01	127244
Benzo(b)fluoranthene	NELAP	0.025		**ND**	mg/Kg-dry	1	02/17/2017 10:01	127244
Benzo(g,h,i)perylene	NELAP	0.025		**ND**	mg/Kg-dry	1	02/17/2017 10:01	127244
Benzo(k)fluoranthene	NELAP	0.025		**ND**	mg/Kg-dry	1	02/17/2017 10:01	127244
Chrysene	NELAP	0.025		**ND**	mg/Kg-dry	1	02/17/2017 10:01	127244
Dibenzo(a,h)anthracene	NELAP	0.025		**ND**	mg/Kg-dry	1	02/17/2017 10:01	127244
Fluoranthene	NELAP	0.025		**ND**	mg/Kg-dry	1	02/17/2017 10:01	127244
Fluorene	NELAP	0.025		**ND**	mg/Kg-dry	1	02/17/2017 10:01	127244
Indeno(1,2,3-cd)pyrene	NELAP	0.025		**ND**	mg/Kg-dry	1	02/17/2017 10:01	127244
Naphthalene	NELAP	0.025		**0.545**	mg/Kg-dry	1	02/17/2017 10:01	127244
Phenanthrene	NELAP	0.025		**ND**	mg/Kg-dry	1	02/17/2017 10:01	127244
Pyrene	NELAP	0.025		**ND**	mg/Kg-dry	1	02/17/2017 10:01	127244
Surr: 2-Fluorobiphenyl		8.85-90.5		**56.8**	%REC	1	02/17/2017 10:01	127244
Surr: Nitrobenzene-d5		5-102		**70.6**	%REC	1	02/17/2017 10:01	127244
Surr: p-Terphenyl-d14		18.4-103		**58.6**	%REC	1	02/17/2017 10:01	127244
Elevated reporting limit due to limited sample.								
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2,4-Trichlorobenzene	NELAP	3.62		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
1,2-Dichlorobenzene	NELAP	3.62		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
1,3-Dichlorobenzene	NELAP	3.62		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
1,4-Dichlorobenzene	NELAP	3.62		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
2,4,5-Trichlorophenol	NELAP	2.53		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
2,4,6-Trichlorophenol	NELAP	2.53		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
2,4-Dichlorophenol	NELAP	3.62		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
2,4-Dimethylphenol	NELAP	3.62		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
2,4-Dinitrophenol	NELAP	7.24		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
2,4-Dinitrotoluene	NELAP	2.53		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
2,6-Dinitrotoluene	NELAP	2.53		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
2-Chloronaphthalene	NELAP	2.53		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
2-Chlorophenol	NELAP	3.62		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
2-Methoxy-4-methylphenol		4.71		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
2-Methylnaphthalene	NELAP	2.53		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
2-Nitroaniline	NELAP	7.24		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
2-Nitrophenol	NELAP	2.53		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
3,3´-Dichlorobenzidine	NELAP	2.53		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
3-Nitroaniline	NELAP	7.24		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
4,6-Dinitro-2-methylphenol	NELAP	7.24		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
4-Bromophenyl phenyl ether	NELAP	2.53		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
4-Chloro-3-methylphenol	NELAP	3.62		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

Lab ID: 17020466-007 **Client Sample ID:** CH-FS-10 (14-15)

Matrix: SOLID **Collection Date:** 02/07/2017 12:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
4-Chloroaniline	NELAP	3.62		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
4-Chlorophenyl phenyl ether	NELAP	2.53		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
4-Nitroaniline	NELAP	3.62		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
4-Nitrophenol	NELAP	2.53		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
Aniline	NELAP	3.62		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
Azobenzene		2.53		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
Benzoic acid	NELAP	10.9		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
Benzyl alcohol	NELAP	3.62		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
Bis(2-chloroethoxy)methane	NELAP	2.53		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
Bis(2-chloroethyl)ether	NELAP	3.62		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
Bis(2-chloroisopropyl)ether	NELAP	2.53		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
Bis(2-ethylhexyl)phthalate	NELAP	2.53		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
Butyl benzyl phthalate	NELAP	2.53		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
Carbazole	NELAP	3.62		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
Dibenzofuran	NELAP	2.53		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
Diethyl phthalate	NELAP	3.62		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
Dimethyl phthalate	NELAP	2.53		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
Di-n-butyl phthalate	NELAP	2.53		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
Di-n-octyl phthalate	NELAP	2.53		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
Hexachlorobenzene	NELAP	2.53		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
Hexachlorobutadiene	NELAP	3.62		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
Hexachlorocyclopentadiene	NELAP	2.53		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
Hexachloroethane	NELAP	3.62		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
Isophorone	NELAP	2.53		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
m,p-Cresol	NELAP	3.62		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
Nitrobenzene	NELAP	3.62		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
N-Nitrosodimethylamine	NELAP	3.62		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
N-Nitroso-di-n-propylamine	NELAP	3.62		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
N-Nitrosodiphenylamine	NELAP	3.62		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
o-Cresol	NELAP	3.62		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
Pentachlorophenol	NELAP	14.5		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
Phenol	NELAP	2.53		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
Pyridine	NELAP	3.62		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
1,2-Diphenylhydrazine		6.08		**ND**	mg/Kg-dry	1	02/17/2017 11:11	127243
Surr: 2,4,6-Tribromophenol		33-115		**67.8**	%REC	1	02/17/2017 11:11	127243
Surr: 2-Fluorobiphenyl		36.5-97.7		**67.3**	%REC	1	02/17/2017 11:11	127243
Surr: 2-Fluorophenol		39.4-92.8		**64.4**	%REC	1	02/17/2017 11:11	127243
Surr: Nitrobenzene-d5		34.7-90.1		**67.8**	%REC	1	02/17/2017 11:11	127243
Surr: Phenol-d5		42.8-106		**76.4**	%REC	1	02/17/2017 11:11	127243
Surr: p-Terphenyl-d14		43.7-124		**79.7**	%REC	1	02/17/2017 11:11	127243

N-Nitroso-di-n-propylamine recovered outside the upper LCS QC limits. Sample results are below reporting limit. Data is reportable per 2009 TNI Standard (Volume1, Module 4, section 1.7.4.2).

Elevated reporting limit due to sample composition.

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,1,2-Tetrachloroethane	NELAP	108		**ND**	µg/Kg-dry	12.5	02/16/2017 18:54	127214
1,1,1-Trichloroethane	NELAP	108		**ND**	µg/Kg-dry	12.5	02/16/2017 18:54	127214
1,1,2,2-Tetrachloroethane	NELAP	108		**ND**	µg/Kg-dry	12.5	02/16/2017 18:54	127214
1,1,2-Trichloro-1,2,2-trifluoroethane		108		**ND**	µg/Kg-dry	12.5	02/16/2017 18:54	127214

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

Lab ID: 17020466-007 **Client Sample ID:** CH-FS-10 (14-15)

Matrix: SOLID **Collection Date:** 02/07/2017 12:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,2-Trichloroethane	NELAP	108		ND	µg/Kg-dry	12.5	02/16/2017 18:54	127214
1,1-Dichloro-2-propanone		1080		ND	µg/Kg-dry	12.5	02/16/2017 18:54	127214
1,1-Dichloroethane	NELAP	108		ND	µg/Kg-dry	12.5	02/16/2017 18:54	127214
1,1-Dichloroethene	NELAP	108		ND	µg/Kg-dry	12.5	02/16/2017 18:54	127214
1,1-Dichloropropene	NELAP	108		ND	µg/Kg-dry	12.5	02/16/2017 18:54	127214
1,2,3-Trichlorobenzene	NELAP	108		ND	µg/Kg-dry	12.5	02/16/2017 18:54	127214
1,2,3-Trichloropropane	NELAP	216		ND	µg/Kg-dry	12.5	02/16/2017 18:54	127214
1,2,3-Trimethylbenzene		108		492	µg/Kg-dry	12.5	02/16/2017 18:54	127214
1,2,4-Trichlorobenzene	NELAP	108		ND	µg/Kg-dry	12.5	02/16/2017 18:54	127214
1,2,4-Trimethylbenzene	NELAP	108		261	µg/Kg-dry	12.5	02/16/2017 18:54	127214
1,2-Dibromo-3-chloropropane	NELAP	108		ND	µg/Kg-dry	12.5	02/16/2017 18:54	127214
1,2-Dibromoethane	NELAP	108		ND	µg/Kg-dry	12.5	02/16/2017 18:54	127214
1,2-Dichlorobenzene	NELAP	108		ND	µg/Kg-dry	12.5	02/16/2017 18:54	127214
1,2-Dichloroethane	NELAP	108		ND	µg/Kg-dry	12.5	02/16/2017 18:54	127214
1,2-Dichloropropane	NELAP	108		ND	µg/Kg-dry	12.5	02/16/2017 18:54	127214
1,3,5-Trimethylbenzene	NELAP	108		ND	µg/Kg-dry	12.5	02/16/2017 18:54	127214
1,3-Dichlorobenzene	NELAP	108		ND	µg/Kg-dry	12.5	02/16/2017 18:54	127214
1,3-Dichloropropane	NELAP	108		ND	µg/Kg-dry	12.5	02/16/2017 18:54	127214
1,4-Dichlorobenzene	NELAP	108		ND	µg/Kg-dry	12.5	02/16/2017 18:54	127214
1-Chlorobutane	NELAP	108		ND	µg/Kg-dry	12.5	02/16/2017 18:54	127214
2,2-Dichloropropane	NELAP	108		ND	µg/Kg-dry	12.5	02/16/2017 18:54	127214
2-Butanone	NELAP	4310		ND	µg/Kg-dry	12.5	02/16/2017 18:54	127214
2-Chlorotoluene	NELAP	108		ND	µg/Kg-dry	12.5	02/16/2017 18:54	127214
2-Hexanone	NELAP	1080		ND	µg/Kg-dry	12.5	02/16/2017 18:54	127214
2-Nitropropane	NELAP	1080		ND	µg/Kg-dry	12.5	02/16/2017 18:54	127214
4-Chlorotoluene	NELAP	108		ND	µg/Kg-dry	12.5	02/16/2017 18:54	127214
4-Methyl-2-pentanone	NELAP	1080		ND	µg/Kg-dry	12.5	02/16/2017 18:54	127214
Acetone	NELAP	1080		ND	µg/Kg-dry	12.5	02/16/2017 18:54	127214
Acrolein	NELAP	2160		ND	µg/Kg-dry	12.5	02/16/2017 18:54	127214
Acrylonitrile	NELAP	216		ND	µg/Kg-dry	12.5	02/16/2017 18:54	127214
Allyl chloride	NELAP	108		ND	µg/Kg-dry	12.5	02/16/2017 18:54	127214
Benzene	NELAP	21.6		442	µg/Kg-dry	12.5	02/16/2017 18:54	127214
Bromobenzene	NELAP	108		ND	µg/Kg-dry	12.5	02/16/2017 18:54	127214
Bromochloromethane	NELAP	108		ND	µg/Kg-dry	12.5	02/16/2017 18:54	127214
Bromodichloromethane	NELAP	108		ND	µg/Kg-dry	12.5	02/16/2017 18:54	127214
Bromoform	NELAP	108		ND	µg/Kg-dry	12.5	02/16/2017 18:54	127214
Bromomethane	NELAP	216		ND	µg/Kg-dry	12.5	02/16/2017 18:54	127214
Carbon disulfide	NELAP	108		ND	µg/Kg-dry	12.5	02/16/2017 18:54	127214
Carbon tetrachloride	NELAP	108		ND	µg/Kg-dry	12.5	02/16/2017 18:54	127214
Chlorobenzene	NELAP	108		ND	µg/Kg-dry	12.5	02/16/2017 18:54	127214
Chloroethane	NELAP	216		ND	µg/Kg-dry	12.5	02/16/2017 18:54	127214
Chloroform	NELAP	108		ND	µg/Kg-dry	12.5	02/16/2017 18:54	127214
Chloromethane	NELAP	216		ND	µg/Kg-dry	12.5	02/16/2017 18:54	127214
cis-1,2-Dichloroethene	NELAP	108		ND	µg/Kg-dry	12.5	02/16/2017 18:54	127214
cis-1,3-Dichloropropene	NELAP	86.3		ND	µg/Kg-dry	12.5	02/16/2017 18:54	127214
Cyclohexanone		2160		ND	µg/Kg-dry	12.5	02/16/2017 18:54	127214
Dibromochloromethane	NELAP	108		ND	µg/Kg-dry	12.5	02/16/2017 18:54	127214

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

Lab ID: 17020466-007 **Client Sample ID:** CH-FS-10 (14-15)

Matrix: SOLID **Collection Date:** 02/07/2017 12:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Dibromomethane	NELAP	108		**ND**	µg/Kg-dry	12.5	02/16/2017 18:54	127214
Dichlorodifluoromethane	NELAP	216		**ND**	µg/Kg-dry	12.5	02/16/2017 18:54	127214
Ethyl ether	NELAP	108		**ND**	µg/Kg-dry	12.5	02/16/2017 18:54	127214
Ethyl methacrylate	NELAP	108		**ND**	µg/Kg-dry	12.5	02/16/2017 18:54	127214
Ethylbenzene	NELAP	108		**476**	µg/Kg-dry	12.5	02/16/2017 18:54	127214
Hexachlorobutadiene	NELAP	108		**ND**	µg/Kg-dry	12.5	02/16/2017 18:54	127214
Hexachloroethane	NELAP	108		**ND**	µg/Kg-dry	12.5	02/16/2017 18:54	127214
Iodomethane	NELAP	216		**ND**	µg/Kg-dry	12.5	02/16/2017 18:54	127214
Isopropylbenzene	NELAP	108		**ND**	µg/Kg-dry	12.5	02/16/2017 18:54	127214
m,p-Xylenes	NELAP	108		**392**	µg/Kg-dry	12.5	02/16/2017 18:54	127214
Methacrylonitrile	NELAP	1080		**ND**	µg/Kg-dry	12.5	02/16/2017 18:54	127214
Methyl Methacrylate	NELAP	108		**ND**	µg/Kg-dry	12.5	02/16/2017 18:54	127214
Methyl tert-butyl ether	NELAP	43.1		**ND**	µg/Kg-dry	12.5	02/16/2017 18:54	127214
Methylacrylate	NELAP	216		**ND**	µg/Kg-dry	12.5	02/16/2017 18:54	127214
Methylene chloride	NELAP	108		**ND**	µg/Kg-dry	12.5	02/16/2017 18:54	127214
Naphthalene	NELAP	431		**4100**	µg/Kg-dry	25	02/16/2017 20:14	127214
n-Butylbenzene	NELAP	108		**ND**	µg/Kg-dry	12.5	02/16/2017 18:54	127214
n-Heptane		1080		**ND**	µg/Kg-dry	12.5	02/16/2017 18:54	127214
n-Hexane		431		**ND**	µg/Kg-dry	12.5	02/16/2017 18:54	127214
Nitrobenzene	NELAP	2160		**ND**	µg/Kg-dry	12.5	02/16/2017 18:54	127214
n-Propylbenzene	NELAP	108		**ND**	µg/Kg-dry	12.5	02/16/2017 18:54	127214
o-Xylene	NELAP	108		**991**	µg/Kg-dry	12.5	02/16/2017 18:54	127214
Pentachloroethane	NELAP	108		**ND**	µg/Kg-dry	12.5	02/16/2017 18:54	127214
p-Isopropyltoluene	NELAP	108		**ND**	µg/Kg-dry	12.5	02/16/2017 18:54	127214
Propionitrile	NELAP	1080		**ND**	µg/Kg-dry	12.5	02/16/2017 18:54	127214
sec-Butylbenzene	NELAP	108		**ND**	µg/Kg-dry	12.5	02/16/2017 18:54	127214
Styrene	NELAP	108		**ND**	µg/Kg-dry	12.5	02/16/2017 18:54	127214
tert-Butylbenzene	NELAP	108		**ND**	µg/Kg-dry	12.5	02/16/2017 18:54	127214
Tetrachloroethene	NELAP	108		**ND**	µg/Kg-dry	12.5	02/16/2017 18:54	127214
Tetrahydrofuran	NELAP	1080		**ND**	µg/Kg-dry	12.5	02/16/2017 18:54	127214
Toluene	NELAP	108		**ND**	µg/Kg-dry	12.5	02/16/2017 18:54	127214
trans-1,2-Dichloroethene	NELAP	108		**ND**	µg/Kg-dry	12.5	02/16/2017 18:54	127214
trans-1,3-Dichloropropene	NELAP	86.3		**ND**	µg/Kg-dry	12.5	02/16/2017 18:54	127214
Trichloroethene	NELAP	108		**ND**	µg/Kg-dry	12.5	02/16/2017 18:54	127214
Trichlorofluoromethane	NELAP	108		**ND**	µg/Kg-dry	12.5	02/16/2017 18:54	127214
Vinyl acetate	NELAP	1080		**ND**	µg/Kg-dry	12.5	02/16/2017 18:54	127214
Vinyl chloride	NELAP	43.1		**ND**	µg/Kg-dry	12.5	02/16/2017 18:54	127214
Surr: 1,2-Dichloroethane-d4		72.2-131		**96.5**	%REC	12.5	02/16/2017 18:54	127214
Surr: 4-Bromofluorobenzene		82.1-116		**108.9**	%REC	12.5	02/16/2017 18:54	127214
Surr: Dibromofluoromethane		77.7-120		**86.7**	%REC	12.5	02/16/2017 18:54	127214
Surr: Toluene-d8		86-116		**108.0**	%REC	12.5	02/16/2017 18:54	127214

LCS & LCSD recovered outside upper QC limits for acrolein. Sample results are below reporting limit. Data is reportable per 2009 TNI Standard (Volume1, Module 4, section 1.7.4.2).

Elevated reporting limit due to matrix interference.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

Lab ID: 17020466-008 **Client Sample ID:** CH-FS-11 (8-9)

Matrix: SOLID **Collection Date:** 02/07/2017 15:55

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**19.7**	%	1	02/14/2017 16:47	R229210
SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Acenaphthene	NELAP	0.241		**11.2**	mg/Kg-dry	10	02/15/2017 12:26	127131
Acenaphthylene	NELAP	0.241		**44.3**	mg/Kg-dry	10	02/15/2017 12:26	127131
Anthracene	NELAP	0.241		**28.6**	mg/Kg-dry	10	02/15/2017 12:26	127131
Benzo(a)anthracene	NELAP	0.710		**11.3**	mg/Kg-dry	10	02/15/2017 12:26	127131
Benzo(a)pyrene	NELAP	0.241		**9.63**	mg/Kg-dry	10	02/15/2017 12:26	127131
Benzo(b)fluoranthene	NELAP	0.241		**6.38**	mg/Kg-dry	10	02/15/2017 12:26	127131
Benzo(g,h,i)perylene	NELAP	0.241		**2.23**	mg/Kg-dry	10	02/15/2017 12:26	127131
Benzo(k)fluoranthene	NELAP	0.241		**4.70**	mg/Kg-dry	10	02/15/2017 12:26	127131
Chrysene	NELAP	0.241		**12.3**	mg/Kg-dry	10	02/15/2017 12:26	127131
Dibenzo(a,h)anthracene	NELAP	0.241		**1.38**	mg/Kg-dry	10	02/15/2017 12:26	127131
Fluoranthene	NELAP	0.241		**38.6**	mg/Kg-dry	10	02/15/2017 12:26	127131
Fluorene	NELAP	0.241		**50.1**	mg/Kg-dry	10	02/15/2017 12:26	127131
Indeno(1,2,3-cd)pyrene	NELAP	0.241		**2.24**	mg/Kg-dry	10	02/15/2017 12:26	127131
Naphthalene	NELAP	0.241		**97.5**	mg/Kg-dry	10	02/15/2017 12:26	127131
Phenanthrene	NELAP	0.241		**78.8**	mg/Kg-dry	10	02/15/2017 12:26	127131
Pyrene	NELAP	0.241		**29.9**	mg/Kg-dry	10	02/15/2017 12:26	127131
Surr: 2-Fluorobiphenyl		8.85-90.5		**47.1**	%REC	10	02/15/2017 12:26	127131
Surr: Nitrobenzene-d5		5-102		**48.7**	%REC	10	02/15/2017 12:26	127131
Surr: p-Terphenyl-d14		18.4-103		**61.1**	%REC	10	02/15/2017 12:26	127131
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2,4-Trichlorobenzene	NELAP	88.7		**ND**	mg/Kg-dry	25	02/15/2017 14:16	127103
1,2-Dichlorobenzene	NELAP	88.7		**ND**	mg/Kg-dry	25	02/15/2017 14:16	127103
1,3-Dichlorobenzene	NELAP	88.7		**ND**	mg/Kg-dry	25	02/15/2017 14:16	127103
1,4-Dichlorobenzene	NELAP	88.7		**ND**	mg/Kg-dry	25	02/15/2017 14:16	127103
2,4,5-Trichlorophenol	NELAP	62.1		**ND**	mg/Kg-dry	25	02/15/2017 14:16	127103
2,4,6-Trichlorophenol	NELAP	62.1		**ND**	mg/Kg-dry	25	02/15/2017 14:16	127103
2,4-Dichlorophenol	NELAP	88.7		**ND**	mg/Kg-dry	25	02/15/2017 14:16	127103
2,4-Dimethylphenol	NELAP	88.7		**ND**	mg/Kg-dry	25	02/15/2017 14:16	127103
2,4-Dinitrophenol	NELAP	177		**ND**	mg/Kg-dry	25	02/15/2017 14:16	127103
2,4-Dinitrotoluene	NELAP	62.1		**ND**	mg/Kg-dry	25	02/15/2017 14:16	127103
2,6-Dinitrotoluene	NELAP	62.1		**ND**	mg/Kg-dry	25	02/15/2017 14:16	127103
2-Chloronaphthalene	NELAP	62.1		**ND**	mg/Kg-dry	25	02/15/2017 14:16	127103
2-Chlorophenol	NELAP	88.7		**ND**	mg/Kg-dry	25	02/15/2017 14:16	127103
2-Methoxy-4-methylphenol		115		**ND**	mg/Kg-dry	25	02/15/2017 14:16	127103
2-Methylnaphthalene	NELAP	62.1		**72.5**	mg/Kg-dry	25	02/15/2017 14:16	127103
2-Nitroaniline	NELAP	177		**ND**	mg/Kg-dry	25	02/15/2017 14:16	127103
2-Nitrophenol	NELAP	62.1		**ND**	mg/Kg-dry	25	02/15/2017 14:16	127103
3,3´-Dichlorobenzidine	NELAP	62.1		**ND**	mg/Kg-dry	25	02/15/2017 14:16	127103
3-Nitroaniline	NELAP	177		**ND**	mg/Kg-dry	25	02/15/2017 14:16	127103
4,6-Dinitro-2-methylphenol	NELAP	177		**ND**	mg/Kg-dry	25	02/15/2017 14:16	127103
4-Bromophenyl phenyl ether	NELAP	62.1		**ND**	mg/Kg-dry	25	02/15/2017 14:16	127103
4-Chloro-3-methylphenol	NELAP	88.7		**ND**	mg/Kg-dry	25	02/15/2017 14:16	127103
4-Chloroaniline	NELAP	88.7		**ND**	mg/Kg-dry	25	02/15/2017 14:16	127103
4-Chlorophenyl phenyl ether	NELAP	62.1		**ND**	mg/Kg-dry	25	02/15/2017 14:16	127103
4-Nitroaniline	NELAP	88.7		**ND**	mg/Kg-dry	25	02/15/2017 14:16	127103

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

Lab ID: 17020466-008 **Client Sample ID:** CH-FS-11 (8-9)

Matrix: SOLID **Collection Date:** 02/07/2017 15:55

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
4-Nitrophenol	NELAP	62.1		ND	mg/Kg-dry	25	02/15/2017 14:16	127103
Aniline	NELAP	88.7		ND	mg/Kg-dry	25	02/15/2017 14:16	127103
Azobenzene		62.1		ND	mg/Kg-dry	25	02/15/2017 14:16	127103
Benzoic acid	NELAP	266		ND	mg/Kg-dry	25	02/15/2017 14:16	127103
Benzyl alcohol	NELAP	88.7		ND	mg/Kg-dry	25	02/15/2017 14:16	127103
Bis(2-chloroethoxy)methane	NELAP	62.1		ND	mg/Kg-dry	25	02/15/2017 14:16	127103
Bis(2-chloroethyl)ether	NELAP	88.7		ND	mg/Kg-dry	25	02/15/2017 14:16	127103
Bis(2-chloroisopropyl)ether	NELAP	62.1		ND	mg/Kg-dry	25	02/15/2017 14:16	127103
Bis(2-ethylhexyl)phthalate	NELAP	62.1		ND	mg/Kg-dry	25	02/15/2017 14:16	127103
Butyl benzyl phthalate	NELAP	62.1		ND	mg/Kg-dry	25	02/15/2017 14:16	127103
Carbazole	NELAP	88.7		ND	mg/Kg-dry	25	02/15/2017 14:16	127103
Dibenzofuran	NELAP	62.1		ND	mg/Kg-dry	25	02/15/2017 14:16	127103
Diethyl phthalate	NELAP	88.7		ND	mg/Kg-dry	25	02/15/2017 14:16	127103
Dimethyl phthalate	NELAP	62.1		ND	mg/Kg-dry	25	02/15/2017 14:16	127103
Di-n-butyl phthalate	NELAP	62.1		ND	mg/Kg-dry	25	02/15/2017 14:16	127103
Di-n-octyl phthalate	NELAP	62.1		ND	mg/Kg-dry	25	02/15/2017 14:16	127103
Hexachlorobenzene	NELAP	62.1		ND	mg/Kg-dry	25	02/15/2017 14:16	127103
Hexachlorobutadiene	NELAP	88.7		ND	mg/Kg-dry	25	02/15/2017 14:16	127103
Hexachlorocyclopentadiene	NELAP	62.1		ND	mg/Kg-dry	25	02/15/2017 14:16	127103
Hexachloroethane	NELAP	88.7		ND	mg/Kg-dry	25	02/15/2017 14:16	127103
Isophorone	NELAP	62.1		ND	mg/Kg-dry	25	02/15/2017 14:16	127103
m,p-Cresol	NELAP	88.7		ND	mg/Kg-dry	25	02/15/2017 14:16	127103
Nitrobenzene	NELAP	88.7		ND	mg/Kg-dry	25	02/15/2017 14:16	127103
N-Nitrosodimethylamine	NELAP	88.7		ND	mg/Kg-dry	25	02/15/2017 14:16	127103
N-Nitroso-di-n-propylamine	NELAP	88.7		ND	mg/Kg-dry	25	02/15/2017 14:16	127103
N-Nitrosodiphenylamine	NELAP	88.7		ND	mg/Kg-dry	25	02/15/2017 14:16	127103
o-Cresol	NELAP	88.7		ND	mg/Kg-dry	25	02/15/2017 14:16	127103
Pentachlorophenol	NELAP	355		ND	mg/Kg-dry	25	02/15/2017 14:16	127103
Phenol	NELAP	62.1		ND	mg/Kg-dry	25	02/15/2017 14:16	127103
Pyridine	NELAP	88.7		ND	mg/Kg-dry	25	02/15/2017 14:16	127103
1,2-Diphenylhydrazine		149		ND	mg/Kg-dry	25	02/15/2017 14:16	127103
Surr: 2,4,6-Tribromophenol		33-115		108.8	%REC	25	02/15/2017 14:16	127103
Surr: 2-Fluorobiphenyl		36.5-97.7		78.8	%REC	25	02/15/2017 14:16	127103
Surr: 2-Fluorophenol		39.4-92.8		59.4	%REC	25	02/15/2017 14:16	127103
Surr: Nitrobenzene-d5		34.7-90.1		65.9	%REC	25	02/15/2017 14:16	127103
Surr: Phenol-d5		42.8-106		77.8	%REC	25	02/15/2017 14:16	127103
Surr: p-Terphenyl-d14		43.7-124		87.8	%REC	25	02/15/2017 14:16	127103
Elevated reporting limit due to sample composition.								
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,1,2-Tetrachloroethane	NELAP	12100		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
1,1,1-Trichloroethane	NELAP	12100		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
1,1,2,2-Tetrachloroethane	NELAP	12100		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
1,1,2-Trichloro-1,2,2-trifluoroethane		12100		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
1,1,2-Trichloroethane	NELAP	12100		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
1,1-Dichloro-2-propanone		121000		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
1,1-Dichloroethane	NELAP	12100		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
1,1-Dichloroethene	NELAP	12100		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

Lab ID: 17020466-008 **Client Sample ID:** CH-FS-11 (8-9)

Matrix: SOLID **Collection Date:** 02/07/2017 15:55

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1-Dichloropropene	NELAP	12100		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
1,2,3-Trichlorobenzene	NELAP	12100		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
1,2,3-Trichloropropane	NELAP	24200		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
1,2,3-Trimethylbenzene		12100		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
1,2,4-Trichlorobenzene	NELAP	12100		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
1,2,4-Trimethylbenzene	NELAP	12100		15700	µg/Kg-dry	1000	02/14/2017 15:50	127123
1,2-Dibromo-3-chloropropane	NELAP	12100		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
1,2-Dibromoethane	NELAP	12100		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
1,2-Dichlorobenzene	NELAP	12100		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
1,2-Dichloroethane	NELAP	12100		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
1,2-Dichloropropane	NELAP	12100		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
1,3,5-Trimethylbenzene	NELAP	12100		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
1,3-Dichlorobenzene	NELAP	12100		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
1,3-Dichloropropane	NELAP	12100		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
1,4-Dichlorobenzene	NELAP	12100		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
1-Chlorobutane	NELAP	12100		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
2,2-Dichloropropane	NELAP	12100		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
2-Butanone	NELAP	483000		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
2-Chlorotoluene	NELAP	12100		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
2-Hexanone	NELAP	121000		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
2-Nitropropane	NELAP	121000		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
4-Chlorotoluene	NELAP	12100		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
4-Methyl-2-pentanone	NELAP	121000		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
Acetone	NELAP	121000		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
Acrolein	NELAP	242000		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
Acrylonitrile	NELAP	24200		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
Allyl chloride	NELAP	12100		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
Benzene	NELAP	2420		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
Bromobenzene	NELAP	12100		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
Bromochloromethane	NELAP	12100		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
Bromodichloromethane	NELAP	12100		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
Bromoform	NELAP	12100		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
Bromomethane	NELAP	24200		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
Carbon disulfide	NELAP	12100		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
Carbon tetrachloride	NELAP	12100		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
Chlorobenzene	NELAP	12100		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
Chloroethane	NELAP	24200		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
Chloroform	NELAP	12100		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
Chloromethane	NELAP	24200		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
cis-1,2-Dichloroethene	NELAP	12100		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
cis-1,3-Dichloropropene	NELAP	9670		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
Cyclohexanone		242000		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
Dibromochloromethane	NELAP	12100		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
Dibromomethane	NELAP	12100		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
Dichlorodifluoromethane	NELAP	24200		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
Ethyl ether	NELAP	12100		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123
Ethyl methacrylate	NELAP	12100		ND	µg/Kg-dry	1000	02/14/2017 15:50	127123

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

Lab ID: 17020466-008 **Client Sample ID:** CH-FS-11 (8-9)

Matrix: SOLID **Collection Date:** 02/07/2017 15:55

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Ethylbenzene	NELAP	12100		**ND**	µg/Kg-dry	1000	02/14/2017 15:50	127123
Hexachlorobutadiene	NELAP	12100		**ND**	µg/Kg-dry	1000	02/14/2017 15:50	127123
Hexachloroethane	NELAP	12100		**ND**	µg/Kg-dry	1000	02/14/2017 15:50	127123
Iodomethane	NELAP	24200		**ND**	µg/Kg-dry	1000	02/14/2017 15:50	127123
Isopropylbenzene	NELAP	12100		**ND**	µg/Kg-dry	1000	02/14/2017 15:50	127123
m,p-Xylenes	NELAP	12100		**19900**	µg/Kg-dry	1000	02/14/2017 15:50	127123
Methacrylonitrile	NELAP	121000		**ND**	µg/Kg-dry	1000	02/14/2017 15:50	127123
Methyl Methacrylate	NELAP	12100		**ND**	µg/Kg-dry	1000	02/14/2017 15:50	127123
Methyl tert-butyl ether	NELAP	4830		**ND**	µg/Kg-dry	1000	02/14/2017 15:50	127123
Methylacrylate	NELAP	24200		**ND**	µg/Kg-dry	1000	02/14/2017 15:50	127123
Methylene chloride	NELAP	12100		**ND**	µg/Kg-dry	1000	02/14/2017 15:50	127123
Naphthalene	NELAP	24200		**342000**	µg/Kg-dry	1000	02/14/2017 15:50	127123
n-Butylbenzene	NELAP	12100		**ND**	µg/Kg-dry	1000	02/14/2017 15:50	127123
n-Heptane		121000		**ND**	µg/Kg-dry	1000	02/14/2017 15:50	127123
n-Hexane		48300		**ND**	µg/Kg-dry	1000	02/14/2017 15:50	127123
Nitrobenzene	NELAP	242000		**ND**	µg/Kg-dry	1000	02/14/2017 15:50	127123
n-Propylbenzene	NELAP	12100		**ND**	µg/Kg-dry	1000	02/14/2017 15:50	127123
o-Xylene	NELAP	12100		**ND**	µg/Kg-dry	1000	02/14/2017 15:50	127123
Pentachloroethane	NELAP	12100		**ND**	µg/Kg-dry	1000	02/14/2017 15:50	127123
p-Isopropyltoluene	NELAP	12100		**ND**	µg/Kg-dry	1000	02/14/2017 15:50	127123
Propionitrile	NELAP	121000		**ND**	µg/Kg-dry	1000	02/14/2017 15:50	127123
sec-Butylbenzene	NELAP	12100		**ND**	µg/Kg-dry	1000	02/14/2017 15:50	127123
Styrene	NELAP	12100		**ND**	µg/Kg-dry	1000	02/14/2017 15:50	127123
tert-Butylbenzene	NELAP	12100		**ND**	µg/Kg-dry	1000	02/14/2017 15:50	127123
Tetrachloroethene	NELAP	12100		**ND**	µg/Kg-dry	1000	02/14/2017 15:50	127123
Tetrahydrofuran	NELAP	121000		**ND**	µg/Kg-dry	1000	02/14/2017 15:50	127123
Toluene	NELAP	12100		**ND**	µg/Kg-dry	1000	02/14/2017 15:50	127123
trans-1,2-Dichloroethene	NELAP	12100		**ND**	µg/Kg-dry	1000	02/14/2017 15:50	127123
trans-1,3-Dichloropropene	NELAP	9670		**ND**	µg/Kg-dry	1000	02/14/2017 15:50	127123
Trichloroethene	NELAP	12100		**ND**	µg/Kg-dry	1000	02/14/2017 15:50	127123
Trichlorofluoromethane	NELAP	12100		**ND**	µg/Kg-dry	1000	02/14/2017 15:50	127123
Vinyl acetate	NELAP	121000		**ND**	µg/Kg-dry	1000	02/14/2017 15:50	127123
Vinyl chloride	NELAP	4830		**ND**	µg/Kg-dry	1000	02/14/2017 15:50	127123
Surr: 1,2-Dichloroethane-d4		72.2-131		**107.7**	%REC	1000	02/14/2017 15:50	127123
Surr: 4-Bromofluorobenzene		82.1-116		**106.2**	%REC	1000	02/14/2017 15:50	127123
Surr: Dibromofluoromethane		77.7-120		**94.4**	%REC	1000	02/14/2017 15:50	127123
Surr: Toluene-d8		86-116		**106.9**	%REC	1000	02/14/2017 15:50	127123

LCS & LCSD recovered outside upper QC limits for multiple compounds. Sample results are below reporting limit. Data is reportable per 2009 TNI Standard (Volume1, Module 4, section 1.7.4.2).

Elevated reporting limit due to high levels of target and/or non-target analytes.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

Lab ID: 17020466-009 **Client Sample ID:** CH-FS-11 (11-12)

Matrix: SOLID **Collection Date:** 02/07/2017 16:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**12.7**	%	1	02/14/2017 16:47	R229210
SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Acenaphthene	NELAP	0.078	SR	**3.47**	mg/Kg-dry	10	02/15/2017 12:59	127131
Acenaphthylene	NELAP	0.777	SR	**19.0**	mg/Kg-dry	100	02/15/2017 16:48	127131
Anthracene	NELAP	0.078	SR	**9.83**	mg/Kg-dry	10	02/15/2017 12:59	127131
Benzo(a)anthracene	NELAP	0.228	SR	**4.49**	mg/Kg-dry	10	02/15/2017 12:59	127131
Benzo(a)pyrene	NELAP	0.078	SR	**4.07**	mg/Kg-dry	10	02/15/2017 12:59	127131
Benzo(b)fluoranthene	NELAP	0.078	SR	**6.35**	mg/Kg-dry	10	02/15/2017 12:59	127131
Benzo(g,h,i)perylene	NELAP	0.078	S	**1.05**	mg/Kg-dry	10	02/15/2017 12:59	127131
Benzo(k)fluoranthene	NELAP	0.078	SR	**1.83**	mg/Kg-dry	10	02/15/2017 12:59	127131
Chrysene	NELAP	0.078	SR	**5.03**	mg/Kg-dry	10	02/15/2017 12:59	127131
Dibenzo(a,h)anthracene	NELAP	0.078	S	**0.551**	mg/Kg-dry	10	02/15/2017 12:59	127131
Fluoranthene	NELAP	0.777	S	**17.2**	mg/Kg-dry	100	02/15/2017 16:48	127131
Fluorene	NELAP	0.777	S	**16.4**	mg/Kg-dry	100	02/15/2017 16:48	127131
Indeno(1,2,3-cd)pyrene	NELAP	0.078	SR	**1.27**	mg/Kg-dry	10	02/15/2017 12:59	127131
Naphthalene	NELAP	0.777	SR	**61.7**	mg/Kg-dry	100	02/15/2017 16:48	127131
Phenanthrene	NELAP	0.777	SR	**34.0**	mg/Kg-dry	100	02/15/2017 16:48	127131
Pyrene	NELAP	0.777	S	**14.7**	mg/Kg-dry	100	02/15/2017 16:48	127131
Surr: 2-Fluorobiphenyl		8.85-90.5		**46.6**	%REC	10	02/15/2017 12:59	127131
Surr: Nitrobenzene-d5		5-102		**52.9**	%REC	10	02/15/2017 12:59	127131
Surr: p-Terphenyl-d14		18.4-103		**63.9**	%REC	10	02/15/2017 12:59	127131
RPD, MS and MSD recovery did not recover within control limits due to sample composition.								
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2,4-Trichlorobenzene	NELAP	57.1		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
1,2-Dichlorobenzene	NELAP	57.1		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
1,3-Dichlorobenzene	NELAP	57.1		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
1,4-Dichlorobenzene	NELAP	57.1		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
2,4,5-Trichlorophenol	NELAP	40.0		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
2,4,6-Trichlorophenol	NELAP	40.0		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
2,4-Dichlorophenol	NELAP	57.1		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
2,4-Dimethylphenol	NELAP	57.1		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
2,4-Dinitrophenol	NELAP	114		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
2,4-Dinitrotoluene	NELAP	40.0		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
2,6-Dinitrotoluene	NELAP	40.0		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
2-Chloronaphthalene	NELAP	40.0		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
2-Chlorophenol	NELAP	57.1		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
2-Methoxy-4-methylphenol		74.2		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
2-Methylnaphthalene	NELAP	40.0		**40.1**	mg/Kg-dry	50	02/15/2017 14:45	127103
2-Nitroaniline	NELAP	114		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
2-Nitrophenol	NELAP	40.0		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
3,3´-Dichlorobenzidine	NELAP	40.0		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
3-Nitroaniline	NELAP	114		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
4,6-Dinitro-2-methylphenol	NELAP	114		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
4-Bromophenyl phenyl ether	NELAP	40.0		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
4-Chloro-3-methylphenol	NELAP	57.1		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
4-Chloroaniline	NELAP	57.1		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
4-Chlorophenyl phenyl ether	NELAP	40.0		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

Lab ID: 17020466-009 **Client Sample ID:** CH-FS-11 (11-12)

Matrix: SOLID **Collection Date:** 02/07/2017 16:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
4-Nitroaniline	NELAP	57.1		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
4-Nitrophenol	NELAP	40.0		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
Aniline	NELAP	57.1		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
Azobenzene		40.0		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
Benzoic acid	NELAP	171		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
Benzyl alcohol	NELAP	57.1		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
Bis(2-chloroethoxy)methane	NELAP	40.0		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
Bis(2-chloroethyl)ether	NELAP	57.1		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
Bis(2-chloroisopropyl)ether	NELAP	40.0		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
Bis(2-ethylhexyl)phthalate	NELAP	40.0		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
Butyl benzyl phthalate	NELAP	40.0		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
Carbazole	NELAP	57.1		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
Dibenzofuran	NELAP	40.0		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
Diethyl phthalate	NELAP	57.1		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
Dimethyl phthalate	NELAP	40.0		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
Di-n-butyl phthalate	NELAP	40.0		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
Di-n-octyl phthalate	NELAP	40.0		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
Hexachlorobenzene	NELAP	40.0		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
Hexachlorobutadiene	NELAP	57.1		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
Hexachlorocyclopentadiene	NELAP	40.0		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
Hexachloroethane	NELAP	57.1		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
Isophorone	NELAP	40.0		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
m,p-Cresol	NELAP	57.1		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
Nitrobenzene	NELAP	57.1		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
N-Nitrosodimethylamine	NELAP	57.1		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
N-Nitroso-di-n-propylamine	NELAP	57.1		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
N-Nitrosodiphenylamine	NELAP	57.1		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
o-Cresol	NELAP	57.1		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
Pentachlorophenol	NELAP	228		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
Phenol	NELAP	40.0		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
Pyridine	NELAP	57.1		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
1,2-Diphenylhydrazine		95.9		**ND**	mg/Kg-dry	50	02/15/2017 14:45	127103
Surr: 2,4,6-Tribromophenol		33-115	S	**156.7**	%REC	50	02/15/2017 14:45	127103
Surr: 2-Fluorobiphenyl		36.5-97.7		**79.8**	%REC	50	02/15/2017 14:45	127103
Surr: 2-Fluorophenol		39.4-92.8		**70.9**	%REC	50	02/15/2017 14:45	127103
Surr: Nitrobenzene-d5		34.7-90.1		**75.8**	%REC	50	02/15/2017 14:45	127103
Surr: Phenol-d5		42.8-106		**72.9**	%REC	50	02/15/2017 14:45	127103
Surr: p-Terphenyl-d14		43.7-124		**75.8**	%REC	50	02/15/2017 14:45	127103

Surrogate recovery is outside QC limits due to matrix interference.

Elevated reporting limit due to sample composition.

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,1,2-Tetrachloroethane	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
1,1,1-Trichloroethane	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
1,1,2,2-Tetrachloroethane	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
1,1,2-Trichloro-1,2,2-trifluoroethane		42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
1,1,2-Trichloroethane	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
1,1-Dichloro-2-propanone		426000		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

Lab ID: 17020466-009 **Client Sample ID:** CH-FS-11 (11-12)

Matrix: SOLID **Collection Date:** 02/07/2017 16:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1-Dichloroethane	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
1,1-Dichloroethene	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
1,1-Dichloropropene	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
1,2,3-Trichlorobenzene	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
1,2,3-Trichloropropane	NELAP	85200		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
1,2,3-Trimethylbenzene		42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
1,2,4-Trichlorobenzene	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
1,2,4-Trimethylbenzene	NELAP	42600		**45700**	µg/Kg-dry	5000	02/14/2017 16:17	127123
1,2-Dibromo-3-chloropropane	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
1,2-Dibromoethane	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
1,2-Dichlorobenzene	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
1,2-Dichloroethane	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
1,2-Dichloropropane	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
1,3,5-Trimethylbenzene	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
1,3-Dichlorobenzene	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
1,3-Dichloropropane	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
1,4-Dichlorobenzene	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
1-Chlorobutane	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
2,2-Dichloropropane	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
2-Butanone	NELAP	1700000		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
2-Chlorotoluene	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
2-Hexanone	NELAP	426000		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
2-Nitropropane	NELAP	426000		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
4-Chlorotoluene	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
4-Methyl-2-pentanone	NELAP	426000		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
Acetone	NELAP	426000		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
Acrolein	NELAP	852000		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
Acrylonitrile	NELAP	85200		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
Allyl chloride	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
Benzene	NELAP	8520		**17900**	µg/Kg-dry	5000	02/14/2017 16:17	127123
Bromobenzene	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
Bromochloromethane	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
Bromodichloromethane	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
Bromoform	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
Bromomethane	NELAP	85200		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
Carbon disulfide	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
Carbon tetrachloride	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
Chlorobenzene	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
Chloroethane	NELAP	85200		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
Chloroform	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
Chloromethane	NELAP	85200		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
cis-1,2-Dichloroethene	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
cis-1,3-Dichloropropene	NELAP	34100		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
Cyclohexanone		852000		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
Dibromochloromethane	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
Dibromomethane	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
Dichlorodifluoromethane	NELAP	85200		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

Lab ID: 17020466-009 **Client Sample ID:** CH-FS-11 (11-12)

Matrix: SOLID **Collection Date:** 02/07/2017 16:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Ethyl ether	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
Ethyl methacrylate	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
Ethylbenzene	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
Hexachlorobutadiene	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
Hexachloroethane	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
Iodomethane	NELAP	85200		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
Isopropylbenzene	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
m,p-Xylenes	NELAP	42600		**80500**	µg/Kg-dry	5000	02/14/2017 16:17	127123
Methacrylonitrile	NELAP	426000		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
Methyl Methacrylate	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
Methyl tert-butyl ether	NELAP	17000		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
Methylacrylate	NELAP	85200		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
Methylene chloride	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
Naphthalene	NELAP	85200		**841000**	µg/Kg-dry	5000	02/14/2017 16:17	127123
n-Butylbenzene	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
n-Heptane		426000		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
n-Hexane		170000		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
Nitrobenzene	NELAP	852000		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
n-Propylbenzene	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
o-Xylene	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
Pentachloroethane	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
p-Isopropyltoluene	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
Propionitrile	NELAP	426000		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
sec-Butylbenzene	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
Styrene	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
tert-Butylbenzene	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
Tetrachloroethene	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
Tetrahydrofuran	NELAP	426000		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
Toluene	NELAP	42600		**66500**	µg/Kg-dry	5000	02/14/2017 16:17	127123
trans-1,2-Dichloroethene	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
trans-1,3-Dichloropropene	NELAP	34100		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
Trichloroethene	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
Trichlorofluoromethane	NELAP	42600		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
Vinyl acetate	NELAP	426000		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
Vinyl chloride	NELAP	17000		**ND**	µg/Kg-dry	5000	02/14/2017 16:17	127123
Surr: 1,2-Dichloroethane-d4		72.2-131		**105.5**	%REC	5000	02/14/2017 16:17	127123
Surr: 4-Bromofluorobenzene		82.1-116		**101.1**	%REC	5000	02/14/2017 16:17	127123
Surr: Dibromofluoromethane		77.7-120		**94.4**	%REC	5000	02/14/2017 16:17	127123
Surr: Toluene-d8		86-116		**105.5**	%REC	5000	02/14/2017 16:17	127123

LCS & LCSD recovered outside upper QC limits for multiple compounds. Sample results are below reporting limit. Data is reportable per 2009 TNI Standard (Volume1, Module 4, section 1.7.4.2).

Elevated reporting limit due to high levels of target and/or non-target analytes.

Client: PSC Industrial Outsourcing, LP
Work Order: 17020466
Client Project: Champaign Soil Residual IRM 624-1610-001-J0055
Report Date: 17-Feb-17

Lab Sample ID	Client Sample ID	Matrix	Fractions	Collection Date
17020466-001	CH-FS-07 (7-8)	Solid	4	02/07/2017 9:45
17020466-002	CH-FS-07 (16-17)	Solid	4	02/07/2017 9:35
17020466-003	CH-FS-07 (19-20)	Solid	4	02/07/2017 9:25
17020466-004	CH-FS-08 (8-9)	Solid	4	02/07/2017 10:40
17020466-005	CH-FS-08 (12-13)	Solid	4	02/07/2017 10:50
17020466-006	CH-FS-09 (8-9)	Solid	4	02/07/2017 11:50
17020466-007	CH-FS-10 (14-15)	Solid	4	02/07/2017 12:40
17020466-008	CH-FS-11 (8-9)	Solid	4	02/07/2017 15:55
17020466-009	CH-FS-11 (11-12)	Solid	4	02/07/2017 16:00

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			Prep Date/Time	Analysis Date/Time
17020466-001A	CH-FS-07 (7-8)	02/07/2017 9:45	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/14/2017 16:44
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/14/2017 15:50	02/15/2017 9:10
	SW-846 3550B, 8270C, Semi-Volatile Organic Compounds by GC/MS			02/14/2017 15:56	02/15/2017 10:30
17020466-001D	CH-FS-07 (7-8)	02/07/2017 9:45	02/08/2017 8:02		
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/14/2017 16:44
17020466-002A	CH-FS-07 (16-17)	02/07/2017 9:35	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/14/2017 16:45
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/14/2017 15:50	02/15/2017 11:20
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/14/2017 15:50	02/15/2017 15:10
	SW-846 3550B, 8270C, Semi-Volatile Organic Compounds by GC/MS			02/14/2017 15:56	02/15/2017 12:51
17020466-002D	CH-FS-07 (16-17)	02/07/2017 9:35	02/08/2017 8:02		
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/14/2017 13:37
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/15/2017 11:02
17020466-003A	CH-FS-07 (19-20)	02/07/2017 9:25	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/14/2017 16:45
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/14/2017 15:50	02/15/2017 9:42
	SW-846 3550B, 8270C, Semi-Volatile Organic Compounds by GC/MS			02/14/2017 15:56	02/15/2017 10:58
17020466-003D	CH-FS-07 (19-20)	02/07/2017 9:25	02/08/2017 8:02		
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/14/2017 17:37
17020466-004A	CH-FS-08 (8-9)	02/07/2017 10:40	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/14/2017 16:46
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/14/2017 15:50	02/15/2017 10:48
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/14/2017 15:50	02/15/2017 15:43
	SW-846 3550B, 8270C, Semi-Volatile Organic Compounds by GC/MS			02/14/2017 15:56	02/15/2017 13:19
17020466-004D	CH-FS-08 (8-9)	02/07/2017 10:40	02/08/2017 8:02		
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/14/2017 14:31
17020466-005A	CH-FS-08 (12-13)	02/07/2017 10:50	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/14/2017 16:46
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/14/2017 15:50	02/15/2017 11:53
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/14/2017 15:50	02/15/2017 16:15
	SW-846 3550B, 8270C, Semi-Volatile Organic Compounds by GC/MS			02/14/2017 15:56	02/15/2017 13:48
17020466-005D	CH-FS-08 (12-13)	02/07/2017 10:50	02/08/2017 8:02		
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/14/2017 14:57
17020466-006A	CH-FS-09 (8-9)	02/07/2017 11:50	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/14/2017 16:46

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/14/2017 15:50	02/15/2017 10:15
	SW-846 3550B, 8270C, Semi-Volatile Organic Compounds by GC/MS			02/14/2017 15:56	02/15/2017 11:26
17020466-006B	CH-FS-09 (8-9)	02/07/2017 11:50	02/08/2017 8:02		
	ASTM D2974				02/16/2017 18:11
17020466-006D	CH-FS-09 (8-9)	02/07/2017 11:50	02/08/2017 8:02		
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/15/2017 11:29
17020466-007A	CH-FS-10 (14-15)	02/07/2017 12:40	02/08/2017 8:02		
	ASTM D2974				02/16/2017 18:12
	EPA SW846 3550C, 5035A, ASTM D2974				02/16/2017 18:12
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/16/2017 19:40	02/17/2017 10:01
	SW-846 3550B, 8270C, Semi-Volatile Organic Compounds by GC/MS			02/16/2017 19:31	02/17/2017 11:11
17020466-007D	CH-FS-10 (14-15)	02/07/2017 12:40	02/08/2017 8:02		
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/16/2017 18:54
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/16/2017 20:14
17020466-008A	CH-FS-11 (8-9)	02/07/2017 15:55	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/14/2017 16:47
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/14/2017 15:50	02/15/2017 12:26
	SW-846 3550B, 8270C, Semi-Volatile Organic Compounds by GC/MS			02/14/2017 15:56	02/15/2017 14:16
17020466-008D	CH-FS-11 (8-9)	02/07/2017 15:55	02/08/2017 8:02		
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/14/2017 15:50
17020466-009A	CH-FS-11 (11-12)	02/07/2017 16:00	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/14/2017 16:47
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/14/2017 15:50	02/15/2017 12:59
	SW-846 3550B, 8270C SIMS, Semi-Volatile Organic Compounds by GC/MS			02/14/2017 15:50	02/15/2017 16:48
	SW-846 3550B, 8270C, Semi-Volatile Organic Compounds by GC/MS			02/14/2017 15:56	02/15/2017 14:45
17020466-009D	CH-FS-11 (11-12)	02/07/2017 16:00	02/08/2017 8:02		
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/14/2017 16:17

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

ASTM D2974

Batch R229313 **SampType:** DUP Units **wt%** RPD Limit **25**

SampID: 17020466-007ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
FOC (0.58 conversion factor)	0.10		**0.55**				0.5700	3.57	02/16/2017

EPA SW846 3550C, 5035A, ASTM D2974

Batch R229210 **SampType:** LCS Units **%**

SampID: LCS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	02/14/2017

Batch R229210 **SampType:** LCSQC Units **%**

SampID: LCSQC

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	02/14/2017

Batch R229313 **SampType:** LCS Units **%**

SampID: LCS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	02/16/2017

Batch R229313 **SampType:** LCSQC Units **%**

SampID: LCSQC

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	02/16/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127131 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK-127131

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Acenaphthene	0.003		ND						02/15/2017
Acenaphthylene	0.003		ND						02/15/2017
Anthracene	0.003		ND						02/15/2017
Benzo(a)anthracene	0.010		ND						02/15/2017
Benzo(a)pyrene	0.003		ND						02/15/2017
Benzo(b)fluoranthene	0.003		ND						02/15/2017
Benzo(g,h,i)perylene	0.003		ND						02/15/2017
Benzo(k)fluoranthene	0.003		ND						02/15/2017
Chrysene	0.003		ND						02/15/2017
Dibenzo(a,h)anthracene	0.003		ND						02/15/2017
Fluoranthene	0.003		ND						02/15/2017
Fluorene	0.003		ND						02/15/2017
Indeno(1,2,3-cd)pyrene	0.003		ND						02/15/2017
Naphthalene	0.003		ND						02/15/2017
Phenanthrene	0.003		ND						02/15/2017
Pyrene	0.003		ND						02/15/2017
Surr: 2-Fluorobiphenyl			0.124	0.1670		74.3	30	101	02/15/2017
Surr: Nitrobenzene-d5			0.158	0.1670		94.7	24.4	112	02/15/2017
Surr: p-Terphenyl-d14			0.128	0.1670		76.8	31.9	121	02/15/2017

Batch 127131 **SampType:** LCS Units **mg/Kg**

SampID: LCS-127131

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Acenaphthene	0.003		0.125	0.1670	0	75.1	19.1	127	02/15/2017
Acenaphthylene	0.003		0.129	0.1670	0	77.0	30.2	115	02/15/2017
Anthracene	0.003		0.120	0.1670	0	71.8	26.9	107	02/15/2017
Benzo(a)anthracene	0.010		0.108	0.1670	0	64.6	27	116	02/15/2017
Benzo(a)pyrene	0.003		0.136	0.1670	0	81.2	22.7	117	02/15/2017
Benzo(b)fluoranthene	0.003		0.125	0.1670	0	74.6	23.8	125	02/15/2017
Benzo(g,h,i)perylene	0.003		0.121	0.1670	0	72.7	31.5	109	02/15/2017
Benzo(k)fluoranthene	0.003		0.134	0.1670	0	80.4	28.1	121	02/15/2017
Chrysene	0.003		0.118	0.1670	0	70.8	29.2	113	02/15/2017
Dibenzo(a,h)anthracene	0.003		0.122	0.1670	0	73.1	28.8	113	02/15/2017
Fluoranthene	0.003		0.132	0.1670	0	79.2	24.9	115	02/15/2017
Fluorene	0.003		0.140	0.1670	0	83.6	30	116	02/15/2017
Indeno(1,2,3-cd)pyrene	0.003		0.130	0.1670	0	77.9	29.5	113	02/15/2017
Naphthalene	0.003		0.163	0.1670	0	97.4	29.1	99.3	02/15/2017
Phenanthrene	0.003		0.120	0.1670	0	71.8	16.5	122	02/15/2017
Pyrene	0.003		0.132	0.1670	0	79.0	28	111	02/15/2017
Surr: 2-Fluorobiphenyl			0.116	0.1670		69.3	30	101	02/15/2017
Surr: Nitrobenzene-d5			0.140	0.1670		83.6	24.4	112	02/15/2017
Surr: p-Terphenyl-d14			0.118	0.1670		70.6	31.9	121	02/15/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127131 **SampType:** MS Units **mg/Kg-dry**

SampID: 17020466-009AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Acenaphthene	0.076	S	**5.83**	0.3757	3.473	626.6	30.6	109	02/15/2017
Acenaphthylene	0.765	S	**27.2**	0.3757	19.00	2177	28	110	02/15/2017
Anthracene	0.076	S	**15.3**	0.3757	9.828	1457	41.4	94.3	02/15/2017
Benzo(a)anthracene	0.225	S	**14.0**	0.3757	4.491	2523	28.6	113	02/15/2017
Benzo(a)pyrene	0.076	S	**6.82**	0.3757	4.073	731.6	37.9	102	02/15/2017
Benzo(b)fluoranthene	0.076	S	**10.8**	0.3757	6.354	1181	37.1	112	02/15/2017
Benzo(g,h,i)perylene	0.076	S	**1.67**	0.3757	1.047	166.1	7.28	119	02/15/2017
Benzo(k)fluoranthene	0.076	S	**3.47**	0.3757	1.833	435.8	34	115	02/15/2017
Chrysene	0.076	S	**7.76**	0.3757	5.033	726.9	23.1	116	02/15/2017
Dibenzo(a,h)anthracene	0.076	S	**1.03**	0.3757	0.5512	127.3	23.9	110	02/15/2017
Fluoranthene	0.765	S	**24.7**	0.3757	17.22	2001	20.8	124	02/15/2017
Fluorene	0.765	S	**23.5**	0.3757	16.42	1882	44.3	96.6	02/15/2017
Indeno(1,2,3-cd)pyrene	0.076	S	**2.09**	0.3757	1.271	218.9	12.6	119	02/15/2017
Naphthalene	0.765	S	**101**	0.3757	61.75	10580	17.8	110	02/15/2017
Phenanthrene	0.765	S	**50.4**	0.3757	33.99	4363	22.3	117	02/15/2017
Pyrene	0.765	S	**21.7**	0.3757	14.70	1857	20.6	121	02/15/2017
Surr: 2-Fluorobiphenyl			**0.148**	0.3757		39.5	8.85	90.5	02/15/2017
Surr: Nitrobenzene-d5			**0.139**	0.3757		37.1	5	102	02/15/2017
Surr: p-Terphenyl-d14			**0.252**	0.3757		67.1	18.4	103	02/15/2017

Batch 127131 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **49.7**

SampID: 17020466-009AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Acenaphthene	0.076	SR	**10.4**	0.3740	3.473	1860	5.827	56.63	02/15/2017
Acenaphthylene	0.761	SR	**47.4**	0.3740	19.00	7593	27.18	54.21	02/15/2017
Anthracene	0.076	SR	**30.8**	0.3740	9.828	5608	15.30	67.24	02/15/2017
Benzo(a)anthracene	0.224	SR	**23.5**	0.3740	4.491	5074	13.97	50.74	02/15/2017
Benzo(a)pyrene	0.076	SR	**14.1**	0.3740	4.073	2694	6.821	69.88	02/15/2017
Benzo(b)fluoranthene	0.076	SR	**21.2**	0.3740	6.354	3976	10.79	65.19	02/15/2017
Benzo(g,h,i)perylene	0.076	S	**2.39**	0.3740	1.047	358.2	1.671	35.28	02/15/2017
Benzo(k)fluoranthene	0.076	SR	**6.61**	0.3740	1.833	1277	3.470	62.29	02/15/2017
Chrysene	0.076	SR	**13.3**	0.3740	5.033	2203	7.764	52.36	02/15/2017
Dibenzo(a,h)anthracene	0.076	S	**1.46**	0.3740	0.5512	242.6	1.030	34.48	02/15/2017
Fluoranthene	0.761	S	**42.1**	0.3740	17.22	6642	24.74	51.87	02/15/2017
Fluorene	0.761	S	**41.2**	0.3740	16.42	6617	23.49	54.66	02/15/2017
Indeno(1,2,3-cd)pyrene	0.076	SR	**3.07**	0.3740	1.271	480.8	2.094	37.80	02/15/2017
Naphthalene	0.761	SR	**208**	0.3740	61.75	39140	101.5	68.87	02/15/2017
Phenanthrene	0.761	SR	**85.9**	0.3740	33.99	13890	50.39	52.17	02/15/2017
Pyrene	0.761	S	**37.4**	0.3740	14.70	6073	21.68	53.25	02/15/2017
Surr: 2-Fluorobiphenyl			**0.146**	0.3740		38.9			02/15/2017
Surr: Nitrobenzene-d5			**0.154**	0.3740		41.1			02/15/2017
Surr: p-Terphenyl-d14			**0.282**	0.3740		75.4			02/15/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127244 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK-127244

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Acenaphthene	0.003		ND						02/17/2017
Acenaphthylene	0.003		ND						02/17/2017
Anthracene	0.003		ND						02/17/2017
Benzo(a)anthracene	0.010		ND						02/17/2017
Benzo(a)pyrene	0.003		ND						02/17/2017
Benzo(b)fluoranthene	0.003		ND						02/17/2017
Benzo(g,h,i)perylene	0.003		ND						02/17/2017
Benzo(k)fluoranthene	0.003		ND						02/17/2017
Chrysene	0.003		ND						02/17/2017
Dibenzo(a,h)anthracene	0.003		ND						02/17/2017
Fluoranthene	0.003		ND						02/17/2017
Fluorene	0.003		ND						02/17/2017
Indeno(1,2,3-cd)pyrene	0.003		ND						02/17/2017
Naphthalene	0.003		ND						02/17/2017
Phenanthrene	0.003		ND						02/17/2017
Pyrene	0.003		ND						02/17/2017
Surr: 2-Fluorobiphenyl			**0.113**	0.1670		67.7	30	101	02/17/2017
Surr: Nitrobenzene-d5			**0.159**	0.1670		95.2	24.4	112	02/17/2017
Surr: p-Terphenyl-d14			**0.106**	0.1670		63.7	31.9	121	02/17/2017

Batch 127244 **SampType:** LCS Units **mg/Kg**

SampID: LCS-127244

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Acenaphthene	0.003		**0.114**	0.1670	0	68.1	19.1	127	02/17/2017
Acenaphthylene	0.003		**0.111**	0.1670	0	66.7	30.2	115	02/17/2017
Anthracene	0.003		**0.106**	0.1670	0	63.6	26.9	107	02/17/2017
Benzo(a)anthracene	0.010		**0.122**	0.1670	0	72.8	27	116	02/17/2017
Benzo(a)pyrene	0.003		**0.121**	0.1670	0	72.3	22.7	117	02/17/2017
Benzo(b)fluoranthene	0.003		**0.115**	0.1670	0	69.1	23.8	125	02/17/2017
Benzo(g,h,i)perylene	0.003		**0.110**	0.1670	0	65.8	31.5	109	02/17/2017
Benzo(k)fluoranthene	0.003		**0.120**	0.1670	0	72.1	28.1	121	02/17/2017
Chrysene	0.003		**0.112**	0.1670	0	67.1	29.2	113	02/17/2017
Dibenzo(a,h)anthracene	0.003		**0.113**	0.1670	0	67.7	28.8	113	02/17/2017
Fluoranthene	0.003		**0.118**	0.1670	0	70.9	24.9	115	02/17/2017
Fluorene	0.003		**0.124**	0.1670	0	74.3	30	116	02/17/2017
Indeno(1,2,3-cd)pyrene	0.003		**0.114**	0.1670	0	68.5	29.5	113	02/17/2017
Naphthalene	0.003		**0.093**	0.1670	0	55.7	29.1	99.3	02/17/2017
Phenanthrene	0.003		**0.105**	0.1670	0	63.2	16.5	122	02/17/2017
Pyrene	0.003		**0.116**	0.1670	0	69.7	28	111	02/17/2017
Surr: 2-Fluorobiphenyl			**0.101**	0.1670		60.6	30	101	02/17/2017
Surr: Nitrobenzene-d5			**0.080**	0.1670		47.7	24.4	112	02/17/2017
Surr: p-Terphenyl-d14			**0.111**	0.1670		66.4	31.9	121	02/17/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127244 **SampType:** MS Units **mg/Kg-dry**

SampID: 17020466-007AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Acenaphthene	0.025		**0.719**	1.214	0	59.2	30.6	109	02/17/2017
Acenaphthylene	0.025		**0.715**	1.214	0	58.9	28	110	02/17/2017
Anthracene	0.025		**0.662**	1.214	0	54.6	41.4	94.3	02/17/2017
Benzo(a)anthracene	0.073		**0.795**	1.214	0	65.5	28.6	113	02/17/2017
Benzo(a)pyrene	0.025		**0.786**	1.214	0	64.8	37.9	102	02/17/2017
Benzo(b)fluoranthene	0.025		**0.730**	1.214	0	60.1	37.1	112	02/17/2017
Benzo(g,h,i)perylene	0.025		**0.721**	1.214	0	59.4	7.28	119	02/17/2017
Benzo(k)fluoranthene	0.025		**0.771**	1.214	0	63.5	34	115	02/17/2017
Chrysene	0.025		**0.725**	1.214	0	59.7	23.1	116	02/17/2017
Dibenzo(a,h)anthracene	0.025		**0.717**	1.214	0	59.0	23.9	110	02/17/2017
Fluoranthene	0.025		**0.727**	1.214	0	59.9	20.8	124	02/17/2017
Fluorene	0.025		**0.783**	1.214	0	64.5	44.3	96.6	02/17/2017
Indeno(1,2,3-cd)pyrene	0.025		**0.730**	1.214	0	60.2	12.6	119	02/17/2017
Naphthalene	0.025		**1.37**	1.214	0.5454	68.2	17.8	110	02/17/2017
Phenanthrene	0.025		**0.680**	1.214	0	56.0	22.3	117	02/17/2017
Pyrene	0.025		**0.741**	1.214	0	61.1	20.6	121	02/17/2017
Surr: 2-Fluorobiphenyl			**0.582**	1.214		48.0	8.85	90.5	02/17/2017
Surr: Nitrobenzene-d5			**0.546**	1.214		45.0	5	102	02/17/2017
Surr: p-Terphenyl-d14			**0.688**	1.214		56.7	18.4	103	02/17/2017

Batch 127244 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **49.7**

SampID: 17020466-007AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Acenaphthene	0.024		**0.737**	1.192	0	61.8	0.7186	2.47	02/17/2017
Acenaphthylene	0.024		**0.736**	1.192	0	61.7	0.7150	2.85	02/17/2017
Anthracene	0.024		**0.700**	1.192	0	58.7	0.6624	5.58	02/17/2017
Benzo(a)anthracene	0.071		**0.820**	1.192	0	68.8	0.7952	3.12	02/17/2017
Benzo(a)pyrene	0.024		**0.827**	1.192	0	69.3	0.7859	5.04	02/17/2017
Benzo(b)fluoranthene	0.024		**0.778**	1.192	0	65.2	0.7300	6.34	02/17/2017
Benzo(g,h,i)perylene	0.024		**0.755**	1.192	0	63.3	0.7210	4.62	02/17/2017
Benzo(k)fluoranthene	0.024		**0.769**	1.192	0	64.5	0.7712	0.26	02/17/2017
Chrysene	0.024		**0.780**	1.192	0	65.4	0.7251	7.25	02/17/2017
Dibenzo(a,h)anthracene	0.024		**0.756**	1.192	0	63.4	0.7167	5.29	02/17/2017
Fluoranthene	0.024		**0.755**	1.192	0	63.3	0.7266	3.79	02/17/2017
Fluorene	0.024		**0.796**	1.192	0	66.7	0.7828	1.62	02/17/2017
Indeno(1,2,3-cd)pyrene	0.024		**0.768**	1.192	0	64.4	0.7305	5.01	02/17/2017
Naphthalene	0.024		**1.31**	1.192	0.5454	64.2	1.374	4.72	02/17/2017
Phenanthrene	0.024		**0.687**	1.192	0	57.6	0.6798	1.06	02/17/2017
Pyrene	0.024		**0.753**	1.192	0	63.2	0.7411	1.62	02/17/2017
Surr: 2-Fluorobiphenyl			**0.568**	1.192		47.6			02/17/2017
Surr: Nitrobenzene-d5			**0.525**	1.192		44.0			02/17/2017
Surr: p-Terphenyl-d14			**0.691**	1.192		57.9			02/17/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127103 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK-127103

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,2,4-Trichlorobenzene	0.500		ND						02/14/2017
1,2-Dichlorobenzene	0.500		ND						02/14/2017
1,3-Dichlorobenzene	0.500		ND						02/14/2017
1,4-Dichlorobenzene	0.500		ND						02/14/2017
2,4,5-Trichlorophenol	0.350		ND						02/14/2017
2,4,6-Trichlorophenol	0.350		ND						02/14/2017
2,4-Dichlorophenol	0.500		ND						02/14/2017
2,4-Dimethylphenol	0.500		ND						02/14/2017
2,4-Dinitrophenol	1.00		ND						02/14/2017
2,4-Dinitrotoluene	0.350		ND						02/14/2017
2,6-Dinitrotoluene	0.350		ND						02/14/2017
2-Chloronaphthalene	0.350		ND						02/14/2017
2-Chlorophenol	0.500		ND						02/14/2017
2-Methoxy-4-methylphenol	0.650		ND						02/14/2017
2-Methylnaphthalene	0.350		ND						02/14/2017
2-Nitroaniline	1.00		ND						02/14/2017
2-Nitrophenol	0.350		ND						02/14/2017
3,3´-Dichlorobenzidine	0.350		ND						02/14/2017
3-Nitroaniline	1.00		ND						02/14/2017
4,6-Dinitro-2-methylphenol	1.00		ND						02/14/2017
4-Bromophenyl phenyl ether	0.350		ND						02/14/2017
4-Chloro-3-methylphenol	0.500		ND						02/14/2017
4-Chloroaniline	0.500		ND						02/14/2017
4-Chlorophenyl phenyl ether	0.350		ND						02/14/2017
4-Nitroaniline	0.500		ND						02/14/2017
4-Nitrophenol	0.350		ND						02/14/2017
Aniline	0.500		ND						02/14/2017
Azobenzene	0.350		ND						02/14/2017
Benzoic acid	1.50		ND						02/14/2017
Benzyl alcohol	0.500		ND						02/14/2017
Bis(2-chloroethoxy)methane	0.350		ND						02/14/2017
Bis(2-chloroethyl)ether	0.500		ND						02/14/2017
Bis(2-chloroisopropyl)ether	0.350		ND						02/14/2017
Bis(2-ethylhexyl)phthalate	0.350		ND						02/14/2017
Butyl benzyl phthalate	0.350		ND						02/14/2017
Carbazole	0.500		ND						02/14/2017
Dibenzofuran	0.350		ND						02/14/2017
Diethyl phthalate	0.500		ND						02/14/2017
Dimethyl phthalate	0.350		ND						02/14/2017
Di-n-butyl phthalate	0.350		ND						02/14/2017
Di-n-octyl phthalate	0.350		ND						02/14/2017
Hexachlorobenzene	0.350		ND						02/14/2017
Hexachlorobutadiene	0.500		ND						02/14/2017
Hexachlorocyclopentadiene	0.350		ND						02/14/2017
Hexachloroethane	0.500		ND						02/14/2017
Isophorone	0.350		ND						02/14/2017
m,p-Cresol	0.500		ND						02/14/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127103 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK-127103

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Nitrobenzene	0.500		**ND**						02/14/2017
N-Nitrosodimethylamine	0.500		**ND**						02/14/2017
N-Nitroso-di-n-propylamine	0.500		**ND**						02/14/2017
N-Nitrosodiphenylamine	0.500		**ND**						02/14/2017
o-Cresol	0.500		**ND**						02/14/2017
Pentachlorophenol	2.00		**ND**						02/14/2017
Phenol	0.350		**ND**						02/14/2017
Pyridine	0.500		**ND**						02/14/2017
1,2-Diphenylhydrazine	0.840		**ND**						02/14/2017
Surr: 2,4,6-Tribromophenol			**1.04**	1.670		62.6	50.5	116	02/14/2017
Surr: 2-Fluorobiphenyl			**0.554**	0.8350		66.4	47.4	102	02/14/2017
Surr: 2-Fluorophenol			**1.08**	1.670		65.0	43.7	98.6	02/14/2017
Surr: Nitrobenzene-d5			**0.560**	0.8350		67.0	39	97.3	02/14/2017
Surr: Phenol-d5			**1.22**	1.670		73.2	48.1	104	02/14/2017
Surr: p-Terphenyl-d14			**0.659**	0.8350		78.9	53.2	119	02/14/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127103 **SampType:** LCS Units **mg/Kg**

SampID: LCS-127103

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,2,4-Trichlorobenzene	0.500		**1.03**	1.670	0	61.4	52.4	102	02/14/2017
1,4-Dichlorobenzene	0.500		**1.03**	1.670	0	61.4	43	86.1	02/14/2017
2,4,5-Trichlorophenol	0.350		**1.11**	1.670	0	66.5	55.1	106	02/14/2017
2,4,6-Trichlorophenol	0.350		**1.01**	1.670	0	60.7	54	105	02/14/2017
2,4-Dimethylphenol	0.500		**0.920**	1.670	0	55.1	46.8	103	02/14/2017
2,4-Dinitrophenol	1.00		**ND**	1.670	0	48.8	38	95.6	02/14/2017
2,4-Dinitrotoluene	0.350		**1.24**	1.670	0	74.5	55.6	109	02/14/2017
2-Chlorophenol	0.500		**0.903**	1.670	0	54.1	51.1	92.4	02/14/2017
4-Chloro-3-methylphenol	0.500		**1.08**	1.670	0	64.4	52	97.3	02/14/2017
4-Nitrophenol	0.350		**0.994**	1.670	0	59.5	48	99.6	02/14/2017
Bis(2-ethylhexyl)phthalate	0.350		**0.953**	1.670	0	57.0	48.3	106	02/14/2017
Diethyl phthalate	0.500		**1.29**	1.670	0	77.3	56.9	103	02/14/2017
Dimethyl phthalate	0.350		**1.20**	1.670	0	71.8	56.4	98.1	02/14/2017
Di-n-butyl phthalate	0.350		**1.05**	1.670	0	62.6	54.8	100	02/14/2017
Hexachlorobenzene	0.350		**1.13**	1.670	0	67.8	54.1	102	02/14/2017
Hexachlorobutadiene	0.500		**0.955**	1.670	0	57.2	46	103	02/14/2017
Hexachloroethane	0.500		**1.01**	1.670	0	60.7	45	90	02/14/2017
m,p-Cresol	0.500		**1.09**	1.670	0	65.5	53	98.5	02/14/2017
Nitrobenzene	0.500		**0.902**	1.670	0	54.0	44.4	86.6	02/14/2017
N-Nitroso-di-n-propylamine	0.500		**1.12**	1.670	0	67.3	39.8	94.3	02/14/2017
o-Cresol	0.500		**1.03**	1.670	0	61.7	52.1	96.4	02/14/2017
Pentachlorophenol	2.00		**ND**	1.670	0	54.5	37	91.7	02/14/2017
Phenol	0.350		**1.04**	1.670	0	62.1	52.9	95.6	02/14/2017
Pyridine	0.500		**0.784**	1.670	0	46.9	30	77.1	02/14/2017
Surr: 2,4,6-Tribromophenol			**1.07**	1.670		63.9	50.5	116	02/14/2017
Surr: 2-Fluorobiphenyl			**0.503**	0.8350		60.2	47.4	102	02/14/2017
Surr: 2-Fluorophenol			**0.885**	1.670		53.0	43.7	98.6	02/14/2017
Surr: Nitrobenzene-d5			**0.421**	0.8350		50.4	39	97.3	02/14/2017
Surr: Phenol-d5			**0.998**	1.670		59.8	48.1	104	02/14/2017
Surr: p-Terphenyl-d14			**0.579**	0.8350		69.4	53.2	119	02/14/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127103 **SampType:** MS Units **mg/Kg-dry**

SampID: 17020466-006AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,2,4-Trichlorobenzene	0.633		**1.53**	2.114	0	72.3	35.9	102	02/15/2017
1,4-Dichlorobenzene	0.633		**1.26**	2.114	0	59.6	29.8	95.5	02/15/2017
2,4,5-Trichlorophenol	0.443		**1.69**	2.114	0	79.8	38.6	123	02/15/2017
2,4,6-Trichlorophenol	0.443		**1.62**	2.114	0	76.7	35.9	123	02/15/2017
2,4-Dimethylphenol	0.633		**1.55**	2.114	0	73.1	38.3	88	02/15/2017
2,4-Dinitrophenol	1.27		**ND**	2.114	0	54.8	1.88	162	02/15/2017
2,4-Dinitrotoluene	0.443		**1.73**	2.114	0	81.8	37.5	107	02/15/2017
2-Chlorophenol	0.633		**1.58**	2.114	0	74.6	22.6	108	02/15/2017
4-Chloro-3-methylphenol	0.633		**1.76**	2.114	0	83.2	19.3	131	02/15/2017
4-Nitrophenol	0.443		**1.44**	2.114	0	68.1	27.6	123	02/15/2017
Bis(2-ethylhexyl)phthalate	0.443		**1.41**	2.114	0	66.5	56.3	109	02/15/2017
Diethyl phthalate	0.633		**1.74**	2.114	0	82.4	51.7	106	02/15/2017
Dimethyl phthalate	0.443		**1.78**	2.114	0	84.0	58.8	104	02/15/2017
Di-n-butyl phthalate	0.443		**1.58**	2.114	0	74.7	54.3	105	02/15/2017
Hexachlorobenzene	0.443		**1.63**	2.114	0	77.1	55.9	106	02/15/2017
Hexachlorobutadiene	0.633		**1.42**	2.114	0	67.2	35.7	100	02/15/2017
Hexachloroethane	0.633		**1.32**	2.114	0	62.3	38.9	89.9	02/15/2017
m,p-Cresol	0.633		**1.75**	2.114	0	82.9	37.6	93.7	02/15/2017
Nitrobenzene	0.633		**1.47**	2.114	0	69.5	51.8	104	02/15/2017
N-Nitroso-di-n-propylamine	0.633		**1.90**	2.114	0	90.0	45.5	99.1	02/15/2017
o-Cresol	0.633		**1.72**	2.114	0	81.4	43	101	02/15/2017
Pentachlorophenol	2.53		**ND**	2.114	0	63.3	18.5	113	02/15/2017
Phenol	0.443		**1.71**	2.114	0	80.8	20.8	110	02/15/2017
Pyridine	0.633		**1.09**	2.114	0	51.7	3.61	74.3	02/15/2017
Surr: 2,4,6-Tribromophenol			**1.39**	2.114		65.6	33	115	02/15/2017
Surr: 2-Fluorobiphenyl			**0.498**	1.057		47.1	36.5	97.7	02/15/2017
Surr: 2-Fluorophenol			**1.32**	2.114		62.2	39.4	92.8	02/15/2017
Surr: Nitrobenzene-d5			**0.666**	1.057		63.0	34.7	90.1	02/15/2017
Surr: Phenol-d5			**1.59**	2.114		75.0	42.8	106	02/15/2017
Surr: p-Terphenyl-d14			**0.853**	1.057		80.7	43.7	124	02/15/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127103 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **40**

SampID: 17020466-006AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
1,2,4-Trichlorobenzene	0.635		**1.57**	2.119	0	74.0	1.530	2.50	02/15/2017
1,4-Dichlorobenzene	0.635		**1.34**	2.119	0	63.1	1.261	5.90	02/15/2017
2,4,5-Trichlorophenol	0.444		**1.67**	2.119	0	79.0	1.687	0.82	02/15/2017
2,4,6-Trichlorophenol	0.444		**1.64**	2.119	0	77.5	1.622	1.27	02/15/2017
2,4-Dimethylphenol	0.635		**1.43**	2.119	0	67.6	1.546	7.65	02/15/2017
2,4-Dinitrophenol	1.27		**ND**	2.119	0	55.2	1.159	0.00	02/15/2017
2,4-Dinitrotoluene	0.444		**1.85**	2.119	0	87.2	1.730	6.63	02/15/2017
2-Chlorophenol	0.635		**1.65**	2.119	0	77.9	1.578	4.61	02/15/2017
4-Chloro-3-methylphenol	0.635		**1.72**	2.119	0	81.2	1.760	2.22	02/15/2017
4-Nitrophenol	0.444		**1.44**	2.119	0	68.2	1.440	0.29	02/15/2017
Bis(2-ethylhexyl)phthalate	0.444		**1.46**	2.119	0	69.0	1.406	3.86	02/15/2017
Diethyl phthalate	0.635		**1.80**	2.119	0	85.1	1.743	3.45	02/15/2017
Dimethyl phthalate	0.444		**1.82**	2.119	0	85.7	1.776	2.28	02/15/2017
Di-n-butyl phthalate	0.444		**1.56**	2.119	0	73.8	1.580	1.06	02/15/2017
Hexachlorobenzene	0.444		**1.75**	2.119	0	82.8	1.631	7.28	02/15/2017
Hexachlorobutadiene	0.635		**1.42**	2.119	0	67.0	1.420	0.03	02/15/2017
Hexachloroethane	0.635		**1.39**	2.119	0	65.6	1.316	5.54	02/15/2017
m,p-Cresol	0.635		**1.83**	2.119	0	86.1	1.752	4.09	02/15/2017
Nitrobenzene	0.635		**1.44**	2.119	0	67.8	1.469	2.18	02/15/2017
N-Nitroso-di-n-propylamine	0.635		**1.95**	2.119	0	91.8	1.904	2.19	02/15/2017
o-Cresol	0.635		**1.75**	2.119	0	82.6	1.721	1.70	02/15/2017
Pentachlorophenol	2.54		**ND**	2.119	0	59.1	1.339	0.00	02/15/2017
Phenol	0.444		**1.78**	2.119	0	83.8	1.708	3.85	02/15/2017
Pyridine	0.635		**1.23**	2.119	0	58.2	1.092	12.22	02/15/2017
Surr: 2,4,6-Tribromophenol			**1.46**	2.119		68.9			02/15/2017
Surr: 2-Fluorobiphenyl			**0.496**	1.060		46.8			02/15/2017
Surr: 2-Fluorophenol			**1.46**	2.119		68.9			02/15/2017
Surr: Nitrobenzene-d5			**0.681**	1.060		64.2			02/15/2017
Surr: Phenol-d5			**1.61**	2.119		75.7			02/15/2017
Surr: p-Terphenyl-d14			**0.841**	1.060		79.4			02/15/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127243 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK-127243

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,2,4-Trichlorobenzene	0.500		ND						02/17/2017
1,2-Dichlorobenzene	0.500		ND						02/17/2017
1,3-Dichlorobenzene	0.500		ND						02/17/2017
1,4-Dichlorobenzene	0.500		ND						02/17/2017
2,4,5-Trichlorophenol	0.350		ND						02/17/2017
2,4,6-Trichlorophenol	0.350		ND						02/17/2017
2,4-Dichlorophenol	0.500		ND						02/17/2017
2,4-Dimethylphenol	0.500		ND						02/17/2017
2,4-Dinitrophenol	1.00		ND						02/17/2017
2,4-Dinitrotoluene	0.350		ND						02/17/2017
2,6-Dinitrotoluene	0.350		ND						02/17/2017
2-Chloronaphthalene	0.350		ND						02/17/2017
2-Chlorophenol	0.500		ND						02/17/2017
2-Methoxy-4-methylphenol	0.650		ND						02/17/2017
2-Methylnaphthalene	0.350		ND						02/17/2017
2-Nitroaniline	1.00		ND						02/17/2017
2-Nitrophenol	0.350		ND						02/17/2017
3,3´-Dichlorobenzidine	0.350		ND						02/17/2017
3-Nitroaniline	1.00		ND						02/17/2017
4,6-Dinitro-2-methylphenol	1.00		ND						02/17/2017
4-Bromophenyl phenyl ether	0.350		ND						02/17/2017
4-Chloro-3-methylphenol	0.500		ND						02/17/2017
4-Chloroaniline	0.500		ND						02/17/2017
4-Chlorophenyl phenyl ether	0.350		ND						02/17/2017
4-Nitroaniline	0.500		ND						02/17/2017
4-Nitrophenol	0.350		ND						02/17/2017
Aniline	0.500		ND						02/17/2017
Azobenzene	0.350		ND						02/17/2017
Benzoic acid	1.50		ND						02/17/2017
Benzyl alcohol	0.500		ND						02/17/2017
Bis(2-chloroethoxy)methane	0.350		ND						02/17/2017
Bis(2-chloroethyl)ether	0.500		ND						02/17/2017
Bis(2-chloroisopropyl)ether	0.350		ND						02/17/2017
Bis(2-ethylhexyl)phthalate	0.350		ND						02/17/2017
Butyl benzyl phthalate	0.350		ND						02/17/2017
Carbazole	0.500		ND						02/17/2017
Dibenzofuran	0.350		ND						02/17/2017
Diethyl phthalate	0.500		ND						02/17/2017
Dimethyl phthalate	0.350		ND						02/17/2017
Di-n-butyl phthalate	0.350		ND						02/17/2017
Di-n-octyl phthalate	0.350		ND						02/17/2017
Hexachlorobenzene	0.350		ND						02/17/2017
Hexachlorobutadiene	0.500		ND						02/17/2017
Hexachlorocyclopentadiene	0.350		ND						02/17/2017
Hexachloroethane	0.500		ND						02/17/2017
Isophorone	0.350		ND						02/17/2017
m,p-Cresol	0.500		ND						02/17/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127243 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK-127243

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Nitrobenzene	0.500		**ND**						02/17/2017
N-Nitrosodimethylamine	0.500		**ND**						02/17/2017
N-Nitroso-di-n-propylamine	0.500		**ND**						02/17/2017
N-Nitrosodiphenylamine	0.500		**ND**						02/17/2017
o-Cresol	0.500		**ND**						02/17/2017
Pentachlorophenol	2.00		**ND**						02/17/2017
Phenol	0.350		**ND**						02/17/2017
Pyridine	0.500		**ND**						02/17/2017
1,2-Diphenylhydrazine	0.840		**ND**						02/17/2017
Surr: 2,4,6-Tribromophenol			**1.28**	1.670		76.8	50.5	116	02/17/2017
Surr: 2-Fluorobiphenyl			**0.734**	0.8350		87.9	47.4	102	02/17/2017
Surr: 2-Fluorophenol			**1.27**	1.670		76.1	43.7	98.6	02/17/2017
Surr: Nitrobenzene-d5			**0.716**	0.8350		85.8	39	97.3	02/17/2017
Surr: Phenol-d5			**1.49**	1.670		89.4	48.1	104	02/17/2017
Surr: p-Terphenyl-d14			**0.761**	0.8350		91.1	53.2	119	02/17/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127243 **SampType:** LCS Units **mg/Kg**

SampID: LCS-127243

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,2,4-Trichlorobenzene	0.500		**1.30**	1.670	0	78.1	52.4	102	02/17/2017
1,4-Dichlorobenzene	0.500		**1.33**	1.670	0	79.4	43	86.1	02/17/2017
2,4,5-Trichlorophenol	0.350		**1.40**	1.670	0	84.0	55.1	106	02/17/2017
2,4,6-Trichlorophenol	0.350		**1.41**	1.670	0	84.3	54	105	02/17/2017
2,4-Dimethylphenol	0.500		**1.19**	1.670	0	71.3	46.8	103	02/17/2017
2,4-Dinitrophenol	1.00		**1.10**	1.670	0	66.1	38	95.6	02/17/2017
2,4-Dinitrotoluene	0.350		**1.57**	1.670	0	94.0	55.6	109	02/17/2017
2-Chlorophenol	0.500		**1.26**	1.670	0	75.4	51.1	92.4	02/17/2017
4-Chloro-3-methylphenol	0.500		**1.42**	1.670	0	85.2	52	97.3	02/17/2017
4-Nitrophenol	0.350		**1.20**	1.670	0	71.6	48	99.6	02/17/2017
Bis(2-ethylhexyl)phthalate	0.350		**1.27**	1.670	0	76.2	48.3	106	02/17/2017
Diethyl phthalate	0.500		**1.63**	1.670	0	97.5	56.9	103	02/17/2017
Dimethyl phthalate	0.350		**1.48**	1.670	0	88.4	56.4	98.1	02/17/2017
Di-n-butyl phthalate	0.350		**1.41**	1.670	0	84.7	54.8	100	02/17/2017
Hexachlorobenzene	0.350		**1.45**	1.670	0	87.1	54.1	102	02/17/2017
Hexachlorobutadiene	0.500		**1.32**	1.670	0	79.1	46	103	02/17/2017
Hexachloroethane	0.500		**1.38**	1.670	0	82.4	45	90	02/17/2017
m,p-Cresol	0.500		**1.42**	1.670	0	85.1	53	98.5	02/17/2017
Nitrobenzene	0.500		**1.19**	1.670	0	71.1	44.4	86.6	02/17/2017
N-Nitroso-di-n-propylamine	0.500	S	**1.63**	1.670	0	97.8	39.8	94.3	02/17/2017
o-Cresol	0.500		**1.45**	1.670	0	86.7	52.1	96.4	02/17/2017
Pentachlorophenol	2.00		**ND**	1.670	0	68.8	37	91.7	02/17/2017
Phenol	0.350		**1.40**	1.670	0	83.8	52.9	95.6	02/17/2017
Pyridine	0.500		**1.05**	1.670	0	62.7	30	77.1	02/17/2017
Surr: 2,4,6-Tribromophenol			**1.27**	1.670		76.0	50.5	116	02/17/2017
Surr: 2-Fluorobiphenyl			**0.583**	0.8350		69.8	47.4	102	02/17/2017
Surr: 2-Fluorophenol			**1.12**	1.670		66.8	43.7	98.6	02/17/2017
Surr: Nitrobenzene-d5			**0.573**	0.8350		68.6	39	97.3	02/17/2017
Surr: Phenol-d5			**1.30**	1.670		77.5	48.1	104	02/17/2017
Surr: p-Terphenyl-d14			**0.746**	0.8350		89.4	53.2	119	02/17/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127243 **SampType:** MS Units **mg/Kg-dry**

SampID: 17020466-007AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,2,4-Trichlorobenzene	3.61		**9.57**	12.07	0	79.3	35.9	102	02/17/2017
1,4-Dichlorobenzene	3.61		**9.66**	12.07	0	80.1	29.8	95.5	02/17/2017
2,4,5-Trichlorophenol	2.53		**9.41**	12.07	0	78.0	38.6	123	02/17/2017
2,4,6-Trichlorophenol	2.53		**9.84**	12.07	0	81.5	35.9	123	02/17/2017
2,4-Dimethylphenol	3.61		**8.99**	12.07	0	74.5	38.3	88	02/17/2017
2,4-Dinitrophenol	7.22		**7.33**	12.07	0	60.8	1.88	162	02/17/2017
2,4-Dinitrotoluene	2.53		**10.7**	12.07	0	88.6	37.5	107	02/17/2017
2-Chlorophenol	3.61		**9.11**	12.07	0	75.5	22.6	108	02/17/2017
4-Chloro-3-methylphenol	3.61		**10.7**	12.07	0	88.4	19.3	131	02/17/2017
4-Nitrophenol	2.53		**8.49**	12.07	0	70.4	27.6	123	02/17/2017
Bis(2-ethylhexyl)phthalate	2.53		**9.03**	12.07	0	74.9	56.3	109	02/17/2017
Diethyl phthalate	3.61		**11.8**	12.07	0	97.8	51.7	106	02/17/2017
Dimethyl phthalate	2.53		**10.4**	12.07	0	86.4	58.8	104	02/17/2017
Di-n-butyl phthalate	2.53		**9.27**	12.07	0	76.8	54.3	105	02/17/2017
Hexachlorobenzene	2.53		**9.75**	12.07	0	80.8	55.9	106	02/17/2017
Hexachlorobutadiene	3.61		**9.40**	12.07	0	77.9	35.7	100	02/17/2017
Hexachloroethane	3.61		**9.79**	12.07	0	81.1	38.9	89.9	02/17/2017
m,p-Cresol	3.61		**9.69**	12.07	0	80.3	37.6	93.7	02/17/2017
Nitrobenzene	3.61		**8.52**	12.07	0	70.6	51.8	104	02/17/2017
N-Nitroso-di-n-propylamine	3.61		**11.2**	12.07	0	93.1	45.5	99.1	02/17/2017
o-Cresol	3.61		**10.3**	12.07	0	85.2	43	101	02/17/2017
Pentachlorophenol	14.4		**ND**	12.07	0	60.0	18.5	113	02/17/2017
Phenol	2.53		**10.3**	12.07	0	85.7	20.8	110	02/17/2017
Pyridine	3.61		**5.96**	12.07	0	49.4	3.61	74.3	02/17/2017
Surr: 2,4,6-Tribromophenol			**8.55**	12.07		70.9	33	115	02/17/2017
Surr: 2-Fluorobiphenyl			**4.19**	6.033		69.5	36.5	97.7	02/17/2017
Surr: 2-Fluorophenol			**7.35**	12.07		60.9	39.4	92.8	02/17/2017
Surr: Nitrobenzene-d5			**3.93**	6.033		65.1	34.7	90.1	02/17/2017
Surr: Phenol-d5			**9.54**	12.07		79.1	42.8	106	02/17/2017
Surr: p-Terphenyl-d14			**4.90**	6.033		81.2	43.7	124	02/17/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127243 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **40**

SampID: 17020466-007AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
1,2,4-Trichlorobenzene	3.62		**9.27**	12.09	0	76.7	9.573	3.23	02/17/2017
1,4-Dichlorobenzene	3.62		**8.75**	12.09	0	72.4	9.665	9.88	02/17/2017
2,4,5-Trichlorophenol	2.53		**9.55**	12.09	0	79.0	9.409	1.52	02/17/2017
2,4,6-Trichlorophenol	2.53		**9.19**	12.09	0	76.0	9.836	6.82	02/17/2017
2,4-Dimethylphenol	3.62		**8.68**	12.09	0	71.8	8.988	3.46	02/17/2017
2,4-Dinitrophenol	7.24		**8.04**	12.09	0	66.5	7.333	9.23	02/17/2017
2,4-Dinitrotoluene	2.53		**11.2**	12.09	0	92.7	10.69	4.69	02/17/2017
2-Chlorophenol	3.62		**8.50**	12.09	0	70.3	9.106	6.92	02/17/2017
4-Chloro-3-methylphenol	3.62		**9.57**	12.09	0	79.1	10.67	10.88	02/17/2017
4-Nitrophenol	2.53		**8.76**	12.09	0	72.5	8.492	3.13	02/17/2017
Bis(2-ethylhexyl)phthalate	2.53		**8.64**	12.09	0	71.4	9.034	4.49	02/17/2017
Diethyl phthalate	3.62		**11.7**	12.09	0	96.4	11.80	1.20	02/17/2017
Dimethyl phthalate	2.53		**11.0**	12.09	0	91.0	10.42	5.38	02/17/2017
Di-n-butyl phthalate	2.53		**8.96**	12.09	0	74.2	9.267	3.32	02/17/2017
Hexachlorobenzene	2.53		**9.33**	12.09	0	77.2	9.749	4.40	02/17/2017
Hexachlorobutadiene	3.62		**8.61**	12.09	0	71.2	9.400	8.77	02/17/2017
Hexachloroethane	3.62		**8.83**	12.09	0	73.0	9.785	10.27	02/17/2017
m,p-Cresol	3.62		**9.58**	12.09	0	79.3	9.689	1.08	02/17/2017
Nitrobenzene	3.62		**8.33**	12.09	0	68.9	8.521	2.23	02/17/2017
N-Nitroso-di-n-propylamine	3.62		**10.6**	12.09	0	88.1	11.23	5.35	02/17/2017
o-Cresol	3.62		**9.39**	12.09	0	77.7	10.29	9.06	02/17/2017
Pentachlorophenol	14.5		**ND**	12.09	0	63.6	7.239	0.00	02/17/2017
Phenol	2.53		**9.46**	12.09	0	78.3	10.34	8.83	02/17/2017
Pyridine	3.62		**5.64**	12.09	0	46.6	5.958	5.54	02/17/2017
Surr: 2,4,6-Tribromophenol			**9.64**	12.09		79.7			02/17/2017
Surr: 2-Fluorobiphenyl			**4.26**	6.045		70.5			02/17/2017
Surr: 2-Fluorophenol			**8.05**	12.09		66.6			02/17/2017
Surr: Nitrobenzene-d5			**4.36**	6.045		72.1			02/17/2017
Surr: Phenol-d5			**9.23**	12.09		76.4			02/17/2017
Surr: p-Terphenyl-d14			**4.69**	6.045		77.6			02/17/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127123 **SampType:** MBLK Units µg/Kg

SampID: MBLK-F170214A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		ND						02/14/2017
1,1,1-Trichloroethane	5.0		ND						02/14/2017
1,1,2,2-Tetrachloroethane	5.0		ND						02/14/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		ND						02/14/2017
1,1,2-Trichloroethane	5.0		ND						02/14/2017
1,1-Dichloro-2-propanone	50.0		ND						02/14/2017
1,1-Dichloroethane	5.0		ND						02/14/2017
1,1-Dichloroethene	5.0		ND						02/14/2017
1,1-Dichloropropene	5.0		ND						02/14/2017
1,2,3-Trichlorobenzene	5.0		ND						02/14/2017
1,2,3-Trichloropropane	10.0		ND						02/14/2017
1,2,3-Trimethylbenzene	5.0		ND						02/14/2017
1,2,4-Trichlorobenzene	5.0		ND						02/14/2017
1,2,4-Trimethylbenzene	5.0		ND						02/14/2017
1,2-Dibromo-3-chloropropane	5.0		ND						02/14/2017
1,2-Dibromoethane	5.0		ND						02/14/2017
1,2-Dichlorobenzene	5.0		ND						02/14/2017
1,2-Dichloroethane	5.0		ND						02/14/2017
1,2-Dichloropropane	5.0		ND						02/14/2017
1,3,5-Trimethylbenzene	5.0		ND						02/14/2017
1,3-Dichlorobenzene	5.0		ND						02/14/2017
1,3-Dichloropropane	5.0		ND						02/14/2017
1,4-Dichlorobenzene	5.0		ND						02/14/2017
1-Chlorobutane	5.0		ND						02/14/2017
2,2-Dichloropropane	5.0		ND						02/14/2017
2-Butanone	50.0		ND						02/14/2017
2-Chlorotoluene	5.0		ND						02/14/2017
2-Hexanone	50.0		ND						02/14/2017
2-Nitropropane	50.0		ND						02/14/2017
4-Chlorotoluene	5.0		ND						02/14/2017
4-Methyl-2-pentanone	50.0		ND						02/14/2017
Acetone	50.0		ND						02/14/2017
Acrolein	100		ND						02/14/2017
Acrylonitrile	10.0		ND						02/14/2017
Allyl chloride	5.0		ND						02/14/2017
Benzene	1.0		ND						02/14/2017
Bromobenzene	5.0		ND						02/14/2017
Bromochloromethane	5.0		ND						02/14/2017
Bromodichloromethane	5.0		ND						02/14/2017
Bromoform	5.0		ND						02/14/2017
Bromomethane	10.0		ND						02/14/2017
Carbon disulfide	5.0		ND						02/14/2017
Carbon tetrachloride	5.0		ND						02/14/2017
Chlorobenzene	5.0		ND						02/14/2017
Chloroethane	10.0		ND						02/14/2017
Chloroform	5.0		ND						02/14/2017
Chloromethane	10.0		ND						02/14/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127123 **SampType:** MBLK Units µg/Kg

SampID: MBLK-F170214A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		ND						02/14/2017
cis-1,3-Dichloropropene	4.0		ND						02/14/2017
Cyclohexanone	100		ND						02/14/2017
Dibromochloromethane	5.0		ND						02/14/2017
Dibromomethane	5.0		ND						02/14/2017
Dichlorodifluoromethane	10.0		ND						02/14/2017
Ethyl ether	5.0		ND						02/14/2017
Ethyl methacrylate	5.0		ND						02/14/2017
Ethylbenzene	5.0		ND						02/14/2017
Hexachlorobutadiene	5.0		ND						02/14/2017
Hexachloroethane	5.0		ND						02/14/2017
Iodomethane	10.0		ND						02/14/2017
Isopropylbenzene	5.0		ND						02/14/2017
m,p-Xylenes	5.0		ND						02/14/2017
Methacrylonitrile	50.0		ND						02/14/2017
Methyl Methacrylate	5.0		ND						02/14/2017
Methyl tert-butyl ether	2.0		ND						02/14/2017
Methylacrylate	10.0		ND						02/14/2017
Methylene chloride	5.0		ND						02/14/2017
Naphthalene	10.0		ND						02/14/2017
n-Butylbenzene	5.0		ND						02/14/2017
n-Heptane	20.0		ND						02/14/2017
n-Hexane	20.0		ND						02/14/2017
Nitrobenzene	100		ND						02/14/2017
n-Propylbenzene	5.0		ND						02/14/2017
o-Xylene	5.0		ND						02/14/2017
Pentachloroethane	5.0		ND						02/14/2017
p-Isopropyltoluene	5.0		ND						02/14/2017
Propionitrile	50.0		ND						02/14/2017
sec-Butylbenzene	5.0		ND						02/14/2017
Styrene	5.0		ND						02/14/2017
tert-Butylbenzene	5.0		ND						02/14/2017
Tetrachloroethene	5.0		ND						02/14/2017
Tetrahydrofuran	50.0		ND						02/14/2017
Toluene	5.0		ND						02/14/2017
trans-1,2-Dichloroethene	5.0		ND						02/14/2017
trans-1,3-Dichloropropene	4.0		ND						02/14/2017
Trichloroethene	5.0		ND						02/14/2017
Trichlorofluoromethane	5.0		ND						02/14/2017
Vinyl acetate	50.0		ND						02/14/2017
Vinyl chloride	2.0		ND						02/14/2017
Surr: 1,2-Dichloroethane-d4			**52.8**	50.00		105.6	72.2	131	02/14/2017
Surr: 4-Bromofluorobenzene			**52.0**	50.00		104.0	82.1	116	02/14/2017
Surr: Dibromofluoromethane			**46.1**	50.00		92.1	77.7	120	02/14/2017
Surr: Toluene-d8			**53.6**	50.00		107.2	86	116	02/14/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127123 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-F170214A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		**54.4**	50.00	0	108.8	51.55	5.36	02/14/2017
1,1,1-Trichloroethane	5.0		**49.0**	50.00	0	97.9	46.71	4.72	02/14/2017
1,1,2,2-Tetrachloroethane	5.0		**53.7**	50.00	0	107.4	55.90	4.03	02/14/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		**47.8**	50.00	0	95.6	46.45	2.89	02/14/2017
1,1,2-Trichloroethane	5.0		**50.7**	50.00	0	101.5	51.01	0.53	02/14/2017
1,1-Dichloro-2-propanone	50.0		**129**	125.0	0	103.0	161.0	22.27	02/14/2017
1,1-Dichloroethane	5.0		**47.3**	50.00	0	94.5	45.98	2.77	02/14/2017
1,1-Dichloroethene	5.0		**49.9**	50.00	0	99.9	47.85	4.25	02/14/2017
1,1-Dichloropropene	5.0		**47.2**	50.00	0	94.4	46.02	2.55	02/14/2017
1,2,3-Trichlorobenzene	5.0		**56.8**	50.00	0	113.7	57.47	1.08	02/14/2017
1,2,3-Trichloropropane	10.0		**54.3**	50.00	0	108.7	56.80	4.45	02/14/2017
1,2,3-Trimethylbenzene	5.0		**55.0**	50.00	0	109.9	55.35	0.73	02/14/2017
1,2,4-Trichlorobenzene	5.0		**60.0**	50.00	0	120.0	61.87	3.05	02/14/2017
1,2,4-Trimethylbenzene	5.0		**57.0**	50.00	0	114.0	55.72	2.27	02/14/2017
1,2-Dibromo-3-chloropropane	5.0		**56.3**	50.00	0	112.5	59.81	6.10	02/14/2017
1,2-Dibromoethane	5.0		**52.1**	50.00	0	104.2	52.80	1.32	02/14/2017
1,2-Dichlorobenzene	5.0		**53.5**	50.00	0	107.0	54.98	2.69	02/14/2017
1,2-Dichloroethane	5.0		**50.0**	50.00	0	100.0	48.84	2.39	02/14/2017
1,2-Dichloropropane	5.0		**45.0**	50.00	0	90.1	44.06	2.18	02/14/2017
1,3,5-Trimethylbenzene	5.0		**57.1**	50.00	0	114.2	55.30	3.24	02/14/2017
1,3-Dichlorobenzene	5.0		**54.3**	50.00	0	108.6	56.23	3.46	02/14/2017
1,3-Dichloropropane	5.0		**52.7**	50.00	0	105.5	52.58	0.28	02/14/2017
1,4-Dichlorobenzene	5.0		**54.4**	50.00	0	108.8	54.46	0.15	02/14/2017
1-Chlorobutane	5.0		**48.7**	50.00	0	97.5	46.44	4.81	02/14/2017
2,2-Dichloropropane	5.0		**49.2**	50.00	0	98.4	47.51	3.47	02/14/2017
2-Butanone	50.0		**148**	125.0	0	118.3	144.7	2.19	02/14/2017
2-Chlorotoluene	5.0		**56.8**	50.00	0	113.5	55.94	1.44	02/14/2017
2-Hexanone	50.0		**154**	125.0	0	123.3	156.2	1.33	02/14/2017
2-Nitropropane	50.0		**553**	500.0	0	110.6	556.0	0.57	02/14/2017
4-Chlorotoluene	5.0		**51.1**	50.00	0	102.2	52.52	2.78	02/14/2017
4-Methyl-2-pentanone	50.0		**133**	125.0	0	106.1	145.6	9.37	02/14/2017
Acetone	50.0		**158**	125.0	0	126.7	131.0	18.93	02/14/2017
Acrolein	100	SE	**2730**	500.0	0	545.1	2778	1.91	02/14/2017
Acrylonitrile	10.0		**49.4**	50.00	0	98.8	51.69	4.55	02/14/2017
Allyl chloride	5.0		**48.2**	50.00	0	96.4	46.42	3.80	02/14/2017
Benzene	1.0		**45.4**	50.00	0	90.7	44.02	2.98	02/14/2017
Bromobenzene	5.0		**54.5**	50.00	0	109.1	54.58	0.07	02/14/2017
Bromochloromethane	5.0		**47.4**	50.00	0	94.8	44.99	5.24	02/14/2017
Bromodichloromethane	5.0		**48.5**	50.00	0	96.9	46.19	4.82	02/14/2017
Bromoform	5.0		**54.9**	50.00	0	109.8	57.33	4.31	02/14/2017
Bromomethane	10.0		**13.5**	50.00	0	27.0	10.78	22.55	02/14/2017
Carbon disulfide	5.0		**45.1**	50.00	0	90.2	42.31	6.43	02/14/2017
Carbon tetrachloride	5.0		**51.0**	50.00	0	102.1	48.62	4.84	02/14/2017
Chlorobenzene	5.0		**52.6**	50.00	0	105.1	50.76	3.47	02/14/2017
Chloroethane	10.0		**46.1**	50.00	0	92.2	40.52	12.84	02/14/2017
Chloroform	5.0		**46.8**	50.00	0	93.7	44.75	4.56	02/14/2017
Chloromethane	10.0		**53.0**	50.00	0	105.9	48.73	8.32	02/14/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127123 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-F170214A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
cis-1,2-Dichloroethene	5.0		**47.9**	50.00	0	95.7	46.98	1.88	02/14/2017
cis-1,3-Dichloropropene	4.0		**48.4**	50.00	0	96.9	46.46	4.17	02/14/2017
Cyclohexanone	100		**493**	500.0	0	98.7	521.8	5.57	02/14/2017
Dibromochloromethane	5.0		**55.6**	50.00	0	111.1	54.54	1.85	02/14/2017
Dibromomethane	5.0		**46.1**	50.00	0	92.3	45.51	1.35	02/14/2017
Dichlorodifluoromethane	10.0		**54.3**	50.00	0	108.7	48.44	11.46	02/14/2017
Ethyl ether	5.0		**47.8**	50.00	0	95.6	45.90	4.10	02/14/2017
Ethyl methacrylate	5.0		**55.2**	50.00	0	110.4	56.54	2.43	02/14/2017
Ethylbenzene	5.0		**53.9**	50.00	0	107.8	52.15	3.30	02/14/2017
Hexachlorobutadiene	5.0		**59.2**	50.00	0	118.3	58.16	1.69	02/14/2017
Hexachloroethane	5.0	S	**61.2**	50.00	0	122.5	59.79	2.38	02/14/2017
Iodomethane	10.0		**21.8**	50.00	0	43.6	19.88	9.30	02/14/2017
Isopropylbenzene	5.0		**53.6**	50.00	0	107.2	51.45	4.13	02/14/2017
m,p-Xylenes	5.0		**111**	100.0	0	111.0	104.0	6.47	02/14/2017
Methacrylonitrile	50.0		**ND**	50.00	0	98.9	49.18	0.00	02/14/2017
Methyl Methacrylate	5.0		**48.2**	50.00	0	96.4	51.87	7.29	02/14/2017
Methyl tert-butyl ether	2.0		**48.0**	50.00	0	96.1	44.31	8.10	02/14/2017
Methylacrylate	10.0		**58.3**	50.00	0	116.6	59.74	2.42	02/14/2017
Methylene chloride	5.0		**47.3**	50.00	0	94.6	45.33	4.23	02/14/2017
Naphthalene	10.0		**58.2**	50.00	0	116.5	60.89	4.47	02/14/2017
n-Butylbenzene	5.0		**59.7**	50.00	0	119.4	61.09	2.32	02/14/2017
n-Heptane	20.0		**56.1**	50.00	0	112.3	56.54	0.73	02/14/2017
n-Hexane	20.0		**52.5**	50.00	0	105.0	52.25	0.48	02/14/2017
Nitrobenzene	100		**532**	500.0	0	106.4	583.8	9.26	02/14/2017
n-Propylbenzene	5.0		**56.7**	50.00	0	113.4	57.01	0.55	02/14/2017
o-Xylene	5.0		**54.5**	50.00	0	109.1	52.87	3.09	02/14/2017
Pentachloroethane	5.0	S	**61.6**	50.00	0	123.3	60.34	2.13	02/14/2017
p-Isopropyltoluene	5.0		**56.6**	50.00	0	113.3	58.44	3.15	02/14/2017
Propionitrile	50.0		**486**	500.0	0	97.1	512.7	5.44	02/14/2017
sec-Butylbenzene	5.0		**56.9**	50.00	0	113.8	55.32	2.78	02/14/2017
Styrene	5.0		**54.5**	50.00	0	109.0	51.85	5.02	02/14/2017
tert-Butylbenzene	5.0		**55.8**	50.00	0	111.5	53.75	3.67	02/14/2017
Tetrachloroethene	5.0		**52.0**	50.00	0	103.9	49.81	4.21	02/14/2017
Tetrahydrofuran	50.0		**50.3**	50.00	0	100.6	50.34	0.10	02/14/2017
Toluene	5.0		**50.8**	50.00	0	101.6	48.22	5.25	02/14/2017
trans-1,2-Dichloroethene	5.0		**47.9**	50.00	0	95.8	46.11	3.83	02/14/2017
trans-1,3-Dichloropropene	4.0		**56.4**	50.00	0	112.8	55.47	1.64	02/14/2017
Trichloroethene	5.0		**46.2**	50.00	0	92.3	45.46	1.51	02/14/2017
Trichlorofluoromethane	5.0		**49.8**	50.00	0	99.7	44.65	10.97	02/14/2017
Vinyl acetate	50.0		**51.6**	50.00	0	103.3	58.60	12.65	02/14/2017
Vinyl chloride	2.0		**45.7**	50.00	0	91.4	42.55	7.14	02/14/2017
Surr: 1,2-Dichloroethane-d4			**53.8**	50.00		107.6			02/14/2017
Surr: 4-Bromofluorobenzene			**52.0**	50.00		103.9			02/14/2017
Surr: Dibromofluoromethane			**49.6**	50.00		99.2			02/14/2017
Surr: Toluene-d8			**52.9**	50.00		105.8			02/14/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127123 **SampType:** LCS Units µg/Kg

SampID: LCS-F170214A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		**51.6**	50.00	0	103.1	83.1	114	02/14/2017
1,1,1-Trichloroethane	5.0		**46.7**	50.00	0	93.4	78.5	119	02/14/2017
1,1,2,2-Tetrachloroethane	5.0		**55.9**	50.00	0	111.8	67.4	120	02/14/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		**46.4**	50.00	0	92.9	75.4	121	02/14/2017
1,1,2-Trichloroethane	5.0		**51.0**	50.00	0	102.0	81.1	111	02/14/2017
1,1-Dichloro-2-propanone	50.0		**161**	125.0	0	128.8	55.4	131	02/14/2017
1,1-Dichloroethane	5.0		**46.0**	50.00	0	92.0	80.1	116	02/14/2017
1,1-Dichloroethene	5.0		**47.8**	50.00	0	95.7	73.1	121	02/14/2017
1,1-Dichloropropene	5.0		**46.0**	50.00	0	92.0	82.2	114	02/14/2017
1,2,3-Trichlorobenzene	5.0		**57.5**	50.00	0	114.9	81.7	130	02/14/2017
1,2,3-Trichloropropane	10.0		**56.8**	50.00	0	113.6	67.8	118	02/14/2017
1,2,3-Trimethylbenzene	5.0		**55.4**	50.00	0	110.7	82.1	127	02/14/2017
1,2,4-Trichlorobenzene	5.0		**61.9**	50.00	0	123.7	72.3	141	02/14/2017
1,2,4-Trimethylbenzene	5.0		**55.7**	50.00	0	111.4	79.7	123	02/14/2017
1,2-Dibromo-3-chloropropane	5.0		**59.8**	50.00	0	119.6	62.1	123	02/14/2017
1,2-Dibromoethane	5.0		**52.8**	50.00	0	105.6	82.4	112	02/14/2017
1,2-Dichlorobenzene	5.0		**55.0**	50.00	0	110.0	82.7	119	02/14/2017
1,2-Dichloroethane	5.0		**48.8**	50.00	0	97.7	72.8	120	02/14/2017
1,2-Dichloropropane	5.0		**44.1**	50.00	0	88.1	80	116	02/14/2017
1,3,5-Trimethylbenzene	5.0		**55.3**	50.00	0	110.6	81.5	125	02/14/2017
1,3-Dichlorobenzene	5.0		**56.2**	50.00	0	112.5	82	124	02/14/2017
1,3-Dichloropropane	5.0		**52.6**	50.00	0	105.2	79.8	113	02/14/2017
1,4-Dichlorobenzene	5.0		**54.5**	50.00	0	108.9	81.1	124	02/14/2017
1-Chlorobutane	5.0		**46.4**	50.00	0	92.9	77.2	113	02/14/2017
2,2-Dichloropropane	5.0		**47.5**	50.00	0	95.0	76.6	121	02/14/2017
2-Butanone	50.0		**145**	125.0	0	115.8	62.8	131	02/14/2017
2-Chlorotoluene	5.0		**55.9**	50.00	0	111.9	78.8	121	02/14/2017
2-Hexanone	50.0		**156**	125.0	0	124.9	63.1	125	02/14/2017
2-Nitropropane	50.0		**556**	500.0	0	111.2	61.2	129	02/14/2017
4-Chlorotoluene	5.0		**52.5**	50.00	0	105.0	77.6	124	02/14/2017
4-Methyl-2-pentanone	50.0		**146**	125.0	0	116.5	60.6	126	02/14/2017
Acetone	50.0		**131**	125.0	0	104.8	39.5	159	02/14/2017
Acrolein	100	SE	**2780**	500.0	0	555.6	1	167	02/14/2017
Acrylonitrile	10.0		**51.7**	50.00	0	103.4	67	124	02/14/2017
Allyl chloride	5.0		**46.4**	50.00	0	92.8	58.5	129	02/14/2017
Benzene	1.0		**44.0**	50.00	0	88.0	80.8	117	02/14/2017
Bromobenzene	5.0		**54.6**	50.00	0	109.2	79.6	117	02/14/2017
Bromochloromethane	5.0		**45.0**	50.00	0	90.0	70.7	121	02/14/2017
Bromodichloromethane	5.0		**46.2**	50.00	0	92.4	80.7	121	02/14/2017
Bromoform	5.0		**57.3**	50.00	0	114.7	79.8	118	02/14/2017
Bromomethane	10.0		**10.8**	50.00	0	21.6	1	175	02/14/2017
Carbon disulfide	5.0		**42.3**	50.00	0	84.6	62.8	123	02/14/2017
Carbon tetrachloride	5.0		**48.6**	50.00	0	97.2	77.6	123	02/14/2017
Chlorobenzene	5.0		**50.8**	50.00	0	101.5	85.6	116	02/14/2017
Chloroethane	10.0		**40.5**	50.00	0	81.0	60.2	125	02/14/2017
Chloroform	5.0		**44.8**	50.00	0	89.5	77.9	116	02/14/2017
Chloromethane	10.0		**48.7**	50.00	0	97.5	29.9	157	02/14/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127123 **SampType:** LCS Units µg/Kg

SampID: LCS-F170214A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		**47.0**	50.00	0	94.0	80.1	116	02/14/2017
cis-1,3-Dichloropropene	4.0		**46.5**	50.00	0	92.9	80.5	121	02/14/2017
Cyclohexanone	100		**522**	500.0	0	104.4	45.4	128	02/14/2017
Dibromochloromethane	5.0		**54.5**	50.00	0	109.1	84.3	116	02/14/2017
Dibromomethane	5.0		**45.5**	50.00	0	91.0	76.6	115	02/14/2017
Dichlorodifluoromethane	10.0		**48.4**	50.00	0	96.9	1	200	02/14/2017
Ethyl ether	5.0		**45.9**	50.00	0	91.8	73.4	116	02/14/2017
Ethyl methacrylate	5.0		**56.5**	50.00	0	113.1	76.2	120	02/14/2017
Ethylbenzene	5.0		**52.2**	50.00	0	104.3	84.8	116	02/14/2017
Hexachlorobutadiene	5.0		**58.2**	50.00	0	116.3	74	135	02/14/2017
Hexachloroethane	5.0		**59.8**	50.00	0	119.6	76.4	121	02/14/2017
Iodomethane	10.0		**19.9**	50.00	0	39.8	38.7	161	02/14/2017
Isopropylbenzene	5.0		**51.4**	50.00	0	102.9	85	125	02/14/2017
m,p-Xylenes	5.0		**104**	100.0	0	104.0	85.3	120	02/14/2017
Methacrylonitrile	50.0		**ND**	50.00	0	98.4	65.7	120	02/14/2017
Methyl Methacrylate	5.0		**51.9**	50.00	0	103.7	69.1	114	02/14/2017
Methyl tert-butyl ether	2.0		**44.3**	50.00	0	88.6	66.6	125	02/14/2017
Methylacrylate	10.0		**59.7**	50.00	0	119.5	69.7	121	02/14/2017
Methylene chloride	5.0		**45.3**	50.00	0	90.7	73.4	115	02/14/2017
Naphthalene	10.0		**60.9**	50.00	0	121.8	70.1	134	02/14/2017
n-Butylbenzene	5.0		**61.1**	50.00	0	122.2	78.4	138	02/14/2017
n-Heptane	20.0		**56.5**	50.00	0	113.1	74.3	125	02/14/2017
n-Hexane	20.0		**52.2**	50.00	0	104.5	66.3	129	02/14/2017
Nitrobenzene	100		**584**	500.0	0	116.8	20.1	165	02/14/2017
n-Propylbenzene	5.0		**57.0**	50.00	0	114.0	79.1	125	02/14/2017
o-Xylene	5.0		**52.9**	50.00	0	105.7	81.9	118	02/14/2017
Pentachloroethane	5.0		**60.3**	50.00	0	120.7	72.7	123	02/14/2017
p-Isopropyltoluene	5.0		**58.4**	50.00	0	116.9	82.7	129	02/14/2017
Propionitrile	50.0		**513**	500.0	0	102.5	64.3	121	02/14/2017
sec-Butylbenzene	5.0		**55.3**	50.00	0	110.6	81.3	125	02/14/2017
Styrene	5.0		**51.8**	50.00	0	103.7	88.2	122	02/14/2017
tert-Butylbenzene	5.0		**53.8**	50.00	0	107.5	74.8	125	02/14/2017
Tetrachloroethene	5.0		**49.8**	50.00	0	99.6	84.2	122	02/14/2017
Tetrahydrofuran	50.0		**50.3**	50.00	0	100.7	61	118	02/14/2017
Toluene	5.0		**48.2**	50.00	0	96.4	81.3	113	02/14/2017
trans-1,2-Dichloroethene	5.0		**46.1**	50.00	0	92.2	78.2	118	02/14/2017
trans-1,3-Dichloropropene	4.0		**55.5**	50.00	0	110.9	81.7	124	02/14/2017
Trichloroethene	5.0		**45.5**	50.00	0	90.9	81	123	02/14/2017
Trichlorofluoromethane	5.0		**44.6**	50.00	0	89.3	66.8	131	02/14/2017
Vinyl acetate	50.0		**58.6**	50.00	0	117.2	64.3	122	02/14/2017
Vinyl chloride	2.0		**42.6**	50.00	0	85.1	45.2	140	02/14/2017
Surr: 1,2-Dichloroethane-d4			**54.5**	50.00		108.9	72.2	131	02/14/2017
Surr: 4-Bromofluorobenzene			**52.3**	50.00		104.6	82.1	116	02/14/2017
Surr: Dibromofluoromethane			**48.6**	50.00		97.3	77.7	120	02/14/2017
Surr: Toluene-d8			**51.2**	50.00		102.5	86	116	02/14/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127123 **SampType:** LCSGD Units %REC RPD Limit 0

SampID: LCSGD-F170214A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Surr: 1,2-Dichloroethane-d4			**53.3**	50.00		106.6			02/14/2017
Surr: 4-Bromofluorobenzene			**50.9**	50.00		101.7			02/14/2017
Surr: Dibromofluoromethane			**48.1**	50.00		96.3			02/14/2017
Surr: Toluene-d8			**53.7**	50.00		107.4			02/14/2017

Batch 127123 **SampType:** LCSG Units %REC

SampID: LCSG-F170214A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Surr: 1,2-Dichloroethane-d4			**52.9**	50.00		105.8	72.2	131	02/14/2017
Surr: 4-Bromofluorobenzene			**52.5**	50.00		105.0	82.1	116	02/14/2017
Surr: Dibromofluoromethane			**47.4**	50.00		94.8	77.7	120	02/14/2017
Surr: Toluene-d8			**53.0**	50.00		106.1	86	116	02/14/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127158 **SampType:** MBLK Units µg/Kg

SampID: MBLK-F170215A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		ND						02/15/2017
1,1,1-Trichloroethane	5.0		ND						02/15/2017
1,1,2,2-Tetrachloroethane	5.0		ND						02/15/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		ND						02/15/2017
1,1,2-Trichloroethane	5.0		ND						02/15/2017
1,1-Dichloro-2-propanone	50.0		ND						02/15/2017
1,1-Dichloroethane	5.0		ND						02/15/2017
1,1-Dichloroethene	5.0		ND						02/15/2017
1,1-Dichloropropene	5.0		ND						02/15/2017
1,2,3-Trichlorobenzene	5.0		ND						02/15/2017
1,2,3-Trichloropropane	10.0		ND						02/15/2017
1,2,3-Trimethylbenzene	5.0		ND						02/15/2017
1,2,4-Trichlorobenzene	5.0		ND						02/15/2017
1,2,4-Trimethylbenzene	5.0		ND						02/15/2017
1,2-Dibromo-3-chloropropane	5.0		ND						02/15/2017
1,2-Dibromoethane	5.0		ND						02/15/2017
1,2-Dichlorobenzene	5.0		ND						02/15/2017
1,2-Dichloroethane	5.0		ND						02/15/2017
1,2-Dichloropropane	5.0		ND						02/15/2017
1,3,5-Trimethylbenzene	5.0		ND						02/15/2017
1,3-Dichlorobenzene	5.0		ND						02/15/2017
1,3-Dichloropropane	5.0		ND						02/15/2017
1,4-Dichlorobenzene	5.0		ND						02/15/2017
1-Chlorobutane	5.0		ND						02/15/2017
2,2-Dichloropropane	5.0		ND						02/15/2017
2-Butanone	50.0		ND						02/15/2017
2-Chlorotoluene	5.0		ND						02/15/2017
2-Hexanone	50.0		ND						02/15/2017
2-Nitropropane	50.0		ND						02/15/2017
4-Chlorotoluene	5.0		ND						02/15/2017
4-Methyl-2-pentanone	50.0		ND						02/15/2017
Acetone	50.0		ND						02/15/2017
Acrolein	100		ND						02/15/2017
Acrylonitrile	10.0		ND						02/15/2017
Allyl chloride	5.0		ND						02/15/2017
Benzene	1.0		ND						02/15/2017
Bromobenzene	5.0		ND						02/15/2017
Bromochloromethane	5.0		ND						02/15/2017
Bromodichloromethane	5.0		ND						02/15/2017
Bromoform	5.0		ND						02/15/2017
Bromomethane	10.0		ND						02/15/2017
Carbon disulfide	5.0		ND						02/15/2017
Carbon tetrachloride	5.0		ND						02/15/2017
Chlorobenzene	5.0		ND						02/15/2017
Chloroethane	10.0		ND						02/15/2017
Chloroform	5.0		ND						02/15/2017
Chloromethane	10.0		ND						02/15/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127158 **SampType:** MBLK Units µg/Kg

SampID: MBLK-F170215A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		ND						02/15/2017
cis-1,3-Dichloropropene	4.0		ND						02/15/2017
Cyclohexanone	100		ND						02/15/2017
Dibromochloromethane	5.0		ND						02/15/2017
Dibromomethane	5.0		ND						02/15/2017
Dichlorodifluoromethane	10.0		ND						02/15/2017
Ethyl ether	5.0		ND						02/15/2017
Ethyl methacrylate	5.0		ND						02/15/2017
Ethylbenzene	5.0		ND						02/15/2017
Hexachlorobutadiene	5.0		ND						02/15/2017
Hexachloroethane	5.0		ND						02/15/2017
Iodomethane	10.0		ND						02/15/2017
Isopropylbenzene	5.0		ND						02/15/2017
m,p-Xylenes	5.0		ND						02/15/2017
Methacrylonitrile	50.0		ND						02/15/2017
Methyl Methacrylate	5.0		ND						02/15/2017
Methyl tert-butyl ether	2.0		ND						02/15/2017
Methylacrylate	10.0		ND						02/15/2017
Methylene chloride	5.0		ND						02/15/2017
Naphthalene	10.0		ND						02/15/2017
n-Butylbenzene	5.0		ND						02/15/2017
n-Heptane	20.0		ND						02/15/2017
n-Hexane	20.0		ND						02/15/2017
Nitrobenzene	100		ND						02/15/2017
n-Propylbenzene	5.0		ND						02/15/2017
o-Xylene	5.0		ND						02/15/2017
Pentachloroethane	5.0		ND						02/15/2017
p-Isopropyltoluene	5.0		ND						02/15/2017
Propionitrile	50.0		ND						02/15/2017
sec-Butylbenzene	5.0		ND						02/15/2017
Styrene	5.0		ND						02/15/2017
tert-Butylbenzene	5.0		ND						02/15/2017
Tetrachloroethene	5.0		ND						02/15/2017
Tetrahydrofuran	50.0		ND						02/15/2017
Toluene	5.0		ND						02/15/2017
trans-1,2-Dichloroethene	5.0		ND						02/15/2017
trans-1,3-Dichloropropene	4.0		ND						02/15/2017
Trichloroethene	5.0		ND						02/15/2017
Trichlorofluoromethane	5.0		ND						02/15/2017
Vinyl acetate	50.0		ND						02/15/2017
Vinyl chloride	2.0		ND						02/15/2017
Surr: 1,2-Dichloroethane-d4			**52.2**	50.00		104.5	72.2	131	02/15/2017
Surr: 4-Bromofluorobenzene			**52.0**	50.00		104.0	82.1	116	02/15/2017
Surr: Dibromofluoromethane			**48.2**	50.00		96.4	77.7	120	02/15/2017
Surr: Toluene-d8			**53.2**	50.00		106.3	86	116	02/15/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127158 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-F170215A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		**50.7**	50.00	0	101.3	52.71	3.97	02/15/2017
1,1,1-Trichloroethane	5.0		**46.4**	50.00	0	92.8	47.94	3.22	02/15/2017
1,1,2,2-Tetrachloroethane	5.0		**49.1**	50.00	0	98.2	52.76	7.19	02/15/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		**45.7**	50.00	0	91.4	47.08	2.93	02/15/2017
1,1,2-Trichloroethane	5.0		**48.1**	50.00	0	96.2	50.83	5.48	02/15/2017
1,1-Dichloro-2-propanone	50.0		**119**	125.0	0	95.0	124.4	4.64	02/15/2017
1,1-Dichloroethane	5.0		**45.5**	50.00	0	90.9	46.79	2.86	02/15/2017
1,1-Dichloroethene	5.0		**46.4**	50.00	0	92.9	48.32	3.99	02/15/2017
1,1-Dichloropropene	5.0		**45.6**	50.00	0	91.1	46.76	2.62	02/15/2017
1,2,3-Trichlorobenzene	5.0		**55.0**	50.00	0	110.0	58.27	5.77	02/15/2017
1,2,3-Trichloropropane	10.0		**49.0**	50.00	0	98.1	53.21	8.16	02/15/2017
1,2,3-Trimethylbenzene	5.0		**54.2**	50.00	0	108.4	55.81	2.91	02/15/2017
1,2,4-Trichlorobenzene	5.0		**58.2**	50.00	0	116.4	63.22	8.25	02/15/2017
1,2,4-Trimethylbenzene	5.0		**55.4**	50.00	0	110.7	57.41	3.64	02/15/2017
1,2-Dibromo-3-chloropropane	5.0		**51.5**	50.00	0	103.0	57.14	10.42	02/15/2017
1,2-Dibromoethane	5.0		**48.9**	50.00	0	97.7	49.85	1.99	02/15/2017
1,2-Dichlorobenzene	5.0		**52.7**	50.00	0	105.4	52.60	0.23	02/15/2017
1,2-Dichloroethane	5.0		**46.7**	50.00	0	93.3	49.16	5.22	02/15/2017
1,2-Dichloropropane	5.0		**43.4**	50.00	0	86.7	43.82	1.06	02/15/2017
1,3,5-Trimethylbenzene	5.0		**54.7**	50.00	0	109.3	56.22	2.81	02/15/2017
1,3-Dichlorobenzene	5.0		**53.8**	50.00	0	107.7	55.31	2.69	02/15/2017
1,3-Dichloropropane	5.0		**50.2**	50.00	0	100.4	51.93	3.41	02/15/2017
1,4-Dichlorobenzene	5.0		**53.1**	50.00	0	106.2	54.74	3.08	02/15/2017
1-Chlorobutane	5.0		**46.2**	50.00	0	92.3	47.55	2.97	02/15/2017
2,2-Dichloropropane	5.0		**46.8**	50.00	0	93.6	48.11	2.74	02/15/2017
2-Butanone	50.0		**137**	125.0	0	109.7	149.2	8.41	02/15/2017
2-Chlorotoluene	5.0		**53.6**	50.00	0	107.1	56.32	5.01	02/15/2017
2-Hexanone	50.0		**141**	125.0	0	113.0	157.7	11.05	02/15/2017
2-Nitropropane	50.0		**489**	500.0	0	97.7	510.8	4.46	02/15/2017
4-Chlorotoluene	5.0		**50.8**	50.00	0	101.6	52.86	4.01	02/15/2017
4-Methyl-2-pentanone	50.0		**131**	125.0	0	104.7	140.6	7.17	02/15/2017
Acetone	50.0		**143**	125.0	0	114.2	160.6	11.79	02/15/2017
Acrolein	100	SE	**2490**	500.0	0	498.2	2706	8.29	02/15/2017
Acrylonitrile	10.0		**43.7**	50.00	0	87.4	48.37	10.17	02/15/2017
Allyl chloride	5.0		**44.7**	50.00	0	89.3	47.85	6.87	02/15/2017
Benzene	1.0		**43.2**	50.00	0	86.5	44.28	2.40	02/15/2017
Bromobenzene	5.0		**53.7**	50.00	0	107.4	52.62	2.03	02/15/2017
Bromochloromethane	5.0		**46.2**	50.00	0	92.4	46.86	1.44	02/15/2017
Bromodichloromethane	5.0		**45.4**	50.00	0	90.9	47.67	4.77	02/15/2017
Bromoform	5.0		**52.4**	50.00	0	104.8	53.14	1.36	02/15/2017
Bromomethane	10.0		**20.0**	50.00	0	40.1	19.01	5.28	02/15/2017
Carbon disulfide	5.0		**41.0**	50.00	0	81.9	43.22	5.35	02/15/2017
Carbon tetrachloride	5.0		**48.4**	50.00	0	96.9	49.61	2.41	02/15/2017
Chlorobenzene	5.0		**50.1**	50.00	0	100.2	50.59	0.99	02/15/2017
Chloroethane	10.0		**43.8**	50.00	0	87.6	46.50	5.93	02/15/2017
Chloroform	5.0		**43.4**	50.00	0	86.8	45.89	5.53	02/15/2017
Chloromethane	10.0		**47.5**	50.00	0	94.9	51.09	7.37	02/15/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127158 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-F170215A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
cis-1,2-Dichloroethene	5.0		**46.7**	50.00	0	93.4	47.31	1.30	02/15/2017
cis-1,3-Dichloropropene	4.0		**46.6**	50.00	0	93.1	47.79	2.63	02/15/2017
Cyclohexanone	100		**444**	500.0	0	88.7	478.1	7.48	02/15/2017
Dibromochloromethane	5.0		**51.2**	50.00	0	102.3	53.05	3.65	02/15/2017
Dibromomethane	5.0		**43.9**	50.00	0	87.8	44.80	2.07	02/15/2017
Dichlorodifluoromethane	10.0		**45.5**	50.00	0	91.0	49.38	8.13	02/15/2017
Ethyl ether	5.0		**43.6**	50.00	0	87.2	46.60	6.67	02/15/2017
Ethyl methacrylate	5.0		**51.4**	50.00	0	102.7	54.44	5.82	02/15/2017
Ethylbenzene	5.0		**50.8**	50.00	0	101.7	53.93	5.88	02/15/2017
Hexachlorobutadiene	5.0		**58.6**	50.00	0	117.2	60.04	2.46	02/15/2017
Hexachloroethane	5.0		**58.2**	50.00	0	116.4	59.71	2.53	02/15/2017
Iodomethane	10.0		**28.2**	50.00	0	56.3	28.81	2.25	02/15/2017
Isopropylbenzene	5.0		**53.5**	50.00	0	107.0	53.26	0.41	02/15/2017
m,p-Xylenes	5.0		**107**	100.0	0	106.8	107.6	0.79	02/15/2017
Methacrylonitrile	50.0		**ND**	50.00	0	89.4	49.86	0.00	02/15/2017
Methyl Methacrylate	5.0		**44.9**	50.00	0	89.9	48.12	6.86	02/15/2017
Methyl tert-butyl ether	2.0		**44.0**	50.00	0	88.1	46.48	5.37	02/15/2017
Methylacrylate	10.0		**52.6**	50.00	0	105.3	57.81	9.38	02/15/2017
Methylene chloride	5.0		**43.1**	50.00	0	86.3	45.36	5.04	02/15/2017
Naphthalene	10.0		**55.7**	50.00	0	111.4	58.82	5.47	02/15/2017
n-Butylbenzene	5.0		**59.9**	50.00	0	119.8	59.93	0.03	02/15/2017
n-Heptane	20.0		**54.4**	50.00	0	108.8	56.45	3.70	02/15/2017
n-Hexane	20.0		**49.3**	50.00	0	98.7	51.98	5.23	02/15/2017
Nitrobenzene	100		**450**	500.0	0	90.0	488.2	8.09	02/15/2017
n-Propylbenzene	5.0		**55.9**	50.00	0	111.8	56.16	0.43	02/15/2017
o-Xylene	5.0		**52.5**	50.00	0	105.1	52.70	0.30	02/15/2017
Pentachloroethane	5.0		**57.9**	50.00	0	115.8	60.51	4.37	02/15/2017
p-Isopropyltoluene	5.0		**57.0**	50.00	0	114.0	58.64	2.87	02/15/2017
Propionitrile	50.0		**453**	500.0	0	90.6	492.4	8.32	02/15/2017
sec-Butylbenzene	5.0		**54.5**	50.00	0	109.0	57.57	5.50	02/15/2017
Styrene	5.0		**52.2**	50.00	0	104.4	52.28	0.19	02/15/2017
tert-Butylbenzene	5.0		**51.4**	50.00	0	102.9	53.16	3.31	02/15/2017
Tetrachloroethene	5.0		**50.6**	50.00	0	101.2	51.88	2.54	02/15/2017
Tetrahydrofuran	50.0		**ND**	50.00	0	90.8	49.37	0.00	02/15/2017
Toluene	5.0		**48.5**	50.00	0	97.0	48.61	0.25	02/15/2017
trans-1,2-Dichloroethene	5.0		**45.4**	50.00	0	90.7	46.70	2.93	02/15/2017
trans-1,3-Dichloropropene	4.0		**53.8**	50.00	0	107.6	55.45	3.02	02/15/2017
Trichloroethene	5.0		**44.9**	50.00	0	89.8	45.99	2.38	02/15/2017
Trichlorofluoromethane	5.0		**47.2**	50.00	0	94.4	48.78	3.31	02/15/2017
Vinyl acetate	50.0		**ND**	50.00	0	96.9	52.10	0.00	02/15/2017
Vinyl chloride	2.0		**42.9**	50.00	0	85.9	45.73	6.29	02/15/2017
Surr: 1,2-Dichloroethane-d4			**52.3**	50.00		104.7			02/15/2017
Surr: 4-Bromofluorobenzene			**51.2**	50.00		102.4			02/15/2017
Surr: Dibromofluoromethane			**48.5**	50.00		97.1			02/15/2017
Surr: Toluene-d8			**51.7**	50.00		103.5			02/15/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127158 **SampType:** LCS Units µg/Kg

SampID: LCS-F170215A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		**52.7**	50.00	0	105.4	83.1	114	02/15/2017
1,1,1-Trichloroethane	5.0		**47.9**	50.00	0	95.9	78.5	119	02/15/2017
1,1,2,2-Tetrachloroethane	5.0		**52.8**	50.00	0	105.5	67.4	120	02/15/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		**47.1**	50.00	0	94.2	75.4	121	02/15/2017
1,1,2-Trichloroethane	5.0		**50.8**	50.00	0	101.7	81.1	111	02/15/2017
1,1-Dichloro-2-propanone	50.0		**124**	125.0	0	99.6	55.4	131	02/15/2017
1,1-Dichloroethane	5.0		**46.8**	50.00	0	93.6	80.1	116	02/15/2017
1,1-Dichloroethene	5.0		**48.3**	50.00	0	96.6	73.1	121	02/15/2017
1,1-Dichloropropene	5.0		**46.8**	50.00	0	93.5	82.2	114	02/15/2017
1,2,3-Trichlorobenzene	5.0		**58.3**	50.00	0	116.5	81.7	130	02/15/2017
1,2,3-Trichloropropane	10.0		**53.2**	50.00	0	106.4	67.8	118	02/15/2017
1,2,3-Trimethylbenzene	5.0		**55.8**	50.00	0	111.6	82.1	127	02/15/2017
1,2,4-Trichlorobenzene	5.0		**63.2**	50.00	0	126.4	72.3	141	02/15/2017
1,2,4-Trimethylbenzene	5.0		**57.4**	50.00	0	114.8	79.7	123	02/15/2017
1,2-Dibromo-3-chloropropane	5.0		**57.1**	50.00	0	114.3	62.1	123	02/15/2017
1,2-Dibromoethane	5.0		**49.8**	50.00	0	99.7	82.4	112	02/15/2017
1,2-Dichlorobenzene	5.0		**52.6**	50.00	0	105.2	82.7	119	02/15/2017
1,2-Dichloroethane	5.0		**49.2**	50.00	0	98.3	72.8	120	02/15/2017
1,2-Dichloropropane	5.0		**43.8**	50.00	0	87.6	80	116	02/15/2017
1,3,5-Trimethylbenzene	5.0		**56.2**	50.00	0	112.4	81.5	125	02/15/2017
1,3-Dichlorobenzene	5.0		**55.3**	50.00	0	110.6	82	124	02/15/2017
1,3-Dichloropropane	5.0		**51.9**	50.00	0	103.9	79.8	113	02/15/2017
1,4-Dichlorobenzene	5.0		**54.7**	50.00	0	109.5	81.1	124	02/15/2017
1-Chlorobutane	5.0		**47.6**	50.00	0	95.1	77.2	113	02/15/2017
2,2-Dichloropropane	5.0		**48.1**	50.00	0	96.2	76.6	121	02/15/2017
2-Butanone	50.0		**149**	125.0	0	119.4	62.8	131	02/15/2017
2-Chlorotoluene	5.0		**56.3**	50.00	0	112.6	78.8	121	02/15/2017
2-Hexanone	50.0	S	**158**	125.0	0	126.2	63.1	125	02/15/2017
2-Nitropropane	50.0		**511**	500.0	0	102.2	61.2	129	02/15/2017
4-Chlorotoluene	5.0		**52.9**	50.00	0	105.7	77.6	124	02/15/2017
4-Methyl-2-pentanone	50.0		**141**	125.0	0	112.5	60.6	126	02/15/2017
Acetone	50.0		**161**	125.0	0	128.5	39.5	159	02/15/2017
Acrolein	100	SE	**2710**	500.0	0	541.3	1	167	02/15/2017
Acrylonitrile	10.0		**48.4**	50.00	0	96.7	67	124	02/15/2017
Allyl chloride	5.0		**47.8**	50.00	0	95.7	58.5	129	02/15/2017
Benzene	1.0		**44.3**	50.00	0	88.6	80.8	117	02/15/2017
Bromobenzene	5.0		**52.6**	50.00	0	105.2	79.6	117	02/15/2017
Bromochloromethane	5.0		**46.9**	50.00	0	93.7	70.7	121	02/15/2017
Bromodichloromethane	5.0		**47.7**	50.00	0	95.3	80.7	121	02/15/2017
Bromoform	5.0		**53.1**	50.00	0	106.3	79.8	118	02/15/2017
Bromomethane	10.0		**19.0**	50.00	0	38.0	1	175	02/15/2017
Carbon disulfide	5.0		**43.2**	50.00	0	86.4	62.8	123	02/15/2017
Carbon tetrachloride	5.0		**49.6**	50.00	0	99.2	77.6	123	02/15/2017
Chlorobenzene	5.0		**50.6**	50.00	0	101.2	85.6	116	02/15/2017
Chloroethane	10.0		**46.5**	50.00	0	93.0	60.2	125	02/15/2017
Chloroform	5.0		**45.9**	50.00	0	91.8	77.9	116	02/15/2017
Chloromethane	10.0		**51.1**	50.00	0	102.2	29.9	157	02/15/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127158 **SampType:** LCS Units µg/Kg

SampID: LCS-F170215A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		**47.3**	50.00	0	94.6	80.1	116	02/15/2017
cis-1,3-Dichloropropene	4.0		**47.8**	50.00	0	95.6	80.5	121	02/15/2017
Cyclohexanone	100		**478**	500.0	0	95.6	45.4	128	02/15/2017
Dibromochloromethane	5.0		**53.0**	50.00	0	106.1	84.3	116	02/15/2017
Dibromomethane	5.0		**44.8**	50.00	0	89.6	76.6	115	02/15/2017
Dichlorodifluoromethane	10.0		**49.4**	50.00	0	98.8	1	200	02/15/2017
Ethyl ether	5.0		**46.6**	50.00	0	93.2	73.4	116	02/15/2017
Ethyl methacrylate	5.0		**54.4**	50.00	0	108.9	76.2	120	02/15/2017
Ethylbenzene	5.0		**53.9**	50.00	0	107.9	84.8	116	02/15/2017
Hexachlorobutadiene	5.0		**60.0**	50.00	0	120.1	74	135	02/15/2017
Hexachloroethane	5.0		**59.7**	50.00	0	119.4	76.4	121	02/15/2017
Iodomethane	10.0		**28.8**	50.00	0	57.6	38.7	161	02/15/2017
Isopropylbenzene	5.0		**53.3**	50.00	0	106.5	85	125	02/15/2017
m,p-Xylenes	5.0		**108**	100.0	0	107.6	85.3	120	02/15/2017
Methacrylonitrile	50.0		**ND**	50.00	0	99.7	65.7	120	02/15/2017
Methyl Methacrylate	5.0		**48.1**	50.00	0	96.2	69.1	114	02/15/2017
Methyl tert-butyl ether	2.0		**46.5**	50.00	0	93.0	66.6	125	02/15/2017
Methylacrylate	10.0		**57.8**	50.00	0	115.6	69.7	121	02/15/2017
Methylene chloride	5.0		**45.4**	50.00	0	90.7	73.4	115	02/15/2017
Naphthalene	10.0		**58.8**	50.00	0	117.6	70.1	134	02/15/2017
n-Butylbenzene	5.0		**59.9**	50.00	0	119.9	78.4	138	02/15/2017
n-Heptane	20.0		**56.4**	50.00	0	112.9	74.3	125	02/15/2017
n-Hexane	20.0		**52.0**	50.00	0	104.0	66.3	129	02/15/2017
Nitrobenzene	100		**488**	500.0	0	97.6	20.1	165	02/15/2017
n-Propylbenzene	5.0		**56.2**	50.00	0	112.3	79.1	125	02/15/2017
o-Xylene	5.0		**52.7**	50.00	0	105.4	81.9	118	02/15/2017
Pentachloroethane	5.0		**60.5**	50.00	0	121.0	72.7	123	02/15/2017
p-Isopropyltoluene	5.0		**58.6**	50.00	0	117.3	82.7	129	02/15/2017
Propionitrile	50.0		**492**	500.0	0	98.5	64.3	121	02/15/2017
sec-Butylbenzene	5.0		**57.6**	50.00	0	115.1	81.3	125	02/15/2017
Styrene	5.0		**52.3**	50.00	0	104.6	88.2	122	02/15/2017
tert-Butylbenzene	5.0		**53.2**	50.00	0	106.3	74.8	125	02/15/2017
Tetrachloroethene	5.0		**51.9**	50.00	0	103.8	84.2	122	02/15/2017
Tetrahydrofuran	50.0		**ND**	50.00	0	98.7	61	118	02/15/2017
Toluene	5.0		**48.6**	50.00	0	97.2	81.3	113	02/15/2017
trans-1,2-Dichloroethene	5.0		**46.7**	50.00	0	93.4	78.2	118	02/15/2017
trans-1,3-Dichloropropene	4.0		**55.4**	50.00	0	110.9	81.7	124	02/15/2017
Trichloroethene	5.0		**46.0**	50.00	0	92.0	81	123	02/15/2017
Trichlorofluoromethane	5.0		**48.8**	50.00	0	97.6	66.8	131	02/15/2017
Vinyl acetate	50.0		**52.1**	50.00	0	104.2	64.3	122	02/15/2017
Vinyl chloride	2.0		**45.7**	50.00	0	91.5	45.2	140	02/15/2017
Surr: 1,2-Dichloroethane-d4			**53.5**	50.00		107.0	72.2	131	02/15/2017
Surr: 4-Bromofluorobenzene			**52.4**	50.00		104.7	82.1	116	02/15/2017
Surr: Dibromofluoromethane			**49.9**	50.00		99.8	77.7	120	02/15/2017
Surr: Toluene-d8			**53.6**	50.00		107.3	86	116	02/15/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127214 **SampType:** MBLK Units µg/Kg

SampID: MBLK-F170216A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		ND						02/16/2017
1,1,1-Trichloroethane	5.0		ND						02/16/2017
1,1,2,2-Tetrachloroethane	5.0		ND						02/16/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		ND						02/16/2017
1,1,2-Trichloroethane	5.0		ND						02/16/2017
1,1-Dichloro-2-propanone	50.0		ND						02/16/2017
1,1-Dichloroethane	5.0		ND						02/16/2017
1,1-Dichloroethene	5.0		ND						02/16/2017
1,1-Dichloropropene	5.0		ND						02/16/2017
1,2,3-Trichlorobenzene	5.0		ND						02/16/2017
1,2,3-Trichloropropane	10.0		ND						02/16/2017
1,2,3-Trimethylbenzene	5.0		ND						02/16/2017
1,2,4-Trichlorobenzene	5.0		ND						02/16/2017
1,2,4-Trimethylbenzene	5.0		ND						02/16/2017
1,2-Dibromo-3-chloropropane	5.0		ND						02/16/2017
1,2-Dibromoethane	5.0		ND						02/16/2017
1,2-Dichlorobenzene	5.0		ND						02/16/2017
1,2-Dichloroethane	5.0		ND						02/16/2017
1,2-Dichloropropane	5.0		ND						02/16/2017
1,3,5-Trimethylbenzene	5.0		ND						02/16/2017
1,3-Dichlorobenzene	5.0		ND						02/16/2017
1,3-Dichloropropane	5.0		ND						02/16/2017
1,4-Dichlorobenzene	5.0		ND						02/16/2017
1-Chlorobutane	5.0		ND						02/16/2017
2,2-Dichloropropane	5.0		ND						02/16/2017
2-Butanone	50.0		ND						02/16/2017
2-Chlorotoluene	5.0		ND						02/16/2017
2-Hexanone	50.0		ND						02/16/2017
2-Nitropropane	50.0		ND						02/16/2017
4-Chlorotoluene	5.0		ND						02/16/2017
4-Methyl-2-pentanone	50.0		ND						02/16/2017
Acetone	50.0		ND						02/16/2017
Acrolein	100		ND						02/16/2017
Acrylonitrile	10.0		ND						02/16/2017
Allyl chloride	5.0		ND						02/16/2017
Benzene	1.0		ND						02/16/2017
Bromobenzene	5.0		ND						02/16/2017
Bromochloromethane	5.0		ND						02/16/2017
Bromodichloromethane	5.0		ND						02/16/2017
Bromoform	5.0		ND						02/16/2017
Bromomethane	10.0		ND						02/16/2017
Carbon disulfide	5.0		ND						02/16/2017
Carbon tetrachloride	5.0		ND						02/16/2017
Chlorobenzene	5.0		ND						02/16/2017
Chloroethane	10.0		ND						02/16/2017
Chloroform	5.0		ND						02/16/2017
Chloromethane	10.0		ND						02/16/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127214 **SampType:** MBLK Units µg/Kg

SampID: MBLK-F170216A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		ND						02/16/2017
cis-1,3-Dichloropropene	4.0		ND						02/16/2017
Cyclohexanone	100		ND						02/16/2017
Dibromochloromethane	5.0		ND						02/16/2017
Dibromomethane	5.0		ND						02/16/2017
Dichlorodifluoromethane	10.0		ND						02/16/2017
Ethyl ether	5.0		ND						02/16/2017
Ethyl methacrylate	5.0		ND						02/16/2017
Ethylbenzene	5.0		ND						02/16/2017
Hexachlorobutadiene	5.0		ND						02/16/2017
Hexachloroethane	5.0		ND						02/16/2017
Iodomethane	10.0		ND						02/16/2017
Isopropylbenzene	5.0		ND						02/16/2017
m,p-Xylenes	5.0		ND						02/16/2017
Methacrylonitrile	50.0		ND						02/16/2017
Methyl Methacrylate	5.0		ND						02/16/2017
Methyl tert-butyl ether	2.0		ND						02/16/2017
Methylacrylate	10.0		ND						02/16/2017
Methylene chloride	5.0		ND						02/16/2017
Naphthalene	10.0		ND						02/16/2017
n-Butylbenzene	5.0		ND						02/16/2017
n-Heptane	20.0		ND						02/16/2017
n-Hexane	20.0		ND						02/16/2017
Nitrobenzene	100		ND						02/16/2017
n-Propylbenzene	5.0		ND						02/16/2017
o-Xylene	5.0		ND						02/16/2017
Pentachloroethane	5.0		ND						02/16/2017
p-Isopropyltoluene	5.0		ND						02/16/2017
Propionitrile	50.0		ND						02/16/2017
sec-Butylbenzene	5.0		ND						02/16/2017
Styrene	5.0		ND						02/16/2017
tert-Butylbenzene	5.0		ND						02/16/2017
Tetrachloroethene	5.0		ND						02/16/2017
Tetrahydrofuran	50.0		ND						02/16/2017
Toluene	5.0		ND						02/16/2017
trans-1,2-Dichloroethene	5.0		ND						02/16/2017
trans-1,3-Dichloropropene	4.0		ND						02/16/2017
Trichloroethene	5.0		ND						02/16/2017
Trichlorofluoromethane	5.0		ND						02/16/2017
Vinyl acetate	50.0		ND						02/16/2017
Vinyl chloride	2.0		ND						02/16/2017
Surr: 1,2-Dichloroethane-d4			**52.1**	50.00		104.2	72.2	131	02/16/2017
Surr: 4-Bromofluorobenzene			**51.6**	50.00		103.2	82.1	116	02/16/2017
Surr: Dibromofluoromethane			**47.6**	50.00		95.1	77.7	120	02/16/2017
Surr: Toluene-d8			**53.6**	50.00		107.1	86	116	02/16/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127214 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-F170216A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		**50.9**	50.00	0	101.8	51.57	1.35	02/16/2017
1,1,1-Trichloroethane	5.0		**47.8**	50.00	0	95.5	47.08	1.43	02/16/2017
1,1,2,2-Tetrachloroethane	5.0		**51.4**	50.00	0	102.7	52.13	1.51	02/16/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		**46.4**	50.00	0	92.7	46.11	0.52	02/16/2017
1,1,2-Trichloroethane	5.0		**49.4**	50.00	0	98.7	48.96	0.81	02/16/2017
1,1-Dichloro-2-propanone	50.0		**130**	125.0	0	103.9	128.8	0.77	02/16/2017
1,1-Dichloroethane	5.0		**45.5**	50.00	0	90.9	45.49	0.07	02/16/2017
1,1-Dichloroethene	5.0		**47.1**	50.00	0	94.3	46.63	1.07	02/16/2017
1,1-Dichloropropene	5.0		**46.8**	50.00	0	93.5	45.37	3.00	02/16/2017
1,2,3-Trichlorobenzene	5.0		**56.5**	50.00	0	113.0	56.94	0.81	02/16/2017
1,2,3-Trichloropropane	10.0		**51.1**	50.00	0	102.2	53.60	4.80	02/16/2017
1,2,3-Trimethylbenzene	5.0		**54.0**	50.00	0	108.0	55.04	1.89	02/16/2017
1,2,4-Trichlorobenzene	5.0		**60.3**	50.00	0	120.6	62.64	3.77	02/16/2017
1,2,4-Trimethylbenzene	5.0		**54.8**	50.00	0	109.6	56.45	2.93	02/16/2017
1,2-Dibromo-3-chloropropane	5.0		**52.5**	50.00	0	105.0	55.49	5.50	02/16/2017
1,2-Dibromoethane	5.0		**49.6**	50.00	0	99.3	49.02	1.28	02/16/2017
1,2-Dichlorobenzene	5.0		**52.9**	50.00	0	105.9	53.83	1.67	02/16/2017
1,2-Dichloroethane	5.0		**47.8**	50.00	0	95.7	48.14	0.63	02/16/2017
1,2-Dichloropropane	5.0		**44.9**	50.00	0	89.8	44.05	1.91	02/16/2017
1,3,5-Trimethylbenzene	5.0		**55.1**	50.00	0	110.2	55.98	1.62	02/16/2017
1,3-Dichlorobenzene	5.0		**54.9**	50.00	0	109.7	54.42	0.82	02/16/2017
1,3-Dichloropropane	5.0		**50.6**	50.00	0	101.2	48.91	3.42	02/16/2017
1,4-Dichlorobenzene	5.0		**52.7**	50.00	0	105.4	54.25	2.90	02/16/2017
1-Chlorobutane	5.0		**46.6**	50.00	0	93.1	46.37	0.39	02/16/2017
2,2-Dichloropropane	5.0		**48.7**	50.00	0	97.4	46.96	3.68	02/16/2017
2-Butanone	50.0		**125**	125.0	0	100.2	135.3	7.70	02/16/2017
2-Chlorotoluene	5.0		**54.8**	50.00	0	109.6	53.86	1.77	02/16/2017
2-Hexanone	50.0		**132**	125.0	0	105.7	141.3	6.69	02/16/2017
2-Nitropropane	50.0		**501**	500.0	0	100.1	522.9	4.37	02/16/2017
4-Chlorotoluene	5.0		**49.8**	50.00	0	99.5	51.93	4.27	02/16/2017
4-Methyl-2-pentanone	50.0		**128**	125.0	0	102.3	133.2	4.07	02/16/2017
Acetone	50.0		**112**	125.0	0	89.9	139.9	21.83	02/16/2017
Acrolein	100	SE	**2320**	500.0	0	464.8	2521	8.12	02/16/2017
Acrylonitrile	10.0		**46.6**	50.00	0	93.3	47.71	2.27	02/16/2017
Allyl chloride	5.0		**46.5**	50.00	0	93.0	45.99	1.12	02/16/2017
Benzene	1.0		**43.6**	50.00	0	87.2	44.24	1.46	02/16/2017
Bromobenzene	5.0		**52.7**	50.00	0	105.3	54.05	2.59	02/16/2017
Bromochloromethane	5.0		**44.0**	50.00	0	88.0	44.55	1.29	02/16/2017
Bromodichloromethane	5.0		**47.6**	50.00	0	95.3	46.64	2.14	02/16/2017
Bromoform	5.0		**54.4**	50.00	0	108.9	54.46	0.02	02/16/2017
Bromomethane	10.0		**24.3**	50.00	0	48.6	23.91	1.70	02/16/2017
Carbon disulfide	5.0		**42.8**	50.00	0	85.5	41.30	3.47	02/16/2017
Carbon tetrachloride	5.0		**50.1**	50.00	0	100.3	48.08	4.19	02/16/2017
Chlorobenzene	5.0		**52.3**	50.00	0	104.6	51.27	2.01	02/16/2017
Chloroethane	10.0		**43.6**	50.00	0	87.2	44.95	3.05	02/16/2017
Chloroform	5.0		**45.6**	50.00	0	91.2	44.63	2.17	02/16/2017
Chloromethane	10.0		**47.6**	50.00	0	95.1	48.50	1.96	02/16/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127214 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-F170216A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
cis-1,2-Dichloroethene	5.0		**48.1**	50.00	0	96.2	45.92	4.66	02/16/2017
cis-1,3-Dichloropropene	4.0		**47.2**	50.00	0	94.4	47.29	0.23	02/16/2017
Cyclohexanone	100		**447**	500.0	0	89.4	503.5	11.95	02/16/2017
Dibromochloromethane	5.0		**53.1**	50.00	0	106.3	54.44	2.42	02/16/2017
Dibromomethane	5.0		**45.7**	50.00	0	91.4	44.56	2.50	02/16/2017
Dichlorodifluoromethane	10.0		**42.8**	50.00	0	85.6	43.64	1.97	02/16/2017
Ethyl ether	5.0		**43.6**	50.00	0	87.3	45.31	3.75	02/16/2017
Ethyl methacrylate	5.0		**53.0**	50.00	0	106.0	53.39	0.75	02/16/2017
Ethylbenzene	5.0		**51.7**	50.00	0	103.5	52.48	1.42	02/16/2017
Hexachlorobutadiene	5.0		**60.0**	50.00	0	120.0	60.15	0.27	02/16/2017
Hexachloroethane	5.0		**59.5**	50.00	0	119.0	59.19	0.54	02/16/2017
Iodomethane	10.0		**32.2**	50.00	0	64.5	30.29	6.27	02/16/2017
Isopropylbenzene	5.0		**53.0**	50.00	0	106.0	52.89	0.23	02/16/2017
m,p-Xylenes	5.0		**105**	100.0	0	104.8	103.7	1.09	02/16/2017
Methacrylonitrile	50.0		**ND**	50.00	0	88.2	47.03	0.00	02/16/2017
Methyl Methacrylate	5.0		**46.8**	50.00	0	93.7	48.45	3.40	02/16/2017
Methyl tert-butyl ether	2.0		**45.4**	50.00	0	90.9	46.39	2.07	02/16/2017
Methylacrylate	10.0		**54.4**	50.00	0	108.7	56.38	3.65	02/16/2017
Methylene chloride	5.0		**43.7**	50.00	0	87.5	45.31	3.53	02/16/2017
Naphthalene	10.0		**57.4**	50.00	0	114.8	57.86	0.82	02/16/2017
n-Butylbenzene	5.0		**57.9**	50.00	0	115.8	59.99	3.58	02/16/2017
n-Heptane	20.0		**54.4**	50.00	0	108.9	55.55	2.00	02/16/2017
n-Hexane	20.0		**50.3**	50.00	0	100.5	50.71	0.89	02/16/2017
Nitrobenzene	100		**488**	500.0	0	97.7	505.7	3.50	02/16/2017
n-Propylbenzene	5.0		**56.2**	50.00	0	112.3	57.01	1.50	02/16/2017
o-Xylene	5.0		**54.5**	50.00	0	109.1	51.84	5.06	02/16/2017
Pentachloroethane	5.0		**59.2**	50.00	0	118.5	59.94	1.19	02/16/2017
p-Isopropyltoluene	5.0		**57.3**	50.00	0	114.5	56.41	1.51	02/16/2017
Propionitrile	50.0		**465**	500.0	0	93.0	473.6	1.87	02/16/2017
sec-Butylbenzene	5.0		**55.0**	50.00	0	109.9	55.87	1.64	02/16/2017
Styrene	5.0		**53.9**	50.00	0	107.7	51.40	4.67	02/16/2017
tert-Butylbenzene	5.0		**52.7**	50.00	0	105.4	54.90	4.13	02/16/2017
Tetrachloroethene	5.0		**50.2**	50.00	0	100.3	50.46	0.60	02/16/2017
Tetrahydrofuran	50.0		**ND**	50.00	0	85.3	48.51	0.00	02/16/2017
Toluene	5.0		**49.6**	50.00	0	99.3	49.99	0.68	02/16/2017
trans-1,2-Dichloroethene	5.0		**45.5**	50.00	0	91.0	46.44	2.04	02/16/2017
trans-1,3-Dichloropropene	4.0		**54.5**	50.00	0	109.0	54.99	0.93	02/16/2017
Trichloroethene	5.0		**46.3**	50.00	0	92.7	45.78	1.19	02/16/2017
Trichlorofluoromethane	5.0		**48.6**	50.00	0	97.1	47.39	2.42	02/16/2017
Vinyl acetate	50.0		**52.2**	50.00	0	104.4	54.35	4.00	02/16/2017
Vinyl chloride	2.0		**43.8**	50.00	0	87.7	43.26	1.35	02/16/2017
Surr: 1,2-Dichloroethane-d4			**52.7**	50.00		105.4			02/16/2017
Surr: 4-Bromofluorobenzene			**51.9**	50.00		103.8			02/16/2017
Surr: Dibromofluoromethane			**49.1**	50.00		98.2			02/16/2017
Surr: Toluene-d8			**51.9**	50.00		103.9			02/16/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127214 **SampType:** LCS Units µg/Kg

SampID: LCS-F170216A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		**51.6**	50.00	0	103.1	83.1	114	02/16/2017
1,1,1-Trichloroethane	5.0		**47.1**	50.00	0	94.2	78.5	119	02/16/2017
1,1,2,2-Tetrachloroethane	5.0		**52.1**	50.00	0	104.3	67.4	120	02/16/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		**46.1**	50.00	0	92.2	75.4	121	02/16/2017
1,1,2-Trichloroethane	5.0		**49.0**	50.00	0	97.9	81.1	111	02/16/2017
1,1-Dichloro-2-propanone	50.0		**129**	125.0	0	103.1	55.4	131	02/16/2017
1,1-Dichloroethane	5.0		**45.5**	50.00	0	91.0	80.1	116	02/16/2017
1,1-Dichloroethene	5.0		**46.6**	50.00	0	93.3	73.1	121	02/16/2017
1,1-Dichloropropene	5.0		**45.4**	50.00	0	90.7	82.2	114	02/16/2017
1,2,3-Trichlorobenzene	5.0		**56.9**	50.00	0	113.9	81.7	130	02/16/2017
1,2,3-Trichloropropane	10.0		**53.6**	50.00	0	107.2	67.8	118	02/16/2017
1,2,3-Trimethylbenzene	5.0		**55.0**	50.00	0	110.1	82.1	127	02/16/2017
1,2,4-Trichlorobenzene	5.0		**62.6**	50.00	0	125.3	72.3	141	02/16/2017
1,2,4-Trimethylbenzene	5.0		**56.4**	50.00	0	112.9	79.7	123	02/16/2017
1,2-Dibromo-3-chloropropane	5.0		**55.5**	50.00	0	111.0	62.1	123	02/16/2017
1,2-Dibromoethane	5.0		**49.0**	50.00	0	98.0	82.4	112	02/16/2017
1,2-Dichlorobenzene	5.0		**53.8**	50.00	0	107.7	82.7	119	02/16/2017
1,2-Dichloroethane	5.0		**48.1**	50.00	0	96.3	72.8	120	02/16/2017
1,2-Dichloropropane	5.0		**44.0**	50.00	0	88.1	80	116	02/16/2017
1,3,5-Trimethylbenzene	5.0		**56.0**	50.00	0	112.0	81.5	125	02/16/2017
1,3-Dichlorobenzene	5.0		**54.4**	50.00	0	108.8	82	124	02/16/2017
1,3-Dichloropropane	5.0		**48.9**	50.00	0	97.8	79.8	113	02/16/2017
1,4-Dichlorobenzene	5.0		**54.2**	50.00	0	108.5	81.1	124	02/16/2017
1-Chlorobutane	5.0		**46.4**	50.00	0	92.7	77.2	113	02/16/2017
2,2-Dichloropropane	5.0		**47.0**	50.00	0	93.9	76.6	121	02/16/2017
2-Butanone	50.0		**135**	125.0	0	108.3	62.8	131	02/16/2017
2-Chlorotoluene	5.0		**53.9**	50.00	0	107.7	78.8	121	02/16/2017
2-Hexanone	50.0		**141**	125.0	0	113.1	63.1	125	02/16/2017
2-Nitropropane	50.0		**523**	500.0	0	104.6	61.2	129	02/16/2017
4-Chlorotoluene	5.0		**51.9**	50.00	0	103.9	77.6	124	02/16/2017
4-Methyl-2-pentanone	50.0		**133**	125.0	0	106.6	60.6	126	02/16/2017
Acetone	50.0		**140**	125.0	0	111.9	39.5	159	02/16/2017
Acrolein	100	SE	**2520**	500.0	0	504.2	1	167	02/16/2017
Acrylonitrile	10.0		**47.7**	50.00	0	95.4	67	124	02/16/2017
Allyl chloride	5.0		**46.0**	50.00	0	92.0	58.5	129	02/16/2017
Benzene	1.0		**44.2**	50.00	0	88.5	80.8	117	02/16/2017
Bromobenzene	5.0		**54.0**	50.00	0	108.1	79.6	117	02/16/2017
Bromochloromethane	5.0		**44.6**	50.00	0	89.1	70.7	121	02/16/2017
Bromodichloromethane	5.0		**46.6**	50.00	0	93.3	80.7	121	02/16/2017
Bromoform	5.0		**54.5**	50.00	0	108.9	79.8	118	02/16/2017
Bromomethane	10.0		**23.9**	50.00	0	47.8	1	175	02/16/2017
Carbon disulfide	5.0		**41.3**	50.00	0	82.6	62.8	123	02/16/2017
Carbon tetrachloride	5.0		**48.1**	50.00	0	96.2	77.6	123	02/16/2017
Chlorobenzene	5.0		**51.3**	50.00	0	102.5	85.6	116	02/16/2017
Chloroethane	10.0		**45.0**	50.00	0	89.9	60.2	125	02/16/2017
Chloroform	5.0		**44.6**	50.00	0	89.3	77.9	116	02/16/2017
Chloromethane	10.0		**48.5**	50.00	0	97.0	29.9	157	02/16/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020466

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 17-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127214 **SampType:** LCS Units µg/Kg

SampID: LCS-F170216A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		**45.9**	50.00	0	91.8	80.1	116	02/16/2017
cis-1,3-Dichloropropene	4.0		**47.3**	50.00	0	94.6	80.5	121	02/16/2017
Cyclohexanone	100		**504**	500.0	0	100.7	45.4	128	02/16/2017
Dibromochloromethane	5.0		**54.4**	50.00	0	108.9	84.3	116	02/16/2017
Dibromomethane	5.0		**44.6**	50.00	0	89.1	76.6	115	02/16/2017
Dichlorodifluoromethane	10.0		**43.6**	50.00	0	87.3	1	200	02/16/2017
Ethyl ether	5.0		**45.3**	50.00	0	90.6	73.4	116	02/16/2017
Ethyl methacrylate	5.0		**53.4**	50.00	0	106.8	76.2	120	02/16/2017
Ethylbenzene	5.0		**52.5**	50.00	0	105.0	84.8	116	02/16/2017
Hexachlorobutadiene	5.0		**60.2**	50.00	0	120.3	74	135	02/16/2017
Hexachloroethane	5.0		**59.2**	50.00	0	118.4	76.4	121	02/16/2017
Iodomethane	10.0		**30.3**	50.00	0	60.6	38.7	161	02/16/2017
Isopropylbenzene	5.0		**52.9**	50.00	0	105.8	85	125	02/16/2017
m,p-Xylenes	5.0		**104**	100.0	0	103.7	85.3	120	02/16/2017
Methacrylonitrile	50.0		**ND**	50.00	0	94.1	65.7	120	02/16/2017
Methyl Methacrylate	5.0		**48.4**	50.00	0	96.9	69.1	114	02/16/2017
Methyl tert-butyl ether	2.0		**46.4**	50.00	0	92.8	66.6	125	02/16/2017
Methylacrylate	10.0		**56.4**	50.00	0	112.8	69.7	121	02/16/2017
Methylene chloride	5.0		**45.3**	50.00	0	90.6	73.4	115	02/16/2017
Naphthalene	10.0		**57.9**	50.00	0	115.7	70.1	134	02/16/2017
n-Butylbenzene	5.0		**60.0**	50.00	0	120.0	78.4	138	02/16/2017
n-Heptane	20.0		**55.6**	50.00	0	111.1	74.3	125	02/16/2017
n-Hexane	20.0		**50.7**	50.00	0	101.4	66.3	129	02/16/2017
Nitrobenzene	100		**506**	500.0	0	101.1	20.1	165	02/16/2017
n-Propylbenzene	5.0		**57.0**	50.00	0	114.0	79.1	125	02/16/2017
o-Xylene	5.0		**51.8**	50.00	0	103.7	81.9	118	02/16/2017
Pentachloroethane	5.0		**59.9**	50.00	0	119.9	72.7	123	02/16/2017
p-Isopropyltoluene	5.0		**56.4**	50.00	0	112.8	82.7	129	02/16/2017
Propionitrile	50.0		**474**	500.0	0	94.7	64.3	121	02/16/2017
sec-Butylbenzene	5.0		**55.9**	50.00	0	111.7	81.3	125	02/16/2017
Styrene	5.0		**51.4**	50.00	0	102.8	88.2	122	02/16/2017
tert-Butylbenzene	5.0		**54.9**	50.00	0	109.8	74.8	125	02/16/2017
Tetrachloroethene	5.0		**50.5**	50.00	0	100.9	84.2	122	02/16/2017
Tetrahydrofuran	50.0		**ND**	50.00	0	97.0	61	118	02/16/2017
Toluene	5.0		**50.0**	50.00	0	100.0	81.3	113	02/16/2017
trans-1,2-Dichloroethene	5.0		**46.4**	50.00	0	92.9	78.2	118	02/16/2017
trans-1,3-Dichloropropene	4.0		**55.0**	50.00	0	110.0	81.7	124	02/16/2017
Trichloroethene	5.0		**45.8**	50.00	0	91.6	81	123	02/16/2017
Trichlorofluoromethane	5.0		**47.4**	50.00	0	94.8	66.8	131	02/16/2017
Vinyl acetate	50.0		**54.4**	50.00	0	108.7	64.3	122	02/16/2017
Vinyl chloride	2.0		**43.3**	50.00	0	86.5	45.2	140	02/16/2017
Surr: 1,2-Dichloroethane-d4			**53.5**	50.00		107.0	72.2	131	02/16/2017
Surr: 4-Bromofluorobenzene			**50.2**	50.00		100.5	82.1	116	02/16/2017
Surr: Dibromofluoromethane			**48.6**	50.00		97.2	77.7	120	02/16/2017
Surr: Toluene-d8			**51.2**	50.00		102.4	86	116	02/16/2017

Receiving Check List

Teklab, Inc. Environmental Laboratory

http://www.teklabinc.com/

Client: PSC Industrial Outsourcing, LP
Work Order: 17020466
Client Project: Champaign Soil Residual IRM 624-1610-001-J0055
Report Date: 17-Feb-17

Carrier: Employee
Received By: AMD

Completed by: Amber M. Dilallo
On: 08-Feb-17

Reviewed by: Elizabeth A. Hurley
On: 08-Feb-17

Pages to follow: Chain of custody 1 Extra pages included 0

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C 1.82
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice ☐
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Reported field parameters measured:	Field ☐	Lab ☐	NA ☑	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐		

When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.

Water – at least one vial per sample has zero headspace?	Yes ☐	No ☐	No VOA vials ☑
Water - TOX containers have zero headspace?	Yes ☐	No ☐	No TOX containers ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	NA ☑
NPDES/CWA TCN interferences checked/treated in the field?	Yes ☐	No ☐	NA ☑

Any No responses must be detailed below or on the COC.

CHAIN OF CUSTODY

pg. 6 of 9 Work order # 170204666

TEKLAB, INC. 5445 Horseshoe Lake Road - Collinsville, IL 62234 - Phone: (618) 344-1004 - Fax: (618) 344-1005

Client: PSC Industrial Outsourcing, LP
Address: 210 West Sand Bank Road
City / State / Zip Columbia, IL 62236-0230
Contact: Michael Crutcher **Phone:** (618) 281-7173
E-Mail: mcrutcher@pscnow.com **Fax:** (618) 281-5120

Samples on: ☒ ICE ☐ BLUE ICE ☐ NO ICE 1.82 °C
Preserved in: ☐ LAB ☐ FIELD **FOR LAB USE ONLY**
Lab Notes

Client Comments: HOLD - per M. Crutcher

re these samples known to be involved in litigation? If yes, a surcharge will apply ☐ Yes ☒ No
re these samples known to be hazardous? ☐ Yes ☒ No
re there any required reporting limits to be met on the requested analysis?. If yes, please provide mits in the comment section. ☐ Yes ☒ No

Project Name/Number: Champaign Soil Residual IRM 624-1610-001-J0055

Sample Collector's Name: Katelyn Bertels

Results Requested: ☐ Standard ☐ 1-2 Day (100% Surcharge) ☒ Other HOLD ☐ 3 Day (50% Surcharge)

Billing Instructions: PSC

Lab Use Only	Sample Identification	Date/Time Sampled	UNPRES	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	OTHER	Aqueous	Drinking Water	Soil	Sludge	Special Waste	Groundwater	Amenable Cyanide	OA2 8015	PAH 8270 SIM	pH	SVOC 8270 (No PAH)	Total 8 RCRA Metals Taco	Total Cyanide	VOC 8260
170204666 001	CH-FS-07 (7-8)	2/7/17 9:45	3					1	2				X						X		X			X
002	CH-FS-07 (16-17)	2/7/17 9:35	3					1	2				X						X		X			X
003	CH-FS-07 (19-20)	2/7/17 9:25	3					1	2				X						X		X			X
004	CH-FS-08 (8-9)	2/7/17 10:40	3					1	2				X						X		X			X
005	CH-FS-08 (12-13)	2/7/17 10:50	3					1	2				X						X		X			X
006	CH-FS-09 (8-9)	2/7/17 11:50	3					1	2				X						X		X			X
007	CH-FS-10 (14-15)	2/7/17 12:40	3					1	2				X						X		X			X
008	CH-FS-11 (8-9)	2/7/17 15:55	3					1	2				X						X		X			X
009	CH-FS-11 (11-12)	2/7/17 16:00	3					1	2				X						X		X			X

Relinquished By	Date/Time	Received By	Date/Time
Katelyn Bertels	2/8/17 8:02	Amber Dicello	2/8/17 802

The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions.

BottleOrder: 35826

2/8/17

February 22, 2017

Michael Crutcher
PSC Industrial Outsourcing, LP
210 West Sand Bank Road
Columbia, IL 62236-0230
TEL: (618) 281-1583
FAX: (618) 281-5120

RE: Champaign Soil Residual IRM 624-1610-001-J0055 **WorkOrder:** 17020468

Dear Michael Crutcher:

TEKLAB, INC received 13 samples on 2/8/2017 8:02:00 AM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Michael L. Austin
Project Manager
(618)344-1004 ex 16
MAustin@teklabinc.com

Client: PSC Industrial Outsourcing, LP
Work Order: 17020468
Client Project: Champaign Soil Residual IRM 624-1610-001-J0055
Report Date: 22-Feb-17

This reporting package includes the following:

Cover Letter	1
Report Contents	2
Definitions	3
Case Narrative	4
Laboratory Results	5
Sample Summary	18
Dates Report	19
Quality Control Results	22
Receiving Check List	27
Chain of Custody	Appended

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020468

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 22-Feb-17

Abbr Definition

CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilutions factors.
DNI	Did not ignite
DUP	Laboratory duplicate is an aliquot of a sample taken from the same container under laboratory conditions for independent processing and analysis independently of the original aliquot.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample, spiked with verified known amounts of analytes, is analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system. The acceptable recovery range is in the QC Package (provided upon request).
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MBLK	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	Method detection limit means the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero.
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions. The acceptable recovery range is listed in the QC Package (provided upon request).
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TIC	Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
TNTC	Too numerous to count (> 200 CFU)

Qualifiers

# -	Unknown hydrocarbon	B -	Analyte detected in associated Method Blank
E -	Value above quantitation range	H -	Holding times exceeded
I -	Associated internal standard was outside method criteria	M -	Manual Integration used to determine area response
ND -	Not Detected at the Reporting Limit	R -	RPD outside accepted recovery limits
S -	Spike Recovery outside recovery limits	T -	TIC(Tentatively identified compound)
X -	Value exceeds Maximum Contaminant Level		

Case Narrative

http://www.teklabinc.com/

Client: PSC Industrial Outsourcing, LP
Work Order: 17020468
Client Project: Champaign Soil Residual IRM 624-1610-001-J0055
Report Date: 22-Feb-17

Cooler Receipt Temp: 1.82 °C

Locations and Accreditations

	Collinsville	Springfield	Kansas City	Collinsville Air
Address	5445 Horseshoe Lake Road	3920 Pintail Dr	8421 Nieman Road	5445 Horseshoe Lake Road
	Collinsville, IL 62234-7425	Springfield, IL 62711-9415	Lenexa, KS 66214	Collinsville, IL 62234-7425
Phone	(618) 344-1004	(217) 698-1004	(913) 541-1998	(618) 344-1004
Fax	(618) 344-1005	(217) 698-1005	(913) 541-1998	(618) 344-1005
Email	jhriley@teklabinc.com	KKlostermann@teklabinc.com	Ryoungstrom@teklabinc.com	EHurley@teklabinc.com

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2018	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2017	Collinsville
Louisiana	LDEQ	166493	NELAP	6/30/2017	Collinsville
Louisiana	LDEQ	166578	NELAP	6/30/2017	Collinsville
Texas	TCEQ	T104704515-12-1	NELAP	7/31/2017	Collinsville
Arkansas	ADEQ	88-0966		3/14/2017	Collinsville
Illinois	IDPH	17584		5/31/2017	Collinsville
Kentucky	KDEP	98006		12/31/2017	Collinsville
Kentucky	UST	0073		1/31/2018	Collinsville
Missouri	MDNR	00930		5/31/2017	Collinsville
Missouri	MDNR	930		1/31/2018	Collinsville
Oklahoma	ODEQ	9978		8/31/2017	Collinsville

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020468

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 22-Feb-17

Lab ID: 17020468-001 **Client Sample ID:** CH-FS-01 (14-15)

Matrix: SOLID **Collection Date:** 02/06/2017 8:55

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**16.9**	%	1	02/10/2017 16:04	R229078
SW-846 9012A								
Cyanide, Amenable to Chlorination		0.29		**Interference**	mg/Kg-dry	1	02/13/2017 0:00	127029
SW-846 9012A (TOTAL)								
Cyanide	NELAP	0.29		**0.72**	mg/Kg-dry	1	02/10/2017 16:02	126977
SW-846 9045C								
pH (1:1)	NELAP	1.00		**8.06**		1	02/08/2017 22:05	R228964
SW-846 3050B, 6010B, METALS BY ICP								
Arsenic	NELAP	2.45		**7.19**	mg/Kg-dry	1	02/10/2017 22:42	126937
Barium	NELAP	0.25		**32.8**	mg/Kg-dry	1	02/10/2017 22:42	126937
Cadmium	NELAP	0.20		**0.21**	mg/Kg-dry	1	02/10/2017 22:42	126937
Chromium	NELAP	0.49		**15.9**	mg/Kg-dry	1	02/10/2017 22:42	126937
Lead	NELAP	1.47		**16.3**	mg/Kg-dry	1	02/10/2017 22:42	126937
Silver	NELAP	0.49		**< 0.49**	mg/Kg-dry	1	02/10/2017 22:42	126937
SW-846 3050B, 6020A, METALS BY ICPMS								
Selenium	NELAP	0.98		**< 0.98**	mg/Kg-dry	10	02/16/2017 2:56	126938
SW-846 7471B								
Mercury	NELAP	0.012		**< 0.012**	mg/Kg-dry	1	02/08/2017 15:24	126892

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020468

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 22-Feb-17

Lab ID: 17020468-002 **Client Sample ID:** CH-FS-01 (17-18)

Matrix: SOLID **Collection Date:** 02/06/2017 9:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**15.9**	%	1	02/10/2017 16:04	R229078
SW-846 9012A								
Cyanide, Amenable to Chlorination		0.27		**Interference**	mg/Kg-dry	1	02/13/2017 0:00	127029
SW-846 9012A (TOTAL)								
Cyanide	NELAP	0.25		**1.00**	mg/Kg-dry	1	02/10/2017 16:06	126977
SW-846 9045C								
pH (1:1)	NELAP	1.00		**8.05**		1	02/08/2017 22:09	R228964
SW-846 3050B, 6010B, METALS BY ICP								
Arsenic	NELAP	2.50		**7.12**	mg/Kg-dry	1	02/10/2017 22:46	126937
Barium	NELAP	0.25		**33.0**	mg/Kg-dry	1	02/10/2017 22:46	126937
Cadmium	NELAP	0.20		**< 0.20**	mg/Kg-dry	1	02/10/2017 22:46	126937
Chromium	NELAP	0.50		**19.2**	mg/Kg-dry	1	02/10/2017 22:46	126937
Lead	NELAP	1.50		**12.4**	mg/Kg-dry	1	02/10/2017 22:46	126937
Silver	NELAP	0.50		**< 0.50**	mg/Kg-dry	1	02/10/2017 22:46	126937
SW-846 3050B, 6020A, METALS BY ICPMS								
Selenium	NELAP	1.00		**< 1.00**	mg/Kg-dry	10	02/16/2017 3:04	126938
SW-846 7471B								
Mercury	NELAP	0.011		**< 0.011**	mg/Kg-dry	1	02/08/2017 15:27	126892

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020468

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 22-Feb-17

Lab ID: 17020468-003 **Client Sample ID:** CH-FS-02 (8-9)

Matrix: SOLID **Collection Date:** 02/06/2017 10:15

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**17.1**	%	1	02/10/2017 16:04	R229078
SW-846 9012A								
Cyanide, Amenable to Chlorination		2.84		**Interference**	mg/Kg-dry	10	02/13/2017 0:00	127029
SW-846 9012A (TOTAL)								
Cyanide	NELAP	0.25		**2.06**	mg/Kg-dry	1	02/10/2017 16:11	126977
SW-846 9045C								
pH (1:1)	NELAP	1.00		**7.89**		1	02/08/2017 22:12	R228964
SW-846 3050B, 6010B, METALS BY ICP								
Arsenic	NELAP	2.50		**7.87**	mg/Kg-dry	1	02/10/2017 22:49	126937
Barium	NELAP	0.25		**25.9**	mg/Kg-dry	1	02/10/2017 22:49	126937
Cadmium	NELAP	0.20		**< 0.20**	mg/Kg-dry	1	02/10/2017 22:49	126937
Chromium	NELAP	0.50		**5.40**	mg/Kg-dry	1	02/10/2017 22:49	126937
Lead	NELAP	1.50		**12.1**	mg/Kg-dry	1	02/10/2017 22:49	126937
Silver	NELAP	0.50		**< 0.50**	mg/Kg-dry	1	02/10/2017 22:49	126937
SW-846 3050B, 6020A, METALS BY ICPMS								
Selenium	NELAP	1.00		**< 1.00**	mg/Kg-dry	10	02/16/2017 3:12	126938
SW-846 7471B								
Mercury	NELAP	0.012		**0.012**	mg/Kg-dry	1	02/08/2017 15:29	126892

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020468

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 22-Feb-17

Lab ID: 17020468-004 **Client Sample ID:** CH-FS-02 (17-18)

Matrix: SOLID **Collection Date:** 02/06/2017 10:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**12.9**	%	1	02/10/2017 16:05	R229078
SW-846 9012A								
Cyanide, Amenable to Chlorination		5.37		**Interference**	mg/Kg-dry	20	02/13/2017 0:00	127029
SW-846 9012A (TOTAL)								
Cyanide	NELAP	2.68		**5.27**	mg/Kg-dry	10	02/10/2017 19:19	126977
SW-846 9045C								
pH (1:1)	NELAP	1.00		**8.24**		1	02/08/2017 22:16	R228964
SW-846 3050B, 6010B, METALS BY ICP								
Arsenic	NELAP	2.31		**4.00**	mg/Kg-dry	1	02/10/2017 22:53	126937
Barium	NELAP	0.23		**20.7**	mg/Kg-dry	1	02/10/2017 22:53	126937
Cadmium	NELAP	0.19		**< 0.19**	mg/Kg-dry	1	02/10/2017 22:53	126937
Chromium	NELAP	0.46		**6.89**	mg/Kg-dry	1	02/10/2017 22:53	126937
Lead	NELAP	1.39		**6.70**	mg/Kg-dry	1	02/10/2017 22:53	126937
Silver	NELAP	0.46		**< 0.46**	mg/Kg-dry	1	02/10/2017 22:53	126937
SW-846 3050B, 6020A, METALS BY ICPMS								
Selenium	NELAP	0.93		**< 0.93**	mg/Kg-dry	10	02/16/2017 3:20	126938
SW-846 7471B								
Mercury	NELAP	0.011		**< 0.011**	mg/Kg-dry	1	02/08/2017 15:31	126892

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020468

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 22-Feb-17

Lab ID: 17020468-005 **Client Sample ID:** CH-FS-02 (19-20)

Matrix: SOLID **Collection Date:** 02/06/2017 10:10

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**9.5**	%	1	02/10/2017 16:05	R229078
SW-846 9012A								
Cyanide, Amenable to Chlorination		0.26		**Interference**	mg/Kg-dry	1	02/13/2017 0:00	127029
SW-846 9012A (TOTAL)								
Cyanide	NELAP	0.22		**0.30**	mg/Kg-dry	1	02/10/2017 16:50	126977
SW-846 9045C								
pH (1:1)	NELAP	1.00		**8.43**		1	02/08/2017 22:18	R228964
SW-846 3050B, 6010B, METALS BY ICP								
Arsenic	NELAP	2.31		**5.07**	mg/Kg-dry	1	02/10/2017 22:57	126937
Barium	NELAP	0.23		**18.1**	mg/Kg-dry	1	02/10/2017 22:57	126937
Cadmium	NELAP	0.19		**< 0.19**	mg/Kg-dry	1	02/10/2017 22:57	126937
Chromium	NELAP	0.46		**15.1**	mg/Kg-dry	1	02/10/2017 22:57	126937
Lead	NELAP	1.39		**7.56**	mg/Kg-dry	1	02/10/2017 22:57	126937
Silver	NELAP	0.46		**< 0.46**	mg/Kg-dry	1	02/10/2017 22:57	126937
SW-846 3050B, 6020A, METALS BY ICPMS								
Selenium	NELAP	0.93		**< 0.93**	mg/Kg-dry	10	02/16/2017 3:28	126938
SW-846 7471B								
Mercury	NELAP	0.011		**< 0.011**	mg/Kg-dry	1	02/10/2017 10:09	126971

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020468

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 22-Feb-17

Lab ID: 17020468-006 **Client Sample ID:** CH-FS-03 (7-8)

Matrix: SOLID **Collection Date:** 02/06/2017 11:25

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**21.5**	%	1	02/10/2017 16:05	R229078
SW-846 9012A								
Cyanide, Amenable to Chlorination		6.06		**< 6.06**	mg/Kg-dry	20	02/14/2017 0:00	127029
SW-846 9012A (TOTAL)								
Cyanide	NELAP	5.95		**14.6**	mg/Kg-dry	20	02/10/2017 19:23	126977
SW-846 9045C								
pH (1:1)	NELAP	1.00		**7.48**		1	02/08/2017 22:19	R228964
SW-846 3050B, 6010B, METALS BY ICP								
Arsenic	NELAP	2.27		**13.3**	mg/Kg-dry	1	02/10/2017 23:00	126937
Barium	NELAP	0.23		**79.4**	mg/Kg-dry	1	02/10/2017 23:00	126937
Cadmium	NELAP	0.18		**0.47**	mg/Kg-dry	1	02/10/2017 23:00	126937
Chromium	NELAP	0.45		**14.3**	mg/Kg-dry	1	02/10/2017 23:00	126937
Lead	NELAP	1.36		**10.8**	mg/Kg-dry	1	02/10/2017 23:00	126937
Silver	NELAP	0.45		**< 0.45**	mg/Kg-dry	1	02/10/2017 23:00	126937
SW-846 3050B, 6020A, METALS BY ICPMS								
Selenium	NELAP	0.91		**< 0.91**	mg/Kg-dry	10	02/16/2017 3:36	126938
SW-846 7471B								
Mercury	NELAP	0.013		**0.026**	mg/Kg-dry	1	02/08/2017 15:40	126892

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020468

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 22-Feb-17

Lab ID: 17020468-007 **Client Sample ID:** CH-FS-03 (19-20)

Matrix: SOLID **Collection Date:** 02/06/2017 11:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**9.6**	%	1	02/10/2017 16:54	R229078
SW-846 9012A								
Cyanide, Amenable to Chlorination		0.28		**Interference**	mg/Kg-dry	1	02/13/2017 0:00	127029
SW-846 9012A (TOTAL)								
Cyanide	NELAP	0.28		**1.01**	mg/Kg-dry	1	02/10/2017 16:59	126977
SW-846 9045C								
pH (1:1)	NELAP	1.00		**8.28**		1	02/10/2017 13:09	R229021
SW-846 3050B, 6010B, METALS BY ICP								
Arsenic	NELAP	2.36		**5.85**	mg/Kg-dry	1	02/10/2017 23:04	126937
Barium	NELAP	0.24		**20.1**	mg/Kg-dry	1	02/10/2017 23:04	126937
Cadmium	NELAP	0.19		**< 0.19**	mg/Kg-dry	1	02/10/2017 23:04	126937
Chromium	NELAP	0.47		**16.9**	mg/Kg-dry	1	02/10/2017 23:04	126937
Lead	NELAP	1.42		**8.78**	mg/Kg-dry	1	02/10/2017 23:04	126937
Silver	NELAP	0.47		**< 0.47**	mg/Kg-dry	1	02/10/2017 23:04	126937
SW-846 3050B, 6020A, METALS BY ICPMS								
Selenium	NELAP	0.94		**< 0.94**	mg/Kg-dry	10	02/16/2017 3:44	126938
SW-846 7471B								
Mercury	NELAP	0.010		**< 0.010**	mg/Kg-dry	1	02/08/2017 15:47	126892

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020468

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 22-Feb-17

Lab ID: 17020468-008 **Client Sample ID:** CH-FS-04 (6-7)

Matrix: SOLID **Collection Date:** 02/06/2017 12:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**18.8**	%	1	02/10/2017 16:55	R229078
SW-846 9012A								
Cyanide, Amenable to Chlorination		0.60		**Interference**	mg/Kg-dry	2	02/13/2017 0:00	127029
SW-846 9012A (TOTAL)								
Cyanide	NELAP	0.53		**0.88**	mg/Kg-dry	2	02/10/2017 19:36	126977
SW-846 9045C								
pH (1:1)	NELAP	1.00		**7.82**		1	02/10/2017 13:11	R229021
SW-846 3050B, 6010B, METALS BY ICP								
Arsenic	NELAP	2.45		**7.99**	mg/Kg-dry	1	02/10/2017 23:08	126937
Barium	NELAP	0.25		**44.0**	mg/Kg-dry	1	02/10/2017 23:08	126937
Cadmium	NELAP	0.20		**0.25**	mg/Kg-dry	1	02/10/2017 23:08	126937
Chromium	NELAP	0.49		**14.7**	mg/Kg-dry	1	02/10/2017 23:08	126937
Lead	NELAP	1.47		**12.5**	mg/Kg-dry	1	02/10/2017 23:08	126937
Silver	NELAP	0.49		**< 0.49**	mg/Kg-dry	1	02/10/2017 23:08	126937
SW-846 3050B, 6020A, METALS BY ICPMS								
Selenium	NELAP	0.98		**< 0.98**	mg/Kg-dry	10	02/16/2017 3:52	126938
SW-846 7471B								
Mercury	NELAP	0.012		**0.022**	mg/Kg-dry	1	02/08/2017 15:49	126892

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020468

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 22-Feb-17

Lab ID: 17020468-009 **Client Sample ID:** CH-FS-04 (11-12)

Matrix: SOLID **Collection Date:** 02/06/2017 12:50

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**12.1**	%	1	02/10/2017 16:55	R229078
SW-846 9012A								
Cyanide, Amenable to Chlorination		0.26		**Interference**	mg/Kg-dry	1	02/13/2017 0:00	127029
SW-846 9012A (TOTAL)								
Cyanide	NELAP	0.26		**< 0.26**	mg/Kg-dry	1	02/10/2017 17:12	126977
SW-846 9045C								
pH (1:1)	NELAP	1.00		**8.64**		1	02/10/2017 13:13	R229021
SW-846 3050B, 6010B, METALS BY ICP								
Arsenic	NELAP	2.50		**6.26**	mg/Kg-dry	1	02/10/2017 23:30	126937
Barium	NELAP	0.25		**28.1**	mg/Kg-dry	1	02/10/2017 23:30	126937
Cadmium	NELAP	0.20		**< 0.20**	mg/Kg-dry	1	02/10/2017 23:30	126937
Chromium	NELAP	0.50		**17.6**	mg/Kg-dry	1	02/10/2017 23:30	126937
Lead	NELAP	1.50		**10.2**	mg/Kg-dry	1	02/10/2017 23:30	126937
Silver	NELAP	0.50		**< 0.50**	mg/Kg-dry	1	02/10/2017 23:30	126937
SW-846 3050B, 6020A, METALS BY ICPMS								
Selenium	NELAP	1.00		**< 1.00**	mg/Kg-dry	10	02/16/2017 5:45	126938
SW-846 7471B								
Mercury	NELAP	0.011		**0.011**	mg/Kg-dry	1	02/08/2017 15:51	126892

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020468

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 22-Feb-17

Lab ID: 17020468-010 **Client Sample ID:** CH-FS-04 (16-17)

Matrix: SOLID **Collection Date:** 02/06/2017 12:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**9.3**	%	1	02/10/2017 16:56	R229078
SW-846 9012A								
Cyanide, Amenable to Chlorination		0.27		**Interference**	mg/Kg-dry	1	02/13/2017 0:00	127044
SW-846 9012A (TOTAL)								
Cyanide	NELAP	0.25		**< 0.25**	mg/Kg-dry	1	02/10/2017 17:16	126977
SW-846 9045C								
pH (1:1)	NELAP	1.00		**8.59**		1	02/10/2017 13:14	R229021
SW-846 3050B, 6010B, METALS BY ICP								
Arsenic	NELAP	2.36		**4.97**	mg/Kg-dry	1	02/10/2017 23:33	126937
Barium	NELAP	0.24		**16.3**	mg/Kg-dry	1	02/10/2017 23:33	126937
Cadmium	NELAP	0.19		**< 0.19**	mg/Kg-dry	1	02/10/2017 23:33	126937
Chromium	NELAP	0.47		**16.4**	mg/Kg-dry	1	02/10/2017 23:33	126937
Lead	NELAP	1.42		**8.44**	mg/Kg-dry	1	02/10/2017 23:33	126937
Silver	NELAP	0.47		**< 0.47**	mg/Kg-dry	1	02/10/2017 23:33	126937
SW-846 3050B, 6020A, METALS BY ICPMS								
Selenium	NELAP	0.94		**< 0.94**	mg/Kg-dry	10	02/16/2017 5:53	126938
SW-846 7471B								
Mercury	NELAP	0.011		**< 0.011**	mg/Kg-dry	1	02/08/2017 15:54	126892

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020468

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 22-Feb-17

Lab ID: 17020468-011 **Client Sample ID:** CH-FS-05 (5-6)

Matrix: SOLID **Collection Date:** 02/06/2017 14:50

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**23.6**	%	1	02/10/2017 16:56	R229078
SW-846 9012A								
Cyanide, Amenable to Chlorination		0.27		**Interference**	mg/Kg-dry	1	02/15/2017 13:30	127179
SW-846 9012A (TOTAL)								
Cyanide	NELAP	0.25		**0.60**	mg/Kg-dry	1	02/13/2017 15:29	127042
SW-846 9045C								
pH (1:1)	NELAP	1.00		**7.37**		1	02/10/2017 13:16	R229021
SW-846 3050B, 6010B, METALS BY ICP								
Arsenic	NELAP	2.45		**6.22**	mg/Kg-dry	1	02/10/2017 23:37	126937
Barium	NELAP	0.25		**137**	mg/Kg-dry	1	02/10/2017 23:37	126937
Cadmium	NELAP	0.20		**0.36**	mg/Kg-dry	1	02/10/2017 23:37	126937
Chromium	NELAP	0.49		**22.5**	mg/Kg-dry	1	02/10/2017 23:37	126937
Lead	NELAP	1.47		**16.2**	mg/Kg-dry	1	02/10/2017 23:37	126937
Silver	NELAP	0.49		**< 0.49**	mg/Kg-dry	1	02/10/2017 23:37	126937
SW-846 3050B, 6020A, METALS BY ICPMS								
Selenium	NELAP	0.98		**< 0.98**	mg/Kg-dry	10	02/16/2017 6:01	126938
SW-846 7471B								
Mercury	NELAP	0.013		**0.045**	mg/Kg-dry	1	02/08/2017 15:56	126892

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020468

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 22-Feb-17

Lab ID: 17020468-012 **Client Sample ID:** CH-FS-05 (16-17)

Matrix: SOLID **Collection Date:** 02/06/2017 14:55

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**11.2**	%	1	02/10/2017 16:56	R229078
SW-846 9012A								
Cyanide, Amenable to Chlorination		0.23		**Interference**	mg/Kg-dry	1	02/15/2017 13:30	127179
SW-846 9012A (TOTAL)								
Cyanide	NELAP	0.20		**0.37**	mg/Kg-dry	1	02/13/2017 15:33	127042
SW-846 9045C								
pH (1:1)	NELAP	1.00		**8.14**		1	02/10/2017 13:18	R229021
SW-846 3050B, 6010B, METALS BY ICP								
Arsenic	NELAP	2.40		**7.60**	mg/Kg-dry	1	02/10/2017 23:41	126937
Barium	NELAP	0.24		**25.6**	mg/Kg-dry	1	02/10/2017 23:41	126937
Cadmium	NELAP	0.19		**0.19**	mg/Kg-dry	1	02/10/2017 23:41	126937
Chromium	NELAP	0.48		**17.2**	mg/Kg-dry	1	02/10/2017 23:41	126937
Lead	NELAP	1.44		**11.7**	mg/Kg-dry	1	02/10/2017 23:41	126937
Silver	NELAP	0.48		**< 0.48**	mg/Kg-dry	1	02/10/2017 23:41	126937
SW-846 3050B, 6020A, METALS BY ICPMS								
Selenium	NELAP	0.96		**1.25**	mg/Kg-dry	10	02/16/2017 6:09	126938
SW-846 7471B								
Mercury	NELAP	0.011		**< 0.011**	mg/Kg-dry	1	02/08/2017 15:58	126892

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020468

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 22-Feb-17

Lab ID: 17020468-013 **Client Sample ID:** CH-FS-06 (18-19)

Matrix: SOLID **Collection Date:** 02/06/2017 16:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**15.1**	%	1	02/10/2017 16:57	R229078
SW-846 9012A								
Cyanide, Amenable to Chlorination		0.29		**Interference**	mg/Kg-dry	1	02/15/2017 13:30	127179
SW-846 9012A (TOTAL)								
Cyanide	NELAP	0.29		**0.60**	mg/Kg-dry	1	02/15/2017 21:12	127181
SW-846 9045C								
pH (1:1)	NELAP	1.00		**8.17**		1	02/10/2017 13:20	R229021
SW-846 3050B, 6010B, METALS BY ICP								
Arsenic	NELAP	2.50		**7.31**	mg/Kg-dry	1	02/10/2017 23:44	126937
Barium	NELAP	0.25		**21.7**	mg/Kg-dry	1	02/10/2017 23:44	126937
Cadmium	NELAP	0.20		**< 0.20**	mg/Kg-dry	1	02/10/2017 23:44	126937
Chromium	NELAP	0.50		**12.6**	mg/Kg-dry	1	02/10/2017 23:44	126937
Lead	NELAP	1.50		**13.4**	mg/Kg-dry	1	02/10/2017 23:44	126937
Silver	NELAP	0.50		**< 0.50**	mg/Kg-dry	1	02/10/2017 23:44	126937
SW-846 3050B, 6020A, METALS BY ICPMS								
Selenium	NELAP	1.00		**< 1.00**	mg/Kg-dry	10	02/16/2017 6:17	126938
SW-846 7471B								
Mercury	NELAP	0.012		**< 0.012**	mg/Kg-dry	1	02/10/2017 10:21	126971

Client: PSC Industrial Outsourcing, LP
Work Order: 17020468
Client Project: Champaign Soil Residual IRM 624-1610-001-J0055
Report Date: 22-Feb-17

Lab Sample ID	Client Sample ID	Matrix	Fractions	Collection Date
17020468-001	CH-FS-01 (14-15)	Solid	1	02/06/2017 8:55
17020468-002	CH-FS-01 (17-18)	Solid	1	02/06/2017 9:00
17020468-003	CH-FS-02 (8-9)	Solid	1	02/06/2017 10:15
17020468-004	CH-FS-02 (17-18)	Solid	1	02/06/2017 10:00
17020468-005	CH-FS-02 (19-20)	Solid	1	02/06/2017 10:10
17020468-006	CH-FS-03 (7-8)	Solid	1	02/06/2017 11:25
17020468-007	CH-FS-03 (19-20)	Solid	1	02/06/2017 11:30
17020468-008	CH-FS-04 (6-7)	Solid	1	02/06/2017 12:40
17020468-009	CH-FS-04 (11-12)	Solid	1	02/06/2017 12:50
17020468-010	CH-FS-04 (16-17)	Solid	1	02/06/2017 12:30
17020468-011	CH-FS-05 (5-6)	Solid	1	02/06/2017 14:50
17020468-012	CH-FS-05 (16-17)	Solid	1	02/06/2017 14:55
17020468-013	CH-FS-06 (18-19)	Solid	1	02/06/2017 16:00

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020468

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 22-Feb-17

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			Prep Date/Time	Analysis Date/Time
17020468-001A	CH-FS-01 (14-15)	02/06/2017 8:55	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/10/2017 16:04
	SW-846 3050B, 6010B, Metals by ICP			02/09/2017 8:53	02/10/2017 22:42
	SW-846 3050B, 6020A, Metals by ICPMS			02/09/2017 8:54	02/16/2017 2:56
	SW-846 7471B			02/08/2017 12:00	02/08/2017 15:24
	SW-846 9012A			02/10/2017 20:30	02/13/2017 0:00
	SW-846 9012A (Total)			02/09/2017 17:00	02/10/2017 16:02
	SW-846 9045C				02/08/2017 22:05
17020468-002A	CH-FS-01 (17-18)	02/06/2017 9:00	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/10/2017 16:04
	SW-846 3050B, 6010B, Metals by ICP			02/09/2017 8:53	02/10/2017 22:46
	SW-846 3050B, 6020A, Metals by ICPMS			02/09/2017 8:54	02/16/2017 3:04
	SW-846 7471B			02/08/2017 12:00	02/08/2017 15:27
	SW-846 9012A			02/10/2017 20:30	02/13/2017 0:00
	SW-846 9012A (Total)			02/09/2017 17:00	02/10/2017 16:06
	SW-846 9045C				02/08/2017 22:09
17020468-003A	CH-FS-02 (8-9)	02/06/2017 10:15	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/10/2017 16:04
	SW-846 3050B, 6010B, Metals by ICP			02/09/2017 8:53	02/10/2017 22:49
	SW-846 3050B, 6020A, Metals by ICPMS			02/09/2017 8:54	02/16/2017 3:12
	SW-846 7471B			02/08/2017 12:00	02/08/2017 15:29
	SW-846 9012A			02/10/2017 20:30	02/13/2017 0:00
	SW-846 9012A (Total)			02/09/2017 17:00	02/10/2017 16:11
	SW-846 9045C				02/08/2017 22:12
17020468-004A	CH-FS-02 (17-18)	02/06/2017 10:00	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/10/2017 16:05
	SW-846 3050B, 6010B, Metals by ICP			02/09/2017 8:53	02/10/2017 22:53
	SW-846 3050B, 6020A, Metals by ICPMS			02/09/2017 8:54	02/16/2017 3:20
	SW-846 7471B			02/08/2017 12:00	02/08/2017 15:31
	SW-846 9012A			02/10/2017 20:30	02/13/2017 0:00
	SW-846 9012A (Total)			02/09/2017 17:00	02/10/2017 19:19
	SW-846 9045C				02/08/2017 22:16
17020468-005A	CH-FS-02 (19-20)	02/06/2017 10:10	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/10/2017 16:05
	SW-846 3050B, 6010B, Metals by ICP			02/09/2017 8:53	02/10/2017 22:57
	SW-846 3050B, 6020A, Metals by ICPMS			02/09/2017 8:54	02/16/2017 3:28
	SW-846 7471B			02/09/2017 18:27	02/10/2017 10:09

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020468

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 22-Feb-17

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			Prep Date/Time	Analysis Date/Time
	SW-846 9012A			02/10/2017 20:30	02/13/2017 0:00
	SW-846 9012A (Total)			02/09/2017 17:00	02/10/2017 16:50
	SW-846 9045C				02/08/2017 22:18
17020468-006A	CH-FS-03 (7-8)	02/06/2017 11:25	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/10/2017 16:05
	SW-846 3050B, 6010B, Metals by ICP			02/09/2017 8:53	02/10/2017 23:00
	SW-846 3050B, 6020A, Metals by ICPMS			02/09/2017 8:54	02/16/2017 3:36
	SW-846 7471B			02/08/2017 12:00	02/08/2017 15:40
	SW-846 9012A			02/10/2017 20:30	02/14/2017 0:00
	SW-846 9012A (Total)			02/09/2017 17:00	02/10/2017 19:23
	SW-846 9045C				02/08/2017 22:19
17020468-007A	CH-FS-03 (19-20)	02/06/2017 11:30	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/10/2017 16:54
	SW-846 3050B, 6010B, Metals by ICP			02/09/2017 8:53	02/10/2017 23:04
	SW-846 3050B, 6020A, Metals by ICPMS			02/09/2017 8:54	02/16/2017 3:44
	SW-846 7471B			02/08/2017 12:00	02/08/2017 15:47
	SW-846 9012A			02/10/2017 20:30	02/13/2017 0:00
	SW-846 9012A (Total)			02/09/2017 17:00	02/10/2017 16:59
	SW-846 9045C				02/10/2017 13:09
17020468-008A	CH-FS-04 (6-7)	02/06/2017 12:40	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/10/2017 16:55
	SW-846 3050B, 6010B, Metals by ICP			02/09/2017 8:53	02/10/2017 23:08
	SW-846 3050B, 6020A, Metals by ICPMS			02/09/2017 8:54	02/16/2017 3:52
	SW-846 7471B			02/08/2017 12:00	02/08/2017 15:49
	SW-846 9012A			02/10/2017 20:30	02/13/2017 0:00
	SW-846 9012A (Total)			02/09/2017 17:00	02/10/2017 19:36
	SW-846 9045C				02/10/2017 13:11
17020468-009A	CH-FS-04 (11-12)	02/06/2017 12:50	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/10/2017 16:55
	SW-846 3050B, 6010B, Metals by ICP			02/09/2017 8:53	02/10/2017 23:30
	SW-846 3050B, 6020A, Metals by ICPMS			02/09/2017 8:54	02/16/2017 5:45
	SW-846 7471B			02/08/2017 12:00	02/08/2017 15:51
	SW-846 9012A			02/10/2017 20:30	02/13/2017 0:00
	SW-846 9012A (Total)			02/09/2017 17:00	02/10/2017 17:12
	SW-846 9045C				02/10/2017 13:13
17020468-010A	CH-FS-04 (16-17)	02/06/2017 12:30	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/10/2017 16:56

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020468

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 22-Feb-17

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
	SW-846 3050B, 6010B, Metals by ICP			02/09/2017 8:53	02/10/2017 23:33
	SW-846 3050B, 6020A, Metals by ICPMS			02/09/2017 8:54	02/16/2017 5:53
	SW-846 7471B			02/08/2017 12:00	02/08/2017 15:54
	SW-846 9012A			02/11/2017 15:00	02/13/2017 0:00
	SW-846 9012A (Total)			02/09/2017 17:00	02/10/2017 17:16
	SW-846 9045C				02/10/2017 13:14
17020468-011A	CH-FS-05 (5-6)	02/06/2017 14:50	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/10/2017 16:56
	SW-846 3050B, 6010B, Metals by ICP			02/09/2017 8:53	02/10/2017 23:37
	SW-846 3050B, 6020A, Metals by ICPMS			02/09/2017 8:54	02/16/2017 6:01
	SW-846 7471B			02/08/2017 12:00	02/08/2017 15:56
	SW-846 9012A			02/15/2017 10:15	02/15/2017 13:30
	SW-846 9012A (Total)			02/10/2017 17:15	02/13/2017 15:29
	SW-846 9045C				02/10/2017 13:16
17020468-012A	CH-FS-05 (16-17)	02/06/2017 14:55	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/10/2017 16:56
	SW-846 3050B, 6010B, Metals by ICP			02/09/2017 8:53	02/10/2017 23:41
	SW-846 3050B, 6020A, Metals by ICPMS			02/09/2017 8:54	02/16/2017 6:09
	SW-846 7471B			02/08/2017 12:00	02/08/2017 15:58
	SW-846 9012A			02/15/2017 10:15	02/15/2017 13:30
	SW-846 9012A (Total)			02/10/2017 17:15	02/13/2017 15:33
	SW-846 9045C				02/10/2017 13:18
17020468-013A	CH-FS-06 (18-19)	02/06/2017 16:00	02/08/2017 8:02		
	EPA SW846 3550C, 5035A, ASTM D2974				02/10/2017 16:57
	SW-846 3050B, 6010B, Metals by ICP			02/09/2017 8:53	02/10/2017 23:44
	SW-846 3050B, 6020A, Metals by ICPMS			02/09/2017 8:54	02/16/2017 6:17
	SW-846 7471B			02/09/2017 18:27	02/10/2017 10:21
	SW-846 9012A			02/15/2017 10:15	02/15/2017 13:30
	SW-846 9012A (Total)			02/15/2017 14:10	02/15/2017 21:12
	SW-846 9045C				02/10/2017 13:20

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020468

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 22-Feb-17

EPA SW846 3550C, 5035A, ASTM D2974

Batch R229078 **SampType:** LCS Units **%**

SampID: LCS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	02/10/2017

Batch R229078 **SampType:** LCSQC Units **%**

SampID: LCSQC

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	02/10/2017

SW-846 9012A (TOTAL)

Batch 126977 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK 170209 TCN1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cyanide	0.25		**< 0.25**						02/10/2017

Batch 126977 **SampType:** LCS Units **mg/Kg**

SampID: LCS 170209 TCN1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cyanide	0.25		**1.30**	1.250	0	104.2	85	115	02/10/2017

Batch 127042 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK 170210 TCN6

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cyanide	0.25		**< 0.25**						02/13/2017

Batch 127042 **SampType:** LCS Units **mg/Kg**

SampID: LCS 170210 TCN6

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cyanide	0.25		**1.16**	1.250	0	92.5	85	115	02/13/2017

Batch 127181 **SampType:** MS Units **mg/Kg-dry**

SampID: 17020468-013AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cyanide	0.29		**1.91**	1.443	0.5983	91.2	75	125	02/15/2017

Batch 127181 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **15**

SampID: 17020468-013AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Cyanide	0.28		**1.95**	1.402	0.5983	96.3	1.915	1.74	02/15/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020468

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 22-Feb-17

SW-846 9045C

Batch R228964 **SampType:** LCS Units

SampID: LCS-R228964

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
pH (1:1)	1.00		**6.98**	7.000	0	99.7	99.1	100.8	02/08/2017

Batch R228964 **SampType:** DUP Units RPD Limit **10**

SampID: 17020468-001ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)	1.00		**8.14**				8.060	0.99	02/08/2017

Batch R228964 **SampType:** DUP Units RPD Limit **10**

SampID: 17020468-002ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)	1.00		**8.10**				8.050	0.62	02/08/2017

Batch R228964 **SampType:** DUP Units RPD Limit **10**

SampID: 17020468-003ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)	1.00		**7.85**				7.890	0.51	02/08/2017

Batch R228964 **SampType:** DUP Units RPD Limit **10**

SampID: 17020468-004ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)	1.00		**8.30**				8.240	0.73	02/08/2017

Batch R228964 **SampType:** DUP Units RPD Limit **10**

SampID: 17020468-005ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)	1.00		**8.41**				8.430	0.24	02/08/2017

Batch R228964 **SampType:** DUP Units RPD Limit **10**

SampID: 17020468-006ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)	1.00		**7.52**				7.480	0.53	02/08/2017

Batch R229021 **SampType:** LCS Units

SampID: LCS-R229021

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
pH (1:1)	1.00		**6.99**	7.000	0	99.9	99.1	100.8	02/10/2017

Batch R229021 **SampType:** DUP Units RPD Limit **10**

SampID: 17020468-007ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)	1.00		**8.28**				8.280	0.00	02/10/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020468

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 22-Feb-17

SW-846 9045C

Batch R229021 **SampType:** DUP Units RPD Limit 10

SampID: 17020468-008ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)	1.00		**7.74**				7.820	1.03	02/10/2017

Batch R229021 **SampType:** DUP Units RPD Limit 10

SampID: 17020468-009ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)	1.00		**8.60**				8.640	0.46	02/10/2017

Batch R229021 **SampType:** DUP Units RPD Limit 10

SampID: 17020468-010ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)	1.00		**8.56**				8.590	0.35	02/10/2017

Batch R229021 **SampType:** DUP Units RPD Limit 10

SampID: 17020468-011ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)	1.00		**7.42**				7.370	0.68	02/10/2017

Batch R229021 **SampType:** DUP Units RPD Limit 10

SampID: 17020468-012ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)	1.00		**8.10**				8.140	0.49	02/10/2017

Batch R229021 **SampType:** DUP Units RPD Limit 10

SampID: 17020468-013ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)	1.00		**8.18**				8.170	0.12	02/10/2017

SW-846 3050B, 6010B, METALS BY ICP

Batch 126937 **SampType:** MBLK Units **mg/Kg-dry**

SampID: MBLK-126937

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	2.50		**< 2.50**	2.500	0	0	-100	100	02/10/2017
Barium	0.25		**< 0.25**	0.2500	0	0	-100	100	02/10/2017
Cadmium	0.20		**< 0.20**	0.2000	0	0	-100	100	02/10/2017
Chromium	0.50		**< 0.50**	0.5000	0	0	-100	100	02/10/2017
Lead	1.50		**< 1.50**	1.500	0	0	-100	100	02/10/2017
Silver	0.50		**< 0.50**	0.5000	0	0	-100	100	02/10/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020468

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 22-Feb-17

SW-846 3050B, 6010B, METALS BY ICP

Batch 126937 **SampType:** LCS Units **mg/Kg-dry**

SampID: LCS-126937

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	2.50		**47.2**	50.00	0	94.5	85	115	02/10/2017
Barium	0.25		**213**	200.0	0	106.4	85	115	02/10/2017
Cadmium	0.20		**5.08**	5.000	0	101.6	85	115	02/10/2017
Chromium	0.50		**20.6**	20.00	0	102.8	85	115	02/10/2017
Lead	1.50		**52.5**	50.00	0	105.1	85	115	02/10/2017
Silver	0.50		**5.06**	5.000	0	101.2	85	115	02/10/2017

Batch 126937 **SampType:** MS Units **mg/Kg-dry**

SampID: 17020468-008AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	2.40		**52.8**	48.08	7.990	93.2	75	125	02/10/2017
Barium	0.24		**246**	192.3	43.96	104.9	75	125	02/10/2017
Cadmium	0.19		**4.96**	4.808	0.2549	97.9	75	125	02/10/2017
Chromium	0.48		**33.0**	19.23	14.70	95.2	75	125	02/10/2017
Lead	1.44		**59.5**	48.08	12.54	97.6	75	125	02/10/2017
Silver	0.48		**4.74**	4.808	0	98.6	75	125	02/10/2017

Batch 126937 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **20**

SampID: 17020468-008AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Arsenic	2.40		**53.8**	48.08	7.990	95.2	52.80	1.80	02/10/2017
Barium	0.24		**253**	192.3	43.96	108.8	245.8	2.97	02/10/2017
Cadmium	0.19		**5.06**	4.808	0.2549	99.9	4.962	1.92	02/10/2017
Chromium	0.48		**35.1**	19.23	14.70	106.2	33.00	6.21	02/10/2017
Lead	1.44		**60.9**	48.08	12.54	100.5	59.46	2.35	02/10/2017
Silver	0.48		**4.83**	4.808	0	100.4	4.740	1.81	02/10/2017

SW-846 3050B, 6020A, METALS BY ICPMS

Batch 126938 **SampType:** MBLK Units **mg/Kg-dry**

SampID: MBLK-126938

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Selenium	1.00		**< 1.00**	1.000	0	0	-100	100	02/16/2017

Batch 126938 **SampType:** LCS Units **mg/Kg-dry**

SampID: LCS-126938

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Selenium	1.00		**50.5**	50.00	0	101.1	80	120	02/16/2017

Batch 126938 **SampType:** MS Units **mg/Kg-dry**

SampID: 17020468-008AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Selenium	0.96		**47.0**	48.08	0	97.7	75	125	02/16/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020468

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 22-Feb-17

SW-846 3050B, 6020A, METALS BY ICPMS

Batch 126938 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **20**

SampID: 17020468-008AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Selenium	0.96		**48.1**	48.08	0	100.0	46.97	2.32	02/16/2017

SW-846 7471B

Batch 126892 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK-126892

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.010		**< 0.010**	0.01000	0	0	-100	100	02/08/2017

Batch 126892 **SampType:** LCS Units **mg/Kg**

SampID: LCS-126892

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.010		**0.270**	0.2500	0	107.9	85	115	02/08/2017

Batch 126971 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK-126971

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.010		**< 0.010**	0.01000	0	0	-100	100	02/10/2017

Batch 126971 **SampType:** LCS Units **mg/Kg**

SampID: LCS-126971

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.010		**0.247**	0.2500	0	98.8	85	115	02/10/2017

Batch 126971 **SampType:** MS Units **mg/Kg-dry**

SampID: 17020468-005AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.011		**0.299**	0.2694	0.008890	107.6	75	125	02/10/2017

Batch 126971 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **15**

SampID: 17020468-005AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Mercury	0.011		**0.289**	0.2694	0.008890	104.1	0.2988	3.20	02/10/2017

Receiving Check List

Teklab, Inc. Environmental Laboratory

http://www.teklabinc.com/

Client: PSC Industrial Outsourcing, LP

Work Order: 17020468

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055

Report Date: 22-Feb-17

Carrier: Employee

Received By: AMD

Completed by: Amber M. Dilallo
On: 08-Feb-17

Reviewed by: Elizabeth A. Hurley
On: 08-Feb-17

Pages to follow: Chain of custody 2 Extra pages included 0

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C	1.82
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice	☐
Chain of custody present?	Yes ☑	No ☐			
Chain of custody signed when relinquished and received?	Yes ☑	No ☐			
Chain of custody agrees with sample labels?	Yes ☑	No ☐			
Samples in proper container/bottle?	Yes ☑	No ☐			
Sample containers intact?	Yes ☑	No ☐			
Sufficient sample volume for indicated test?	Yes ☑	No ☐			
All samples received within holding time?	Yes ☑	No ☐			
Reported field parameters measured:	Field ☐	Lab ☐	NA ☑		
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐			

When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.

Water – at least one vial per sample has zero headspace?	Yes ☐	No ☐	No VOA vials ☑
Water - TOX containers have zero headspace?	Yes ☐	No ☐	No TOX containers ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	NA ☑
NPDES/CWA TCN interferences checked/treated in the field?	Yes ☐	No ☐	NA ☑

Any No responses must be detailed below or on the COC.

CHAIN OF CUSTODY

pg. 1 of 9 Work order # 17020468

TEKLAB, INC. 5445 Horseshoe Lake Road - Collinsville, IL 62234 - Phone: (618) 344-1004 - Fax: (618) 344-1005

Client:	PSC Industrial Outsourcing, LP
Address:	210 West Sand Bank Road
City / State / Zip	Columbia, IL 62236-0230
Contact:	Michael Crutcher
Phone:	(618) 281-7173
E-Mail:	mcrutcher@pscnow.com
Fax:	(618) 281-5120

Samples on: ☒ ICE ☐ BLUE ICE ☐ NO ICE 1.8 °C

Preserved in: ☐ LAB ☐ FIELD

FOR LAB USE ONLY

Lab Notes

Client Comments: ~~[illegible]~~ TAT Standard

Are these samples known to be involved in litigation? If yes, a surcharge will apply ☐ Yes ☒ No

Are these samples known to be hazardous? ☐ Yes ☒ No

Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section. ☐ Yes ☒ No

Project Name/Number: Champaign Soil Residual IRM 624-1610-001-J0055

Sample Collector's Name: Katelyn Bertels

Results Requested: ☒ Standard ☒ 1-2 Day (100% Surcharge) ☐ Other ____ ☐ 3 Day (50% Surcharge)

Billing Instructions: PSC

Lab Use Only	Sample Identification	Date/Time Sampled	# and Type of Containers: UNPRES	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	OTHER	MATRIX: Aqueous	Drinking Water	Soil	Sludge	Special Waste	Groundwater	Amenable Cyanide	OA2 8015	PAH 8270 SIM	pH	SVOC 8270 (No PAH)	Total 8 RCRA Metals Teco	Total Cyanide	VOC 8260
17020468-001	CH-FS-01 (14-15)	2/6/17 8:55	3					1	2				X				X			X		X	X	
002	CH-FS-01 (17-18)	2/6/17 9:00	3					1	2				X				X			X		X	X	
003	CH-FS-02 (8-9)	2/6/17 10:15	3					1	2				X				X			X		X	X	
004	CH-FS-02 (17-18)	2/6/17 10:00	3					1	2				X				X			X		X	X	
005	CH-FS-02 (19-20)	2/6/17 10:10	3					1	2				X				X			X		X	X	
006	CH-FS-03 (7-8)	2/6/17 11:25	3					1	2				X				X			X		X	X	
007	CH-FS-03 (19-20)	2/6/17 11:30	3					1	2				X				X			X		X	X	
008	CH-FS-04 (6-7)	2/6/17 12:40	3					1	2				X				X			X		X	X	
009	CH-FS-04 (11-12)	2/6/17 12:50	3					1	2				X				X			X		X	X	
010	CH-FS-04 (16-17)	2/6/17 12:30	3					1	2				X				X			X		X	X	

Relinquished By	Date/Time	Received By	Date/Time
Katelyn Bertels	2/8/17 8:02	[illegible]	2/8/17 802

The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions.

BottleOrder: 35826

2/8/17

CHAIN OF CUSTODY

pg. 8 of 9 Work order # 17020468

TEKLAB, INC. 5445 Horseshoe Lake Road - Collinsville, IL 62234 - Phone: (618) 344-1004 - Fax: (618) 344-1005

Client: PSC Industrial Outsourcing, LP
Address: 210 West Sand Bank Road
City / State / Zip Columbia, IL 62236-0230
Contact: Michael Crutcher **Phone:** (618) 281-7173
E-Mail: mcrutcher@pscnow.com **Fax:** (618) 281-5120

Samples on: ☐ ICE ☐ BLUE ICE ☐ NO ICE _____ °C
Preserved in: ☐ LAB ☐ FIELD **FOR LAB USE ONLY**
Lab Notes

Client Comments: ~~[illegible]~~ TAT Standard

e these samples known to be involved in litigation? If yes, a surcharge will apply ☐ Yes ☒ No
e these samples known to be hazardous? ☐ Yes ☒ No
e there any required reporting limits to be met on the requested analysis?. If yes, please provide
nits in the comment section. ☐ Yes ☒ No

Project Name/Number
hampaign Soil Residual IRM 624-1610-
01-J0055

Sample Collector's Name
Katelyn Bertels

Results Requested
☒ Standard ☒ 1-2 Day (100% Surcharge)
☐ Other _____ ☐ 3 Day (50% Surcharge)

Billing Instructions
PSC

Lab Use Only	Sample Identification	Date/Time Sampled	# and Type of Containers: UNPRES	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	OTHER	MATRIX: Aqueous	Drinking Water	Soil	Sludge	Special Waste	Groundwater	INDICATE ANALYSIS REQUESTED: Amenable Cyanide	OA2 8015	PAH 8270 SIM	pH	SVOC 8270 (No PAH)	Total 8 RCRA Metals Tacp	Total Cyanide	VOC 8260
17020468-011	CH-FS-05 (5-6)	2/6/17 14:50	3					1	2				X				X			X		X	X	
012	CH-FS-05 (16-17)	2/6/17 14:55	3					1	2				X				X			X		X	X	
013	CH-FS-06 (18-19)	2/6/17 16:00	3					1	2				X				X			X		X	X	

Relinquished By	Date/Time	Received By	Date/Time
Katelyn Bertels	2/8/17 8:02	Omar Dilcillo	2/8/17 8:02

e individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this reement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions.

BottleOrder: 35826

February 15, 2017

Michael Crutcher
PSC Industrial Outsourcing, LP
210 West Sand Bank Road
Columbia, IL 62236-0230
TEL: (618) 281-7173
FAX: (618) 281-5120

RE: Champaign Soil Residual IRM 624-1610-001-J0055 **WorkOrder:** 17020673

Dear Michael Crutcher:

TEKLAB, INC received 3 samples on 2/9/2017 4:07:00 PM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Michael L. Austin
Project Manager
(618)344-1004 ex 16
MAustin@teklabinc.com

Client: PSC Industrial Outsourcing, LP
Work Order: 17020673
Client Project: Champaign Soil Residual IRM 624-1610-001-J0055
Report Date: 15-Feb-17

This reporting package includes the following:

Cover Letter	1
Report Contents	2
Definitions	3
Case Narrative	4
Laboratory Results	5
Sample Summary	14
Dates Report	15
Quality Control Results	16
Receiving Check List	30
Chain of Custody	Appended

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020673

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 15-Feb-17

Abbr Definition

CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilutions factors.
DNI	Did not ignite
DUP	Laboratory duplicate is an aliquot of a sample taken from the same container under laboratory conditions for independent processing and analysis independently of the original aliquot.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample, spiked with verified known amounts of analytes, is analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system. The acceptable recovery range is in the QC Package (provided upon request).
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MBLK	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	Method detection limit means the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero.
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions. The acceptable recovery range is listed in the QC Package (provided upon request).
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TIC	Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
TNTC	Too numerous to count (> 200 CFU)

Qualifiers

# -	Unknown hydrocarbon	B -	Analyte detected in associated Method Blank
E -	Value above quantitation range	H -	Holding times exceeded
I -	Associated internal standard was outside method criteria	M -	Manual Integration used to determine area response
ND -	Not Detected at the Reporting Limit	R -	RPD outside accepted recovery limits
S -	Spike Recovery outside recovery limits	T -	TIC(Tentatively identified compound)
X -	Value exceeds Maximum Contaminant Level		

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020673

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 15-Feb-17

Cooler Receipt Temp: 2.22 °C

Locations and Accreditations

	Collinsville	Springfield	Kansas City	Collinsville Air
Address	5445 Horseshoe Lake Road	3920 Pintail Dr	8421 Nieman Road	5445 Horseshoe Lake Road
	Collinsville, IL 62234-7425	Springfield, IL 62711-9415	Lenexa, KS 66214	Collinsville, IL 62234-7425
Phone	(618) 344-1004	(217) 698-1004	(913) 541-1998	(618) 344-1004
Fax	(618) 344-1005	(217) 698-1005	(913) 541-1998	(618) 344-1005
Email	jhriley@teklabinc.com	KKlostermann@teklabinc.com	Ryoungstrom@teklabinc.com	EHurley@teklabinc.com

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2018	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2017	Collinsville
Louisiana	LDEQ	166493	NELAP	6/30/2017	Collinsville
Louisiana	LDEQ	166578	NELAP	6/30/2017	Collinsville
Texas	TCEQ	T104704515-12-1	NELAP	7/31/2017	Collinsville
Arkansas	ADEQ	88-0966		3/14/2017	Collinsville
Illinois	IDPH	17584		5/31/2017	Collinsville
Kentucky	KDEP	98006		12/31/2017	Collinsville
Kentucky	UST	0073		1/31/2018	Collinsville
Missouri	MDNR	00930		5/31/2017	Collinsville
Missouri	MDNR	930		1/31/2018	Collinsville
Oklahoma	ODEQ	9978		8/31/2017	Collinsville

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020673

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 15-Feb-17

Lab ID: 17020673-001 **Client Sample ID:** 2017-CBF-001

Matrix: SOLID **Collection Date:** 02/09/2017 10:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**22.2**	%	1	02/10/2017 17:07	R229078
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,1,2-Tetrachloroethane	NELAP	130		**ND**	µg/Kg-dry	12.5	02/15/2017 11:56	127158
1,1,1-Trichloroethane	NELAP	130		**ND**	µg/Kg-dry	12.5	02/15/2017 11:56	127158
1,1,2,2-Tetrachloroethane	NELAP	130		**ND**	µg/Kg-dry	12.5	02/15/2017 11:56	127158
1,1,2-Trichloro-1,2,2-trifluoroethane		130		**ND**	µg/Kg-dry	12.5	02/15/2017 11:56	127158
1,1,2-Trichloroethane	NELAP	130		**ND**	µg/Kg-dry	12.5	02/15/2017 11:56	127158
1,1-Dichloro-2-propanone		1300		**ND**	µg/Kg-dry	12.5	02/15/2017 11:56	127158
1,1-Dichloroethane	NELAP	130		**ND**	µg/Kg-dry	12.5	02/15/2017 11:56	127158
1,1-Dichloroethene	NELAP	130		**ND**	µg/Kg-dry	12.5	02/15/2017 11:56	127158
1,1-Dichloropropene	NELAP	130		**ND**	µg/Kg-dry	12.5	02/15/2017 11:56	127158
1,2,3-Trichlorobenzene	NELAP	130		**ND**	µg/Kg-dry	12.5	02/15/2017 11:56	127158
1,2,3-Trichloropropane	NELAP	259		**ND**	µg/Kg-dry	12.5	02/15/2017 11:56	127158
1,2,3-Trimethylbenzene		130		**ND**	µg/Kg-dry	12.5	02/15/2017 11:56	127158
1,2,4-Trichlorobenzene	NELAP	130		**ND**	µg/Kg-dry	12.5	02/15/2017 11:56	127158
1,2,4-Trimethylbenzene	NELAP	130		**ND**	µg/Kg-dry	12.5	02/15/2017 11:56	127158
1,2-Dibromo-3-chloropropane	NELAP	130		**ND**	µg/Kg-dry	12.5	02/15/2017 11:56	127158
1,2-Dibromoethane	NELAP	130		**ND**	µg/Kg-dry	12.5	02/15/2017 11:56	127158
1,2-Dichlorobenzene	NELAP	130		**ND**	µg/Kg-dry	12.5	02/15/2017 11:56	127158
1,2-Dichloroethane	NELAP	130		**ND**	µg/Kg-dry	12.5	02/15/2017 11:56	127158
1,2-Dichloropropane	NELAP	130		**ND**	µg/Kg-dry	12.5	02/15/2017 11:56	127158
1,3,5-Trimethylbenzene	NELAP	130		**ND**	µg/Kg-dry	12.5	02/15/2017 11:56	127158
1,3-Dichlorobenzene	NELAP	130		**ND**	µg/Kg-dry	12.5	02/15/2017 11:56	127158
1,3-Dichloropropane	NELAP	130		**ND**	µg/Kg-dry	12.5	02/15/2017 11:56	127158
1,4-Dichlorobenzene	NELAP	130		**ND**	µg/Kg-dry	12.5	02/15/2017 11:56	127158
1-Chlorobutane	NELAP	130		**ND**	µg/Kg-dry	12.5	02/15/2017 11:56	127158
2,2-Dichloropropane	NELAP	130		**ND**	µg/Kg-dry	12.5	02/15/2017 11:56	127158
2-Butanone	NELAP	5180		**ND**	µg/Kg-dry	12.5	02/15/2017 11:56	127158
2-Chlorotoluene	NELAP	130		**ND**	µg/Kg-dry	12.5	02/15/2017 11:56	127158
2-Hexanone	NELAP	1300		**ND**	µg/Kg-dry	12.5	02/15/2017 11:56	127158
2-Nitropropane	NELAP	1300		**ND**	µg/Kg-dry	12.5	02/15/2017 11:56	127158
4-Chlorotoluene	NELAP	130		**ND**	µg/Kg-dry	12.5	02/15/2017 11:56	127158
4-Methyl-2-pentanone	NELAP	1300		**ND**	µg/Kg-dry	12.5	02/15/2017 11:56	127158
Acetone	NELAP	1300		**ND**	µg/Kg-dry	12.5	02/15/2017 11:56	127158
Acrolein	NELAP	2590		**ND**	µg/Kg-dry	12.5	02/15/2017 11:56	127158
Acrylonitrile	NELAP	259		**ND**	µg/Kg-dry	12.5	02/15/2017 11:56	127158
Allyl chloride	NELAP	130		**ND**	µg/Kg-dry	12.5	02/15/2017 11:56	127158
Benzene	NELAP	25.9		**ND**	µg/Kg-dry	12.5	02/15/2017 11:56	127158
Bromobenzene	NELAP	130		**ND**	µg/Kg-dry	12.5	02/15/2017 11:56	127158
Bromochloromethane	NELAP	130		**ND**	µg/Kg-dry	12.5	02/15/2017 11:56	127158
Bromodichloromethane	NELAP	130		**ND**	µg/Kg-dry	12.5	02/15/2017 11:56	127158
Bromoform	NELAP	130		**ND**	µg/Kg-dry	12.5	02/15/2017 11:56	127158
Bromomethane	NELAP	259		**ND**	µg/Kg-dry	12.5	02/15/2017 11:56	127158
Carbon disulfide	NELAP	130		**ND**	µg/Kg-dry	12.5	02/15/2017 11:56	127158
Carbon tetrachloride	NELAP	130		**ND**	µg/Kg-dry	12.5	02/15/2017 11:56	127158
Chlorobenzene	NELAP	130		**ND**	µg/Kg-dry	12.5	02/15/2017 11:56	127158
Chloroethane	NELAP	259		**ND**	µg/Kg-dry	12.5	02/15/2017 11:56	127158

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020673

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 15-Feb-17

Lab ID: 17020673-001 **Client Sample ID:** 2017-CBF-001

Matrix: SOLID **Collection Date:** 02/09/2017 10:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Chloroform	NELAP	130		ND	µg/Kg-dry	12.5	02/15/2017 11:56	127158
Chloromethane	NELAP	259		ND	µg/Kg-dry	12.5	02/15/2017 11:56	127158
cis-1,2-Dichloroethene	NELAP	130		ND	µg/Kg-dry	12.5	02/15/2017 11:56	127158
cis-1,3-Dichloropropene	NELAP	104		ND	µg/Kg-dry	12.5	02/15/2017 11:56	127158
Cyclohexanone		2590		ND	µg/Kg-dry	12.5	02/15/2017 11:56	127158
Dibromochloromethane	NELAP	130		ND	µg/Kg-dry	12.5	02/15/2017 11:56	127158
Dibromomethane	NELAP	130		ND	µg/Kg-dry	12.5	02/15/2017 11:56	127158
Dichlorodifluoromethane	NELAP	259		ND	µg/Kg-dry	12.5	02/15/2017 11:56	127158
Ethyl ether	NELAP	130		ND	µg/Kg-dry	12.5	02/15/2017 11:56	127158
Ethyl methacrylate	NELAP	130		ND	µg/Kg-dry	12.5	02/15/2017 11:56	127158
Ethylbenzene	NELAP	130		ND	µg/Kg-dry	12.5	02/15/2017 11:56	127158
Hexachlorobutadiene	NELAP	130		ND	µg/Kg-dry	12.5	02/15/2017 11:56	127158
Hexachloroethane	NELAP	130		ND	µg/Kg-dry	12.5	02/15/2017 11:56	127158
Iodomethane	NELAP	259		ND	µg/Kg-dry	12.5	02/15/2017 11:56	127158
Isopropylbenzene	NELAP	130		ND	µg/Kg-dry	12.5	02/15/2017 11:56	127158
m,p-Xylenes	NELAP	130		ND	µg/Kg-dry	12.5	02/15/2017 11:56	127158
Methacrylonitrile	NELAP	1300		ND	µg/Kg-dry	12.5	02/15/2017 11:56	127158
Methyl Methacrylate	NELAP	130		ND	µg/Kg-dry	12.5	02/15/2017 11:56	127158
Methyl tert-butyl ether	NELAP	51.8		ND	µg/Kg-dry	12.5	02/15/2017 11:56	127158
Methylacrylate	NELAP	259		ND	µg/Kg-dry	12.5	02/15/2017 11:56	127158
Methylene chloride	NELAP	130		ND	µg/Kg-dry	12.5	02/15/2017 11:56	127158
Naphthalene	NELAP	259		ND	µg/Kg-dry	12.5	02/15/2017 11:56	127158
n-Butylbenzene	NELAP	130		ND	µg/Kg-dry	12.5	02/15/2017 11:56	127158
n-Heptane		1300		ND	µg/Kg-dry	12.5	02/15/2017 11:56	127158
n-Hexane		518		ND	µg/Kg-dry	12.5	02/15/2017 11:56	127158
Nitrobenzene	NELAP	2590		ND	µg/Kg-dry	12.5	02/15/2017 11:56	127158
n-Propylbenzene	NELAP	130		ND	µg/Kg-dry	12.5	02/15/2017 11:56	127158
o-Xylene	NELAP	130		ND	µg/Kg-dry	12.5	02/15/2017 11:56	127158
Pentachloroethane	NELAP	130		ND	µg/Kg-dry	12.5	02/15/2017 11:56	127158
p-Isopropyltoluene	NELAP	130		ND	µg/Kg-dry	12.5	02/15/2017 11:56	127158
Propionitrile	NELAP	1300		ND	µg/Kg-dry	12.5	02/15/2017 11:56	127158
sec-Butylbenzene	NELAP	130		ND	µg/Kg-dry	12.5	02/15/2017 11:56	127158
Styrene	NELAP	130		ND	µg/Kg-dry	12.5	02/15/2017 11:56	127158
tert-Butylbenzene	NELAP	130		ND	µg/Kg-dry	12.5	02/15/2017 11:56	127158
Tetrachloroethene	NELAP	130		ND	µg/Kg-dry	12.5	02/15/2017 11:56	127158
Tetrahydrofuran	NELAP	1300		ND	µg/Kg-dry	12.5	02/15/2017 11:56	127158
Toluene	NELAP	130		ND	µg/Kg-dry	12.5	02/15/2017 11:56	127158
trans-1,2-Dichloroethene	NELAP	130		ND	µg/Kg-dry	12.5	02/15/2017 11:56	127158
trans-1,3-Dichloropropene	NELAP	104		ND	µg/Kg-dry	12.5	02/15/2017 11:56	127158
Trichloroethene	NELAP	130		ND	µg/Kg-dry	12.5	02/15/2017 11:56	127158
Trichlorofluoromethane	NELAP	130		ND	µg/Kg-dry	12.5	02/15/2017 11:56	127158
Vinyl acetate	NELAP	1300		ND	µg/Kg-dry	12.5	02/15/2017 11:56	127158
Vinyl chloride	NELAP	51.8		ND	µg/Kg-dry	12.5	02/15/2017 11:56	127158
Surr: 1,2-Dichloroethane-d4		72.2-131		101.0	%REC	12.5	02/15/2017 11:56	127158
Surr: 4-Bromofluorobenzene		82.1-116		99.9	%REC	12.5	02/15/2017 11:56	127158
Surr: Dibromofluoromethane		77.7-120		92.4	%REC	12.5	02/15/2017 11:56	127158
Surr: Toluene-d8		86-116		106.0	%REC	12.5	02/15/2017 11:56	127158

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020673

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 15-Feb-17

Lab ID: 17020673-001 **Client Sample ID:** 2017-CBF-001

Matrix: SOLID **Collection Date:** 02/09/2017 10:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

LCS recovered outside upper QC limits for 2-hexanone. Sample results are below reporting limit. Data is reportable per 2009 TNI Standard (Volume1, Module 4, section 1.7.4.2).

LCS & LCSD recovered outside upper QC limits for acrolein. Sample results are below reporting limit. Data is reportable per 2009 TNI Standard (Volume1, Module 4, section 1.7.4.2).

Elevated reporting limit due to matrix interference.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020673

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 15-Feb-17

Lab ID: 17020673-002 **Client Sample ID:** 2017-CBF-002

Matrix: SOLID **Collection Date:** 02/09/2017 11:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**15.1**	%	1	02/10/2017 17:07	R229078
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,1,2-Tetrachloroethane	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
1,1,1-Trichloroethane	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
1,1,2,2-Tetrachloroethane	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
1,1,2-Trichloro-1,2,2-trifluoroethane		108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
1,1,2-Trichloroethane	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
1,1-Dichloro-2-propanone		1080		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
1,1-Dichloroethane	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
1,1-Dichloroethene	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
1,1-Dichloropropene	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
1,2,3-Trichlorobenzene	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
1,2,3-Trichloropropane	NELAP	216		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
1,2,3-Trimethylbenzene		108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
1,2,4-Trichlorobenzene	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
1,2,4-Trimethylbenzene	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
1,2-Dibromo-3-chloropropane	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
1,2-Dibromoethane	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
1,2-Dichlorobenzene	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
1,2-Dichloroethane	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
1,2-Dichloropropane	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
1,3,5-Trimethylbenzene	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
1,3-Dichlorobenzene	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
1,3-Dichloropropane	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
1,4-Dichlorobenzene	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
1-Chlorobutane	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
2,2-Dichloropropane	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
2-Butanone	NELAP	4320		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
2-Chlorotoluene	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
2-Hexanone	NELAP	1080		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
2-Nitropropane	NELAP	1080		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
4-Chlorotoluene	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
4-Methyl-2-pentanone	NELAP	1080		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
Acetone	NELAP	1080		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
Acrolein	NELAP	2160		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
Acrylonitrile	NELAP	216		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
Allyl chloride	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
Benzene	NELAP	21.6		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
Bromobenzene	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
Bromochloromethane	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
Bromodichloromethane	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
Bromoform	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
Bromomethane	NELAP	216		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
Carbon disulfide	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
Carbon tetrachloride	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
Chlorobenzene	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
Chloroethane	NELAP	216		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020673

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 15-Feb-17

Lab ID: 17020673-002 **Client Sample ID:** 2017-CBF-002

Matrix: SOLID **Collection Date:** 02/09/2017 11:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Chloroform	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
Chloromethane	NELAP	216		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
cis-1,2-Dichloroethene	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
cis-1,3-Dichloropropene	NELAP	86.5		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
Cyclohexanone		2160		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
Dibromochloromethane	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
Dibromomethane	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
Dichlorodifluoromethane	NELAP	216		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
Ethyl ether	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
Ethyl methacrylate	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
Ethylbenzene	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
Hexachlorobutadiene	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
Hexachloroethane	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
Iodomethane	NELAP	216		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
Isopropylbenzene	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
m,p-Xylenes	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
Methacrylonitrile	NELAP	1080		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
Methyl Methacrylate	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
Methyl tert-butyl ether	NELAP	43.2		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
Methylacrylate	NELAP	216		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
Methylene chloride	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
Naphthalene	NELAP	216		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
n-Butylbenzene	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
n-Heptane		1080		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
n-Hexane		432		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
Nitrobenzene	NELAP	2160		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
n-Propylbenzene	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
o-Xylene	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
Pentachloroethane	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
p-Isopropyltoluene	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
Propionitrile	NELAP	1080		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
sec-Butylbenzene	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
Styrene	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
tert-Butylbenzene	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
Tetrachloroethene	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
Tetrahydrofuran	NELAP	1080		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
Toluene	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
trans-1,2-Dichloroethene	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
trans-1,3-Dichloropropene	NELAP	86.5		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
Trichloroethene	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
Trichlorofluoromethane	NELAP	108		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
Vinyl acetate	NELAP	1080		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
Vinyl chloride	NELAP	43.2		**ND**	µg/Kg-dry	12.5	02/15/2017 12:23	127158
Surr: 1,2-Dichloroethane-d4		72.2-131		**100.0**	%REC	12.5	02/15/2017 12:23	127158
Surr: 4-Bromofluorobenzene		82.1-116		**101.0**	%REC	12.5	02/15/2017 12:23	127158
Surr: Dibromofluoromethane		77.7-120		**90.8**	%REC	12.5	02/15/2017 12:23	127158
Surr: Toluene-d8		86-116		**112.3**	%REC	12.5	02/15/2017 12:23	127158

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020673

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 15-Feb-17

Lab ID: 17020673-002 **Client Sample ID:** 2017-CBF-002

Matrix: SOLID **Collection Date:** 02/09/2017 11:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

LCS recovered outside upper QC limits for 2-hexanone. Sample results are below reporting limit. Data is reportable per 2009 TNI Standard (Volume1, Module 4, section 1.7.4.2).

LCS & LCSD recovered outside upper QC limits for acrolein. Sample results are below reporting limit. Data is reportable per 2009 TNI Standard (Volume1, Module 4, section 1.7.4.2).

Elevated reporting limit due to matrix interference.

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020673

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 15-Feb-17

Lab ID: 17020673-003 **Client Sample ID:** 2017-CBF-003

Matrix: SOLID **Collection Date:** 02/09/2017 11:45

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**18.7**	%	1	02/10/2017 17:08	R229078
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,1,2-Tetrachloroethane	NELAP	147		**ND**	µg/Kg-dry	12.5	02/15/2017 12:49	127158
1,1,1-Trichloroethane	NELAP	147		**ND**	µg/Kg-dry	12.5	02/15/2017 12:49	127158
1,1,2,2-Tetrachloroethane	NELAP	147		**ND**	µg/Kg-dry	12.5	02/15/2017 12:49	127158
1,1,2-Trichloro-1,2,2-trifluoroethane		147		**ND**	µg/Kg-dry	12.5	02/15/2017 12:49	127158
1,1,2-Trichloroethane	NELAP	147		**ND**	µg/Kg-dry	12.5	02/15/2017 12:49	127158
1,1-Dichloro-2-propanone		1470		**ND**	µg/Kg-dry	12.5	02/15/2017 12:49	127158
1,1-Dichloroethane	NELAP	147		**ND**	µg/Kg-dry	12.5	02/15/2017 12:49	127158
1,1-Dichloroethene	NELAP	147		**ND**	µg/Kg-dry	12.5	02/15/2017 12:49	127158
1,1-Dichloropropene	NELAP	147		**ND**	µg/Kg-dry	12.5	02/15/2017 12:49	127158
1,2,3-Trichlorobenzene	NELAP	147		**ND**	µg/Kg-dry	12.5	02/15/2017 12:49	127158
1,2,3-Trichloropropane	NELAP	293		**ND**	µg/Kg-dry	12.5	02/15/2017 12:49	127158
1,2,3-Trimethylbenzene		147		**ND**	µg/Kg-dry	12.5	02/15/2017 12:49	127158
1,2,4-Trichlorobenzene	NELAP	147		**ND**	µg/Kg-dry	12.5	02/15/2017 12:49	127158
1,2,4-Trimethylbenzene	NELAP	147		**ND**	µg/Kg-dry	12.5	02/15/2017 12:49	127158
1,2-Dibromo-3-chloropropane	NELAP	147		**ND**	µg/Kg-dry	12.5	02/15/2017 12:49	127158
1,2-Dibromoethane	NELAP	147		**ND**	µg/Kg-dry	12.5	02/15/2017 12:49	127158
1,2-Dichlorobenzene	NELAP	147		**ND**	µg/Kg-dry	12.5	02/15/2017 12:49	127158
1,2-Dichloroethane	NELAP	147		**ND**	µg/Kg-dry	12.5	02/15/2017 12:49	127158
1,2-Dichloropropane	NELAP	147		**ND**	µg/Kg-dry	12.5	02/15/2017 12:49	127158
1,3,5-Trimethylbenzene	NELAP	147		**ND**	µg/Kg-dry	12.5	02/15/2017 12:49	127158
1,3-Dichlorobenzene	NELAP	147		**ND**	µg/Kg-dry	12.5	02/15/2017 12:49	127158
1,3-Dichloropropane	NELAP	147		**ND**	µg/Kg-dry	12.5	02/15/2017 12:49	127158
1,4-Dichlorobenzene	NELAP	147		**ND**	µg/Kg-dry	12.5	02/15/2017 12:49	127158
1-Chlorobutane	NELAP	147		**ND**	µg/Kg-dry	12.5	02/15/2017 12:49	127158
2,2-Dichloropropane	NELAP	147		**ND**	µg/Kg-dry	12.5	02/15/2017 12:49	127158
2-Butanone	NELAP	5870		**ND**	µg/Kg-dry	12.5	02/15/2017 12:49	127158
2-Chlorotoluene	NELAP	147		**ND**	µg/Kg-dry	12.5	02/15/2017 12:49	127158
2-Hexanone	NELAP	1470		**ND**	µg/Kg-dry	12.5	02/15/2017 12:49	127158
2-Nitropropane	NELAP	1470		**ND**	µg/Kg-dry	12.5	02/15/2017 12:49	127158
4-Chlorotoluene	NELAP	147		**ND**	µg/Kg-dry	12.5	02/15/2017 12:49	127158
4-Methyl-2-pentanone	NELAP	1470		**ND**	µg/Kg-dry	12.5	02/15/2017 12:49	127158
Acetone	NELAP	1470		**ND**	µg/Kg-dry	12.5	02/15/2017 12:49	127158
Acrolein	NELAP	2930		**ND**	µg/Kg-dry	12.5	02/15/2017 12:49	127158
Acrylonitrile	NELAP	293		**ND**	µg/Kg-dry	12.5	02/15/2017 12:49	127158
Allyl chloride	NELAP	147		**ND**	µg/Kg-dry	12.5	02/15/2017 12:49	127158
Benzene	NELAP	29.3		**ND**	µg/Kg-dry	12.5	02/15/2017 12:49	127158
Bromobenzene	NELAP	147		**ND**	µg/Kg-dry	12.5	02/15/2017 12:49	127158
Bromochloromethane	NELAP	147		**ND**	µg/Kg-dry	12.5	02/15/2017 12:49	127158
Bromodichloromethane	NELAP	147		**ND**	µg/Kg-dry	12.5	02/15/2017 12:49	127158
Bromoform	NELAP	147		**ND**	µg/Kg-dry	12.5	02/15/2017 12:49	127158
Bromomethane	NELAP	293		**ND**	µg/Kg-dry	12.5	02/15/2017 12:49	127158
Carbon disulfide	NELAP	147		**ND**	µg/Kg-dry	12.5	02/15/2017 12:49	127158
Carbon tetrachloride	NELAP	147		**ND**	µg/Kg-dry	12.5	02/15/2017 12:49	127158
Chlorobenzene	NELAP	147		**ND**	µg/Kg-dry	12.5	02/15/2017 12:49	127158
Chloroethane	NELAP	293		**ND**	µg/Kg-dry	12.5	02/15/2017 12:49	127158

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020673

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 15-Feb-17

Lab ID: 17020673-003 **Client Sample ID:** 2017-CBF-003

Matrix: SOLID **Collection Date:** 02/09/2017 11:45

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Chloroform	NELAP	147		ND	µg/Kg-dry	12.5	02/15/2017 12:49	127158
Chloromethane	NELAP	293		ND	µg/Kg-dry	12.5	02/15/2017 12:49	127158
cis-1,2-Dichloroethene	NELAP	147		ND	µg/Kg-dry	12.5	02/15/2017 12:49	127158
cis-1,3-Dichloropropene	NELAP	117		ND	µg/Kg-dry	12.5	02/15/2017 12:49	127158
Cyclohexanone		2930		ND	µg/Kg-dry	12.5	02/15/2017 12:49	127158
Dibromochloromethane	NELAP	147		ND	µg/Kg-dry	12.5	02/15/2017 12:49	127158
Dibromomethane	NELAP	147		ND	µg/Kg-dry	12.5	02/15/2017 12:49	127158
Dichlorodifluoromethane	NELAP	293		ND	µg/Kg-dry	12.5	02/15/2017 12:49	127158
Ethyl ether	NELAP	147		ND	µg/Kg-dry	12.5	02/15/2017 12:49	127158
Ethyl methacrylate	NELAP	147		ND	µg/Kg-dry	12.5	02/15/2017 12:49	127158
Ethylbenzene	NELAP	147		ND	µg/Kg-dry	12.5	02/15/2017 12:49	127158
Hexachlorobutadiene	NELAP	147		ND	µg/Kg-dry	12.5	02/15/2017 12:49	127158
Hexachloroethane	NELAP	147		ND	µg/Kg-dry	12.5	02/15/2017 12:49	127158
Iodomethane	NELAP	293		ND	µg/Kg-dry	12.5	02/15/2017 12:49	127158
Isopropylbenzene	NELAP	147		ND	µg/Kg-dry	12.5	02/15/2017 12:49	127158
m,p-Xylenes	NELAP	147		ND	µg/Kg-dry	12.5	02/15/2017 12:49	127158
Methacrylonitrile	NELAP	1470		ND	µg/Kg-dry	12.5	02/15/2017 12:49	127158
Methyl Methacrylate	NELAP	147		ND	µg/Kg-dry	12.5	02/15/2017 12:49	127158
Methyl tert-butyl ether	NELAP	58.7		ND	µg/Kg-dry	12.5	02/15/2017 12:49	127158
Methylacrylate	NELAP	293		ND	µg/Kg-dry	12.5	02/15/2017 12:49	127158
Methylene chloride	NELAP	147		ND	µg/Kg-dry	12.5	02/15/2017 12:49	127158
Naphthalene	NELAP	293		ND	µg/Kg-dry	12.5	02/15/2017 12:49	127158
n-Butylbenzene	NELAP	147		ND	µg/Kg-dry	12.5	02/15/2017 12:49	127158
n-Heptane		1470		ND	µg/Kg-dry	12.5	02/15/2017 12:49	127158
n-Hexane		587		ND	µg/Kg-dry	12.5	02/15/2017 12:49	127158
Nitrobenzene	NELAP	2930		ND	µg/Kg-dry	12.5	02/15/2017 12:49	127158
n-Propylbenzene	NELAP	147		ND	µg/Kg-dry	12.5	02/15/2017 12:49	127158
o-Xylene	NELAP	147		ND	µg/Kg-dry	12.5	02/15/2017 12:49	127158
Pentachloroethane	NELAP	147		ND	µg/Kg-dry	12.5	02/15/2017 12:49	127158
p-Isopropyltoluene	NELAP	147		ND	µg/Kg-dry	12.5	02/15/2017 12:49	127158
Propionitrile	NELAP	1470		ND	µg/Kg-dry	12.5	02/15/2017 12:49	127158
sec-Butylbenzene	NELAP	147		ND	µg/Kg-dry	12.5	02/15/2017 12:49	127158
Styrene	NELAP	147		ND	µg/Kg-dry	12.5	02/15/2017 12:49	127158
tert-Butylbenzene	NELAP	147		ND	µg/Kg-dry	12.5	02/15/2017 12:49	127158
Tetrachloroethene	NELAP	147		ND	µg/Kg-dry	12.5	02/15/2017 12:49	127158
Tetrahydrofuran	NELAP	1470		ND	µg/Kg-dry	12.5	02/15/2017 12:49	127158
Toluene	NELAP	147		ND	µg/Kg-dry	12.5	02/15/2017 12:49	127158
trans-1,2-Dichloroethene	NELAP	147		ND	µg/Kg-dry	12.5	02/15/2017 12:49	127158
trans-1,3-Dichloropropene	NELAP	117		ND	µg/Kg-dry	12.5	02/15/2017 12:49	127158
Trichloroethene	NELAP	147		ND	µg/Kg-dry	12.5	02/15/2017 12:49	127158
Trichlorofluoromethane	NELAP	147		ND	µg/Kg-dry	12.5	02/15/2017 12:49	127158
Vinyl acetate	NELAP	1470		ND	µg/Kg-dry	12.5	02/15/2017 12:49	127158
Vinyl chloride	NELAP	58.7		ND	µg/Kg-dry	12.5	02/15/2017 12:49	127158
Surr: 1,2-Dichloroethane-d4		72.2-131		103.7	%REC	12.5	02/15/2017 12:49	127158
Surr: 4-Bromofluorobenzene		82.1-116		99.4	%REC	12.5	02/15/2017 12:49	127158
Surr: Dibromofluoromethane		77.7-120		94.0	%REC	12.5	02/15/2017 12:49	127158
Surr: Toluene-d8		86-116		108.8	%REC	12.5	02/15/2017 12:49	127158

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020673

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 15-Feb-17

Lab ID: 17020673-003 **Client Sample ID:** 2017-CBF-003

Matrix: SOLID **Collection Date:** 02/09/2017 11:45

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

LCS recovered outside upper QC limits for 2-hexanone. Sample results are below reporting limit. Data is reportable per 2009 TNI Standard (Volume1, Module 4, section 1.7.4.2).

LCS & LCSD recovered outside upper QC limits for acrolein. Sample results are below reporting limit. Data is reportable per 2009 TNI Standard (Volume1, Module 4, section 1.7.4.2).

Elevated reporting limit due to matrix interference.

Client: PSC Industrial Outsourcing, LP
Work Order: 17020673
Client Project: Champaign Soil Residual IRM 624-1610-001-J0055
Report Date: 15-Feb-17

Lab Sample ID	Client Sample ID	Matrix	Fractions	Collection Date
17020673-001	2017-CBF-001	Solid	3	02/09/2017 10:30
17020673-002	2017-CBF-002	Solid	3	02/09/2017 11:30
17020673-003	2017-CBF-003	Solid	3	02/09/2017 11:45

Client: PSC Industrial Outsourcing, LP
Work Order: 17020673
Client Project: Champaign Soil Residual IRM 624-1610-001-J0055
Report Date: 15-Feb-17

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			Prep Date/Time	Analysis Date/Time
17020673-001A	2017-CBF-001	02/09/2017 10:30	02/09/2017 16:07		
	EPA SW846 3550C, 5035A, ASTM D2974				02/10/2017 17:07
17020673-001C	2017-CBF-001	02/09/2017 10:30	02/09/2017 16:07		
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/15/2017 11:56
17020673-002A	2017-CBF-002	02/09/2017 11:30	02/09/2017 16:07		
	EPA SW846 3550C, 5035A, ASTM D2974				02/10/2017 17:07
17020673-002C	2017-CBF-002	02/09/2017 11:30	02/09/2017 16:07		
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/15/2017 12:23
17020673-003A	2017-CBF-003	02/09/2017 11:45	02/09/2017 16:07		
	EPA SW846 3550C, 5035A, ASTM D2974				02/10/2017 17:08
17020673-003C	2017-CBF-003	02/09/2017 11:45	02/09/2017 16:07		
	SW-846 5035, 8260B, Volatile Organic Compounds by GC/MS				02/15/2017 12:49

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020673

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 15-Feb-17

EPA SW846 3550C, 5035A, ASTM D2974

Batch R229078 **SampType:** LCS Units %

SampID: LCS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	02/10/2017

Batch R229078 **SampType:** LCSQC Units %

SampID: LCSQC

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	02/10/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020673

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 15-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127123 **SampType:** MBLK Units µg/Kg

SampID: MBLK-F170214A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		ND						02/14/2017
1,1,1-Trichloroethane	5.0		ND						02/14/2017
1,1,2,2-Tetrachloroethane	5.0		ND						02/14/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		ND						02/14/2017
1,1,2-Trichloroethane	5.0		ND						02/14/2017
1,1-Dichloro-2-propanone	50.0		ND						02/14/2017
1,1-Dichloroethane	5.0		ND						02/14/2017
1,1-Dichloroethene	5.0		ND						02/14/2017
1,1-Dichloropropene	5.0		ND						02/14/2017
1,2,3-Trichlorobenzene	5.0		ND						02/14/2017
1,2,3-Trichloropropane	10.0		ND						02/14/2017
1,2,3-Trimethylbenzene	5.0		ND						02/14/2017
1,2,4-Trichlorobenzene	5.0		ND						02/14/2017
1,2,4-Trimethylbenzene	5.0		ND						02/14/2017
1,2-Dibromo-3-chloropropane	5.0		ND						02/14/2017
1,2-Dibromoethane	5.0		ND						02/14/2017
1,2-Dichlorobenzene	5.0		ND						02/14/2017
1,2-Dichloroethane	5.0		ND						02/14/2017
1,2-Dichloropropane	5.0		ND						02/14/2017
1,3,5-Trimethylbenzene	5.0		ND						02/14/2017
1,3-Dichlorobenzene	5.0		ND						02/14/2017
1,3-Dichloropropane	5.0		ND						02/14/2017
1,4-Dichlorobenzene	5.0		ND						02/14/2017
1-Chlorobutane	5.0		ND						02/14/2017
2,2-Dichloropropane	5.0		ND						02/14/2017
2-Butanone	50.0		ND						02/14/2017
2-Chlorotoluene	5.0		ND						02/14/2017
2-Hexanone	50.0		ND						02/14/2017
2-Nitropropane	50.0		ND						02/14/2017
4-Chlorotoluene	5.0		ND						02/14/2017
4-Methyl-2-pentanone	50.0		ND						02/14/2017
Acetone	50.0		ND						02/14/2017
Acrolein	100		ND						02/14/2017
Acrylonitrile	10.0		ND						02/14/2017
Allyl chloride	5.0		ND						02/14/2017
Benzene	1.0		ND						02/14/2017
Bromobenzene	5.0		ND						02/14/2017
Bromochloromethane	5.0		ND						02/14/2017
Bromodichloromethane	5.0		ND						02/14/2017
Bromoform	5.0		ND						02/14/2017
Bromomethane	10.0		ND						02/14/2017
Carbon disulfide	5.0		ND						02/14/2017
Carbon tetrachloride	5.0		ND						02/14/2017
Chlorobenzene	5.0		ND						02/14/2017
Chloroethane	10.0		ND						02/14/2017
Chloroform	5.0		ND						02/14/2017
Chloromethane	10.0		ND						02/14/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020673

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 15-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127123 **SampType:** MBLK Units µg/Kg

SampID: MBLK-F170214A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		ND						02/14/2017
cis-1,3-Dichloropropene	4.0		ND						02/14/2017
Cyclohexanone	100		ND						02/14/2017
Dibromochloromethane	5.0		ND						02/14/2017
Dibromomethane	5.0		ND						02/14/2017
Dichlorodifluoromethane	10.0		ND						02/14/2017
Ethyl ether	5.0		ND						02/14/2017
Ethyl methacrylate	5.0		ND						02/14/2017
Ethylbenzene	5.0		ND						02/14/2017
Hexachlorobutadiene	5.0		ND						02/14/2017
Hexachloroethane	5.0		ND						02/14/2017
Iodomethane	10.0		ND						02/14/2017
Isopropylbenzene	5.0		ND						02/14/2017
m,p-Xylenes	5.0		ND						02/14/2017
Methacrylonitrile	50.0		ND						02/14/2017
Methyl Methacrylate	5.0		ND						02/14/2017
Methyl tert-butyl ether	2.0		ND						02/14/2017
Methylacrylate	10.0		ND						02/14/2017
Methylene chloride	5.0		ND						02/14/2017
Naphthalene	10.0		ND						02/14/2017
n-Butylbenzene	5.0		ND						02/14/2017
n-Heptane	20.0		ND						02/14/2017
n-Hexane	20.0		ND						02/14/2017
Nitrobenzene	100		ND						02/14/2017
n-Propylbenzene	5.0		ND						02/14/2017
o-Xylene	5.0		ND						02/14/2017
Pentachloroethane	5.0		ND						02/14/2017
p-Isopropyltoluene	5.0		ND						02/14/2017
Propionitrile	50.0		ND						02/14/2017
sec-Butylbenzene	5.0		ND						02/14/2017
Styrene	5.0		ND						02/14/2017
tert-Butylbenzene	5.0		ND						02/14/2017
Tetrachloroethene	5.0		ND						02/14/2017
Tetrahydrofuran	50.0		ND						02/14/2017
Toluene	5.0		ND						02/14/2017
trans-1,2-Dichloroethene	5.0		ND						02/14/2017
trans-1,3-Dichloropropene	4.0		ND						02/14/2017
Trichloroethene	5.0		ND						02/14/2017
Trichlorofluoromethane	5.0		ND						02/14/2017
Vinyl acetate	50.0		ND						02/14/2017
Vinyl chloride	2.0		ND						02/14/2017
Surr: 1,2-Dichloroethane-d4			**52.8**	50.00		105.6	72.2	131	02/14/2017
Surr: 4-Bromofluorobenzene			**52.0**	50.00		104.0	82.1	116	02/14/2017
Surr: Dibromofluoromethane			**46.1**	50.00		92.1	77.7	120	02/14/2017
Surr: Toluene-d8			**53.6**	50.00		107.2	86	116	02/14/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020673

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 15-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127123 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-F170214A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		**54.4**	50.00	0	108.8	51.55	5.36	02/14/2017
1,1,1-Trichloroethane	5.0		**49.0**	50.00	0	97.9	46.71	4.72	02/14/2017
1,1,2,2-Tetrachloroethane	5.0		**53.7**	50.00	0	107.4	55.90	4.03	02/14/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		**47.8**	50.00	0	95.6	46.45	2.89	02/14/2017
1,1,2-Trichloroethane	5.0		**50.7**	50.00	0	101.5	51.01	0.53	02/14/2017
1,1-Dichloro-2-propanone	50.0		**129**	125.0	0	103.0	161.0	22.27	02/14/2017
1,1-Dichloroethane	5.0		**47.3**	50.00	0	94.5	45.98	2.77	02/14/2017
1,1-Dichloroethene	5.0		**49.9**	50.00	0	99.9	47.85	4.25	02/14/2017
1,1-Dichloropropene	5.0		**47.2**	50.00	0	94.4	46.02	2.55	02/14/2017
1,2,3-Trichlorobenzene	5.0		**56.8**	50.00	0	113.7	57.47	1.08	02/14/2017
1,2,3-Trichloropropane	10.0		**54.3**	50.00	0	108.7	56.80	4.45	02/14/2017
1,2,3-Trimethylbenzene	5.0		**55.0**	50.00	0	109.9	55.35	0.73	02/14/2017
1,2,4-Trichlorobenzene	5.0		**60.0**	50.00	0	120.0	61.87	3.05	02/14/2017
1,2,4-Trimethylbenzene	5.0		**57.0**	50.00	0	114.0	55.72	2.27	02/14/2017
1,2-Dibromo-3-chloropropane	5.0		**56.3**	50.00	0	112.5	59.81	6.10	02/14/2017
1,2-Dibromoethane	5.0		**52.1**	50.00	0	104.2	52.80	1.32	02/14/2017
1,2-Dichlorobenzene	5.0		**53.5**	50.00	0	107.0	54.98	2.69	02/14/2017
1,2-Dichloroethane	5.0		**50.0**	50.00	0	100.0	48.84	2.39	02/14/2017
1,2-Dichloropropane	5.0		**45.0**	50.00	0	90.1	44.06	2.18	02/14/2017
1,3,5-Trimethylbenzene	5.0		**57.1**	50.00	0	114.2	55.30	3.24	02/14/2017
1,3-Dichlorobenzene	5.0		**54.3**	50.00	0	108.6	56.23	3.46	02/14/2017
1,3-Dichloropropane	5.0		**52.7**	50.00	0	105.5	52.58	0.28	02/14/2017
1,4-Dichlorobenzene	5.0		**54.4**	50.00	0	108.8	54.46	0.15	02/14/2017
1-Chlorobutane	5.0		**48.7**	50.00	0	97.5	46.44	4.81	02/14/2017
2,2-Dichloropropane	5.0		**49.2**	50.00	0	98.4	47.51	3.47	02/14/2017
2-Butanone	50.0		**148**	125.0	0	118.3	144.7	2.19	02/14/2017
2-Chlorotoluene	5.0		**56.8**	50.00	0	113.5	55.94	1.44	02/14/2017
2-Hexanone	50.0		**154**	125.0	0	123.3	156.2	1.33	02/14/2017
2-Nitropropane	50.0		**553**	500.0	0	110.6	556.0	0.57	02/14/2017
4-Chlorotoluene	5.0		**51.1**	50.00	0	102.2	52.52	2.78	02/14/2017
4-Methyl-2-pentanone	50.0		**133**	125.0	0	106.1	145.6	9.37	02/14/2017
Acetone	50.0		**158**	125.0	0	126.7	131.0	18.93	02/14/2017
Acrolein	100	SE	**2730**	500.0	0	545.1	2778	1.91	02/14/2017
Acrylonitrile	10.0		**49.4**	50.00	0	98.8	51.69	4.55	02/14/2017
Allyl chloride	5.0		**48.2**	50.00	0	96.4	46.42	3.80	02/14/2017
Benzene	1.0		**45.4**	50.00	0	90.7	44.02	2.98	02/14/2017
Bromobenzene	5.0		**54.5**	50.00	0	109.1	54.58	0.07	02/14/2017
Bromochloromethane	5.0		**47.4**	50.00	0	94.8	44.99	5.24	02/14/2017
Bromodichloromethane	5.0		**48.5**	50.00	0	96.9	46.19	4.82	02/14/2017
Bromoform	5.0		**54.9**	50.00	0	109.8	57.33	4.31	02/14/2017
Bromomethane	10.0		**13.5**	50.00	0	27.0	10.78	22.55	02/14/2017
Carbon disulfide	5.0		**45.1**	50.00	0	90.2	42.31	6.43	02/14/2017
Carbon tetrachloride	5.0		**51.0**	50.00	0	102.1	48.62	4.84	02/14/2017
Chlorobenzene	5.0		**52.6**	50.00	0	105.1	50.76	3.47	02/14/2017
Chloroethane	10.0		**46.1**	50.00	0	92.2	40.52	12.84	02/14/2017
Chloroform	5.0		**46.8**	50.00	0	93.7	44.75	4.56	02/14/2017
Chloromethane	10.0		**53.0**	50.00	0	105.9	48.73	8.32	02/14/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020673

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 15-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127123 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-F170214A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
cis-1,2-Dichloroethene	5.0		**47.9**	50.00	0	95.7	46.98	1.88	02/14/2017
cis-1,3-Dichloropropene	4.0		**48.4**	50.00	0	96.9	46.46	4.17	02/14/2017
Cyclohexanone	100		**493**	500.0	0	98.7	521.8	5.57	02/14/2017
Dibromochloromethane	5.0		**55.6**	50.00	0	111.1	54.54	1.85	02/14/2017
Dibromomethane	5.0		**46.1**	50.00	0	92.3	45.51	1.35	02/14/2017
Dichlorodifluoromethane	10.0		**54.3**	50.00	0	108.7	48.44	11.46	02/14/2017
Ethyl ether	5.0		**47.8**	50.00	0	95.6	45.90	4.10	02/14/2017
Ethyl methacrylate	5.0		**55.2**	50.00	0	110.4	56.54	2.43	02/14/2017
Ethylbenzene	5.0		**53.9**	50.00	0	107.8	52.15	3.30	02/14/2017
Hexachlorobutadiene	5.0		**59.2**	50.00	0	118.3	58.16	1.69	02/14/2017
Hexachloroethane	5.0	S	**61.2**	50.00	0	122.5	59.79	2.38	02/14/2017
Iodomethane	10.0		**21.8**	50.00	0	43.6	19.88	9.30	02/14/2017
Isopropylbenzene	5.0		**53.6**	50.00	0	107.2	51.45	4.13	02/14/2017
m,p-Xylenes	5.0		**111**	100.0	0	111.0	104.0	6.47	02/14/2017
Methacrylonitrile	50.0		**ND**	50.00	0	98.9	49.18	0.00	02/14/2017
Methyl Methacrylate	5.0		**48.2**	50.00	0	96.4	51.87	7.29	02/14/2017
Methyl tert-butyl ether	2.0		**48.0**	50.00	0	96.1	44.31	8.10	02/14/2017
Methylacrylate	10.0		**58.3**	50.00	0	116.6	59.74	2.42	02/14/2017
Methylene chloride	5.0		**47.3**	50.00	0	94.6	45.33	4.23	02/14/2017
Naphthalene	10.0		**58.2**	50.00	0	116.5	60.89	4.47	02/14/2017
n-Butylbenzene	5.0		**59.7**	50.00	0	119.4	61.09	2.32	02/14/2017
n-Heptane	20.0		**56.1**	50.00	0	112.3	56.54	0.73	02/14/2017
n-Hexane	20.0		**52.5**	50.00	0	105.0	52.25	0.48	02/14/2017
Nitrobenzene	100		**532**	500.0	0	106.4	583.8	9.26	02/14/2017
n-Propylbenzene	5.0		**56.7**	50.00	0	113.4	57.01	0.55	02/14/2017
o-Xylene	5.0		**54.5**	50.00	0	109.1	52.87	3.09	02/14/2017
Pentachloroethane	5.0	S	**61.6**	50.00	0	123.3	60.34	2.13	02/14/2017
p-Isopropyltoluene	5.0		**56.6**	50.00	0	113.3	58.44	3.15	02/14/2017
Propionitrile	50.0		**486**	500.0	0	97.1	512.7	5.44	02/14/2017
sec-Butylbenzene	5.0		**56.9**	50.00	0	113.8	55.32	2.78	02/14/2017
Styrene	5.0		**54.5**	50.00	0	109.0	51.85	5.02	02/14/2017
tert-Butylbenzene	5.0		**55.8**	50.00	0	111.5	53.75	3.67	02/14/2017
Tetrachloroethene	5.0		**52.0**	50.00	0	103.9	49.81	4.21	02/14/2017
Tetrahydrofuran	50.0		**50.3**	50.00	0	100.6	50.34	0.10	02/14/2017
Toluene	5.0		**50.8**	50.00	0	101.6	48.22	5.25	02/14/2017
trans-1,2-Dichloroethene	5.0		**47.9**	50.00	0	95.8	46.11	3.83	02/14/2017
trans-1,3-Dichloropropene	4.0		**56.4**	50.00	0	112.8	55.47	1.64	02/14/2017
Trichloroethene	5.0		**46.2**	50.00	0	92.3	45.46	1.51	02/14/2017
Trichlorofluoromethane	5.0		**49.8**	50.00	0	99.7	44.65	10.97	02/14/2017
Vinyl acetate	50.0		**51.6**	50.00	0	103.3	58.60	12.65	02/14/2017
Vinyl chloride	2.0		**45.7**	50.00	0	91.4	42.55	7.14	02/14/2017
Surr: 1,2-Dichloroethane-d4			**53.8**	50.00		107.6			02/14/2017
Surr: 4-Bromofluorobenzene			**52.0**	50.00		103.9			02/14/2017
Surr: Dibromofluoromethane			**49.6**	50.00		99.2			02/14/2017
Surr: Toluene-d8			**52.9**	50.00		105.8			02/14/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020673

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 15-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127123 **SampType:** LCS Units µg/Kg

SampID: LCS-F170214A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		**51.6**	50.00	0	103.1	83.1	114	02/14/2017
1,1,1-Trichloroethane	5.0		**46.7**	50.00	0	93.4	78.5	119	02/14/2017
1,1,2,2-Tetrachloroethane	5.0		**55.9**	50.00	0	111.8	67.4	120	02/14/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		**46.4**	50.00	0	92.9	75.4	121	02/14/2017
1,1,2-Trichloroethane	5.0		**51.0**	50.00	0	102.0	81.1	111	02/14/2017
1,1-Dichloro-2-propanone	50.0		**161**	125.0	0	128.8	55.4	131	02/14/2017
1,1-Dichloroethane	5.0		**46.0**	50.00	0	92.0	80.1	116	02/14/2017
1,1-Dichloroethene	5.0		**47.8**	50.00	0	95.7	73.1	121	02/14/2017
1,1-Dichloropropene	5.0		**46.0**	50.00	0	92.0	82.2	114	02/14/2017
1,2,3-Trichlorobenzene	5.0		**57.5**	50.00	0	114.9	81.7	130	02/14/2017
1,2,3-Trichloropropane	10.0		**56.8**	50.00	0	113.6	67.8	118	02/14/2017
1,2,3-Trimethylbenzene	5.0		**55.4**	50.00	0	110.7	82.1	127	02/14/2017
1,2,4-Trichlorobenzene	5.0		**61.9**	50.00	0	123.7	72.3	141	02/14/2017
1,2,4-Trimethylbenzene	5.0		**55.7**	50.00	0	111.4	79.7	123	02/14/2017
1,2-Dibromo-3-chloropropane	5.0		**59.8**	50.00	0	119.6	62.1	123	02/14/2017
1,2-Dibromoethane	5.0		**52.8**	50.00	0	105.6	82.4	112	02/14/2017
1,2-Dichlorobenzene	5.0		**55.0**	50.00	0	110.0	82.7	119	02/14/2017
1,2-Dichloroethane	5.0		**48.8**	50.00	0	97.7	72.8	120	02/14/2017
1,2-Dichloropropane	5.0		**44.1**	50.00	0	88.1	80	116	02/14/2017
1,3,5-Trimethylbenzene	5.0		**55.3**	50.00	0	110.6	81.5	125	02/14/2017
1,3-Dichlorobenzene	5.0		**56.2**	50.00	0	112.5	82	124	02/14/2017
1,3-Dichloropropane	5.0		**52.6**	50.00	0	105.2	79.8	113	02/14/2017
1,4-Dichlorobenzene	5.0		**54.5**	50.00	0	108.9	81.1	124	02/14/2017
1-Chlorobutane	5.0		**46.4**	50.00	0	92.9	77.2	113	02/14/2017
2,2-Dichloropropane	5.0		**47.5**	50.00	0	95.0	76.6	121	02/14/2017
2-Butanone	50.0		**145**	125.0	0	115.8	62.8	131	02/14/2017
2-Chlorotoluene	5.0		**55.9**	50.00	0	111.9	78.8	121	02/14/2017
2-Hexanone	50.0		**156**	125.0	0	124.9	63.1	125	02/14/2017
2-Nitropropane	50.0		**556**	500.0	0	111.2	61.2	129	02/14/2017
4-Chlorotoluene	5.0		**52.5**	50.00	0	105.0	77.6	124	02/14/2017
4-Methyl-2-pentanone	50.0		**146**	125.0	0	116.5	60.6	126	02/14/2017
Acetone	50.0		**131**	125.0	0	104.8	39.5	159	02/14/2017
Acrolein	100	SE	**2780**	500.0	0	555.6	1	167	02/14/2017
Acrylonitrile	10.0		**51.7**	50.00	0	103.4	67	124	02/14/2017
Allyl chloride	5.0		**46.4**	50.00	0	92.8	58.5	129	02/14/2017
Benzene	1.0		**44.0**	50.00	0	88.0	80.8	117	02/14/2017
Bromobenzene	5.0		**54.6**	50.00	0	109.2	79.6	117	02/14/2017
Bromochloromethane	5.0		**45.0**	50.00	0	90.0	70.7	121	02/14/2017
Bromodichloromethane	5.0		**46.2**	50.00	0	92.4	80.7	121	02/14/2017
Bromoform	5.0		**57.3**	50.00	0	114.7	79.8	118	02/14/2017
Bromomethane	10.0		**10.8**	50.00	0	21.6	1	175	02/14/2017
Carbon disulfide	5.0		**42.3**	50.00	0	84.6	62.8	123	02/14/2017
Carbon tetrachloride	5.0		**48.6**	50.00	0	97.2	77.6	123	02/14/2017
Chlorobenzene	5.0		**50.8**	50.00	0	101.5	85.6	116	02/14/2017
Chloroethane	10.0		**40.5**	50.00	0	81.0	60.2	125	02/14/2017
Chloroform	5.0		**44.8**	50.00	0	89.5	77.9	116	02/14/2017
Chloromethane	10.0		**48.7**	50.00	0	97.5	29.9	157	02/14/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020673

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 15-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127123 **SampType:** LCS Units µg/Kg

SampID: LCS-F170214A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		**47.0**	50.00	0	94.0	80.1	116	02/14/2017
cis-1,3-Dichloropropene	4.0		**46.5**	50.00	0	92.9	80.5	121	02/14/2017
Cyclohexanone	100		**522**	500.0	0	104.4	45.4	128	02/14/2017
Dibromochloromethane	5.0		**54.5**	50.00	0	109.1	84.3	116	02/14/2017
Dibromomethane	5.0		**45.5**	50.00	0	91.0	76.6	115	02/14/2017
Dichlorodifluoromethane	10.0		**48.4**	50.00	0	96.9	1	200	02/14/2017
Ethyl ether	5.0		**45.9**	50.00	0	91.8	73.4	116	02/14/2017
Ethyl methacrylate	5.0		**56.5**	50.00	0	113.1	76.2	120	02/14/2017
Ethylbenzene	5.0		**52.2**	50.00	0	104.3	84.8	116	02/14/2017
Hexachlorobutadiene	5.0		**58.2**	50.00	0	116.3	74	135	02/14/2017
Hexachloroethane	5.0		**59.8**	50.00	0	119.6	76.4	121	02/14/2017
Iodomethane	10.0		**19.9**	50.00	0	39.8	38.7	161	02/14/2017
Isopropylbenzene	5.0		**51.4**	50.00	0	102.9	85	125	02/14/2017
m,p-Xylenes	5.0		**104**	100.0	0	104.0	85.3	120	02/14/2017
Methacrylonitrile	50.0		**ND**	50.00	0	98.4	65.7	120	02/14/2017
Methyl Methacrylate	5.0		**51.9**	50.00	0	103.7	69.1	114	02/14/2017
Methyl tert-butyl ether	2.0		**44.3**	50.00	0	88.6	66.6	125	02/14/2017
Methylacrylate	10.0		**59.7**	50.00	0	119.5	69.7	121	02/14/2017
Methylene chloride	5.0		**45.3**	50.00	0	90.7	73.4	115	02/14/2017
Naphthalene	10.0		**60.9**	50.00	0	121.8	70.1	134	02/14/2017
n-Butylbenzene	5.0		**61.1**	50.00	0	122.2	78.4	138	02/14/2017
n-Heptane	20.0		**56.5**	50.00	0	113.1	74.3	125	02/14/2017
n-Hexane	20.0		**52.2**	50.00	0	104.5	66.3	129	02/14/2017
Nitrobenzene	100		**584**	500.0	0	116.8	20.1	165	02/14/2017
n-Propylbenzene	5.0		**57.0**	50.00	0	114.0	79.1	125	02/14/2017
o-Xylene	5.0		**52.9**	50.00	0	105.7	81.9	118	02/14/2017
Pentachloroethane	5.0		**60.3**	50.00	0	120.7	72.7	123	02/14/2017
p-Isopropyltoluene	5.0		**58.4**	50.00	0	116.9	82.7	129	02/14/2017
Propionitrile	50.0		**513**	500.0	0	102.5	64.3	121	02/14/2017
sec-Butylbenzene	5.0		**55.3**	50.00	0	110.6	81.3	125	02/14/2017
Styrene	5.0		**51.8**	50.00	0	103.7	88.2	122	02/14/2017
tert-Butylbenzene	5.0		**53.8**	50.00	0	107.5	74.8	125	02/14/2017
Tetrachloroethene	5.0		**49.8**	50.00	0	99.6	84.2	122	02/14/2017
Tetrahydrofuran	50.0		**50.3**	50.00	0	100.7	61	118	02/14/2017
Toluene	5.0		**48.2**	50.00	0	96.4	81.3	113	02/14/2017
trans-1,2-Dichloroethene	5.0		**46.1**	50.00	0	92.2	78.2	118	02/14/2017
trans-1,3-Dichloropropene	4.0		**55.5**	50.00	0	110.9	81.7	124	02/14/2017
Trichloroethene	5.0		**45.5**	50.00	0	90.9	81	123	02/14/2017
Trichlorofluoromethane	5.0		**44.6**	50.00	0	89.3	66.8	131	02/14/2017
Vinyl acetate	50.0		**58.6**	50.00	0	117.2	64.3	122	02/14/2017
Vinyl chloride	2.0		**42.6**	50.00	0	85.1	45.2	140	02/14/2017
Surr: 1,2-Dichloroethane-d4			**54.5**	50.00		108.9	72.2	131	02/14/2017
Surr: 4-Bromofluorobenzene			**52.3**	50.00		104.6	82.1	116	02/14/2017
Surr: Dibromofluoromethane			**48.6**	50.00		97.3	77.7	120	02/14/2017
Surr: Toluene-d8			**51.2**	50.00		102.5	86	116	02/14/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020673

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 15-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127123 **SampType:** LCSGD Units %REC RPD Limit 0

SampID: LCSGD-F170214A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Surr: 1,2-Dichloroethane-d4			**53.3**	50.00		106.6			02/14/2017
Surr: 4-Bromofluorobenzene			**50.9**	50.00		101.7			02/14/2017
Surr: Dibromofluoromethane			**48.1**	50.00		96.3			02/14/2017
Surr: Toluene-d8			**53.7**	50.00		107.4			02/14/2017

Batch 127123 **SampType:** LCSG Units %REC

SampID: LCSG-F170214A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Surr: 1,2-Dichloroethane-d4			**52.9**	50.00		105.8	72.2	131	02/14/2017
Surr: 4-Bromofluorobenzene			**52.5**	50.00		105.0	82.1	116	02/14/2017
Surr: Dibromofluoromethane			**47.4**	50.00		94.8	77.7	120	02/14/2017
Surr: Toluene-d8			**53.0**	50.00		106.1	86	116	02/14/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020673

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 15-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127158 **SampType:** MBLK Units µg/Kg

SampID: MBLK-F170215A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		ND						02/15/2017
1,1,1-Trichloroethane	5.0		ND						02/15/2017
1,1,2,2-Tetrachloroethane	5.0		ND						02/15/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		ND						02/15/2017
1,1,2-Trichloroethane	5.0		ND						02/15/2017
1,1-Dichloro-2-propanone	50.0		ND						02/15/2017
1,1-Dichloroethane	5.0		ND						02/15/2017
1,1-Dichloroethene	5.0		ND						02/15/2017
1,1-Dichloropropene	5.0		ND						02/15/2017
1,2,3-Trichlorobenzene	5.0		ND						02/15/2017
1,2,3-Trichloropropane	10.0		ND						02/15/2017
1,2,3-Trimethylbenzene	5.0		ND						02/15/2017
1,2,4-Trichlorobenzene	5.0		ND						02/15/2017
1,2,4-Trimethylbenzene	5.0		ND						02/15/2017
1,2-Dibromo-3-chloropropane	5.0		ND						02/15/2017
1,2-Dibromoethane	5.0		ND						02/15/2017
1,2-Dichlorobenzene	5.0		ND						02/15/2017
1,2-Dichloroethane	5.0		ND						02/15/2017
1,2-Dichloropropane	5.0		ND						02/15/2017
1,3,5-Trimethylbenzene	5.0		ND						02/15/2017
1,3-Dichlorobenzene	5.0		ND						02/15/2017
1,3-Dichloropropane	5.0		ND						02/15/2017
1,4-Dichlorobenzene	5.0		ND						02/15/2017
1-Chlorobutane	5.0		ND						02/15/2017
2,2-Dichloropropane	5.0		ND						02/15/2017
2-Butanone	50.0		ND						02/15/2017
2-Chlorotoluene	5.0		ND						02/15/2017
2-Hexanone	50.0		ND						02/15/2017
2-Nitropropane	50.0		ND						02/15/2017
4-Chlorotoluene	5.0		ND						02/15/2017
4-Methyl-2-pentanone	50.0		ND						02/15/2017
Acetone	50.0		ND						02/15/2017
Acrolein	100		ND						02/15/2017
Acrylonitrile	10.0		ND						02/15/2017
Allyl chloride	5.0		ND						02/15/2017
Benzene	1.0		ND						02/15/2017
Bromobenzene	5.0		ND						02/15/2017
Bromochloromethane	5.0		ND						02/15/2017
Bromodichloromethane	5.0		ND						02/15/2017
Bromoform	5.0		ND						02/15/2017
Bromomethane	10.0		ND						02/15/2017
Carbon disulfide	5.0		ND						02/15/2017
Carbon tetrachloride	5.0		ND						02/15/2017
Chlorobenzene	5.0		ND						02/15/2017
Chloroethane	10.0		ND						02/15/2017
Chloroform	5.0		ND						02/15/2017
Chloromethane	10.0		ND						02/15/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020673

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 15-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127158 **SampType:** MBLK Units µg/Kg

SampID: MBLK-F170215A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		ND						02/15/2017
cis-1,3-Dichloropropene	4.0		ND						02/15/2017
Cyclohexanone	100		ND						02/15/2017
Dibromochloromethane	5.0		ND						02/15/2017
Dibromomethane	5.0		ND						02/15/2017
Dichlorodifluoromethane	10.0		ND						02/15/2017
Ethyl ether	5.0		ND						02/15/2017
Ethyl methacrylate	5.0		ND						02/15/2017
Ethylbenzene	5.0		ND						02/15/2017
Hexachlorobutadiene	5.0		ND						02/15/2017
Hexachloroethane	5.0		ND						02/15/2017
Iodomethane	10.0		ND						02/15/2017
Isopropylbenzene	5.0		ND						02/15/2017
m,p-Xylenes	5.0		ND						02/15/2017
Methacrylonitrile	50.0		ND						02/15/2017
Methyl Methacrylate	5.0		ND						02/15/2017
Methyl tert-butyl ether	2.0		ND						02/15/2017
Methylacrylate	10.0		ND						02/15/2017
Methylene chloride	5.0		ND						02/15/2017
Naphthalene	10.0		ND						02/15/2017
n-Butylbenzene	5.0		ND						02/15/2017
n-Heptane	20.0		ND						02/15/2017
n-Hexane	20.0		ND						02/15/2017
Nitrobenzene	100		ND						02/15/2017
n-Propylbenzene	5.0		ND						02/15/2017
o-Xylene	5.0		ND						02/15/2017
Pentachloroethane	5.0		ND						02/15/2017
p-Isopropyltoluene	5.0		ND						02/15/2017
Propionitrile	50.0		ND						02/15/2017
sec-Butylbenzene	5.0		ND						02/15/2017
Styrene	5.0		ND						02/15/2017
tert-Butylbenzene	5.0		ND						02/15/2017
Tetrachloroethene	5.0		ND						02/15/2017
Tetrahydrofuran	50.0		ND						02/15/2017
Toluene	5.0		ND						02/15/2017
trans-1,2-Dichloroethene	5.0		ND						02/15/2017
trans-1,3-Dichloropropene	4.0		ND						02/15/2017
Trichloroethene	5.0		ND						02/15/2017
Trichlorofluoromethane	5.0		ND						02/15/2017
Vinyl acetate	50.0		ND						02/15/2017
Vinyl chloride	2.0		ND						02/15/2017
Surr: 1,2-Dichloroethane-d4			**52.2**	50.00		104.5	72.2	131	02/15/2017
Surr: 4-Bromofluorobenzene			**52.0**	50.00		104.0	82.1	116	02/15/2017
Surr: Dibromofluoromethane			**48.2**	50.00		96.4	77.7	120	02/15/2017
Surr: Toluene-d8			**53.2**	50.00		106.3	86	116	02/15/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020673

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 15-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127158 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-F170215A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		**50.7**	50.00	0	101.3	52.71	3.97	02/15/2017
1,1,1-Trichloroethane	5.0		**46.4**	50.00	0	92.8	47.94	3.22	02/15/2017
1,1,2,2-Tetrachloroethane	5.0		**49.1**	50.00	0	98.2	52.76	7.19	02/15/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		**45.7**	50.00	0	91.4	47.08	2.93	02/15/2017
1,1,2-Trichloroethane	5.0		**48.1**	50.00	0	96.2	50.83	5.48	02/15/2017
1,1-Dichloro-2-propanone	50.0		**119**	125.0	0	95.0	124.4	4.64	02/15/2017
1,1-Dichloroethane	5.0		**45.5**	50.00	0	90.9	46.79	2.86	02/15/2017
1,1-Dichloroethene	5.0		**46.4**	50.00	0	92.9	48.32	3.99	02/15/2017
1,1-Dichloropropene	5.0		**45.6**	50.00	0	91.1	46.76	2.62	02/15/2017
1,2,3-Trichlorobenzene	5.0		**55.0**	50.00	0	110.0	58.27	5.77	02/15/2017
1,2,3-Trichloropropane	10.0		**49.0**	50.00	0	98.1	53.21	8.16	02/15/2017
1,2,3-Trimethylbenzene	5.0		**54.2**	50.00	0	108.4	55.81	2.91	02/15/2017
1,2,4-Trichlorobenzene	5.0		**58.2**	50.00	0	116.4	63.22	8.25	02/15/2017
1,2,4-Trimethylbenzene	5.0		**55.4**	50.00	0	110.7	57.41	3.64	02/15/2017
1,2-Dibromo-3-chloropropane	5.0		**51.5**	50.00	0	103.0	57.14	10.42	02/15/2017
1,2-Dibromoethane	5.0		**48.9**	50.00	0	97.7	49.85	1.99	02/15/2017
1,2-Dichlorobenzene	5.0		**52.7**	50.00	0	105.4	52.60	0.23	02/15/2017
1,2-Dichloroethane	5.0		**46.7**	50.00	0	93.3	49.16	5.22	02/15/2017
1,2-Dichloropropane	5.0		**43.4**	50.00	0	86.7	43.82	1.06	02/15/2017
1,3,5-Trimethylbenzene	5.0		**54.7**	50.00	0	109.3	56.22	2.81	02/15/2017
1,3-Dichlorobenzene	5.0		**53.8**	50.00	0	107.7	55.31	2.69	02/15/2017
1,3-Dichloropropane	5.0		**50.2**	50.00	0	100.4	51.93	3.41	02/15/2017
1,4-Dichlorobenzene	5.0		**53.1**	50.00	0	106.2	54.74	3.08	02/15/2017
1-Chlorobutane	5.0		**46.2**	50.00	0	92.3	47.55	2.97	02/15/2017
2,2-Dichloropropane	5.0		**46.8**	50.00	0	93.6	48.11	2.74	02/15/2017
2-Butanone	50.0		**137**	125.0	0	109.7	149.2	8.41	02/15/2017
2-Chlorotoluene	5.0		**53.6**	50.00	0	107.1	56.32	5.01	02/15/2017
2-Hexanone	50.0		**141**	125.0	0	113.0	157.7	11.05	02/15/2017
2-Nitropropane	50.0		**489**	500.0	0	97.7	510.8	4.46	02/15/2017
4-Chlorotoluene	5.0		**50.8**	50.00	0	101.6	52.86	4.01	02/15/2017
4-Methyl-2-pentanone	50.0		**131**	125.0	0	104.7	140.6	7.17	02/15/2017
Acetone	50.0		**143**	125.0	0	114.2	160.6	11.79	02/15/2017
Acrolein	100	SE	**2490**	500.0	0	498.2	2706	8.29	02/15/2017
Acrylonitrile	10.0		**43.7**	50.00	0	87.4	48.37	10.17	02/15/2017
Allyl chloride	5.0		**44.7**	50.00	0	89.3	47.85	6.87	02/15/2017
Benzene	1.0		**43.2**	50.00	0	86.5	44.28	2.40	02/15/2017
Bromobenzene	5.0		**53.7**	50.00	0	107.4	52.62	2.03	02/15/2017
Bromochloromethane	5.0		**46.2**	50.00	0	92.4	46.86	1.44	02/15/2017
Bromodichloromethane	5.0		**45.4**	50.00	0	90.9	47.67	4.77	02/15/2017
Bromoform	5.0		**52.4**	50.00	0	104.8	53.14	1.36	02/15/2017
Bromomethane	10.0		**20.0**	50.00	0	40.1	19.01	5.28	02/15/2017
Carbon disulfide	5.0		**41.0**	50.00	0	81.9	43.22	5.35	02/15/2017
Carbon tetrachloride	5.0		**48.4**	50.00	0	96.9	49.61	2.41	02/15/2017
Chlorobenzene	5.0		**50.1**	50.00	0	100.2	50.59	0.99	02/15/2017
Chloroethane	10.0		**43.8**	50.00	0	87.6	46.50	5.93	02/15/2017
Chloroform	5.0		**43.4**	50.00	0	86.8	45.89	5.53	02/15/2017
Chloromethane	10.0		**47.5**	50.00	0	94.9	51.09	7.37	02/15/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020673

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 15-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127158 **SampType:** LCSD Units µg/Kg RPD Limit 40

SampID: LCSD-F170215A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
cis-1,2-Dichloroethene	5.0		**46.7**	50.00	0	93.4	47.31	1.30	02/15/2017
cis-1,3-Dichloropropene	4.0		**46.6**	50.00	0	93.1	47.79	2.63	02/15/2017
Cyclohexanone	100		**444**	500.0	0	88.7	478.1	7.48	02/15/2017
Dibromochloromethane	5.0		**51.2**	50.00	0	102.3	53.05	3.65	02/15/2017
Dibromomethane	5.0		**43.9**	50.00	0	87.8	44.80	2.07	02/15/2017
Dichlorodifluoromethane	10.0		**45.5**	50.00	0	91.0	49.38	8.13	02/15/2017
Ethyl ether	5.0		**43.6**	50.00	0	87.2	46.60	6.67	02/15/2017
Ethyl methacrylate	5.0		**51.4**	50.00	0	102.7	54.44	5.82	02/15/2017
Ethylbenzene	5.0		**50.8**	50.00	0	101.7	53.93	5.88	02/15/2017
Hexachlorobutadiene	5.0		**58.6**	50.00	0	117.2	60.04	2.46	02/15/2017
Hexachloroethane	5.0		**58.2**	50.00	0	116.4	59.71	2.53	02/15/2017
Iodomethane	10.0		**28.2**	50.00	0	56.3	28.81	2.25	02/15/2017
Isopropylbenzene	5.0		**53.5**	50.00	0	107.0	53.26	0.41	02/15/2017
m,p-Xylenes	5.0		**107**	100.0	0	106.8	107.6	0.79	02/15/2017
Methacrylonitrile	50.0		**ND**	50.00	0	89.4	49.86	0.00	02/15/2017
Methyl Methacrylate	5.0		**44.9**	50.00	0	89.9	48.12	6.86	02/15/2017
Methyl tert-butyl ether	2.0		**44.0**	50.00	0	88.1	46.48	5.37	02/15/2017
Methylacrylate	10.0		**52.6**	50.00	0	105.3	57.81	9.38	02/15/2017
Methylene chloride	5.0		**43.1**	50.00	0	86.3	45.36	5.04	02/15/2017
Naphthalene	10.0		**55.7**	50.00	0	111.4	58.82	5.47	02/15/2017
n-Butylbenzene	5.0		**59.9**	50.00	0	119.8	59.93	0.03	02/15/2017
n-Heptane	20.0		**54.4**	50.00	0	108.8	56.45	3.70	02/15/2017
n-Hexane	20.0		**49.3**	50.00	0	98.7	51.98	5.23	02/15/2017
Nitrobenzene	100		**450**	500.0	0	90.0	488.2	8.09	02/15/2017
n-Propylbenzene	5.0		**55.9**	50.00	0	111.8	56.16	0.43	02/15/2017
o-Xylene	5.0		**52.5**	50.00	0	105.1	52.70	0.30	02/15/2017
Pentachloroethane	5.0		**57.9**	50.00	0	115.8	60.51	4.37	02/15/2017
p-Isopropyltoluene	5.0		**57.0**	50.00	0	114.0	58.64	2.87	02/15/2017
Propionitrile	50.0		**453**	500.0	0	90.6	492.4	8.32	02/15/2017
sec-Butylbenzene	5.0		**54.5**	50.00	0	109.0	57.57	5.50	02/15/2017
Styrene	5.0		**52.2**	50.00	0	104.4	52.28	0.19	02/15/2017
tert-Butylbenzene	5.0		**51.4**	50.00	0	102.9	53.16	3.31	02/15/2017
Tetrachloroethene	5.0		**50.6**	50.00	0	101.2	51.88	2.54	02/15/2017
Tetrahydrofuran	50.0		**ND**	50.00	0	90.8	49.37	0.00	02/15/2017
Toluene	5.0		**48.5**	50.00	0	97.0	48.61	0.25	02/15/2017
trans-1,2-Dichloroethene	5.0		**45.4**	50.00	0	90.7	46.70	2.93	02/15/2017
trans-1,3-Dichloropropene	4.0		**53.8**	50.00	0	107.6	55.45	3.02	02/15/2017
Trichloroethene	5.0		**44.9**	50.00	0	89.8	45.99	2.38	02/15/2017
Trichlorofluoromethane	5.0		**47.2**	50.00	0	94.4	48.78	3.31	02/15/2017
Vinyl acetate	50.0		**ND**	50.00	0	96.9	52.10	0.00	02/15/2017
Vinyl chloride	2.0		**42.9**	50.00	0	85.9	45.73	6.29	02/15/2017
Surr: 1,2-Dichloroethane-d4			**52.3**	50.00		104.7			02/15/2017
Surr: 4-Bromofluorobenzene			**51.2**	50.00		102.4			02/15/2017
Surr: Dibromofluoromethane			**48.5**	50.00		97.1			02/15/2017
Surr: Toluene-d8			**51.7**	50.00		103.5			02/15/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020673

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 15-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127158 **SampType:** LCS Units µg/Kg

SampID: LCS-F170215A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		**52.7**	50.00	0	105.4	83.1	114	02/15/2017
1,1,1-Trichloroethane	5.0		**47.9**	50.00	0	95.9	78.5	119	02/15/2017
1,1,2,2-Tetrachloroethane	5.0		**52.8**	50.00	0	105.5	67.4	120	02/15/2017
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		**47.1**	50.00	0	94.2	75.4	121	02/15/2017
1,1,2-Trichloroethane	5.0		**50.8**	50.00	0	101.7	81.1	111	02/15/2017
1,1-Dichloro-2-propanone	50.0		**124**	125.0	0	99.6	55.4	131	02/15/2017
1,1-Dichloroethane	5.0		**46.8**	50.00	0	93.6	80.1	116	02/15/2017
1,1-Dichloroethene	5.0		**48.3**	50.00	0	96.6	73.1	121	02/15/2017
1,1-Dichloropropene	5.0		**46.8**	50.00	0	93.5	82.2	114	02/15/2017
1,2,3-Trichlorobenzene	5.0		**58.3**	50.00	0	116.5	81.7	130	02/15/2017
1,2,3-Trichloropropane	10.0		**53.2**	50.00	0	106.4	67.8	118	02/15/2017
1,2,3-Trimethylbenzene	5.0		**55.8**	50.00	0	111.6	82.1	127	02/15/2017
1,2,4-Trichlorobenzene	5.0		**63.2**	50.00	0	126.4	72.3	141	02/15/2017
1,2,4-Trimethylbenzene	5.0		**57.4**	50.00	0	114.8	79.7	123	02/15/2017
1,2-Dibromo-3-chloropropane	5.0		**57.1**	50.00	0	114.3	62.1	123	02/15/2017
1,2-Dibromoethane	5.0		**49.8**	50.00	0	99.7	82.4	112	02/15/2017
1,2-Dichlorobenzene	5.0		**52.6**	50.00	0	105.2	82.7	119	02/15/2017
1,2-Dichloroethane	5.0		**49.2**	50.00	0	98.3	72.8	120	02/15/2017
1,2-Dichloropropane	5.0		**43.8**	50.00	0	87.6	80	116	02/15/2017
1,3,5-Trimethylbenzene	5.0		**56.2**	50.00	0	112.4	81.5	125	02/15/2017
1,3-Dichlorobenzene	5.0		**55.3**	50.00	0	110.6	82	124	02/15/2017
1,3-Dichloropropane	5.0		**51.9**	50.00	0	103.9	79.8	113	02/15/2017
1,4-Dichlorobenzene	5.0		**54.7**	50.00	0	109.5	81.1	124	02/15/2017
1-Chlorobutane	5.0		**47.6**	50.00	0	95.1	77.2	113	02/15/2017
2,2-Dichloropropane	5.0		**48.1**	50.00	0	96.2	76.6	121	02/15/2017
2-Butanone	50.0		**149**	125.0	0	119.4	62.8	131	02/15/2017
2-Chlorotoluene	5.0		**56.3**	50.00	0	112.6	78.8	121	02/15/2017
2-Hexanone	50.0	S	**158**	125.0	0	126.2	63.1	125	02/15/2017
2-Nitropropane	50.0		**511**	500.0	0	102.2	61.2	129	02/15/2017
4-Chlorotoluene	5.0		**52.9**	50.00	0	105.7	77.6	124	02/15/2017
4-Methyl-2-pentanone	50.0		**141**	125.0	0	112.5	60.6	126	02/15/2017
Acetone	50.0		**161**	125.0	0	128.5	39.5	159	02/15/2017
Acrolein	100	SE	**2710**	500.0	0	541.3	1	167	02/15/2017
Acrylonitrile	10.0		**48.4**	50.00	0	96.7	67	124	02/15/2017
Allyl chloride	5.0		**47.8**	50.00	0	95.7	58.5	129	02/15/2017
Benzene	1.0		**44.3**	50.00	0	88.6	80.8	117	02/15/2017
Bromobenzene	5.0		**52.6**	50.00	0	105.2	79.6	117	02/15/2017
Bromochloromethane	5.0		**46.9**	50.00	0	93.7	70.7	121	02/15/2017
Bromodichloromethane	5.0		**47.7**	50.00	0	95.3	80.7	121	02/15/2017
Bromoform	5.0		**53.1**	50.00	0	106.3	79.8	118	02/15/2017
Bromomethane	10.0		**19.0**	50.00	0	38.0	1	175	02/15/2017
Carbon disulfide	5.0		**43.2**	50.00	0	86.4	62.8	123	02/15/2017
Carbon tetrachloride	5.0		**49.6**	50.00	0	99.2	77.6	123	02/15/2017
Chlorobenzene	5.0		**50.6**	50.00	0	101.2	85.6	116	02/15/2017
Chloroethane	10.0		**46.5**	50.00	0	93.0	60.2	125	02/15/2017
Chloroform	5.0		**45.9**	50.00	0	91.8	77.9	116	02/15/2017
Chloromethane	10.0		**51.1**	50.00	0	102.2	29.9	157	02/15/2017

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020673

Client Project: Champaign Soil Residual IRM 624-1610-001-J0055 **Report Date:** 15-Feb-17

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 127158 **SampType:** LCS Units µg/Kg

SampID: LCS-F170215A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
cis-1,2-Dichloroethene	5.0		**47.3**	50.00	0	94.6	80.1	116	02/15/2017
cis-1,3-Dichloropropene	4.0		**47.8**	50.00	0	95.6	80.5	121	02/15/2017
Cyclohexanone	100		**478**	500.0	0	95.6	45.4	128	02/15/2017
Dibromochloromethane	5.0		**53.0**	50.00	0	106.1	84.3	116	02/15/2017
Dibromomethane	5.0		**44.8**	50.00	0	89.6	76.6	115	02/15/2017
Dichlorodifluoromethane	10.0		**49.4**	50.00	0	98.8	1	200	02/15/2017
Ethyl ether	5.0		**46.6**	50.00	0	93.2	73.4	116	02/15/2017
Ethyl methacrylate	5.0		**54.4**	50.00	0	108.9	76.2	120	02/15/2017
Ethylbenzene	5.0		**53.9**	50.00	0	107.9	84.8	116	02/15/2017
Hexachlorobutadiene	5.0		**60.0**	50.00	0	120.1	74	135	02/15/2017
Hexachloroethane	5.0		**59.7**	50.00	0	119.4	76.4	121	02/15/2017
Iodomethane	10.0		**28.8**	50.00	0	57.6	38.7	161	02/15/2017
Isopropylbenzene	5.0		**53.3**	50.00	0	106.5	85	125	02/15/2017
m,p-Xylenes	5.0		**108**	100.0	0	107.6	85.3	120	02/15/2017
Methacrylonitrile	50.0		**ND**	50.00	0	99.7	65.7	120	02/15/2017
Methyl Methacrylate	5.0		**48.1**	50.00	0	96.2	69.1	114	02/15/2017
Methyl tert-butyl ether	2.0		**46.5**	50.00	0	93.0	66.6	125	02/15/2017
Methylacrylate	10.0		**57.8**	50.00	0	115.6	69.7	121	02/15/2017
Methylene chloride	5.0		**45.4**	50.00	0	90.7	73.4	115	02/15/2017
Naphthalene	10.0		**58.8**	50.00	0	117.6	70.1	134	02/15/2017
n-Butylbenzene	5.0		**59.9**	50.00	0	119.9	78.4	138	02/15/2017
n-Heptane	20.0		**56.4**	50.00	0	112.9	74.3	125	02/15/2017
n-Hexane	20.0		**52.0**	50.00	0	104.0	66.3	129	02/15/2017
Nitrobenzene	100		**488**	500.0	0	97.6	20.1	165	02/15/2017
n-Propylbenzene	5.0		**56.2**	50.00	0	112.3	79.1	125	02/15/2017
o-Xylene	5.0		**52.7**	50.00	0	105.4	81.9	118	02/15/2017
Pentachloroethane	5.0		**60.5**	50.00	0	121.0	72.7	123	02/15/2017
p-Isopropyltoluene	5.0		**58.6**	50.00	0	117.3	82.7	129	02/15/2017
Propionitrile	50.0		**492**	500.0	0	98.5	64.3	121	02/15/2017
sec-Butylbenzene	5.0		**57.6**	50.00	0	115.1	81.3	125	02/15/2017
Styrene	5.0		**52.3**	50.00	0	104.6	88.2	122	02/15/2017
tert-Butylbenzene	5.0		**53.2**	50.00	0	106.3	74.8	125	02/15/2017
Tetrachloroethene	5.0		**51.9**	50.00	0	103.8	84.2	122	02/15/2017
Tetrahydrofuran	50.0		**ND**	50.00	0	98.7	61	118	02/15/2017
Toluene	5.0		**48.6**	50.00	0	97.2	81.3	113	02/15/2017
trans-1,2-Dichloroethene	5.0		**46.7**	50.00	0	93.4	78.2	118	02/15/2017
trans-1,3-Dichloropropene	4.0		**55.4**	50.00	0	110.9	81.7	124	02/15/2017
Trichloroethene	5.0		**46.0**	50.00	0	92.0	81	123	02/15/2017
Trichlorofluoromethane	5.0		**48.8**	50.00	0	97.6	66.8	131	02/15/2017
Vinyl acetate	50.0		**52.1**	50.00	0	104.2	64.3	122	02/15/2017
Vinyl chloride	2.0		**45.7**	50.00	0	91.5	45.2	140	02/15/2017
Surr: 1,2-Dichloroethane-d4			**53.5**	50.00		107.0	72.2	131	02/15/2017
Surr: 4-Bromofluorobenzene			**52.4**	50.00		104.7	82.1	116	02/15/2017
Surr: Dibromofluoromethane			**49.9**	50.00		99.8	77.7	120	02/15/2017
Surr: Toluene-d8			**53.6**	50.00		107.3	86	116	02/15/2017

Receiving Check List

http://www.teklabinc.com/

Client: PSC Industrial Outsourcing, LP
Work Order: 17020673
Client Project: Champaign Soil Residual IRM 624-1610-001-J0055
Report Date: 15-Feb-17

Carrier: Daniel Wheaton
Received By: AMD

Completed by: Amber M. Dilallo
On: 10-Feb-17

Reviewed by: Elizabeth A. Hurley
On: 10-Feb-17

Pages to follow: Chain of custody 1 Extra pages included 0

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C	2.22
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice	☐
Chain of custody present?	Yes ☑	No ☐			
Chain of custody signed when relinquished and received?	Yes ☑	No ☐			
Chain of custody agrees with sample labels?	Yes ☑	No ☐			
Samples in proper container/bottle?	Yes ☑	No ☐			
Sample containers intact?	Yes ☑	No ☐			
Sufficient sample volume for indicated test?	Yes ☑	No ☐			
All samples received within holding time?	Yes ☑	No ☐			
Reported field parameters measured:	Field ☐	Lab ☐	NA ☑		
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐			

When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.

Water – at least one vial per sample has zero headspace?	Yes ☐	No ☐	No VOA vials ☑
Water - TOX containers have zero headspace?	Yes ☐	No ☐	No TOX containers ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	NA ☑
NPDES/CWA TCN interferences checked/treated in the field?	Yes ☐	No ☐	NA ☑

Any No responses must be detailed below or on the COC.

CHAIN OF CUSTODY

pg. 1 of 1 Work order # 17020673

TEKLAB, INC. 5445 Horseshoe Lake Road - Collinsville, IL 62234 - Phone: (618) 344-1004 - Fax: (618) 344-1005

Client:	PSC Industrial Outsourcing, LP		
Address:	210 West Sand Bank Road		
City / State / Zip	Columbia, IL 62236-0230		
Contact:	Michael Crutcher	**Phone:**	(618) 281-7173
E-Mail:	mcrutcher@pscnow.com	**Fax:**	(618) 281-5120

Samples on: ☒ ICE ☐ BLUE ICE ☐ NO ICE 2.2 °C

Preserved in: ☐ LAB ☐ FIELD

FOR LAB USE ONLY

Lab Notes

Client Comments: IL IAC 740/742

Are these samples known to be involved in litigation? If yes, a surcharge will apply ☐ Yes ☒ No

Are these samples known to be hazardous? ☐ Yes ☒ No

Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section. ☒ Yes ☐ No

Project Name/Number: Champaign Soil Residual IRM 624-1610-001-J0055

Sample Collector's Name:

Results Requested: ☐ Standard ☐ 1-2 Day (100% Surcharge) ☐ Other ☐ 3 Day (50% Surcharge)

Billing Instructions:

Lab Use Only	Sample Identification	Date/Time Sampled	# and Type of Containers: UNPRES	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	OTHER	MATRIX: Aqueous	Drinking Water	Soil	Sludge	Special Waste	Groundwater	INDICATE ANALYSIS REQUESTED: Amenable Cyanide	OA2 8015	PAH 8270 SIM	pH	SVOC 8270 (No PAH)	Total 8 RCRA Metals Tagn	Total Cyanide	VOC 8260
17020673-001	2017-CBF-001	2/9/17 1030	X					1	2				X											X
002	2017-CBF-002	2/9/17 1180	X					1	2				X											X
003	2017-CBF-003	2/9/17 1145	X					1	2				X											X

Relinquished By	Date/Time	Received By	Date/Time
Daniel D. Whitten	2-9-17 16:07	[illegible]	2/9/17 1607

The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions.

BottleOrder: 35798

2.2.17

February 15, 2017

Michael Crutcher
PSC Industrial Outsourcing, LP
210 West Sand Bank Road
Columbia, IL 62236-0230
TEL: (618) 281-7173
FAX: (618) 281-5120

RE: Champaign Residual IRM 624-1610-0001 / J0055 **WorkOrder:** 17020892

Dear Michael Crutcher:

TEKLAB, INC received 1 sample on 2/1/2017 3:30:00 PM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Michael L. Austin
Project Manager
(618)344-1004 ex 16
MAustin@teklabinc.com

Client: PSC Industrial Outsourcing, LP
Work Order: 17020892
Client Project: Champaign Residual IRM 624-1610-0001 / J0055
Report Date: 15-Feb-17

This reporting package includes the following:

Cover Letter	1
Report Contents	2
Definitions	3
Case Narrative	4
Laboratory Results	5
Sample Summary	6
Dates Report	7
Quality Control Results	8
Chain of Custody	Appended

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020892

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 15-Feb-17

Abbr Definition

CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilutions factors.
DNI	Did not ignite
DUP	Laboratory duplicate is an aliquot of a sample taken from the same container under laboratory conditions for independent processing and analysis independently of the original aliquot.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample, spiked with verified known amounts of analytes, is analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system. The acceptable recovery range is in the QC Package (provided upon request).
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MBLK	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	Method detection limit means the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero.
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions. The acceptable recovery range is listed in the QC Package (provided upon request).
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TIC	Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
TNTC	Too numerous to count (> 200 CFU)

Qualifiers

# - Unknown hydrocarbon	B - Analyte detected in associated Method Blank
E - Value above quantitation range	H - Holding times exceeded
I - Associated internal standard was outside method criteria	M - Manual Integration used to determine area response
ND - Not Detected at the Reporting Limit	R - RPD outside accepted recovery limits
S - Spike Recovery outside recovery limits	T - TIC(Tentatively identified compound)
X - Value exceeds Maximum Contaminant Level	

Case Narrative

http://www.teklabinc.com/

Client: PSC Industrial Outsourcing, LP
Work Order: 17020892
Client Project: Champaign Residual IRM 624-1610-0001 / J0055
Report Date: 15-Feb-17

Cooler Receipt Temp: °C

Additional analysis to WO# 17020090.

Locations and Accreditations

	Collinsville	Springfield	Kansas City	Collinsville Air
Address	5445 Horseshoe Lake Road	3920 Pintail Dr	8421 Nieman Road	5445 Horseshoe Lake Road
	Collinsville, IL 62234-7425	Springfield, IL 62711-9415	Lenexa, KS 66214	Collinsville, IL 62234-7425
Phone	(618) 344-1004	(217) 698-1004	(913) 541-1998	(618) 344-1004
Fax	(618) 344-1005	(217) 698-1005	(913) 541-1998	(618) 344-1005
Email	jhriley@teklabinc.com	KKlostermann@teklabinc.com	Ryoungstrom@teklabinc.com	EHurley@teklabinc.com

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2018	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2017	Collinsville
Louisiana	LDEQ	166493	NELAP	6/30/2017	Collinsville
Louisiana	LDEQ	166578	NELAP	6/30/2017	Collinsville
Texas	TCEQ	T104704515-12-1	NELAP	7/31/2017	Collinsville
Arkansas	ADEQ	88-0966		3/14/2017	Collinsville
Illinois	IDPH	17584		5/31/2017	Collinsville
Kentucky	KDEP	98006		12/31/2017	Collinsville
Kentucky	UST	0073		1/31/2018	Collinsville
Missouri	MDNR	00930		5/31/2017	Collinsville
Missouri	MDNR	930		1/31/2018	Collinsville
Oklahoma	ODEQ	9978		8/31/2017	Collinsville

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020892

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 15-Feb-17

Lab ID: 17020892-001 **Client Sample ID:** SW-RES-REM-W2 (10)

Matrix: SOLID **Collection Date:** 01/31/2017 15:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**20.0**	%	1	02/03/2017 14:45	R228804
SW-846 3550B, 8015B, TOTAL PETROLEUM HYDROCARBONS (OA-2) BY GC/FID								
Diesel	NELAP	312	#H	**2540**	mg/Kg-dry	50	02/15/2017 13:47	127136
Kerosene	NELAP	312	H	**ND**	mg/Kg-dry	50	02/15/2017 13:47	127136
Mineral Spirits	NELAP	312	H	**ND**	mg/Kg-dry	50	02/15/2017 13:47	127136
Motor Oil	NELAP	312	#H	**1500**	mg/Kg-dry	50	02/15/2017 13:47	127136
Surr: n-Tetracontane		20-152	SH	**674.8**	%REC	50	02/15/2017 13:47	127136

Surrogate recovery is outside QC limits due to sample dilution.
Sample extraction did not meet hold time requirements.
Elevated reporting limit due to sample extract composition.

Client: PSC Industrial Outsourcing, LP
Work Order: 17020892
Client Project: Champaign Residual IRM 624-1610-0001 / J0055
Report Date: 15-Feb-17

Lab Sample ID	Client Sample ID	Matrix	Fractions	Collection Date
17020892-001	SW-RES-REM-W2 (10)	Solid	1	01/31/2017 15:00

Client: PSC Industrial Outsourcing, LP
Work Order: 17020892
Client Project: Champaign Residual IRM 624-1610-0001 / J0055
Report Date: 15-Feb-17

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			Prep Date/Time	Analysis Date/Time
17020892-001A	SW-RES-REM-W2 (10)	01/31/2017 15:00	02/01/2017 15:30		
	EPA SW846 3550C, 5035A, ASTM D2974				02/03/2017 14:45
	SW-846 3550B, 8015B, Total Petroleum Hydrocarbons (OA-2) by GC/FID			02/14/2017 17:28	02/15/2017 13:47

Client: PSC Industrial Outsourcing, LP **Work Order:** 17020892

Client Project: Champaign Residual IRM 624-1610-0001 / J0055 **Report Date:** 15-Feb-17

EPA SW846 3550C, 5035A, ASTM D2974

Batch R228804 **SampType:** LCS Units **%**

SampID: LCS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	02/03/2017

Batch R228804 **SampType:** LCSQC Units **%**

SampID: LCSQC

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	02/03/2017

SW-846 3550B, 8015B, TOTAL PETROLEUM HYDROCARBONS (OA-2) BY GC/FID

Batch 127136 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK-127136

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Diesel	5.00		**ND**						02/15/2017
Kerosene	5.00		**ND**						02/15/2017
Mineral Spirits	5.00		**ND**						02/15/2017
Motor Oil	5.00		**ND**						02/15/2017
Surr: n-Tetracontane			**0.76**	0.6700		113.8	33.4	140	02/15/2017

Batch 127136 **SampType:** LCS Units **mg/Kg**

SampID: LCS-127136

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Diesel	5.00		**17.3**	16.70	0	103.9	35.2	131	02/15/2017
Surr: n-Tetracontane			**0.72**	0.6700		107.7	33.4	140	02/15/2017

17020892

Page 1 of 1

TEKLAB, INC
5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
TEL: (618) 344-1004
FAX: (618) 344-1005

CHAIN-OF-CUSTODY RECORD

WorkOrder: 17020892

Client:
PSC Industrial Outsourcing, LP
210 West Sand Bank Road
Columbia, IL 62236-0230

TEL: (618) 281-7173
FAX: (618) 281-5120
Project: Champaign Residual IRM 62

14-Feb-17

					Requested Tests					
Sample ID	**ClientSampID**	**Matrix**	**Date Collected**	**Bottle**	**SW8015M/OA 2**					
17020892-001	SW-RES-REM-W2(10)	Solid	1/31/2017 3:00:00 PM		A					

Comments: Level 3 QC, Excel STD EDD.
Cc: Invoices to: Cindy Grohmann (Cindy.grohmann@pscnow.com)

	Date/Time		Date/Time
Relinquished by:		**Received by:** Amber Diecus	2/14/17 1020
Relinquished by:		**Received by:**	
Relinquished by:		**Received by:**	

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.

Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

ONE DAY TAT

Appendix D Tier 2 Evaluation Calculations and Results – Soil Component for Groundwater Ingestion Pathway

INPUT PARAMETERS FOR TIER 2 SOIL COMPONENT TO GROUNDWATER INGESTION EVALUATION

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		BENZENE (P1-F5-5) FLOW SOUTH		
Site Name		CHAMPAIGN MGP		
Site Location		CHAMPAIGN, ILLINOIS		
FOR RBCA EQUATION - (R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, and R24)				
Constituent based parameters				
Organic carbon partition coefficient	K_{oc}	50	cm^3/g	Appendix C; Table E
Henry's constant	H'	0.23	l/gm	Appendix C; Table E
Solubility	S	1800	mg/l	Appendix C; Table E
Degradation constant	λ	0.0009	day^{-1}	Appendix C; Table E
Groundwater Objective	GW_{obj}	0.025	mg/l	Appendix B; Table E
Site Specific Data - Soil Zone				
Concentration of Constituent in Soil	$Soil_{(conc)}$	41	mg/kg	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	
Soil moisture content	***w***	0.3	unitless	
Total soil porosity - soil	θ_T	0.43	unitless	
Soil bulk density	ρ_b	1.7	gm/cm^3	
Source width in soil parallel to groundwater flow	W	30	feet	
Site Specific Data - Groundwater Zone				
Hydraulic conductivity	K	3.10E-05	cm/sec	
Groundwater gradient	*i*	0.02	unitless	
Total soil porosity - aquifer	θ_T	0.43	unitless	
Source width in groundwater perpendicular to groundwater flow direction	S_w	30	feet	
Source thickness in groundwater zone	S_d	25	feet	
Distance to point of compliance	X	1175	feet	

TABLE
EQUATION R12 WORKSHEET - SOIL COMPONENT OF GROUNDWATER INGESTION
BENZENE (P1-F5-5) FLOW SOUTH
CHAMPAIGN MGP
CHAMPAIGN MGP

R12	**RO**	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)}$	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)} * LF_{sw}$	$= GW_{source\text{-}calculated}$
R13	$\mathbf{GW_{source}}$	$= GW_{comp}/[C_{(x)}/C_{(source)}]$

Soil Source Concentration $\mathbf{Soil_{(conc)}}$ **(mg/kg)**	Leachate Factor LF_{sw} $(mg/l_{water})/(mg/kg_{soil})$	**GW Standard** $\mathbf{GW_{comp}}$ **(mg/l)**	GW_{source} $Soil_{(conc)}*LF_{sw}$ (mg/l)
41	1.664967644	**0.025**	68.2636734

Tier 2 Soil Remediation Objective (μg/kg) = **41000**

TABLE
EQUATION R15 WORKSHEET - STEADY STATE ATTENUATION ALONG THE CENTERLINE OF PLUME
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZENE (P1-F5-5) FLOW SOUTH
CHAMPAIGN MGP
CHAMPAIGN MGP

R26 $C_{(x)} = GW_{source}*\{\exp[(X/2\alpha_x)*(1-(1+(4*\lambda*\alpha_x)/U)^{1/2})]*\mathrm{erf}[S_w/(4*(\alpha_y*X)^{1/2})]*\mathrm{erf}[S_d/(2*(\alpha_z*X)^{1/2})]\}$

α_x	=	0.10 * X	Equation R16
α_y	=	$\alpha_x/3$	Equation R17
α_z	=	$\alpha_x/20$	Equation R18
U	=	$K*i/\theta_T$	Equation R19
X	=	1175	feet
K	=	0.000031	cm/sec
S_w	=	914.4	cm
S_d	=	762	cm
i	=	0.02	unitless
$GW_{(source)}$	=	68.2636734	mg/l
θ_T	=	0.43	unitless
λ	=	0.0009	day^{-1}
GW_{comp}	=	0.025	mg/l

$C_{(x)}$ (μg/l)	X (feet)	GW_{comp} (mg/l)	$C_{(x)}$ (mg/l)	X (cm)	C_{source} (mg/l)	β_3 =(X/(2α_x))	β_4 =1-[1+(4λ*α_x)/U]^1/2	a_x (cm)	a_y (cm)	a_z (cm)	U (cm/day)	λ (day^{-1})	S_w (cm)	S_d (cm)	K (cm/day)	I (cm/cm)	θ_T (cm^3/cm^3)	β_1 =S_w/(4*[α_y*X]^1/2)	β_2 =S_d/(2*[α_z*X]^1/2)	Error Function erf(β_1)	Error Function erf(β_2)
#DIV/0!	0	0.025	#DIV/0!	0.0	68.3	#DIV/0!	0.00000000	0	0	0	0.12457674	0.0009	914.4	762	2.6784	0.02	0.43	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
10657.383	10	0.025	10.65738303	304.8	68.3	5	-0.37142497	30.48	10.16	1.524	0.12457674	0.0009	914.4	762	2.6784	0.02	0.43	4.10791918	17.67766953	0.99999999	1.00000000
2485.9248	20	0.025	2.485924768	609.6	68.3	5	-0.66181013	60.96	20.32	3.048	0.12457674	0.0009	914.4	762	2.6784	0.02	0.43	2.05395959	8.83883476	0.99632439	1.00000000
688.36443	30	0.025	0.688364426	914.4	68.3	5	-0.90851234	91.44	30.48	4.572	0.12457674	0.0009	914.4	762	2.6784	0.02	0.43	1.36930639	5.89255651	0.94719249	1.00000000
208.28413	40	0.025	0.208284128	1219.2	68.3	5	-1.12678767	121.92	40.64	6.096	0.12457674	0.0009	914.4	762	2.6784	0.02	0.43	1.02697980	4.41941738	0.85360090	1.00000000
118.21409	45	0.025	0.118214091	1371.6	68.3	5	-1.22792034	137.16	45.72	6.858	0.12457674	0.0009	914.4	762	2.6784	0.02	0.43	0.91287093	3.92837101	0.80329440	0.99999997
68.472982	50	0.025	0.068472982	1524.0	68.3	5	-1.32465745	152.4	50.8	7.62	0.12457674	0.0009	914.4	762	2.6784	0.02	0.43	0.82158384	3.53553391	0.75472188	0.99999943
40.439691	55	0.025	0.040439691	1676.4	68.3	5	-1.41752673	167.64	55.88	8.382	0.12457674	0.0009	914.4	762	2.6784	0.02	0.43	0.74689440	3.21412173	0.70915429	0.99999452
36.478356	56	0.025	0.036478356	1706.9	68.3	5	-1.43567570	170.688	56.896	8.5344	0.12457674	0.0009	914.4	762	2.6784	0.02	0.43	0.73355700	3.15672670	0.70045343	0.99999197
32.928813	57	0.025	0.032928813	1737.4	68.3	5	-1.45369044	173.736	57.912	8.6868	0.12457674	0.0009	914.4	762	2.6784	0.02	0.43	0.72068758	3.10134553	0.69189489	0.99998845
29.745821	58	0.025	0.029745821	1767.8	68.3	5	-1.47157387	176.784	58.928	8.8392	0.12457674	0.0009	914.4	762	2.6784	0.02	0.43	0.70826193	3.04787406	0.68347942	0.99998370
26.889361	59	0.025	0.026889361	1798.3	68.3	5	-1.48932884	179.832	59.944	8.9916	0.12457674	0.0009	914.4	762	2.6784	0.02	0.43	0.69625749	2.99621517	0.67520731	0.99997738
24.324015	60	0.025	0.024324015	1828.8	68.3	5	-1.50695806	182.88	60.96	9.144	0.12457674	0.0009	914.4	762	2.6784	0.02	0.43	0.68465320	2.94627825	0.66707839	0.99996909
0.6947778	100	0.025	0.000694778	3048.0	68.3	5	-2.13178296	304.8	101.6	15.24	0.12457674	0.0009	914.4	762	2.6784	0.02	0.43	0.41079192	1.76776695	0.43872416	0.98758067
9.587E-10	500	0.025	9.58742E-13	15240.0	68.3	5	-5.71120873	1524	508	76.2	0.12457674	0.0009	914.4	762	2.6784	0.02	0.43	0.08215838	0.35355339	0.09249764	0.38292492
2.935E-11	600	0.025	2.93518E-14	18288.0	68.3	5	-6.33814603	1828.8	609.6	91.44	0.12457674	0.0009	914.4	762	2.6784	0.02	0.43	0.06846532	0.29462783	0.07713430	0.32307776
1.211E-12	700	0.025	1.21144E-15	21336.0	68.3	5	-6.91558283	2133.6	711.2	106.68	0.12457674	0.0009	914.4	762	2.6784	0.02	0.43	0.05868456	0.25253814	0.06614250	0.27901514
1.686E-30	2750	0.025	1.68646E-33	83820.0	68.3	5	-14.59556906	8382	2794	419.1	0.12457674	0.0009	914.4	762	2.6784	0.02	0.43	0.01493789	0.06428243	0.01685435	0.07243517

TABLE
EQUATION R14 WORKSHEET - LEACHING FACTOR
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZENE (P1-F5-5) FLOW SOUTH
CHAMPAIGN MGP
CHAMPAIGN MGP

$$LF_{sw} = \rho_b/[\theta_{ws}+(k_s*\rho_b)+(H'*\theta_{as})]*[1+(U_{gw}*\delta_{gw})/(I*W)]$$

k_s	=	$K_{oc} * f_{oc}$	R20
U_{gw}	=	$K * i$	R24
f_{oc}	=	0.00473	gm/gm
ρ_b	=	1.7	gm/cm3
w	=	0.3	unitless
θ_T	=	0.43	unitless
W	=	914.4	centimeters
K	=	0.000031	cm/sec
i	=	0.02	unitless
K_{oc}	=	50	L/gm
H'	=	0.23	unitless
ρ_w	=	1	gm/cm^3
δ_{gw}	=	200	centimeters
I	=	30	cm/year

LFsw (mg/L_{water})/ (mg/kg_{soil})	ρ_b g/cm^3	β_1 $=\theta_{ws}+(k_s*\rho_s)+(H'*\theta_{as})$	K_{oc} cm^3/g	f_{oc} g/g	k_s cm^3_{water}/g_{soil}	H' unitless	w unitless	θ_{ws} cm^3_{water}/cm^3_{soil}
1.664967644	**1.7**	0.89365	**50**	**0.00473**	0.2365	**0.23**	0.3	0.51

θ_T uniltess	θ_{as} cm^3_{air}/cm^3_{soil}	β_2 $=1+(U_{gw}*\delta_{gw})/(I*W)$	K cm/year	i cm/cm	U_{gw} cm/year	δ_{gw} cm	I cm/year	W cm
0.43	-0.08	1.142551181	977.616	0.02	19.55232	200	30	914.4

INPUT PARAMETERS FOR TIER 2 SOIL COMPONENT TO GROUNDWATER INGESTION EVALUATION

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		BENZENE (P1-F5-F) NORTH FLOW		
Site Name		CHAMPAIGN MGP		
Site Location		CHAMPAIGN, ILLINOIS		
FOR RBCA EQUATION - (R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, and R24)				
Constituent based parameters				
Organic carbon partition coefficient	K_{oc}	50	cm^3/g	Appendix C; Table E
Henry's constant	H'	0.23	l/gm	Appendix C; Table E
Solubility	S	1800	mg/l	Appendix C; Table E
Degradation constant	λ	0.0009	day^{-1}	Appendix C; Table E
Groundwater Objective	GW_{obj}	0.025	mg/l	Appendix B; Table E
Site Specific Data - Soil Zone				
Concentration of Constituent in Soil	$Soil_{(conc)}$	41	mg/kg	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	
Soil moisture content	***w***	0.3	unitless	
Total soil porosity - soil	θ_T	0.43	unitless	
Soil bulk density	ρ_b	1.7	gm/cm^3	
Source width in soil parallel to groundwater flow	W	30	feet	
Site Specific Data - Groundwater Zone				
Hydraulic conductivity	K	3.10E-05	cm/sec	
Groundwater gradient	*i*	0.033	unitless	
Total soil porosity - aquifer	θ_T	0.43	unitless	
Source width in groundwater perpendicular to groundwater flow direction	S_w	30	feet	
Source thickness in groundwater zone	S_d	25	feet	
Distance to point of compliance	X	1175	feet	

TABLE
EQUATION R12 WORKSHEET - SOIL COMPONENT OF GROUNDWATER INGESTION
BENZENE (P1-F5-F) NORTH FLOW
CHAMPAIGN MGP
CHAMPAIGN MGP

R12	**RO**	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)}$	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)} * LF_{sw}$	$= GW_{source\text{-}calculated}$
R13	$\mathbf{GW_{source}}$	$= GW_{comp}/[C_{(x)}/C_{(source)}]$

Soil Source Concentration $\mathbf{Soil_{(conc)}}$ **(mg/kg)**	Leachate Factor LF_{sw} $(mg/l_{water})/(mg/kg_{soil})$	**GW Standard** $\mathbf{GW_{comp}}$ **(mg/l)**	GW_{source} $Soil_{(conc)}*LF_{sw}$ (mg/l)
41	1.540071402	**0.025**	63.1429275

Tier 2 Soil Remediation Objective (μg/kg) = **41000**

TABLE
EQUATION R15 WORKSHEET - STEADY STATE ATTENUATION ALONG THE CENTERLINE OF PLUME
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZENE (P1-F5-F) NORTH FLOW
CHAMPAIGN MGP
CHAMPAIGN MGP

R26 $C_{(x)} = GW_{source}*\{\exp[(X/2\alpha_x)*(1-(1+(4*\lambda*\alpha_x)/U)^{1/2})]*\mathrm{erf}[S_w/(4*(\alpha_y*X)^{1/2})]*\mathrm{erf}[S_d/(2*(\alpha_z*X)^{1/2})]\}$

α_x	=	0.10 * X	Equation R16
α_y	=	α_x/3	Equation R17
α_z	=	α_x/20	Equation R18
U	=	$K*i/\theta_T$	Equation R19
X	=	1175	feet
K	=	0.000031	cm/sec
S_w	=	914.4	cm
S_d	=	762	cm
i	=	0.033	unitless
$GW_{(source)}$	=	63.1429275	mg/l
θ_T	=	0.43	unitless
λ	=	0.0009	day^{-1}
GW_{comp}	=	0.025	mg/l

$C_{(x)}$ (μg/l)	X (feet)	GW_{comp} (mg/l)	$C_{(x)}$ (mg/l)	X (cm)	C_{source} (mg/l)	β_3 =(X/(2α_x))	β_4 =1-[1+(4λ*α_x)/U]^1/2	a_x (cm)	a_y (cm)	a_z (cm)	U (cm/day)	λ (day^{-1})	S_w (cm)	S_d (cm)	K (cm/day)	I (cm/cm)	θ_T (cm^3/cm^3)	β_1 =S_w/(4*[α_y*X]^1/2)	β_2 =S_d/(2*[α_z*X]^1/2)	Error Function erf(β_1)	Error Function erf(β_2)
#DIV/0!	0	0.025	#DIV/0!	0.0	63.1	#DIV/0!	0.00000000	0	0	0	0.20555163	0.0009	914.4	762	2.6784	0.033	0.43	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
19163.785	10	0.025	19.16378453	304.8	63.1	5	-0.23847571	30.48	10.16	1.524	0.20555163	0.0009	914.4	762	2.6784	0.033	0.43	4.10791918	17.67766953	0.99999999	1.00000000
7043.2229	20	0.025	7.043222856	609.6	63.1	5	-0.43793052	60.96	20.32	3.048	0.20555163	0.0009	914.4	762	2.6784	0.033	0.43	2.05395959	8.83883476	0.99632439	1.00000000
2791.6061	30	0.025	2.791606148	914.4	63.1	5	-0.61290616	91.44	30.48	4.572	0.20555163	0.0009	914.4	762	2.6784	0.033	0.43	1.36930639	5.89255651	0.94719249	1.00000000
1143.0916	40	0.025	1.14309165	1219.2	63.1	5	-0.77067455	121.92	40.64	6.096	0.20555163	0.0009	914.4	762	2.6784	0.033	0.43	1.02697980	4.41941738	0.85360090	1.00000000
489.94271	50	0.025	0.489942712	1524.0	63.1	5	-0.91549222	152.4	50.8	7.62	0.20555163	0.0009	914.4	762	2.6784	0.033	0.43	0.82158384	3.53553391	0.75472188	0.99999943
220.90882	60	0.025	0.220908816	1828.8	63.1	5	-1.05010550	182.88	60.96	9.144	0.20555163	0.0009	914.4	762	2.6784	0.033	0.43	0.68465320	2.94627825	0.66707839	0.99996909
104.47031	70	0.025	0.104470305	2133.6	63.1	5	-1.17640866	213.36	71.12	10.668	0.20555163	0.0009	914.4	762	2.6784	0.033	0.43	0.58684560	2.52538136	0.59341881	0.99964496
73.008631	75	0.025	0.073008631	2286.0	63.1	5	-1.23688750	228.6	76.2	11.43	0.20555163	0.0009	914.4	762	2.6784	0.033	0.43	0.54772256	2.35702260	0.56142197	0.99914188
51.516994	80	0.025	0.051516994	2438.4	63.1	5	-1.29577367	243.84	81.28	12.192	0.20555163	0.0009	914.4	762	2.6784	0.033	0.43	0.51348990	2.20970869	0.53227425	0.99822195
36.675658	85	0.025	0.036675658	2590.8	63.1	5	-1.35318673	259.08	86.36	12.954	0.20555163	0.0009	914.4	762	2.6784	0.033	0.43	0.48328461	2.07972583	0.50568861	0.99673032
26.322938	90	0.025	0.026322938	2743.2	63.1	5	-1.40923200	274.32	91.44	13.716	0.20555163	0.0009	914.4	762	2.6784	0.033	0.43	0.45643546	1.96418550	0.48139498	0.99452680
24.656014	91	0.025	0.024656014	2773.7	63.1	5	-1.42028532	277.368	92.456	13.8684	0.20555163	0.0009	914.4	762	2.6784	0.033	0.43	0.45141969	1.94260105	0.47678917	0.99399032
13.858002	100	0.025	0.013858002	3048.0	63.1	5	-1.51758236	304.8	101.6	15.24	0.20555163	0.0009	914.4	762	2.6784	0.033	0.43	0.41079192	1.76776695	0.43872416	0.98758067
1.242E-06	500	0.025	1.24236E-09	15240.0	63.1	5	-4.26223380	1524	508	76.2	0.20555163	0.0009	914.4	762	2.6784	0.033	0.43	0.08215838	0.35355339	0.09249764	0.38292492
7.738E-08	600	0.025	7.7384E-11	18288.0	63.1	5	-4.74711454	1828.8	609.6	91.44	0.20555163	0.0009	914.4	762	2.6784	0.033	0.43	0.06846532	0.29462783	0.07713430	0.32307776
6.13E-09	700	0.025	6.13014E-12	21336.0	63.1	5	-5.19415421	2133.6	711.2	106.68	0.20555163	0.0009	914.4	762	2.6784	0.033	0.43	0.05868456	0.25253814	0.06614250	0.27901514
4.562E-23	2750	0.025	4.56159E-26	83820.0	63.1	5	-11.15734656	8382	2794	419.1	0.20555163	0.0009	914.4	762	2.6784	0.033	0.43	0.01493789	0.06428243	0.01685435	0.07243517

TABLE
EQUATION R14 WORKSHEET - LEACHING FACTOR
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZENE (P1-F5-F) NORTH FLOW
CHAMPAIGN MGP
CHAMPAIGN MGP

$$LF_{sw} = \rho_b/[\theta_{ws}+(k_s*\rho_b)+(H'*\theta_{as})]*[1+(U_{gw}*\delta_{gw})/(I*W)]$$

k_s	=	$K_{oc} * f_{oc}$	R20
U_{gw}	=	$K * i$	R24
f_{oc}	=	0.00473	gm/gm
ρ_b	=	1.7	gm/cm3
w	=	0.3	unitless
θ_T	=	0.43	unitless
W	=	914.4	centimeters
K	=	0.000031	cm/sec
i	=	0.033	unitless
K_{oc}	=	50	L/gm
H'	=	0.23	unitless
ρ_w	=	1	gm/cm^3
δ_{gw}	=	200	centimeters
I	=	30	cm/year

LFsw (mg/L_{water})/ (mg/kg_{soil})	ρ_b g/cm^3	β_1 $=\theta_{ws}+(k_s*\rho_s)+(H'*\theta_{as})$	K_{oc} cm^3/g	f_{oc} g/g	k_s cm^3_{water}/g_{soil}	H' unitless	w unitless	θ_{ws} cm^3_{water}/cm^3_{soil}
1.540071402	**1.7**	0.89365	**50**	**0.00473**	0.2365	**0.23**	0.3	0.51

θ_T uniltess	θ_{as} cm^3_{air}/cm^3_{soil}	β_2 $=1+(U_{gw}*\delta_{gw})/(I*W)$	K cm/year	i cm/cm	U_{gw} cm/year	δ_{gw} cm	I cm/year	W cm
0.43	-0.08	1.235209449	977.616	0.033	32.261328	200	30	914.4

INPUT PARAMETERS FOR TIER 2 SOIL COMPONENT TO GROUNDWATER INGESTION EVALUATION

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		BENZENE (P1-F5-F) WEST FLOW		
Site Name		CHAMPAIGN MGP		
Site Location		CHAMPAIGN, ILLINOIS		
FOR RBCA EQUATION - (R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, and R24)				
Constituent based parameters				
Organic carbon partition coefficient	K_{oc}	50	cm^3/g	Appendix C; Table E
Henry's constant	H'	0.23	l/gm	Appendix C; Table E
Solubility	S	1800	mg/l	Appendix C; Table E
Degradation constant	λ	0.0009	day^{-1}	Appendix C; Table E
Groundwater Objective	GW_{obj}	0.025	mg/l	Appendix B; Table E
Site Specific Data - Soil Zone				
Concentration of Constituent in Soil	$Soil_{(conc)}$	41	mg/kg	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	
Soil moisture content	***w***	0.3	unitless	
Total soil porosity - soil	θ_T	0.43	unitless	
Soil bulk density	ρ_b	1.7	gm/cm^3	
Source width in soil parallel to groundwater flow	W	30	feet	
Site Specific Data - Groundwater Zone				
Hydraulic conductivity	K	3.10E-05	cm/sec	
Groundwater gradient	*i*	0.036	unitless	
Total soil porosity - aquifer	θ_T	0.43	unitless	
Source width in groundwater perpendicular to groundwater flow direction	S_w	30	feet	
Source thickness in groundwater zone	S_d	25	feet	
Distance to point of compliance	X	1175	feet	

TABLE
EQUATION R12 WORKSHEET - SOIL COMPONENT OF GROUNDWATER INGESTION
BENZENE (P1-F5-F) WEST FLOW
CHAMPAIGN MGP
CHAMPAIGN MGP

R12	**RO**	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)}$	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)} * LF_{sw}$	$= GW_{source\text{-}calculated}$
R13	$\mathbf{GW_{source}}$	$= GW_{comp}/[C_{(x)}/C_{(source)}]$

Soil Source Concentration $\mathbf{Soil_{(conc)}}$ **(mg/kg)**	Leachate Factor LF_{sw} $(mg/l_{water})/(mg/kg_{soil})$	**GW Standard** $\mathbf{GW_{comp}}$ **(mg/l)**	GW_{source} $Soil_{(conc)}*LF_{sw}$ (mg/l)
41	1.513864928	**0.025**	62.06846204

Tier 2 Soil Remediation Objective (μg/kg) = **41000**

TABLE
EQUATION R15 WORKSHEET - STEADY STATE ATTENUATION ALONG THE CENTERLINE OF PLUME
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZENE (P1-F5-F) WEST FLOW
CHAMPAIGN MGP
CHAMPAIGN MGP

R26 $C_{(x)} = GW_{source}*\{\exp[(X/2\alpha_x)*(1-(1+(4*\lambda*\alpha_x)/U)^{1/2})]*\mathrm{erf}[S_w/(4*(\alpha_y*X)^{1/2})]*\mathrm{erf}[S_d/(2*(\alpha_z*X)^{1/2})]\}$

α_x	=	0.10 * X	Equation R16
α_y	=	$\alpha_x/3$	Equation R17
α_z	=	$\alpha_x/20$	Equation R18
U	=	$K*i/\theta_T$	Equation R19
X	=	1175	feet
K	=	0.000031	cm/sec
S_w	=	914.4	cm
S_d	=	762	cm
i	=	0.036	unitless
$GW_{(source)}$	=	62.068462	mg/l
θ_T	=	0.43	unitless
λ	=	0.0009	day^{-1}
GW_{comp}	=	0.025	mg/l

$C_{(x)}$ (μg/l)	X (feet)	GW_{comp} (mg/l)	$C_{(x)}$ (mg/l)	X (cm)	C_{source} (mg/l)	β_3 =(X/(2α_x))	β_4 =1-[1+(4λ*α_x)/U]^1/2	a_x (cm)	a_y (cm)	a_z (cm)	U (cm/day)	λ (day^{-1})	S_w (cm)	S_d (cm)	K (cm/day)	I (cm/cm)	θ_T (cm^3/cm^3)	β_1 =S_w/(4*[α_y*X]^1/2)	β_2 =S_d/(2*[α_z*X]^1/2)	Error Function erf(β_1)	Error Function erf(β_2)
#DIV/0!	0	0.025	#DIV/0!	0.0	62.1	#DIV/0!	0.00000000	0	0	0	0.22423814	0.0009	914.4	762	2.6784	0.036	0.43	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
20621.173	10	0.025	20.62117344	304.8	62.1	5	-0.22038392	30.48	10.16	1.524	0.22423814	0.0009	914.4	762	2.6784	0.036	0.43	4.10791918	17.67766953	0.99999999	1.00000000
8095.3396	20	0.025	8.095339569	609.6	62.1	5	-0.40665342	60.96	20.32	3.048	0.22423814	0.0009	914.4	762	2.6784	0.036	0.43	2.05395959	8.83883476	0.99632439	1.00000000
3383.9146	30	0.025	3.383914553	914.4	62.1	5	-0.57099037	91.44	30.48	4.572	0.22423814	0.0009	914.4	762	2.6784	0.036	0.43	1.36930639	5.89255651	0.94719249	1.00000000
1449.8733	40	0.025	1.449873285	1219.2	62.1	5	-0.71969406	121.92	40.64	6.096	0.22423814	0.0009	914.4	762	2.6784	0.036	0.43	1.02697980	4.41941738	0.85360090	1.00000000
646.75167	50	0.025	0.646751668	1524.0	62.1	5	-0.85652487	152.4	50.8	7.62	0.22423814	0.0009	914.4	762	2.6784	0.036	0.43	0.82158384	3.53553391	0.75472188	0.99999943
302.29705	60	0.025	0.302297051	1828.8	62.1	5	-0.98394090	182.88	60.96	9.144	0.22423814	0.0009	914.4	762	2.6784	0.036	0.43	0.68465320	2.94627825	0.66707839	0.99996909
147.74907	70	0.025	0.14774907	2133.6	62.1	5	-1.10365359	213.36	71.12	10.668	0.22423814	0.0009	914.4	762	2.6784	0.036	0.43	0.58684560	2.52538136	0.59341881	0.99964496
75.118071	80	0.025	0.075118071	2438.4	62.1	5	-1.21691122	243.84	81.28	12.192	0.22423814	0.0009	914.4	762	2.6784	0.036	0.43	0.51348990	2.20970869	0.53227425	0.99822195
39.494073	90	0.025	0.039494073	2743.2	62.1	5	-1.32465745	274.32	91.44	13.716	0.22423814	0.0009	914.4	762	2.6784	0.036	0.43	0.45643546	1.96418550	0.48139498	0.99452680
27.228245	96	0.025	0.027228245	2926.1	62.1	5	-1.38697181	292.608	97.536	14.6304	0.22423814	0.0009	914.4	762	2.6784	0.036	0.43	0.42790825	1.84142391	0.45492309	0.99079020
25.615278	97	0.025	0.025615278	2956.6	62.1	5	-1.39720005	295.656	98.552	14.7828	0.22423814	0.0009	914.4	762	2.6784	0.036	0.43	0.42349682	1.82244016	0.45077040	0.99004302
24.103905	98	0.025	0.024103905	2987.0	62.1	5	-1.40738485	298.704	99.568	14.9352	0.22423814	0.0009	914.4	762	2.6784	0.036	0.43	0.41917543	1.80384383	0.44668738	0.98925920
21.359158	100	0.025	0.021359158	3048.0	62.1	5	-1.42762624	304.8	101.6	15.24	0.22423814	0.0009	914.4	762	2.6784	0.036	0.43	0.41079192	1.76776695	0.43872416	0.98758067
3.592E-06	500	0.025	3.59187E-09	15240.0	62.1	5	-4.04646865	1524	508	76.2	0.22423814	0.0009	914.4	762	2.6784	0.036	0.43	0.08215838	0.35355339	0.09249764	0.38292492
2.489E-07	600	0.025	2.48921E-10	18288.0	62.1	5	-4.51001044	1828.8	609.6	91.44	0.22423814	0.0009	914.4	762	2.6784	0.036	0.43	0.06846532	0.29462783	0.07713430	0.32307776
2.175E-08	700	0.025	2.17467E-11	21336.0	62.1	5	-4.93747288	2133.6	711.2	106.68	0.22423814	0.0009	914.4	762	2.6784	0.036	0.43	0.05868456	0.25253814	0.06614250	0.27901514
5.859E-22	2750	0.025	5.8585E-25	83820.0	62.1	5	-10.64335228	8382	2794	419.1	0.22423814	0.0009	914.4	762	2.6784	0.036	0.43	0.01493789	0.06428243	0.01685435	0.07243517

TABLE
EQUATION R14 WORKSHEET - LEACHING FACTOR
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZENE (P1-F5-F) WEST FLOW
CHAMPAIGN MGP
CHAMPAIGN MGP

$$LF_{sw} = \rho_b/[\theta_{ws}+(k_s*\rho_b)+(H'*\theta_{as})]*[1+(U_{gw}*\delta_{gw})/(I*W)]$$

k_s	=	$K_{oc} * f_{oc}$	R20
U_{gw}	=	$K * i$	R24
f_{oc}	=	0.00473	gm/gm
ρ_b	=	1.7	gm/cm3
w	=	0.3	unitless
θ_T	=	0.43	unitless
W	=	914.4	centimeters
K	=	0.000031	cm/sec
i	=	0.036	unitless
K_{oc}	=	50	L/gm
H'	=	0.23	unitless
ρ_w	=	1	gm/cm^3
δ_{gw}	=	200	centimeters
I	=	30	cm/year

LFsw (mg/L_{water})/ (mg/kg_{soil})	ρ_b g/cm^3	β_1 $=\theta_{ws}+(k_s*\rho_s)+(H'*\theta_{as})$	K_{oc} cm^3/g	f_{oc} g/g	k_s cm^3_{water}/g_{soil}	H' unitless	w unitless	θ_{ws} cm^3_{water}/cm^3_{soil}
1.513864928	**1.7**	0.89365	**50**	**0.00473**	0.2365	**0.23**	0.3	0.51

θ_T uniltess	θ_{as} cm^3_{air}/cm^3_{soil}	β_2 $=1+(U_{gw}*\delta_{gw})/(I*W)$	K cm/year	i cm/cm	U_{gw} cm/year	δ_{gw} cm	I cm/year	W cm
0.43	-0.08	1.256592126	977.616	0.036	35.194176	200	30	914.4

INPUT PARAMETERS FOR TIER 2 SOIL COMPONENT TO GROUNDWATER INGESTION EVALUATION

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		BENZENE (P3-C1-W)		
Site Name		CHAMPAIGN MGP		
Site Location		CHAMPAIGN, ILLINOIS		
FOR RBCA EQUATION - (R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, and R24)				
Constituent based parameters				
Organic carbon partition coefficient	K_{oc}	50	cm^3/g	Appendix C; Table E
Henry's constant	H'	0.23	l/gm	Appendix C; Table E
Solubility	S	1800	mg/l	Appendix C; Table E
Degradation constant	λ	0.0009	day^{-1}	Appendix C; Table E
Groundwater Objective	GW_{obj}	0.025	mg/l	Appendix B; Table E
Site Specific Data - Soil Zone				
Concentration of Constituent in Soil	$Soil_{(conc)}$	118	mg/kg	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	
Soil moisture content	***w***	0.3	unitless	
Total soil porosity - soil	θ_T	0.43	unitless	
Soil bulk density	ρ_b	1.7	gm/cm^3	
Source width in soil parallel to groundwater flow	W	60	feet	
Site Specific Data - Groundwater Zone				
Hydraulic conductivity	K	3.10E-05	cm/sec	
Groundwater gradient	*i*	0.036	unitless	
Total soil porosity - aquifer	θ_T	0.43	unitless	
Source width in groundwater perpendicular to groundwater flow direction	S_w	165	feet	
Source thickness in groundwater zone	S_d	25	feet	
Distance to point of compliance	X	1175	feet	

TABLE
EQUATION R12 WORKSHEET - SOIL COMPONENT OF GROUNDWATER INGESTION
BENZENE (P3-C1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R12	**RO**	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)}$	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)} * LF_{sw}$	$= GW_{source\text{-}calculated}$
R13	$\mathbf{GW_{source}}$	$= GW_{comp}/[C_{(x)}/C_{(source)}]$

Soil Source Concentration $\mathbf{Soil_{(conc)}}$ **(mg/kg)**	Leachate Factor LF_{sw} $(mg/l_{water})/(mg/kg_{soil})$	**GW Standard** $\mathbf{GW_{comp}}$ **(mg/l)**	GW_{source} $Soil_{(conc)}*LF_{sw}$ (mg/l)
118	1.686003178	**0.025**	198.948375

Tier 2 Soil Remediation Objective (µg/kg) = **118000**

TABLE
EQUATION R15 WORKSHEET - STEADY STATE ATTENUATION ALONG THE CENTERLINE OF PLUME
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZENE (P3-C1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R26 $C_{(x)}$ = $GW_{source}*\{\exp[(X/2\alpha_x)*(1-(1+(4*\lambda*\alpha_x)/U)^{1/2})]*erf[S_w/(4*(\alpha_y*X)^{1/2})]*erf[S_d/(2*(\alpha_z*X)^{1/2})]\}$

α_x	=	0.10 * X	Equation R16
α_y	=	$\alpha_x/3$	Equation R17
α_z	=	$\alpha_x/20$	Equation R18
U	=	$K*i/\theta_T$	Equation R19
X	=	1175	feet
K	=	0.000031	cm/sec
S_w	=	5029.2	cm
S_d	=	762	cm
i	=	0.036	unitless
$GW_{(source)}$	=	198.948375	mg/l
θ_T	=	0.43	unitless
λ	=	0.0009	day^{-1}
GW_{comp}	=	0.025	mg/l

$C_{(x)}$ (μg/l)	X (feet)	GW_{comp} (mg/l)	$C_{(x)}$ (mg/l)	X (cm)	C_{source} (mg/l)	β_3 =(X/(2α_x))	β_4 =1-[1+(4λ*α_x)/U]^1/2	a_x (cm)	a_y (cm)	a_z (cm)	U (cm/day)	λ (day^{-1})	S_w (cm)	S_d (cm)	K (cm/day)	I (cm/cm)	θ_T (cm^3/cm^3)	β_1 =S_w/(4*[α_y*X]^1/2)	β_2 =S_d/(2*[α_z*X]^1/2)	Error Function erf(β_1)	Error Function erf(β_2)
66097.159	10	0.025	66.0971585	304.8	198.9	5	-0.22038392	30.48	10.16	1.524	0.22423814	0.0009	5029.2	762	2.6784	0.036	0.43	22.59355550	17.67766953	1.00000000	1.00000000
17074.861	25	0.025	17.07486097	762.0	198.9	5	-0.49108762	76.2	25.4	3.81	0.22423814	0.0009	5029.2	762	2.6784	0.036	0.43	9.03742220	7.07106781	1.00000000	1.00000000
155.83131	100	0.025	0.15583131	3048.0	198.9	5	-1.42762624	304.8	101.6	15.24	0.22423814	0.0009	5029.2	762	2.6784	0.036	0.43	2.25935555	1.76776695	0.99860271	0.98758067
44.925723	125	0.025	0.044925723	3810.0	198.9	5	-1.66771653	381	127	19.05	0.22423814	0.0009	5029.2	762	2.6784	0.036	0.43	1.80748444	1.41421356	0.98941683	0.95449974
35.331803	130	0.025	0.035331803	3962.4	198.9	5	-1.71318631	396.24	132.08	19.812	0.22423814	0.0009	5029.2	762	2.6784	0.036	0.43	1.73796581	1.35982073	0.98602303	0.94552961
26.567569	136	0.025	0.026567569	4145.3	198.9	5	-1.76676383	414.528	138.176	20.7264	0.22423814	0.0009	5029.2	762	2.6784	0.036	0.43	1.66129085	1.29982864	0.98119732	0.93397226
25.342945	137	0.025	0.025342945	4175.8	198.9	5	-1.77559287	417.576	139.192	20.8788	0.22423814	0.0009	5029.2	762	2.6784	0.036	0.43	1.64916463	1.29034084	0.98031356	0.93197143
24.176961	138	0.025	0.024176961	4206.2	198.9	5	-1.78439391	420.624	140.208	21.0312	0.22423814	0.0009	5029.2	762	2.6784	0.036	0.43	1.63721417	1.28099055	0.97940733	0.92995108
4.4903767	175	0.025	0.004490377	5334.0	198.9	5	-2.09247410	533.4	177.8	26.67	0.22423814	0.0009	5029.2	762	2.6784	0.036	0.43	1.29106031	1.01015254	0.93212488	0.84687255
1.5298444	200	0.025	0.001529844	6096.0	198.9	5	-2.28431703	609.6	203.2	30.48	0.22423814	0.0009	5029.2	762	2.6784	0.036	0.43	1.12967777	0.88388348	0.88986923	0.78870045
0.2030162	250	0.025	0.000203016	7620.0	198.9	5	-2.63777720	762	254	38.1	0.22423814	0.0009	5029.2	762	2.6784	0.036	0.43	0.90374222	0.70710678	0.79878037	0.68268949
0.0315895	300	0.025	3.15895E-05	9144.0	198.9	5	-2.95981155	914.4	304.8	45.72	0.22423814	0.0009	5029.2	762	2.6784	0.036	0.43	0.75311852	0.58925565	0.71315594	0.59534324
0.0056295	350	0.025	5.62949E-06	10668.0	198.9	5	-3.25755706	1066.8	355.6	53.34	0.22423814	0.0009	5029.2	762	2.6784	0.036	0.43	0.64553016	0.50507627	0.63871407	0.52494948
0.0011252	400	0.025	1.12522E-06	12192.0	198.9	5	-3.53579946	1219.2	406.4	60.96	0.22423814	0.0009	5029.2	762	2.6784	0.036	0.43	0.56483889	0.44194174	0.57559524	0.46802894
5.94E-05	500	0.025	5.93969E-08	15240.0	198.9	5	-4.04646865	1524	508	76.2	0.22423814	0.0009	5029.2	762	2.6784	0.036	0.43	0.45187111	0.35355339	0.47720455	0.38292492
4.196E-06	600	0.025	4.19595E-09	18288.0	198.9	5	-4.51001044	1828.8	609.6	91.44	0.22423814	0.0009	5029.2	762	2.6784	0.036	0.43	0.37655926	0.29462783	0.40564464	0.32307776
3.709E-07	700	0.025	3.70895E-10	21336.0	198.9	5	-4.93747288	2133.6	711.2	106.68	0.22423814	0.0009	5029.2	762	2.6784	0.036	0.43	0.32276508	0.25253814	0.35193987	0.27901514
1.031E-20	2750	0.025	1.03056E-23	83820.0	198.9	5	-10.64335228	8382	2794	419.1	0.22423814	0.0009	5029.2	762	2.6784	0.036	0.43	0.08215838	0.06428243	0.09249764	0.07243517

TABLE
EQUATION R14 WORKSHEET - LEACHING FACTOR
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZENE (P3-C1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

$$LF_{sw} = \rho_b/[\theta_{ws}+(k_s*\rho_b)+(H'*\theta_{as})]*[1+(U_{gw}*\delta_{gw})/(I*W)]$$

k_s	=	$K_{oc} * f_{oc}$	R20
U_{gw}	=	$K * i$	R24
f_{oc}	=	0.00473	gm/gm
ρ_b	=	1.7	gm/cm3
w	=	0.3	unitless
θ_T	=	0.43	unitless
W	=	1828.8	centimeters
K	=	0.000031	cm/sec
i	=	0.036	unitless
K_{oc}	=	50	L/gm
H'	=	0.23	unitless
ρ_w	=	1	gm/cm^3
δ_{gw}	=	200	centimeters
I	=	30	cm/year

LFsw (mg/L_{water})/ (mg/kg_{soil})	ρ_b g/cm^3	β_1 $=\theta_{ws}+(k_s*\rho_s)+(H'*\theta_{as})$	K_{oc} cm^3/g	f_{oc} g/g	k_s cm^3_{water}/g_{soil}	H' unitless	w unitless	θ_{ws} cm^3_{water}/cm^3_{soil}
1.686003178	**1.7**	0.89365	**50**	**0.00473**	0.2365	**0.23**	0.3	0.51

θ_T uniltess	θ_{as} cm^3_{air}/cm^3_{soil}	β_2 $=1+(U_{gw}*\delta_{gw})/(I*W)$	K cm/year	i cm/cm	U_{gw} cm/year	δ_{gw} cm	I cm/year	W cm
0.43	-0.08	1.128296063	977.616	0.036	35.194176	200	30	1828.8

INPUT PARAMETERS FOR TIER 2 SOIL COMPONENT TO GROUNDWATER INGESTION EVALUATION

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		BENZENE (P4-A1-W)		
Site Name		CHAMPAIGN MGP		
Site Location		CHAMPAIGN, ILLINOIS		
FOR RBCA EQUATION - (R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, and R24)				
Constituent based parameters				
Organic carbon partition coefficient	K_{oc}	50	cm^3/g	Appendix C; Table E
Henry's constant	H'	0.23	l/gm	Appendix C; Table E
Solubility	S	1800	mg/l	Appendix C; Table E
Degradation constant	λ	0.0009	day^{-1}	Appendix C; Table E
Groundwater Objective	GW_{obj}	0.025	mg/l	Appendix B; Table E
Site Specific Data - Soil Zone				
Concentration of Constituent in Soil	$Soil_{(conc)}$	1460	mg/kg	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	
Soil moisture content	***w***	0.3	unitless	
Total soil porosity - soil	θ_T	0.43	unitless	
Soil bulk density	ρ_b	1.7	gm/cm^3	
Source width in soil parallel to groundwater flow	W	30	feet	
Site Specific Data - Groundwater Zone				
Hydraulic conductivity	K	3.10E-05	cm/sec	
Groundwater gradient	*i*	0.033	unitless	
Total soil porosity - aquifer	θ_T	0.43	unitless	
Source width in groundwater perpendicular to groundwater flow direction	S_w	200	feet	
Source thickness in groundwater zone	S_d	25	feet	
Distance to point of compliance	X	1175	feet	

TABLE
EQUATION R12 WORKSHEET - SOIL COMPONENT OF GROUNDWATER INGESTION
BENZENE (P4-A1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R12	**RO**	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)}$	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)} * LF_{sw}$	$= GW_{source\text{-}calculated}$
R13	$\mathbf{GW_{source}}$	$= GW_{comp}/[C_{(x)}/C_{(source)}]$

Soil Source Concentration $\mathbf{Soil_{(conc)}}$ **(mg/kg)**	Leachate Factor LF_{sw} $(mg/l_{water})/(mg/kg_{soil})$	**GW Standard** $\mathbf{GW_{comp}}$ **(mg/l)**	GW_{source} $Soil_{(conc)}*LF_{sw}$ (mg/l)
1460	1.540071402	**0.025**	2248.504247

Tier 2 Soil Remediation Objective (μg/kg) = **1460000**

TABLE
EQUATION R15 WORKSHEET - STEADY STATE ATTENUATION ALONG THE CENTERLINE OF PLUME
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZENE (P4-A1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R26 $C_{(x)}$ = $GW_{source}*\{\exp[(X/2\alpha_x)*(1-(1+(4*\lambda*\alpha_x)/U)^{1/2})]*\mathrm{erf}[S_w/(4*(\alpha_y*X)^{1/2})]*\mathrm{erf}[S_d/(2*(\alpha_z*X)^{1/2})]\}$

α_x	=	0.10 * X	Equation R16
α_y	=	$\alpha_x/3$	Equation R17
α_z	=	$\alpha_x/20$	Equation R18
U	=	$K*i/\theta_T$	Equation R19
X	=	1175	feet
K	=	0.000031	cm/sec
S_w	=	6096	cm
S_d	=	762	cm
i	=	0.033	unitless
$GW_{(source)}$	=	2248.50425	mg/l
θ_T	=	0.43	unitless
λ	=	0.0009	day^{-1}
GW_{comp}	=	0.025	mg/l

$C_{(x)}$ (μg/l)	X (feet)	GW_{comp} (mg/l)	$C_{(x)}$ (mg/l)	X (cm)	C_{source} (mg/l)	β_3 =(X/(2α_x))	β_4 =1-[1+(4λ*α_x)/U]^1/2	a_x (cm)	a_y (cm)	a_z (cm)	U (cm/day)	λ (day^{-1})	S_w (cm)	S_d (cm)	K (cm/day)	I (cm/cm)	θ_T (cm^3/cm^3)	β_1 =S_w/(4*[α_y*X]^1/2)	β_2 =S_d/(2*[α_z*X]^1/2)	Error Function erf(β_1)	Error Function erf(β_2)
682417.7	10	0.025	682.4176974	304.8	2248.5	5	-0.23847571	30.48	10.16	1.524	0.20555163	0.0009	6096	762	2.6784	0.033	0.43	27.38612788	17.67766953	1.00000000	1.00000000
23116.781	50	0.025	23.11678098	1524.0	2248.5	5	-0.91549222	152.4	50.8	7.62	0.20555163	0.0009	6096	762	2.6784	0.033	0.43	5.47722558	3.53553391	1.00000000	0.99999943
1124.6862	100	0.025	1.124686245	3048.0	2248.5	5	-1.51758236	304.8	101.6	15.24	0.20555163	0.0009	6096	762	2.6784	0.033	0.43	2.73861279	1.76776695	0.99989249	0.98758067
90.861238	150	0.025	0.090861238	4572.0	2248.5	5	-2.00122165	457.2	152.4	22.86	0.20555163	0.0009	6096	762	2.6784	0.033	0.43	1.82574186	1.17851130	0.99017673	0.90441930
28.585862	175	0.025	0.028585862	5334.0	2248.5	5	-2.21588038	533.4	177.8	26.67	0.20555163	0.0009	6096	762	2.6784	0.033	0.43	1.56492159	1.01015254	0.97311155	0.84687255
27.324587	176	0.025	0.027324587	5364.5	2248.5	5	-2.22416948	536.448	178.816	26.8224	0.20555163	0.0009	6096	762	2.6784	0.033	0.43	1.55602999	1.00441304	0.97223272	0.84452461
26.121123	177	0.025	0.026121123	5395.0	2248.5	5	-2.23243732	539.496	179.832	26.9748	0.20555163	0.0009	6096	762	2.6784	0.033	0.43	1.54723886	0.99873839	0.97133959	0.84217643
24.972719	178	0.025	0.024972719	5425.4	2248.5	5	-2.24068407	542.544	180.848	27.1272	0.20555163	0.0009	6096	762	2.6784	0.033	0.43	1.53854651	0.99312750	0.97043228	0.83982832
28.585862	175	0.025	0.028585862	5334.0	2248.5	5	-2.21588038	533.4	177.8	26.67	0.20555163	0.0009	6096	762	2.6784	0.033	0.43	1.56492159	1.01015254	0.97311155	0.84687255
9.4758805	200	0.025	0.00947588	6096.0	2248.5	5	-2.41708089	609.6	203.2	30.48	0.20555163	0.0009	6096	762	2.6784	0.033	0.43	1.36930639	0.88388348	0.94719249	0.78870045
4.9977685	215	0.025	0.004997768	6553.2	2248.5	5	-2.53230449	655.32	218.44	32.766	0.20555163	0.0009	6096	762	2.6784	0.033	0.43	1.27377339	0.82221719	0.92835819	0.75508557
0.1761724	300	0.025	0.000176172	9144.0	2248.5	5	-3.12488336	914.4	304.8	45.72	0.20555163	0.0009	6096	762	2.6784	0.033	0.43	0.91287093	0.58925565	0.80329440	0.59534324
0.0297624	350	0.025	2.97624E-05	10668.0	2248.5	5	-3.43663986	1066.8	355.6	53.34	0.20555163	0.0009	6096	762	2.6784	0.033	0.43	0.78246080	0.50507627	0.73151868	0.52494948
0.0056409	400	0.025	5.64088E-06	12192.0	2248.5	5	-3.72788364	1219.2	406.4	60.96	0.20555163	0.0009	6096	762	2.6784	0.033	0.43	0.68465320	0.44194174	0.66707839	0.46802894
0.0002685	500	0.025	2.68518E-07	15240.0	2248.5	5	-4.26223380	1524	508	76.2	0.20555163	0.0009	6096	762	2.6784	0.033	0.43	0.54772256	0.35355339	0.56142197	0.38292492
1.72E-05	600	0.025	1.71978E-08	18288.0	2248.5	5	-4.74711454	1828.8	609.6	91.44	0.20555163	0.0009	6096	762	2.6784	0.033	0.43	0.45643546	0.29462783	0.48139498	0.32307776
1.386E-06	700	0.025	1.38591E-09	21336.0	2248.5	5	-5.19415421	2133.6	711.2	106.68	0.20555163	0.0009	6096	762	2.6784	0.033	0.43	0.39123040	0.25253814	0.41993059	0.27901514
1.079E-20	2750	0.025	1.07942E-23	83820.0	2248.5	5	-11.15734656	8382	2794	419.1	0.20555163	0.0009	6096	762	2.6784	0.033	0.43	0.09958592	0.06428243	0.11200031	0.07243517

TABLE
EQUATION R14 WORKSHEET - LEACHING FACTOR
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZENE (P4-A1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

$$LF_{sw} = \rho_b/[\theta_{ws}+(k_s*\rho_b)+(H'*\theta_{as})]*[1+(U_{gw}*\delta_{gw})/(I*W)]$$

k_s	=	$K_{oc} * f_{oc}$	R20
U_{gw}	=	$K * i$	R24
f_{oc}	=	0.00473	gm/gm
ρ_b	=	1.7	gm/cm3
w	=	0.3	unitless
θ_T	=	0.43	unitless
W	=	914.4	centimeters
K	=	0.000031	cm/sec
i	=	0.033	unitless
K_{oc}	=	50	L/gm
H'	=	0.23	unitless
ρ_w	=	1	gm/cm^3
δ_{gw}	=	200	centimeters
I	=	30	cm/year

LFsw	ρ_b	β_1	K_{oc}	f_{oc}	k_s	H'	w	θ_{ws}
$(mg/L_{water})/(mg/kg_{soil})$	g/cm^3	$=\theta_{ws}+(k_s*\rho_s)+(H'*\theta_{as})$	cm^3/g	g/g	cm^3_{water}/g_{soil}	unitless	unitless	cm^3_{water}/cm^3_{soil}
1.540071402	**1.7**	0.89365	**50**	**0.00473**	0.2365	**0.23**	0.3	0.51

θ_T	θ_{as}	β_2	K	i	U_{gw}	δ_{gw}	I	W
uniltess	cm^3_{air}/cm^3_{soil}	$=1+(U_{gw}*\delta_{gw})/(I*W)$	cm/year	cm/cm	cm/year	cm	cm/year	cm
0.43	-0.08	1.235209449	977.616	0.033	32.261328	200	30	914.4

INPUT PARAMETERS FOR TIER 2 SOIL COMPONENT TO GROUNDWATER INGESTION EVALUATION

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		BENZENE (P5-C5-W)		
Site Name		CHAMPAIGN MGP		
Site Location		CHAMPAIGN, ILLINOIS		
FOR RBCA EQUATION - (R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, and R24)				
Constituent based parameters				
Organic carbon partition coefficient	K_{oc}	50	cm^3/g	Appendix C; Table E
Henry's constant	H'	0.23	l/gm	Appendix C; Table E
Solubility	S	1800	mg/l	Appendix C; Table E
Degradation constant	λ	0.0009	day^{-1}	Appendix C; Table E
Groundwater Objective	GW_{obj}	0.025	mg/l	Appendix B; Table E
Site Specific Data - Soil Zone				
Concentration of Constituent in Soil	$Soil_{(conc)}$	33.8	mg/kg	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	
Soil moisture content	***w***	0.3	unitless	
Total soil porosity - soil	θ_T	0.43	unitless	
Soil bulk density	ρ_b	1.7	gm/cm^3	
Source width in soil parallel to groundwater flow	W	90	feet	
Site Specific Data - Groundwater Zone				
Hydraulic conductivity	K	3.10E-05	cm/sec	
Groundwater gradient	*i*	0.011	unitless	
Total soil porosity - aquifer	θ_T	0.43	unitless	
Source width in groundwater perpendicular to groundwater flow direction	S_w	60	feet	
Source thickness in groundwater zone	S_d	25	feet	
Distance to point of compliance	X	1175	feet	

TABLE
EQUATION R12 WORKSHEET - SOIL COMPONENT OF GROUNDWATER INGESTION
BENZENE (P5-C5-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R12	**RO**	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)}$	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)} * LF_{sw}$	$= GW_{source\text{-}calculated}$
R13	$\mathbf{GW_{source}}$	$= GW_{comp}/[C_{(x)}/C_{(source)}]$

Soil Source Concentration $\mathbf{Soil_{(conc)}}$ **(mg/kg)**	Leachate Factor LF_{sw} $(mg/l_{water})/(mg/kg_{soil})$	**GW Standard** $\mathbf{GW_{comp}}$ **(mg/l)**	GW_{source} $Soil_{(conc)}*LF_{sw}$ (mg/l)
33.8	1.853861228	**0.025**	62.66050952

Tier 2 Soil Remediation Objective (µg/kg) = **33800**

TABLE
EQUATION R15 WORKSHEET - STEADY STATE ATTENUATION ALONG THE CENTERLINE OF PLUME
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZENE (P5-C5-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R26 $C_{(x)}$ = $GW_{source}*\{\exp[(X/2\alpha_x)*(1-(1+(4*\lambda*\alpha_x)/U)^{1/2})]*\mathrm{erf}[S_w/(4*(\alpha_y*X)^{1/2})]*\mathrm{erf}[S_d/(2*(\alpha_z*X)^{1/2})]\}$

α_x	=	0.10 * X	Equation R16
α_y	=	$\alpha_x/3$	Equation R17
α_z	=	$\alpha_x/20$	Equation R18
U	=	$K*i/\theta_T$	Equation R19
X	=	1175	feet
K	=	0.000031	cm/sec
S_w	=	1828.8	cm
S_d	=	762	cm
i	=	0.011	unitless
$GW_{(source)}$	=	62.6605095	mg/l
θ_T	=	0.43	unitless
λ	=	0.0009	day^{-1}
GW_{comp}	=	0.025	mg/l

$C_{(x)}$ (μg/l)	X (feet)	GW_{comp} (mg/l)	$C_{(x)}$ (mg/l)	X (cm)	C_{source} (mg/l)	β_3 =(X/(2α_x))	β_4 =1-[1+(4λ*α_x)/U]^1/2	a_x (cm)	a_y (cm)	a_z (cm)	U (cm/day)	λ (day^{-1})	S_w (cm)	S_d (cm)	K (cm/day)	I (cm/cm)	θ_T (cm^3/cm^3)	β_1 =S_w/(4*[α_y*X]^1/2)	β_2 =S_d/(2*[α_z*X]^1/2)	Error Function erf(β_1)	Error Function erf(β_2)
42615.851	1	0.025	42.61585086	30.5	62.7	5	-0.07710103	3.048	1.016	0.1524	0.06851721	0.0009	1828.8	762	2.6784	0.011	0.43	82.15838363	176.77669530	1.00000000	1.00000000
11338.018	5	0.025	11.33801798	152.4	62.7	5	-0.34191398	15.24	5.08	0.762	0.06851721	0.0009	1828.8	762	2.6784	0.011	0.43	16.43167673	35.35533906	1.00000000	1.00000000
2924.7255	10	0.025	2.924725486	304.8	62.7	5	-0.61290616	30.48	10.16	1.524	0.06851721	0.0009	1828.8	762	2.6784	0.011	0.43	8.21583836	17.67766953	1.00000000	1.00000000
918.70101	15	0.025	0.918701006	457.2	62.7	5	-0.84450519	45.72	15.24	2.286	0.06851721	0.0009	1828.8	762	2.6784	0.011	0.43	5.47722558	11.78511302	1.00000000	1.00000000
129.15921	25	0.025	0.129159211	762.0	62.7	5	-1.23688750	76.2	25.4	3.81	0.06851721	0.0009	1828.8	762	2.6784	0.011	0.43	3.28633535	7.07106781	0.99999664	1.00000000
54.555535	30	0.025	0.054555535	914.4	62.7	5	-1.40923200	91.44	30.48	4.572	0.06851721	0.0009	1828.8	762	2.6784	0.011	0.43	2.73861279	5.89255651	0.99989249	1.00000000
28.541703	34	0.025	0.028541703	1036.3	62.7	5	-1.53869757	103.632	34.544	5.1816	0.06851721	0.0009	1828.8	762	2.6784	0.011	0.43	2.41642305	5.19931457	0.99936763	1.00000000
24.394544	35	0.025	0.024394544	1066.8	62.7	5	-1.57004513	106.68	35.56	5.334	0.06851721	0.0009	1828.8	762	2.6784	0.011	0.43	2.34738239	5.05076272	0.99909886	1.00000000
7.771E-06	175	0.025	7.77072E-09	5334.0	62.7	5	-4.38754674	533.4	177.8	26.67	0.06851721	0.0009	1828.8	762	2.6784	0.011	0.43	0.46947648	1.01015254	0.49327129	0.84687255
1.066E-06	200	0.025	1.06628E-09	6096.0	62.7	5	-4.74711454	609.6	203.2	30.48	0.06851721	0.0009	1828.8	762	2.6784	0.011	0.43	0.41079192	0.88388348	0.43872416	0.78870045
3.426E-07	215	0.025	3.42644E-10	6553.2	62.7	5	-4.95243857	655.32	218.44	32.766	0.06851721	0.0009	1828.8	762	2.6784	0.011	0.43	0.38213202	0.82221719	0.41109002	0.75508557
1.036E-09	300	0.025	1.03596E-12	9144.0	62.7	5	-6.00314131	914.4	304.8	45.72	0.06851721	0.0009	1828.8	762	2.6784	0.011	0.43	0.27386128	0.58925565	0.30146464	0.59534324
5.036E-11	350	0.025	5.0358E-14	10668.0	62.7	5	-6.55323240	1066.8	355.6	53.34	0.06851721	0.0009	1828.8	762	2.6784	0.011	0.43	0.23473824	0.50507627	0.26008809	0.52494948
3.04E-12	400	0.025	3.03981E-15	12192.0	62.7	5	-7.06589431	1219.2	406.4	60.96	0.06851721	0.0009	1828.8	762	2.6784	0.011	0.43	0.20539596	0.44194174	0.22854617	0.46802894
1.835E-14	500	0.025	1.83539E-17	15240.0	62.7	5	-8.00407207	1524	508	76.2	0.06851721	0.0009	1828.8	762	2.6784	0.011	0.43	0.16431677	0.35355339	0.18375634	0.38292492
1.853E-16	600	0.025	1.85269E-19	18288.0	62.7	5	-8.85332312	1828.8	609.6	91.44	0.06851721	0.0009	1828.8	762	2.6784	0.011	0.43	0.13693064	0.29462783	0.15354940	0.32307776
2.758E-18	700	0.025	2.7578E-21	21336.0	62.7	5	-9.63497246	2133.6	711.2	106.68	0.06851721	0.0009	1828.8	762	2.6784	0.011	0.43	0.11736912	0.25253814	0.13183125	0.27901514
5.424E-42	2750	0.025	5.42372E-45	83820.0	62.7	5	-20.00959842	8382	2794	419.1	0.06851721	0.0009	1828.8	762	2.6784	0.011	0.43	0.02987578	0.06428243	0.03370118	0.07243517

TABLE
EQUATION R14 WORKSHEET - LEACHING FACTOR
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZENE (P5-C5-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

$$LF_{sw} = \rho_b/[\theta_{ws}+(k_s*\rho_b)+(H'*\theta_{as})]*[1+(U_{gw}*\delta_{gw})/(I*W)]$$

k_s	=	$K_{oc} * f_{oc}$	R20
U_{gw}	=	$K * i$	R24
f_{oc}	=	0.00473	gm/gm
ρ_b	=	1.7	gm/cm3
w	=	0.3	unitless
θ_T	=	0.43	unitless
W	=	2743.2	centimeters
K	=	0.000031	cm/sec
i	=	0.011	unitless
K_{oc}	=	50	L/gm
H'	=	0.23	unitless
ρ_w	=	1	gm/cm^3
δ_{gw}	=	200	centimeters
I	=	30	cm/year

LFsw (mg/L_{water})/ (mg/kg_{soil})	ρ_b g/cm^3	β_1 $=\theta_{ws}+(k_s*\rho_s)+(H'*\theta_{as})$	K_{oc} cm^3/g	f_{oc} g/g	k_s cm^3_{water}/g_{soil}	H' unitless	w unitless	θ_{ws} cm^3_{water}/cm^3_{soil}
1.853861228	**1.7**	0.89365	**50**	**0.00473**	0.2365	**0.23**	0.3	0.51

θ_T uniltess	θ_{as} cm^3_{air}/cm^3_{soil}	β_2 $=1+(U_{gw}*\delta_{gw})/(I*W)$	K cm/year	i cm/cm	U_{gw} cm/year	δ_{gw} cm	I cm/year	W cm
0.43	-0.08	1.026134383	977.616	0.011	10.753776	200	30	2743.2

INPUT PARAMETERS FOR TIER 2 SOIL COMPONENT TO GROUNDWATER INGESTION EVALUATION

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		BENZENE (P7-D1-W) s		
Site Name		CHAMPAIGN MGP		
Site Location		CHAMPAIGN, ILLINOIS		
FOR RBCA EQUATION - (R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, and R24)				
Constituent based parameters				
Organic carbon partition coefficient	K_{oc}	50	cm^3/g	Appendix C; Table E
Henry's constant	H'	0.23	l/gm	Appendix C; Table E
Solubility	S	1800	mg/l	Appendix C; Table E
Degradation constant	λ	0.0009	day^{-1}	Appendix C; Table E
Groundwater Objective	GW_{obj}	0.025	mg/l	Appendix B; Table E
Site Specific Data - Soil Zone				
Concentration of Constituent in Soil	$Soil_{(conc)}$	28.2	mg/kg	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	
Soil moisture content	***w***	0.3	unitless	
Total soil porosity - soil	θ_T	0.43	unitless	
Soil bulk density	ρ_b	1.7	gm/cm^3	
Source width in soil parallel to groundwater flow	W	20	feet	
Site Specific Data - Groundwater Zone				
Hydraulic conductivity	K	3.10E-05	cm/sec	
Groundwater gradient	*i*	0.02	unitless	
Total soil porosity - aquifer	θ_T	0.43	unitless	
Source width in groundwater perpendicular to groundwater flow direction	S_w	60	feet	
Source thickness in groundwater zone	S_d	25	feet	
Distance to point of compliance	X	1175	feet	

TABLE
EQUATION R12 WORKSHEET - SOIL COMPONENT OF GROUNDWATER INGESTION
BENZENE (P7-D1-W) s
CHAMPAIGN MGP
CHAMPAIGN MGP

R12	**RO**	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)}$	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)} * LF_{sw}$	$= GW_{source\text{-}calculated}$
R13	$\mathbf{GW_{source}}$	$= GW_{comp}/[C_{(x)}/C_{(source)}]$

Soil Source Concentration $\mathbf{Soil_{(conc)}}$ **(mg/kg)**	Leachate Factor LF_{sw} $(mg/l_{water})/(mg/kg_{soil})$	**GW Standard** $\mathbf{GW_{comp}}$ **(mg/l)**	GW_{source} $Soil_{(conc)}*LF_{sw}$ (mg/l)
28.2	1.567201179	**0.025**	44.19507326

Tier 2 Soil Remediation Objective (μg/kg) = **28200**

TABLE
EQUATION R15 WORKSHEET - STEADY STATE ATTENUATION ALONG THE CENTERLINE OF PLUME
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZENE (P7-D1-W) s
CHAMPAIGN MGP
CHAMPAIGN MGP

R26 $C_{(x)}$ = $GW_{source}*\{\exp[(X/2\alpha_x)*(1-(1+(4*\lambda*\alpha_x)/U)^{1/2})]*erf[S_w/(4*(\alpha_y*X)^{1/2})]*erf[S_d/(2*(\alpha_z*X)^{1/2})]\}$

α_x	=	0.10 * X	Equation R16
α_y	=	$\alpha_x/3$	Equation R17
α_z	=	$\alpha_x/20$	Equation R18
U	=	$K*i/\theta_T$	Equation R19
X	=	1175	feet
K	=	0.000031	cm/sec
S_w	=	1828.8	cm
S_d	=	762	cm
i	=	0.02	unitless
$GW_{(source)}$	=	44.1950733	mg/l
θ_T	=	0.43	unitless
λ	=	0.0009	day^{-1}
GW_{comp}	=	0.025	mg/l

$C_{(x)}$ (μg/l)	X (feet)	GW_{comp} (mg/l)	$C_{(x)}$ (mg/l)	X (cm)	C_{source} (mg/l)	β_3 =(X/(2α_x))	β_4 =1-[1+(4λ*α_x)/U]^1/2	a_x (cm)	a_y (cm)	a_z (cm)	U (cm/day)	λ (day^{-1})	S_w (cm)	S_d (cm)	K (cm/day)	I (cm/cm)	θ_T (cm^3/cm^3)	β_1 =S_w/(4*[α_y*X]^1/2)	β_2 =S_d/(2*[α_z*X]^1/2)	Error Function erf(β_1)	Error Function erf(β_2)
6899.7727	10	0.025	6.899772652	304.8	44.2	5	-0.37142497	30.48	10.16	1.524	0.12457674	0.0009	1828.8	762	2.6784	0.02	0.43	8.21583836	17.67766953	1.00000000	1.00000000
470.45456	30	0.025	0.47045456	914.4	44.2	5	-0.90851234	91.44	30.48	4.572	0.12457674	0.0009	1828.8	762	2.6784	0.02	0.43	2.73861279	5.89255651	0.99989249	1.00000000
268.39754	35	0.025	0.268397543	1066.8	44.2	5	-1.02059956	106.68	35.56	5.334	0.12457674	0.0009	1828.8	762	2.6784	0.02	0.43	2.34738239	5.05076272	0.99909886	1.00000000
157.39331	40	0.025	0.157393312	1219.2	44.2	5	-1.12678767	121.92	40.64	6.096	0.12457674	0.0009	1828.8	762	2.6784	0.02	0.43	2.05395959	4.41941738	0.99632439	1.00000000
115.50487	43	0.025	0.115504867	1310.6	44.2	5	-1.18802828	131.064	43.688	6.5532	0.12457674	0.0009	1828.8	762	2.6784	0.02	0.43	1.91066008	4.11108594	0.99310931	0.99999999
104.34868	44	0.025	0.104348677	1341.1	44.2	5	-1.20806440	134.112	44.704	6.7056	0.12457674	0.0009	1828.8	762	2.6784	0.02	0.43	1.86723599	4.01765217	0.99172578	0.99999999
94.339034	45	0.025	0.094339034	1371.6	44.2	5	-1.22792034	137.16	45.72	6.858	0.12457674	0.0009	1828.8	762	2.6784	0.02	0.43	1.82574186	3.92837101	0.99017673	0.99999997
85.349575	46	0.025	0.085349575	1402.1	44.2	5	-1.24760087	140.208	46.736	7.0104	0.12457674	0.0009	1828.8	762	2.6784	0.02	0.43	1.78605182	3.84297164	0.98845841	0.99999995
57.554856	50	0.025	0.057554856	1524.0	44.2	5	-1.32465745	152.4	50.8	7.62	0.12457674	0.0009	1828.8	762	2.6784	0.02	0.43	1.64316767	3.53553391	0.97986325	0.99999943
35.640221	55	0.025	0.035640221	1676.4	44.2	5	-1.41752673	167.64	55.88	8.382	0.12457674	0.0009	1828.8	762	2.6784	0.02	0.43	1.49378879	3.21412173	0.96535953	0.99999452
29.533052	57	0.025	0.029533052	1737.4	44.2	5	-1.45369044	173.736	57.912	8.6868	0.12457674	0.0009	1828.8	762	2.6784	0.02	0.43	1.44137515	3.10134553	0.95849128	0.99998845
26.904226	58	0.025	0.026904226	1767.8	44.2	5	-1.47157387	176.784	58.928	8.8392	0.12457674	0.0009	1828.8	762	2.6784	0.02	0.43	1.41652386	3.04787406	0.95485139	0.99998370
24.521438	59	0.025	0.024521438	1798.3	44.2	5	-1.48932884	179.832	59.944	8.9916	0.12457674	0.0009	1828.8	762	2.6784	0.02	0.43	1.39251498	2.99621517	0.95108291	0.99997738
5.961E-08	400	0.025	5.9607E-11	12192.0	44.2	5	-5.01932372	1219.2	406.4	60.96	0.12457674	0.0009	1828.8	762	2.6784	0.02	0.43	0.20539596	0.44194174	0.22854617	0.46802894
1.233E-09	500	0.025	1.2331E-12	15240.0	44.2	5	-5.71120873	1524	508	76.2	0.12457674	0.0009	1828.8	762	2.6784	0.02	0.43	0.16431677	0.35355339	0.18375634	0.38292492
3.783E-11	600	0.025	3.78286E-14	18288.0	44.2	5	-6.33814603	1828.8	609.6	91.44	0.12457674	0.0009	1828.8	762	2.6784	0.02	0.43	0.13693064	0.29462783	0.15354940	0.32307776
1.563E-12	700	0.025	1.56323E-15	21336.0	44.2	5	-6.91558283	2133.6	711.2	106.68	0.12457674	0.0009	1828.8	762	2.6784	0.02	0.43	0.11736912	0.25253814	0.13183125	0.27901514
2.183E-30	2750	0.025	2.1832E-33	83820.0	44.2	5	-14.59556906	8382	2794	419.1	0.12457674	0.0009	1828.8	762	2.6784	0.02	0.43	0.02987578	0.06428243	0.03370118	0.07243517

TABLE
EQUATION R14 WORKSHEET - LEACHING FACTOR
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZENE (P7-D1-W) s
CHAMPAIGN MGP
CHAMPAIGN MGP

$LF_{sw} = \rho_b/[\theta_{ws}+(k_s*\rho_b)+(H'*\theta_{as})]*[1+(U_{gw}*\delta_{gw})/(I*W)]$

k_s	=	$K_{oc} * f_{oc}$	R20
U_{gw}	=	$K * i$	R24
f_{oc}	=	0.00473	gm/gm
ρ_b	=	1.7	gm/cm3
w	=	0.3	unitless
θ_T	=	0.43	unitless
W	=	609.6	centimeters
K	=	0.000031	cm/sec
i	=	0.02	unitless
K_{oc}	=	50	L/gm
H'	=	0.23	unitless
ρ_w	=	1	gm/cm^3
δ_{gw}	=	200	centimeters
I	=	30	cm/year

LFsw (mg/L_{water})/ (mg/kg_{soil})	ρ_b g/cm^3	β_1 $=\theta_{ws}+(k_s*\rho_s)+(H'*\theta_{as})$	K_{oc} cm^3/g	f_{oc} g/g	k_s cm^3_{water}/g_{soil}	H' unitless	w unitless	θ_{ws} cm^3_{water}/cm^3_{soil}
1.567201179	**1.7**	0.89365	**50**	**0.00473**	0.2365	**0.23**	0.3	0.51

θ_T uniltess	θ_{as} cm^3_{air}/cm^3_{soil}	β_2 $=1+(U_{gw}*\delta_{gw})/(I*W)$	K cm/year	i cm/cm	U_{gw} cm/year	δ_{gw} cm	I cm/year	W cm
0.43	-0.08	1.213826772	977.616	0.02	19.55232	200	30	609.6

INPUT PARAMETERS FOR TIER 2 SOIL COMPONENT TO GROUNDWATER INGESTION EVALUATION

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		ETHYLBENZENE (P3-C1-W)		
Site Name		CHAMPAIGN MGP		
Site Location		CHAMPAIGN, ILLINOIS		
FOR RBCA EQUATION - (R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, and R24)				
Constituent based parameters				
Organic carbon partition coefficient	K_{oc}	320	cm^3/g	Appendix C; Table E
Henry's constant	H'	0.324	l/gm	Appendix C; Table E
Solubility	S	170	mg/l	Appendix C; Table E
Degradation constant	λ	0.003	day^{-1}	Appendix C; Table E
Groundwater Objective	GW_{obj}	1	mg/l	Appendix B; Table E
Site Specific Data - Soil Zone				
Concentration of Constituent in Soil	$Soil_{(conc)}$	33	mg/kg	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	
Soil moisture content	***w***	0.3	unitless	
Total soil porosity - soil	θ_T	0.43	unitless	
Soil bulk density	ρ_b	1.7	gm/cm^3	
Source width in soil parallel to groundwater flow	W	60	feet	
Site Specific Data - Groundwater Zone				
Hydraulic conductivity	K	3.10E-05	cm/sec	
Groundwater gradient	*i*	0.036	unitless	
Total soil porosity - aquifer	θ_T	0.43	unitless	
Source width in groundwater perpendicular to groundwater flow direction	S_w	165	feet	
Source thickness in groundwater zone	S_d	25	feet	
Distance to point of compliance	X	1175	feet	

TABLE
EQUATION R12 WORKSHEET - SOIL COMPONENT OF GROUNDWATER INGESTION
ETHYLBENZENE (P3-C1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R12	**RO**	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)}$	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)} * LF_{sw}$	$= GW_{source\text{-}calculated}$
R13	$\mathbf{GW_{source}}$	$= GW_{comp}/[C_{(x)}/C_{(source)}]$

Soil Source Concentration $\mathbf{Soil_{(conc)}}$ **(mg/kg)**	Leachate Factor LF_{sw} $(mg/l_{water})/(mg/kg_{soil})$	**GW Standard** $\mathbf{GW_{comp}}$ **(mg/l)**	GW_{source} $Soil_{(conc)}*LF_{sw}$ (mg/l)
33	0.492835516	**1**	16.26357203

Tier 2 Soil Remediation Objective (μg/kg) = **33000**

TABLE
EQUATION R15 WORKSHEET - STEADY STATE ATTENUATION ALONG THE CENTERLINE OF PLUME
SOIL COMPONENT OF GROUNDWATER INGESTION
ETHYLBENZENE (P3-C1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R26 $C_{(x)} = GW_{source}*\{\exp[(X/2\alpha_x)*(1-(1+(4*\lambda*\alpha_x)/U)^{1/2})]*erf[S_w/(4*(\alpha_y*X)^{1/2})]*erf[S_d/(2*(\alpha_z*X)^{1/2})]\}$

α_x	=	0.10 * X	Equation R16
α_y	=	$\alpha_x/3$	Equation R17
α_z	=	$\alpha_x/20$	Equation R18
U	=	$K*i/\theta_T$	Equation R19
X	=	1175	feet
K	=	0.000031	cm/sec
S_w	=	5029.2	cm
S_d	=	762	cm
i	=	0.036	unitless
$GW_{(source)}$	=	16.263572	mg/l
θ_T	=	0.43	unitless
λ	=	0.003	day^{-1}
GW_{comp}	=	1	mg/l

$C_{(x)}$ (µg/l)	X (feet)	GW_{comp} (mg/l)	$C_{(x)}$ (mg/l)	X (cm)	C_{source} (mg/l)	β_3 =(X/(2α_x))	β_4 =1-[1+(4λ*α_x)/U]^1/2	a_x (cm)	a_y (cm)	a_z (cm)	U (cm/day)	λ (day^{-1})	S_w (cm)	S_d (cm)	K (cm/day)	I (cm/cm)	θ_T (cm^3/cm^3)	β_1 =S_w/(4*[α_y*X]^1/2)	β_2 =S_d/(2*[α_z*X]^1/2)	Error Function erf(β_1)	erf(β_2)
10985.141	1	1	10.98514094	30.5	16.3	5	-0.07847685	3.048	1.016	0.1524	0.22423814	0.003	5029.2	762	2.6784	0.036	0.43	225.93555497	176.77669530	1.00000000	1.00000000
7620.458	2	1	7.620458003	61.0	16.3	5	-0.15161826	6.096	2.032	0.3048	0.22423814	0.003	5029.2	762	2.6784	0.036	0.43	112.96777749	88.38834765	1.00000000	1.00000000
5403.2907	3	1	5.40329067	91.4	16.3	5	-0.22038392	9.144	3.048	0.4572	0.22423814	0.003	5029.2	762	2.6784	0.036	0.43	75.31185166	58.92556510	1.00000000	1.00000000
2862.7681	5	1	2.862768132	152.4	16.3	5	-0.34742775	15.24	5.08	0.762	0.22423814	0.003	5029.2	762	2.6784	0.036	0.43	45.18711099	35.35533906	1.00000000	1.00000000
2129.0177	6	1	2.129017654	182.9	16.3	5	-0.40665342	18.288	6.096	0.9144	0.22423814	0.003	5029.2	762	2.6784	0.036	0.43	37.65592583	29.46278255	1.00000000	1.00000000
1602.4064	7	1	1.602406445	213.4	16.3	5	-0.46348425	21.336	7.112	1.0668	0.22423814	0.003	5029.2	762	2.6784	0.036	0.43	32.27650785	25.25381361	1.00000000	1.00000000
1218.9402	8	1	1.218940163	243.8	16.3	5	-0.51818920	24.384	8.128	1.2192	0.22423814	0.003	5029.2	762	2.6784	0.036	0.43	28.24194437	22.09708691	1.00000000	1.00000000
936.1083	9	1	0.9361083	274.3	16.3	5	-0.57099037	27.432	9.144	1.3716	0.22423814	0.003	5029.2	762	2.6784	0.036	0.43	25.10395055	19.64185503	1.00000000	1.00000000
2.999E-06	175	1	2.99877E-09	5334.0	16.3	5	-4.43549938	533.4	177.8	26.67	0.22423814	0.003	5029.2	762	2.6784	0.036	0.43	1.29106031	1.01015254	0.93212488	0.84687255
4.342E-07	200	1	4.3418E-10	6096.0	16.3	5	-4.79848783	609.6	203.2	30.48	0.22423814	0.003	5029.2	762	2.6784	0.036	0.43	1.12967777	0.88388348	0.88986923	0.78870045
1.213E-08	250	1	1.21288E-11	7620.0	16.3	5	-5.46359625	762	254	38.1	0.22423814	0.003	5029.2	762	2.6784	0.036	0.43	0.90374222	0.70710678	0.79878037	0.68268949
4.637E-10	300	1	4.63657E-13	9144.0	16.3	5	-6.06637756	914.4	304.8	45.72	0.22423814	0.003	5029.2	762	2.6784	0.036	0.43	0.75311852	0.58925565	0.71315594	0.59534324
2.28E-11	350	1	2.28005E-14	10668.0	16.3	5	-6.62163415	1066.8	355.6	53.34	0.22423814	0.003	5029.2	762	2.6784	0.036	0.43	0.64553016	0.50507627	0.63871407	0.52494948
1.378E-12	400	1	1.378E-15	12192.0	16.3	5	-7.13909837	1219.2	406.4	60.96	0.22423814	0.003	5029.2	762	2.6784	0.036	0.43	0.56483889	0.44194174	0.57559524	0.46802894
8.211E-15	500	1	8.21141E-18	15240.0	16.3	5	-8.08604165	1524	508	76.2	0.22423814	0.003	5029.2	762	2.6784	0.036	0.43	0.45187111	0.35355339	0.47720455	0.38292492
8.105E-17	600	1	8.10475E-20	18288.0	16.3	5	-8.94320791	1828.8	609.6	91.44	0.22423814	0.003	5029.2	762	2.6784	0.036	0.43	0.37655926	0.29462783	0.40564464	0.32307776
1.176E-18	700	1	1.1756E-21	21336.0	16.3	5	-9.73212999	2133.6	711.2	106.68	0.22423814	0.003	5029.2	762	2.6784	0.036	0.43	0.32276508	0.25253814	0.35193987	0.27901514
1.471E-42	2750	1	1.47051E-45	83820.0	16.3	5	-20.20280267	8382	2794	419.1	0.22423814	0.003	5029.2	762	2.6784	0.036	0.43	0.08215838	0.06428243	0.09249764	0.07243517

TABLE
EQUATION R14 WORKSHEET - LEACHING FACTOR
SOIL COMPONENT OF GROUNDWATER INGESTION
ETHYLBENZENE (P3-C1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

$LF_{sw} = \rho_b/[\theta_{ws}+(k_s*\rho_b)+(H'*\theta_{as})]*[1+(U_{gw}*\delta_{gw})/(I*W)]$

k_s	=	$K_{oc} * f_{oc}$	R20
U_{gw}	=	$K * i$	R24
f_{oc}	=	0.00473	gm/gm
ρ_b	=	1.7	gm/cm3
w	=	0.3	unitless
θ_T	=	0.43	unitless
W	=	1828.8	centimeters
K	=	0.000031	cm/sec
i	=	0.036	unitless
K_{oc}	=	320	L/gm
H'	=	0.324	unitless
ρ_w	=	1	gm/cm^3
δ_{gw}	=	200	centimeters
I	=	30	cm/year

LFsw (mg/L_{water})/(mg/kg_{soil})	ρ_b g/cm^3	β_1 $=\theta_{ws}+(k_s*\rho_s)+(H'*\theta_{as})$	K_{oc} cm^3/g	f_{oc} g/g	k_s cm^3_{water}/g_{soil}	H' unitless	w unitless	θ_{ws} cm^3_{water}/cm^3_{soil}
0.492835516	**1.7**	3.0572	**320**	**0.00473**	1.5136	**0.324**	0.3	0.51

θ_T uniltess	θ_{as} cm^3_{air}/cm^3_{soil}	β_2 $=1+(U_{gw}*\delta_{gw})/(I*W)$	K cm/year	i cm/cm	U_{gw} cm/year	δ_{gw} cm	I cm/year	W cm
0.43	-0.08	1.128296063	977.616	0.036	35.194176	200	30	1828.8

INPUT PARAMETERS FOR TIER 2 SOIL COMPONENT TO GROUNDWATER INGESTION EVALUATION

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		ETHYLBENZENE (P4-A1-W)		
Site Name		CHAMPAIGN MGP		
Site Location		CHAMPAIGN, ILLINOIS		
FOR RBCA EQUATION - (R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, and R24)				
Constituent based parameters				
Organic carbon partition coefficient	K_{oc}	320	cm^3/g	Appendix C; Table E
Henry's constant	H'	0.324	l/gm	Appendix C; Table E
Solubility	S	170	mg/l	Appendix C; Table E
Degradation constant	λ	0.003	day^{-1}	Appendix C; Table E
Groundwater Objective	GW_{obj}	1	mg/l	Appendix B; Table E
Site Specific Data - Soil Zone				
Concentration of Constituent in Soil	$Soil_{(conc)}$	282	mg/kg	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	
Soil moisture content	***w***	0.3	unitless	
Total soil porosity - soil	θ_T	0.43	unitless	
Soil bulk density	ρ_b	1.7	gm/cm^3	
Source width in soil parallel to groundwater flow	W	30	feet	
Site Specific Data - Groundwater Zone				
Hydraulic conductivity	K	3.10E-05	cm/sec	
Groundwater gradient	*i*	0.033	unitless	
Total soil porosity - aquifer	θ_T	0.43	unitless	
Source width in groundwater perpendicular to groundwater flow direction	S_w	200	feet	
Source thickness in groundwater zone	S_d	25	feet	
Distance to point of compliance	X	1175	feet	

TABLE
EQUATION R12 WORKSHEET - SOIL COMPONENT OF GROUNDWATER INGESTION
ETHYLBENZENE (P4-A1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R12	**RO**	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)}$	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)} * LF_{sw}$	$= GW_{source\text{-}calculated}$
R13	$\mathbf{GW_{source}}$	$= GW_{comp}/[C_{(x)}/C_{(source)}]$

Soil Source Concentration $\mathbf{Soil_{(conc)}}$ **(mg/kg)**	Leachate Factor LF_{sw} $(mg/l_{water})/(mg/kg_{soil})$	**GW Standard** $\mathbf{GW_{comp}}$ **(mg/l)**	GW_{source} $Soil_{(conc)}*LF_{sw}$ (mg/l)
282	0.450178205	**1**	126.9502538

Tier 2 Soil Remediation Objective (μg/kg) = **282000**

TABLE
EQUATION R15 WORKSHEET - STEADY STATE ATTENUATION ALONG THE CENTERLINE OF PLUME
SOIL COMPONENT OF GROUNDWATER INGESTION
ETHYLBENZENE (P4-A1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R26 $C_{(x)} = GW_{source}*\{\exp[(X/2\alpha_x)*(1-(1+(4*\lambda*\alpha_x)/U)^{1/2})]*\mathrm{erf}[S_w/(4*(\alpha_y*X)^{1/2})]*\mathrm{erf}[S_d/(2*(\alpha_z*X)^{1/2})]\}$

α_x	=	0.10 * X	Equation R16
α_y	=	$\alpha_x/3$	Equation R17
α_z	=	$\alpha_x/20$	Equation R18
U	=	$K*i/\theta_T$	Equation R19
X	=	1175	feet
K	=	0.000031	cm/sec
S_w	=	6096	cm
S_d	=	762	cm
i	=	0.033	unitless
$GW_{(source)}$	=	126.950254	mg/l
θ_T	=	0.43	unitless
λ	=	0.003	day^{-1}
GW_{comp}	=	1	mg/l

$C_{(x)}$ (μg/l)	X (feet)	GW_{comp} (mg/l)	$C_{(x)}$ (mg/l)	X (cm)	C_{source} (mg/l)	β_3 =(X/(2α_x))	β_4 =1-[1+(4λ*α_x)/U]^1/2	a_x (cm)	a_y (cm)	a_z (cm)	U (cm/day)	λ (day^{-1})	S_w (cm)	S_d (cm)	K (cm/day)	I (cm/cm)	θ_T (cm^3/cm^3)	β_1 =S_w/(4*[α_y*X]^1/2)	β_2 =S_d/(2*[α_z*X]^1/2)	Error Function erf(β_1)	Error Function erf(β_2)
82859.507	1	1	82.85950695	30.5	127.0	5	-0.08532976	3.048	1.016	0.1524	0.20555163	0.003	6096	762	2.6784	0.033	0.43	273.86127875	176.77669530	1.00000000	1.00000000
4517.7701	10	1	4.517770138	304.8	127.0	5	-0.66715535	30.48	10.16	1.524	0.20555163	0.003	6096	762	2.6784	0.033	0.43	27.38612788	17.67766953	1.00000000	1.00000000
2692.3719	12	1	2.692371894	365.8	127.0	5	-0.77067455	36.576	12.192	1.8288	0.20555163	0.003	6096	762	2.6784	0.033	0.43	22.82177323	14.73139127	1.00000000	1.00000000
2101.5109	13	1	2.101510882	396.2	127.0	5	-0.82022775	39.624	13.208	1.9812	0.20555163	0.003	6096	762	2.6784	0.033	0.43	21.06625221	13.59820733	1.00000000	1.00000000
1651.1288	14	1	1.651128832	426.7	127.0	5	-0.86846722	42.672	14.224	2.1336	0.20555163	0.003	6096	762	2.6784	0.033	0.43	19.56151991	12.62690681	1.00000000	1.00000000
1305.1712	15	1	1.305171159	457.2	127.0	5	-0.91549222	45.72	15.24	2.286	0.20555163	0.003	6096	762	2.6784	0.033	0.43	18.25741858	11.78511302	1.00000000	1.00000000
1037.5319	16	1	1.037531949	487.7	127.0	5	-0.96139011	48.768	16.256	2.4384	0.20555163	0.003	6096	762	2.6784	0.033	0.43	17.11632992	11.04854346	1.00000000	1.00000000
829.11545	17	1	0.829115453	518.2	127.0	5	-1.00623823	51.816	17.272	2.5908	0.20555163	0.003	6096	762	2.6784	0.033	0.43	16.10948699	10.39862914	1.00000000	1.00000000
7.597E-06	175	1	7.59652E-09	5334.0	127.0	5	-4.66918178	533.4	177.8	26.67	0.20555163	0.003	6096	762	2.6784	0.033	0.43	1.56492159	1.01015254	0.97311155	0.84687255
1.032E-06	200	1	1.03187E-09	6096.0	127.0	5	-5.04881306	609.6	203.2	30.48	0.20555163	0.003	6096	762	2.6784	0.033	0.43	1.36930639	0.88388348	0.94719249	0.78870045
2.56E-08	250	1	2.55951E-11	7620.0	127.0	5	-5.74426974	762	254	38.1	0.20555163	0.003	6096	762	2.6784	0.033	0.43	1.09544512	0.70710678	0.87866475	0.68268949
8.737E-10	300	1	8.73732E-13	9144.0	127.0	5	-6.37442941	914.4	304.8	45.72	0.20555163	0.003	6096	762	2.6784	0.033	0.43	0.91287093	0.58925565	0.80329440	0.59534324
3.853E-11	350	1	3.8527E-14	10668.0	127.0	5	-6.95482521	1066.8	355.6	53.34	0.20555163	0.003	6096	762	2.6784	0.033	0.43	0.78246080	0.50507627	0.73151868	0.52494948
2.096E-12	400	1	2.09633E-15	12192.0	127.0	5	-7.49566236	1219.2	406.4	60.96	0.20555163	0.003	6096	762	2.6784	0.033	0.43	0.68465320	0.44194174	0.66707839	0.46802894
1.024E-14	500	1	1.02449E-17	15240.0	127.0	5	-8.48527009	1524	508	76.2	0.20555163	0.003	6096	762	2.6784	0.033	0.43	0.54772256	0.35355339	0.56142197	0.38292492
8.413E-17	600	1	8.41273E-20	18288.0	127.0	5	-9.38096423	1828.8	609.6	91.44	0.20555163	0.003	6096	762	2.6784	0.033	0.43	0.45643546	0.29462783	0.48139498	0.32307776
1.028E-18	700	1	1.02787E-21	21336.0	127.0	5	-10.20528840	2133.6	711.2	106.68	0.20555163	0.003	6096	762	2.6784	0.033	0.43	0.39123040	0.25253814	0.41993059	0.27901514
1.259E-43	2750	1	1.25939E-46	83820.0	127.0	5	-21.14355251	8382	2794	419.1	0.20555163	0.003	6096	762	2.6784	0.033	0.43	0.09958592	0.06428243	0.11200031	0.07243517

TABLE
EQUATION R14 WORKSHEET - LEACHING FACTOR
SOIL COMPONENT OF GROUNDWATER INGESTION
ETHYLBENZENE (P4-A1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

$LF_{sw} = \rho_b/[\theta_{ws}+(k_s*\rho_b)+(H'*\theta_{as})]*[1+(U_{gw}*\delta_{gw})/(I*W)]$

k_s	=	$K_{oc} * f_{oc}$	R20
U_{gw}	=	$K * i$	R24
f_{oc}	=	0.00473	gm/gm
ρ_b	=	1.7	gm/cm3
w	=	0.3	unitless
θ_T	=	0.43	unitless
W	=	914.4	centimeters
K	=	0.000031	cm/sec
i	=	0.033	unitless
K_{oc}	=	320	L/gm
H'	=	0.324	unitless
ρ_w	=	1	gm/cm^3
δ_{gw}	=	200	centimeters
I	=	30	cm/year

LFsw (mg/L_{water})/ (mg/kg_{soil})	ρ_b g/cm^3	β_1 $=\theta_{ws}+(k_s*\rho_s)+(H'*\theta_{as})$	K_{oc} cm^3/g	f_{oc} g/g	k_s cm^3_{water}/g_{soil}	H' unitless	w unitless	θ_{ws} cm^3_{water}/cm^3_{soil}
0.450178205	**1.7**	3.0572	**320**	**0.00473**	1.5136	**0.324**	0.3	0.51

θ_T uniltess	θ_{as} cm^3_{air}/cm^3_{soil}	β_2 $=1+(U_{gw}*\delta_{gw})/(I*W)$	K cm/year	i cm/cm	U_{gw} cm/year	δ_{gw} cm	I cm/year	W cm
0.43	-0.08	1.235209449	977.616	0.033	32.261328	200	30	914.4

INPUT PARAMETERS FOR TIER 2 SOIL COMPONENT TO GROUNDWATER INGESTION EVALUATION

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		TOLUENE(P3-C1-W)		
Site Name		CHAMPAIGN MGP		
Site Location		CHAMPAIGN, ILLINOIS		
FOR RBCA EQUATION - (R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, and R24)				
Constituent based parameters				
Organic carbon partition coefficient	K_{oc}	158	cm^3/g	Appendix C; Table E
Henry's constant	H'	0.271	l/gm	Appendix C; Table E
Solubility	S	530	mg/l	Appendix C; Table E
Degradation constant	λ	0.011	day^{-1}	Appendix C; Table E
Groundwater Objective	GW_{obj}	2.5	mg/l	Appendix B; Table E
Site Specific Data - Soil Zone				
Concentration of Constituent in Soil	$Soil_{(conc)}$	267	mg/kg	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	
Soil moisture content	***w***	0.3	unitless	
Total soil porosity - soil	θ_T	0.43	unitless	
Soil bulk density	ρ_b	1.7	gm/cm^3	
Source width in soil parallel to groundwater flow	W	60	feet	
Site Specific Data - Groundwater Zone				
Hydraulic conductivity	K	3.10E-05	cm/sec	
Groundwater gradient	*i*	0.036	unitless	
Total soil porosity - aquifer	θ_T	0.43	unitless	
Source width in groundwater perpendicular to groundwater flow direction	S_w	165	feet	
Source thickness in groundwater zone	S_d	25	feet	
Distance to point of compliance	X	1175	feet	

TABLE
EQUATION R12 WORKSHEET - SOIL COMPONENT OF GROUNDWATER INGESTION
TOLUENE(P3-C1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R12	**RO**	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)}$	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)} * LF_{sw}$	$= GW_{source\text{-}calculated}$
R13	$\mathbf{GW_{source}}$	$= GW_{comp}/[C_{(x)}/C_{(source)}]$

Soil Source Concentration $\mathbf{Soil_{(conc)}}$ **(mg/kg)**	Leachate Factor LF_{sw} $(mg/l_{water})/(mg/kg_{soil})$	**GW Standard** $\mathbf{GW_{comp}}$ **(mg/l)**	GW_{source} $Soil_{(conc)}*LF_{sw}$ (mg/l)
267	0.856662755	**2.5**	228.7289556

Tier 2 Soil Remediation Objective (μg/kg) = **267000**

TABLE
EQUATION R15 WORKSHEET - STEADY STATE ATTENUATION ALONG THE CENTERLINE OF PLUME
SOIL COMPONENT OF GROUNDWATER INGESTION
TOLUENE(P3-C1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R26 $C_{(x)} = GW_{source}*\{\exp[(X/2\alpha_x)*(1-(1+(4*\lambda*\alpha_x)/U)^{1/2})]*\mathrm{erf}[S_w/(4*(\alpha_y*X)^{1/2})]*\mathrm{erf}[S_d/(2*(\alpha_z*X)^{1/2})]\}$

α_x	=	0.10 * X	Equation R16
α_y	=	α_x/3	Equation R17
α_z	=	α_x/20	Equation R18
U	=	K*i/θ_T	Equation R19
X	=	1175	feet
K	=	0.000031	cm/sec
S_w	=	5029.2	cm
S_d	=	762	cm
i	=	0.036	unitless
$GW_{(source)}$	=	228.728956	mg/l
θ_T	=	0.43	unitless
λ	=	0.011	day^{-1}
GW_{comp}	=	2.5	mg/l

$C_{(x)}$ (μg/l)	X (feet)	GW_{comp} (mg/l)	$C_{(x)}$ (mg/l)	X (cm)	C_{source} (mg/l)	β_3 =(X/(2α_x))	β_4 =1-[1+(4λ*α_x)/U]$^{+1/2}$	a_x (cm)	a_y (cm)	a_z (cm)	U (cm/day)	λ (day^{-1})	S_w (cm)	S_d (cm)	K (cm/day)	I (cm/cm)	θ_T (cm^3/cm^3)	β_1 =S_w/(4*[α_y*X]$^{1/2}$)	β_2 =S_d/(2*[α_z*X]$^{1/2}$)	Error Function erf(β_1)	Error Function erf(β_2)
61055.379	1	2.5	61.0553793	30.5	228.7	5	-0.26415128	3.048	1.016	0.1524	0.22423814	0.011	5029.2	762	2.6784	0.036	0.43	225.93555497	176.77669530	1.00000000	1.00000000
34665.43	1.5	2.5	34.6654302	45.7	228.7	5	-0.37735895	4.572	1.524	0.2286	0.22423814	0.011	5029.2	762	2.6784	0.036	0.43	150.62370331	117.85113020	1.00000000	1.00000000
20549.15	2	2.5	20.5491499	61.0	228.7	5	-0.48194363	6.096	2.032	0.3048	0.22423814	0.011	5029.2	762	2.6784	0.036	0.43	112.96777749	88.38834765	1.00000000	1.00000000
12609.403	2.5	2.5	12.6094027	76.2	228.7	5	-0.57961898	7.62	2.54	0.381	0.22423814	0.011	5029.2	762	2.6784	0.036	0.43	90.37422199	70.71067812	1.00000000	1.00000000
7960.9986	3	2.5	7.96099862	91.4	228.7	5	-0.67159665	9.144	3.048	0.4572	0.22423814	0.011	5029.2	762	2.6784	0.036	0.43	75.31185166	58.92556510	1.00000000	1.00000000
5148.3892	3.5	2.5	5.14838923	106.7	228.7	5	-0.75877076	10.668	3.556	0.5334	0.22423814	0.011	5029.2	762	2.6784	0.036	0.43	64.55301571	50.50762723	1.00000000	1.00000000
3398.7924	4	2.5	3.39879237	121.9	228.7	5	-0.84182350	12.192	4.064	0.6096	0.22423814	0.011	5029.2	762	2.6784	0.036	0.43	56.48388874	44.19417382	1.00000000	1.00000000
1559.7953	5	2.5	1.55979528	152.4	228.7	5	-0.99759662	15.24	5.08	0.762	0.22423814	0.011	5029.2	762	2.6784	0.036	0.43	45.18711099	35.35533906	1.00000000	1.00000000
1.279E-15	175	2.5	1.2791E-18	5334.0	228.7	5	-9.27928643	533.4	177.8	26.67	0.22423814	0.011	5029.2	762	2.6784	0.036	0.43	1.29106031	1.01015254	0.93212488	0.84687255
3.379E-17	200	2.5	3.3791E-20	6096.0	228.7	5	-9.98251751	609.6	203.2	30.48	0.22423814	0.011	5029.2	762	2.6784	0.036	0.43	1.12967777	0.88388348	0.88986923	0.78870045
4.231E-20	250	2.5	4.2308E-23	7620.0	228.7	5	-11.26864352	762	254	38.1	0.22423814	0.011	5029.2	762	2.6784	0.036	0.43	0.90374222	0.70710678	0.79878037	0.68268949
9.798E-23	300	2.5	9.7979E-26	9144.0	228.7	5	-12.43218286	914.4	304.8	45.72	0.22423814	0.011	5029.2	762	2.6784	0.036	0.43	0.75311852	0.58925565	0.71315594	0.59534324
3.665E-25	350	2.5	3.665E-28	10668.0	228.7	5	-13.50267076	1066.8	355.6	53.34	0.22423814	0.011	5029.2	762	2.6784	0.036	0.43	0.64553016	0.50507627	0.63871407	0.52494948
2.017E-27	400	2.5	2.0168E-30	12192.0	228.7	5	-14.49939941	1219.2	406.4	60.96	0.22423814	0.011	5029.2	762	2.6784	0.036	0.43	0.56483889	0.44194174	0.57559524	0.46802894
1.511E-31	500	2.5	1.5106E-34	15240.0	228.7	5	-16.32164044	1524	508	76.2	0.22423814	0.011	5029.2	762	2.6784	0.036	0.43	0.45187111	0.35355339	0.47720455	0.38292492
2.859E-35	600	2.5	2.8589E-38	18288.0	228.7	5	-17.96963555	1828.8	609.6	91.44	0.22423814	0.011	5029.2	762	2.6784	0.036	0.43	0.37655926	0.29462783	0.40564464	0.32307776
1.095E-38	700	2.5	1.0945E-41	21336.0	228.7	5	-19.48548067	2133.6	711.2	106.68	0.22423814	0.011	5029.2	762	2.6784	0.036	0.43	0.32276508	0.25253814	0.35193987	0.27901514
1.844E-83	2750	2.5	1.8443E-86	83820.0	228.7	5	-39.56742228	8382	2794	419.1	0.22423814	0.011	5029.2	762	2.6784	0.036	0.43	0.08215838	0.06428243	0.09249764	0.07243517

TABLE
EQUATION R14 WORKSHEET - LEACHING FACTOR
SOIL COMPONENT OF GROUNDWATER INGESTION
TOLUENE(P3-C1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

$$LF_{sw} = \rho_b/[\theta_{ws}+(k_s*\rho_b)+(H'*\theta_{as})]*[1+(U_{gw}*\delta_{gw})/(I*W)]$$

k_s	=	$K_{oc} * f_{oc}$	R20
U_{gw}	=	$K * i$	R24
f_{oc}	=	0.00473	gm/gm
ρ_b	=	1.7	gm/cm3
w	=	0.3	unitless
θ_T	=	0.43	unitless
W	=	1828.8	centimeters
K	=	0.000031	cm/sec
i	=	0.036	unitless
K_{oc}	=	158	L/gm
H'	=	0.271	unitless
ρ_w	=	1	gm/cm^3
δ_{gw}	=	200	centimeters
I	=	30	cm/year

LFsw	ρ_b	β_1	K_{oc}	f_{oc}	k_s	H'	w	θ_{ws}
$(mg/L_{water})/(mg/kg_{soil})$	g/cm^3	$=\theta_{ws}+(k_s*\rho_s)+(H'*\theta_{as})$	cm^3/g	g/g	cm^3_{water}/g_{soil}	unitless	unitless	cm^3_{water}/cm^3_{soil}
0.856662755	**1.7**	1.758798	**158**	**0.00473**	0.74734	**0.271**	0.3	0.51

θ_T	θ_{as}	β_2	K	i	U_{gw}	δ_{gw}	I	W
uniltess	cm^3_{air}/cm^3_{soil}	$=1+(U_{gw}*\delta_{gw})/(I*W)$	cm/year	cm/cm	cm/year	cm	cm/year	cm
0.43	-0.08	1.128296063	977.616	0.036	35.194176	200	30	1828.8

INPUT PARAMETERS FOR TIER 2 SOIL COMPONENT TO GROUNDWATER INGESTION EVALUATION

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		TOLUENE(P4-A1-W)		
Site Name		CHAMPAIGN MGP		
Site Location		CHAMPAIGN, ILLINOIS		
FOR RBCA EQUATION - (R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, and R24)				
Constituent based parameters				
Organic carbon partition coefficient	K_{oc}	158	cm^3/g	Appendix C; Table E
Henry's constant	H'	0.271	l/gm	Appendix C; Table E
Solubility	S	530	mg/l	Appendix C; Table E
Degradation constant	λ	0.011	day^{-1}	Appendix C; Table E
Groundwater Objective	GW_{obj}	2.5	mg/l	Appendix B; Table E
Site Specific Data - Soil Zone				
Concentration of Constituent in Soil	$Soil_{(conc)}$	2510	mg/kg	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	
Soil moisture content	***w***	0.3	unitless	
Total soil porosity - soil	θ_T	0.43	unitless	
Soil bulk density	ρ_b	1.7	gm/cm^3	
Source width in soil parallel to groundwater flow	W	30	feet	
Site Specific Data - Groundwater Zone				
Hydraulic conductivity	K	3.10E-05	cm/sec	
Groundwater gradient	*i*	0.033	unitless	
Total soil porosity - aquifer	θ_T	0.43	unitless	
Source width in groundwater perpendicular to groundwater flow direction	S_w	200	feet	
Source thickness in groundwater zone	S_d	25	feet	
Distance to point of compliance	X	1175	feet	

TABLE
EQUATION R12 WORKSHEET - SOIL COMPONENT OF GROUNDWATER INGESTION
TOLUENE(P4-A1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R12	**RO**	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)}$	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)} * LF_{sw}$	$= GW_{source\text{-}calculated}$
R13	$\mathbf{GW_{source}}$	$= GW_{comp}/[C_{(x)}/C_{(source)}]$

Soil Source Concentration $\mathbf{Soil_{(conc)}}$ **(mg/kg)**	Leachate Factor LF_{sw} $(mg/l_{water})/(mg/kg_{soil})$	**GW Standard** $\mathbf{GW_{comp}}$ **(mg/l)**	GW_{source} $Soil_{(conc)}*LF_{sw}$ (mg/l)
2510	0.782514427	**2.5**	1964.111211

Tier 2 Soil Remediation Objective (μg/kg) = **2510000**

TABLE
EQUATION R15 WORKSHEET - STEADY STATE ATTENUATION ALONG THE CENTERLINE OF PLUME
SOIL COMPONENT OF GROUNDWATER INGESTION
TOLUENE(P4-A1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R26 $C_{(x)} = GW_{source}*\{\exp[(X/2\alpha_x)*(1-(1+(4*\lambda*\alpha_x)/U)^{1/2})]*\mathrm{erf}[S_w/(4*(\alpha_y*X)^{1/2})]*\mathrm{erf}[S_d/(2*(\alpha_z*X)^{1/2})]\}$

α_x	=	0.10 * X	Equation R16
α_y	=	α_x/3	Equation R17
α_z	=	α_x/20	Equation R18
U	=	K*i/θ_T	Equation R19
X	=	1175	feet
K	=	0.000031	cm/sec
S_w	=	6096	cm
S_d	=	762	cm
i	=	0.033	unitless
$GW_{(source)}$	=	1964.11121	mg/l
θ_T	=	0.43	unitless
λ	=	0.011	day^{-1}
GW_{comp}	=	2.5	mg/l

$C_{(x)}$ (μg/l)	X (feet)	GW_{comp} (mg/l)	$C_{(x)}$ (mg/l)	X (cm)	C_{source} (mg/l)	β_3 =(X/(2α_x))	β_4 =1-[1+(4λ*α_x)/U]$^{+1/2}$	a_x (cm)	a_y (cm)	a_z (cm)	U (cm/day)	λ (day^{-1})	S_w (cm)	S_d (cm)	K (cm/day)	I (cm/cm)	θ_T (cm^3/cm^3)	β_1 =S_w/(4*[α_y*X]$^{1/2}$)	β_2 =S_d/(2*[α_z*X]$^{1/2}$)	Error Function erf(β_1)	Error Function erf(β_2)
#DIV/0!	0	2.5	#DIV/0!	0.0	1964.1	#DIV/0!	0.00000000	0	0	0	0.20555163	0.011	6096	762	2.6784	0.033	0.43	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
471261.81	1	2.5	471.261808	30.5	1964.1	5	-0.28547626	3.048	1.016	0.1524	0.20555163	0.011	6096	762	2.6784	0.033	0.43	273.86127875	176.77669530	1.00000000	1.00000000
147208.38	2	2.5	147.208377	61.0	1964.1	5	-0.51818920	6.096	2.032	0.3048	0.20555163	0.011	6096	762	2.6784	0.033	0.43	136.93063938	88.38834765	1.00000000	1.00000000
53748.986	3	2.5	53.7489858	91.4	1964.1	5	-0.71969406	9.144	3.048	0.4572	0.20555163	0.011	6096	762	2.6784	0.033	0.43	91.28709292	58.92556510	1.00000000	1.00000000
21825.137	4	2.5	21.8251366	121.9	1964.1	5	-0.89994655	12.192	4.064	0.6096	0.20555163	0.011	6096	762	2.6784	0.033	0.43	68.46531969	44.19417382	1.00000000	1.00000000
9584.921	5	2.5	9.58492098	152.4	1964.1	5	-1.06452080	15.24	5.08	0.762	0.20555163	0.011	6096	762	2.6784	0.033	0.43	54.77225575	35.35533906	1.00000000	1.00000000
4473.8039	6	2.5	4.4738039	182.9	1964.1	5	-1.21691122	18.288	6.096	0.9144	0.20555163	0.011	6096	762	2.6784	0.033	0.43	45.64354646	29.46278255	1.00000000	1.00000000
2193.2764	7	2.5	2.19327639	213.4	1964.1	5	-1.35947972	21.336	7.112	1.0668	0.20555163	0.011	6096	762	2.6784	0.033	0.43	39.12303982	25.25381361	1.00000000	1.00000000
1.192E-15	175	2.5	1.1915E-18	5334.0	1964.1	5	-9.73212999	533.4	177.8	26.67	0.20555163	0.011	6096	762	2.6784	0.033	0.43	1.56492159	1.01015254	0.97311155	0.84687255
2.741E-17	200	2.5	2.7411E-20	6096.0	1964.1	5	-10.46690214	609.6	203.2	30.48	0.20555163	0.011	6096	762	2.6784	0.033	0.43	1.36930639	0.88388348	0.94719249	0.78870045
2.659E-20	250	2.5	2.6592E-23	7620.0	1964.1	5	-11.81063253	762	254	38.1	0.20555163	0.011	6096	762	2.6784	0.033	0.43	1.09544512	0.70710678	0.87866475	0.68268949
4.861E-23	300	2.5	4.8611E-26	9144.0	1964.1	5	-13.02621713	914.4	304.8	45.72	0.20555163	0.011	6096	762	2.6784	0.033	0.43	0.91287093	0.58925565	0.80329440	0.59534324
1.456E-25	350	2.5	1.4555E-28	10668.0	1964.1	5	-14.14454450	1066.8	355.6	53.34	0.20555163	0.011	6096	762	2.6784	0.033	0.43	0.78246080	0.50507627	0.73151868	0.52494948
6.488E-28	400	2.5	6.4878E-31	12192.0	1964.1	5	-15.18578665	1219.2	406.4	60.96	0.20555163	0.011	6096	762	2.6784	0.033	0.43	0.68465320	0.44194174	0.66707839	0.46802894
3.285E-32	500	2.5	3.2848E-35	15240.0	1964.1	5	-17.08935078	1524	508	76.2	0.20555163	0.011	6096	762	2.6784	0.033	0.43	0.54772256	0.35355339	0.56142197	0.38292492
4.343E-36	600	2.5	4.3426E-39	18288.0	1964.1	5	-18.81084385	1828.8	609.6	91.44	0.20555163	0.011	6096	762	2.6784	0.033	0.43	0.45643546	0.29462783	0.48139498	0.32307776
1.192E-39	700	2.5	1.1923E-42	21336.0	1964.1	5	-20.39426223	2133.6	711.2	106.68	0.20555163	0.011	6096	762	2.6784	0.033	0.43	0.39123040	0.25253814	0.41993059	0.27901514
2.334E-86	2750	2.5	2.3337E-89	83820.0	1964.1	5	-41.37021789	8382	2794	419.1	0.20555163	0.011	6096	762	2.6784	0.033	0.43	0.09958592	0.06428243	0.11200031	0.07243517

TABLE
EQUATION R14 WORKSHEET - LEACHING FACTOR
SOIL COMPONENT OF GROUNDWATER INGESTION
TOLUENE(P4-A1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

$$LF_{sw} = \rho_b/[\theta_{ws}+(k_s*\rho_b)+(H'*\theta_{as})]*[1+(U_{gw}*\delta_{gw})/(I*W)]$$

k_s	=	$K_{oc} * f_{oc}$	R20
U_{gw}	=	$K * i$	R24
f_{oc}	=	0.00473	gm/gm
ρ_b	=	1.7	gm/cm3
w	=	0.3	unitless
θ_T	=	0.43	unitless
W	=	914.4	centimeters
K	=	0.000031	cm/sec
i	=	0.033	unitless
K_{oc}	=	158	L/gm
H'	=	0.271	unitless
ρ_w	=	1	gm/cm^3
δ_{gw}	=	200	centimeters
I	=	30	cm/year

LFsw (mg/L_{water})/(mg/kg_{soil})	ρ_b g/cm^3	β_1 $=\theta_{ws}+(k_s*\rho_s)+(H'*\theta_{as})$	K_{oc} cm^3/g	f_{oc} g/g	k_s cm^3_{water}/g_{soil}	H' unitless	w unitless	θ_{ws} cm^3_{water}/cm^3_{soil}
0.782514427	**1.7**	1.758798	**158**	**0.00473**	0.74734	**0.271**	0.3	0.51

θ_T uniltess	θ_{as} cm^3_{air}/cm^3_{soil}	β_2 $=1+(U_{gw}*\delta_{gw})/(I*W)$	K cm/year	i cm/cm	U_{gw} cm/year	δ_{gw} cm	I cm/year	W cm
0.43	-0.08	1.235209449	977.616	0.033	32.261328	200	30	914.4

INPUT PARAMETERS FOR TIER 2 SOIL COMPONENT TO GROUNDWATER INGESTION EVALUATION

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		TOLUENE(P5-C5-W)		
Site Name		CHAMPAIGN MGP		
Site Location		CHAMPAIGN, ILLINOIS		
FOR RBCA EQUATION - (R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, and R24)				
Constituent based parameters				
Organic carbon partition coefficient	K_{oc}	158	cm^3/g	Appendix C; Table E
Henry's constant	H'	0.271	l/gm	Appendix C; Table E
Solubility	S	530	mg/l	Appendix C; Table E
Degradation constant	λ	0.011	day^{-1}	Appendix C; Table E
Groundwater Objective	GW_{obj}	2.5	mg/l	Appendix B; Table E
Site Specific Data - Soil Zone				
Concentration of Constituent in Soil	$Soil_{(conc)}$	59.9	mg/kg	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	
Soil moisture content	***w***	0.3	unitless	
Total soil porosity - soil	θ_T	0.43	unitless	
Soil bulk density	ρ_b	1.7	gm/cm^3	
Source width in soil parallel to groundwater flow	W	90	feet	
Site Specific Data - Groundwater Zone				
Hydraulic conductivity	K	3.10E-05	cm/sec	
Groundwater gradient	*i*	0.011	unitless	
Total soil porosity - aquifer	θ_T	0.43	unitless	
Source width in groundwater perpendicular to groundwater flow direction	S_w	60	feet	
Source thickness in groundwater zone	S_d	25	feet	
Distance to point of compliance	X	1175	feet	

TABLE
EQUATION R12 WORKSHEET - SOIL COMPONENT OF GROUNDWATER INGESTION
TOLUENE(P5-C5-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R12	**RO**	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)}$	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)} * LF_{sw}$	$= GW_{source\text{-}calculated}$
R13	$\mathbf{GW_{source}}$	$= GW_{comp}/[C_{(x)}/C_{(source)}]$

Soil Source Concentration $\mathbf{Soil_{(conc)}}$ **(mg/kg)**	Leachate Factor LF_{sw} $(mg/l_{water})/(mg/kg_{soil})$	**GW Standard** $\mathbf{GW_{comp}}$ **(mg/l)**	GW_{source} $Soil_{(conc)}*LF_{sw}$ (mg/l)
59.9	0.941951882	**2.5**	56.42291775

Tier 2 Soil Remediation Objective (μg/kg) = **59900**

TABLE
EQUATION R15 WORKSHEET - STEADY STATE ATTENUATION ALONG THE CENTERLINE OF PLUME
SOIL COMPONENT OF GROUNDWATER INGESTION
TOLUENE(P5-C5-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R26 $C_{(x)} = GW_{source}*\{\exp[(X/2\alpha_x)*(1-(1+(4*\lambda*\alpha_x)/U)^{1/2})]*\mathrm{erf}[S_w/(4*(\alpha_y*X)^{1/2})]*\mathrm{erf}[S_d/(2*(\alpha_z*X)^{1/2})]\}$

α_x	=	0.10 * X	Equation R16
α_y	=	α_x/3	Equation R17
α_z	=	α_x/20	Equation R18
U	=	K*i/θ_T	Equation R19
X	=	1175	feet
K	=	0.000031	cm/sec
S_w	=	1828.8	cm
S_d	=	762	cm
i	=	0.011	unitless
$GW_{(source)}$	=	56.4229177	mg/l
θ_T	=	0.43	unitless
λ	=	0.011	day^{-1}
GW_{comp}	=	2.5	mg/l

$C_{(x)}$ (μg/l)	X (feet)	GW_{comp} (mg/l)	$C_{(x)}$ (mg/l)	X (cm)	C_{source} (mg/l)	β_3 =(X/(2α_x))	β_4 =1-[1+(4λ*α_x)/U]$^{+1/2}$	a_x (cm)	a_y (cm)	a_z (cm)	U (cm/day)	λ (day^{-1})	S_w (cm)	S_d (cm)	K (cm/day)	I (cm/cm)	θ_T (cm^3/cm^3)	β_1 =S_w/(4*[α_y*X]$^{1/2}$)	β_2 =S_d/(2*[α_z*X]$^{1/2}$)	Error Function erf(β_1)	Error Function erf(β_2)
35353.328	0.1	2.5	35.3533278	3.0	56.4	5	-0.09349658	0.3048	0.1016	0.01524	0.06851721	0.011	1828.8	762	2.6784	0.011	0.43	821.58383626	1767.76695297	1.00000000	1.00000000
22985.121	0.2	2.5	22.9851206	6.1	56.4	5	-0.17960567	0.6096	0.2032	0.03048	0.06851721	0.011	1828.8	762	2.6784	0.011	0.43	410.79191813	883.88347648	1.00000000	1.00000000
15389.117	0.3	2.5	15.3891172	9.1	56.4	5	-0.25984297	0.9144	0.3048	0.04572	0.06851721	0.011	1828.8	762	2.6784	0.011	0.43	273.86127875	589.25565099	1.00000000	1.00000000
7386.1626	0.5	2.5	7.38616263	15.2	56.4	5	-0.40665342	1.524	0.508	0.0762	0.06851721	0.011	1828.8	762	2.6784	0.011	0.43	164.31676725	353.55339059	1.00000000	1.00000000
3247.6237	0.75	2.5	3.24762368	22.9	56.4	5	-0.57099037	2.286	0.762	0.1143	0.06851721	0.011	1828.8	762	2.6784	0.011	0.43	109.54451150	235.70226040	1.00000000	1.00000000
2783.4637	0.8	2.5	2.78346373	24.4	56.4	5	-0.60183586	2.4384	0.8128	0.12192	0.06851721	0.011	1828.8	762	2.6784	0.011	0.43	102.69797953	220.97086912	1.00000000	1.00000000
2062.306	0.9	2.5	2.062306	27.4	56.4	5	-0.66181013	2.7432	0.9144	0.13716	0.06851721	0.011	1828.8	762	2.6784	0.011	0.43	91.28709292	196.41855033	1.00000000	1.00000000
1544.0442	1	2.5	1.54404424	30.5	56.4	5	-0.71969406	3.048	1.016	0.1524	0.06851721	0.011	1828.8	762	2.6784	0.011	0.43	82.15838363	176.77669530	1.00000000	1.00000000
1.978E-34	175	2.5	1.9779E-37	5334.0	56.4	5	-17.53471991	533.4	177.8	26.67	0.06851721	0.011	1828.8	762	2.6784	0.011	0.43	0.46947648	1.01015254	0.49327129	0.84687255
2.775E-37	200	2.5	2.7754E-40	6096.0	56.4	5	-18.81084385	609.6	203.2	30.48	0.06851721	0.011	1828.8	762	2.6784	0.011	0.43	0.41079192	0.88388348	0.43872416	0.78870045
1.686E-42	250	2.5	1.6858E-45	7620.0	56.4	5	-21.14355251	762	254	38.1	0.06851721	0.011	1828.8	762	2.6784	0.011	0.43	0.32863353	0.70710678	0.35789523	0.68268949
3.254E-47	300	2.5	3.2537E-50	9144.0	56.4	5	-23.25292356	914.4	304.8	45.72	0.06851721	0.011	1828.8	762	2.6784	0.011	0.43	0.27386128	0.58925565	0.30146464	0.59534324
1.517E-51	350	2.5	1.5165E-54	10668.0	56.4	5	-25.19297014	1066.8	355.6	53.34	0.06851721	0.011	1828.8	762	2.6784	0.011	0.43	0.23473824	0.50507627	0.26008809	0.52494948
1.423E-55	400	2.5	1.4233E-58	12192.0	56.4	5	-26.99891191	1219.2	406.4	60.96	0.06851721	0.011	1828.8	762	2.6784	0.011	0.43	0.20539596	0.44194174	0.22854617	0.46802894
6.364E-63	500	2.5	6.3644E-66	15240.0	56.4	5	-30.29974177	1524	508	76.2	0.06851721	0.011	1828.8	762	2.6784	0.011	0.43	0.16431677	0.35355339	0.18375634	0.38292492
1.483E-69	600	2.5	1.4833E-72	18288.0	56.4	5	-33.28423256	1828.8	609.6	91.44	0.06851721	0.011	1828.8	762	2.6784	0.011	0.43	0.13693064	0.29462783	0.15354940	0.32307776
1.206E-75	700	2.5	1.2057E-78	21336.0	56.4	5	-36.02895312	2133.6	711.2	106.68	0.06851721	0.011	1828.8	762	2.6784	0.011	0.43	0.11736912	0.25253814	0.13183125	0.27901514
9.58E-156	2750	2.5	9.582E-159	83820.0	56.4	5	-72.37374253	8382	2794	419.1	0.06851721	0.011	1828.8	762	2.6784	0.011	0.43	0.02987578	0.06428243	0.03370118	0.07243517

TABLE
EQUATION R14 WORKSHEET - LEACHING FACTOR
SOIL COMPONENT OF GROUNDWATER INGESTION
TOLUENE(P5-C5-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

$$LF_{sw} = \rho_b/[\theta_{ws}+(k_s*\rho_b)+(H'*\theta_{as})]*[1+(U_{gw}*\delta_{gw})/(I*W)]$$

k_s	=	$K_{oc} * f_{oc}$	R20
U_{gw}	=	$K * i$	R24
f_{oc}	=	0.00473	gm/gm
ρ_b	=	1.7	gm/cm3
w	=	0.3	unitless
θ_T	=	0.43	unitless
W	=	2743.2	centimeters
K	=	0.000031	cm/sec
i	=	0.011	unitless
K_{oc}	=	158	L/gm
H'	=	0.271	unitless
ρ_w	=	1	gm/cm^3
δ_{gw}	=	200	centimeters
I	=	30	cm/year

LFsw (mg/L_{water})/(mg/kg_{soil})	ρ_b g/cm^3	β_1 =$\theta_{ws}+(k_s*\rho_s)+(H'*\theta_{as})$	K_{oc} cm^3/g	f_{oc} g/g	k_s cm^3_{water}/g_{soil}	H' unitless	w unitless	θ_{ws} cm^3_{water}/cm^3_{soil}
0.941951882	**1.7**	1.758798	**158**	**0.00473**	0.74734	**0.271**	0.3	0.51

θ_T uniltess	θ_{as} cm^3_{air}/cm^3_{soil}	β_2 =$1+(U_{gw}*\delta_{gw})/(I*W)$	K cm/year	i cm/cm	U_{gw} cm/year	δ_{gw} cm	I cm/year	W cm
0.43	-0.08	1.026134383	977.616	0.011	10.753776	200	30	2743.2

INPUT PARAMETERS FOR TIER 2 SOIL COMPONENT TO GROUNDWATER INGESTION EVALUATION

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		XYLENE(P3-C1-W)		
Site Name		CHAMPAIGN MGP		
Site Location		CHAMPAIGN, ILLINOIS		
FOR RBCA EQUATION - (R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, and R24)				
Constituent based parameters				
Organic carbon partition coefficient	K_{oc}	398	cm^3/g	Appendix C; Table E
Henry's constant	H'	0.271	l/gm	Appendix C; Table E
Solubility	S	11	mg/l	Appendix C; Table E
Degradation constant	λ	0.0019	day^{-1}	Appendix C; Table E
Groundwater Objective	GW_{obj}	10	mg/l	Appendix B; Table E
Site Specific Data - Soil Zone				
Concentration of Constituent in Soil	$Soil_{(conc)}$	360	mg/kg	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	
Soil moisture content	***w***	0.3	unitless	
Total soil porosity - soil	θ_T	0.43	unitless	
Soil bulk density	ρ_b	1.7	gm/cm^3	
Source width in soil parallel to groundwater flow	W	60	feet	
Site Specific Data - Groundwater Zone				
Hydraulic conductivity	K	3.10E-05	cm/sec	
Groundwater gradient	*i*	0.036	unitless	
Total soil porosity - aquifer	θ_T	0.43	unitless	
Source width in groundwater perpendicular to groundwater flow direction	S_w	165	feet	
Source thickness in groundwater zone	S_d	25	feet	
Distance to point of compliance	X	1175	feet	

TABLE
EQUATION R12 WORKSHEET - SOIL COMPONENT OF GROUNDWATER INGESTION
XYLENE(P3-C1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R12	**RO**	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)}$	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)} * LF_{sw}$	$= GW_{source\text{-}calculated}$
R13	$\mathbf{GW_{source}}$	$= GW_{comp}/[C_{(x)}/C_{(source)}]$

Soil Source Concentration $\mathbf{Soil_{(conc)}}$ **(mg/kg)**	Leachate Factor LF_{sw} $(mg/l_{water})/(mg/kg_{soil})$	**GW Standard** $\mathbf{GW_{comp}}$ **(mg/l)**	GW_{source} $Soil_{(conc)}*LF_{sw}$ (mg/l)
360	0.408469668	**10**	147.0490806

Tier 2 Soil Remediation Objective (μg/kg) = **360000**

TABLE
EQUATION R15 WORKSHEET - STEADY STATE ATTENUATION ALONG THE CENTERLINE OF PLUME
SOIL COMPONENT OF GROUNDWATER INGESTION
XYLENE(P3-C1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R26 $C_{(x)}$ = $GW_{source}*\{\exp[(X/2\alpha_x)*(1-(1+(4*\lambda*\alpha_x)/U)^{1/2})]*erf[S_w/(4*(\alpha_y*X)^{1/2})]*erf[S_d/(2*(\alpha_z*X)^{1/2})]\}$

α_x	=	0.10 * X	Equation R16
α_y	=	$\alpha_x/3$	Equation R17
α_z	=	$\alpha_x/20$	Equation R18
U	=	$K*i/\theta_T$	Equation R19
X	=	1175	feet
K	=	0.000031	cm/sec
S_w	=	5029.2	cm
S_d	=	762	cm
i	=	0.036	unitless
$GW_{(source)}$	=	147.049081	mg/l
θ_T	=	0.43	unitless
λ	=	0.0019	day^{-1}
GW_{comp}	=	10	mg/l

$C_{(x)}$ (μg/l)	X (feet)	GW_{comp} (mg/l)	$C_{(x)}$ (mg/l)	X (cm)	C_{source} (mg/l)	β_3 =(X/(2α_x))	β_4 =1-[1+(4λ*α_x)/U]^1/2	a_x (cm)	a_y (cm)	a_z (cm)	U (cm/day)	λ (day^{-1})	S_w (cm)	S_d (cm)	K (cm/day)	I (cm/cm)	θ_T (cm^3/cm^3)	β_1 =S_w/(4*[α_y*X]^1/2)	β_2 =S_d/(2*[α_z*X]^1/2)	Error Function erf(β_1)	Error Function erf(β_2)
114302.84	1	10	114.3028357	30.5	147.0	5	-0.05038301	3.048	1.016	0.1524	0.22423814	0.0019	5029.2	762	2.6784	0.036	0.43	225.93555497	176.77669530	1.00000000	1.00000000
89880.303	2	10	89.88030297	61.0	147.0	5	-0.09845752	6.096	2.032	0.3048	0.22423814	0.0019	5029.2	762	2.6784	0.036	0.43	112.96777749	88.38834765	1.00000000	1.00000000
46219.806	5	10	46.2198062	152.4	147.0	5	-0.23147160	15.24	5.08	0.762	0.22423814	0.0019	5029.2	762	2.6784	0.036	0.43	45.18711099	35.35533906	1.00000000	1.00000000
30795.29	7	10	30.79529027	213.4	147.0	5	-0.31268093	21.336	7.112	1.0668	0.22423814	0.0019	5029.2	762	2.6784	0.036	0.43	32.27650785	25.25381361	1.00000000	1.00000000
17488.137	10	10	17.48813686	304.8	147.0	5	-0.42584873	30.48	10.16	1.524	0.22423814	0.0019	5029.2	762	2.6784	0.036	0.43	22.59355550	17.67766953	1.00000000	1.00000000
12280.718	12	10	12.28071822	365.8	147.0	5	-0.49654720	36.576	12.192	1.8288	0.22423814	0.0019	5029.2	762	2.6784	0.036	0.43	18.82796291	14.73139127	1.00000000	1.00000000
10354.326	13	10	10.35432628	396.2	147.0	5	-0.53067240	39.624	13.208	1.9812	0.22423814	0.0019	5029.2	762	2.6784	0.036	0.43	17.37965807	13.59820733	1.00000000	1.00000000
8762.6674	14	10	8.762667432	426.7	147.0	5	-0.56405321	42.672	14.224	2.1336	0.22423814	0.0019	5029.2	762	2.6784	0.036	0.43	16.13825393	12.62690681	1.00000000	1.00000000
0.0056431	175	10	5.64312E-06	5334.0	147.0	5	-3.36786911	533.4	177.8	26.67	0.22423814	0.0019	5029.2	762	2.6784	0.036	0.43	1.29106031	1.01015254	0.93212488	0.84687255
0.0011991	200	10	1.19913E-06	6096.0	147.0	5	-3.65412635	609.6	203.2	30.48	0.22423814	0.0019	5029.2	762	2.6784	0.036	0.43	1.12967777	0.88388348	0.88986923	0.78870045
6.74E-05	250	10	6.74024E-08	7620.0	147.0	5	-4.17939331	762	254	38.1	0.22423814	0.0019	5029.2	762	2.6784	0.036	0.43	0.90374222	0.70710678	0.79878037	0.68268949
4.84E-06	300	10	4.84001E-09	9144.0	147.0	5	-4.65608859	914.4	304.8	45.72	0.22423814	0.0019	5029.2	762	2.6784	0.036	0.43	0.75311852	0.58925565	0.71315594	0.59534324
4.245E-07	350	10	4.24514E-10	10668.0	147.0	5	-5.09561819	1066.8	355.6	53.34	0.22423814	0.0019	5029.2	762	2.6784	0.036	0.43	0.64553016	0.50507627	0.63871407	0.52494948
4.393E-08	400	10	4.39307E-11	12192.0	147.0	5	-5.50551951	1219.2	406.4	60.96	0.22423814	0.0019	5029.2	762	2.6784	0.036	0.43	0.56483889	0.44194174	0.57559524	0.46802894
6.985E-10	500	10	6.98467E-13	15240.0	147.0	5	-6.25618565	1524	508	76.2	0.22423814	0.0019	5029.2	762	2.6784	0.036	0.43	0.45187111	0.35355339	0.47720455	0.38292492
1.672E-11	600	10	1.67197E-14	18288.0	147.0	5	-6.93616256	1828.8	609.6	91.44	0.22423814	0.0019	5029.2	762	2.6784	0.036	0.43	0.37655926	0.29462783	0.40564464	0.32307776
5.473E-13	700	10	5.47287E-16	21336.0	147.0	5	-7.56230823	2133.6	711.2	106.68	0.22423814	0.0019	5029.2	762	2.6784	0.036	0.43	0.32276508	0.25253814	0.35193987	0.27901514
3.168E-32	2750	10	3.16759E-35	83820.0	147.0	5	-15.88452742	8382	2794	419.1	0.22423814	0.0019	5029.2	762	2.6784	0.036	0.43	0.08215838	0.06428243	0.09249764	0.07243517

TABLE
EQUATION R14 WORKSHEET - LEACHING FACTOR
SOIL COMPONENT OF GROUNDWATER INGESTION
XYLENE(P3-C1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

$$LF_{sw} = \rho_b/[\theta_{ws}+(k_s*\rho_b)+(H'*\theta_{as})]*[1+(U_{gw}*\delta_{gw})/(I*W)]$$

k_s	=	$K_{oc} * f_{oc}$	R20
U_{gw}	=	$K * i$	R24
f_{oc}	=	0.00473	gm/gm
ρ_b	=	1.7	gm/cm3
w	=	0.3	unitless
θ_T	=	0.43	unitless
W	=	1828.8	centimeters
K	=	0.000031	cm/sec
i	=	0.036	unitless
K_{oc}	=	398	L/gm
H'	=	0.271	unitless
ρ_w	=	1	gm/cm^3
δ_{gw}	=	200	centimeters
I	=	30	cm/year

LFsw (mg/L_{water})/ (mg/kg_{soil})	ρ_b g/cm^3	β_1 $=\theta_{ws}+(k_s*\rho_s)+(H'*\theta_{as})$	K_{oc} cm^3/g	f_{oc} g/g	k_s cm^3_{water}/g_{soil}	H' unitless	w unitless	θ_{ws} cm^3_{water}/cm^3_{soil}
0.408469668	**1.7**	3.688638	**398**	**0.00473**	1.88254	**0.271**	0.3	0.51

θ_T uniltess	θ_{as} cm^3_{air}/cm^3_{soil}	β_2 $=1+(U_{gw}*\delta_{gw})/(I*W)$	K cm/year	i cm/cm	U_{gw} cm/year	δ_{gw} cm	I cm/year	W cm
0.43	-0.08	1.128296063	977.616	0.036	35.194176	200	30	1828.8

INPUT PARAMETERS FOR TIER 2 SOIL COMPONENT TO GROUNDWATER INGESTION EVALUATION

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		XYLENE(P4-A1-W)		
Site Name		CHAMPAIGN MGP		
Site Location		CHAMPAIGN, ILLINOIS		
FOR RBCA EQUATION - (R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, and R24)				
Constituent based parameters				
Organic carbon partition coefficient	K_{oc}	398	cm^3/g	Appendix C; Table E
Henry's constant	H'	0.271	l/gm	Appendix C; Table E
Solubility	S	11	mg/l	Appendix C; Table E
Degradation constant	λ	0.0019	day^{-1}	Appendix C; Table E
Groundwater Objective	GW_{obj}	10	mg/l	Appendix B; Table E
Site Specific Data - Soil Zone				
Concentration of Constituent in Soil	$Soil_{(conc)}$	1681	mg/kg	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	
Soil moisture content	***w***	0.3	unitless	
Total soil porosity - soil	θ_T	0.43	unitless	
Soil bulk density	ρ_b	1.7	gm/cm^3	
Source width in soil parallel to groundwater flow	W	30	feet	
Site Specific Data - Groundwater Zone				
Hydraulic conductivity	K	3.10E-05	cm/sec	
Groundwater gradient	*i*	0.033	unitless	
Total soil porosity - aquifer	θ_T	0.43	unitless	
Source width in groundwater perpendicular to groundwater flow direction	S_w	200	feet	
Source thickness in groundwater zone	S_d	25	feet	
Distance to point of compliance	X	1175	feet	

TABLE
EQUATION R12 WORKSHEET - SOIL COMPONENT OF GROUNDWATER INGESTION
XYLENE(P4-A1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R12	**RO**	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)}$	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)} * LF_{sw}$	$= GW_{source\text{-}calculated}$
R13	$\mathbf{GW_{source}}$	$= GW_{comp}/[C_{(x)}/C_{(source)}]$

Soil Source Concentration $\mathbf{Soil_{(conc)}}$ **(mg/kg)**	Leachate Factor LF_{sw} $(mg/l_{water})/(mg/kg_{soil})$	**GW Standard** $\mathbf{GW_{comp}}$ **(mg/l)**	GW_{source} $Soil_{(conc)}*LF_{sw}$ (mg/l)
1681	0.373114632	**10**	627.2056958

Tier 2 Soil Remediation Objective (μg/kg) = **1681000**

TABLE
EQUATION R15 WORKSHEET - STEADY STATE ATTENUATION ALONG THE CENTERLINE OF PLUME
SOIL COMPONENT OF GROUNDWATER INGESTION
XYLENE(P4-A1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R26 $C_{(x)}$ = $GW_{source}*\{\exp[(X/2\alpha_x)*(1-(1+(4*\lambda*\alpha_x)/U)^{1/2})]*erf[S_w/(4*(\alpha_y*X)^{1/2})]*erf[S_d/(2*(\alpha_z*X)^{1/2})]\}$

α_x	=	0.10 * X	Equation R16
α_y	=	$\alpha_x/3$	Equation R17
α_z	=	$\alpha_x/20$	Equation R18
U	=	$K*i/\theta_T$	Equation R19
X	=	1175	feet
K	=	0.000031	cm/sec
S_w	=	6096	cm
S_d	=	762	cm
i	=	0.033	unitless
$GW_{(source)}$	=	627.205696	mg/l
θ_T	=	0.43	unitless
λ	=	0.0019	day^{-1}
GW_{comp}	=	10	mg/l

$C_{(x)}$ (μg/l)	X (feet)	GW_{comp} (mg/l)	$C_{(x)}$ (mg/l)	X (cm)	C_{source} (mg/l)	β_3 =(X/(2α_x))	β_4 =1-[1+(4λ*α_x)/U]^1/2	a_x (cm)	a_y (cm)	a_z (cm)	U (cm/day)	λ (day^{-1})	S_w (cm)	S_d (cm)	K (cm/day)	I (cm/cm)	θ_T (cm^3/cm^3)	β_1 =S_w/(4*[α_y*X]^1/2)	β_2 =S_d/(2*[α_z*X]^1/2)	Error Function erf(β_1)	Error Function erf(β_2)
476779.81	**1**	10	476.7798063	30.5	627.2	5	-0.05484396	3.048	1.016	0.1524	0.20555163	**0.0019**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	273.86127875	176.77669530	1.00000000	1.00000000
63385.044	**10**	10	63.38504447	304.8	627.2	5	-0.45840932	30.48	10.16	1.524	0.20555163	**0.0019**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	27.38612788	17.67766953	1.00000000	1.00000000
25533.704	**15**	10	25.53370407	457.2	627.2	5	-0.64025505	45.72	15.24	2.286	0.20555163	**0.0019**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	18.25741858	11.78511302	1.00000000	1.00000000
21541.81	**16**	10	21.54180954	487.7	627.2	5	-0.67425577	48.768	16.256	2.4384	0.20555163	**0.0019**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	17.11632992	11.04854346	1.00000000	1.00000000
15486.166	**18**	10	15.48616645	548.6	627.2	5	-0.74026548	54.864	18.288	2.7432	0.20555163	**0.0019**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	15.21451549	9.82092752	1.00000000	1.00000000
13190.954	**19**	10	13.19095436	579.1	627.2	5	-0.77234865	57.912	19.304	2.8956	0.20555163	**0.0019**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	14.41375151	9.30403659	1.00000000	1.00000000
11268.015	**20**	10	11.26801494	609.6	627.2	5	-0.80386127	60.96	20.32	3.048	0.20555163	**0.0019**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	13.69306394	8.83883476	1.00000000	1.00000000
9651.4747	**21**	10	9.651474749	640.1	627.2	5	-0.83483276	64.008	21.336	3.2004	0.20555163	**0.0019**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	13.04101327	8.41793787	1.00000000	1.00000000
0.0100016	**175**	10	1.00016E-05	5334.0	627.2	5	-3.55211606	533.4	177.8	26.67	0.20555163	**0.0019**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	1.56492159	1.01015254	0.97311155	0.84687255
0.002027	**200**	10	2.02705E-06	6096.0	627.2	5	-3.85171671	609.6	203.2	30.48	0.20555163	**0.0019**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	1.36930639	0.88388348	0.94719249	0.78870045
0.0001043	**250**	10	1.04274E-07	7620.0	627.2	5	-4.40129093	762	254	38.1	0.20555163	**0.0019**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	1.09544512	0.70710678	0.87866475	0.68268949
6.872E-06	**300**	10	6.8718E-09	9144.0	627.2	5	-4.89989258	914.4	304.8	45.72	0.20555163	**0.0019**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	0.91287093	0.58925565	0.80329440	0.59534324
5.542E-07	**350**	10	5.54241E-10	10668.0	627.2	5	-5.35952209	1066.8	355.6	53.34	0.20555163	**0.0019**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	0.78246080	0.50507627	0.73151868	0.52494948
5.286E-08	**400**	10	5.28638E-11	12192.0	627.2	5	-5.78810062	1219.2	406.4	60.96	0.20555163	**0.0019**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	0.68465320	0.44194174	0.66707839	0.46802894
7.196E-10	**500**	10	7.19573E-13	15240.0	627.2	5	-6.57283880	1524	508	76.2	0.20555163	**0.0019**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	0.54772256	0.35355339	0.56142197	0.38292492
1.49E-11	**600**	10	1.4899E-14	18288.0	627.2	5	-7.28356596	1828.8	609.6	91.44	0.20555163	**0.0019**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	0.45643546	0.29462783	0.48139498	0.32307776
4.258E-13	**700**	10	4.2576E-16	21336.0	627.2	5	-7.93795516	2133.6	711.2	106.68	0.20555163	**0.0019**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	0.39123040	0.25253814	0.41993059	0.27901514
3.882E-33	**2750**	10	3.88196E-36	83820.0	627.2	5	-16.63273606	8382	2794	419.1	0.20555163	**0.0019**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	0.09958592	0.06428243	0.11200031	0.07243517

TABLE
EQUATION R14 WORKSHEET - LEACHING FACTOR
SOIL COMPONENT OF GROUNDWATER INGESTION
XYLENE(P4-A1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

$$LF_{sw} = \rho_b/[\theta_{ws}+(k_s*\rho_b)+(H'*\theta_{as})]*[1+(U_{gw}*\delta_{gw})/(I*W)]$$

k_s	=	$K_{oc} * f_{oc}$	R20
U_{gw}	=	$K * i$	R24
f_{oc}	=	0.00473	gm/gm
ρ_b	=	1.7	gm/cm3
w	=	0.3	unitless
θ_T	=	0.43	unitless
W	=	914.4	centimeters
K	=	0.000031	cm/sec
i	=	0.033	unitless
K_{oc}	=	398	L/gm
H'	=	0.271	unitless
ρ_w	=	1	gm/cm^3
δ_{gw}	=	200	centimeters
I	=	30	cm/year

LFsw (mg/L_{water})/ (mg/kg_{soil})	ρ_b g/cm^3	β_1 $=\theta_{ws}+(k_s*\rho_s)+(H'*\theta_{as})$	K_{oc} cm^3/g	f_{oc} g/g	k_s cm^3_{water}/g_{soil}	H' unitless	w unitless	θ_{ws} cm^3_{water}/cm^3_{soil}
0.373114632	**1.7**	3.688638	**398**	**0.00473**	1.88254	**0.271**	0.3	0.51

θ_T uniltess	θ_{as} cm^3_{air}/cm^3_{soil}	β_2 $=1+(U_{gw}*\delta_{gw})/(I*W)$	K cm/year	i cm/cm	U_{gw} cm/year	δ_{gw} cm	I cm/year	W cm
0.43	-0.08	1.235209449	977.616	0.033	32.261328	200	30	914.4

INPUT PARAMETERS FOR TIER 2 SOIL COMPONENT TO GROUNDWATER INGESTION EVALUATION

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		BENZO(A)ANTHRACENE (P1-F35-F) NORTH		
Site Name		CHAMPAIGN MGP		
Site Location		CHAMPAIGN, ILLINOIS		
FOR RBCA EQUATION - (R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, and R24)				
Constituent based parameters				
Organic carbon partition coefficient	K_{oc}	400000	cm^3/g	Appendix C; Table E
Henry's constant	H'	0.000139	l/gm	Appendix C; Table E
Solubility	S	0.0094	mg/l	Appendix C; Table E
Degradation constant	λ	0.00051	day^{-1}	Appendix C; Table E
Groundwater Objective	GW_{obj}	0.0005	mg/l	Appendix B; Table E
Site Specific Data - Soil Zone				
Concentration of Constituent in Soil	$Soil_{(conc)}$	10.1	mg/kg	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	
Soil moisture content	***w***	0.3	unitless	
Total soil porosity - soil	θ_T	0.43	unitless	
Soil bulk density	ρ_b	1.7	gm/cm^3	
Source width in soil parallel to groundwater flow	W	30	feet	
Site Specific Data - Groundwater Zone				
Hydraulic conductivity	K	3.10E-05	cm/sec	
Groundwater gradient	*i*	0.033	unitless	
Total soil porosity - aquifer	θ_T	0.43	unitless	
Source width in groundwater perpendicular to groundwater flow direction	S_w	30	feet	
Source thickness in groundwater zone	S_d	25	feet	
Distance to point of compliance	X	1175	feet	

TABLE
EQUATION R12 WORKSHEET - SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(A)ANTHRACENE (P1-F35-F) NORTH
CHAMPAIGN MGP
CHAMPAIGN MGP

R12	**RO**	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)}$	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)} * LF_{sw}$	$= GW_{source\text{-}calculated}$
R13	$\mathbf{GW_{source}}$	$= GW_{comp}/[C_{(x)}/C_{(source)}]$

Soil Source Concentration $\mathbf{Soil_{(conc)}}$ **(mg/kg)**	Leachate Factor LF_{sw} $(mg/l_{water})/(mg/kg_{soil})$	**GW Standard** $\mathbf{GW_{comp}}$ **(mg/l)**	GW_{source} $Soil_{(conc)}*LF_{sw}$ (mg/l)
10.1	0.000427828	**0.0005**	0.004321065

Tier 2 Soil Remediation Objective (μg/kg) = **10100**

TABLE
EQUATION R15 WORKSHEET - STEADY STATE ATTENUATION ALONG THE CENTERLINE OF PLUME
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(A)ANTHRACENE (P1-F35-F) NORTH
CHAMPAIGN MGP
CHAMPAIGN MGP

R26 $C_{(x)} = GW_{source}*\{\exp[(X/2\alpha_x)*(1-(1+(4*\lambda*\alpha_x)/U)^{1/2})]*\mathrm{erf}[S_w/(4*(\alpha_y*X)^{1/2})]*\mathrm{erf}[S_d/(2*(\alpha_z*X)^{1/2})]\}$

α_x	=	0.10 * X	Equation R16
α_y	=	α_x/3	Equation R17
α_z	=	α_x/20	Equation R18
U	=	K*i/θ_T	Equation R19
X	=	1175	feet
K	=	0.000031	cm/sec
S_w	=	914.4	cm
S_d	=	762	cm
i	=	0.033	unitless
$GW_{(source)}$	=	0.00432106	mg/l
θ_T	=	0.43	unitless
λ	=	0.00051	day^{-1}
GW_{comp}	=	0.0005	mg/l

$C_{(x)}$ (μg/l)	X (feet)	GW_{comp} (mg/l)	$C_{(x)}$ (mg/l)	X (cm)	C_{source} (mg/l)	β_3 =(X/(2α_x))	β_4 =1-[1+(4λ*α_x)/U]$^{+1/2}$	a_x (cm)	a_y (cm)	a_z (cm)	U (cm/day)	λ (day^{-1})	S_w (cm)	S_d (cm)	K (cm/day)	I (cm/cm)	θ_T (cm^3/cm^3)	β_1 =S_w/(4*[α_y*X]$^{1/2}$)	β_2 =S_d/(2*[α_z*X]$^{1/2}$)	Error Function erf(β_1)	Error Function erf(β_2)
4.0085937	**1**	0.0005	0.00400859	30.5	0.0	5	-0.01501228	3.048	1.016	0.1524	0.20555163	**0.00051**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	41.07919181	176.77669530	1.00000000	1.00000000
3.7227894	**2**	0.0005	0.00372279	61.0	0.0	5	-0.02980573	6.096	2.032	0.3048	0.20555163	**0.00051**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	20.53959591	88.38834765	1.00000000	1.00000000
3.4609862	**3**	0.0005	0.00346099	91.4	0.0	5	-0.04438966	9.144	3.048	0.4572	0.20555163	**0.00051**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	13.69306394	58.92556510	1.00000000	1.00000000
3.2208273	**4**	0.0005	0.00322083	121.9	0.0	5	-0.05877272	12.192	4.064	0.6096	0.20555163	**0.00051**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	10.26979795	44.19417382	1.00000000	1.00000000
3.0002238	**5**	0.0005	0.00300022	152.4	0.0	5	-0.07296300	15.24	5.08	0.762	0.20555163	**0.00051**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	8.21583836	35.35533906	1.00000000	1.00000000
2.1321855	**10**	0.0005	0.00213219	304.8	0.0	5	-0.14127086	30.48	10.16	1.524	0.20555163	**0.00051**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	4.10791918	17.67766953	0.99999999	1.00000000
1.5446836	**15**	0.0005	0.00154468	457.2	0.0	5	-0.20571505	45.72	15.24	2.286	0.20555163	**0.00051**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	2.73861279	11.78511302	0.99989249	1.00000000
1.1335938	**20**	0.0005	0.00113359	609.6	0.0	5	-0.26688530	60.96	20.32	3.048	0.20555163	**0.00051**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	2.05395959	8.83883476	0.99632439	1.00000000
0.8327551	**25**	0.0005	0.00083276	762.0	0.0	5	-0.32523506	76.2	25.4	3.81	0.20555163	**0.00051**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	1.64316767	7.07106781	0.97986325	1.00000000
0.6087423	**30**	0.0005	0.00060874	914.4	0.0	5	-0.38112185	91.44	30.48	4.572	0.20555163	**0.00051**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	1.36930639	5.89255651	0.94719249	1.00000000
0.5364685	**32**	0.0005	0.00053647	975.4	0.0	5	-0.40285330	97.536	32.512	4.8768	0.20555163	**0.00051**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	1.28372474	5.52427173	0.93054690	1.00000000
0.5035677	**33**	0.0005	0.00050357	1005.8	0.0	5	-0.41359376	100.584	33.528	5.0292	0.20555163	**0.00051**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	1.24482399	5.35686955	0.92166795	1.00000000
0.4726761	**34**	0.0005	0.00047268	1036.3	0.0	5	-0.42425322	103.632	34.544	5.1816	0.20555163	**0.00051**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	1.20821152	5.19931457	0.91248774	1.00000000
0.0122275	**100**	0.0005	1.2227E-05	3048.0	0.0	5	-1.00623823	304.8	101.6	15.24	0.20555163	**0.00051**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	0.41079192	1.76776695	0.43872416	0.98758067
4.331E-08	**500**	0.0005	4.3308E-11	15240.0	0.0	5	-3.01558953	1524	508	76.2	0.20555163	**0.00051**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	0.08215838	0.35355339	0.09249764	0.38292492
5.025E-09	**600**	0.0005	5.0247E-12	18288.0	0.0	5	-3.37606571	1828.8	609.6	91.44	0.20555163	**0.00051**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	0.06846532	0.29462783	0.07713430	0.32307776
7.041E-10	**700**	0.0005	7.0412E-13	21336.0	0.0	5	-3.70902782	2133.6	711.2	106.68	0.20555163	**0.00051**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	0.05868456	0.25253814	0.06614250	0.27901514
9.326E-21	**2750**	0.0005	9.3256E-24	83820.0	0.0	5	-8.17536244	8382	2794	419.1	0.20555163	**0.00051**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	0.01493789	0.06428243	0.01685435	0.07243517

TABLE
EQUATION R14 WORKSHEET - LEACHING FACTOR
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(A)ANTHRACENE (P1-F35-F) NORTH
CHAMPAIGN MGP
CHAMPAIGN MGP

$LF_{sw} = \rho_b/[\theta_{ws}+(k_s*\rho_b)+(H'*\theta_{as})]*[1+(U_{gw}*\delta_{gw})/(I*W)]$

k_s	=	$K_{oc} * f_{oc}$	R20
U_{gw}	=	$K * i$	R24
f_{oc}	=	0.00473	gm/gm
ρ_b	=	1.7	gm/cm3
w	=	0.3	unitless
θ_T	=	0.43	unitless
W	=	914.4	centimeters
K	=	0.000031	cm/sec
i	=	0.033	unitless
K_{oc}	=	400000	L/gm
H'	=	0.000139	unitless
ρ_w	=	1	gm/cm^3
δ_{gw}	=	200	centimeters
I	=	30	cm/year

LFsw (mg/L_{water})/(mg/kg_{soil})	ρ_b g/cm^3	β_1 $=\theta_{ws}+(k_s*\rho_s)+(H'*\theta_{as})$	K_{oc} cm^3/g	f_{oc} g/g	k_s cm^3_{water}/g_{soil}	H' unitless	w unitless	θ_{ws} cm^3_{water}/cm^3_{soil}
0.000427828	**1.7**	3216.909989	**400000**	**0.00473**	1892	**0.000139**	0.3	0.51

θ_T uniltess	θ_{as} cm^3_{air}/cm^3_{soil}	β_2 $=1+(U_{gw}*\delta_{gw})/(I*W)$	K cm/year	i cm/cm	U_{gw} cm/year	δ_{gw} cm	I cm/year	W cm
0.43	-0.08	1.235209449	977.616	0.033	32.261328	200	30	914.4

INPUT PARAMETERS FOR TIER 2 SOIL COMPONENT TO GROUNDWATER INGESTION EVALUATION

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		BENZO(A)ANTHRACENE (P1-F3.5-F) SOUTH CHAMPAIGN MGP		
Site Name				
Site Location		CHAMPAIGN, ILLINOIS		
FOR RBCA EQUATION - (R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, and R24)				
Constituent based parameters				
Organic carbon partition coefficient	K_{oc}	400000	cm^3/g	Appendix C; Table E
Henry's constant	H'	0.000139	l/gm	Appendix C; Table E
Solubility	S	0.0094	mg/l	Appendix C; Table E
Degradation constant	λ	0.00051	day^{-1}	Appendix C; Table E
Groundwater Objective	GW_{obj}	0.0005	mg/l	Appendix B; Table E
Site Specific Data - Soil Zone				
Concentration of Constituent in Soil	$Soil_{(conc)}$	10.1	mg/kg	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	
Soil moisture content	***w***	0.3	unitless	
Total soil porosity - soil	θ_T	0.43	unitless	
Soil bulk density	ρ_b	1.7	gm/cm^3	
Source width in soil parallel to groundwater flow	W	30	feet	
Site Specific Data - Groundwater Zone				
Hydraulic conductivity	K	3.10E-05	cm/sec	
Groundwater gradient	*i*	0.02	unitless	
Total soil porosity - aquifer	θ_T	0.43	unitless	
Source width in groundwater perpendicular to groundwater flow direction	S_w	30	feet	
Source thickness in groundwater zone	S_d	25	feet	
Distance to point of compliance	X	1175	feet	

TABLE
EQUATION R12 WORKSHEET - SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(A)ANTHRACENE (P1-F3.5-F) SOUTH
CHAMPAIGN MGP
CHAMPAIGN MGP

R12	**RO**	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)}$	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)} * LF_{sw}$	$= GW_{source\text{-}calculated}$
R13	$\mathbf{GW_{source}}$	$= GW_{comp}/[C_{(x)}/C_{(source)}]$

Soil Source Concentration $\mathbf{Soil_{(conc)}}$ **(mg/kg)**	Leachate Factor LF_{sw} $(mg/l_{water})/(mg/kg_{soil})$	**GW Standard** $\mathbf{GW_{comp}}$ **(mg/l)**	GW_{source} $Soil_{(conc)}*LF_{sw}$ (mg/l)
10.1	0.000462524	**0.0005**	0.004671493

Tier 2 Soil Remediation Objective (μg/kg) = **10100**

TABLE
EQUATION R15 WORKSHEET - STEADY STATE ATTENUATION ALONG THE CENTERLINE OF PLUME
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(A)ANTHRACENE (P1-F3.5-F) SOUTH
CHAMPAIGN MGP
CHAMPAIGN MGP

R26 $C_{(x)} = GW_{source}*\{\exp[(X/2\alpha_x)*(1-(1+(4*\lambda*\alpha_x)/U)^{1/2})]*\mathrm{erf}[S_w/(4*(\alpha_y*X)^{1/2})]*\mathrm{erf}[S_d/(2*(\alpha_z*X)^{1/2})]\}$

α_x	=	0.10 * X	Equation R16
α_y	=	α_x/3	Equation R17
α_z	=	α_x/20	Equation R18
U	=	K*i/θ_T	Equation R19
X	=	1175	feet
K	=	0.000031	cm/sec
S_w	=	914.4	cm
S_d	=	762	cm
i	=	0.02	unitless
$GW_{(source)}$	=	0.00467149	mg/l
θ_T	=	0.43	unitless
λ	=	0.00051	day^{-1}
GW_{comp}	=	0.0005	mg/l

$C_{(x)}$ (μg/l)	X (feet)	GW_{comp} (mg/l)	$C_{(x)}$ (mg/l)	X (cm)	C_{source} (mg/l)	β_3 =(X/(2α_x))	β_4 =1-[1+(4λ*α_x)/U]$^{+1/2}$	a_x (cm)	a_y (cm)	a_z (cm)	U (cm/day)	λ (day^{-1})	S_w (cm)	S_d (cm)	K (cm/day)	I (cm/cm)	θ_T (cm^3/cm^3)	β_1 =S_w/(4*[α_x*X]$^{1/2}$)	β_2 =S_d/(2*[α_z*X]$^{1/2}$)	Error Function erf(β_1)	Error Function erf(β_2)
4.1297513	1	0.0005	0.00412975	30.5	0.0	5	-0.02465231	3.048	1.016	0.1524	0.12457674	0.00051	914.4	762	2.6784	0.02	0.43	41.07919181	176.77669530	1.00000000	1.00000000
3.6614247	2	0.0005	0.00366142	61.0	0.0	5	-0.04872529	6.096	2.032	0.3048	0.12457674	0.00051	914.4	762	2.6784	0.02	0.43	20.53959591	88.38834765	1.00000000	1.00000000
3.2549895	3	0.0005	0.00325499	91.4	0.0	5	-0.07225794	9.144	3.048	0.4572	0.12457674	0.00051	914.4	762	2.6784	0.02	0.43	13.69306394	58.92556510	1.00000000	1.00000000
2.9009934	4	0.0005	0.00290099	121.9	0.0	5	-0.09528511	12.192	4.064	0.6096	0.12457674	0.00051	914.4	762	2.6784	0.02	0.43	10.26979795	44.19417382	1.00000000	1.00000000
2.5916343	5	0.0005	0.00259163	152.4	0.0	5	-0.11783802	15.24	5.08	0.762	0.12457674	0.00051	914.4	762	2.6784	0.02	0.43	8.21583836	35.35533906	1.00000000	1.00000000
1.5212669	10	0.0005	0.00152127	304.8	0.0	5	-0.22438705	30.48	10.16	1.524	0.12457674	0.00051	914.4	762	2.6784	0.02	0.43	4.10791918	17.67766953	0.99999999	1.00000000
0.9319069	15	0.0005	0.00093191	457.2	0.0	5	-0.32237872	45.72	15.24	2.286	0.12457674	0.00051	914.4	762	2.6784	0.02	0.43	2.73861279	11.78511302	0.99989249	1.00000000
0.773252	17	0.0005	0.00077325	518.2	0.0	5	-0.35959928	51.816	17.272	2.5908	0.12457674	0.00051	914.4	762	2.6784	0.02	0.43	2.41642305	10.39862914	0.99936763	1.00000000
0.7054399	18	0.0005	0.00070544	548.6	0.0	5	-0.37783257	54.864	18.288	2.7432	0.12457674	0.00051	914.4	762	2.6784	0.02	0.43	2.28217732	9.82092752	0.99875117	1.00000000
0.6441052	19	0.0005	0.00064411	579.1	0.0	5	-0.39582769	57.912	19.304	2.8956	0.12457674	0.00051	914.4	762	2.6784	0.02	0.43	2.16206273	9.30403659	0.99776897	1.00000000
0.5885035	20	0.0005	0.0005885	609.6	0.0	5	-0.41359376	60.96	20.32	3.048	0.12457674	0.00051	914.4	762	2.6784	0.02	0.43	2.05395959	8.83883476	0.99632439	1.00000000
0.5379975	21	0.0005	0.000538	640.1	0.0	5	-0.43113929	64.008	21.336	3.2004	0.12457674	0.00051	914.4	762	2.6784	0.02	0.43	1.95615199	8.41793787	0.99433239	1.00000000
0.4920419	22	0.0005	0.00049204	670.6	0.0	5	-0.44847231	67.056	22.352	3.3528	0.12457674	0.00051	914.4	762	2.6784	0.02	0.43	1.86723599	8.03530433	0.99172578	1.00000000
0.001454	100	0.0005	1.454E-06	3048.0	0.0	5	-1.44770026	304.8	101.6	15.24	0.12457674	0.00051	914.4	762	2.6784	0.02	0.43	0.41079192	1.76776695	0.43872416	0.98758067
2.124E-10	500	0.0005	2.1239E-13	15240.0	0.0	5	-4.09472107	1524	508	76.2	0.12457674	0.00051	914.4	762	2.6784	0.02	0.43	0.08215838	0.35355339	0.09249764	0.38292492
1.437E-11	600	0.0005	1.4371E-14	18288.0	0.0	5	-4.56304048	1828.8	609.6	91.44	0.12457674	0.00051	914.4	762	2.6784	0.02	0.43	0.06846532	0.29462783	0.07713430	0.32307776
1.228E-12	700	0.0005	1.2283E-15	21336.0	0.0	5	-4.99488581	2133.6	711.2	106.68	0.12457674	0.00051	914.4	762	2.6784	0.02	0.43	0.05868456	0.25253814	0.06614250	0.27901514
2.481E-26	2750	0.0005	2.4811E-29	83820.0	0.0	5	-10.75835896	8382	2794	419.1	0.12457674	0.00051	914.4	762	2.6784	0.02	0.43	0.01493789	0.06428243	0.01685435	0.07243517

TABLE
EQUATION R14 WORKSHEET - LEACHING FACTOR
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(A)ANTHRACENE (P1-F3.5-F) SOUTH
CHAMPAIGN MGP
CHAMPAIGN MGP

$LF_{sw} = \rho_b/[\theta_{ws}+(k_s*\rho_b)+(H'*\theta_{as})]*[1+(U_{gw}*\delta_{gw})/(I*W)]$

k_s	=	$K_{oc} * f_{oc}$	R20
U_{gw}	=	$K * i$	R24
f_{oc}	=	0.00473	gm/gm
ρ_b	=	1.7	gm/cm3
w	=	0.3	unitless
θ_T	=	0.43	unitless
W	=	914.4	centimeters
K	=	0.000031	cm/sec
i	=	0.02	unitless
K_{oc}	=	400000	L/gm
H'	=	0.000139	unitless
ρ_w	=	1	gm/cm^3
δ_{gw}	=	200	centimeters
I	=	30	cm/year

LFsw (mg/L_{water})/(mg/kg_{soil})	ρ_b g/cm^3	β_1 $=\theta_{ws}+(k_s*\rho_s)+(H'*\theta_{as})$	K_{oc} cm^3/g	f_{oc} g/g	k_s cm^3_{water}/g_{soil}	H' unitless	w unitless	θ_{ws} cm^3_{water}/cm^3_{soil}
0.000462524	**1.7**	3216.909989	**400000**	**0.00473**	1892	**0.000139**	0.3	0.51

θ_T uniltess	θ_{as} cm^3_{air}/cm^3_{soil}	β_2 $=1+(U_{gw}*\delta_{gw})/(I*W)$	K cm/year	i cm/cm	U_{gw} cm/year	δ_{gw} cm	I cm/year	W cm
0.43	-0.08	1.142551181	977.616	0.02	19.55232	200	30	914.4

INPUT PARAMETERS FOR TIER 2 SOIL COMPONENT TO GROUNDWATER INGESTION EVALUATION

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		BENZO(A)ANTHRACENE (P1-F35-F) WEST		
Site Name		CHAMPAIGN MGP		
Site Location		CHAMPAIGN, ILLINOIS		
FOR RBCA EQUATION - (R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, and R24)				
Constituent based parameters				
Organic carbon partition coefficient	K_{oc}	400000	cm^3/g	Appendix C; Table E
Henry's constant	H'	0.000139	l/gm	Appendix C; Table E
Solubility	S	0.0094	mg/l	Appendix C; Table E
Degradation constant	λ	0.00051	day^{-1}	Appendix C; Table E
Groundwater Objective	GW_{obj}	0.0005	mg/l	Appendix B; Table E
Site Specific Data - Soil Zone				
Concentration of Constituent in Soil	$Soil_{(conc)}$	10.1	mg/kg	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	
Soil moisture content	***w***	0.3	unitless	
Total soil porosity - soil	θ_T	0.43	unitless	
Soil bulk density	ρ_b	1.7	gm/cm^3	
Source width in soil parallel to groundwater flow	W	30	feet	
Site Specific Data - Groundwater Zone				
Hydraulic conductivity	K	3.10E-05	cm/sec	
Groundwater gradient	*i*	0.036	unitless	
Total soil porosity - aquifer	θ_T	0.43	unitless	
Source width in groundwater perpendicular to groundwater flow direction	S_w	30	feet	
Source thickness in groundwater zone	S_d	25	feet	
Distance to point of compliance	X	1175	feet	

TABLE
EQUATION R12 WORKSHEET - SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(A)ANTHRACENE (P1-F35-F) WEST
CHAMPAIGN MGP
CHAMPAIGN MGP

R12	**RO**	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)}$	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)} * LF_{sw}$	$= GW_{source\text{-}calculated}$
R13	$\mathbf{GW_{source}}$	$= GW_{comp}/[C_{(x)}/C_{(source)}]$

Soil Source Concentration $\mathbf{Soil_{(conc)}}$ **(mg/kg)**	Leachate Factor LF_{sw} $(mg/l_{water})/(mg/kg_{soil})$	**GW Standard** $\mathbf{GW_{comp}}$ **(mg/l)**	GW_{source} $Soil_{(conc)}*LF_{sw}$ (mg/l)
10.1	0.000420548	**0.0005**	0.004247536

Tier 2 Soil Remediation Objective (μg/kg) = **10100**

TABLE
EQUATION R15 WORKSHEET - STEADY STATE ATTENUATION ALONG THE CENTERLINE OF PLUME
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(A)ANTHRACENE (P1-F35-F) WEST
CHAMPAIGN MGP
CHAMPAIGN MGP

R26 $C_{(x)} = GW_{source}*\{\exp[(X/2\alpha_x)*(1-(1+(4*\lambda*\alpha_x)/U)^{1/2})]*\mathrm{erf}[S_w/(4*(\alpha_y*X)^{1/2})]*\mathrm{erf}[S_d/(2*(\alpha_z*X)^{1/2})]\}$

α_x	=	0.10 * X	Equation R16
α_y	=	α_x/3	Equation R17
α_z	=	α_x/20	Equation R18
U	=	K*i/θ_T	Equation R19
X	=	1175	feet
K	=	0.000031	cm/sec
S_w	=	914.4	cm
S_d	=	762	cm
i	=	0.036	unitless
$GW_{(source)}$	=	0.00424754	mg/l
θ_T	=	0.43	unitless
λ	=	0.00051	day^{-1}
GW_{comp}	=	0.0005	mg/l

$C_{(x)}$ (μg/l)	X (feet)	GW_{comp} (mg/l)	$C_{(x)}$ (mg/l)	X (cm)	C_{source} (mg/l)	β_3 =(X/(2α_x))	β_4 =1-[1+(4λ*α_x)/U]$^{+1/2}$	a_x (cm)	a_y (cm)	a_z (cm)	U (cm/day)	λ (day^{-1})	S_w (cm)	S_d (cm)	K (cm/day)	I (cm/cm)	θ_T (cm^3/cm^3)	β_1 =S_w/(4*[α_y*X]$^{1/2}$)	β_2 =S_d/(2*[α_z*X]$^{1/2}$)	Error Function erf(β_1)	Error Function erf(β_2)
3.9649383	1	0.0005	0.00396494	30.5	0.0	5	-0.01376974	3.048	1.016	0.1524	0.22423814	0.00051	914.4	762	2.6784	0.036	0.43	41.07919181	176.77669530	1.00000000	1.00000000
2.2154913	10	0.0005	0.00221549	304.8	0.0	5	-0.13017296	30.48	10.16	1.524	0.22423814	0.00051	914.4	762	2.6784	0.036	0.43	4.10791918	17.67766953	0.99999999	1.00000000
1.6430845	15	0.0005	0.00164308	457.2	0.0	5	-0.18993125	45.72	15.24	2.286	0.22423814	0.00051	914.4	762	2.6784	0.036	0.43	2.73861279	11.78511302	0.99989249	1.00000000
1.231845	20	0.0005	0.00123185	609.6	0.0	5	-0.24682871	60.96	20.32	3.048	0.22423814	0.00051	914.4	762	2.6784	0.036	0.43	2.05395959	8.83883476	0.99632439	1.00000000
1.0981893	22	0.0005	0.00109819	670.6	0.0	5	-0.26887353	67.056	22.352	3.3528	0.22423814	0.00051	914.4	762	2.6784	0.036	0.43	1.86723599	8.03530433	0.99172578	1.00000000
0.9229256	25	0.0005	0.00092293	762.0	0.0	5	-0.30124068	76.2	25.4	3.81	0.22423814	0.00051	914.4	762	2.6784	0.036	0.43	1.64316767	7.07106781	0.97986325	1.00000000
0.6871184	30	0.0005	0.00068712	914.4	0.0	5	-0.35346694	91.44	30.48	4.572	0.22423814	0.00051	914.4	762	2.6784	0.036	0.43	1.36930639	5.89255651	0.94719249	1.00000000
0.6473397	31	0.0005	0.00064734	944.9	0.0	5	-0.36367219	94.488	31.496	4.7244	0.22423814	0.00051	914.4	762	2.6784	0.036	0.43	1.32513522	5.70247404	0.93907291	1.00000000
0.6097831	32	0.0005	0.00060978	975.4	0.0	5	-0.37380164	97.536	32.512	4.8768	0.22423814	0.00051	914.4	762	2.6784	0.036	0.43	1.28372474	5.52427173	0.93054690	1.00000000
0.5743502	33	0.0005	0.00057435	1005.8	0.0	5	-0.38385694	100.584	33.528	5.0292	0.22423814	0.00051	914.4	762	2.6784	0.036	0.43	1.24482399	5.35686955	0.92166795	1.00000000
0.5409437	34	0.0005	0.00054094	1036.3	0.0	5	-0.39383971	103.632	34.544	5.1816	0.22423814	0.00051	914.4	762	2.6784	0.036	0.43	1.20821152	5.19931457	0.91248774	1.00000000
0.5094672	35	0.0005	0.00050947	1066.8	0.0	5	-0.40375148	106.68	35.56	5.334	0.22423814	0.00051	914.4	762	2.6784	0.036	0.43	1.17369119	5.05076272	0.90305537	1.00000000
0.479826	36	0.0005	0.00047983	1097.3	0.0	5	-0.41359376	109.728	36.576	5.4864	0.22423814	0.00051	914.4	762	2.6784	0.036	0.43	1.14108866	4.91046376	0.89341683	1.00000000
0.016539	100	0.0005	1.6539E-05	3048.0	0.0	5	-0.94239780	304.8	101.6	15.24	0.22423814	0.00051	914.4	762	2.6784	0.036	0.43	0.41079192	1.76776695	0.43872416	0.98758067
9.481E-08	500	0.0005	9.4806E-11	15240.0	0.0	5	-2.85545665	1524	508	76.2	0.22423814	0.00051	914.4	762	2.6784	0.036	0.43	0.08215838	0.35355339	0.09249764	0.38292492
1.193E-08	600	0.0005	1.193E-11	18288.0	0.0	5	-3.19969704	1828.8	609.6	91.44	0.22423814	0.00051	914.4	762	2.6784	0.036	0.43	0.06846532	0.29462783	0.07713430	0.32307776
1.801E-09	700	0.0005	1.8008E-12	21336.0	0.0	5	-3.51778313	2133.6	711.2	106.68	0.22423814	0.00051	914.4	762	2.6784	0.036	0.43	0.05868456	0.25253814	0.06614250	0.27901514
6.312E-20	2750	0.0005	6.3118E-23	83820.0	0.0	5	-7.78948252	8382	2794	419.1	0.22423814	0.00051	914.4	762	2.6784	0.036	0.43	0.01493789	0.06428243	0.01685435	0.07243517

TABLE
EQUATION R14 WORKSHEET - LEACHING FACTOR
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(A)ANTHRACENE (P1-F35-F) WEST
CHAMPAIGN MGP
CHAMPAIGN MGP

$LF_{sw} = \rho_b/[\theta_{ws}+(k_s*\rho_b)+(H'*\theta_{as})]*[1+(U_{gw}*\delta_{gw})/(I*W)]$

k_s	=	$K_{oc} * f_{oc}$	R20
U_{gw}	=	$K * i$	R24
f_{oc}	=	0.00473	gm/gm
ρ_b	=	1.7	gm/cm3
w	=	0.3	unitless
θ_T	=	0.43	unitless
W	=	914.4	centimeters
K	=	0.000031	cm/sec
i	=	0.036	unitless
K_{oc}	=	400000	L/gm
H'	=	0.000139	unitless
ρ_w	=	1	gm/cm^3
δ_{gw}	=	200	centimeters
I	=	30	cm/year

LFsw	ρ_b	β_1	K_{oc}	f_{oc}	k_s	H'	w	θ_{ws}
$(mg/L_{water})/(mg/kg_{soil})$	g/cm^3	$=\theta_{ws}+(k_s*\rho_s)+(H'*\theta_{as})$	cm^3/g	g/g	cm^3_{water}/g_{soil}	unitless	unitless	cm^3_{water}/cm^3_{soil}
0.000420548	**1.7**	3216.909989	**400000**	**0.00473**	1892	**0.000139**	0.3	0.51

θ_T	θ_{as}	β_2	K	i	U_{gw}	δ_{gw}	I	W
uniltess	cm^3_{air}/cm^3_{soil}	$=1+(U_{gw}*\delta_{gw})/(I*W)$	cm/year	cm/cm	cm/year	cm	cm/year	cm
0.43	-0.08	1.256592126	977.616	0.036	35.194176	200	30	914.4

INPUT PARAMETERS FOR TIER 2 SOIL COMPONENT TO GROUNDWATER INGESTION EVALUATION

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		BENZO(A)ANTHRACENE (P3-C1-W)		
Site Name		CHAMPAIGN MGP		
Site Location		CHAMPAIGN, ILLINOIS		
FOR RBCA EQUATION - (R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, and R24)				
Constituent based parameters				
Organic carbon partition coefficient	K_{oc}	400000	cm^3/g	Appendix C; Table E
Henry's constant	H'	0.000139	l/gm	Appendix C; Table E
Solubility	S	0.0094	mg/l	Appendix C; Table E
Degradation constant	λ	0.00051	day^{-1}	Appendix C; Table E
Groundwater Objective	GW_{obj}	0.0005	mg/l	Appendix B; Table E
Site Specific Data - Soil Zone				
Concentration of Constituent in Soil	$Soil_{(conc)}$	53.7	mg/kg	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	
Soil moisture content	***w***	0.3	unitless	
Total soil porosity - soil	θ_T	0.43	unitless	
Soil bulk density	ρ_b	1.7	gm/cm^3	
Source width in soil parallel to groundwater flow	W	60	feet	
Site Specific Data - Groundwater Zone				
Hydraulic conductivity	K	3.10E-05	cm/sec	
Groundwater gradient	*i*	0.036	unitless	
Total soil porosity - aquifer	θ_T	0.43	unitless	
Source width in groundwater perpendicular to groundwater flow direction	S_w	165	feet	
Source thickness in groundwater zone	S_d	25	feet	
Distance to point of compliance	X	1175	feet	

TABLE
EQUATION R12 WORKSHEET - SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(A)ANTHRACENE (P3-C1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R12	**RO**	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)}$	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)} * LF_{sw}$	$= GW_{source\text{-}calculated}$
R13	$\mathbf{GW_{source}}$	$= GW_{comp}/[C_{(x)}/C_{(source)}]$

Soil Source Concentration $\mathbf{Soil_{(conc)}}$ **(mg/kg)**	Leachate Factor LF_{sw} $(mg/l_{water})/(mg/kg_{soil})$	**GW Standard** $\mathbf{GW_{comp}}$ **(mg/l)**	GW_{source} $Soil_{(conc)}*LF_{sw}$ (mg/l)
53.7	0.000468368	**0.0005**	0.025151346

Tier 2 Soil Remediation Objective (μg/kg) = **53700**

TABLE
EQUATION R15 WORKSHEET - STEADY STATE ATTENUATION ALONG THE CENTERLINE OF PLUME
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(A)ANTHRACENE (P3-C1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R26 $C_{(x)} = GW_{source}*\{\exp[(X/2\alpha_x)*(1-(1+(4*\lambda*\alpha_x)/U)^{1/2})]*\mathrm{erf}[S_w/(4*(\alpha_y*X)^{1/2})]*\mathrm{erf}[S_d/(2*(\alpha_z*X)^{1/2})]\}$

α_x	=	0.10 * X	Equation R16
α_y	=	α_x/3	Equation R17
α_z	=	α_x/20	Equation R18
U	=	K*i/θ_T	Equation R19
X	=	1175	feet
K	=	0.000031	cm/sec
S_w	=	5029.2	cm
S_d	=	762	cm
i	=	0.036	unitless
$GW_{(source)}$	=	0.02515135	mg/l
θ_T	=	0.43	unitless
λ	=	0.00051	day^{-1}
GW_{comp}	=	0.0005	mg/l

$C_{(x)}$ (μg/l)	X (feet)	GW_{comp} (mg/l)	$C_{(x)}$ (mg/l)	X (cm)	C_{source} (mg/l)	β_3 =(X/(2α_x))	β_4 =1-[1+(4λ*α_x)/U]$^{+1/2}$	a_x (cm)	a_y (cm)	a_z (cm)	U (cm/day)	λ (day^{-1})	S_w (cm)	S_d (cm)	K (cm/day)	I (cm/cm)	θ_T (cm^3/cm^3)	β_1 =S_w/(4*[α_x*X]$^{1/2}$)	β_2 =S_d/(2*[α_z*X]$^{1/2}$)	Error Function erf(β_1)	Error Function erf(β_2)
23.477973	**1**	0.0005	0.02347797	30.5	0.0	5	-0.01376974	3.048	1.016	0.1524	0.22423814	**0.00051**	**5029.2**	**762**	**2.6784**	**0.036**	**0.43**	225.93555497	176.77669530	1.00000000	1.00000000
13.118804	**10**	0.0005	0.0131188	304.8	0.0	5	-0.13017296	30.48	10.16	1.524	0.22423814	**0.00051**	**5029.2**	**762**	**2.6784**	**0.036**	**0.43**	22.59355550	17.67766953	1.00000000	1.00000000
9.7304014	**15**	0.0005	0.0097304	457.2	0.0	5	-0.18993125	45.72	15.24	2.286	0.22423814	**0.00051**	**5029.2**	**762**	**2.6784**	**0.036**	**0.43**	15.06237033	11.78511302	1.00000000	1.00000000
7.321153	**20**	0.0005	0.00732115	609.6	0.0	5	-0.24682871	60.96	20.32	3.048	0.22423814	**0.00051**	**5029.2**	**762**	**2.6784**	**0.036**	**0.43**	11.29677775	8.83883476	1.00000000	1.00000000
5.577318	**25**	0.0005	0.00557732	762.0	0.0	5	-0.30124068	76.2	25.4	3.81	0.22423814	**0.00051**	**5029.2**	**762**	**2.6784**	**0.036**	**0.43**	9.03742220	7.07106781	1.00000000	1.00000000
4.2955375	**30**	0.0005	0.00429554	914.4	0.0	5	-0.35346694	91.44	30.48	4.572	0.22423814	**0.00051**	**5029.2**	**762**	**2.6784**	**0.036**	**0.43**	7.53118517	5.89255651	1.00000000	1.00000000
3.3406119	**35**	0.0005	0.00334061	1066.8	0.0	5	-0.40375148	106.68	35.56	5.334	0.22423814	**0.00051**	**5029.2**	**762**	**2.6784**	**0.036**	**0.43**	6.45530157	5.05076272	1.00000000	1.00000000
2.6206736	**40**	0.0005	0.00262067	1219.2	0.0	5	-0.45229600	121.92	40.64	6.096	0.22423814	**0.00051**	**5029.2**	**762**	**2.6784**	**0.036**	**0.43**	5.64838887	4.41941738	1.00000000	1.00000000
1.6500966	**50**	0.0005	0.0016501	1524.0	0.0	5	-0.54481539	152.4	50.8	7.62	0.22423814	**0.00051**	**5029.2**	**762**	**2.6784**	**0.036**	**0.43**	4.51871110	3.53553391	1.00000000	0.99999943
0.5766737	**75**	0.0005	0.00057667	2286.0	0.0	5	-0.75490225	228.6	76.2	11.43	0.22423814	**0.00051**	**5029.2**	**762**	**2.6784**	**0.036**	**0.43**	3.01247407	2.35702260	0.99997958	0.99914188
0.5328831	**77**	0.0005	0.00053288	2347.0	0.0	5	-0.77063268	234.696	78.232	11.7348	0.22423814	**0.00051**	**5029.2**	**762**	**2.6784**	**0.036**	**0.43**	2.93422799	2.29580124	0.99996670	0.99883270
0.5123691	**78**	0.0005	0.00051237	2377.4	0.0	5	-0.77844572	237.744	79.248	11.8872	0.22423814	**0.00051**	**5029.2**	**762**	**2.6784**	**0.036**	**0.43**	2.89660968	2.26636789	0.99995804	0.99864998
0.492718	**79**	0.0005	0.00049272	2407.9	0.0	5	-0.78622458	240.792	80.264	12.0396	0.22423814	**0.00051**	**5029.2**	**762**	**2.6784**	**0.036**	**0.43**	2.85994373	2.23767969	0.99994758	0.99844681
0.2229132	**100**	0.0005	0.00022291	3048.0	0.0	5	-0.94239780	304.8	101.6	15.24	0.22423814	**0.00051**	**5029.2**	**762**	**2.6784**	**0.036**	**0.43**	2.25935555	1.76776695	0.99860271	0.98758067
2.896E-06	**500**	0.0005	2.8962E-09	15240.0	0.0	5	-2.85545665	1524	508	76.2	0.22423814	**0.00051**	**5029.2**	**762**	**2.6784**	**0.036**	**0.43**	0.45187111	0.35355339	0.47720455	0.38292492
3.715E-07	**600**	0.0005	3.715E-10	18288.0	0.0	5	-3.19969704	1828.8	609.6	91.44	0.22423814	**0.00051**	**5029.2**	**762**	**2.6784**	**0.036**	**0.43**	0.37655926	0.29462783	0.40564464	0.32307776
5.674E-08	**700**	0.0005	5.674E-11	21336.0	0.0	5	-3.51778313	2133.6	711.2	106.68	0.22423814	**0.00051**	**5029.2**	**762**	**2.6784**	**0.036**	**0.43**	0.32276508	0.25253814	0.35193987	0.27901514
2.051E-18	**2750**	0.0005	2.0511E-21	83820.0	0.0	5	-7.78948252	8382	2794	419.1	0.22423814	**0.00051**	**5029.2**	**762**	**2.6784**	**0.036**	**0.43**	0.08215838	0.06428243	0.09249764	0.07243517

TABLE
EQUATION R14 WORKSHEET - LEACHING FACTOR
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(A)ANTHRACENE (P3-C1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

$LF_{sw} = \rho_b/[\theta_{ws}+(k_s*\rho_b)+(H'*\theta_{as})]*[1+(U_{gw}*\delta_{gw})/(I*W)]$

k_s	=	$K_{oc} * f_{oc}$	R20
U_{gw}	=	$K * i$	R24
f_{oc}	=	0.00473	gm/gm
ρ_b	=	1.7	gm/cm3
w	=	0.3	unitless
θ_T	=	0.43	unitless
W	=	1828.8	centimeters
K	=	0.000031	cm/sec
i	=	0.036	unitless
K_{oc}	=	400000	L/gm
H'	=	0.000139	unitless
ρ_w	=	1	gm/cm^3
δ_{gw}	=	200	centimeters
I	=	30	cm/year

LFsw (mg/L_{water})/(mg/kg_{soil})	ρ_b g/cm^3	β_1 $=\theta_{ws}+(k_s*\rho_s)+(H'*\theta_{as})$	K_{oc} cm^3/g	f_{oc} g/g	k_s cm^3_{water}/g_{soil}	H' unitless	w unitless	θ_{ws} cm^3_{water}/cm^3_{soil}
0.000468368	**1.7**	3216.909989	**400000**	**0.00473**	1892	**0.000139**	0.3	0.51

θ_T uniltess	θ_{as} cm^3_{air}/cm^3_{soil}	β_2 $=1+(U_{gw}*\delta_{gw})/(I*W)$	K cm/year	i cm/cm	U_{gw} cm/year	δ_{gw} cm	I cm/year	W cm
0.43	-0.08	1.128296063	977.616	0.036	35.194176	200	30	1828.8

INPUT PARAMETERS FOR TIER 2 SOIL COMPONENT TO GROUNDWATER INGESTION EVALUATION

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		BENZO(A)ANTHRACENE (P4-A1-W)		
Site Name		CHAMPAIGN MGP		
Site Location		CHAMPAIGN, ILLINOIS		
FOR RBCA EQUATION - (R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, and R24)				
Constituent based parameters				
Organic carbon partition coefficient	K_{oc}	400000	cm^3/g	Appendix C; Table E
Henry's constant	H'	0.000139	l/gm	Appendix C; Table E
Solubility	S	0.0094	mg/l	Appendix C; Table E
Degradation constant	λ	0.00051	day^{-1}	Appendix C; Table E
Groundwater Objective	GW_{obj}	0.0005	mg/l	Appendix B; Table E
Site Specific Data - Soil Zone				
Concentration of Constituent in Soil	$Soil_{(conc)}$	75.4	mg/kg	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	
Soil moisture content	***w***	0.3	unitless	
Total soil porosity - soil	θ_T	0.43	unitless	
Soil bulk density	ρ_b	1.7	gm/cm^3	
Source width in soil parallel to groundwater flow	W	30	feet	
Site Specific Data - Groundwater Zone				
Hydraulic conductivity	K	3.10E-05	cm/sec	
Groundwater gradient	*i*	0.033	unitless	
Total soil porosity - aquifer	θ_T	0.43	unitless	
Source width in groundwater perpendicular to groundwater flow direction	S_w	200	feet	
Source thickness in groundwater zone	S_d	25	feet	
Distance to point of compliance	X	1175	feet	

TABLE
EQUATION R12 WORKSHEET - SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(A)ANTHRACENE (P4-A1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R12	**RO**	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)}$	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)} * LF_{sw}$	$= GW_{source\text{-}calculated}$
R13	$\mathbf{GW_{source}}$	$= GW_{comp}/[C_{(x)}/C_{(source)}]$

Soil Source Concentration $\mathbf{Soil_{(conc)}}$ **(mg/kg)**	Leachate Factor LF_{sw} $(mg/l_{water})/(mg/kg_{soil})$	**GW Standard** $\mathbf{GW_{comp}}$ **(mg/l)**	GW_{source} $Soil_{(conc)}*LF_{sw}$ (mg/l)
75.4	0.000427828	**0.0005**	0.032258246

Tier 2 Soil Remediation Objective (μg/kg) = **75400**

TABLE
EQUATION R15 WORKSHEET - STEADY STATE ATTENUATION ALONG THE CENTERLINE OF PLUME
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(A)ANTHRACENE (P4-A1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R26 $C_{(x)} = GW_{source}*\{\exp[(X/2\alpha_x)*(1-(1+(4*\lambda*\alpha_x)/U)^{1/2})]*\mathrm{erf}[S_w/(4*(\alpha_y*X)^{1/2})]*\mathrm{erf}[S_d/(2*(\alpha_z*X)^{1/2})]\}$

α_x	=	0.10 * X	Equation R16
α_y	=	α_x/3	Equation R17
α_z	=	α_x/20	Equation R18
U	=	K*i/θ_T	Equation R19
X	=	1175	feet
K	=	0.000031	cm/sec
S_w	=	6096	cm
S_d	=	762	cm
i	=	0.033	unitless
$GW_{(source)}$	=	0.03225825	mg/l
θ_T	=	0.43	unitless
λ	=	0.00051	day^{-1}
GW_{comp}	=	0.0005	mg/l

$C_{(x)}$ (μg/l)	X (feet)	GW_{comp} (mg/l)	$C_{(x)}$ (mg/l)	X (cm)	C_{source} (mg/l)	β_3 =(X/(2α_x))	β_4 =1-[1+(4λ*α_x)/U]$^{+1/2}$	a_x (cm)	a_y (cm)	a_z (cm)	U (cm/day)	λ (day^{-1})	S_w (cm)	S_d (cm)	K (cm/day)	I (cm/cm)	θ_T (cm^3/cm^3)	β_1 =S_w/(4*[α_x*X]$^{1/2}$)	β_2 =S_d/(2*[α_z*X]$^{1/2}$)	Error Function erf(β_1)	Error Function erf(β_2)
29.925541	**1**	0.0005	0.02992554	30.5	0.0	5	-0.01501228	3.048	1.016	0.1524	0.20555163	**0.00051**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	273.86127875	176.77669530	1.00000000	1.00000000
15.917504	**10**	0.0005	0.0159175	304.8	0.0	5	-0.14127086	30.48	10.16	1.524	0.20555163	**0.00051**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	27.38612788	17.67766953	1.00000000	1.00000000
11.532838	**15**	0.0005	0.01153284	457.2	0.0	5	-0.20571505	45.72	15.24	2.286	0.20555163	**0.00051**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	18.25741858	11.78511302	1.00000000	1.00000000
6.3445642	**25**	0.0005	0.00634456	762.0	0.0	5	-0.32523506	76.2	25.4	3.81	0.20555163	**0.00051**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	10.95445115	7.07106781	1.00000000	1.00000000
4.7978336	**30**	0.0005	0.00479783	914.4	0.0	5	-0.38112185	91.44	30.48	4.572	0.20555163	**0.00051**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	9.12870929	5.89255651	1.00000000	1.00000000
2.831325	**40**	0.0005	0.00283133	1219.2	0.0	5	-0.48660578	121.92	40.64	6.096	0.20555163	**0.00051**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	6.84653197	4.41941738	1.00000000	1.00000000
1.7303883	**50**	0.0005	0.00173039	1524.0	0.0	5	-0.58508546	152.4	50.8	7.62	0.20555163	**0.00051**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	5.47722558	3.53553391	1.00000000	0.99999943
1.0884658	**60**	0.0005	0.00108847	1828.8	0.0	5	-0.67779472	182.88	60.96	9.144	0.20555163	**0.00051**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	4.56435465	2.94627825	1.00000000	0.99996909
0.8713244	**65**	0.0005	0.00087132	1981.2	0.0	5	-0.72227893	198.12	66.04	9.906	0.20555163	**0.00051**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	4.21325044	2.71964147	1.00000000	0.99988001
0.7013171	**70**	0.0005	0.00070132	2133.6	0.0	5	-0.76564274	213.36	71.12	10.668	0.20555163	**0.00051**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	3.91230398	2.52538136	0.99999997	0.99964496
0.5672705	**75**	0.0005	0.00056727	2286.0	0.0	5	-0.80796678	228.6	76.2	11.43	0.20555163	**0.00051**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	3.65148372	2.35702260	0.99999976	0.99914188
0.5440048	**76**	0.0005	0.000544	2316.5	0.0	5	-0.81631325	231.648	77.216	11.5824	0.20555163	**0.00051**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	3.60343788	2.32600915	0.99999965	0.99899625
0.4802686	**79**	0.0005	0.00048027	2407.9	0.0	5	-0.84112562	240.792	80.264	12.0396	0.20555163	**0.00051**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	3.46659847	2.23767969	0.99999905	0.99844681
0.2080406	**100**	0.0005	0.00020804	3048.0	0.0	5	-1.00623823	304.8	101.6	15.24	0.20555163	**0.00051**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	2.73861279	1.76776695	0.99989249	0.98758067
1.962E-06	**500**	0.0005	1.9623E-09	15240.0	0.0	5	-3.01558953	1524	508	76.2	0.20555163	**0.00051**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	0.54772256	0.35355339	0.56142197	0.38292492
2.341E-07	**600**	0.0005	2.3411E-10	18288.0	0.0	5	-3.37606571	1828.8	609.6	91.44	0.20555163	**0.00051**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	0.45643546	0.29462783	0.48139498	0.32307776
3.337E-08	**700**	0.0005	3.3373E-11	21336.0	0.0	5	-3.70902782	2133.6	711.2	106.68	0.20555163	**0.00051**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	0.39123040	0.25253814	0.41993059	0.27901514
4.626E-19	**2750**	0.0005	4.6263E-22	83820.0	0.0	5	-8.17536244	8382	2794	419.1	0.20555163	**0.00051**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	0.09958592	0.06428243	0.11200031	0.07243517

TABLE
EQUATION R14 WORKSHEET - LEACHING FACTOR
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(A)ANTHRACENE (P4-A1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

$LF_{sw} = \rho_b/[\theta_{ws}+(k_s*\rho_b)+(H'*\theta_{as})]*[1+(U_{gw}*\delta_{gw})/(I*W)]$

k_s	=	$K_{oc} * f_{oc}$	R20
U_{gw}	=	$K * i$	R24
f_{oc}	=	0.00473	gm/gm
ρ_b	=	1.7	gm/cm3
w	=	0.3	unitless
θ_T	=	0.43	unitless
W	=	914.4	centimeters
K	=	0.000031	cm/sec
i	=	0.033	unitless
K_{oc}	=	400000	L/gm
H'	=	0.000139	unitless
ρ_w	=	1	gm/cm^3
δ_{gw}	=	200	centimeters
I	=	30	cm/year

LFsw (mg/L_{water})/(mg/kg_{soil})	ρ_b g/cm^3	β_1 $=\theta_{ws}+(k_s*\rho_s)+(H'*\theta_{as})$	K_{oc} cm^3/g	f_{oc} g/g	k_s cm^3_{water}/g_{soil}	H' unitless	w unitless	θ_{ws} cm^3_{water}/cm^3_{soil}
0.000427828	**1.7**	3216.909989	**400000**	**0.00473**	1892	**0.000139**	0.3	0.51

θ_T uniltess	θ_{as} cm^3_{air}/cm^3_{soil}	β_2 $=1+(U_{gw}*\delta_{gw})/(I*W)$	K cm/year	i cm/cm	U_{gw} cm/year	δ_{gw} cm	I cm/year	W cm
0.43	-0.08	1.235209449	977.616	0.033	32.261328	200	30	914.4

INPUT PARAMETERS FOR TIER 2 SOIL COMPONENT TO GROUNDWATER INGESTION EVALUATION

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		BENZO(A)ANTHRACENE (P5-A5.5-W)		
Site Name		CHAMPAIGN MGP		
Site Location		CHAMPAIGN, ILLINOIS		
FOR RBCA EQUATION - (R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, and R24)				
Constituent based parameters				
Organic carbon partition coefficient	K_{oc}	400000	cm^3/g	Appendix C; Table E
Henry's constant	H'	0.000139	l/gm	Appendix C; Table E
Solubility	S	0.0094	mg/l	Appendix C; Table E
Degradation constant	λ	0.00051	day^{-1}	Appendix C; Table E
Groundwater Objective	GW_{obj}	0.0005	mg/l	Appendix B; Table E
Site Specific Data - Soil Zone				
Concentration of Constituent in Soil	$Soil_{(conc)}$	7.36	mg/kg	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	
Soil moisture content	***w***	0.3	unitless	
Total soil porosity - soil	θ_T	0.43	unitless	
Soil bulk density	ρ_b	1.7	gm/cm^3	
Source width in soil parallel to groundwater flow	W	90	feet	
Site Specific Data - Groundwater Zone				
Hydraulic conductivity	K	3.10E-05	cm/sec	
Groundwater gradient	*i*	0.011	unitless	
Total soil porosity - aquifer	θ_T	0.43	unitless	
Source width in groundwater perpendicular to groundwater flow direction	S_w	60	feet	
Source thickness in groundwater zone	S_d	25	feet	
Distance to point of compliance	X	1175	feet	

TABLE
EQUATION R12 WORKSHEET - SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(A)ANTHRACENE (P5-A5.5-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R12	**RO**	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)}$	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)} * LF_{sw}$	$= GW_{source\text{-}calculated}$
R13	$\mathbf{GW_{source}}$	$= GW_{comp}/[C_{(x)}/C_{(source)}]$

Soil Source Concentration $\mathbf{Soil_{(conc)}}$ **(mg/kg)**	Leachate Factor LF_{sw} $(mg/l_{water})/(mg/kg_{soil})$	**GW Standard** $\mathbf{GW_{comp}}$ **(mg/l)**	GW_{source} $Soil_{(conc)}*LF_{sw}$ (mg/l)
7.36	0.000514998	**0.0005**	0.003790387

Tier 2 Soil Remediation Objective (μg/kg) = **7360**

TABLE
EQUATION R15 WORKSHEET - STEADY STATE ATTENUATION ALONG THE CENTERLINE OF PLUME
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(A)ANTHRACENE (P5-A5.5-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R26 $C_{(x)} = GW_{source}*\{\exp[(X/2\alpha_x)*(1-(1+(4*\lambda*\alpha_x)/U)^{1/2})]*\mathrm{erf}[S_w/(4*(\alpha_y*X)^{1/2})]*\mathrm{erf}[S_d/(2*(\alpha_z*X)^{1/2})]\}$

α_x	=	0.10 * X	Equation R16
α_y	=	α_x/3	Equation R17
α_z	=	α_x/20	Equation R18
U	=	K*i/θ_T	Equation R19
X	=	1175	feet
K	=	0.000031	cm/sec
S_w	=	1828.8	cm
S_d	=	762	cm
i	=	0.011	unitless
$GW_{(source)}$	=	0.00379039	mg/l
θ_T	=	0.43	unitless
λ	=	0.00051	day^{-1}
GW_{comp}	=	0.0005	mg/l

$C_{(x)}$ (μg/l)	X (feet)	GW_{comp} (mg/l)	$C_{(x)}$ (mg/l)	X (cm)	C_{source} (mg/l)	β_3 =(X/(2α_x))	β_4 =1-[1+(4λ*α_x)/U]$^{+1/2}$	a_x (cm)	a_y (cm)	a_z (cm)	U (cm/day)	λ (day^{-1})	S_w (cm)	S_d (cm)	K (cm/day)	I (cm/cm)	θ_T (cm^3/cm^3)	β_1 =S_w/(4*[α_y*X]$^{1/2}$)	β_2 =S_d/(2*[α_z*X]$^{1/2}$)	Error Function erf(β_1)	Error Function erf(β_2)
3.0359364	1	0.0005	0.00303594	30.5	0.0	5	-0.04438966	3.048	1.016	0.1524	0.06851721	0.00051	1828.8	762	2.6784	0.011	0.43	82.15838363	176.77669530	1.00000000	1.00000000
2.4537759	2	0.0005	0.00245378	61.0	0.0	5	-0.08696804	6.096	2.032	0.3048	0.06851721	0.00051	1828.8	762	2.6784	0.011	0.43	41.07919181	88.38834765	1.00000000	1.00000000
1.9992394	3	0.0005	0.00199924	91.4	0.0	5	-0.12794028	9.144	3.048	0.4572	0.06851721	0.00051	1828.8	762	2.6784	0.011	0.43	27.38612788	58.92556510	1.00000000	1.00000000
1.6406471	4	0.0005	0.00164065	121.9	0.0	5	-0.16747549	12.192	4.064	0.6096	0.06851721	0.00051	1828.8	762	2.6784	0.011	0.43	20.53959591	44.19417382	1.00000000	1.00000000
1.355124	5	0.0005	0.00135512	152.4	0.0	5	-0.20571505	15.24	5.08	0.762	0.06851721	0.00051	1828.8	762	2.6784	0.011	0.43	16.43167673	35.35533906	1.00000000	1.00000000
0.5637519	10	0.0005	0.00056375	304.8	0.0	5	-0.38112185	30.48	10.16	1.524	0.06851721	0.00051	1828.8	762	2.6784	0.011	0.43	8.21583836	17.67766953	1.00000000	1.00000000
0.4792655	11	0.0005	0.00047927	335.3	0.0	5	-0.41359376	33.528	11.176	1.6764	0.06851721	0.00051	1828.8	762	2.6784	0.011	0.43	7.46894397	16.07060866	1.00000000	1.00000000
0.0001531	87	0.0005	1.5308E-07	2651.8	0.0	5	-1.98248701	265.176	88.392	13.2588	0.06851721	0.00051	1828.8	762	2.6784	0.011	0.43	0.94434924	2.03191604	0.81829101	0.99594130
0.000141	88	0.0005	1.4096E-07	2682.2	0.0	5	-1.99766217	268.224	89.408	13.4112	0.06851721	0.00051	1828.8	762	2.6784	0.011	0.43	0.93361800	2.00882608	0.81327688	0.99550149
5.371E-05	100	0.0005	5.3706E-08	3048.0	0.0	5	-2.17411020	304.8	101.6	15.24	0.06851721	0.00051	1828.8	762	2.6784	0.011	0.43	0.82158384	1.76776695	0.75472188	0.98758067
6.456E-14	500	0.0005	6.4562E-17	15240.0	0.0	5	-5.80991026	1524	508	76.2	0.06851721	0.00051	1828.8	762	2.6784	0.011	0.43	0.16431677	0.35355339	0.18375634	0.38292492
1.888E-15	600	0.0005	1.8876E-18	18288.0	0.0	5	-6.44646583	1828.8	609.6	91.44	0.06851721	0.00051	1828.8	762	2.6784	0.011	0.43	0.13693064	0.29462783	0.15354940	0.32307776
7.463E-17	700	0.0005	7.4635E-20	21336.0	0.0	5	-7.03273484	2133.6	711.2	106.68	0.06851721	0.00051	1828.8	762	2.6784	0.011	0.43	0.11736912	0.25253814	0.13183125	0.27901514
5.824E-35	2750	0.0005	5.8237E-38	83820.0	0.0	5	-14.82914489	8382	2794	419.1	0.06851721	0.00051	1828.8	762	2.6784	0.011	0.43	0.02987578	0.06428243	0.03370118	0.07243517

TABLE
EQUATION R14 WORKSHEET - LEACHING FACTOR
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(A)ANTHRACENE (P5-A5.5-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

$$LF_{sw} = \rho_b/[\theta_{ws}+(k_s*\rho_b)+(H'*\theta_{as})]*[1+(U_{gw}*\delta_{gw})/(I*W)]$$

k_s	=	$K_{oc} * f_{oc}$	R20
U_{gw}	=	$K * i$	R24
f_{oc}	=	0.00473	gm/gm
ρ_b	=	1.7	gm/cm3
w	=	0.3	unitless
θ_T	=	0.43	unitless
W	=	2743.2	centimeters
K	=	0.000031	cm/sec
i	=	0.011	unitless
K_{oc}	=	400000	L/gm
H'	=	0.000139	unitless
ρ_w	=	1	gm/cm^3
δ_{gw}	=	200	centimeters
I	=	30	cm/year

LFsw	ρ_b	β_1	K_{oc}	f_{oc}	k_s	H'	w	θ_{ws}
$(mg/L_{water})/(mg/kg_{soil})$	g/cm^3	$=\theta_{ws}+(k_s*\rho_s)+(H'*\theta_{as})$	cm^3/g	g/g	cm^3_{water}/g_{soil}	unitless	unitless	cm^3_{water}/cm^3_{soil}
0.000514998	**1.7**	3216.909989	**400000**	**0.00473**	1892	**0.000139**	0.3	0.51

θ_T	θ_{as}	β_2	K	i	U_{gw}	δ_{gw}	I	W
uniltess	cm^3_{air}/cm^3_{soil}	$=1+(U_{gw}*\delta_{gw})/(I*W)$	cm/year	cm/cm	cm/year	cm	cm/year	cm
0.43	-0.08	1.026134383	977.616	0.011	10.753776	200	30	2743.2

INPUT PARAMETERS FOR TIER 2 SOIL COMPONENT TO GROUNDWATER INGESTION EVALUATION

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		BENZO(A)ANTHRACENE (P3-C1-W)		
Site Name		CHAMPAIGN MGP		
Site Location		CHAMPAIGN, ILLINOIS		
FOR RBCA EQUATION - (R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, and R24)				
Constituent based parameters				
Organic carbon partition coefficient	K_{oc}	400000	cm^3/g	Appendix C; Table E
Henry's constant	H'	0.000139	l/gm	Appendix C; Table E
Solubility	S	0.0094	mg/l	Appendix C; Table E
Degradation constant	λ	0.00051	day^{-1}	Appendix C; Table E
Groundwater Objective	GW_{obj}	0.0005	mg/l	Appendix B; Table E
Site Specific Data - Soil Zone				
Concentration of Constituent in Soil	$Soil_{(conc)}$	15.3	mg/kg	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	
Soil moisture content	***w***	0.3	unitless	
Total soil porosity - soil	θ_T	0.43	unitless	
Soil bulk density	ρ_b	1.7	gm/cm^3	
Source width in soil parallel to groundwater flow	W	20	feet	
Site Specific Data - Groundwater Zone				
Hydraulic conductivity	K	3.10E-05	cm/sec	
Groundwater gradient	*i*	0.02	unitless	
Total soil porosity - aquifer	θ_T	0.43	unitless	
Source width in groundwater perpendicular to groundwater flow direction	S_w	60	feet	
Source thickness in groundwater zone	S_d	25	feet	
Distance to point of compliance	X	1175	feet	

TABLE
EQUATION R12 WORKSHEET - SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(A)ANTHRACENE (P3-C1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R12	**RO**	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)}$	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)} * LF_{sw}$	$= GW_{source\text{-}calculated}$
R13	$\mathbf{GW_{source}}$	$= GW_{comp}/[C_{(x)}/C_{(source)}]$

Soil Source Concentration $Soil_{(conc)}$ **(mg/kg)**	Leachate Factor LF_{sw} $(mg/l_{water})/(mg/kg_{soil})$	**GW Standard** GW_{comp} **(mg/l)**	GW_{source} $Soil_{(conc)}*LF_{sw}$ (mg/l)
15.3	0.000435365	**0.0005**	0.006661081

Tier 2 Soil Remediation Objective (μg/kg) = **15300**

TABLE
EQUATION R15 WORKSHEET - STEADY STATE ATTENUATION ALONG THE CENTERLINE OF PLUME
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(A)ANTHRACENE (P3-C1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R26 $C_{(x)} = GW_{source}*\{\exp[(X/2\alpha_x)*(1-(1+(4*\lambda*\alpha_x)/U)^{1/2})]*\mathrm{erf}[S_w/(4*(\alpha_y*X)^{1/2})]*\mathrm{erf}[S_d/(2*(\alpha_z*X)^{1/2})]\}$

α_x	=	0.10 * X	Equation R16
α_y	=	α_x/3	Equation R17
α_z	=	α_x/20	Equation R18
U	=	K*i/θ_T	Equation R19
X	=	1175	feet
K	=	0.000031	cm/sec
S_w	=	1828.8	cm
S_d	=	762	cm
i	=	0.02	unitless
$GW_{(source)}$	=	0.00666108	mg/l
θ_T	=	0.43	unitless
λ	=	0.00051	day^{-1}
GW_{comp}	=	0.0005	mg/l

$C_{(x)}$ (μg/l)	X (feet)	GW_{comp} (mg/l)	$C_{(x)}$ (mg/l)	X (cm)	C_{source} (mg/l)	β_3 =(X/(2α_x))	β_4 =1-[1+(4λ*α_x)/U]$^{+1/2}$	a_x (cm)	a_y (cm)	a_z (cm)	U (cm/day)	λ (day^{-1})	S_w (cm)	S_d (cm)	K (cm/day)	I (cm/cm)	θ_T (cm^3/cm^3)	β_1 =S_w/(4*[α_x*X]$^{1/2}$)	β_2 =S_d/(2*[α_z*X]$^{1/2}$)	Error Function erf(β_1)	Error Function erf(β_2)
5.8886116	1	0.0005	0.00588861	30.5	0.0	5	-0.02465231	3.048	1.016	0.1524	0.12457674	0.00051	1828.8	762	2.6784	0.02	0.43	82.15838363	176.77669530	1.00000000	1.00000000
2.1691742	10	0.0005	0.00216917	304.8	0.0	5	-0.22438705	30.48	10.16	1.524	0.12457674	0.00051	1828.8	762	2.6784	0.02	0.43	8.21583836	17.67766953	1.00000000	1.00000000
1.9606343	11	0.0005	0.00196063	335.3	0.0	5	-0.24460276	33.528	11.176	1.6764	0.12457674	0.00051	1828.8	762	2.6784	0.02	0.43	7.46894397	16.07060866	1.00000000	1.00000000
1.7750086	12	0.0005	0.00177501	365.8	0.0	5	-0.26449531	36.576	12.192	1.8288	0.12457674	0.00051	1828.8	762	2.6784	0.02	0.43	6.84653197	14.73139127	1.00000000	1.00000000
1.3289487	15	0.0005	0.00132895	457.2	0.0	5	-0.32237872	45.72	15.24	2.286	0.12457674	0.00051	1828.8	762	2.6784	0.02	0.43	5.47722558	11.78511302	1.00000000	1.00000000
0.8422428	20	0.0005	0.00084224	609.6	0.0	5	-0.41359376	60.96	20.32	3.048	0.12457674	0.00051	1828.8	762	2.6784	0.02	0.43	4.10791918	8.83883476	0.99999999	1.00000000
0.771503	21	0.0005	0.0007715	640.1	0.0	5	-0.43113929	64.008	21.336	3.2004	0.12457674	0.00051	1828.8	762	2.6784	0.02	0.43	3.91230398	8.41793787	0.99999997	1.00000000
0.707456	22	0.0005	0.00070746	670.6	0.0	5	-0.44847231	67.056	22.352	3.3528	0.12457674	0.00051	1828.8	762	2.6784	0.02	0.43	3.73447198	8.03530433	0.99999987	1.00000000
0.6493909	23	0.0005	0.00064939	701.0	0.0	5	-0.46560036	70.104	23.368	3.5052	0.12457674	0.00051	1828.8	762	2.6784	0.02	0.43	3.57210364	7.68594327	0.99999956	1.00000000
0.5966813	24	0.0005	0.00059668	731.5	0.0	5	-0.48253053	73.152	24.384	3.6576	0.12457674	0.00051	1828.8	762	2.6784	0.02	0.43	3.42326598	7.36569564	0.99999871	1.00000000
0.5487737	25	0.0005	0.00054877	762.0	0.0	5	-0.49926954	76.2	25.4	3.81	0.12457674	0.00051	1828.8	762	2.6784	0.02	0.43	3.28633535	7.07106781	0.99999664	1.00000000
0.5051779	26	0.0005	0.00050518	792.5	0.0	5	-0.51582371	79.248	26.416	3.9624	0.12457674	0.00051	1828.8	762	2.6784	0.02	0.43	3.15993783	6.79910367	0.99999214	1.00000000
0.4654595	27	0.0005	0.00046546	823.0	0.0	5	-0.53219903	82.296	27.432	4.1148	0.12457674	0.00051	1828.8	762	2.6784	0.02	0.43	3.04290310	6.54728501	0.99998317	1.00000000
0.0035667	100	0.0005	3.5667E-06	3048.0	0.0	5	-1.44770026	304.8	101.6	15.24	0.12457674	0.00051	1828.8	762	2.6784	0.02	0.43	0.82158384	1.76776695	0.75472188	0.98758067
6.016E-10	500	0.0005	6.0163E-13	15240.0	0.0	5	-4.09472107	1524	508	76.2	0.12457674	0.00051	1828.8	762	2.6784	0.02	0.43	0.16431677	0.35355339	0.18375634	0.38292492
4.079E-11	600	0.0005	4.0793E-14	18288.0	0.0	5	-4.56304048	1828.8	609.6	91.44	0.12457674	0.00051	1828.8	762	2.6784	0.02	0.43	0.13693064	0.29462783	0.15354940	0.32307776
3.491E-12	700	0.0005	3.4909E-15	21336.0	0.0	5	-4.99488581	2133.6	711.2	106.68	0.12457674	0.00051	1828.8	762	2.6784	0.02	0.43	0.11736912	0.25253814	0.13183125	0.27901514
7.074E-26	2750	0.0005	7.0739E-29	83820.0	0.0	5	-10.75835896	8382	2794	419.1	0.12457674	0.00051	1828.8	762	2.6784	0.02	0.43	0.02987578	0.06428243	0.03370118	0.07243517

TABLE
EQUATION R14 WORKSHEET - LEACHING FACTOR
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(A)ANTHRACENE (P3-C1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

$$LF_{sw} = \rho_b/[\theta_{ws}+(k_s*\rho_b)+(H'*\theta_{as})]*[1+(U_{gw}*\delta_{gw})/(I*W)]$$

k_s	=	$K_{oc} * f_{oc}$	R20
U_{gw}	=	$K * i$	R24
f_{oc}	=	0.00473	gm/gm
ρ_b	=	1.7	gm/cm3
w	=	0.3	unitless
θ_T	=	0.43	unitless
W	=	609.6	centimeters
K	=	0.000031	cm/sec
i	=	0.02	unitless
K_{oc}	=	400000	L/gm
H'	=	0.000139	unitless
ρ_w	=	1	gm/cm^3
δ_{gw}	=	200	centimeters
I	=	30	cm/year

LFsw (mg/L_{water})/(mg/kg_{soil})	ρ_b g/cm^3	β_1 $=\theta_{ws}+(k_s*\rho_s)+(H'*\theta_{as})$	K_{oc} cm^3/g	f_{oc} g/g	k_s cm^3_{water}/g_{soil}	H' unitless	w unitless	θ_{ws} cm^3_{water}/cm^3_{soil}
0.000435365	**1.7**	3216.909989	**400000**	**0.00473**	1892	**0.000139**	0.3	0.51

θ_T uniltess	θ_{as} cm^3_{air}/cm^3_{soil}	β_2 $=1+(U_{gw}*\delta_{gw})/(I*W)$	K cm/year	i cm/cm	U_{gw} cm/year	δ_{gw} cm	I cm/year	W cm
0.43	-0.08	1.213826772	977.616	0.02	19.55232	200	30	609.6

INPUT PARAMETERS FOR TIER 2 SOIL COMPONENT TO GROUNDWATER INGESTION EVALUATION

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		BENZO(A)PYRENE(P1-F3.5-F) NORTH		
Site Name		CHAMPAIGN MGP		
Site Location		CHAMPAIGN, ILLINOIS		
FOR RBCA EQUATION - (R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, and R24)				
Constituent based parameters				
Organic carbon partition coefficient	K_{oc}	790000	cm^3/g	Appendix C; Table E
Henry's constant	H'	0.000045	l/gm	Appendix C; Table E
Solubility	S	0.0016	mg/l	Appendix C; Table E
Degradation constant	λ	0.00065	day^{-1}	Appendix C; Table E
Groundwater Objective	GW_{obj}	0.002	mg/l	Appendix B; Table E
Site Specific Data - Soil Zone				
Concentration of Constituent in Soil	$Soil_{(conc)}$	11.3	mg/kg	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	
Soil moisture content	***w***	0.3	unitless	
Total soil porosity - soil	θ_T	0.43	unitless	
Soil bulk density	ρ_b	1.7	gm/cm^3	
Source width in soil parallel to groundwater flow	W	30	feet	
Site Specific Data - Groundwater Zone				
Hydraulic conductivity	K	3.10E-05	cm/sec	
Groundwater gradient	*i*	0.033	unitless	
Total soil porosity - aquifer	θ_T	0.43	unitless	
Source width in groundwater perpendicular to groundwater flow direction	S_w	30	feet	
Source thickness in groundwater zone	S_d	25	feet	
Distance to point of compliance	X	1175	feet	

TABLE
EQUATION R12 WORKSHEET - SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(A)PYRENE(P1-F3.5-F) NORTH
CHAMPAIGN MGP
CHAMPAIGN MGP

R12	**RO**	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)}$	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)} * LF_{sw}$	$= GW_{source\text{-}calculated}$
R13	$\mathbf{GW_{source}}$	$= GW_{comp}/[C_{(x)}/C_{(source)}]$

Soil Source Concentration $\mathbf{Soil_{(conc)}}$ **(mg/kg)**	Leachate Factor LF_{sw} $(mg/l_{water})/(mg/kg_{soil})$	**GW Standard** $\mathbf{GW_{comp}}$ **(mg/l)**	GW_{source} $Soil_{(conc)}*LF_{sw}$ (mg/l)
11.3	0.000216639	**0.002**	0.002448019

Tier 2 Soil Remediation Objective (μg/kg) = **11300**

TABLE
EQUATION R15 WORKSHEET - STEADY STATE ATTENUATION ALONG THE CENTERLINE OF PLUME
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(A)PYRENE(P1-F3.5-F) NORTH
CHAMPAIGN MGP
CHAMPAIGN MGP

R26 $C_{(x)} = GW_{source}*\{\exp[(X/2\alpha_x)*(1-(1+(4*\lambda*\alpha_x)/U)^{1/2})]*\mathrm{erf}[S_w/(4*(\alpha_y*X)^{1/2})]*\mathrm{erf}[S_d/(2*(\alpha_z*X)^{1/2})]\}$

α_x	=	0.10 * X	Equation R16
α_y	=	$\alpha_x/3$	Equation R17
α_z	=	$\alpha_x/20$	Equation R18
U	=	$K*i/\theta_T$	Equation R19
X	=	1175	feet
K	=	0.000031	cm/sec
S_w	=	914.4	cm
S_d	=	762	cm
i	=	0.033	unitless
$GW_{(source)}$	=	0.00244802	mg/l
θ_T	=	0.43	unitless
λ	=	0.00065	day^{-1}
GW_{comp}	=	0.002	mg/l

$C_{(x)}$ (μg/l)	X (feet)	GW_{comp} (mg/l)	$C_{(x)}$ (mg/l)	X (cm)	C_{source} (mg/l)	β_3 =(X/(2α_x))	β_4 =1-[1+(4λ*α_x)/U]^1/2	a_x (cm)	a_y (cm)	a_z (cm)	U (cm/day)	λ (day^{-1})	S_w (cm)	S_d (cm)	K (cm/day)	I (cm/cm)	θ_T (cm^3/cm^3)	β_1 =S_w/(4*[α_y*X]^1/2)	β_2 =S_d/(2*[α_z*X]^1/2)	Error Function erf(β_1)	Error Function erf(β_2)
#DIV/0!	0	0.002	#DIV/0!	0.0	0.0	#DIV/0!	0.00000000	0	0	0	0.20555163	0.00065	914.4	762	2.6784	0.033	0.43	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
2.4245595	0.1	0.002	0.002424559	3.0	0.0	5	-0.00192584	0.3048	0.1016	0.01524	0.20555163	0.00065	914.4	762	2.6784	0.033	0.43	410.79191813	1767.76695297	1.00000000	1.00000000
2.4013693	0.2	0.002	0.002401369	6.1	0.0	5	-0.00384798	0.6096	0.2032	0.03048	0.20555163	0.00065	914.4	762	2.6784	0.033	0.43	205.39595906	883.88347648	1.00000000	1.00000000
2.3333775	0.5	0.002	0.002333378	15.2	0.0	5	-0.00959245	1.524	0.508	0.0762	0.20555163	0.00065	914.4	762	2.6784	0.033	0.43	82.15838363	353.55339059	1.00000000	1.00000000
2.2251092	1	0.002	0.002225109	30.5	0.0	5	-0.01909461	3.048	1.016	0.1524	0.20555163	0.00065	914.4	762	2.6784	0.033	0.43	41.07919181	176.77669530	1.00000000	1.00000000
2.0260523	2	0.002	0.002026052	61.0	0.0	5	-0.03783796	6.096	2.032	0.3048	0.20555163	0.00065	914.4	762	2.6784	0.033	0.43	20.53959591	88.38834765	1.00000000	1.00000000
1.8478729	3	0.002	0.001847873	91.4	0.0	5	-0.05624876	9.144	3.048	0.4572	0.20555163	0.00065	914.4	762	2.6784	0.033	0.43	13.69306394	58.92556510	1.00000000	1.00000000
0.6795235	15	0.002	0.000679523	457.2	0.0	5	-0.25630700	45.72	15.24	2.286	0.20555163	0.00065	914.4	762	2.6784	0.033	0.43	2.73861279	11.78511302	0.99989249	1.00000000
0.466502	20	0.002	0.000466502	609.6	0.0	5	-0.33081793	60.96	20.32	3.048	0.20555163	0.00065	914.4	762	2.6784	0.033	0.43	2.05395959	8.83883476	0.99632439	1.00000000
0.3737163	23	0.002	0.000373716	701.0	0.0	5	-0.37358575	70.104	23.368	3.5052	0.20555163	0.00065	914.4	762	2.6784	0.033	0.43	1.78605182	7.68594327	0.98845841	1.00000000
0.3471215	24	0.002	0.000347121	731.5	0.0	5	-0.38754878	73.152	24.384	3.6576	0.20555163	0.00065	914.4	762	2.6784	0.033	0.43	1.71163299	7.36569564	0.98450571	1.00000000
0.3224115	25	0.002	0.000322411	762.0	0.0	5	-0.40137270	76.2	25.4	3.81	0.20555163	0.00065	914.4	762	2.6784	0.033	0.43	1.64316767	7.07106781	0.97986325	1.00000000
0.299448	26	0.002	0.000299448	792.5	0.0	5	-0.41506158	79.248	26.416	3.9624	0.20555163	0.00065	914.4	762	2.6784	0.033	0.43	1.57996892	6.79910367	0.97454412	1.00000000
0.0025836	100	0.002	2.58361E-06	3048.0	0.0	5	-1.20349308	304.8	101.6	15.24	0.20555163	0.00065	914.4	762	2.6784	0.033	0.43	0.41079192	1.76776695	0.43872416	0.98758067
2.145E-09	500	0.002	2.14494E-12	15240.0	0.0	5	-3.50298888	1524	508	76.2	0.20555163	0.00065	914.4	762	2.6784	0.033	0.43	0.08215838	0.35355339	0.09249764	0.38292492
1.948E-10	600	0.002	1.94789E-13	18288.0	0.0	5	-3.91246279	1828.8	609.6	91.44	0.20555163	0.00065	914.4	762	2.6784	0.033	0.43	0.06846532	0.29462783	0.07713430	0.32307776
2.181E-11	700	0.002	2.18059E-14	21336.0	0.0	5	-4.29033765	2133.6	711.2	106.68	0.20555163	0.00065	914.4	762	2.6784	0.033	0.43	0.05868456	0.25253814	0.06614250	0.27901514
1.523E-23	2750	0.002	1.52282E-26	83820.0	0.0	5	-9.34519206	8382	2794	419.1	0.20555163	0.00065	914.4	762	2.6784	0.033	0.43	0.01493789	0.06428243	0.01685435	0.07243517

TABLE
EQUATION R14 WORKSHEET - LEACHING FACTOR
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(A)PYRENE(P1-F3.5-F) NORTH
CHAMPAIGN MGP
CHAMPAIGN MGP

$LF_{sw} = \rho_b/[\theta_{ws}+(k_s*\rho_b)+(H'*\theta_{as})]*[1+(U_{gw}*\delta_{gw})/(I*W)]$

k_s	=	$K_{oc} * f_{oc}$	R20
U_{gw}	=	$K * i$	R24
f_{oc}	=	0.00473	gm/gm
ρ_b	=	1.7	gm/cm3
w	=	0.3	unitless
θ_T	=	0.43	unitless
W	=	914.4	centimeters
K	=	0.000031	cm/sec
i	=	0.033	unitless
K_{oc}	=	790000	L/gm
H'	=	0.000045	unitless
ρ_w	=	1	gm/cm^3
δ_{gw}	=	200	centimeters
I	=	30	cm/year

LFsw (mg/L_{water})/ (mg/kg_{soil})	ρ_b g/cm^3	β_1 $=\theta_{ws}+(k_s*\rho_s)+(H'*\theta_{as})$	K_{oc} cm^3/g	f_{oc} g/g	k_s cm^3_{water}/g_{soil}	H' unitless	w unitless	θ_{ws} cm^3_{water}/cm^3_{soil}
0.000216639	**1.7**	6352.899996	**790000**	**0.00473**	3736.7	**0.000045**	0.3	0.51

θ_T uniltess	θ_{as} cm^3_{air}/cm^3_{soil}	β_2 $=1+(U_{gw}*\delta_{gw})/(I*W)$	K cm/year	i cm/cm	U_{gw} cm/year	δ_{gw} cm	I cm/year	W cm
0.43	-0.08	1.235209449	977.616	0.033	32.261328	200	30	914.4

INPUT PARAMETERS FOR TIER 2 SOIL COMPONENT TO GROUNDWATER INGESTION EVALUATION

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		BENZO(A)PYRENE(P1-F3.5-F) SOUTH		
Site Name		CHAMPAIGN MGP		
Site Location		CHAMPAIGN, ILLINOIS		
FOR RBCA EQUATION - (R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, and R24)				
Constituent based parameters				
Organic carbon partition coefficient	K_{oc}	790000	cm^3/g	Appendix C; Table E
Henry's constant	H'	0.000045	l/gm	Appendix C; Table E
Solubility	S	0.0016	mg/l	Appendix C; Table E
Degradation constant	λ	0.00065	day^{-1}	Appendix C; Table E
Groundwater Objective	GW_{obj}	0.002	mg/l	Appendix B; Table E
Site Specific Data - Soil Zone				
Concentration of Constituent in Soil	$Soil_{(conc)}$	11.3	mg/kg	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	
Soil moisture content	***w***	0.3	unitless	
Total soil porosity - soil	θ_T	0.43	unitless	
Soil bulk density	ρ_b	1.7	gm/cm^3	
Source width in soil parallel to groundwater flow	W	30	feet	
Site Specific Data - Groundwater Zone				
Hydraulic conductivity	K	3.10E-05	cm/sec	
Groundwater gradient	*i*	0.02	unitless	
Total soil porosity - aquifer	θ_T	0.43	unitless	
Source width in groundwater perpendicular to groundwater flow direction	S_w	30	feet	
Source thickness in groundwater zone	S_d	25	feet	
Distance to point of compliance	X	1175	feet	

TABLE
EQUATION R12 WORKSHEET - SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(A)PYRENE(P1-F3.5-F) SOUTH
CHAMPAIGN MGP
CHAMPAIGN MGP

R12	**RO**	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)}$	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)} * LF_{sw}$	$= GW_{source\text{-}calculated}$
R13	$\mathbf{GW_{source}}$	$= GW_{comp}/[C_{(x)}/C_{(source)}]$

Soil Source Concentration $Soil_{(conc)}$ **(mg/kg)**	Leachate Factor LF_{sw} $(mg/l_{water})/(mg/kg_{soil})$	**GW Standard** GW_{comp} **(mg/l)**	GW_{source} $Soil_{(conc)}*LF_{sw}$ (mg/l)
11.3	0.000234208	**0.002**	0.002646547

Tier 2 Soil Remediation Objective (μg/kg) = **11300**

TABLE
EQUATION R15 WORKSHEET - STEADY STATE ATTENUATION ALONG THE CENTERLINE OF PLUME
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(A)PYRENE(P1-F3.5-F) SOUTH
CHAMPAIGN MGP
CHAMPAIGN MGP

R26 $C_{(x)} = GW_{source}*\{\exp[(X/2\alpha_x)*(1-(1+(4*\lambda*\alpha_x)/U)^{1/2})]*\mathrm{erf}[S_w/(4*(\alpha_y*X)^{1/2})]*\mathrm{erf}[S_d/(2*(\alpha_z*X)^{1/2})]\}$

α_x	=	0.10 * X	Equation R16
α_y	=	$\alpha_x/3$	Equation R17
α_z	=	$\alpha_x/20$	Equation R18
U	=	$K*i/\theta_T$	Equation R19
X	=	1175	feet
K	=	0.000031	cm/sec
S_w	=	914.4	cm
S_d	=	762	cm
i	=	0.02	unitless
$GW_{(source)}$	=	0.00264655	mg/l
θ_T	=	0.43	unitless
λ	=	0.00065	day^{-1}
GW_{comp}	=	0.002	mg/l

$C_{(x)}$ (μg/l)	X (feet)	GW_{comp} (mg/l)	$C_{(x)}$ (mg/l)	X (cm)	C_{source} (mg/l)	β_3 =(X/(2α_x))	β_4 =1-[1+(4λ*α_x)/U]^1/2	a_x (cm)	a_y (cm)	a_z (cm)	U (cm/day)	λ (day^{-1})	S_w (cm)	S_d (cm)	K (cm/day)	I (cm/cm)	θ_T (cm^3/cm^3)	β_1 =S_w/(4*[α_y*X]^1/2)	β_2 =S_d/(2*[α_z*X]^1/2)	Error Function erf(β_1)	Error Function erf(β_2)
#DIV/0!	0	0.002	#DIV/0!	0.0	0.0	#DIV/0!	0.00000000	0	0	0	0.12457674	0.00065	914.4	762	2.6784	0.02	0.43	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
2.6048568	0.1	0.002	0.002604857	3.0	0.0	5	-0.00317565	0.3048	0.1016	0.01524	0.12457674	0.00065	914.4	762	2.6784	0.02	0.43	410.79191813	1767.76695297	1.00000000	1.00000000
2.5639514	0.2	0.002	0.002563951	6.1	0.0	5	-0.00634127	0.6096	0.2032	0.03048	0.12457674	0.00065	914.4	762	2.6784	0.02	0.43	205.39595906	883.88347648	1.00000000	1.00000000
2.4457727	0.5	0.002	0.002445773	15.2	0.0	5	-0.01577896	1.524	0.508	0.0762	0.12457674	0.00065	914.4	762	2.6784	0.02	0.43	82.15838363	353.55339059	1.00000000	1.00000000
2.262959	1	0.002	0.002262959	30.5	0.0	5	-0.03131654	3.048	1.016	0.1524	0.12457674	0.00065	914.4	762	2.6784	0.02	0.43	41.07919181	176.77669530	1.00000000	1.00000000
2.0962259	1.5	0.002	0.002096226	45.7	0.0	5	-0.04662348	4.572	1.524	0.2286	0.12457674	0.00065	914.4	762	2.6784	0.02	0.43	27.38612788	117.85113020	1.00000000	1.00000000
1.9439212	2	0.002	0.001943921	61.0	0.0	5	-0.06170975	6.096	2.032	0.3048	0.12457674	0.00065	914.4	762	2.6784	0.02	0.43	20.53959591	88.38834765	1.00000000	1.00000000
0.3618595	15	0.002	0.000361859	457.2	0.0	5	-0.39792954	45.72	15.24	2.286	0.12457674	0.00065	914.4	762	2.6784	0.02	0.43	2.73861279	11.78511302	0.99989249	1.00000000
0.2085739	20	0.002	0.000208574	609.6	0.0	5	-0.50740704	60.96	20.32	3.048	0.12457674	0.00065	914.4	762	2.6784	0.02	0.43	2.05395959	8.83883476	0.99632439	1.00000000
0.1517511	23	0.002	0.000151751	701.0	0.0	5	-0.56943219	70.104	23.368	3.5052	0.12457674	0.00065	914.4	762	2.6784	0.02	0.43	1.78605182	7.68594327	0.98845841	1.00000000
0.1366671	24	0.002	0.000136667	731.5	0.0	5	-0.58956950	73.152	24.384	3.6576	0.12457674	0.00065	914.4	762	2.6784	0.02	0.43	1.71163299	7.36569564	0.98450571	1.00000000
0.123149	25	0.002	0.000123149	762.0	0.0	5	-0.60945487	76.2	25.4	3.81	0.12457674	0.00065	914.4	762	2.6784	0.02	0.43	1.64316767	7.07106781	0.97986325	1.00000000
0.1110231	26	0.002	0.000111023	792.5	0.0	5	-0.62909754	79.248	26.416	3.9624	0.12457674	0.00065	914.4	762	2.6784	0.02	0.43	1.57996892	6.79910367	0.97454412	1.00000000
0.0002184	100	0.002	2.18427E-07	3048.0	0.0	5	-1.71318631	304.8	101.6	15.24	0.12457674	0.00065	914.4	762	2.6784	0.02	0.43	0.41079192	1.76776695	0.43872416	0.98758067
5.079E-12	500	0.002	5.0791E-15	15240.0	0.0	5	-4.72773076	1524	508	76.2	0.12457674	0.00065	914.4	762	2.6784	0.02	0.43	0.08215838	0.35355339	0.09249764	0.38292492
2.516E-13	600	0.002	2.5156E-16	18288.0	0.0	5	-5.25845664	1828.8	609.6	91.44	0.12457674	0.00065	914.4	762	2.6784	0.02	0.43	0.06846532	0.29462783	0.07713430	0.32307776
1.615E-14	700	0.002	1.61475E-17	21336.0	0.0	5	-5.74756693	2133.6	711.2	106.68	0.12457674	0.00065	914.4	762	2.6784	0.02	0.43	0.05868456	0.25253814	0.06614250	0.27901514
7.552E-30	2750	0.002	7.55189E-33	83820.0	0.0	5	-12.26416028	8382	2794	419.1	0.12457674	0.00065	914.4	762	2.6784	0.02	0.43	0.01493789	0.06428243	0.01685435	0.07243517

TABLE
EQUATION R14 WORKSHEET - LEACHING FACTOR
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(A)PYRENE(P1-F3.5-F) SOUTH
CHAMPAIGN MGP
CHAMPAIGN MGP

$LF_{sw} = \rho_b/[\theta_{ws}+(k_s*\rho_b)+(H'*\theta_{as})]*[1+(U_{gw}*\delta_{gw})/(I*W)]$

k_s	=	$K_{oc} * f_{oc}$	R20
U_{gw}	=	$K * i$	R24
f_{oc}	=	0.00473	gm/gm
ρ_b	=	1.7	gm/cm3
w	=	0.3	unitless
θ_T	=	0.43	unitless
W	=	914.4	centimeters
K	=	0.000031	cm/sec
i	=	0.02	unitless
K_{oc}	=	790000	L/gm
H'	=	0.000045	unitless
ρ_w	=	1	gm/cm^3
δ_{gw}	=	200	centimeters
I	=	30	cm/year

LFsw (mg/L_{water})/(mg/kg_{soil})	ρ_b g/cm^3	β_1 $=\theta_{ws}+(k_s*\rho_s)+(H'*\theta_{as})$	K_{oc} cm^3/g	f_{oc} g/g	k_s cm^3_{water}/g_{soil}	H' unitless	w unitless	θ_{ws} cm^3_{water}/cm^3_{soil}
0.000234208	**1.7**	6352.899996	**790000**	**0.00473**	3736.7	**0.000045**	0.3	0.51

θ_T uniltess	θ_{as} cm^3_{air}/cm^3_{soil}	β_2 $=1+(U_{gw}*\delta_{gw})/(I*W)$	K cm/year	i cm/cm	U_{gw} cm/year	δ_{gw} cm	I cm/year	W cm
0.43	-0.08	1.142551181	977.616	0.02	19.55232	200	30	914.4

INPUT PARAMETERS FOR TIER 2 SOIL COMPONENT TO GROUNDWATER INGESTION EVALUATION

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		BENZO(A)PYRENE(P1-F35-F) WEST		
Site Name		CHAMPAIGN MGP		
Site Location		CHAMPAIGN, ILLINOIS		
FOR RBCA EQUATION - (R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, and R24)				
Constituent based parameters				
Organic carbon partition coefficient	K_{oc}	790000	cm^3/g	Appendix C; Table E
Henry's constant	H'	0.000045	l/gm	Appendix C; Table E
Solubility	S	0.0016	mg/l	Appendix C; Table E
Degradation constant	λ	0.00065	day^{-1}	Appendix C; Table E
Groundwater Objective	GW_{obj}	0.002	mg/l	Appendix B; Table E
Site Specific Data - Soil Zone				
Concentration of Constituent in Soil	$Soil_{(conc)}$	11.3	mg/kg	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	
Soil moisture content	***w***	0.3	unitless	
Total soil porosity - soil	θ_T	0.43	unitless	
Soil bulk density	ρ_b	1.7	gm/cm^3	
Source width in soil parallel to groundwater flow	W	30	feet	
Site Specific Data - Groundwater Zone				
Hydraulic conductivity	K	3.10E-05	cm/sec	
Groundwater gradient	*i*	0.036	unitless	
Total soil porosity - aquifer	θ_T	0.43	unitless	
Source width in groundwater perpendicular to groundwater flow direction	S_w	30	feet	
Source thickness in groundwater zone	S_d	25	feet	
Distance to point of compliance	X	1175	feet	

TABLE
EQUATION R12 WORKSHEET - SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(A)PYRENE(P1-F35-F) WEST
CHAMPAIGN MGP
CHAMPAIGN MGP

R12	**RO**	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)}$	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)} * LF_{sw}$	$= GW_{source\text{-}calculated}$
R13	$\mathbf{GW_{source}}$	$= GW_{comp}/[C_{(x)}/C_{(source)}]$

Soil Source Concentration $\mathbf{Soil_{(conc)}}$ **(mg/kg)**	Leachate Factor LF_{sw} $(mg/l_{water})/(mg/kg_{soil})$	**GW Standard** $\mathbf{GW_{comp}}$ **(mg/l)**	GW_{source} $Soil_{(conc)}*LF_{sw}$ (mg/l)
11.3	0.000212952	**0.002**	0.002406362

Tier 2 Soil Remediation Objective (μg/kg) = **11300**

TABLE
EQUATION R15 WORKSHEET - STEADY STATE ATTENUATION ALONG THE CENTERLINE OF PLUME
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(A)PYRENE(P1-F35-F) WEST
CHAMPAIGN MGP
CHAMPAIGN MGP

R26 $C_{(x)} = GW_{source}*\{\exp[(X/2\alpha_x)*(1-(1+(4*\lambda*\alpha_x)/U)^{1/2})]*\mathrm{erf}[S_w/(4*(\alpha_y*X)^{1/2})]*\mathrm{erf}[S_d/(2*(\alpha_z*X)^{1/2})]\}$

α_x	=	0.10 * X	Equation R16
α_y	=	$\alpha_x/3$	Equation R17
α_z	=	$\alpha_x/20$	Equation R18
U	=	$K*i/\theta_T$	Equation R19
X	=	1175	feet
K	=	0.000031	cm/sec
S_w	=	914.4	cm
S_d	=	762	cm
i	=	0.036	unitless
$GW_{(source)}$	=	0.00240636	mg/l
θ_T	=	0.43	unitless
λ	=	0.00065	day^{-1}
GW_{comp}	=	0.002	mg/l

$C_{(x)}$ (μg/l)	X (feet)	GW_{comp} (mg/l)	$C_{(x)}$ (mg/l)	X (cm)	C_{source} (mg/l)	β_3 =(X/(2α_x))	β_4 =1-[1+(4λ*α_x)/U]^1/2	a_x (cm)	a_y (cm)	a_z (cm)	U (cm/day)	λ (day^{-1})	S_w (cm)	S_d (cm)	K (cm/day)	I (cm/cm)	θ_T (cm^3/cm^3)	β_1 =S_w/(4*[α_y*X]^1/2)	β_2 =S_d/(2*[α_z*X]^1/2)	Error Function erf(β_1)	Error Function erf(β_2)
#DIV/0!	0	0.002	#DIV/0!	0.0	0.0	#DIV/0!	0.00000000	0	0	0	0.22423814	0.00065	914.4	762	2.6784	0.036	0.43	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
2.3852137	0.1	0.002	0.002385214	3.0	0.0	5	-0.00176549	0.3048	0.1016	0.01524	0.22423814	0.00065	914.4	762	2.6784	0.036	0.43	410.79191813	1767.76695297	1.00000000	1.00000000
2.3642877	0.2	0.002	0.002364288	6.1	0.0	5	-0.00352788	0.6096	0.2032	0.03048	0.22423814	0.00065	914.4	762	2.6784	0.036	0.43	205.39595906	883.88347648	1.00000000	1.00000000
2.3028175	0.5	0.002	0.002302818	15.2	0.0	5	-0.00879656	1.524	0.508	0.0762	0.22423814	0.00065	914.4	762	2.6784	0.036	0.43	82.15838363	353.55339059	1.00000000	1.00000000
2.2045663	1	0.002	0.002204566	30.5	0.0	5	-0.01751708	3.048	1.016	0.1524	0.22423814	0.00065	914.4	762	2.6784	0.036	0.43	41.07919181	176.77669530	1.00000000	1.00000000
2.0226893	2	0.002	0.002022689	61.0	0.0	5	-0.03473765	6.096	2.032	0.3048	0.22423814	0.00065	914.4	762	2.6784	0.036	0.43	20.53959591	88.38834765	1.00000000	1.00000000
1.8584351	3	0.002	0.001858435	91.4	0.0	5	-0.05167628	9.144	3.048	0.4572	0.22423814	0.00065	914.4	762	2.6784	0.036	0.43	13.69306394	58.92556510	1.00000000	1.00000000
0.7357373	15	0.002	0.000735737	457.2	0.0	5	-0.23697817	45.72	15.24	2.286	0.22423814	0.00065	914.4	762	2.6784	0.036	0.43	2.73861279	11.78511302	0.99989249	1.00000000
0.517973	20	0.002	0.000517973	609.6	0.0	5	-0.30645321	60.96	20.32	3.048	0.22423814	0.00065	914.4	762	2.6784	0.036	0.43	2.05395959	8.83883476	0.99632439	1.00000000
0.4208051	23	0.002	0.000420805	701.0	0.0	5	-0.34641858	70.104	23.368	3.5052	0.22423814	0.00065	914.4	762	2.6784	0.036	0.43	1.78605182	7.68594327	0.98845841	1.00000000
0.3926267	24	0.002	0.000392627	731.5	0.0	5	-0.35947931	73.152	24.384	3.6576	0.22423814	0.00065	914.4	762	2.6784	0.036	0.43	1.71163299	7.36569564	0.98450571	1.00000000
0.3662992	25	0.002	0.000366299	762.0	0.0	5	-0.37241575	76.2	25.4	3.81	0.22423814	0.00065	914.4	762	2.6784	0.036	0.43	1.64316767	7.07106781	0.97986325	1.00000000
0.3416986	26	0.002	0.000341699	792.5	0.0	5	-0.38523138	79.248	26.416	3.9624	0.22423814	0.00065	914.4	762	2.6784	0.036	0.43	1.57996892	6.79910367	0.97454412	1.00000000
0.0036795	100	0.002	3.6795E-06	3048.0	0.0	5	-1.12934261	304.8	101.6	15.24	0.22423814	0.00065	914.4	762	2.6784	0.036	0.43	0.41079192	1.76776695	0.43872416	0.98758067
5.239E-09	500	0.002	5.2394E-12	15240.0	0.0	5	-3.32093738	1524	508	76.2	0.22423814	0.00065	914.4	762	2.6784	0.036	0.43	0.08215838	0.35355339	0.09249764	0.38292492
5.212E-10	600	0.002	5.21229E-13	18288.0	0.0	5	-3.71217569	1828.8	609.6	91.44	0.22423814	0.00065	914.4	762	2.6784	0.036	0.43	0.06846532	0.29462783	0.07713430	0.32307776
6.344E-11	700	0.002	6.34367E-14	21336.0	0.0	5	-4.07333221	2133.6	711.2	106.68	0.22423814	0.00065	914.4	762	2.6784	0.036	0.43	0.05868456	0.25253814	0.06614250	0.27901514
1.326E-22	2750	0.002	1.32566E-25	83820.0	0.0	5	-8.90897315	8382	2794	419.1	0.22423814	0.00065	914.4	762	2.6784	0.036	0.43	0.01493789	0.06428243	0.01685435	0.07243517

TABLE
EQUATION R14 WORKSHEET - LEACHING FACTOR
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(A)PYRENE(P1-F35-F) WEST
CHAMPAIGN MGP
CHAMPAIGN MGP

$$LF_{sw} = \rho_b/[\theta_{ws}+(k_s*\rho_b)+(H'*\theta_{as})]*[1+(U_{gw}*\delta_{gw})/(I*W)]$$

k_s	=	$K_{oc} * f_{oc}$	R20
U_{gw}	=	$K * i$	R24
f_{oc}	=	0.00473	gm/gm
ρ_b	=	1.7	gm/cm3
w	=	0.3	unitless
θ_T	=	0.43	unitless
W	=	914.4	centimeters
K	=	0.000031	cm/sec
i	=	0.036	unitless
K_{oc}	=	790000	L/gm
H'	=	0.000045	unitless
ρ_w	=	1	gm/cm^3
δ_{gw}	=	200	centimeters
I	=	30	cm/year

LFsw (mg/L_{water})/ (mg/kg_{soil})	ρ_b g/cm^3	β_1 $=\theta_{ws}+(k_s*\rho_s)+(H'*\theta_{as})$	K_{oc} cm^3/g	f_{oc} g/g	k_s cm^3_{water}/g_{soil}	H' unitless	w unitless	θ_{ws} cm^3_{water}/cm^3_{soil}
0.000212952	**1.7**	6352.899996	**790000**	**0.00473**	3736.7	**0.000045**	0.3	0.51

θ_T uniltess	θ_{as} cm^3_{air}/cm^3_{soil}	β_2 $=1+(U_{gw}*\delta_{gw})/(I*W)$	K cm/year	i cm/cm	U_{gw} cm/year	δ_{gw} cm	I cm/year	W cm
0.43	-0.08	1.256592126	977.616	0.036	35.194176	200	30	914.4

INPUT PARAMETERS FOR TIER 2 SOIL COMPONENT TO GROUNDWATER INGESTION EVALUATION

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		BENZO(A)PYRENE(P3-C1-W)		
Site Name		CHAMPAIGN MGP		
Site Location		CHAMPAIGN, ILLINOIS		
FOR RBCA EQUATION - (R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, and R24)				
Constituent based parameters				
Organic carbon partition coefficient	K_{oc}	790000	cm^3/g	Appendix C; Table E
Henry's constant	H'	0.000045	l/gm	Appendix C; Table E
Solubility	S	0.0016	mg/l	Appendix C; Table E
Degradation constant	λ	0.00065	day^{-1}	Appendix C; Table E
Groundwater Objective	GW_{obj}	0.002	mg/l	Appendix B; Table E
Site Specific Data - Soil Zone				
Concentration of Constituent in Soil	$Soil_{(conc)}$	39.9	mg/kg	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	
Soil moisture content	***w***	0.3	unitless	
Total soil porosity - soil	θ_T	0.43	unitless	
Soil bulk density	ρ_b	1.7	gm/cm^3	
Source width in soil parallel to groundwater flow	W	60	feet	
Site Specific Data - Groundwater Zone				
Hydraulic conductivity	K	3.10E-05	cm/sec	
Groundwater gradient	*i*	0.036	unitless	
Total soil porosity - aquifer	θ_T	0.43	unitless	
Source width in groundwater perpendicular to groundwater flow direction	S_w	165	feet	
Source thickness in groundwater zone	S_d	25	feet	
Distance to point of compliance	X	1175	feet	

TABLE
EQUATION R12 WORKSHEET - SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(A)PYRENE(P3-C1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R12	**RO**	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)}$	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)} * LF_{sw}$	$= GW_{source\text{-}calculated}$
R13	$\mathbf{GW_{source}}$	$= GW_{comp}/[C_{(x)}/C_{(source)}]$

Soil Source Concentration $Soil_{(conc)}$ **(mg/kg)**	Leachate Factor LF_{sw} $(mg/l_{water})/(mg/kg_{soil})$	**GW Standard** GW_{comp} **(mg/l)**	GW_{source} $Soil_{(conc)}*LF_{sw}$ (mg/l)
39.9	0.000237167	**0.002**	0.009462954

Tier 2 Soil Remediation Objective (μg/kg) = **39900**

TABLE
EQUATION R15 WORKSHEET - STEADY STATE ATTENUATION ALONG THE CENTERLINE OF PLUME
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(A)PYRENE(P3-C1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R26 $C_{(x)} = GW_{source}*\{\exp[(X/2\alpha_x)*(1-(1+(4*\lambda*\alpha_x)/U)^{1/2})]*\mathrm{erf}[S_w/(4*(\alpha_y*X)^{1/2})]*\mathrm{erf}[S_d/(2*(\alpha_z*X)^{1/2})]\}$

α_x	=	0.10 * X	Equation R16
α_y	=	$\alpha_x/3$	Equation R17
α_z	=	$\alpha_x/20$	Equation R18
U	=	$K*i/\theta_T$	Equation R19
X	=	1175	feet
K	=	0.000031	cm/sec
S_w	=	5029.2	cm
S_d	=	762	cm
i	=	0.036	unitless
$GW_{(source)}$	=	0.00946295	mg/l
θ_T	=	0.43	unitless
λ	=	0.00065	day^{-1}
GW_{comp}	=	0.002	mg/l

$C_{(x)}$ (μg/l)	X (feet)	GW_{comp} (mg/l)	$C_{(x)}$ (mg/l)	X (cm)	C_{source} (mg/l)	β_3 =(X/(2α_x))	β_4 =1-[1+(4λ*α_x)/U]^1/2	a_x (cm)	a_y (cm)	a_z (cm)	U (cm/day)	λ (day^{-1})	S_w (cm)	S_d (cm)	K (cm/day)	I (cm/cm)	θ_T (cm^3/cm^3)	β_1 =S_w/(4*[α_y*X]^1/2)	β_2 =S_d/(2*[α_z*X]^1/2)	Error Function erf(β_1)	Error Function erf(β_2)
#DIV/0!	0	0.002	#DIV/0!	0.0	0.0	#DIV/0!	0.00000000	0	0	0	0.22423814	0.00065	5029.2	762	2.6784	0.036	0.43	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
6.1940112	5	0.002	0.006194011	152.4	0.0	5	-0.08476034	15.24	5.08	0.762	0.22423814	0.00065	5029.2	762	2.6784	0.036	0.43	45.18711099	35.35533906	1.00000000	1.00000000
5.2754319	7	0.002	0.005275432	213.4	0.0	5	-0.11686481	21.336	7.112	1.0668	0.22423814	0.00065	5029.2	762	2.6784	0.036	0.43	32.27650785	25.25381361	1.00000000	1.00000000
4.876879	8	0.002	0.004876879	243.8	0.0	5	-0.13257582	24.384	8.128	1.2192	0.22423814	0.00065	5029.2	762	2.6784	0.036	0.43	28.24194437	22.09708691	1.00000000	1.00000000
4.5132851	9	0.002	0.004513285	274.3	0.0	5	-0.14807186	27.432	9.144	1.3716	0.22423814	0.00065	5029.2	762	2.6784	0.036	0.43	25.10395055	19.64185503	1.00000000	1.00000000
4.1811112	10	0.002	0.004181111	304.8	0.0	5	-0.16336151	30.48	10.16	1.524	0.22423814	0.00065	5029.2	762	2.6784	0.036	0.43	22.59355550	17.67766953	1.00000000	1.00000000
3.8772285	11	0.002	0.003877229	335.3	0.0	5	-0.17845280	33.528	11.176	1.6764	0.22423814	0.00065	5029.2	762	2.6784	0.036	0.43	20.53959591	16.07060866	1.00000000	1.00000000
3.5988642	12	0.002	0.003598864	365.8	0.0	5	-0.19335326	36.576	12.192	1.8288	0.22423814	0.00065	5029.2	762	2.6784	0.036	0.43	18.82796291	14.73139127	1.00000000	1.00000000
3.3435558	13	0.002	0.003343556	396.2	0.0	5	-0.20806995	39.624	13.208	1.9812	0.22423814	0.00065	5029.2	762	2.6784	0.036	0.43	17.37965807	13.59820733	1.00000000	1.00000000
3.1091118	14	0.002	0.003109112	426.7	0.0	5	-0.22260950	42.672	14.224	2.1336	0.22423814	0.00065	5029.2	762	2.6784	0.036	0.43	16.13825393	12.62690681	1.00000000	1.00000000
2.8935778	15	0.002	0.002893578	457.2	0.0	5	-0.23697817	45.72	15.24	2.286	0.22423814	0.00065	5029.2	762	2.6784	0.036	0.43	15.06237033	11.78511302	1.00000000	1.00000000
2.695208	16	0.002	0.002695208	487.7	0.0	5	-0.25118184	48.768	16.256	2.4384	0.22423814	0.00065	5029.2	762	2.6784	0.036	0.43	14.12097219	11.04854346	1.00000000	1.00000000
1.9114025	21	0.002	0.001911403	640.1	0.0	5	-0.31990946	64.008	21.336	3.2004	0.22423814	0.00065	5029.2	762	2.6784	0.036	0.43	10.75883595	8.41793787	1.00000000	1.00000000
0.0329349	100	0.002	3.29349E-05	3048.0	0.0	5	-1.12934261	304.8	101.6	15.24	0.22423814	0.00065	5029.2	762	2.6784	0.036	0.43	2.25935555	1.76776695	0.99860271	0.98758067
1.063E-07	500	0.002	1.06297E-10	15240.0	0.0	5	-3.32093738	1524	508	76.2	0.22423814	0.00065	5029.2	762	2.6784	0.036	0.43	0.45187111	0.35355339	0.47720455	0.38292492
1.078E-08	600	0.002	1.07793E-11	18288.0	0.0	5	-3.71217569	1828.8	609.6	91.44	0.22423814	0.00065	5029.2	762	2.6784	0.036	0.43	0.37655926	0.29462783	0.40564464	0.32307776
1.327E-09	700	0.002	1.32738E-12	21336.0	0.0	5	-4.07333221	2133.6	711.2	106.68	0.22423814	0.00065	5029.2	762	2.6784	0.036	0.43	0.32276508	0.25253814	0.35193987	0.27901514
2.861E-21	2750	0.002	2.861E-24	83820.0	0.0	5	-8.90897315	8382	2794	419.1	0.22423814	0.00065	5029.2	762	2.6784	0.036	0.43	0.08215838	0.06428243	0.09249764	0.07243517

TABLE
EQUATION R14 WORKSHEET - LEACHING FACTOR
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(A)PYRENE(P3-C1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

$LF_{sw} = \rho_b/[\theta_{ws}+(k_s*\rho_b)+(H'*\theta_{as})]*[1+(U_{gw}*\delta_{gw})/(I*W)]$

k_s	=	$K_{oc} * f_{oc}$	R20
U_{gw}	=	$K * i$	R24
f_{oc}	=	0.00473	gm/gm
ρ_b	=	1.7	gm/cm3
w	=	0.3	unitless
θ_T	=	0.43	unitless
W	=	1828.8	centimeters
K	=	0.000031	cm/sec
i	=	0.036	unitless
K_{oc}	=	790000	L/gm
H'	=	0.000045	unitless
ρ_w	=	1	gm/cm^3
δ_{gw}	=	200	centimeters
I	=	30	cm/year

LFsw (mg/L_{water})/ (mg/kg_{soil})	ρ_b g/cm^3	β_1 $=\theta_{ws}+(k_s*\rho_s)+(H'*\theta_{as})$	K_{oc} cm^3/g	f_{oc} g/g	k_s cm^3_{water}/g_{soil}	H' unitless	w unitless	θ_{ws} cm^3_{water}/cm^3_{soil}
0.000237167	**1.7**	6352.899996	**790000**	**0.00473**	3736.7	**0.000045**	0.3	0.51

θ_T uniltess	θ_{as} cm^3_{air}/cm^3_{soil}	β_2 $=1+(U_{gw}*\delta_{gw})/(I*W)$	K cm/year	i cm/cm	U_{gw} cm/year	δ_{gw} cm	I cm/year	W cm
0.43	-0.08	1.128296063	977.616	0.036	35.194176	200	30	1828.8

INPUT PARAMETERS FOR TIER 2 SOIL COMPONENT TO GROUNDWATER INGESTION EVALUATION

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		BENZO(A)PYRENE(P4-A1-W)		
Site Name		CHAMPAIGN MGP		
Site Location		CHAMPAIGN, ILLINOIS		
FOR RBCA EQUATION - (R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, and R24)				
Constituent based parameters				
Organic carbon partition coefficient	K_{oc}	790000	cm^3/g	Appendix C; Table E
Henry's constant	H'	0.000045	l/gm	Appendix C; Table E
Solubility	S	0.0016	mg/l	Appendix C; Table E
Degradation constant	λ	0.00065	day^{-1}	Appendix C; Table E
Groundwater Objective	GW_{obj}	0.002	mg/l	Appendix B; Table E
Site Specific Data - Soil Zone				
Concentration of Constituent in Soil	$Soil_{(conc)}$	72.1	mg/kg	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	
Soil moisture content	***w***	0.3	unitless	
Total soil porosity - soil	θ_T	0.43	unitless	
Soil bulk density	ρ_b	1.7	gm/cm^3	
Source width in soil parallel to groundwater flow	W	30	feet	
Site Specific Data - Groundwater Zone				
Hydraulic conductivity	K	3.10E-05	cm/sec	
Groundwater gradient	*i*	0.033	unitless	
Total soil porosity - aquifer	θ_T	0.43	unitless	
Source width in groundwater perpendicular to groundwater flow direction	S_w	200	feet	
Source thickness in groundwater zone	S_d	25	feet	
Distance to point of compliance	X	1175	feet	

TABLE
EQUATION R12 WORKSHEET - SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(A)PYRENE(P4-A1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R12	**RO**	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)}$	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)} * LF_{sw}$	$= GW_{source\text{-}calculated}$
R13	$\mathbf{GW_{source}}$	$= GW_{comp}/[C_{(x)}/C_{(source)}]$

Soil Source Concentration $\mathbf{Soil_{(conc)}}$ **(mg/kg)**	Leachate Factor LF_{sw} $(mg/l_{water})/(mg/kg_{soil})$	**GW Standard** $\mathbf{GW_{comp}}$ **(mg/l)**	GW_{source} $Soil_{(conc)}*LF_{sw}$ (mg/l)
72.1	0.000216639	**0.002**	0.015619659

Tier 2 Soil Remediation Objective (μg/kg) = **72100**

TABLE
EQUATION R15 WORKSHEET - STEADY STATE ATTENUATION ALONG THE CENTERLINE OF PLUME
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(A)PYRENE(P4-A1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R26 $C_{(x)}$ = $GW_{source}*\{\exp[(X/2\alpha_x)*(1-(1+(4*\lambda*\alpha_x)/U)^{1/2})]*erf[S_w/(4*(\alpha_y*X)^{1/2})]*erf[S_d/(2*(\alpha_z*X)^{1/2})]\}$

α_x	=	0.10 * X	Equation R16
α_y	=	$\alpha_x/3$	Equation R17
α_z	=	$\alpha_x/20$	Equation R18
U	=	$K*i/\theta_T$	Equation R19
X	=	1175	feet
K	=	0.000031	cm/sec
S_w	=	6096	cm
S_d	=	762	cm
i	=	0.033	unitless
$GW_{(source)}$	=	0.01561966	mg/l
θ_T	=	0.43	unitless
λ	=	0.00065	day^{-1}
GW_{comp}	=	0.002	mg/l

$C_{(x)}$ (μg/l)	X (feet)	GW_{comp} (mg/l)	$C_{(x)}$ (mg/l)	X (cm)	C_{source} (mg/l)	β_3 =(X/(2α_x))	β_4 =1-[1+(4λ*α_x)/U]^1/2	a_x (cm)	a_y (cm)	a_z (cm)	U (cm/day)	λ (day^{-1})	S_w (cm)	S_d (cm)	K (cm/day)	I (cm/cm)	θ_T (cm^3/cm^3)	β_1 =S_w/(4*[α_y*X]^1/2)	β_2 =S_d/(2*[α_z*X]^1/2)	Error Function erf(β_1)	Error Function erf(β_2)
#DIV/0!	0	0.002	#DIV/0!	0.0	0.0	#DIV/0!	0.00000000	0	0	0	0.20555163	0.00065	6096	762	2.6784	0.033	0.43	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
9.8535513	5	0.002	0.009853551	152.4	0.0	5	-0.09213968	15.24	5.08	0.762	0.20555163	0.00065	6096	762	2.6784	0.033	0.43	54.77225575	35.35533906	1.00000000	1.00000000
8.2820456	7	0.002	0.008282046	213.4	0.0	5	-0.12688807	21.336	7.112	1.0668	0.20555163	0.00065	6096	762	2.6784	0.033	0.43	39.12303982	25.25381361	1.00000000	1.00000000
7.6079816	8	0.002	0.007607982	243.8	0.0	5	-0.14386649	24.384	8.128	1.2192	0.20555163	0.00065	6096	762	2.6784	0.033	0.43	34.23265984	22.09708691	1.00000000	1.00000000
6.9974625	9	0.002	0.006997462	274.3	0.0	5	-0.16059655	27.432	9.144	1.3716	0.20555163	0.00065	6096	762	2.6784	0.033	0.43	30.42903097	19.64185503	1.00000000	1.00000000
6.4435914	10	0.002	0.006443591	304.8	0.0	5	-0.17708886	30.48	10.16	1.524	0.20555163	0.00065	6096	762	2.6784	0.033	0.43	27.38612788	17.67766953	1.00000000	1.00000000
5.0650183	13	0.002	0.005065018	396.2	0.0	5	-0.22523452	39.624	13.208	1.9812	0.20555163	0.00065	6096	762	2.6784	0.033	0.43	21.06625221	13.59820733	1.00000000	1.00000000
4.3361869	15	0.002	0.004336187	457.2	0.0	5	-0.25630700	45.72	15.24	2.286	0.20555163	0.00065	6096	762	2.6784	0.033	0.43	18.25741858	11.78511302	1.00000000	1.00000000
2.9875113	20	0.002	0.002987511	609.6	0.0	5	-0.33081793	60.96	20.32	3.048	0.20555163	0.00065	6096	762	2.6784	0.033	0.43	13.69306394	8.83883476	1.00000000	1.00000000
2.4123505	23	0.002	0.002412351	701.0	0.0	5	-0.37358575	70.104	23.368	3.5052	0.20555163	0.00065	6096	762	2.6784	0.033	0.43	11.90701212	7.68594327	1.00000000	1.00000000
2.2496765	24	0.002	0.002249677	731.5	0.0	5	-0.38754878	73.152	24.384	3.6576	0.20555163	0.00065	6096	762	2.6784	0.033	0.43	11.41088661	7.36569564	1.00000000	1.00000000
2.099432	25	0.002	0.002099432	762.0	0.0	5	-0.40137270	76.2	25.4	3.81	0.20555163	0.00065	6096	762	2.6784	0.033	0.43	10.95445115	7.07106781	1.00000000	1.00000000
1.9605449	26	0.002	0.001960545	792.5	0.0	5	-0.41506158	79.248	26.416	3.9624	0.20555163	0.00065	6096	762	2.6784	0.033	0.43	10.53312611	6.79910367	1.00000000	1.00000000
0.0375704	100	0.002	3.75704E-05	3048.0	0.0	5	-1.20349308	304.8	101.6	15.24	0.20555163	0.00065	6096	762	2.6784	0.033	0.43	2.73861279	1.76776695	0.99989249	0.98758067
8.307E-08	500	0.002	8.30675E-11	15240.0	0.0	5	-3.50298888	1524	508	76.2	0.20555163	0.00065	6096	762	2.6784	0.033	0.43	0.54772256	0.35355339	0.56142197	0.38292492
7.757E-09	600	0.002	7.75667E-12	18288.0	0.0	5	-3.91246279	1828.8	609.6	91.44	0.20555163	0.00065	6096	762	2.6784	0.033	0.43	0.45643546	0.29462783	0.48139498	0.32307776
8.833E-10	700	0.002	8.83338E-13	21336.0	0.0	5	-4.29033765	2133.6	711.2	106.68	0.20555163	0.00065	6096	762	2.6784	0.033	0.43	0.39123040	0.25253814	0.41993059	0.27901514
6.457E-22	2750	0.002	6.45674E-25	83820.0	0.0	5	-9.34519206	8382	2794	419.1	0.20555163	0.00065	6096	762	2.6784	0.033	0.43	0.09958592	0.06428243	0.11200031	0.07243517

TABLE
EQUATION R14 WORKSHEET - LEACHING FACTOR
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(A)PYRENE(P4-A1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

$$LF_{sw} = \rho_b/[\theta_{ws}+(k_s*\rho_b)+(H'*\theta_{as})]*[1+(U_{gw}*\delta_{gw})/(I*W)]$$

k_s	=	$K_{oc} * f_{oc}$	R20
U_{gw}	=	$K * i$	R24
f_{oc}	=	0.00473	gm/gm
ρ_b	=	1.7	gm/cm3
w	=	0.3	unitless
θ_T	=	0.43	unitless
W	=	914.4	centimeters
K	=	0.000031	cm/sec
i	=	0.033	unitless
K_{oc}	=	790000	L/gm
H'	=	0.000045	unitless
ρ_w	=	1	gm/cm^3
δ_{gw}	=	200	centimeters
I	=	30	cm/year

LFsw (mg/L_{water})/ (mg/kg_{soil})	ρ_b g/cm^3	β_1 $=\theta_{ws}+(k_s*\rho_s)+(H'*\theta_{as})$	K_{oc} cm^3/g	f_{oc} g/g	k_s cm^3_{water}/g_{soil}	H' unitless	w unitless	θ_{ws} cm^3_{water}/cm^3_{soil}
0.000216639	**1.7**	6352.899996	**790000**	**0.00473**	3736.7	**0.000045**	0.3	0.51

θ_T uniltess	θ_{as} cm^3_{air}/cm^3_{soil}	β_2 $=1+(U_{gw}*\delta_{gw})/(I*W)$	K cm/year	i cm/cm	U_{gw} cm/year	δ_{gw} cm	I cm/year	W cm
0.43	-0.08	1.235209449	977.616	0.033	32.261328	200	30	914.4

INPUT PARAMETERS FOR TIER 2 SOIL COMPONENT TO GROUNDWATER INGESTION EVALUATION

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		BENZO(A)PYRENE(P7-CD1-SW)		
Site Name		CHAMPAIGN MGP		
Site Location		CHAMPAIGN, ILLINOIS		
FOR RBCA EQUATION - (R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, and R24)				
Constituent based parameters				
Organic carbon partition coefficient	K_{oc}	790000	cm^3/g	Appendix C; Table E
Henry's constant	H'	0.000045	l/gm	Appendix C; Table E
Solubility	S	0.0016	mg/l	Appendix C; Table E
Degradation constant	λ	0.00065	day^{-1}	Appendix C; Table E
Groundwater Objective	GW_{obj}	0.002	mg/l	Appendix B; Table E
Site Specific Data - Soil Zone				
Concentration of Constituent in Soil	$Soil_{(conc)}$	15.5	mg/kg	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	
Soil moisture content	***w***	0.3	unitless	
Total soil porosity - soil	θ_T	0.43	unitless	
Soil bulk density	ρ_b	1.7	gm/cm^3	
Source width in soil parallel to groundwater flow	W	20	feet	
Site Specific Data - Groundwater Zone				
Hydraulic conductivity	K	3.10E-05	cm/sec	
Groundwater gradient	*i*	0.02	unitless	
Total soil porosity - aquifer	θ_T	0.43	unitless	
Source width in groundwater perpendicular to groundwater flow direction	S_w	60	feet	
Source thickness in groundwater zone	S_d	25	feet	
Distance to point of compliance	X	1175	feet	

TABLE
EQUATION R12 WORKSHEET - SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(A)PYRENE(P7-CD1-SW)
CHAMPAIGN MGP
CHAMPAIGN MGP

R12	**RO**	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)}$	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)} * LF_{sw}$	$= GW_{source\text{-}calculated}$
R13	$\mathbf{GW_{source}}$	$= GW_{comp}/[C_{(x)}/C_{(source)}]$

Soil Source Concentration $\mathbf{Soil_{(conc)}}$ **(mg/kg)**	Leachate Factor LF_{sw} $(mg/l_{water})/(mg/kg_{soil})$	**GW Standard** $\mathbf{GW_{comp}}$ **(mg/l)**	GW_{source} $Soil_{(conc)}*LF_{sw}$ (mg/l)
15.5	0.000220455	**0.002**	0.003417054

Tier 2 Soil Remediation Objective (μg/kg) = **15500**

TABLE
EQUATION R15 WORKSHEET - STEADY STATE ATTENUATION ALONG THE CENTERLINE OF PLUME
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(A)PYRENE(P7-CD1-SW)
CHAMPAIGN MGP
CHAMPAIGN MGP

R26 $C_{(x)} = GW_{source}*\{\exp[(X/2\alpha_x)*(1-(1+(4*\lambda*\alpha_x)/U)^{1/2})]*erf[S_w/(4*(\alpha_y*X)^{1/2})]*erf[S_d/(2*(\alpha_z*X)^{1/2})]\}$

α_x	=	0.10 * X	Equation R16
α_y	=	$\alpha_x/3$	Equation R17
α_z	=	$\alpha_x/20$	Equation R18
U	=	$K*i/\theta_T$	Equation R19
X	=	1175	feet
K	=	0.000031	cm/sec
S_w	=	1828.8	cm
S_d	=	762	cm
i	=	0.02	unitless
$GW_{(source)}$	=	0.00341705	mg/l
θ_T	=	0.43	unitless
λ	=	0.00065	day^{-1}
GW_{comp}	=	0.002	mg/l

$C_{(x)}$ (μg/l)	X (feet)	GW_{comp} (mg/l)	$C_{(x)}$ (mg/l)	X (cm)	C_{source} (mg/l)	β_3 =(X/(2α_x))	β_4 =1-[1+(4λ*α_x)/U]^1/2	a_x (cm)	a_y (cm)	a_z (cm)	U (cm/day)	λ (day^{-1})	S_w (cm)	S_d (cm)	K (cm/day)	I (cm/cm)	θ_T (cm^3/cm^3)	β_1 =S_w/(4*[α_y*X]^1/2)	β_2 =S_d/(2*[α_z*X]^1/2)	Error Function erf(β_1)	Error Function erf(β_2)
#DIV/0!	0	0.002	#DIV/0!	0.0	0.0	#DIV/0!	0.00000000	0	0	0	0.12457674	0.00065	1828.8	762	2.6784	0.02	0.43	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
2.7065141	1.5	0.002	0.002706514	45.7	0.0	5	-0.04662348	4.572	1.524	0.2286	0.12457674	0.00065	1828.8	762	2.6784	0.02	0.43	54.77225575	117.85113020	1.00000000	1.00000000
2.5098679	2	0.002	0.002509868	61.0	0.0	5	-0.06170975	6.096	2.032	0.3048	0.12457674	0.00065	1828.8	762	2.6784	0.02	0.43	41.07919181	88.38834765	1.00000000	1.00000000
2.3299706	2.5	0.002	0.002329971	76.2	0.0	5	-0.07658465	7.62	2.54	0.381	0.12457674	0.00065	1828.8	762	2.6784	0.02	0.43	32.86335345	70.71067812	1.00000000	1.00000000
2.1651614	3	0.002	0.002165161	91.4	0.0	5	-0.09125680	9.144	3.048	0.4572	0.12457674	0.00065	1828.8	762	2.6784	0.02	0.43	27.38612788	58.92556510	1.00000000	1.00000000
2.0139692	3.5	0.002	0.002013969	106.7	0.0	5	-0.10573428	10.668	3.556	0.5334	0.12457674	0.00065	1828.8	762	2.6784	0.02	0.43	23.47382389	50.50762723	1.00000000	1.00000000
1.8750882	4	0.002	0.001875088	121.9	0.0	5	-0.12002464	12.192	4.064	0.6096	0.12457674	0.00065	1828.8	762	2.6784	0.02	0.43	20.53959591	44.19417382	1.00000000	1.00000000
0.4672603	15	0.002	0.00046726	457.2	0.0	5	-0.39792954	45.72	15.24	2.286	0.12457674	0.00065	1828.8	762	2.6784	0.02	0.43	5.47722558	11.78511302	1.00000000	1.00000000
0.2702909	20	0.002	0.000270291	609.6	0.0	5	-0.50740704	60.96	20.32	3.048	0.12457674	0.00065	1828.8	762	2.6784	0.02	0.43	4.10791918	8.83883476	0.99999999	1.00000000
0.1982191	23	0.002	0.000198219	701.0	0.0	5	-0.56943219	70.104	23.368	3.5052	0.12457674	0.00065	1828.8	762	2.6784	0.02	0.43	3.57210364	7.68594327	0.99999956	1.00000000
0.1792328	24	0.002	0.000179233	731.5	0.0	5	-0.58956950	73.152	24.384	3.6576	0.12457674	0.00065	1828.8	762	2.6784	0.02	0.43	3.42326598	7.36569564	0.99999871	1.00000000
0.1622692	25	0.002	0.000162269	762.0	0.0	5	-0.60945487	76.2	25.4	3.81	0.12457674	0.00065	1828.8	762	2.6784	0.02	0.43	3.28633535	7.07106781	0.99999664	1.00000000
0.1470891	26	0.002	0.000147089	792.5	0.0	5	-0.62909754	79.248	26.416	3.9624	0.12457674	0.00065	1828.8	762	2.6784	0.02	0.43	3.15993783	6.79910367	0.99999214	1.00000000
0.0004851	100	0.002	4.85148E-07	3048.0	0.0	5	-1.71318631	304.8	101.6	15.24	0.12457674	0.00065	1828.8	762	2.6784	0.02	0.43	0.82158384	1.76776695	0.75472188	0.98758067
1.303E-11	500	0.002	1.30278E-14	15240.0	0.0	5	-4.72773076	1524	508	76.2	0.12457674	0.00065	1828.8	762	2.6784	0.02	0.43	0.16431677	0.35355339	0.18375634	0.38292492
6.466E-13	600	0.002	6.46567E-16	18288.0	0.0	5	-5.25845664	1828.8	609.6	91.44	0.12457674	0.00065	1828.8	762	2.6784	0.02	0.43	0.13693064	0.29462783	0.15354940	0.32307776
4.155E-14	700	0.002	4.15542E-17	21336.0	0.0	5	-5.74756693	2133.6	711.2	106.68	0.12457674	0.00065	1828.8	762	2.6784	0.02	0.43	0.11736912	0.25253814	0.13183125	0.27901514
1.95E-29	2750	0.002	1.94967E-32	83820.0	0.0	5	-12.26416028	8382	2794	419.1	0.12457674	0.00065	1828.8	762	2.6784	0.02	0.43	0.02987578	0.06428243	0.03370118	0.07243517

TABLE
EQUATION R14 WORKSHEET - LEACHING FACTOR
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(A)PYRENE(P7-CD1-SW)
CHAMPAIGN MGP
CHAMPAIGN MGP

$LF_{sw} = \rho_b/[\theta_{ws}+(k_s*\rho_b)+(H'*\theta_{as})]*[1+(U_{gw}*\delta_{gw})/(I*W)]$

k_s	=	$K_{oc} * f_{oc}$	R20
U_{gw}	=	$K * i$	R24
f_{oc}	=	0.00473	gm/gm
ρ_b	=	1.7	gm/cm3
w	=	0.3	unitless
θ_T	=	0.43	unitless
W	=	609.6	centimeters
K	=	0.000031	cm/sec
i	=	0.02	unitless
K_{oc}	=	790000	L/gm
H'	=	0.000045	unitless
ρ_w	=	1	gm/cm^3
δ_{gw}	=	200	centimeters
I	=	30	cm/year

LFsw (mg/L_{water})/ (mg/kg_{soil})	ρ_b g/cm^3	β_1 $=\theta_{ws}+(k_s*\rho_s)+(H'*\theta_{as})$	K_{oc} cm^3/g	f_{oc} g/g	k_s cm^3_{water}/g_{soil}	H' unitless	w unitless	θ_{ws} cm^3_{water}/cm^3_{soil}
0.000220455	**1.7**	6352.899996	**790000**	**0.00473**	3736.7	**0.000045**	0.3	0.51

θ_T uniltess	θ_{as} cm^3_{air}/cm^3_{soil}	β_2 $=1+(U_{gw}*\delta_{gw})/(I*W)$	K cm/year	i cm/cm	U_{gw} cm/year	δ_{gw} cm	I cm/year	W cm
0.43	-0.08	1.213826772	977.616	0.02	19.55232	200	30	609.6

INPUT PARAMETERS FOR TIER 2 SOIL COMPONENT TO GROUNDWATER INGESTION EVALUATION

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		BENZO(B)FLUORANTHENE(P1-F3.5-F) NORTH		
Site Name		CHAMPAIGN MGP		
Site Location		CHAMPAIGN, ILLINOIS		
FOR RBCA EQUATION - (R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, and R24)				
Constituent based parameters				
Organic carbon partition coefficient	K_{oc}	1050000	cm^3/g	Appendix C; Table E
Henry's constant	H'	0.00455	l/gm	Appendix C; Table E
Solubility	S	0.0015	mg/l	Appendix C; Table E
Degradation constant	λ	0.00057	day^{-1}	Appendix C; Table E
Groundwater Objective	GW_{obj}	0.0005	mg/l	Appendix B; Table E
Site Specific Data - Soil Zone				
Concentration of Constituent in Soil	$Soil_{(conc)}$	8.4	mg/kg	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	
Soil moisture content	***w***	0.3	unitless	
Total soil porosity - soil	θ_T	0.43	unitless	
Soil bulk density	ρ_b	1.7	gm/cm^3	
Source width in soil parallel to groundwater flow	W	30	feet	
Site Specific Data - Groundwater Zone				
Hydraulic conductivity	K	3.10E-05	cm/sec	
Groundwater gradient	*i*	0.033	unitless	
Total soil porosity - aquifer	θ_T	0.43	unitless	
Source width in groundwater perpendicular to groundwater flow direction	S_w	30	feet	
Source thickness in groundwater zone	S_d	25	feet	
Distance to point of compliance	X	1175	feet	

TABLE
EQUATION R12 WORKSHEET - SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(B)FLUORANTHENE(P1-F3.5-F) NORTH
CHAMPAIGN MGP
CHAMPAIGN MGP

R12	**RO**	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)}$	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)} * LF_{sw}$	$= GW_{source\text{-}calculated}$
R13	$\mathbf{GW_{source}}$	$= GW_{comp}/[C_{(x)}/C_{(source)}]$

Soil Source Concentration $\mathbf{Soil_{(conc)}}$ **(mg/kg)**	Leachate Factor LF_{sw} $(mg/l_{water})/(mg/kg_{soil})$	**GW Standard** $\mathbf{GW_{comp}}$ **(mg/l)**	GW_{source} $Soil_{(conc)}*LF_{sw}$ (mg/l)
8.4	0.000162998	**0.0005**	0.001369185

Tier 2 Soil Remediation Objective (μg/kg) = **8400**

TABLE
EQUATION R15 WORKSHEET - STEADY STATE ATTENUATION ALONG THE CENTERLINE OF PLUME
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(B)FLUORANTHENE(P1-F3.5-F) NORTH
CHAMPAIGN MGP
CHAMPAIGN MGP

R26 $C_{(x)} = GW_{source}*\{\exp[(X/2\alpha_x)*(1-(1+(4*\lambda*\alpha_x)/U)^{1/2})]*\mathrm{erf}[S_w/(4*(\alpha_y*X)^{1/2})]*\mathrm{erf}[S_d/(2*(\alpha_z*X)^{1/2})]\}$

α_x	=	0.10 * X	Equation R16
α_y	=	α_x/3	Equation R17
α_z	=	α_x/20	Equation R18
U	=	K*i/θ_T	Equation R19
X	=	1175	feet
K	=	0.000031	cm/sec
S_w	=	914.4	cm
S_d	=	762	cm
i	=	0.033	unitless
$GW_{(source)}$	=	0.00136918	mg/l
θ_T	=	0.43	unitless
λ	=	0.00057	day^{-1}
GW_{comp}	=	0.0005	mg/l

$C_{(x)}$ (μg/l)	X (feet)	GW_{comp} (mg/l)	$C_{(x)}$ (mg/l)	X (cm)	C_{source} (mg/l)	β_3 =(X/(2α_x))	β_4 =1-[1+(4λ*α_x)/U]$^{+1/2}$	a_x (cm)	a_y (cm)	a_z (cm)	U (cm/day)	λ (day^{-1})	S_w (cm)	S_d (cm)	K (cm/day)	I (cm/cm)	θ_T (cm^3/cm^3)	β_1 =S_w/(4*[α_y*X]$^{1/2}$)	β_2 =S_d/(2*[α_z*X]$^{1/2}$)	Error Function erf(β_1)	Error Function erf(β_2)
1.2590987	**1**	0.0005	0.0012591	30.5	0.0	5	-0.01676385	3.048	1.016	0.1524	0.20555163	**0.00057**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	41.07919181	176.77669530	1.00000000	1.00000000
0.9121957	**5**	0.0005	0.0009122	152.4	0.0	5	-0.08122323	15.24	5.08	0.762	0.20555163	**0.00057**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	8.21583836	35.35533906	1.00000000	1.00000000
0.6252706	**10**	0.0005	0.00062527	304.8	0.0	5	-0.15675725	30.48	10.16	1.524	0.20555163	**0.00057**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	4.10791918	17.67766953	0.99999999	1.00000000
0.5814775	**11**	0.0005	0.00058148	335.3	0.0	5	-0.17127967	33.528	11.176	1.6764	0.20555163	**0.00057**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	3.73447198	16.07060866	0.99999987	1.00000000
0.5412322	**12**	0.0005	0.00054123	365.8	0.0	5	-0.18562422	36.576	12.192	1.8288	0.20555163	**0.00057**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	3.42326598	14.73139127	0.99999871	1.00000000
0.5042017	**13**	0.0005	0.0005042	396.2	0.0	5	-0.19979728	39.624	13.208	1.9812	0.20555163	**0.00057**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	3.15993783	13.59820733	0.99999214	1.00000000
0.4700848	**14**	0.0005	0.00047008	426.7	0.0	5	-0.21380487	42.672	14.224	2.1336	0.20555163	**0.00057**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	2.93422799	12.62690681	0.99996670	1.00000000
0.0420681	**50**	0.0005	4.2068E-05	1524.0	0.0	5	-0.64025505	152.4	50.8	7.62	0.20555163	**0.00057**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	0.82158384	3.53553391	0.75472188	0.99999943
0.3126018	**20**	0.0005	0.0003126	609.6	0.0	5	-0.29467164	60.96	20.32	3.048	0.20555163	**0.00057**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	2.05395959	8.83883476	0.99632439	1.00000000
0.2557057	**23**	0.0005	0.00025571	701.0	0.0	5	-0.33326698	70.104	23.368	3.5052	0.20555163	**0.00057**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	1.78605182	7.68594327	0.98845841	1.00000000
0.2391101	**24**	0.0005	0.00023911	731.5	0.0	5	-0.34588617	73.152	24.384	3.6576	0.20555163	**0.00057**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	1.71163299	7.36569564	0.98450571	1.00000000
0.2235618	**25**	0.0005	0.00022356	762.0	0.0	5	-0.35838813	76.2	25.4	3.81	0.20555163	**0.00057**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	1.64316767	7.07106781	0.97986325	1.00000000
0.2089939	**26**	0.0005	0.00020899	792.5	0.0	5	-0.37077607	79.248	26.416	3.9624	0.20555163	**0.00057**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	1.57996892	6.79910367	0.97454412	1.00000000
0.0025101	**100**	0.0005	2.5101E-06	3048.0	0.0	5	-1.09305357	304.8	101.6	15.24	0.20555163	**0.00057**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	0.41079192	1.76776695	0.43872416	0.98758067
4.666E-09	**500**	0.0005	4.6656E-12	15240.0	0.0	5	-3.23135513	1524	508	76.2	0.20555163	**0.00057**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	0.08215838	0.35355339	0.09249764	0.38292492
4.855E-10	**600**	0.0005	4.8551E-13	18288.0	0.0	5	-3.61359290	1828.8	609.6	91.44	0.20555163	**0.00057**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	0.06846532	0.29462783	0.07713430	0.32307776
6.158E-11	**700**	0.0005	6.1578E-14	21336.0	0.0	5	-3.96649904	2133.6	711.2	106.68	0.20555163	**0.00057**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	0.05868456	0.25253814	0.06614250	0.27901514
2.21E-22	**2750**	0.0005	2.2095E-25	83820.0	0.0	5	-8.69401951	8382	2794	419.1	0.20555163	**0.00057**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	0.01493789	0.06428243	0.01685435	0.07243517

TABLE
EQUATION R14 WORKSHEET - LEACHING FACTOR
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(B)FLUORANTHENE(P1-F3.5-F) NORTH
CHAMPAIGN MGP
CHAMPAIGN MGP

$$LF_{sw} = \rho_b/[\theta_{ws}+(k_s*\rho_b)+(H'*\theta_{as})]*[1+(U_{gw}*\delta_{gw})/(I*W)]$$

k_s	=	$K_{oc} * f_{oc}$	R20
U_{gw}	=	$K * i$	R24
f_{oc}	=	0.00473	gm/gm
ρ_b	=	1.7	gm/cm3
w	=	0.3	unitless
θ_T	=	0.43	unitless
W	=	914.4	centimeters
K	=	0.000031	cm/sec
i	=	0.033	unitless
K_{oc}	=	1050000	L/gm
H'	=	0.00455	unitless
ρ_w	=	1	gm/cm^3
δ_{gw}	=	200	centimeters
I	=	30	cm/year

LFsw (mg/L_{water})/(mg/kg_{soil})	ρ_b g/cm^3	β_1 $=\theta_{ws}+(k_s*\rho_s)+(H'*\theta_{as})$	K_{oc} cm^3/g	f_{oc} g/g	k_s cm^3_{water}/g_{soil}	H' unitless	w unitless	θ_{ws} cm^3_{water}/cm^3_{soil}
0.000162998	**1.7**	8443.559636	**1050000**	**0.00473**	4966.5	**0.00455**	0.3	0.51

θ_T uniltess	θ_{as} cm^3_{air}/cm^3_{soil}	β_2 $=1+(U_{gw}*\delta_{gw})/(I*W)$	K cm/year	i cm/cm	U_{gw} cm/year	δ_{gw} cm	I cm/year	W cm
0.43	-0.08	1.235209449	977.616	0.033	32.261328	200	30	914.4

INPUT PARAMETERS FOR TIER 2 SOIL COMPONENT TO GROUNDWATER INGESTION EVALUATION

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		BENZO(B)FLUORANTHENE(P1-F3.5-F) SOUTH		
Site Name		CHAMPAIGN MGP		
Site Location		CHAMPAIGN, ILLINOIS		
FOR RBCA EQUATION - (R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, and R24)				
Constituent based parameters				
Organic carbon partition coefficient	K_{oc}	1050000	cm^3/g	Appendix C; Table E
Henry's constant	H'	0.00455	l/gm	Appendix C; Table E
Solubility	S	0.0015	mg/l	Appendix C; Table E
Degradation constant	λ	0.00057	day^{-1}	Appendix C; Table E
Groundwater Objective	GW_{obj}	0.0005	mg/l	Appendix B; Table E
Site Specific Data - Soil Zone				
Concentration of Constituent in Soil	$Soil_{(conc)}$	8.4	mg/kg	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	
Soil moisture content	***w***	0.3	unitless	
Total soil porosity - soil	θ_T	0.43	unitless	
Soil bulk density	ρ_b	1.7	gm/cm^3	
Source width in soil parallel to groundwater flow	W	30	feet	
Site Specific Data - Groundwater Zone				
Hydraulic conductivity	K	3.10E-05	cm/sec	
Groundwater gradient	*i*	0.02	unitless	
Total soil porosity - aquifer	θ_T	0.43	unitless	
Source width in groundwater perpendicular to groundwater flow direction	S_w	30	feet	
Source thickness in groundwater zone	S_d	25	feet	
Distance to point of compliance	X	1175	feet	

TABLE
EQUATION R12 WORKSHEET - SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(B)FLUORANTHENE(P1-F3.5-F) SOUTH
CHAMPAIGN MGP
CHAMPAIGN MGP

R12	**RO**	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)}$	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)} * LF_{sw}$	$= GW_{source\text{-}calculated}$
R13	$\mathbf{GW_{source}}$	$= GW_{comp}/[C_{(x)}/C_{(source)}]$

Soil Source Concentration $\mathbf{Soil_{(conc)}}$ **(mg/kg)**	Leachate Factor LF_{sw} $(mg/l_{water})/(mg/kg_{soil})$	**GW Standard** $\mathbf{GW_{comp}}$ **(mg/l)**	GW_{source} $Soil_{(conc)}*LF_{sw}$ (mg/l)
8.4	0.000176217	**0.0005**	0.001480222

Tier 2 Soil Remediation Objective (μg/kg) = **8400**

TABLE
EQUATION R15 WORKSHEET - STEADY STATE ATTENUATION ALONG THE CENTERLINE OF PLUME
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(B)FLUORANTHENE(P1-F3.5-F) SOUTH
CHAMPAIGN MGP
CHAMPAIGN MGP

R26 $C_{(x)} = GW_{source}*\{\exp[(X/2\alpha_x)*(1-(1+(4*\lambda*\alpha_x)/U)^{1/2})]*\mathrm{erf}[S_w/(4*(\alpha_y*X)^{1/2})]*\mathrm{erf}[S_d/(2*(\alpha_z*X)^{1/2})]\}$

α_x	=	0.10 * X	Equation R16
α_y	=	α_x/3	Equation R17
α_z	=	α_x/20	Equation R18
U	=	K*i/θ_T	Equation R19
X	=	1175	feet
K	=	0.000031	cm/sec
S_w	=	914.4	cm
S_d	=	762	cm
i	=	0.02	unitless
$GW_{(source)}$	=	0.00148022	mg/l
θ_T	=	0.43	unitless
λ	=	0.00057	day^{-1}
GW_{comp}	=	0.0005	mg/l

$C_{(x)}$ (μg/l)	X (feet)	GW_{comp} (mg/l)	$C_{(x)}$ (mg/l)	X (cm)	C_{source} (mg/l)	β_3 =(X/(2α_x))	β_4 =1-[1+(4λ*α_x)/U]$^{+1/2}$	a_x (cm)	a_y (cm)	a_z (cm)	U (cm/day)	λ (day^{-1})	S_w (cm)	S_d (cm)	K (cm/day)	I (cm/cm)	θ_T (cm^3/cm^3)	β_1 =S_w/(4*[α_y*X]$^{1/2}$)	β_2 =S_d/(2*[α_z*X]$^{1/2}$)	Error Function erf(β_1)	Error Function erf(β_2)
1.2899763	1	0.0005	0.00128998	30.5	0.0	5	-0.02751370	3.048	1.016	0.1524	0.12457674	0.00057	914.4	762	2.6784	0.02	0.43	41.07919181	176.77669530	1.00000000	1.00000000
1.1282233	2	0.0005	0.00112822	61.0	0.0	5	-0.05430964	6.096	2.032	0.3048	0.12457674	0.00057	914.4	762	2.6784	0.02	0.43	20.53959591	88.38834765	1.00000000	1.00000000
0.9900362	3	0.0005	0.00099004	91.4	0.0	5	-0.08044122	9.144	3.048	0.4572	0.12457674	0.00057	914.4	762	2.6784	0.02	0.43	13.69306394	58.92556510	1.00000000	1.00000000
0.87146	4	0.0005	0.00087146	121.9	0.0	5	-0.10595553	12.192	4.064	0.6096	0.12457674	0.00057	914.4	762	2.6784	0.02	0.43	10.26979795	44.19417382	1.00000000	1.00000000
0.769296	5	0.0005	0.0007693	152.4	0.0	5	-0.13089436	15.24	5.08	0.762	0.12457674	0.00057	914.4	762	2.6784	0.02	0.43	8.21583836	35.35533906	1.00000000	1.00000000
0.5374783	8	0.0005	0.00053748	243.8	0.0	5	-0.20261185	24.384	8.128	1.2192	0.12457674	0.00057	914.4	762	2.6784	0.02	0.43	5.13489898	22.09708691	1.00000000	1.00000000
0.4791532	9	0.0005	0.00047915	274.3	0.0	5	-0.22558544	27.432	9.144	1.3716	0.12457674	0.00057	914.4	762	2.6784	0.02	0.43	4.56435465	19.64185503	1.00000000	1.00000000
0.2505035	15	0.0005	0.0002505	457.2	0.0	5	-0.35527345	45.72	15.24	2.286	0.12457674	0.00057	914.4	762	2.6784	0.02	0.43	2.73861279	11.78511302	0.99989249	1.00000000
0.1519517	20	0.0005	0.00015195	609.6	0.0	5	-0.45454054	60.96	20.32	3.048	0.12457674	0.00057	914.4	762	2.6784	0.02	0.43	2.05395959	8.83883476	0.99632439	1.00000000
0.1136895	23	0.0005	0.00011369	701.0	0.0	5	-0.51097366	70.104	23.368	3.5052	0.12457674	0.00057	914.4	762	2.6784	0.02	0.43	1.78605182	7.68594327	0.98845841	1.00000000
0.1033087	24	0.0005	0.00010331	731.5	0.0	5	-0.52932201	73.152	24.384	3.6576	0.12457674	0.00057	914.4	762	2.6784	0.02	0.43	1.71163299	7.36569564	0.98450571	1.00000000
0.0939104	25	0.0005	9.391E-05	762.0	0.0	5	-0.54745282	76.2	25.4	3.81	0.12457674	0.00057	914.4	762	2.6784	0.02	0.43	1.64316767	7.07106781	0.97986325	1.00000000
0.0853955	26	0.0005	8.5396E-05	792.5	0.0	5	-0.56537364	79.248	26.416	3.9624	0.12457674	0.00057	914.4	762	2.6784	0.02	0.43	1.57996892	6.79910367	0.97454412	1.00000000
0.0002565	100	0.0005	2.5649E-07	3048.0	0.0	5	-1.56484714	304.8	101.6	15.24	0.12457674	0.00057	914.4	762	2.6784	0.02	0.43	0.41079192	1.76776695	0.43872416	0.98758067
1.656E-11	500	0.0005	1.656E-14	15240.0	0.0	5	-4.37514691	1524	508	76.2	0.12457674	0.00057	914.4	762	2.6784	0.02	0.43	0.08215838	0.35355339	0.09249764	0.38292492
9.756E-13	600	0.0005	9.7559E-16	18288.0	0.0	5	-4.87117068	1828.8	609.6	91.44	0.12457674	0.00057	914.4	762	2.6784	0.02	0.43	0.06846532	0.29462783	0.07713430	0.32307776
7.343E-14	700	0.0005	7.3432E-17	21336.0	0.0	5	-5.32843472	2133.6	711.2	106.68	0.12457674	0.00057	914.4	762	2.6784	0.02	0.43	0.05868456	0.25253814	0.06614250	0.27901514
2.79E-28	2750	0.0005	2.79E-31	83820.0	0.0	5	-11.42606630	8382	2794	419.1	0.12457674	0.00057	914.4	762	2.6784	0.02	0.43	0.01493789	0.06428243	0.01685435	0.07243517

TABLE
EQUATION R14 WORKSHEET - LEACHING FACTOR
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(B)FLUORANTHENE(P1-F3.5-F) SOUTH
CHAMPAIGN MGP
CHAMPAIGN MGP

$$LF_{sw} = \rho_b/[\theta_{ws}+(k_s*\rho_b)+(H'*\theta_{as})]*[1+(U_{gw}*\delta_{gw})/(I*W)]$$

k_s	=	$K_{oc} * f_{oc}$	R20
U_{gw}	=	$K * i$	R24
f_{oc}	=	0.00473	gm/gm
ρ_b	=	1.7	gm/cm3
w	=	0.3	unitless
θ_T	=	0.43	unitless
W	=	914.4	centimeters
K	=	0.000031	cm/sec
i	=	0.02	unitless
K_{oc}	=	1050000	L/gm
H'	=	0.00455	unitless
ρ_w	=	1	gm/cm^3
δ_{gw}	=	200	centimeters
I	=	30	cm/year

LFsw (mg/L_{water})/(mg/kg_{soil})	ρ_b g/cm^3	β_1 $=\theta_{ws}+(k_s*\rho_s)+(H'*\theta_{as})$	K_{oc} cm^3/g	f_{oc} g/g	k_s cm^3_{water}/g_{soil}	H' unitless	w unitless	θ_{ws} cm^3_{water}/cm^3_{soil}
0.000176217	**1.7**	8443.559636	**1050000**	**0.00473**	4966.5	**0.00455**	0.3	0.51

θ_T uniltess	θ_{as} cm^3_{air}/cm^3_{soil}	β_2 $=1+(U_{gw}*\delta_{gw})/(I*W)$	K cm/year	i cm/cm	U_{gw} cm/year	δ_{gw} cm	I cm/year	W cm
0.43	-0.08	1.142551181	977.616	0.02	19.55232	200	30	914.4

INPUT PARAMETERS FOR TIER 2 SOIL COMPONENT TO GROUNDWATER INGESTION EVALUATION

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		BENZO(B)FLUORANTHENE(P3-C1-W)		
Site Name		CHAMPAIGN MGP		
Site Location		CHAMPAIGN, ILLINOIS		
FOR RBCA EQUATION - (R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, and R24)				
Constituent based parameters				
Organic carbon partition coefficient	K_{oc}	1050000	cm^3/g	Appendix C; Table E
Henry's constant	H'	0.00455	l/gm	Appendix C; Table E
Solubility	S	0.0015	mg/l	Appendix C; Table E
Degradation constant	λ	0.00057	day^{-1}	Appendix C; Table E
Groundwater Objective	GW_{obj}	0.0005	mg/l	Appendix B; Table E
Site Specific Data - Soil Zone				
Concentration of Constituent in Soil	$Soil_{(conc)}$	44.9	mg/kg	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	
Soil moisture content	***w***	0.3	unitless	
Total soil porosity - soil	θ_T	0.43	unitless	
Soil bulk density	ρ_b	1.7	gm/cm^3	
Source width in soil parallel to groundwater flow	W	60	feet	
Site Specific Data - Groundwater Zone				
Hydraulic conductivity	K	3.10E-05	cm/sec	
Groundwater gradient	*i*	0.036	unitless	
Total soil porosity - aquifer	θ_T	0.43	unitless	
Source width in groundwater perpendicular to groundwater flow direction	S_w	165	feet	
Source thickness in groundwater zone	S_d	25	feet	
Distance to point of compliance	X	1175	feet	

TABLE
EQUATION R12 WORKSHEET - SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(B)FLUORANTHENE(P3-C1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R12	**RO**	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)}$	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)} * LF_{sw}$	$= GW_{source\text{-}calculated}$
R13	$\mathbf{GW_{source}}$	$= GW_{comp}/[C_{(x)}/C_{(source)}]$

Soil Source Concentration $\mathbf{Soil_{(conc)}}$ **(mg/kg)**	Leachate Factor LF_{sw} $(mg/l_{water})/(mg/kg_{soil})$	**GW Standard** $\mathbf{GW_{comp}}$ **(mg/l)**	GW_{source} $Soil_{(conc)}*LF_{sw}$ (mg/l)
44.9	0.000178443	**0.0005**	0.008012105

Tier 2 Soil Remediation Objective (μg/kg) = **44900**

TABLE
EQUATION R15 WORKSHEET - STEADY STATE ATTENUATION ALONG THE CENTERLINE OF PLUME
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(B)FLUORANTHENE(P3-C1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R26 $C_{(x)} = GW_{source}*\{\exp[(X/2\alpha_x)*(1-(1+(4*\lambda*\alpha_x)/U)^{1/2})]*\mathrm{erf}[S_w/(4*(\alpha_y*X)^{1/2})]*\mathrm{erf}[S_d/(2*(\alpha_z*X)^{1/2})]\}$

α_x	=	0.10 * X	Equation R16
α_y	=	α_x/3	Equation R17
α_z	=	α_x/20	Equation R18
U	=	K*i/θ_T	Equation R19
X	=	1175	feet
K	=	0.000031	cm/sec
S_w	=	5029.2	cm
S_d	=	762	cm
i	=	0.036	unitless
$GW_{(source)}$	=	0.0080121	mg/l
θ_T	=	0.43	unitless
λ	=	0.00057	day^{-1}
GW_{comp}	=	0.0005	mg/l

0.0005

$C_{(x)}$ (μg/l)	X (feet)	GW_{comp} (mg/l)	$C_{(x)}$ (mg/l)	X (cm)	C_{source} (mg/l)	β_3 =(X/(2α_x))	β_4 =1-[1+(4λ*α_x)/U]$^{+1/2}$	a_x (cm)	a_y (cm)	a_z (cm)	U (cm/day)	λ (day^{-1})	S_w (cm)	S_d (cm)	K (cm/day)	I (cm/cm)	θ_T (cm^3/cm^3)	β_1 =S_w/(4*[α_y*X]$^{1/2}$)	β_2 =S_d/(2*[α_z*X]$^{1/2}$)	Error Function erf(β_1)	Error Function erf(β_2)
7.4191634	1	0.0005	0.00741916	30.5	0.0	5	-0.01537744	3.048	1.016	0.1524	0.22423814	0.00057	5029.2	762	2.6784	0.036	0.43	225.93555497	176.77669530	1.00000000	1.00000000
3.8898909	10	0.0005	0.00388989	304.8	0.0	5	-0.14451447	30.48	10.16	1.524	0.22423814	0.00057	5029.2	762	2.6784	0.036	0.43	22.59355550	17.67766953	1.00000000	1.00000000
2.7992811	15	0.0005	0.00279928	457.2	0.0	5	-0.21031817	45.72	15.24	2.286	0.22423814	0.00057	5029.2	762	2.6784	0.036	0.43	15.06237033	11.78511302	1.00000000	1.00000000
1.5218148	25	0.0005	0.00152181	762.0	0.0	5	-0.33220999	76.2	25.4	3.81	0.22423814	0.00057	5029.2	762	2.6784	0.036	0.43	9.03742220	7.07106781	1.00000000	1.00000000
0.6691262	40	0.0005	0.00066913	1219.2	0.0	5	-0.49654720	121.92	40.64	6.096	0.22423814	0.00057	5029.2	762	2.6784	0.036	0.43	5.64838887	4.41941738	1.00000000	1.00000000
0.5187617	45	0.0005	0.00051876	1371.6	0.0	5	-0.54745282	137.16	45.72	6.858	0.22423814	0.00057	5029.2	762	2.6784	0.036	0.43	5.02079011	3.92837101	1.00000000	0.99999997
0.4935071	46	0.0005	0.00049351	1402.1	0.0	5	-0.55743429	140.208	46.736	7.0104	0.22423814	0.00057	5029.2	762	2.6784	0.036	0.43	4.91164250	3.84297164	1.00000000	0.99999995
2.7992811	15	0.0005	0.00279928	457.2	0.0	5	-0.21031817	45.72	15.24	2.286	0.22423814	0.00057	5029.2	762	2.6784	0.036	0.43	15.06237033	11.78511302	1.00000000	1.00000000
2.0489608	20	0.0005	0.00204896	609.6	0.0	5	-0.27272415	60.96	20.32	3.048	0.22423814	0.00057	5029.2	762	2.6784	0.036	0.43	11.29677775	8.83883476	1.00000000	1.00000000
1.711299	23	0.0005	0.0017113	701.0	0.0	5	-0.30874015	70.104	23.368	3.5052	0.22423814	0.00057	5029.2	762	2.6784	0.036	0.43	9.82328500	7.68594327	1.00000000	1.00000000
1.6133575	24	0.0005	0.00161336	731.5	0.0	5	-0.32052721	73.152	24.384	3.6576	0.22423814	0.00057	5029.2	762	2.6784	0.036	0.43	9.41398146	7.36569564	1.00000000	1.00000000
1.5218148	25	0.0005	0.00152181	762.0	0.0	5	-0.33220999	76.2	25.4	3.81	0.22423814	0.00057	5029.2	762	2.6784	0.036	0.43	9.03742220	7.07106781	1.00000000	1.00000000
1.4361953	26	0.0005	0.0014362	792.5	0.0	5	-0.34379120	79.248	26.416	3.9624	0.22423814	0.00057	5029.2	762	2.6784	0.036	0.43	8.68982904	6.79910367	1.00000000	1.00000000
0.0470709	100	0.0005	4.7071E-05	3048.0	0.0	5	-1.02463177	304.8	101.6	15.24	0.22423814	0.00057	5029.2	762	2.6784	0.036	0.43	2.25935555	1.76776695	0.99860271	0.98758067
3.293E-07	500	0.0005	3.2933E-10	15240.0	0.0	5	-3.06148606	1524	508	76.2	0.22423814	0.00057	5029.2	762	2.6784	0.036	0.43	0.45187111	0.35355339	0.47720455	0.38292492
3.806E-08	600	0.0005	3.8056E-11	18288.0	0.0	5	-3.42660173	1828.8	609.6	91.44	0.22423814	0.00057	5029.2	762	2.6784	0.036	0.43	0.37655926	0.29462783	0.40564464	0.32307776
5.282E-09	700	0.0005	5.2823E-12	21336.0	0.0	5	-3.76381535	2133.6	711.2	106.68	0.22423814	0.00057	5029.2	762	2.6784	0.036	0.43	0.32276508	0.25253814	0.35193987	0.27901514
5.463E-20	2750	0.0005	5.463E-23	83820.0	0.0	5	-8.28580529	8382	2794	419.1	0.22423814	0.00057	5029.2	762	2.6784	0.036	0.43	0.08215838	0.06428243	0.09249764	0.07243517

TABLE
EQUATION R14 WORKSHEET - LEACHING FACTOR
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(B)FLUORANTHENE(P3-C1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

$LF_{sw} = \rho_b/[\theta_{ws}+(k_s*\rho_b)+(H'*\theta_{as})]*[1+(U_{gw}*\delta_{gw})/(I*W)]$

k_s	=	$K_{oc} * f_{oc}$	R20
U_{gw}	=	$K * i$	R24
f_{oc}	=	0.00473	gm/gm
ρ_b	=	1.7	gm/cm3
w	=	0.3	unitless
θ_T	=	0.43	unitless
W	=	1828.8	centimeters
K	=	0.000031	cm/sec
i	=	0.036	unitless
K_{oc}	=	1050000	L/gm
H'	=	0.00455	unitless
ρ_w	=	1	gm/cm^3
δ_{gw}	=	200	centimeters
I	=	30	cm/year

LFsw (mg/L_{water})/(mg/kg_{soil})	ρ_b g/cm^3	β_1 =$\theta_{ws}+(k_s*\rho_s)+(H'*\theta_{as})$	K_{oc} cm^3/g	f_{oc} g/g	k_s cm^3_{water}/g_{soil}	H' unitless	w unitless	θ_{ws} cm^3_{water}/cm^3_{soil}
0.000178443	**1.7**	8443.559636	**1050000**	**0.00473**	4966.5	**0.00455**	0.3	0.51

θ_T uniltess	θ_{as} cm^3_{air}/cm^3_{soil}	β_2 =$1+(U_{gw}*\delta_{gw})/(I*W)$	K cm/year	i cm/cm	U_{gw} cm/year	δ_{gw} cm	I cm/year	W cm
0.43	-0.08	1.128296063	977.616	0.036	35.194176	200	30	1828.8

INPUT PARAMETERS FOR TIER 2 SOIL COMPONENT TO GROUNDWATER INGESTION EVALUATION

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		BENZO(B)FLUORANTHENE(P1-F3.5-F) WEST		
Site Name		CHAMPAIGN MGP		
Site Location		CHAMPAIGN, ILLINOIS		
FOR RBCA EQUATION - (R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, and R24)				
Constituent based parameters				
Organic carbon partition coefficient	K_{oc}	1050000	cm^3/g	Appendix C; Table E
Henry's constant	H'	0.00455	l/gm	Appendix C; Table E
Solubility	S	0.0015	mg/l	Appendix C; Table E
Degradation constant	λ	0.00057	day^{-1}	Appendix C; Table E
Groundwater Objective	GW_{obj}	0.0005	mg/l	Appendix B; Table E
Site Specific Data - Soil Zone				
Concentration of Constituent in Soil	$Soil_{(conc)}$	8.4	mg/kg	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	
Soil moisture content	***w***	0.3	unitless	
Total soil porosity - soil	θ_T	0.43	unitless	
Soil bulk density	ρ_b	1.7	gm/cm^3	
Source width in soil parallel to groundwater flow	W	30	feet	
Site Specific Data - Groundwater Zone				
Hydraulic conductivity	K	3.10E-05	cm/sec	
Groundwater gradient	*i*	0.036	unitless	
Total soil porosity - aquifer	θ_T	0.43	unitless	
Source width in groundwater perpendicular to groundwater flow direction	S_w	30	feet	
Source thickness in groundwater zone	S_d	25	feet	
Distance to point of compliance	X	1175	feet	

TABLE
EQUATION R12 WORKSHEET - SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(B)FLUORANTHENE(P1-F3.5-F) WEST
CHAMPAIGN MGP
CHAMPAIGN MGP

R12	**RO**	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)}$	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)} * LF_{sw}$	$= GW_{source\text{-}calculated}$
R13	$\mathbf{GW_{source}}$	$= GW_{comp}/[C_{(x)}/C_{(source)}]$

Soil Source Concentration $\mathbf{Soil_{(conc)}}$ **(mg/kg)**	Leachate Factor LF_{sw} $(mg/l_{water})/(mg/kg_{soil})$	**GW Standard** $\mathbf{GW_{comp}}$ **(mg/l)**	GW_{source} $Soil_{(conc)}*LF_{sw}$ (mg/l)
8.4	0.000160225	**0.0005**	0.001345886

Tier 2 Soil Remediation Objective (μg/kg) = **8400**

TABLE
EQUATION R15 WORKSHEET - STEADY STATE ATTENUATION ALONG THE CENTERLINE OF PLUME
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(B)FLUORANTHENE(P1-F3.5-F) WEST
CHAMPAIGN MGP
CHAMPAIGN MGP

R26 $C_{(x)} = GW_{source}*\{\exp[(X/2\alpha_x)*(1-(1+(4*\lambda*\alpha_x)/U)^{1/2})]*\mathrm{erf}[S_w/(4*(\alpha_y*X)^{1/2})]*\mathrm{erf}[S_d/(2*(\alpha_z*X)^{1/2})]\}$

α_x	=	0.10 * X	Equation R16
α_y	=	α_x/3	Equation R17
α_z	=	α_x/20	Equation R18
U	=	K*i/θ_T	Equation R19
X	=	1175	feet
K	=	0.000031	cm/sec
S_w	=	914.4	cm
S_d	=	762	cm
i	=	0.036	unitless
$GW_{(source)}$	=	0.00134589	mg/l
θ_T	=	0.43	unitless
λ	=	0.00057	day^{-1}
GW_{comp}	=	0.0005	mg/l

$C_{(x)}$ (μg/l)	X (feet)	GW_{comp} (mg/l)	$C_{(x)}$ (mg/l)	X (cm)	C_{source} (mg/l)	β_3 =(X/(2α_x))	β_4 =1-[1+(4λ*α_x)/U]$^{+1/2}$	a_x (cm)	a_y (cm)	a_z (cm)	U (cm/day)	λ (day^{-1})	S_w (cm)	S_d (cm)	K (cm/day)	I (cm/cm)	θ_T (cm^3/cm^3)	β_1 =S_w/(4*[α_x*X]$^{1/2}$)	β_2 =S_d/(2*[α_z*X]$^{1/2}$)	Error Function erf(β_1)	Error Function erf(β_2)
1.2462829	1	0.0005	0.00124628	30.5	0.0	5	-0.01537744	3.048	1.016	0.1524	0.22423814	0.00057	914.4	762	2.6784	0.036	0.43	41.07919181	176.77669530	1.00000000	1.00000000
1.1553755	2	0.0005	0.00115538	61.0	0.0	5	-0.03052544	6.096	2.032	0.3048	0.22423814	0.00057	914.4	762	2.6784	0.036	0.43	20.53959591	88.38834765	1.00000000	1.00000000
1.0722752	3	0.0005	0.00107228	91.4	0.0	5	-0.04545398	9.144	3.048	0.4572	0.22423814	0.00057	914.4	762	2.6784	0.036	0.43	13.69306394	58.92556510	1.00000000	1.00000000
0.862423	6	0.0005	0.00086242	182.9	0.0	5	-0.08901241	18.288	6.096	0.9144	0.22423814	0.00057	914.4	762	2.6784	0.036	0.43	6.84653197	29.46278255	1.00000000	1.00000000
0.65343	10	0.0005	0.00065343	304.8	0.0	5	-0.14451447	30.48	10.16	1.524	0.22423814	0.00057	914.4	762	2.6784	0.036	0.43	4.10791918	17.67766953	0.99999999	1.00000000
0.5014685	14	0.0005	0.00050147	426.7	0.0	5	-0.19744676	42.672	14.224	2.1336	0.22423814	0.00057	914.4	762	2.6784	0.036	0.43	2.93422799	12.62690681	0.99996670	1.00000000
0.4701771	15	0.0005	0.00047018	457.2	0.0	5	-0.21031817	45.72	15.24	2.286	0.22423814	0.00057	914.4	762	2.6784	0.036	0.43	2.73861279	11.78511302	0.99989249	1.00000000
0.0514042	50	0.0005	5.1404E-05	1524.0	0.0	5	-0.59673633	152.4	50.8	7.62	0.22423814	0.00057	914.4	762	2.6784	0.036	0.43	0.82158384	3.53553391	0.75472188	0.99999943
0.3429226	20	0.0005	0.00034292	609.6	0.0	5	-0.27272415	60.96	20.32	3.048	0.22423814	0.00057	914.4	762	2.6784	0.036	0.43	2.05395959	8.83883476	0.99632439	1.00000000
0.2841489	23	0.0005	0.00028415	701.0	0.0	5	-0.30874015	70.104	23.368	3.5052	0.22423814	0.00057	914.4	762	2.6784	0.036	0.43	1.78605182	7.68594327	0.98845841	1.00000000
0.2668152	24	0.0005	0.00026682	731.5	0.0	5	-0.32052721	73.152	24.384	3.6576	0.22423814	0.00057	914.4	762	2.6784	0.036	0.43	1.71163299	7.36569564	0.98450571	1.00000000
0.2504892	25	0.0005	0.00025049	762.0	0.0	5	-0.33220999	76.2	25.4	3.81	0.22423814	0.00057	914.4	762	2.6784	0.036	0.43	1.64316767	7.07106781	0.97986325	1.00000000
0.235113	26	0.0005	0.00023511	792.5	0.0	5	-0.34379120	79.248	26.416	3.9624	0.22423814	0.00057	914.4	762	2.6784	0.036	0.43	1.57996892	6.79910367	0.97454412	1.00000000
0.0034739	100	0.0005	3.4739E-06	3048.0	0.0	5	-1.02463177	304.8	101.6	15.24	0.22423814	0.00057	914.4	762	2.6784	0.036	0.43	0.41079192	1.76776695	0.43872416	0.98758067
1.072E-08	500	0.0005	1.0723E-11	15240.0	0.0	5	-3.06148606	1524	508	76.2	0.22423814	0.00057	914.4	762	2.6784	0.036	0.43	0.08215838	0.35355339	0.09249764	0.38292492
1.216E-09	600	0.0005	1.2156E-12	18288.0	0.0	5	-3.42660173	1828.8	609.6	91.44	0.22423814	0.00057	914.4	762	2.6784	0.036	0.43	0.06846532	0.29462783	0.07713430	0.32307776
1.668E-10	700	0.0005	1.6676E-13	21336.0	0.0	5	-3.76381535	2133.6	711.2	106.68	0.22423814	0.00057	914.4	762	2.6784	0.036	0.43	0.05868456	0.25253814	0.06614250	0.27901514
1.672E-21	2750	0.0005	1.6721E-24	83820.0	0.0	5	-8.28580529	8382	2794	419.1	0.22423814	0.00057	914.4	762	2.6784	0.036	0.43	0.01493789	0.06428243	0.01685435	0.07243517

TABLE
EQUATION R14 WORKSHEET - LEACHING FACTOR
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(B)FLUORANTHENE(P1-F3.5-F) WEST
CHAMPAIGN MGP
CHAMPAIGN MGP

$LF_{sw} = \rho_b/[\theta_{ws}+(k_s*\rho_b)+(H'*\theta_{as})]*[1+(U_{gw}*\delta_{gw})/(I*W)]$

k_s	=	$K_{oc} * f_{oc}$	R20
U_{gw}	=	$K * i$	R24
f_{oc}	=	0.00473	gm/gm
ρ_b	=	1.7	gm/cm3
w	=	0.3	unitless
θ_T	=	0.43	unitless
W	=	914.4	centimeters
K	=	0.000031	cm/sec
i	=	0.036	unitless
K_{oc}	=	1050000	L/gm
H'	=	0.00455	unitless
ρ_w	=	1	gm/cm^3
δ_{gw}	=	200	centimeters
I	=	30	cm/year

LFsw	ρ_b	β_1	K_{oc}	f_{oc}	k_s	H'	w	θ_{ws}
$(mg/L_{water})/(mg/kg_{soil})$	g/cm^3	$=\theta_{ws}+(k_s*\rho_s)+(H'*\theta_{as})$	cm^3/g	g/g	cm^3_{water}/g_{soil}	unitless	unitless	cm^3_{water}/cm^3_{soil}
0.000160225	**1.7**	8443.559636	**1050000**	**0.00473**	4966.5	**0.00455**	0.3	0.51

θ_T	θ_{as}	β_2	K	i	U_{gw}	δ_{gw}	I	W
uniltess	cm^3_{air}/cm^3_{soil}	$=1+(U_{gw}*\delta_{gw})/(I*W)$	cm/year	cm/cm	cm/year	cm	cm/year	cm
0.43	-0.08	1.256592126	977.616	0.036	35.194176	200	30	914.4

INPUT PARAMETERS FOR TIER 2 SOIL COMPONENT TO GROUNDWATER INGESTION EVALUATION

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		BENZO(B)FLUORANTHENE(P4-A1-W)		
Site Name		CHAMPAIGN MGP		
Site Location		CHAMPAIGN, ILLINOIS		
FOR RBCA EQUATION - (R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, and R24)				
Constituent based parameters				
Organic carbon partition coefficient	K_{oc}	1050000	cm^3/g	Appendix C; Table E
Henry's constant	H'	0.00455	l/gm	Appendix C; Table E
Solubility	S	0.0015	mg/l	Appendix C; Table E
Degradation constant	λ	0.00057	day^{-1}	Appendix C; Table E
Groundwater Objective	GW_{obj}	0.0005	mg/l	Appendix B; Table E
Site Specific Data - Soil Zone				
Concentration of Constituent in Soil	$Soil_{(conc)}$	55.2	mg/kg	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	
Soil moisture content	***w***	0.3	unitless	
Total soil porosity - soil	θ_T	0.43	unitless	
Soil bulk density	ρ_b	1.7	gm/cm^3	
Source width in soil parallel to groundwater flow	W	30	feet	
Site Specific Data - Groundwater Zone				
Hydraulic conductivity	K	3.10E-05	cm/sec	
Groundwater gradient	*i*	0.033	unitless	
Total soil porosity - aquifer	θ_T	0.43	unitless	
Source width in groundwater perpendicular to groundwater flow direction	S_w	200	feet	
Source thickness in groundwater zone	S_d	25	feet	
Distance to point of compliance	X	1175	feet	

TABLE
EQUATION R12 WORKSHEET - SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(B)FLUORANTHENE(P4-A1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R12	**RO**	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)}$	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)} * LF_{sw}$	$= GW_{source\text{-}calculated}$
R13	$\mathbf{GW_{source}}$	$= GW_{comp}/[C_{(x)}/C_{(source)}]$

BENZO(B)FLUORANTHENE(P4-A1-W)

Soil Source Concentration $\mathbf{Soil_{(conc)}}$ **(mg/kg)**	Leachate Factor LF_{sw} $(mg/l_{water})/(mg/kg_{soil})$	**GW Standard** $\mathbf{GW_{comp}}$ **(mg/l)**	GW_{source} $Soil_{(conc)}*LF_{sw}$ (mg/l)
55.2	#VALUE!	**0.0005**	#VALUE!

Tier 2 Soil Remediation Objective (μg/kg) = **55200**

TABLE
EQUATION R15 WORKSHEET - STEADY STATE ATTENUATION ALONG THE CENTERLINE OF PLUME
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(B)FLUORANTHENE(P4-A1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R26 $C_{(x)} = GW_{source}*\{\exp[(X/2\alpha_x)*(1-(1+(4*\lambda*\alpha_x)/U)^{1/2})]*\mathrm{erf}[S_w/(4*(\alpha_y*X)^{1/2})]*\mathrm{erf}[S_d/(2*(\alpha_z*X)^{1/2})]\}$

α_x	=	0.10 * X	Equation R16
α_y	=	α_x/3	Equation R17
α_z	=	α_x/20	Equation R18
U	=	BENZO(B)FLUORANTHEI	Equation R19
X	=	1175	feet
K	=	0.000031	cm/sec
S_w	=	6096	cm
S_d	=	762	cm
i	=	0.033	unitless
$GW_{(source)}$	=	#VALUE!	mg/l
θ_T	=	0.43	unitless
λ	=	0.00057	day^{-1}
GW_{comp}	=	0.0005	mg/l

$C_{(x)}$ (μg/l)	X (feet)	GW_{comp} (mg/l)	$C_{(x)}$ (mg/l)	X (cm)	C_{source} (mg/l)	β_3 =(X/(2α_x))	β_4 =1-[1+(4λ*α_x)/U]$^{+1/2}$	a_x (cm)	a_y (cm)	a_z (cm)	U (cm/day)	λ (day^{-1})	S_w (cm)	S_d (cm)	K (cm/day)	I (cm/cm)	θ_T (cm^3/cm^3)	β_1 =S_w/(4*[α_x*X]$^{1/2}$)	β_2 =S_d/(2*[α_z*X]$^{1/2}$)	Error Function erf(β_1)	Error Function erf(β_2)
#VALUE!	1	0.0005	#VALUE!	30.5	#VALUE!	5	-0.01676385	3.048	1.016	0.1524	0.20555163	0.00057	6096	762	2.6784	0.033	0.43	273.86127875	176.77669530	1.00000000	1.00000000
#VALUE!	10	0.0005	#VALUE!	304.8	#VALUE!	5	-0.15675725	30.48	10.16	1.524	0.20555163	0.00057	6096	762	2.6784	0.033	0.43	27.38612788	17.67766953	1.00000000	1.00000000
#VALUE!	15	0.0005	#VALUE!	457.2	#VALUE!	5	-0.22765263	45.72	15.24	2.286	0.20555163	0.00057	6096	762	2.6784	0.033	0.43	18.25741858	11.78511302	1.00000000	1.00000000
#VALUE!	25	0.0005	#VALUE!	762.0	#VALUE!	5	-0.35838813	76.2	25.4	3.81	0.20555163	0.00057	6096	762	2.6784	0.033	0.43	10.95445115	7.07106781	1.00000000	1.00000000
#VALUE!	30	0.0005	#VALUE!	914.4	#VALUE!	5	-0.41924697	91.44	30.48	4.572	0.20555163	0.00057	6096	762	2.6784	0.033	0.43	9.12870929	5.89255651	1.00000000	1.00000000
#VALUE!	41	0.0005	#VALUE!	1249.7	#VALUE!	5	-0.54471940	124.968	41.656	6.2484	0.20555163	0.00057	6096	762	2.6784	0.033	0.43	6.67954338	4.31162671	1.00000000	1.00000000
#VALUE!	45	0.0005	#VALUE!	1371.6	#VALUE!	5	-0.58788947	137.16	45.72	6.858	0.20555163	0.00057	6096	762	2.6784	0.033	0.43	6.08580619	3.92837101	1.00000000	0.99999997
#VALUE!	15	0.0005	#VALUE!	457.2	#VALUE!	5	-0.22765263	45.72	15.24	2.286	0.20555163	0.00057	6096	762	2.6784	0.033	0.43	18.25741858	11.78511302	1.00000000	1.00000000
#VALUE!	20	0.0005	#VALUE!	609.6	#VALUE!	5	-0.29467164	60.96	20.32	3.048	0.20555163	0.00057	6096	762	2.6784	0.033	0.43	13.69306394	8.83883476	1.00000000	1.00000000
#VALUE!	23	0.0005	#VALUE!	701.0	#VALUE!	5	-0.33326698	70.104	23.368	3.5052	0.20555163	0.00057	6096	762	2.6784	0.033	0.43	11.90701212	7.68594327	1.00000000	1.00000000
#VALUE!	24	0.0005	#VALUE!	731.5	#VALUE!	5	-0.34588617	73.152	24.384	3.6576	0.20555163	0.00057	6096	762	2.6784	0.033	0.43	11.41088661	7.36569564	1.00000000	1.00000000
#VALUE!	25	0.0005	#VALUE!	762.0	#VALUE!	5	-0.35838813	76.2	25.4	3.81	0.20555163	0.00057	6096	762	2.6784	0.033	0.43	10.95445115	7.07106781	1.00000000	1.00000000
#VALUE!	26	0.0005	#VALUE!	792.5	#VALUE!	5	-0.37077607	79.248	26.416	3.9624	0.20555163	0.00057	6096	762	2.6784	0.033	0.43	10.53312611	6.79910367	1.00000000	1.00000000
#VALUE!	100	0.0005	#VALUE!	3048.0	#VALUE!	5	-1.09305357	304.8	101.6	15.24	0.20555163	0.00057	6096	762	2.6784	0.033	0.43	2.73861279	1.76776695	0.99989249	0.98758067
#VALUE!	500	0.0005	#VALUE!	15240.0	#VALUE!	5	-3.23135513	1524	508	76.2	0.20555163	0.00057	6096	762	2.6784	0.033	0.43	0.54772256	0.35355339	0.56142197	0.38292492
#VALUE!	600	0.0005	#VALUE!	18288.0	#VALUE!	5	-3.61359290	1828.8	609.6	91.44	0.20555163	0.00057	6096	762	2.6784	0.033	0.43	0.45643546	0.29462783	0.48139498	0.32307776
#VALUE!	700	0.0005	#VALUE!	21336.0	#VALUE!	5	-3.96649904	2133.6	711.2	106.68	0.20555163	0.00057	6096	762	2.6784	0.033	0.43	0.39123040	0.25253814	0.41993059	0.27901514
#VALUE!	2750	0.0005	#VALUE!	83820.0	#VALUE!	5	-8.69401951	8382	2794	419.1	0.20555163	0.00057	6096	762	2.6784	0.033	0.43	0.09958592	0.06428243	0.11200031	0.07243517

TABLE
EQUATION R14 WORKSHEET - LEACHING FACTOR
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(B)FLUORANTHENE(P4-A1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

$LF_{sw} = \rho_b/[\theta_{ws}+(k_s*\rho_b)+(H'*\theta_{as})]*[1+(U_{gw}*\delta_{gw})/(I*W)]$

k_s	=	$K_{oc} * f_{oc}$	R20
U_{gw}	=	$K * i$	R24
f_{oc}	=	0.00473	gm/gm
ρ_b	=	LUORANTHEN	gm/cm3
w	=	0.3	unitless
θ_T	=	0.43	unitless
W	=	914.4	centimeters
K	=	0.000031	cm/sec
i	=	0.033	unitless
K_{oc}	=	1050000	L/gm
H'	=	0.00455	unitless
ρ_w	=	1	gm/cm^3
δ_{gw}	=	200	centimeters
I	=	30	cm/year

LFsw	ρ_b	β_1	K_{oc}	f_{oc}	k_s	H'	w	θ_{ws}
$(mg/L_{water})/(mg/kg_{soil})$	g/cm^3	$=\theta_{ws}+(k_s*\rho_s)+(H'*\theta_{as})$	cm^3/g	g/g	cm^3_{water}/g_{soil}	unitless	unitless	cm^3_{water}/cm^3_{soil}
#VALUE!	UORANTHE	#VALUE!	1050000	0.00473	4966.5	0.00455	0.3	#VALUE!

θ_T	θ_{as}	β_2	K	i	U_{gw}	δ_{gw}	I	W
uniltess	cm^3_{air}/cm^3_{soil}	$=1+(U_{gw}*\delta_{gw})/(I*W)$	cm/year	cm/cm	cm/year	cm	cm/year	cm
0.43	#VALUE!	1.235209449	977.616	0.033	32.261328	200	30	914.4

INPUT PARAMETERS FOR TIER 2 SOIL COMPONENT TO GROUNDWATER INGESTION EVALUATION

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		BENZO(B)FLUORANTHENE(P6-A5.5-W)		
Site Name		CHAMPAIGN MGP		
Site Location		CHAMPAIGN, ILLINOIS		
FOR RBCA EQUATION - (R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, and R24)				
Constituent based parameters				
Organic carbon partition coefficient	K_{oc}	1050000	cm^3/g	Appendix C; Table E
Henry's constant	H'	0.00455	l/gm	Appendix C; Table E
Solubility	S	0.0015	mg/l	Appendix C; Table E
Degradation constant	λ	0.00057	day^{-1}	Appendix C; Table E
Groundwater Objective	GW_{obj}	0.0005	mg/l	Appendix B; Table E
Site Specific Data - Soil Zone				
Concentration of Constituent in Soil	$Soil_{(conc)}$	5.09	mg/kg	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	
Soil moisture content	***w***	0.3	unitless	
Total soil porosity - soil	θ_T	0.43	unitless	
Soil bulk density	ρ_b	1.7	gm/cm^3	
Source width in soil parallel to groundwater flow	W	90	feet	
Site Specific Data - Groundwater Zone				
Hydraulic conductivity	K	3.10E-05	cm/sec	
Groundwater gradient	*i*	0.011	unitless	
Total soil porosity - aquifer	θ_T	0.43	unitless	
Source width in groundwater perpendicular to groundwater flow direction	S_w	60	feet	
Source thickness in groundwater zone	S_d	25	feet	
Distance to point of compliance	X	1175	feet	

TABLE
EQUATION R12 WORKSHEET - SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(B)FLUORANTHENE(P6-A5.5-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R12	**RO**	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)}$	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)} * LF_{sw}$	$= GW_{source\text{-}calculated}$
R13	$\mathbf{GW_{source}}$	$= GW_{comp}/[C_{(x)}/C_{(source)}]$

Soil Source Concentration $\mathbf{Soil_{(conc)}}$ **(mg/kg)**	Leachate Factor LF_{sw} $(mg/l_{water})/(mg/kg_{soil})$	**GW Standard** $\mathbf{GW_{comp}}$ **(mg/l)**	GW_{source} $Soil_{(conc)}*LF_{sw}$ (mg/l)
5.09	0.000196209	**0.0005**	0.000998704

Tier 2 Soil Remediation Objective (μg/kg) = **5090**

TABLE
EQUATION R15 WORKSHEET - STEADY STATE ATTENUATION ALONG THE CENTERLINE OF PLUME
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(B)FLUORANTHENE(P6-A5.5-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R26 $C_{(x)} = GW_{source}*\{\exp[(X/2\alpha_x)*(1-(1+(4*\lambda*\alpha_x)/U)^{1/2})]*\mathrm{erf}[S_w/(4*(\alpha_y*X)^{1/2})]*\mathrm{erf}[S_d/(2*(\alpha_z*X)^{1/2})]\}$

α_x	=	0.10 * X	Equation R16
α_y	=	α_x/3	Equation R17
α_z	=	α_x/20	Equation R18
U	=	K*i/θ_T	Equation R19
X	=	1175	feet
K	=	0.000031	cm/sec
S_w	=	1828.8	cm
S_d	=	762	cm
i	=	0.011	unitless
$GW_{(source)}$	=	0.0009987	mg/l
θ_T	=	0.43	unitless
λ	=	0.00057	day^{-1}
GW_{comp}	=	0.0005	mg/l

$C_{(x)}$ (μg/l)	X (feet)	GW_{comp} (mg/l)	$C_{(x)}$ (mg/l)	X (cm)	C_{source} (mg/l)	β_3 =(X/(2α_x))	β_4 =1-[1+(4λ*α_x)/U]$^{+1/2}$	a_x (cm)	a_y (cm)	a_z (cm)	U (cm/day)	λ (day^{-1})	S_w (cm)	S_d (cm)	K (cm/day)	I (cm/cm)	θ_T (cm^3/cm^3)	β_1 =S_w/(4*[α_x*X]$^{1/2}$)	β_2 =S_d/(2*[α_z*X]$^{1/2}$)	Error Function erf(β_1)	Error Function erf(β_2)
0.881164	0.5	0.0005	0.00088116	15.2	0.0	5	-0.02504297	1.524	0.508	0.0762	0.06851721	0.00057	1828.8	762	2.6784	0.011	0.43	164.31676725	353.55339059	1.00000000	1.00000000
0.7797832	1	0.0005	0.00077978	30.5	0.0	5	-0.04948854	3.048	1.016	0.1524	0.06851721	0.00057	1828.8	762	2.6784	0.011	0.43	82.15838363	176.77669530	1.00000000	1.00000000
0.6919897	1.5	0.0005	0.00069199	45.7	0.0	5	-0.07337752	4.572	1.524	0.2286	0.06851721	0.00057	1828.8	762	2.6784	0.011	0.43	54.77225575	117.85113020	1.00000000	1.00000000
0.61568	2	0.0005	0.00061568	61.0	0.0	5	-0.09674628	6.096	2.032	0.3048	0.06851721	0.00057	1828.8	762	2.6784	0.011	0.43	41.07919181	88.38834765	1.00000000	1.00000000
0.5491226	2.5	0.0005	0.00054912	76.2	0.0	5	-0.11962739	7.62	2.54	0.381	0.06851721	0.00057	1828.8	762	2.6784	0.011	0.43	32.86335345	70.71067812	1.00000000	1.00000000
0.5190431	2.75	0.0005	0.00051904	83.8	0.0	5	-0.13089436	8.382	2.794	0.4191	0.06851721	0.00057	1828.8	762	2.6784	0.011	0.43	29.87577586	64.28243465	1.00000000	1.00000000
0.490884	3	0.0005	0.00049088	91.4	0.0	5	-0.14205017	9.144	3.048	0.4572	0.06851721	0.00057	1828.8	762	2.6784	0.011	0.43	27.38612788	58.92556510	1.00000000	1.00000000
0.0528264	15	0.0005	5.2826E-05	457.2	0.0	5	-0.58788947	45.72	15.24	2.286	0.06851721	0.00057	1828.8	762	2.6784	0.011	0.43	5.47722558	11.78511302	1.00000000	1.00000000
0.0246587	20	0.0005	2.4659E-05	609.6	0.0	5	-0.74026548	60.96	20.32	3.048	0.06851721	0.00057	1828.8	762	2.6784	0.011	0.43	4.10791918	8.83883476	0.99999999	1.00000000
0.0160945	23	0.0005	1.6094E-05	701.0	0.0	5	-0.82559649	70.104	23.368	3.5052	0.06851721	0.00057	1828.8	762	2.6784	0.011	0.43	3.57210364	7.68594327	0.99999956	1.00000000
0.0140219	24	0.0005	1.4022E-05	731.5	0.0	5	-0.85316722	73.152	24.384	3.6576	0.06851721	0.00057	1828.8	762	2.6784	0.011	0.43	3.42326598	7.36569564	0.99999871	1.00000000
0.0122409	25	0.0005	1.2241E-05	762.0	0.0	5	-0.88033373	76.2	25.4	3.81	0.06851721	0.00057	1828.8	762	2.6784	0.011	0.43	3.28633535	7.07106781	0.99999664	1.00000000
0.0107069	26	0.0005	1.0707E-05	792.5	0.0	5	-0.90711330	79.248	26.416	3.9624	0.06851721	0.00057	1828.8	762	2.6784	0.011	0.43	3.15993783	6.79910367	0.99999214	1.00000000
6.234E-06	100	0.0005	6.2341E-09	3048.0	0.0	5	-2.33805628	304.8	101.6	15.24	0.06851721	0.00057	1828.8	762	2.6784	0.011	0.43	0.82158384	1.76776695	0.75472188	0.98758067
2.528E-15	500	0.0005	2.5282E-18	15240.0	0.0	5	-6.19118201	1524	508	76.2	0.06851721	0.00057	1828.8	762	2.6784	0.011	0.43	0.16431677	0.35355339	0.18375634	0.38292492
6.14E-17	600	0.0005	6.1402E-20	18288.0	0.0	5	-6.86484065	1828.8	609.6	91.44	0.06851721	0.00057	1828.8	762	2.6784	0.011	0.43	0.13693064	0.29462783	0.15354940	0.32307776
2.047E-18	700	0.0005	2.0475E-21	21336.0	0.0	5	-7.48518345	2133.6	711.2	106.68	0.06851721	0.00057	1828.8	762	2.6784	0.011	0.43	0.11736912	0.25253814	0.13183125	0.27901514
1.69E-37	2750	0.0005	1.69E-40	83820.0	0.0	5	-15.73087096	8382	2794	419.1	0.06851721	0.00057	1828.8	762	2.6784	0.011	0.43	0.02987578	0.06428243	0.03370118	0.07243517

TABLE
EQUATION R14 WORKSHEET - LEACHING FACTOR
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(B)FLUORANTHENE(P6-A5.5-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

$LF_{sw} = \rho_b/[\theta_{ws}+(k_s*\rho_b)+(H'*\theta_{as})]*[1+(U_{gw}*\delta_{gw})/(I*W)]$

k_s	=	$K_{oc} * f_{oc}$	R20
U_{gw}	=	$K * i$	R24
f_{oc}	=	0.00473	gm/gm
ρ_b	=	1.7	gm/cm3
w	=	0.3	unitless
θ_T	=	0.43	unitless
W	=	2743.2	centimeters
K	=	0.000031	cm/sec
i	=	0.011	unitless
K_{oc}	=	1050000	L/gm
H'	=	0.00455	unitless
ρ_w	=	1	gm/cm^3
δ_{gw}	=	200	centimeters
I	=	30	cm/year

LFsw $(mg/L_{water})/(mg/kg_{soil})$	ρ_b g/cm^3	β_1 $=\theta_{ws}+(k_s*\rho_s)+(H'*\theta_{as})$	K_{oc} cm^3/g	f_{oc} g/g	k_s cm^3_{water}/g_{soil}	H' unitless	w unitless	θ_{ws} cm^3_{water}/cm^3_{soil}
0.000196209	**1.7**	8443.559636	**1050000**	**0.00473**	4966.5	**0.00455**	0.3	0.51

θ_T uniltess	θ_{as} cm^3_{air}/cm^3_{soil}	β_2 $=1+(U_{gw}*\delta_{gw})/(I*W)$	K cm/year	i cm/cm	U_{gw} cm/year	δ_{gw} cm	I cm/year	W cm
0.43	-0.08	1.026134383	977.616	0.011	10.753776	200	30	2743.2

INPUT PARAMETERS FOR TIER 2 SOIL COMPONENT TO GROUNDWATER INGESTION EVALUATION

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		BENZO(B)FLUROANTHENE(P7-CD1-SW)		
Site Name		CHAMPAIGN MGP		
Site Location		CHAMPAIGN, ILLINOIS		
FOR RBCA EQUATION - (R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, and R24)				
Constituent based parameters				
Organic carbon partition coefficient	K_{oc}	1050000	cm^3/g	Appendix C; Table E
Henry's constant	H'	0.00455	l/gm	Appendix C; Table E
Solubility	S	0.0015	mg/l	Appendix C; Table E
Degradation constant	λ	0.00057	day^{-1}	Appendix C; Table E
Groundwater Objective	GW_{obj}	0.0005	mg/l	Appendix B; Table E
Site Specific Data - Soil Zone				
Concentration of Constituent in Soil	$Soil_{(conc)}$	11.7	mg/kg	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	
Soil moisture content	***w***	0.3	unitless	
Total soil porosity - soil	θ_T	0.43	unitless	
Soil bulk density	ρ_b	1.7	gm/cm^3	
Source width in soil parallel to groundwater flow	W	20	feet	
Site Specific Data - Groundwater Zone				
Hydraulic conductivity	K	3.10E-05	cm/sec	
Groundwater gradient	*i*	0.02	unitless	
Total soil porosity - aquifer	θ_T	0.43	unitless	
Source width in groundwater perpendicular to groundwater flow direction	S_w	60	feet	
Source thickness in groundwater zone	S_d	25	feet	
Distance to point of compliance	X	1175	feet	

TABLE
EQUATION R12 WORKSHEET - SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(B)FLUROANTHENE(P7-CD1-SW)
CHAMPAIGN MGP
CHAMPAIGN MGP

R12	**RO**	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)}$	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)} * LF_{sw}$	$= GW_{source\text{-}calculated}$
R13	$\mathbf{GW_{source}}$	$= GW_{comp}/[C_{(x)}/C_{(source)}]$

Soil Source Concentration $Soil_{(conc)}$ **(mg/kg)**	Leachate Factor LF_{sw} $(mg/l_{water})/(mg/kg_{soil})$	**GW Standard** GW_{comp} **(mg/l)**	GW_{source} $Soil_{(conc)}*LF_{sw}$ (mg/l)
11.7	0.00016587	**0.0005**	0.001940674

Tier 2 Soil Remediation Objective (μg/kg) = **11700**

TABLE
EQUATION R15 WORKSHEET - STEADY STATE ATTENUATION ALONG THE CENTERLINE OF PLUME
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(B)FLUROANTHENE(P7-CD1-SW)
CHAMPAIGN MGP
CHAMPAIGN MGP

R26 $C_{(x)} = GW_{source}*\{\exp[(X/2\alpha_x)*(1-(1+(4*\lambda*\alpha_x)/U)^{1/2})]*\mathrm{erf}[S_w/(4*(\alpha_y*X)^{1/2})]*\mathrm{erf}[S_d/(2*(\alpha_z*X)^{1/2})]\}$

α_x	=	0.10 * X	Equation R16
α_y	=	α_x/3	Equation R17
α_z	=	α_x/20	Equation R18
U	=	K*i/θ_T	Equation R19
X	=	1175	feet
K	=	0.000031	cm/sec
S_w	=	1828.8	cm
S_d	=	762	cm
i	=	0.02	unitless
$GW_{(source)}$	=	0.00194067	mg/l
θ_T	=	0.43	unitless
λ	=	0.00057	day^{-1}
GW_{comp}	=	0.0005	mg/l

$C_{(x)}$ (μg/l)	X (feet)	GW_{comp} (mg/l)	$C_{(x)}$ (mg/l)	X (cm)	C_{source} (mg/l)	β_3 =(X/(2α_x))	β_4 =1-[1+(4λ*α_x)/U]$^{+1/2}$	a_x (cm)	a_y (cm)	a_z (cm)	U (cm/day)	λ (day^{-1})	S_w (cm)	S_d (cm)	K (cm/day)	I (cm/cm)	θ_T (cm^3/cm^3)	β_1 =S_w/(4*[α_y*X]$^{1/2}$)	β_2 =S_d/(2*[α_z*X]$^{1/2}$)	Error Function erf(β_1)	Error Function erf(β_2)
1.6912478	**1**	0.0005	0.00169125	30.5	0.0	5	-0.02751370	3.048	1.016	0.1524	0.12457674	**0.00057**	**1828.8**	**762**	**2.6784**	**0.02**	**0.43**	82.15838363	176.77669530	1.00000000	1.00000000
1.4791786	**2**	0.0005	0.00147918	61.0	0.0	5	-0.05430964	6.096	2.032	0.3048	0.12457674	**0.00057**	**1828.8**	**762**	**2.6784**	**0.02**	**0.43**	41.07919181	88.38834765	1.00000000	1.00000000
1.2980057	**3**	0.0005	0.00129801	91.4	0.0	5	-0.08044122	9.144	3.048	0.4572	0.12457674	**0.00057**	**1828.8**	**762**	**2.6784**	**0.02**	**0.43**	27.38612788	58.92556510	1.00000000	1.00000000
1.0086001	**5**	0.0005	0.0010086	152.4	0.0	5	-0.13089436	15.24	5.08	0.762	0.12457674	**0.00057**	**1828.8**	**762**	**2.6784**	**0.02**	**0.43**	16.43167673	35.35533906	1.00000000	1.00000000
0.892758	**6**	0.0005	0.00089276	182.9	0.0	5	-0.15529496	18.288	6.096	0.9144	0.12457674	**0.00057**	**1828.8**	**762**	**2.6784**	**0.02**	**0.43**	13.69306394	29.46278255	1.00000000	1.00000000
0.5612179	**10**	0.0005	0.00056122	304.8	0.0	5	-0.24813624	30.48	10.16	1.524	0.12457674	**0.00057**	**1828.8**	**762**	**2.6784**	**0.02**	**0.43**	8.21583836	17.67766953	1.00000000	1.00000000
0.450565	**12**	0.0005	0.00045056	365.8	0.0	5	-0.29205762	36.576	12.192	1.8288	0.12457674	**0.00057**	**1828.8**	**762**	**2.6784**	**0.02**	**0.43**	6.84653197	14.73139127	1.00000000	1.00000000
0.3284627	**15**	0.0005	0.00032846	457.2	0.0	5	-0.35527345	45.72	15.24	2.286	0.12457674	**0.00057**	**1828.8**	**762**	**2.6784**	**0.02**	**0.43**	5.47722558	11.78511302	1.00000000	1.00000000
0.1999541	**20**	0.0005	0.00019995	609.6	0.0	5	-0.45454054	60.96	20.32	3.048	0.12457674	**0.00057**	**1828.8**	**762**	**2.6784**	**0.02**	**0.43**	4.10791918	8.83883476	0.99999999	1.00000000
0.1507951	**23**	0.0005	0.0001508	701.0	0.0	5	-0.51097366	70.104	23.368	3.5052	0.12457674	**0.00057**	**1828.8**	**762**	**2.6784**	**0.02**	**0.43**	3.57210364	7.68594327	0.99999956	1.00000000
0.1375764	**24**	0.0005	0.00013758	731.5	0.0	5	-0.52932201	73.152	24.384	3.6576	0.12457674	**0.00057**	**1828.8**	**762**	**2.6784**	**0.02**	**0.43**	3.42326598	7.36569564	0.99999871	1.00000000
0.1256529	**25**	0.0005	0.00012565	762.0	0.0	5	-0.54745282	76.2	25.4	3.81	0.12457674	**0.00057**	**1828.8**	**762**	**2.6784**	**0.02**	**0.43**	3.28633535	7.07106781	0.99999664	1.00000000
0.114883	**26**	0.0005	0.00011488	792.5	0.0	5	-0.56537364	79.248	26.416	3.9624	0.12457674	**0.00057**	**1828.8**	**762**	**2.6784**	**0.02**	**0.43**	3.15993783	6.79910367	0.99999214	1.00000000
0.0005785	**100**	0.0005	5.7848E-07	3048.0	0.0	5	-1.56484714	304.8	101.6	15.24	0.12457674	**0.00057**	**1828.8**	**762**	**2.6784**	**0.02**	**0.43**	0.82158384	1.76776695	0.75472188	0.98758067
4.313E-11	**500**	0.0005	4.3132E-14	15240.0	0.0	5	-4.37514691	1524	508	76.2	0.12457674	**0.00057**	**1828.8**	**762**	**2.6784**	**0.02**	**0.43**	0.16431677	0.35355339	0.18375634	0.38292492
2.546E-12	**600**	0.0005	2.5462E-15	18288.0	0.0	5	-4.87117068	1828.8	609.6	91.44	0.12457674	**0.00057**	**1828.8**	**762**	**2.6784**	**0.02**	**0.43**	0.13693064	0.29462783	0.15354940	0.32307776
1.919E-13	**700**	0.0005	1.9189E-16	21336.0	0.0	5	-5.32843472	2133.6	711.2	106.68	0.12457674	**0.00057**	**1828.8**	**762**	**2.6784**	**0.02**	**0.43**	0.11736912	0.25253814	0.13183125	0.27901514
7.314E-28	**2750**	0.0005	7.3141E-31	83820.0	0.0	5	-11.42606630	8382	2794	419.1	0.12457674	**0.00057**	**1828.8**	**762**	**2.6784**	**0.02**	**0.43**	0.02987578	0.06428243	0.03370118	0.07243517

TABLE
EQUATION R14 WORKSHEET - LEACHING FACTOR
SOIL COMPONENT OF GROUNDWATER INGESTION
BENZO(B)FLUROANTHENE(P7-CD1-SW)
CHAMPAIGN MGP
CHAMPAIGN MGP

$$LF_{sw} = \rho_b/[\theta_{ws}+(k_s*\rho_b)+(H'*\theta_{as})]*[1+(U_{gw}*\delta_{gw})/(I*W)]$$

k_s	=	$K_{oc} * f_{oc}$	R20
U_{gw}	=	$K * i$	R24
f_{oc}	=	0.00473	gm/gm
ρ_b	=	1.7	gm/cm3
w	=	0.3	unitless
θ_T	=	0.43	unitless
W	=	609.6	centimeters
K	=	0.000031	cm/sec
i	=	0.02	unitless
K_{oc}	=	1050000	L/gm
H'	=	0.00455	unitless
ρ_w	=	1	gm/cm^3
δ_{gw}	=	200	centimeters
I	=	30	cm/year

LFsw (mg/L_{water})/(mg/kg_{soil})	ρ_b g/cm^3	β_1 $=\theta_{ws}+(k_s*\rho_s)+(H'*\theta_{as})$	K_{oc} cm^3/g	f_{oc} g/g	k_s cm^3_{water}/g_{soil}	H' unitless	w unitless	θ_{ws} cm^3_{water}/cm^3_{soil}
0.00016587	**1.7**	8443.559636	**1050000**	**0.00473**	4966.5	**0.00455**	0.3	0.51

θ_T uniltess	θ_{as} cm^3_{air}/cm^3_{soil}	β_2 $=1+(U_{gw}*\delta_{gw})/(I*W)$	K cm/year	i cm/cm	U_{gw} cm/year	δ_{gw} cm	I cm/year	W cm
0.43	-0.08	1.213826772	977.616	0.02	19.55232	200	30	609.6

INPUT PARAMETERS FOR TIER 2 SOIL COMPONENT TO GROUNDWATER INGESTION EVALUATION

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		DIBENZO(A,H)ANTHRACENE(P3-C1-W)		
Site Name		CHAMPAIGN MGP		
Site Location		CHAMPAIGN, ILLINOIS		
FOR RBCA EQUATION - (R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, and R24)				
Constituent based parameters				
Organic carbon partition coefficient	K_{oc}	2500000	cm^3/g	Appendix C; Table E
Henry's constant	H'	0.00000061	l/gm	Appendix C; Table E
Solubility	S	0.0025	mg/l	Appendix C; Table E
Degradation constant	λ	0.00037	day^{-1}	Appendix C; Table E
Groundwater Objective	GW_{obj}	0.00005	mg/l	Appendix B; Table E
Site Specific Data - Soil Zone				
Concentration of Constituent in Soil	$Soil_{(conc)}$	5.64	mg/kg	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	
Soil moisture content	***w***	0.3	unitless	
Total soil porosity - soil	θ_T	0.43	unitless	
Soil bulk density	ρ_b	1.7	gm/cm^3	
Source width in soil parallel to groundwater flow	W	60	feet	
Site Specific Data - Groundwater Zone				
Hydraulic conductivity	K	3.10E-05	cm/sec	
Groundwater gradient	*i*	0.036	unitless	
Total soil porosity - aquifer	θ_T	0.43	unitless	
Source width in groundwater perpendicular to groundwater flow direction	S_w	165	feet	
Source thickness in groundwater zone	S_d	25	feet	
Distance to point of compliance	X	1175	feet	

TABLE
EQUATION R12 WORKSHEET - SOIL COMPONENT OF GROUNDWATER INGESTION
DIBENZO(A,H)ANTHRACENE(P3-C1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R12	**RO**	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)}$	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)} * LF_{sw}$	$= GW_{source\text{-}calculated}$
R13	$\mathbf{GW_{source}}$	$= GW_{comp}/[C_{(x)}/C_{(source)}]$

Soil Source Concentration $\mathbf{Soil_{(conc)}}$ **(mg/kg)**	Leachate Factor LF_{sw} $(mg/l_{water})/(mg/kg_{soil})$	**GW Standard** $\mathbf{GW_{comp}}$ **(mg/l)**	GW_{source} $Soil_{(conc)}*LF_{sw}$ (mg/l)
5.64	7.49488E-05	**0.00005**	0.000422711

Tier 2 Soil Remediation Objective (μg/kg) = **5640**

TABLE
EQUATION R15 WORKSHEET - STEADY STATE ATTENUATION ALONG THE CENTERLINE OF PLUME
SOIL COMPONENT OF GROUNDWATER INGESTION
DIBENZO(A,H)ANTHRACENE(P3-C1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R26 $C_{(x)} = GW_{source}*\{\exp[(X/2\alpha_x)*(1-(1+(4*\lambda*\alpha_x)/U)^{1/2})]*\mathrm{erf}[S_w/(4*(\alpha_y*X)^{1/2})]*\mathrm{erf}[S_d/(2*(\alpha_z*X)^{1/2})]\}$

α_x	=	0.10 * X	Equation R16
α_y	=	$\alpha_x/3$	Equation R17
α_z	=	$\alpha_x/20$	Equation R18
U	=	$K*i/\theta_T$	Equation R19
X	=	1175	feet
K	=	0.000031	cm/sec
S_w	=	5029.2	cm
S_d	=	762	cm
i	=	0.036	unitless
$GW_{(source)}$	=	0.00042271	mg/l
θ_T	=	0.43	unitless
λ	=	0.00037	day^{-1}
GW_{comp}	=	0.00005	mg/l

$C_{(x)}$ (μg/l)	X (feet)	GW_{comp} (mg/l)	$C_{(x)}$ (mg/l)	X (cm)	C_{source} (mg/l)	β_3 =(X/(2α_x))	β_4 =1-[1+(4λ*α_x)/U]^1/2	a_x (cm)	a_y (cm)	a_z (cm)	U (cm/day)	λ (day^{-1})	S_w (cm)	S_d (cm)	K (cm/day)	I (cm/cm)	θ_T (cm^3/cm^3)	β_1 =S_w/(4*[α_y*X]^1/2)	β_2 =S_d/(2*[α_z*X]^1/2)	Error Function erf(β_1)	Error Function erf(β_2)
0.4020783	**1**	0.00005	0.000402078	30.5	0.0	5	-0.01000851	3.048	1.016	0.1524	0.22423814	**0.00037**	**5029.2**	**762**	**2.6784**	**0.036**	**0.43**	225.93555497	176.77669530	1.00000000	1.00000000
0.1682851	**20**	0.00005	0.000168285	609.6	0.0	5	-0.18420593	60.96	20.32	3.048	0.22423814	**0.00037**	**5029.2**	**762**	**2.6784**	**0.036**	**0.43**	11.29677775	8.83883476	1.00000000	1.00000000
0.1365906	**25**	0.00005	0.000136591	762.0	0.0	5	-0.22594030	76.2	25.4	3.81	0.22423814	**0.00037**	**5029.2**	**762**	**2.6784**	**0.036**	**0.43**	9.03742220	7.07106781	1.00000000	1.00000000
0.0759258	**40**	0.00005	7.59258E-05	1219.2	0.0	5	-0.34338653	121.92	40.64	6.096	0.22423814	**0.00037**	**5029.2**	**762**	**2.6784**	**0.036**	**0.43**	5.64838887	4.41941738	1.00000000	1.00000000
0.0631244	**45**	0.00005	6.31244E-05	1371.6	0.0	5	-0.38031638	137.16	45.72	6.858	0.22423814	**0.00037**	**5029.2**	**762**	**2.6784**	**0.036**	**0.43**	5.02079011	3.92837101	1.00000000	0.99999997
0.0527346	**50**	0.00005	5.27346E-05	1524.0	0.0	5	-0.41628359	152.4	50.8	7.62	0.22423814	**0.00037**	**5029.2**	**762**	**2.6784**	**0.036**	**0.43**	4.51871110	3.53553391	1.00000000	0.99999943
0.0491365	**52**	0.00005	4.91365E-05	1585.0	0.0	5	-0.43041728	158.496	52.832	7.9248	0.22423814	**0.00037**	**5029.2**	**762**	**2.6784**	**0.036**	**0.43**	4.34491452	3.39955183	1.00000000	0.99999847
0.0527346	**50**	0.00005	5.27346E-05	1524.0	0.0	5	-0.41628359	152.4	50.8	7.62	0.22423814	**0.00037**	**5029.2**	**762**	**2.6784**	**0.036**	**0.43**	4.51871110	3.53553391	1.00000000	0.99999943
0.1682851	**20**	0.00005	0.000168285	609.6	0.0	5	-0.18420593	60.96	20.32	3.048	0.22423814	**0.00037**	**5029.2**	**762**	**2.6784**	**0.036**	**0.43**	11.29677775	8.83883476	1.00000000	1.00000000
0.1483527	**23**	0.00005	0.000148353	701.0	0.0	5	-0.20941938	70.104	23.368	3.5052	0.22423814	**0.00037**	**5029.2**	**762**	**2.6784**	**0.036**	**0.43**	9.82328500	7.68594327	1.00000000	1.00000000
0.1423303	**24**	0.00005	0.00014233	731.5	0.0	5	-0.21770786	73.152	24.384	3.6576	0.22423814	**0.00037**	**5029.2**	**762**	**2.6784**	**0.036**	**0.43**	9.41398146	7.36569564	1.00000000	1.00000000
0.1365906	**25**	0.00005	0.000136591	762.0	0.0	5	-0.22594030	76.2	25.4	3.81	0.22423814	**0.00037**	**5029.2**	**762**	**2.6784**	**0.036**	**0.43**	9.03742220	7.07106781	1.00000000	1.00000000
0.1311184	**26**	0.00005	0.000131118	792.5	0.0	5	-0.23411782	79.248	26.416	3.9624	0.22423814	**0.00037**	**5029.2**	**762**	**2.6784**	**0.036**	**0.43**	8.68982904	6.79910367	1.00000000	1.00000000
0.0105449	**100**	0.00005	1.05449E-05	3048.0	0.0	5	-0.73543033	304.8	101.6	15.24	0.22423814	**0.00037**	**5029.2**	**762**	**2.6784**	**0.036**	**0.43**	2.25935555	1.76776695	0.99860271	0.98758067
6.89E-07	**500**	0.00005	6.89001E-10	15240.0	0.0	5	-2.32544616	1524	508	76.2	0.22423814	**0.00037**	**5029.2**	**762**	**2.6784**	**0.036**	**0.43**	0.45187111	0.35355339	0.47720455	0.38292492
1.16E-07	**600**	0.00005	1.16003E-10	18288.0	0.0	5	-2.61528846	1828.8	609.6	91.44	0.22423814	**0.00037**	**5029.2**	**762**	**2.6784**	**0.036**	**0.43**	0.37655926	0.29462783	0.40564464	0.32307776
2.273E-08	**700**	0.00005	2.27285E-11	21336.0	0.0	5	-2.88355882	2133.6	711.2	106.68	0.22423814	**0.00037**	**5029.2**	**762**	**2.6784**	**0.036**	**0.43**	0.32276508	0.25253814	0.35193987	0.27901514
2.124E-17	**2750**	0.00005	2.12372E-20	83820.0	0.0	5	-6.50481559	8382	2794	419.1	0.22423814	**0.00037**	**5029.2**	**762**	**2.6784**	**0.036**	**0.43**	0.08215838	0.06428243	0.09249764	0.07243517

TABLE
EQUATION R14 WORKSHEET - LEACHING FACTOR
SOIL COMPONENT OF GROUNDWATER INGESTION
DIBENZO(A,H)ANTHRACENE(P3-C1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

$$LF_{sw} = \rho_b/[\theta_{ws}+(k_s*\rho_b)+(H'*\theta_{as})]*[1+(U_{gw}*\delta_{gw})/(I*W)]$$

k_s	=	$K_{oc} * f_{oc}$	R20
U_{gw}	=	$K * i$	R24
f_{oc}	=	0.00473	gm/gm
ρ_b	=	1.7	gm/cm3
w	=	0.3	unitless
θ_T	=	0.43	unitless
W	=	1828.8	centimeters
K	=	0.000031	cm/sec
i	=	0.036	unitless
K_{oc}	=	2500000	L/gm
H'	=	0.00000061	unitless
ρ_w	=	1	gm/cm^3
δ_{gw}	=	200	centimeters
I	=	30	cm/year

LFsw (mg/L_{water})/ (mg/kg_{soil})	ρ_b g/cm^3	β_1 $=\theta_{ws}+(k_s*\rho_s)+(H'*\theta_{as})$	K_{oc} cm^3/g	f_{oc} g/g	k_s cm^3_{water}/g_{soil}	H' unitless	w unitless	θ_{ws} cm^3_{water}/cm^3_{soil}
7.49488E-05	**1.7**	20103.01	**2500000**	**0.00473**	11825	**6.1E-07**	0.3	0.51

θ_T uniltess	θ_{as} cm^3_{air}/cm^3_{soil}	β_2 $=1+(U_{gw}*\delta_{gw})/(I*W)$	K cm/year	i cm/cm	U_{gw} cm/year	δ_{gw} cm	I cm/year	W cm
0.43	-0.08	1.128296063	977.616	0.036	35.194176	200	30	1828.8

INPUT PARAMETERS FOR TIER 2 SOIL COMPONENT TO GROUNDWATER INGESTION EVALUATION

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		DIBENZO(A,H)ANTHRACENE(P4-A1-W)		
Site Name		CHAMPAIGN MGP		
Site Location		CHAMPAIGN, ILLINOIS		
FOR RBCA EQUATION - (R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, and R24)				
Constituent based parameters				
Organic carbon partition coefficient	K_{oc}	2500000	cm^3/g	Appendix C; Table E
Henry's constant	H'	0.00000061	l/gm	Appendix C; Table E
Solubility	S	0.0025	mg/l	Appendix C; Table E
Degradation constant	λ	0.00037	day^{-1}	Appendix C; Table E
Groundwater Objective	GW_{obj}	0.00005	mg/l	Appendix B; Table E
Site Specific Data - Soil Zone				
Concentration of Constituent in Soil	$Soil_{(conc)}$	7.2	mg/kg	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	
Soil moisture content	***w***	0.3	unitless	
Total soil porosity - soil	θ_T	0.43	unitless	
Soil bulk density	ρ_b	1.7	gm/cm^3	
Source width in soil parallel to groundwater flow	W	30	feet	
Site Specific Data - Groundwater Zone				
Hydraulic conductivity	K	3.10E-05	cm/sec	
Groundwater gradient	*i*	0.033	unitless	
Total soil porosity - aquifer	θ_T	0.43	unitless	
Source width in groundwater perpendicular to groundwater flow direction	S_w	200	feet	
Source thickness in groundwater zone	S_d	25	feet	
Distance to point of compliance	X	1175	feet	

TABLE
EQUATION R12 WORKSHEET - SOIL COMPONENT OF GROUNDWATER INGESTION
DIBENZO(A,H)ANTHRACENE(P4-A1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R12	**RO**	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)}$	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)} * LF_{sw}$	$= GW_{source\text{-}calculated}$
R13	$\mathbf{GW_{source}}$	$= GW_{comp}/[C_{(x)}/C_{(source)}]$

Soil Source Concentration $\mathbf{Soil_{(conc)}}$ **(mg/kg)**	Leachate Factor LF_{sw} $(mg/l_{water})/(mg/kg_{soil})$	**GW Standard** $\mathbf{GW_{comp}}$ **(mg/l)**	GW_{source} $Soil_{(conc)}*LF_{sw}$ (mg/l)
7.2	6.84616E-05	**0.00005**	0.000492924

Tier 2 Soil Remediation Objective (μg/kg) = **7200**

TABLE
EQUATION R15 WORKSHEET - STEADY STATE ATTENUATION ALONG THE CENTERLINE OF PLUME
SOIL COMPONENT OF GROUNDWATER INGESTION
DIBENZO(A,H)ANTHRACENE(P4-A1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R26 $C_{(x)} = GW_{source}*\{\exp[(X/2\alpha_x)*(1-(1+(4*\lambda*\alpha_x)/U)^{1/2})]*\mathrm{erf}[S_w/(4*(\alpha_y*X)^{1/2})]*\mathrm{erf}[S_d/(2*(\alpha_z*X)^{1/2})]\}$

α_x	=	0.10 * X	Equation R16
α_y	=	$\alpha_x/3$	Equation R17
α_z	=	$\alpha_x/20$	Equation R18
U	=	$K*i/\theta_T$	Equation R19
X	=	1175	feet
K	=	0.000031	cm/sec
S_w	=	6096	cm
S_d	=	762	cm
i	=	0.033	unitless
$GW_{(source)}$	=	0.00049292	mg/l
θ_T	=	0.43	unitless
λ	=	0.00037	day^{-1}
GW_{comp}	=	0.00005	mg/l

$C_{(x)}$ (μg/l)	X (feet)	GW_{comp} (mg/l)	$C_{(x)}$ (mg/l)	X (cm)	C_{source} (mg/l)	β_3 =(X/(2α_x))	β_4 =1-[1+(4λ*α_x)/U]^1/2	a_x (cm)	a_y (cm)	a_z (cm)	U (cm/day)	λ (day^{-1})	S_w (cm)	S_d (cm)	K (cm/day)	I (cm/cm)	θ_T (cm^3/cm^3)	β_1 =S_w/(4*[α_y*X]^1/2)	β_2 =S_d/(2*[α_z*X]^1/2)	Error Function erf(β_1)	Error Function erf(β_2)
0.4667469	1	0.00005	0.000466747	30.5	0.0	5	-0.01091346	3.048	1.016	0.1524	0.20555163	0.00037	6096	762	2.6784	0.033	0.43	273.86127875	176.77669530	1.00000000	1.00000000
0.1817449	20	0.00005	0.000181745	609.6	0.0	5	-0.19955008	60.96	20.32	3.048	0.20555163	0.00037	6096	762	2.6784	0.033	0.43	13.69306394	8.83883476	1.00000000	1.00000000
0.1452004	25	0.00005	0.0001452	762.0	0.0	5	-0.24444786	76.2	25.4	3.81	0.20555163	0.00037	6096	762	2.6784	0.033	0.43	10.95445115	7.07106781	1.00000000	1.00000000
0.077373	40	0.00005	7.7373E-05	1219.2	0.0	5	-0.37034330	121.92	40.64	6.096	0.20555163	0.00037	6096	762	2.6784	0.033	0.43	6.84653197	4.41941738	1.00000000	1.00000000
0.0635161	45	0.00005	6.35161E-05	1371.6	0.0	5	-0.40981235	137.16	45.72	6.858	0.20555163	0.00037	6096	762	2.6784	0.033	0.43	6.08580619	3.92837101	1.00000000	0.99999997
0.0524218	50	0.00005	5.24218E-05	1524.0	0.0	5	-0.44820612	152.4	50.8	7.62	0.20555163	0.00037	6096	762	2.6784	0.033	0.43	5.47722558	3.53553391	1.00000000	0.99999943
0.0486156	52	0.00005	4.86156E-05	1585.0	0.0	5	-0.46328159	158.496	52.832	7.9248	0.20555163	0.00037	6096	762	2.6784	0.033	0.43	5.26656305	3.39955183	1.00000000	0.99999847
0.0524218	50	0.00005	5.24218E-05	1524.0	0.0	5	-0.44820612	152.4	50.8	7.62	0.20555163	0.00037	6096	762	2.6784	0.033	0.43	5.47722558	3.53553391	1.00000000	0.99999943
0.1817449	20	0.00005	0.000181745	609.6	0.0	5	-0.19955008	60.96	20.32	3.048	0.20555163	0.00037	6096	762	2.6784	0.033	0.43	13.69306394	8.83883476	1.00000000	1.00000000
0.1586856	23	0.00005	0.000158686	701.0	0.0	5	-0.22668596	70.104	23.368	3.5052	0.20555163	0.00037	6096	762	2.6784	0.033	0.43	11.90701212	7.68594327	1.00000000	1.00000000
0.1517691	24	0.00005	0.000151769	731.5	0.0	5	-0.23559883	73.152	24.384	3.6576	0.20555163	0.00037	6096	762	2.6784	0.033	0.43	11.41088661	7.36569564	1.00000000	1.00000000
0.1452004	25	0.00005	0.0001452	762.0	0.0	5	-0.24444786	76.2	25.4	3.81	0.20555163	0.00037	6096	762	2.6784	0.033	0.43	10.95445115	7.07106781	1.00000000	1.00000000
0.1389595	26	0.00005	0.000138959	792.5	0.0	5	-0.25323442	79.248	26.416	3.9624	0.20555163	0.00037	6096	762	2.6784	0.033	0.43	10.53312611	6.79910367	1.00000000	1.00000000
0.0094975	100	0.00005	9.49747E-06	3048.0	0.0	5	-0.78734494	304.8	101.6	15.24	0.20555163	0.00037	6096	762	2.6784	0.033	0.43	2.73861279	1.76776695	0.99989249	0.98758067
4.819E-07	500	0.00005	4.81857E-10	15240.0	0.0	5	-2.46020370	1524	508	76.2	0.20555163	0.00037	6096	762	2.6784	0.033	0.43	0.54772256	0.35355339	0.56142197	0.38292492
7.632E-08	600	0.00005	7.63243E-11	18288.0	0.0	5	-2.76398879	1828.8	609.6	91.44	0.20555163	0.00037	6096	762	2.6784	0.033	0.43	0.45643546	0.29462783	0.48139498	0.32307776
1.411E-08	700	0.00005	1.41059E-11	21336.0	0.0	5	-3.04502330	2133.6	711.2	106.68	0.20555163	0.00037	6096	762	2.6784	0.033	0.43	0.39123040	0.25253814	0.41993059	0.27901514
5.819E-18	2750	0.00005	5.8194E-21	83820.0	0.0	5	-6.83272323	8382	2794	419.1	0.20555163	0.00037	6096	762	2.6784	0.033	0.43	0.09958592	0.06428243	0.11200031	0.07243517

TABLE
EQUATION R14 WORKSHEET - LEACHING FACTOR
SOIL COMPONENT OF GROUNDWATER INGESTION
DIBENZO(A,H)ANTHRACENE(P4-A1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

$$LF_{sw} = \rho_b/[\theta_{ws}+(k_s*\rho_b)+(H'*\theta_{as})]*[1+(U_{gw}*\delta_{gw})/(I*W)]$$

k_s	=	$K_{oc} * f_{oc}$	R20
U_{gw}	=	$K * i$	R24
f_{oc}	=	0.00473	gm/gm
ρ_b	=	1.7	gm/cm3
w	=	0.3	unitless
θ_T	=	0.43	unitless
W	=	914.4	centimeters
K	=	0.000031	cm/sec
i	=	0.033	unitless
K_{oc}	=	2500000	L/gm
H'	=	0.00000061	unitless
ρ_w	=	1	gm/cm^3
δ_{gw}	=	200	centimeters
I	=	30	cm/year

LFsw	ρ_b	β_1	K_{oc}	f_{oc}	k_s	H'	w	θ_{ws}
$(mg/L_{water})/(mg/kg_{soil})$	g/cm^3	$=\theta_{ws}+(k_s*\rho_s)+(H'*\theta_{as})$	cm^3/g	g/g	cm^3_{water}/g_{soil}	unitless	unitless	cm^3_{water}/cm^3_{soil}
6.84616E-05	**1.7**	20103.01	**2500000**	**0.00473**	11825	**6.1E-07**	0.3	0.51

θ_T	θ_{as}	β_2	K	i	U_{gw}	δ_{gw}	I	W
uniltess	cm^3_{air}/cm^3_{soil}	$=1+(U_{gw}*\delta_{gw})/(I*W)$	cm/year	cm/cm	cm/year	cm	cm/year	cm
0.43	-0.08	1.235209449	977.616	0.033	32.261328	200	30	914.4

INPUT PARAMETERS FOR TIER 2 SOIL COMPONENT TO GROUNDWATER INGESTION EVALUATION

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		INDENO(1,2,3-CD)PYRENE(P3-C1-W)		
Site Name		CHAMPAIGN MGP		
Site Location		CHAMPAIGN, ILLINOIS		
FOR RBCA EQUATION - (R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, and R24)				
Constituent based parameters				
Organic carbon partition coefficient	K_{oc}	3100000	cm^3/g	Appendix C; Table E
Henry's constant	H'	0.0000656	l/gm	Appendix C; Table E
Solubility	S	0.000022	mg/l	Appendix C; Table E
Degradation constant	λ	0.00047	day^{-1}	Appendix C; Table E
Groundwater Objective	GW_{obj}	0.0005	mg/l	Appendix B; Table E
Site Specific Data - Soil Zone				
Concentration of Constituent in Soil	$Soil_{(conc)}$	14.5	mg/kg	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	
Soil moisture content	***w***	0.3	unitless	
Total soil porosity - soil	θ_T	0.43	unitless	
Soil bulk density	ρ_b	1.7	gm/cm^3	
Source width in soil parallel to groundwater flow	W	60	feet	
Site Specific Data - Groundwater Zone				
Hydraulic conductivity	K	3.10E-05	cm/sec	
Groundwater gradient	*i*	0.036	unitless	
Total soil porosity - aquifer	θ_T	0.43	unitless	
Source width in groundwater perpendicular to groundwater flow direction	S_w	165	feet	
Source thickness in groundwater zone	S_d	25	feet	
Distance to point of compliance	X	1175	feet	

TABLE
EQUATION R12 WORKSHEET - SOIL COMPONENT OF GROUNDWATER INGESTION
INDENO(1,2,3-CD)PYRENE(P3-C1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R12	**RO**	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)}$	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)} * LF_{sw}$	$= GW_{source\text{-}calculated}$
R13	$\mathbf{GW_{source}}$	$= GW_{comp}/[C_{(x)}/C_{(source)}]$

Soil Source Concentration $\mathbf{Soil_{(conc)}}$ **(mg/kg)**	Leachate Factor LF_{sw} $(mg/l_{water})/(mg/kg_{soil})$	**GW Standard** $\mathbf{GW_{comp}}$ **(mg/l)**	GW_{source} $Soil_{(conc)}*LF_{sw}$ (mg/l)
14.5	6.04429E-05	**0.0005**	0.000876422

Tier 2 Soil Remediation Objective (μg/kg) = **14500**

TABLE
EQUATION R15 WORKSHEET - STEADY STATE ATTENUATION ALONG THE CENTERLINE OF PLUME
SOIL COMPONENT OF GROUNDWATER INGESTION
INDENO(1,2,3-CD)PYRENE(P3-C1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R26 $C_{(x)} = GW_{source}*\{\exp[(X/2\alpha_x)*(1-(1+(4*\lambda*\alpha_x)/U)^{1/2})]*erf[S_w/(4*(\alpha_y*X)^{1/2})]*erf[S_d/(2*(\alpha_z*X)^{1/2})]\}$

α_x	=	0.10 * X	Equation R16
α_y	=	α_x/3	Equation R17
α_z	=	α_x/20	Equation R18
U	=	$K*i/\theta_T$	Equation R19
X	=	1175	feet
K	=	0.000031	cm/sec
S_w	=	5029.2	cm
S_d	=	762	cm
i	=	0.036	unitless
$GW_{(source)}$	=	0.00087642	mg/l
θ_T	=	0.43	unitless
λ	=	0.00047	day^{-1}
GW_{comp}	=	0.0005	mg/l

$C_{(x)}$ (μg/l)	X (feet)	GW_{comp} (mg/l)	$C_{(x)}$ (mg/l)	X (cm)	C_{source} (mg/l)	β_3 =(X/(2α_x))	β_4 =1-[1+(4λ*α_x)/U]^1/2	a_x (cm)	a_y (cm)	a_z (cm)	U (cm/day)	λ (day^{-1})	S_w (cm)	S_d (cm)	K (cm/day)	I (cm/cm)	θ_T (cm^3/cm^3)	β_1 =S_w/(4*[α_y*X]^1/2)	β_2 =S_d/(2*[α_z*X]^1/2)	Error Function erf(β_1)	Error Function erf(β_2)
0.8225135	1	0.0005	0.000822514	30.5	0.0	5	-0.01269653	3.048	1.016	0.1524	0.22423814	0.00047	5029.2	762	2.6784	0.036	0.43	225.93555497	176.77669530	1.00000000	1.00000000
0.2785332	20	0.0005	0.000278533	609.6	0.0	5	-0.22926207	60.96	20.32	3.048	0.22423814	0.00047	5029.2	762	2.6784	0.036	0.43	11.29677775	8.83883476	1.00000000	1.00000000
0.1690374	30	0.0005	0.000169037	914.4	0.0	5	-0.32914553	91.44	30.48	4.572	0.22423814	0.00047	5029.2	762	2.6784	0.036	0.43	7.53118517	5.89255651	1.00000000	1.00000000
0.1062395	40	0.0005	0.000106239	1219.2	0.0	5	-0.42203040	121.92	40.64	6.096	0.22423814	0.00047	5029.2	762	2.6784	0.036	0.43	5.64838887	4.41941738	1.00000000	1.00000000
0.0687035	50	0.0005	6.87035E-05	1524.0	0.0	5	-0.50920942	152.4	50.8	7.62	0.22423814	0.00047	5029.2	762	2.6784	0.036	0.43	4.51871110	3.53553391	1.00000000	0.99999943
0.0535141	56	0.0005	5.35141E-05	1706.9	0.0	5	-0.55917883	170.688	56.896	8.5344	0.22423814	0.00047	5029.2	762	2.6784	0.036	0.43	4.03456348	3.15672670	0.99999999	0.99999197
0.0493242	58	0.0005	4.93242E-05	1767.8	0.0	5	-0.57548315	176.784	58.928	8.8392	0.22423814	0.00047	5029.2	762	2.6784	0.036	0.43	3.89544060	3.04787406	0.99999996	0.99998370
0.0687035	50	0.0005	6.87035E-05	1524.0	0.0	5	-0.50920942	152.4	50.8	7.62	0.22423814	0.00047	5029.2	762	2.6784	0.036	0.43	4.51871110	3.53553391	1.00000000	0.99999943
0.2785332	20	0.0005	0.000278533	609.6	0.0	5	-0.22926207	60.96	20.32	3.048	0.22423814	0.00047	5029.2	762	2.6784	0.036	0.43	11.29677775	8.83883476	1.00000000	1.00000000
0.2387827	23	0.0005	0.000238783	701.0	0.0	5	-0.26005873	70.104	23.368	3.5052	0.22423814	0.00047	5029.2	762	2.6784	0.036	0.43	9.82328500	7.68594327	1.00000000	1.00000000
0.227024	24	0.0005	0.000227024	731.5	0.0	5	-0.27015836	73.152	24.384	3.6576	0.22423814	0.00047	5029.2	762	2.6784	0.036	0.43	9.41398146	7.36569564	1.00000000	1.00000000
0.2159304	25	0.0005	0.00021593	762.0	0.0	5	-0.28017832	76.2	25.4	3.81	0.22423814	0.00047	5029.2	762	2.6784	0.036	0.43	9.03742220	7.07106781	1.00000000	1.00000000
0.2054588	26	0.0005	0.000205459	792.5	0.0	5	-0.29012046	79.248	26.416	3.9624	0.22423814	0.00047	5029.2	762	2.6784	0.036	0.43	8.68982904	6.79910367	1.00000000	1.00000000
0.0103195	100	0.0005	1.03195E-05	3048.0	0.0	5	-0.88558376	304.8	101.6	15.24	0.22423814	0.00047	5029.2	762	2.6784	0.036	0.43	2.25935555	1.76776695	0.99860271	0.98758067
2.07E-07	500	0.0005	2.07028E-10	15240.0	0.0	5	-2.71175573	1524	508	76.2	0.22423814	0.00047	5029.2	762	2.6784	0.036	0.43	0.45187111	0.35355339	0.47720455	0.38292492
2.857E-08	600	0.0005	2.85723E-11	18288.0	0.0	5	-3.04135581	1828.8	609.6	91.44	0.22423814	0.00047	5029.2	762	2.6784	0.036	0.43	0.37655926	0.29462783	0.40564464	0.32307776
4.667E-09	700	0.0005	4.66655E-12	21336.0	0.0	5	-3.34603070	2133.6	711.2	106.68	0.22423814	0.00047	5029.2	762	2.6784	0.036	0.43	0.32276508	0.25253814	0.35193987	0.27901514
4.053E-19	2750	0.0005	4.05335E-22	83820.0	0.0	5	-7.44240596	8382	2794	419.1	0.22423814	0.00047	5029.2	762	2.6784	0.036	0.43	0.08215838	0.06428243	0.09249764	0.07243517

TABLE
EQUATION R14 WORKSHEET - LEACHING FACTOR
SOIL COMPONENT OF GROUNDWATER INGESTION
INDENO(1,2,3-CD)PYRENE(P3-C1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

$LF_{sw} = \rho_b/[\theta_{ws}+(k_s*\rho_b)+(H'*\theta_{as})]*[1+(U_{gw}*\delta_{gw})/(I*W)]$

k_s	=	$K_{oc} * f_{oc}$	R20
U_{gw}	=	$K * i$	R24
f_{oc}	=	0.00473	gm/gm
ρ_b	=	1.7	gm/cm3
w	=	0.3	unitless
θ_T	=	0.43	unitless
W	=	1828.8	centimeters
K	=	0.000031	cm/sec
i	=	0.036	unitless
K_{oc}	=	3100000	L/gm
H'	=	0.0000656	unitless
ρ_w	=	1	gm/cm^3
δ_{gw}	=	200	centimeters
I	=	30	cm/year

LFsw (mg/L_{water})/ (mg/kg_{soil})	ρ_b g/cm^3	β_1 $=\theta_{ws}+(k_s*\rho_s)+(H'*\theta_{as})$	K_{oc} cm^3/g	f_{oc} g/g	k_s cm^3_{water}/g_{soil}	H' unitless	w unitless	θ_{ws} cm^3_{water}/cm^3_{soil}
6.04429E-05	**1.7**	24927.60999	**3100000**	**0.00473**	14663	**0.0000656**	0.3	0.51

θ_T uniltess	θ_{as} cm^3_{air}/cm^3_{soil}	β_2 $=1+(U_{gw}*\delta_{gw})/(I*W)$	K cm/year	i cm/cm	U_{gw} cm/year	δ_{gw} cm	I cm/year	W cm
0.43	-0.08	1.128296063	977.616	0.036	35.194176	200	30	1828.8

INPUT PARAMETERS FOR TIER 2 SOIL COMPONENT TO GROUNDWATER INGESTION EVALUATION

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		INDENO(1,2,3-CD)PYRENE(P4-A1-W)		
Site Name		CHAMPAIGN MGP		
Site Location		CHAMPAIGN, ILLINOIS		
FOR RBCA EQUATION - (R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, and R24)				
Constituent based parameters				
Organic carbon partition coefficient	K_{oc}	3100000	cm^3/g	Appendix C; Table E
Henry's constant	H'	0.0000656	l/gm	Appendix C; Table E
Solubility	S	0.000022	mg/l	Appendix C; Table E
Degradation constant	λ	0.00047	day^{-1}	Appendix C; Table E
Groundwater Objective	GW_{obj}	0.0005	mg/l	Appendix B; Table E
Site Specific Data - Soil Zone				
Concentration of Constituent in Soil	$Soil_{(conc)}$	22.1	mg/kg	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	
Soil moisture content	***w***	0.3	unitless	
Total soil porosity - soil	θ_T	0.43	unitless	
Soil bulk density	ρ_b	1.7	gm/cm^3	
Source width in soil parallel to groundwater flow	W	30	feet	
Site Specific Data - Groundwater Zone				
Hydraulic conductivity	K	3.10E-05	cm/sec	
Groundwater gradient	*i*	0.033	unitless	
Total soil porosity - aquifer	θ_T	0.43	unitless	
Source width in groundwater perpendicular to groundwater flow direction	S_w	200	feet	
Source thickness in groundwater zone	S_d	25	feet	
Distance to point of compliance	X	1175	feet	

TABLE
EQUATION R12 WORKSHEET - SOIL COMPONENT OF GROUNDWATER INGESTION
INDENO(1,2,3-CD)PYRENE(P4-A1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R12	**RO**	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)}$	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)} * LF_{sw}$	$= GW_{source\text{-}calculated}$
R13	$\mathbf{GW_{source}}$	$= GW_{comp}/[C_{(x)}/C_{(source)}]$

Soil Source Concentration $\mathbf{Soil_{(conc)}}$ **(mg/kg)**	Leachate Factor LF_{sw} $(mg/l_{water})/(mg/kg_{soil})$	**GW Standard** $\mathbf{GW_{comp}}$ **(mg/l)**	GW_{source} $Soil_{(conc)}*LF_{sw}$ (mg/l)
22.1	5.52113E-05	**0.0005**	0.001220169

Tier 2 Soil Remediation Objective (μg/kg) = **22100**

TABLE
EQUATION R15 WORKSHEET - STEADY STATE ATTENUATION ALONG THE CENTERLINE OF PLUME
SOIL COMPONENT OF GROUNDWATER INGESTION
INDENO(1,2,3-CD)PYRENE(P4-A1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R26 $C_{(x)} = GW_{source}*\{\exp[(X/2\alpha_x)*(1-(1+(4*\lambda*\alpha_x)/U)^{1/2})]*\mathrm{erf}[S_w/(4*(\alpha_y*X)^{1/2})]*\mathrm{erf}[S_d/(2*(\alpha_z*X)^{1/2})]\}$

α_x	=	0.10 * X	Equation R16
α_y	=	$\alpha_x/3$	Equation R17
α_z	=	$\alpha_x/20$	Equation R18
U	=	$K*i/\theta_T$	Equation R19
X	=	1175	feet
K	=	0.000031	cm/sec
S_w	=	6096	cm
S_d	=	762	cm
i	=	0.033	unitless
$GW_{(source)}$	=	0.00122017	mg/l
θ_T	=	0.43	unitless
λ	=	0.00047	day^{-1}
GW_{comp}	=	0.0005	mg/l

$C_{(x)}$ (μg/l)	X (feet)	GW_{comp} (mg/l)	$C_{(x)}$ (mg/l)	X (cm)	C_{source} (mg/l)	β_3 =(X/(2α_x))	β_4 =1-[1+(4λ*α_x)/U]^1/2	a_x (cm)	a_y (cm)	a_z (cm)	U (cm/day)	λ (day^{-1})	S_w (cm)	S_d (cm)	K (cm/day)	I (cm/cm)	θ_T (cm^3/cm^3)	β_1 =S_w/(4*[α_y*X]^1/2)	β_2 =S_d/(2*[α_z*X]^1/2)	Error Function erf(β_1)	Error Function erf(β_2)
1.1385721	1	0.0005	0.001138572	30.5	0.0	5	-0.01384288	3.048	1.016	0.1524	0.20555163	0.00047	6096	762	2.6784	0.033	0.43	273.86127875	176.77669530	1.00000000	1.00000000
0.3530668	20	0.0005	0.000353067	609.6	0.0	5	-0.24801744	60.96	20.32	3.048	0.20555163	0.00047	6096	762	2.6784	0.033	0.43	13.69306394	8.83883476	1.00000000	1.00000000
0.2066854	30	0.0005	0.000206685	914.4	0.0	5	-0.35510932	91.44	30.48	4.572	0.20555163	0.00047	6096	762	2.6784	0.033	0.43	9.12870929	5.89255651	1.00000000	1.00000000
0.1258463	40	0.0005	0.000125846	1219.2	0.0	5	-0.45433663	121.92	40.64	6.096	0.20555163	0.00047	6096	762	2.6784	0.033	0.43	6.84653197	4.41941738	1.00000000	1.00000000
0.0790972	50	0.0005	7.90972E-05	1524.0	0.0	5	-0.54721324	152.4	50.8	7.62	0.20555163	0.00047	6096	762	2.6784	0.033	0.43	5.47722558	3.53553391	1.00000000	0.99999943
0.0510397	60	0.0005	5.10397E-05	1828.8	0.0	5	-0.63482187	182.88	60.96	9.144	0.20555163	0.00047	6096	762	2.6784	0.033	0.43	4.56435465	2.94627825	1.00000000	0.99996909
0.0489145	61	0.0005	4.89145E-05	1859.3	0.0	5	-0.64332587	185.928	61.976	9.2964	0.20555163	0.00047	6096	762	2.6784	0.033	0.43	4.48952916	2.89797861	1.00000000	0.99995839
0.0790972	50	0.0005	7.90972E-05	1524.0	0.0	5	-0.54721324	152.4	50.8	7.62	0.20555163	0.00047	6096	762	2.6784	0.033	0.43	5.47722558	3.53553391	1.00000000	0.99999943
0.3530668	20	0.0005	0.000353067	609.6	0.0	5	-0.24801744	60.96	20.32	3.048	0.20555163	0.00047	6096	762	2.6784	0.033	0.43	13.69306394	8.83883476	1.00000000	1.00000000
0.2992615	23	0.0005	0.000299262	701.0	0.0	5	-0.28108534	70.104	23.368	3.5052	0.20555163	0.00047	6096	762	2.6784	0.033	0.43	11.90701212	7.68594327	1.00000000	1.00000000
0.283481	24	0.0005	0.000283481	731.5	0.0	5	-0.29191990	73.152	24.384	3.6576	0.20555163	0.00047	6096	762	2.6784	0.033	0.43	11.41088661	7.36569564	1.00000000	1.00000000
0.2686536	25	0.0005	0.000268654	762.0	0.0	5	-0.30266435	76.2	25.4	3.81	0.20555163	0.00047	6096	762	2.6784	0.033	0.43	10.95445115	7.07106781	1.00000000	1.00000000
0.2547137	26	0.0005	0.000254714	792.5	0.0	5	-0.31332090	79.248	26.416	3.9624	0.20555163	0.00047	6096	762	2.6784	0.033	0.43	10.53312611	6.79910367	1.00000000	1.00000000
0.0106237	100	0.0005	1.06237E-05	3048.0	0.0	5	-0.94621109	304.8	101.6	15.24	0.20555163	0.00047	6096	762	2.6784	0.033	0.43	2.73861279	1.76776695	0.99989249	0.98758067
1.576E-07	500	0.0005	1.57552E-10	15240.0	0.0	5	-2.86505989	1524	508	76.2	0.20555163	0.00047	6096	762	2.6784	0.033	0.43	0.54772256	0.35355339	0.56142197	0.38292492
2.029E-08	600	0.0005	2.02863E-11	18288.0	0.0	5	-3.21027618	1828.8	609.6	91.44	0.20555163	0.00047	6096	762	2.6784	0.033	0.43	0.45643546	0.29462783	0.48139498	0.32307776
3.101E-09	700	0.0005	3.10129E-12	21336.0	0.0	5	-3.52925636	2133.6	711.2	106.68	0.20555163	0.00047	6096	762	2.6784	0.033	0.43	0.39123040	0.25253814	0.41993059	0.27901514
1.073E-19	2750	0.0005	1.07309E-22	83820.0	0.0	5	-7.81264908	8382	2794	419.1	0.20555163	0.00047	6096	762	2.6784	0.033	0.43	0.09958592	0.06428243	0.11200031	0.07243517

TABLE
EQUATION R14 WORKSHEET - LEACHING FACTOR
SOIL COMPONENT OF GROUNDWATER INGESTION
INDENO(1,2,3-CD)PYRENE(P4-A1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

$$LF_{sw} = \rho_b/[\theta_{ws}+(k_s*\rho_b)+(H'*\theta_{as})]*[1+(U_{gw}*\delta_{gw})/(I*W)]$$

k_s	=	$K_{oc} * f_{oc}$	R20
U_{gw}	=	$K * i$	R24
f_{oc}	=	0.00473	gm/gm
ρ_b	=	1.7	gm/cm3
w	=	0.3	unitless
θ_T	=	0.43	unitless
W	=	914.4	centimeters
K	=	0.000031	cm/sec
i	=	0.033	unitless
K_{oc}	=	3100000	L/gm
H'	=	0.0000656	unitless
ρ_w	=	1	gm/cm^3
δ_{gw}	=	200	centimeters
I	=	30	cm/year

LFsw (mg/L_{water})/ (mg/kg_{soil})	ρ_b g/cm^3	β_1 $=\theta_{ws}+(k_s*\rho_s)+(H'*\theta_{as})$	K_{oc} cm^3/g	f_{oc} g/g	k_s cm^3_{water}/g_{soil}	H' unitless	w unitless	θ_{ws} cm^3_{water}/cm^3_{soil}
5.52113E-05	**1.7**	24927.60999	**3100000**	**0.00473**	14663	**0.0000656**	0.3	0.51

θ_T uniltess	θ_{as} cm^3_{air}/cm^3_{soil}	β_2 $=1+(U_{gw}*\delta_{gw})/(I*W)$	K cm/year	i cm/cm	U_{gw} cm/year	δ_{gw} cm	I cm/year	W cm
0.43	-0.08	1.235209449	977.616	0.033	32.261328	200	30	914.4

INPUT PARAMETERS FOR TIER 2 SOIL COMPONENT TO GROUNDWATER INGESTION EVALUATION

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		NAPHTHALENE(P3-C1-W)		
Site Name		CHAMPAIGN MGP		
Site Location		CHAMPAIGN, ILLINOIS		
FOR RBCA EQUATION - (R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, and R24)				
Constituent based parameters				
Organic carbon partition coefficient	K_{oc}	500	cm^3/g	Appendix C; Table E
Henry's constant	H'	0.0197	l/gm	Appendix C; Table E
Solubility	S	31	mg/l	Appendix C; Table E
Degradation constant	λ	0.0027	day^{-1}	Appendix C; Table E
Groundwater Objective	GW_{obj}	0.22	mg/l	Appendix B; Table E
Site Specific Data - Soil Zone				
Concentration of Constituent in Soil	$Soil_{(conc)}$	582	mg/kg	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	
Soil moisture content	***w***	0.3	unitless	
Total soil porosity - soil	θ_T	0.43	unitless	
Soil bulk density	ρ_b	1.7	gm/cm^3	
Source width in soil parallel to groundwater flow	W	60	feet	
Site Specific Data - Groundwater Zone				
Hydraulic conductivity	K	3.10E-05	cm/sec	
Groundwater gradient	*i*	0.036	unitless	
Total soil porosity - aquifer	θ_T	0.43	unitless	
Source width in groundwater perpendicular to groundwater flow direction	S_w	165	feet	
Source thickness in groundwater zone	S_d	25	feet	
Distance to point of compliance	X	1175	feet	

TABLE
EQUATION R12 WORKSHEET - SOIL COMPONENT OF GROUNDWATER INGESTION
NAPHTHALENE(P3-C1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R12	**RO**	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)}$	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)} * LF_{sw}$	$= GW_{source\text{-}calculated}$
R13	$\mathbf{GW_{source}}$	$= GW_{comp}/[C_{(x)}/C_{(source)}]$

Soil Source Concentration $\mathbf{Soil_{(conc)}}$ **(mg/kg)**	Leachate Factor LF_{sw} $(mg/l_{water})/(mg/kg_{soil})$	**GW Standard** $\mathbf{GW_{comp}}$ **(mg/l)**	GW_{source} $Soil_{(conc)}*LF_{sw}$ (mg/l)
582	0.332683158	**0.22**	193.6215981

Tier 2 Soil Remediation Objective (μg/kg) = **582000**

TABLE
EQUATION R15 WORKSHEET - STEADY STATE ATTENUATION ALONG THE CENTERLINE OF PLUME
SOIL COMPONENT OF GROUNDWATER INGESTION
NAPHTHALENE(P3-C1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R26 $C_{(x)} = GW_{source}*\{\exp[(X/2\alpha_x)*(1-(1+(4*\lambda*\alpha_x)/U)^{1/2})]*\mathrm{erf}[S_w/(4*(\alpha_y*X)^{1/2})]*\mathrm{erf}[S_d/(2*(\alpha_z*X)^{1/2})]\}$

α_x	=	0.10 * X	Equation R16
α_y	=	$\alpha_x/3$	Equation R17
α_z	=	$\alpha_x/20$	Equation R18
U	=	$K*i/\theta_T$	Equation R19
X	=	1175	feet
K	=	0.000031	cm/sec
S_w	=	5029.2	cm
S_d	=	762	cm
i	=	0.036	unitless
$GW_{(source)}$	=	193.621598	mg/l
θ_T	=	0.43	unitless
λ	=	0.0027	day^{-1}
GW_{comp}	=	0.22	mg/l

$C_{(x)}$ (μg/l)	X (feet)	GW_{comp} (mg/l)	$C_{(x)}$ (mg/l)	X (cm)	C_{source} (mg/l)	β_3 =(X/(2α_x))	β_4 =1-[1+(4λ*α_x)/U]^1/2	a_x (cm)	a_y (cm)	a_z (cm)	U (cm/day)	λ (day^{-1})	S_w (cm)	S_d (cm)	K (cm/day)	I (cm/cm)	θ_T (cm^3/cm^3)	β_1 =S_w/(4*[α_y*X]^1/2)	β_2 =S_d/(2*[α_z*X]^1/2)	Error Function erf(β_1)	Error Function erf(β_2)
135838.38	1	0.22	135.8383814	30.5	193.6	5	-0.07088798	3.048	1.016	0.1524	0.22423814	0.0027	5029.2	762	2.6784	0.036	0.43	225.93555497	176.77669530	1.00000000	1.00000000
39718.768	5	0.22	39.71876848	152.4	193.6	5	-0.31681638	15.24	5.08	0.762	0.22423814	0.0027	5029.2	762	2.6784	0.036	0.43	45.18711099	35.35533906	1.00000000	1.00000000
11144.586	10	0.22	11.14458649	304.8	193.6	5	-0.57099037	30.48	10.16	1.524	0.22423814	0.0027	5029.2	762	2.6784	0.036	0.43	22.59355550	17.67766953	1.00000000	1.00000000
1413.687	20	0.22	1.413687043	609.6	193.6	5	-0.98394090	60.96	20.32	3.048	0.22423814	0.0027	5029.2	762	2.6784	0.036	0.43	11.29677775	8.83883476	1.00000000	1.00000000
583.20486	25	0.22	0.583204862	762.0	193.6	5	-1.16102450	76.2	25.4	3.81	0.22423814	0.0027	5029.2	762	2.6784	0.036	0.43	9.03742220	7.07106781	1.00000000	1.00000000
257.33372	30	0.22	0.257333719	914.4	193.6	5	-1.32465745	91.44	30.48	4.572	0.22423814	0.0027	5029.2	762	2.6784	0.036	0.43	7.53118517	5.89255651	1.00000000	1.00000000
219.98464	31	0.22	0.21998464	944.9	193.6	5	-1.35602066	94.488	31.496	4.7244	0.22423814	0.0027	5029.2	762	2.6784	0.036	0.43	7.28824371	5.70247404	1.00000000	1.00000000
15.395647	50	0.22	0.015395647	1524.0	193.6	5	-1.88791512	152.4	50.8	7.62	0.22423814	0.0027	5029.2	762	2.6784	0.036	0.43	4.51871110	3.53553391	1.00000000	0.99999943
1413.687	20	0.22	1.413687043	609.6	193.6	5	-0.98394090	60.96	20.32	3.048	0.22423814	0.0027	5029.2	762	2.6784	0.036	0.43	11.29677775	8.83883476	1.00000000	1.00000000
823.61891	23	0.22	0.823618911	701.0	193.6	5	-1.09199061	70.104	23.368	3.5052	0.22423814	0.0027	5029.2	762	2.6784	0.036	0.43	9.82328500	7.68594327	1.00000000	1.00000000
692.09459	24	0.22	0.692094594	731.5	193.6	5	-1.12678767	73.152	24.384	3.6576	0.22423814	0.0027	5029.2	762	2.6784	0.036	0.43	9.41398146	7.36569564	1.00000000	1.00000000
583.20486	25	0.22	0.583204862	762.0	193.6	5	-1.16102450	76.2	25.4	3.81	0.22423814	0.0027	5029.2	762	2.6784	0.036	0.43	9.03742220	7.07106781	1.00000000	1.00000000
492.7611	26	0.22	0.492761098	792.5	193.6	5	-1.19472731	79.248	26.416	3.9624	0.22423814	0.0027	5029.2	762	2.6784	0.036	0.43	8.68982904	6.79910367	1.00000000	1.00000000
0.0714118	100	0.22	7.14118E-05	3048.0	193.6	5	-2.95981155	304.8	101.6	15.24	0.22423814	0.0027	5029.2	762	2.6784	0.036	0.43	2.25935555	1.76776695	0.99860271	0.98758067
9.773E-13	500	0.22	9.77343E-16	15240.0	193.6	5	-7.62557463	1524	508	76.2	0.22423814	0.0027	5029.2	762	2.6784	0.036	0.43	0.45187111	0.35355339	0.47720455	0.38292492
1.205E-14	600	0.22	1.20495E-17	18288.0	193.6	5	-8.43825435	1828.8	609.6	91.44	0.22423814	0.0027	5029.2	762	2.6784	0.036	0.43	0.37655926	0.29462783	0.40564464	0.32307776
2.144E-16	700	0.22	2.14412E-19	21336.0	193.6	5	-9.18630221	2133.6	711.2	106.68	0.22423814	0.0027	5029.2	762	2.6784	0.036	0.43	0.32276508	0.25253814	0.35193987	0.27901514
3.986E-39	2750	0.22	3.98562E-42	83820.0	193.6	5	-19.11723035	8382	2794	419.1	0.22423814	0.0027	5029.2	762	2.6784	0.036	0.43	0.08215838	0.06428243	0.09249764	0.07243517

TABLE
EQUATION R14 WORKSHEET - LEACHING FACTOR
SOIL COMPONENT OF GROUNDWATER INGESTION
NAPHTHALENE(P3-C1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

$$LF_{sw} = \rho_b/[\theta_{ws}+(k_s*\rho_b)+(H'*\theta_{as})]*[1+(U_{gw}*\delta_{gw})/(I*W)]$$

k_s	=	$K_{oc} * f_{oc}$	R20
U_{gw}	=	$K * i$	R24
f_{oc}	=	0.00473	gm/gm
ρ_b	=	1.7	gm/cm3
w	=	0.3	unitless
θ_T	=	0.43	unitless
W	=	1828.8	centimeters
K	=	0.000031	cm/sec
i	=	0.036	unitless
K_{oc}	=	500	L/gm
H'	=	0.0197	unitless
ρ_w	=	1	gm/cm^3
δ_{gw}	=	200	centimeters
I	=	30	cm/year

LFsw (mg/L_{water})/ (mg/kg_{soil})	ρ_b g/cm^3	β_1 $=\theta_{ws}+(k_s*\rho_s)+(H'*\theta_{as})$	K_{oc} cm^3/g	f_{oc} g/g	k_s cm^3_{water}/g_{soil}	H' unitless	w unitless	θ_{ws} cm^3_{water}/cm^3_{soil}
0.332683158	**1.7**	4.528924	**500**	**0.00473**	2.365	**0.0197**	0.3	0.51

θ_T uniltess	θ_{as} cm^3_{air}/cm^3_{soil}	β_2 $=1+(U_{gw}*\delta_{gw})/(I*W)$	K cm/year	i cm/cm	U_{gw} cm/year	δ_{gw} cm	I cm/year	W cm
0.43	-0.08	1.128296063	977.616	0.036	35.194176	200	30	1828.8

INPUT PARAMETERS FOR TIER 2 SOIL COMPONENT TO GROUNDWATER INGESTION EVALUATION

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		NAPHTHALENE(P4-A1-W)		
Site Name		CHAMPAIGN MGP		
Site Location		CHAMPAIGN, ILLINOIS		
FOR RBCA EQUATION - (R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, and R24)				
Constituent based parameters				
Organic carbon partition coefficient	K_{oc}	500	cm^3/g	Appendix C; Table E
Henry's constant	H'	0.0197	l/gm	Appendix C; Table E
Solubility	S	31	mg/l	Appendix C; Table E
Degradation constant	λ	0.0027	day^{-1}	Appendix C; Table E
Groundwater Objective	GW_{obj}	0.22	mg/l	Appendix B; Table E
Site Specific Data - Soil Zone				
Concentration of Constituent in Soil	$Soil_{(conc)}$	1850	mg/kg	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	
Soil moisture content	***w***	0.3	unitless	
Total soil porosity - soil	θ_T	0.43	unitless	
Soil bulk density	ρ_b	1.7	gm/cm^3	
Source width in soil parallel to groundwater flow	W	30	feet	
Site Specific Data - Groundwater Zone				
Hydraulic conductivity	K	3.10E-05	cm/sec	
Groundwater gradient	*i*	0.033	unitless	
Total soil porosity - aquifer	θ_T	0.43	unitless	
Source width in groundwater perpendicular to groundwater flow direction	S_w	200	feet	
Source thickness in groundwater zone	S_d	25	feet	
Distance to point of compliance	X	1175	feet	

TABLE
EQUATION R12 WORKSHEET - SOIL COMPONENT OF GROUNDWATER INGESTION
NAPHTHALENE(P4-A1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R12	**RO**	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)}$	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)} * LF_{sw}$	$= GW_{source\text{-}calculated}$
R13	$\mathbf{GW_{source}}$	$= GW_{comp}/[C_{(x)}/C_{(source)}]$

Soil Source Concentration $Soil_{(conc)}$ **(mg/kg)**	Leachate Factor LF_{sw} $(mg/l_{water})/(mg/kg_{soil})$	**GW Standard** GW_{comp} **(mg/l)**	GW_{source} $Soil_{(conc)}*LF_{sw}$ (mg/l)
1850	0.303887813	**0.22**	562.1924537

Tier 2 Soil Remediation Objective (μg/kg) = **1850000**

TABLE
EQUATION R15 WORKSHEET - STEADY STATE ATTENUATION ALONG THE CENTERLINE OF PLUME
SOIL COMPONENT OF GROUNDWATER INGESTION
NAPHTHALENE(P4-A1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R26 $C_{(x)} = GW_{source}*\{\exp[(X/2\alpha_x)*(1-(1+(4*\lambda*\alpha_x)/U)^{1/2})]*erf[S_w/(4*(\alpha_y*X)^{1/2})]*erf[S_d/(2*(\alpha_z*X)^{1/2})]\}$

α_x	=	0.10 * X	Equation R16
α_y	=	α_x/3	Equation R17
α_z	=	α_x/20	Equation R18
U	=	$K*i/\theta_T$	Equation R19
X	=	1175	feet
K	=	0.000031	cm/sec
S_w	=	6096	cm
S_d	=	762	cm
i	=	0.033	unitless
$GW_{(source)}$	=	562.192454	mg/l
θ_T	=	0.43	unitless
λ	=	0.0027	day^{-1}
GW_{comp}	=	0.22	mg/l

$C_{(x)}$ (µg/l)	X (feet)	GW_{comp} (mg/l)	$C_{(x)}$ (mg/l)	X (cm)	C_{source} (mg/l)	β_3 =(X/(2α_x))	β_4 =1-[1+(4λ*α_x)/U]^1/2	a_x (cm)	a_y (cm)	a_z (cm)	U (cm/day)	λ (day^{-1})	S_w (cm)	S_d (cm)	K (cm/day)	I (cm/cm)	θ_T (cm^3/cm^3)	β_1 =S_w/(4*[α_y*X]^1/2)	β_2 =S_d/(2*[α_z*X]^1/2)	Error Function erf(β_1)	Error Function erf(β_2)
382351.02	**1**	0.22	382.3510205	30.5	562.2	5	-0.07710103	3.048	1.016	0.1524	0.20555163	**0.0027**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	273.86127875	176.77669530	1.00000000	1.00000000
101725.12	**5**	0.22	101.7251248	152.4	562.2	5	-0.34191398	15.24	5.08	0.762	0.20555163	**0.0027**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	54.77225575	35.35533906	1.00000000	1.00000000
26240.747	**10**	0.22	26.24074732	304.8	562.2	5	-0.61290616	30.48	10.16	1.524	0.20555163	**0.0027**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	27.38612788	17.67766953	1.00000000	1.00000000
2948.5595	**20**	0.22	2.948559504	609.6	562.2	5	-1.05010550	60.96	20.32	3.048	0.20555163	**0.0027**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	13.69306394	8.83883476	1.00000000	1.00000000
1158.8252	**25**	0.22	1.158825201	762.0	562.2	5	-1.23688750	76.2	25.4	3.81	0.20555163	**0.0027**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	10.95445115	7.07106781	1.00000000	1.00000000
25.368055	**50**	0.22	0.025368055	1524.0	562.2	5	-2.00122165	152.4	50.8	7.62	0.20555163	**0.0027**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	5.47722558	3.53553391	1.00000000	0.99999943
19.472786	**52**	0.22	0.019472786	1585.0	562.2	5	-2.05411602	158.496	52.832	7.9248	0.20555163	**0.0027**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	5.26656305	3.39955183	1.00000000	0.99999847
25.368055	**50**	0.22	0.025368055	1524.0	562.2	5	-2.00122165	152.4	50.8	7.62	0.20555163	**0.0027**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	5.47722558	3.53553391	1.00000000	0.99999943
2948.5595	**20**	0.22	2.948559504	609.6	562.2	5	-1.05010550	60.96	20.32	3.048	0.20555163	**0.0027**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	13.69306394	8.83883476	1.00000000	1.00000000
1667.4472	**23**	0.22	1.667447211	701.0	562.2	5	-1.16411008	70.104	23.368	3.5052	0.20555163	**0.0027**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	11.90701212	7.68594327	1.00000000	1.00000000
1387.9752	**24**	0.22	1.387975247	731.5	562.2	5	-1.20079964	73.152	24.384	3.6576	0.20555163	**0.0027**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	11.41088661	7.36569564	1.00000000	1.00000000
1158.8252	**25**	0.22	1.158825201	762.0	562.2	5	-1.23688750	76.2	25.4	3.81	0.20555163	**0.0027**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	10.95445115	7.07106781	1.00000000	1.00000000
970.28312	**26**	0.22	0.970283115	792.5	562.2	5	-1.27240232	79.248	26.416	3.9624	0.20555163	**0.0027**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	10.53312611	6.79910367	1.00000000	1.00000000
0.0909521	**100**	0.22	9.09521E-05	3048.0	562.2	5	-3.12488336	304.8	101.6	15.24	0.20555163	**0.0027**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	2.73861279	1.76776695	0.99989249	0.98758067
5.031E-13	**500**	0.22	5.03114E-16	15240.0	562.2	5	-8.00407207	1524	508	76.2	0.20555163	**0.0027**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	0.54772256	0.35355339	0.56142197	0.38292492
5.211E-15	**600**	0.22	5.21131E-18	18288.0	562.2	5	-8.85332312	1828.8	609.6	91.44	0.20555163	**0.0027**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	0.45643546	0.29462783	0.48139498	0.32307776
7.882E-17	**700**	0.22	7.88158E-20	21336.0	562.2	5	-9.63497246	2133.6	711.2	106.68	0.20555163	**0.0027**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	0.39123040	0.25253814	0.41993059	0.27901514
1.617E-40	**2750**	0.22	1.6172E-43	83820.0	562.2	5	-20.00959842	8382	2794	419.1	0.20555163	**0.0027**	**6096**	**762**	**2.6784**	**0.033**	**0.43**	0.09958592	0.06428243	0.11200031	0.07243517

TABLE
EQUATION R14 WORKSHEET - LEACHING FACTOR
SOIL COMPONENT OF GROUNDWATER INGESTION
NAPHTHALENE(P4-A1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

$$LF_{sw} = \rho_b/[\theta_{ws}+(k_s*\rho_b)+(H'*\theta_{as})]*[1+(U_{gw}*\delta_{gw})/(I*W)]$$

k_s	=	$K_{oc} * f_{oc}$	R20
U_{gw}	=	$K * i$	R24
f_{oc}	=	0.00473	gm/gm
ρ_b	=	1.7	gm/cm3
w	=	0.3	unitless
θ_T	=	0.43	unitless
W	=	914.4	centimeters
K	=	0.000031	cm/sec
i	=	0.033	unitless
K_{oc}	=	500	L/gm
H'	=	0.0197	unitless
ρ_w	=	1	gm/cm^3
δ_{gw}	=	200	centimeters
I	=	30	cm/year

LFsw (mg/L_{water})/ (mg/kg_{soil})	ρ_b g/cm^3	β_1 $=\theta_{ws}+(k_s*\rho_s)+(H'*\theta_{as})$	K_{oc} cm^3/g	f_{oc} g/g	k_s cm^3_{water}/g_{soil}	H' unitless	w unitless	θ_{ws} cm^3_{water}/cm^3_{soil}
0.303887813	**1.7**	4.528924	**500**	**0.00473**	2.365	**0.0197**	0.3	0.51

θ_T uniltess	θ_{as} cm^3_{air}/cm^3_{soil}	β_2 $=1+(U_{gw}*\delta_{gw})/(I*W)$	K cm/year	i cm/cm	U_{gw} cm/year	δ_{gw} cm	I cm/year	W cm
0.43	-0.08	1.235209449	977.616	0.033	32.261328	200	30	914.4

INPUT PARAMETERS FOR TIER 2 SOIL COMPONENT TO GROUNDWATER INGESTION EVALUATION

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		NAPHTHALENE(P6-A5.5-W)		
Site Name		CHAMPAIGN MGP		
Site Location		CHAMPAIGN, ILLINOIS		
FOR RBCA EQUATION - (R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, and R24)				
Constituent based parameters				
Organic carbon partition coefficient	K_{oc}	500	cm^3/g	Appendix C; Table E
Henry's constant	H'	0.0197	l/gm	Appendix C; Table E
Solubility	S	31	mg/l	Appendix C; Table E
Degradation constant	λ	0.0027	day^{-1}	Appendix C; Table E
Groundwater Objective	GW_{obj}	0.22	mg/l	Appendix B; Table E
Site Specific Data - Soil Zone				
Concentration of Constituent in Soil	$Soil_{(conc)}$	112	mg/kg	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	
Soil moisture content	***w***	0.3	unitless	
Total soil porosity - soil	θ_T	0.43	unitless	
Soil bulk density	ρ_b	1.7	gm/cm^3	
Source width in soil parallel to groundwater flow	W	90	feet	
Site Specific Data - Groundwater Zone				
Hydraulic conductivity	K	3.10E-05	cm/sec	
Groundwater gradient	*i*	0.011	unitless	
Total soil porosity - aquifer	θ_T	0.43	unitless	
Source width in groundwater perpendicular to groundwater flow direction	S_w	60	feet	
Source thickness in groundwater zone	S_d	25	feet	
Distance to point of compliance	X	1175	feet	

TABLE
EQUATION R12 WORKSHEET - SOIL COMPONENT OF GROUNDWATER INGESTION
NAPHTHALENE(P6-A5.5-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R12	**RO**	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)}$	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)} * LF_{sw}$	$= GW_{source\text{-}calculated}$
R13	$\mathbf{GW_{source}}$	$= GW_{comp}/[C_{(x)}/C_{(source)}]$

Soil Source Concentration $\mathbf{Soil_{(conc)}}$ **(mg/kg)**	Leachate Factor LF_{sw} $(mg/l_{water})/(mg/kg_{soil})$	**GW Standard** $\mathbf{GW_{comp}}$ **(mg/l)**	GW_{source} $Soil_{(conc)}*LF_{sw}$ (mg/l)
112	0.365805009	**0.22**	40.97016106

Tier 2 Soil Remediation Objective (μg/kg) = **112000**

TABLE
EQUATION R15 WORKSHEET - STEADY STATE ATTENUATION ALONG THE CENTERLINE OF PLUME
SOIL COMPONENT OF GROUNDWATER INGESTION
NAPHTHALENE(P6-A5.5-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R26 $C_{(x)} = GW_{source}*\{\exp[(X/2\alpha_x)*(1-(1+(4*\lambda*\alpha_x)/U)^{1/2})]*erf[S_w/(4*(\alpha_y*X)^{1/2})]*erf[S_d/(2*(\alpha_z*X)^{1/2})]\}$

α_x	=	0.10 * X	Equation R16
α_y	=	α_x/3	Equation R17
α_z	=	α_x/20	Equation R18
U	=	$K*i/\theta_T$	Equation R19
X	=	1175	feet
K	=	0.000031	cm/sec
S_w	=	1828.8	cm
S_d	=	762	cm
i	=	0.011	unitless
$GW_{(source)}$	=	40.9701611	mg/l
θ_T	=	0.43	unitless
λ	=	0.0027	day^{-1}
GW_{comp}	=	0.22	mg/l

$C_{(x)}$ (μg/l)	X (feet)	GW_{comp} (mg/l)	$C_{(x)}$ (mg/l)	X (cm)	C_{source} (mg/l)	β_3 =(X/(2α_x))	β_4 =1-[1+(4λ*α_x)/U]^1/2	a_x (cm)	a_y (cm)	a_z (cm)	U (cm/day)	λ (day^{-1})	S_w (cm)	S_d (cm)	K (cm/day)	I (cm/cm)	θ_T (cm^3/cm^3)	β_1 =S_w/(4*[α_y*X]^1/2)	β_2 =S_d/(2*[α_z*X]^1/2)	Error Function erf(β_1)	Error Function erf(β_2)
13862.365	1	0.22	13.86236489	30.5	41.0	5	-0.21673328	3.048	1.016	0.1524	0.06851721	0.0027	1828.8	762	2.6784	0.011	0.43	82.15838363	176.77669530	1.00000000	1.00000000
600.6866	5	0.22	0.600686596	152.4	41.0	5	-0.84450519	15.24	5.08	0.762	0.06851721	0.0027	1828.8	762	2.6784	0.011	0.43	16.43167673	35.35533906	1.00000000	1.00000000
320.02282	6	0.22	0.320022825	182.9	41.0	5	-0.97044140	18.288	6.096	0.9144	0.06851721	0.0027	1828.8	762	2.6784	0.011	0.43	13.69306394	29.46278255	1.00000000	1.00000000
177.08092	7	0.22	0.177080919	213.4	41.0	5	-1.08879850	21.336	7.112	1.0668	0.06851721	0.0027	1828.8	762	2.6784	0.011	0.43	11.73691195	25.25381361	1.00000000	1.00000000
101.14965	8	0.22	0.101149649	243.8	41.0	5	-1.20079964	24.384	8.128	1.2192	0.06851721	0.0027	1828.8	762	2.6784	0.011	0.43	10.26979795	22.09708691	1.00000000	1.00000000
35.674613	10	0.22	0.035674613	304.8	41.0	5	-1.40923200	30.48	10.16	1.524	0.06851721	0.0027	1828.8	762	2.6784	0.011	0.43	8.21583836	17.67766953	1.00000000	1.00000000
21.885165	11	0.22	0.021885165	335.3	41.0	5	-1.50695806	33.528	11.176	1.6764	0.06851721	0.0027	1828.8	762	2.6784	0.011	0.43	7.46894397	16.07060866	1.00000000	1.00000000
8.184E-05	50	0.22	8.18405E-08	1524.0	41.0	5	-4.00219893	152.4	50.8	7.62	0.06851721	0.0027	1828.8	762	2.6784	0.011	0.43	1.64316767	3.53553391	0.97986325	0.99999943
0.5142862	20	0.22	0.000514286	609.6	41.0	5	-2.25711493	60.96	20.32	3.048	0.06851721	0.0027	1828.8	762	2.6784	0.011	0.43	4.10791918	8.83883476	0.99999999	1.00000000
0.1762167	23	0.22	0.000176217	701.0	41.0	5	-2.47132789	70.104	23.368	3.5052	0.06851721	0.0027	1828.8	762	2.6784	0.011	0.43	3.57210364	7.68594327	0.99999956	1.00000000
0.125097	24	0.22	0.000125097	731.5	41.0	5	-2.53985271	73.152	24.384	3.6576	0.06851721	0.0027	1828.8	762	2.6784	0.011	0.43	3.42326598	7.36569564	0.99999871	1.00000000
0.0893867	25	0.22	8.93867E-05	762.0	41.0	5	-2.60707597	76.2	25.4	3.81	0.06851721	0.0027	1828.8	762	2.6784	0.011	0.43	3.28633535	7.07106781	0.99999664	1.00000000
0.0642641	26	0.22	6.42641E-05	792.5	41.0	5	-2.67306915	79.248	26.416	3.9624	0.06851721	0.0027	1828.8	762	2.6784	0.011	0.43	3.15993783	6.79910367	0.99999214	1.00000000
2.813E-09	100	0.22	2.81301E-12	3048.0	41.0	5	-6.00314131	304.8	101.6	15.24	0.06851721	0.0027	1828.8	762	2.6784	0.011	0.43	0.82158384	1.76776695	0.75472188	0.98758067
8.046E-29	500	0.22	8.04637E-32	15240.0	41.0	5	-14.53125691	1524	508	76.2	0.06851721	0.0027	1828.8	762	2.6784	0.011	0.43	0.16431677	0.35355339	0.18375634	0.38292492
3.529E-32	600	0.22	3.52868E-35	18288.0	41.0	5	-16.00776086	1828.8	609.6	91.44	0.06851721	0.0027	1828.8	762	2.6784	0.011	0.43	0.13693064	0.29462783	0.15354940	0.32307776
2.941E-35	700	0.22	2.94066E-38	21336.0	41.0	5	-17.36594451	2133.6	711.2	106.68	0.06851721	0.0027	1828.8	762	2.6784	0.011	0.43	0.11736912	0.25253814	0.13183125	0.27901514
1.629E-75	2750	0.22	1.62936E-78	83820.0	41.0	5	-35.36220122	8382	2794	419.1	0.06851721	0.0027	1828.8	762	2.6784	0.011	0.43	0.02987578	0.06428243	0.03370118	0.07243517

TABLE
EQUATION R14 WORKSHEET - LEACHING FACTOR
SOIL COMPONENT OF GROUNDWATER INGESTION
NAPHTHALENE(P6-A5.5-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

$$LF_{sw} = \rho_b/[\theta_{ws}+(k_s*\rho_b)+(H'*\theta_{as})]*[1+(U_{gw}*\delta_{gw})/(I*W)]$$

k_s	=	$K_{oc} * f_{oc}$	R20
U_{gw}	=	$K * i$	R24
f_{oc}	=	0.00473	gm/gm
ρ_b	=	1.7	gm/cm3
w	=	0.3	unitless
θ_T	=	0.43	unitless
W	=	2743.2	centimeters
K	=	0.000031	cm/sec
i	=	0.011	unitless
K_{oc}	=	500	L/gm
H'	=	0.0197	unitless
ρ_w	=	1	gm/cm^3
δ_{gw}	=	200	centimeters
I	=	30	cm/year

LFsw (mg/L_{water})/ (mg/kg_{soil})	ρ_b g/cm^3	β_1 $=\theta_{ws}+(k_s*\rho_s)+(H'*\theta_{as})$	K_{oc} cm^3/g	f_{oc} g/g	k_s cm^3_{water}/g_{soil}	H' unitless	w unitless	θ_{ws} cm^3_{water}/cm^3_{soil}
0.365805009	**1.7**	4.528924	**500**	**0.00473**	2.365	**0.0197**	0.3	0.51

θ_T uniltess	θ_{as} cm^3_{air}/cm^3_{soil}	β_2 $=1+(U_{gw}*\delta_{gw})/(I*W)$	K cm/year	i cm/cm	U_{gw} cm/year	δ_{gw} cm	I cm/year	W cm
0.43	-0.08	1.026134383	977.616	0.011	10.753776	200	30	2743.2

INPUT PARAMETERS FOR TIER 2 SOIL COMPONENT TO GROUNDWATER INGESTION EVALUATION

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		NAPHTHALENE(P7-DE1-W)		
Site Name		CHAMPAIGN MGP		
Site Location		CHAMPAIGN, ILLINOIS		
FOR RBCA EQUATION - (R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, and R24)				
Constituent based parameters				
Organic carbon partition coefficient	K_{oc}	500	cm^3/g	Appendix C; Table E
Henry's constant	H'	0.0197	l/gm	Appendix C; Table E
Solubility	S	31	mg/l	Appendix C; Table E
Degradation constant	λ	0.0027	day^{-1}	Appendix C; Table E
Groundwater Objective	GW_{obj}	0.22	mg/l	Appendix B; Table E
Site Specific Data - Soil Zone				
Concentration of Constituent in Soil	$Soil_{(conc)}$	152	mg/kg	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	
Soil moisture content	***w***	0.3	unitless	
Total soil porosity - soil	θ_T	0.43	unitless	
Soil bulk density	ρ_b	1.7	gm/cm^3	
Source width in soil parallel to groundwater flow	W	20	feet	
Site Specific Data - Groundwater Zone				
Hydraulic conductivity	K	3.10E-05	cm/sec	
Groundwater gradient	*i*	0.02	unitless	
Total soil porosity - aquifer	θ_T	0.43	unitless	
Source width in groundwater perpendicular to groundwater flow direction	S_w	60	feet	
Source thickness in groundwater zone	S_d	25	feet	
Distance to point of compliance	X	1175	feet	

TABLE
EQUATION R12 WORKSHEET - SOIL COMPONENT OF GROUNDWATER INGESTION
NAPHTHALENE(P7-DE1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R12	**RO**	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)}$	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)} * LF_{sw}$	$= GW_{source\text{-}calculated}$
R13	$\mathbf{GW_{source}}$	$= GW_{comp}/[C_{(x)}/C_{(source)}]$

Soil Source Concentration $\mathbf{Soil_{(conc)}}$ **(mg/kg)**	Leachate Factor LF_{sw} $(mg/l_{water})/(mg/kg_{soil})$	**GW Standard** $\mathbf{GW_{comp}}$ **(mg/l)**	GW_{source} $Soil_{(conc)}*LF_{sw}$ (mg/l)
152	0.309241077	**0.22**	47.00464365

Tier 2 Soil Remediation Objective (μg/kg) = **152000**

TABLE
EQUATION R15 WORKSHEET - STEADY STATE ATTENUATION ALONG THE CENTERLINE OF PLUME
SOIL COMPONENT OF GROUNDWATER INGESTION
NAPHTHALENE(P7-DE1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

R26 $C_{(x)}$ = $GW_{source}*\{\exp[(X/2\alpha_x)*(1-(1+(4*\lambda*\alpha_x)/U)^{1/2})]*\mathrm{erf}[S_w/(4*(\alpha_y*X)^{1/2})]*\mathrm{erf}[S_d/(2*(\alpha_z*X)^{1/2})]\}$

α_x	=	0.10 * X	Equation R16
α_y	=	$\alpha_x/3$	Equation R17
α_z	=	$\alpha_x/20$	Equation R18
U	=	$K*i/\theta_T$	Equation R19
X	=	1175	feet
K	=	0.000031	cm/sec
S_w	=	1828.8	cm
S_d	=	762	cm
i	=	0.02	unitless
$GW_{(source)}$	=	47.0046437	mg/l
θ_T	=	0.43	unitless
λ	=	0.0027	day^{-1}
GW_{comp}	=	0.22	mg/l

$C_{(x)}$ (μg/l)	X (feet)	GW_{comp} (mg/l)	$C_{(x)}$ (mg/l)	X (cm)	C_{source} (mg/l)	β_3 =(X/(2α_x))	β_4 =1-[1+(4λ*α_x)/U]^1/2	a_x (cm)	a_y (cm)	a_z (cm)	U (cm/day)	λ (day^{-1})	S_w (cm)	S_d (cm)	K (cm/day)	I (cm/cm)	θ_T (cm^3/cm^3)	β_1 =S_w/(4*[α_y*X]^1/2)	β_2 =S_d/(2*[α_z*X]^1/2)	Error Function erf(β_1)	Error Function erf(β_2)
25237.241	1	0.22	25.23724084	30.5	47.0	5	-0.12438514	3.048	1.016	0.1524	0.12457674	0.0027	1828.8	762	2.6784	0.02	0.43	82.15838363	176.77669530	1.00000000	1.00000000
3429.7524	5	0.22	3.429752395	152.4	47.0	5	-0.52355167	15.24	5.08	0.762	0.12457674	0.0027	1828.8	762	2.6784	0.02	0.43	16.43167673	35.35533906	1.00000000	1.00000000
500.41611	10	0.22	0.50041611	304.8	47.0	5	-0.90851234	30.48	10.16	1.524	0.12457674	0.0027	1828.8	762	2.6784	0.02	0.43	8.21583836	17.67766953	1.00000000	1.00000000
101.33177	15	0.22	0.10133177	457.2	47.0	5	-1.22792034	45.72	15.24	2.286	0.12457674	0.0027	1828.8	762	2.6784	0.02	0.43	5.47722558	11.78511302	1.00000000	1.00000000
32.77118	19	0.22	0.03277118	579.1	47.0	5	-1.45369044	57.912	19.304	2.8956	0.12457674	0.0027	1828.8	762	2.6784	0.02	0.43	4.32412545	9.30403659	1.00000000	1.00000000
25.108624	20	0.22	0.025108624	609.6	47.0	5	-1.50695806	60.96	20.32	3.048	0.12457674	0.0027	1828.8	762	2.6784	0.02	0.43	4.10791918	8.83883476	0.99999999	1.00000000
19.344649	21	0.22	0.019344649	640.1	47.0	5	-1.55911716	64.008	21.336	3.2004	0.12457674	0.0027	1828.8	762	2.6784	0.02	0.43	3.91230398	8.41793787	0.99999997	1.00000000
0.0445204	50	0.22	4.45204E-05	1524.0	47.0	5	-2.76989347	152.4	50.8	7.62	0.12457674	0.0027	1828.8	762	2.6784	0.02	0.43	1.64316767	3.53553391	0.97986325	0.99999943
25.108624	20	0.22	0.025108624	609.6	47.0	5	-1.50695806	60.96	20.32	3.048	0.12457674	0.0027	1828.8	762	2.6784	0.02	0.43	4.10791918	8.83883476	0.99999999	1.00000000
11.659893	23	0.22	0.011659893	701.0	47.0	5	-1.66036924	70.104	23.368	3.5052	0.12457674	0.0027	1828.8	762	2.6784	0.02	0.43	3.57210364	7.68594327	0.99999956	1.00000000
9.1167773	24	0.22	0.009116777	731.5	47.0	5	-1.70957680	73.152	24.384	3.6576	0.12457674	0.0027	1828.8	762	2.6784	0.02	0.43	3.42326598	7.36569564	0.99999871	1.00000000
7.159683	25	0.22	0.007159683	762.0	47.0	5	-1.75790652	76.2	25.4	3.81	0.12457674	0.0027	1828.8	762	2.6784	0.02	0.43	3.28633535	7.07106781	0.99999664	1.00000000
5.646156	26	0.22	0.005646156	792.5	47.0	5	-1.80540377	79.248	26.416	3.9624	0.12457674	0.0027	1828.8	762	2.6784	0.02	0.43	3.15993783	6.79910367	0.99999214	1.00000000
2.21E-05	100	0.22	2.20994E-08	3048.0	47.0	5	-4.23681139	304.8	101.6	15.24	0.12457674	0.0027	1828.8	762	2.6784	0.02	0.43	0.82158384	1.76776695	0.75472188	0.98758067
4.335E-20	500	0.22	4.33453E-23	15240.0	47.0	5	-10.53780602	1524	508	76.2	0.12457674	0.0027	1828.8	762	2.6784	0.02	0.43	0.16431677	0.35355339	0.18375634	0.38292492
1.291E-22	600	0.22	1.29135E-25	18288.0	47.0	5	-11.63111877	1828.8	609.6	91.44	0.12457674	0.0027	1828.8	762	2.6784	0.02	0.43	0.13693064	0.29462783	0.15354940	0.32307776
6.263E-25	700	0.22	6.26273E-28	21336.0	47.0	5	-12.63705814	2133.6	711.2	106.68	0.12457674	0.0027	1828.8	762	2.6784	0.02	0.43	0.11736912	0.25253814	0.13183125	0.27901514
4.52E-55	2750	0.22	4.5201E-58	83820.0	47.0	5	-25.97527243	8382	2794	419.1	0.12457674	0.0027	1828.8	762	2.6784	0.02	0.43	0.02987578	0.06428243	0.03370118	0.07243517

TABLE
EQUATION R14 WORKSHEET - LEACHING FACTOR
SOIL COMPONENT OF GROUNDWATER INGESTION
NAPHTHALENE(P7-DE1-W)
CHAMPAIGN MGP
CHAMPAIGN MGP

$LF_{sw} = \rho_b/[\theta_{ws}+(k_s*\rho_b)+(H'*\theta_{as})]*[1+(U_{gw}*\delta_{gw})/(I*W)]$

k_s	=	$K_{oc} * f_{oc}$	R20
U_{gw}	=	$K * i$	R24
f_{oc}	=	0.00473	gm/gm
ρ_b	=	1.7	gm/cm3
w	=	0.3	unitless
θ_T	=	0.43	unitless
W	=	609.6	centimeters
K	=	0.000031	cm/sec
i	=	0.02	unitless
K_{oc}	=	500	L/gm
H'	=	0.0197	unitless
ρ_w	=	1	gm/cm^3
δ_{gw}	=	200	centimeters
I	=	30	cm/year

LFsw	ρ_b	β_1	K_{oc}	f_{oc}	k_s	H'	w	θ_{ws}
$(mg/L_{water})/(mg/kg_{soil})$	g/cm^3	$=\theta_{ws}+(k_s*\rho_s)+(H'*\theta_{as})$	cm^3/g	g/g	cm^3_{water}/g_{soil}	unitless	unitless	cm^3_{water}/cm^3_{soil}
0.309241077	**1.7**	4.528924	**500**	**0.00473**	2.365	**0.0197**	0.3	0.51

θ_T	θ_{as}	β_2	K	i	U_{gw}	δ_{gw}	I	W
uniltess	cm^3_{air}/cm^3_{soil}	$=1+(U_{gw}*\delta_{gw})/(I*W)$	cm/year	cm/cm	cm/year	cm	cm/year	cm
0.43	-0.08	1.213826772	977.616	0.02	19.55232	200	30	609.6

INPUT PARAMETERS FOR TIER 2 SOIL COMPONENT TO GROUNDWATER INGESTION EVALUATION

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		NAPHTHALENE(P1-F3.5-F) NORTH		
Site Name		CHAMPAIGN MGP		
Site Location		CHAMPAIGN, ILLINOIS		
FOR RBCA EQUATION - (R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, and R24)				
Constituent based parameters				
Organic carbon partition coefficient	K_{oc}	500	cm^3/g	Appendix C; Table E
Henry's constant	H'	0.0197	l/gm	Appendix C; Table E
Solubility	S	31	mg/l	Appendix C; Table E
Degradation constant	λ	0.0027	day^{-1}	Appendix C; Table E
Groundwater Objective	GW_{obj}	0.22	mg/l	Appendix B; Table E
Site Specific Data - Soil Zone				
Concentration of Constituent in Soil	$Soil_{(conc)}$	136	mg/kg	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	
Soil moisture content	***w***	0.3	unitless	
Total soil porosity - soil	θ_T	0.43	unitless	
Soil bulk density	ρ_b	1.7	gm/cm^3	
Source width in soil parallel to groundwater flow	W	30	feet	
Site Specific Data - Groundwater Zone				
Hydraulic conductivity	K	3.10E-05	cm/sec	
Groundwater gradient	*i*	0.033	unitless	
Total soil porosity - aquifer	θ_T	0.43	unitless	
Source width in groundwater perpendicular to groundwater flow direction	S_w	30	feet	
Source thickness in groundwater zone	S_d	25	feet	
Distance to point of compliance	X	1175	feet	

TABLE
EQUATION R12 WORKSHEET - SOIL COMPONENT OF GROUNDWATER INGESTION
NAPHTHALENE(P1-F3.5-F) NORTH
CHAMPAIGN MGP
CHAMPAIGN MGP

R12	**RO**	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)}$	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)} * LF_{sw}$	$= GW_{source\text{-}calculated}$
R13	$\mathbf{GW_{source}}$	$= GW_{comp}/[C_{(x)}/C_{(source)}]$

Soil Source Concentration $\mathbf{Soil_{(conc)}}$ **(mg/kg)**	Leachate Factor LF_{sw} $(mg/l_{water})/(mg/kg_{soil})$	**GW Standard** $\mathbf{GW_{comp}}$ **(mg/l)**	GW_{source} $Soil_{(conc)}*LF_{sw}$ (mg/l)
136	0.303887813	**0.22**	41.32874254

Tier 2 Soil Remediation Objective (μg/kg) = **136000**

TABLE
EQUATION R15 WORKSHEET - STEADY STATE ATTENUATION ALONG THE CENTERLINE OF PLUME
SOIL COMPONENT OF GROUNDWATER INGESTION
NAPHTHALENE(P1-F3.5-F) NORTH
CHAMPAIGN MGP
CHAMPAIGN MGP

R26 $C_{(x)} = GW_{source}*\{\exp[(X/2\alpha_x)*(1-(1+(4*\lambda*\alpha_x)/U)^{1/2})]*\mathrm{erf}[S_w/(4*(\alpha_y*X)^{1/2})]*\mathrm{erf}[S_d/(2*(\alpha_z*X)^{1/2})]\}$

α_x	=	0.10 * X	Equation R16
α_y	=	α_x/3	Equation R17
α_z	=	α_x/20	Equation R18
U	=	$K*i/\theta_T$	Equation R19
X	=	1175	feet
K	=	0.000031	cm/sec
S_w	=	914.4	cm
S_d	=	762	cm
i	=	0.033	unitless
$GW_{(source)}$	=	41.3287425	mg/l
θ_T	=	0.43	unitless
λ	=	0.0027	day^{-1}
GW_{comp}	=	0.22	mg/l

$C_{(x)}$ (μg/l)	X (feet)	GW_{comp} (mg/l)	$C_{(x)}$ (mg/l)	X (cm)	C_{source} (mg/l)	β_3 =(X/(2α_x))	β_4 =1-[1+(4λ*α_x)/U]^1/2	a_x (cm)	a_y (cm)	a_z (cm)	U (cm/day)	λ (day^{-1})	S_w (cm)	S_d (cm)	K (cm/day)	I (cm/cm)	θ_T (cm^3/cm^3)	β_1 =S_w/(4*[α_y*X]^1/2)	β_2 =S_d/(2*[α_z*X]^1/2)	Error Function erf(β_1)	Error Function erf(β_2)
28107.967	**1**	0.22	28.10796691	30.5	41.3	5	-0.07710103	3.048	1.016	0.1524	0.20555163	**0.0027**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	41.07919181	176.77669530	1.00000000	1.00000000
7478.1713	**5**	0.22	7.478171335	152.4	41.3	5	-0.34191398	15.24	5.08	0.762	0.20555163	**0.0027**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	8.21583836	35.35533906	1.00000000	1.00000000
1929.0495	**10**	0.22	1.92904952	304.8	41.3	5	-0.61290616	30.48	10.16	1.524	0.20555163	**0.0027**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	4.10791918	17.67766953	0.99999999	1.00000000
605.87882	**15**	0.22	0.605878815	457.2	41.3	5	-0.84450519	45.72	15.24	2.286	0.20555163	**0.0027**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	2.73861279	11.78511302	0.99989249	1.00000000
322.4206	**18**	0.22	0.322420595	548.6	41.3	5	-0.97044140	54.864	18.288	2.7432	0.20555163	**0.0027**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	2.28217732	9.82092752	0.99875117	1.00000000
263.41739	**19**	0.22	0.26341739	579.1	41.3	5	-1.01066803	57.912	19.304	2.8956	0.20555163	**0.0027**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	2.16206273	9.30403659	0.99776897	1.00000000
215.96225	**20**	0.22	0.215962247	609.6	41.3	5	-1.05010550	60.96	20.32	3.048	0.20555163	**0.0027**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	2.05395959	8.83883476	0.99632439	1.00000000
1.407477	**50**	0.22	0.001407477	1524.0	41.3	5	-2.00122165	152.4	50.8	7.62	0.20555163	**0.0027**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	0.82158384	3.53553391	0.75472188	0.99999943
215.96225	**20**	0.22	0.215962247	609.6	41.3	5	-1.05010550	60.96	20.32	3.048	0.20555163	**0.0027**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	2.05395959	8.83883476	0.99632439	1.00000000
121.16514	**23**	0.22	0.121165136	701.0	41.3	5	-1.16411008	70.104	23.368	3.5052	0.20555163	**0.0027**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	1.78605182	7.68594327	0.98845841	1.00000000
100.45398	**24**	0.22	0.100453978	731.5	41.3	5	-1.20079964	73.152	24.384	3.6576	0.20555163	**0.0027**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	1.71163299	7.36569564	0.98450571	1.00000000
83.473876	**25**	0.22	0.083473876	762.0	41.3	5	-1.23688750	76.2	25.4	3.81	0.20555163	**0.0027**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	1.64316767	7.07106781	0.97986325	1.00000000
69.51318	**26**	0.22	0.06951318	792.5	41.3	5	-1.27240232	79.248	26.416	3.9624	0.20555163	**0.0027**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	1.57996892	6.79910367	0.97454412	1.00000000
0.0029337	**100**	0.22	2.93372E-06	3048.0	41.3	5	-3.12488336	304.8	101.6	15.24	0.20555163	**0.0027**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	0.41079192	1.76776695	0.43872416	0.98758067
6.094E-15	**500**	0.22	6.09361E-18	15240.0	41.3	5	-8.00407207	1524	508	76.2	0.20555163	**0.0027**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	0.08215838	0.35355339	0.09249764	0.38292492
6.138E-17	**600**	0.22	6.13847E-20	18288.0	41.3	5	-8.85332312	1828.8	609.6	91.44	0.20555163	**0.0027**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	0.06846532	0.29462783	0.07713430	0.32307776
9.126E-19	**700**	0.22	9.12607E-22	21336.0	41.3	5	-9.63497246	2133.6	711.2	106.68	0.20555163	**0.0027**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	0.05868456	0.25253814	0.06614250	0.27901514
1.789E-42	**2750**	0.22	1.78905E-45	83820.0	41.3	5	-20.00959842	8382	2794	419.1	0.20555163	**0.0027**	**914.4**	**762**	**2.6784**	**0.033**	**0.43**	0.01493789	0.06428243	0.01685435	0.07243517

TABLE
EQUATION R14 WORKSHEET - LEACHING FACTOR
SOIL COMPONENT OF GROUNDWATER INGESTION
NAPHTHALENE(P1-F3.5-F) NORTH
CHAMPAIGN MGP
CHAMPAIGN MGP

$LF_{sw} = \rho_b/[\theta_{ws}+(k_s*\rho_b)+(H'*\theta_{as})]*[1+(U_{gw}*\delta_{gw})/(I*W)]$

k_s	=	$K_{oc} * f_{oc}$	R20
U_{gw}	=	$K * i$	R24
f_{oc}	=	0.00473	gm/gm
ρ_b	=	1.7	gm/cm3
w	=	0.3	unitless
θ_T	=	0.43	unitless
W	=	914.4	centimeters
K	=	0.000031	cm/sec
i	=	0.033	unitless
K_{oc}	=	500	L/gm
H'	=	0.0197	unitless
ρ_w	=	1	gm/cm^3
δ_{gw}	=	200	centimeters
I	=	30	cm/year

LFsw (mg/L_{water})/ (mg/kg_{soil})	ρ_b g/cm^3	β_1 $=\theta_{ws}+(k_s*\rho_s)+(H'*\theta_{as})$	K_{oc} cm^3/g	f_{oc} g/g	k_s cm^3_{water}/g_{soil}	H' unitless	w unitless	θ_{ws} cm^3_{water}/cm^3_{soil}
0.303887813	**1.7**	4.528924	**500**	**0.00473**	2.365	**0.0197**	0.3	0.51

θ_T uniltess	θ_{as} cm^3_{air}/cm^3_{soil}	β_2 $=1+(U_{gw}*\delta_{gw})/(I*W)$	K cm/year	i cm/cm	U_{gw} cm/year	δ_{gw} cm	I cm/year	W cm
0.43	-0.08	1.235209449	977.616	0.033	32.261328	200	30	914.4

INPUT PARAMETERS FOR TIER 2 SOIL COMPONENT TO GROUNDWATER INGESTION EVALUATION

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		NAPHTHALENE(P1-F3.5-F) SOUTH		
Site Name		CHAMPAIGN MGP		
Site Location		CHAMPAIGN, ILLINOIS		
FOR RBCA EQUATION - (R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, and R24)				
Constituent based parameters				
Organic carbon partition coefficient	K_{oc}	500	cm^3/g	Appendix C; Table E
Henry's constant	H'	0.0197	l/gm	Appendix C; Table E
Solubility	S	31	mg/l	Appendix C; Table E
Degradation constant	λ	0.0027	day^{-1}	Appendix C; Table E
Groundwater Objective	GW_{obj}	0.22	mg/l	Appendix B; Table E
Site Specific Data - Soil Zone				
Concentration of Constituent in Soil	$Soil_{(conc)}$	136	mg/kg	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	
Soil moisture content	***w***	0.3	unitless	
Total soil porosity - soil	θ_T	0.43	unitless	
Soil bulk density	ρ_b	1.7	gm/cm^3	
Source width in soil parallel to groundwater flow	W	30	feet	
Site Specific Data - Groundwater Zone				
Hydraulic conductivity	K	3.10E-05	cm/sec	
Groundwater gradient	*i*	0.02	unitless	
Total soil porosity - aquifer	θ_T	0.43	unitless	
Source width in groundwater perpendicular to groundwater flow direction	S_w	30	feet	
Source thickness in groundwater zone	S_d	25	feet	
Distance to point of compliance	X	1175	feet	

TABLE
EQUATION R12 WORKSHEET - SOIL COMPONENT OF GROUNDWATER INGESTION
NAPHTHALENE(P1-F3.5-F) SOUTH
CHAMPAIGN MGP
CHAMPAIGN MGP

R12	**RO**	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)}$	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)} * LF_{sw}$	$= GW_{source\text{-}calculated}$
R13	$\mathbf{GW_{source}}$	$= GW_{comp}/[C_{(x)}/C_{(source)}]$

Soil Source Concentration $\mathbf{Soil_{(conc)}}$ **(mg/kg)**	Leachate Factor LF_{sw} $(mg/l_{water})/(mg/kg_{soil})$	**GW Standard** $\mathbf{GW_{comp}}$ **(mg/l)**	GW_{source} $Soil_{(conc)}*LF_{sw}$ (mg/l)
136	0.328532414	**0.22**	44.68040832

Tier 2 Soil Remediation Objective (μg/kg) = **136000**

TABLE
EQUATION R15 WORKSHEET - STEADY STATE ATTENUATION ALONG THE CENTERLINE OF PLUME
SOIL COMPONENT OF GROUNDWATER INGESTION
NAPHTHALENE(P1-F3.5-F) SOUTH
CHAMPAIGN MGP
CHAMPAIGN MGP

R26 $C_{(x)} = GW_{source}*\{\exp[(X/2\alpha_x)*(1-(1+(4*\lambda*\alpha_x)/U)^{1/2})]*\mathrm{erf}[S_w/(4*(\alpha_y*X)^{1/2})]*\mathrm{erf}[S_d/(2*(\alpha_z*X)^{1/2})]\}$

α_x	=	0.10 * X	Equation R16
α_y	=	$\alpha_x/3$	Equation R17
α_z	=	$\alpha_x/20$	Equation R18
U	=	$K*i/\theta_T$	Equation R19
X	=	1175	feet
K	=	0.000031	cm/sec
S_w	=	914.4	cm
S_d	=	762	cm
i	=	0.02	unitless
$GW_{(source)}$	=	44.6804083	mg/l
θ_T	=	0.43	unitless
λ	=	0.0027	day^{-1}
GW_{comp}	=	0.22	mg/l

$C_{(x)}$ (µg/l)	X (feet)	GW_{comp} (mg/l)	$C_{(x)}$ (mg/l)	X (cm)	C_{source} (mg/l)	β_3 =(X/(2α_x))	β_4 =1-[1+(4λ*α_x)/U]^1/2	a_x (cm)	a_y (cm)	a_z (cm)	U (cm/day)	λ (day^{-1})	S_w (cm)	S_d (cm)	K (cm/day)	I (cm/cm)	θ_T (cm^3/cm^3)	β_1 =S_w/(4*[α_y*X]^1/2)	β_2 =S_d/(2*[α_z*X]^1/2)	Error Function erf(β_1)	Error Function erf(β_2)
23989.337	1	0.22	23.98933675	30.5	44.7	5	-0.12438514	3.048	1.016	0.1524	0.12457674	0.0027	914.4	762	2.6784	0.02	0.43	41.07919181	176.77669530	1.00000000	1.00000000
3260.1617	5	0.22	3.260161668	152.4	44.7	5	-0.52355167	15.24	5.08	0.762	0.12457674	0.0027	914.4	762	2.6784	0.02	0.43	8.21583836	35.35533906	1.00000000	1.00000000
475.67207	10	0.22	0.475672067	304.8	44.7	5	-0.90851234	30.48	10.16	1.524	0.12457674	0.0027	914.4	762	2.6784	0.02	0.43	4.10791918	17.67766953	0.99999999	1.00000000
96.31087	15	0.22	0.09631087	457.2	44.7	5	-1.22792034	45.72	15.24	2.286	0.12457674	0.0027	914.4	762	2.6784	0.02	0.43	2.73861279	11.78511302	0.99989249	1.00000000
31.081248	19	0.22	0.031081248	579.1	44.7	5	-1.45369044	57.912	19.304	2.8956	0.12457674	0.0027	914.4	762	2.6784	0.02	0.43	2.16206273	9.30403659	0.99776897	1.00000000
23.779354	20	0.22	0.023779354	609.6	44.7	5	-1.50695806	60.96	20.32	3.048	0.12457674	0.0027	914.4	762	2.6784	0.02	0.43	2.05395959	8.83883476	0.99632439	1.00000000
18.283899	21	0.22	0.018283899	640.1	44.7	5	-1.55911716	64.008	21.336	3.2004	0.12457674	0.0027	914.4	762	2.6784	0.02	0.43	1.95615199	8.41793787	0.99433239	1.00000000
0.0325954	50	0.22	3.25954E-05	1524.0	44.7	5	-2.76989347	152.4	50.8	7.62	0.12457674	0.0027	914.4	762	2.6784	0.02	0.43	0.82158384	3.53553391	0.75472188	0.99999943
23.779354	20	0.22	0.023779354	609.6	44.7	5	-1.50695806	60.96	20.32	3.048	0.12457674	0.0027	914.4	762	2.6784	0.02	0.43	2.05395959	8.83883476	0.99632439	1.00000000
10.955433	23	0.22	0.010955433	701.0	44.7	5	-1.66036924	70.104	23.368	3.5052	0.12457674	0.0027	914.4	762	2.6784	0.02	0.43	1.78605182	7.68594327	0.98845841	1.00000000
8.5317184	24	0.22	0.008531718	731.5	44.7	5	-1.70957680	73.152	24.384	3.6576	0.12457674	0.0027	914.4	762	2.6784	0.02	0.43	1.71163299	7.36569564	0.98450571	1.00000000
6.6686372	25	0.22	0.006668637	762.0	44.7	5	-1.75790652	76.2	25.4	3.81	0.12457674	0.0027	914.4	762	2.6784	0.02	0.43	1.64316767	7.07106781	0.97986325	1.00000000
5.2303911	26	0.22	0.005230391	792.5	44.7	5	-1.80540377	79.248	26.416	3.9624	0.12457674	0.0027	914.4	762	2.6784	0.02	0.43	1.57996892	6.79910367	0.97454412	1.00000000
1.221E-05	100	0.22	1.22113E-08	3048.0	44.7	5	-4.23681139	304.8	101.6	15.24	0.12457674	0.0027	914.4	762	2.6784	0.02	0.43	0.41079192	1.76776695	0.43872416	0.98758067
2.074E-20	500	0.22	2.07399E-23	15240.0	44.7	5	-10.53780602	1524	508	76.2	0.12457674	0.0027	914.4	762	2.6784	0.02	0.43	0.08215838	0.35355339	0.09249764	0.38292492
6.166E-23	600	0.22	6.16621E-26	18288.0	44.7	5	-11.63111877	1828.8	609.6	91.44	0.12457674	0.0027	914.4	762	2.6784	0.02	0.43	0.06846532	0.29462783	0.07713430	0.32307776
2.987E-25	700	0.22	2.98677E-28	21336.0	44.7	5	-12.63705814	2133.6	711.2	106.68	0.12457674	0.0027	914.4	762	2.6784	0.02	0.43	0.05868456	0.25253814	0.06614250	0.27901514
2.149E-55	2750	0.22	2.14878E-58	83820.0	44.7	5	-25.97527243	8382	2794	419.1	0.12457674	0.0027	914.4	762	2.6784	0.02	0.43	0.01493789	0.06428243	0.01685435	0.07243517

TABLE
EQUATION R14 WORKSHEET - LEACHING FACTOR
SOIL COMPONENT OF GROUNDWATER INGESTION
NAPHTHALENE(P1-F3.5-F) SOUTH
CHAMPAIGN MGP
CHAMPAIGN MGP

$LF_{sw} = \rho_b/[\theta_{ws}+(k_s*\rho_b)+(H'*\theta_{as})]*[1+(U_{gw}*\delta_{gw})/(I*W)]$

k_s	=	$K_{oc} * f_{oc}$	R20
U_{gw}	=	$K * i$	R24
f_{oc}	=	0.00473	gm/gm
ρ_b	=	1.7	gm/cm3
w	=	0.3	unitless
θ_T	=	0.43	unitless
W	=	914.4	centimeters
K	=	0.000031	cm/sec
i	=	0.02	unitless
K_{oc}	=	500	L/gm
H'	=	0.0197	unitless
ρ_w	=	1	gm/cm^3
δ_{gw}	=	200	centimeters
I	=	30	cm/year

LFsw (mg/L_{water})/ (mg/kg_{soil})	ρ_b g/cm^3	β_1 $=\theta_{ws}+(k_s*\rho_s)+(H'*\theta_{as})$	K_{oc} cm^3/g	f_{oc} g/g	k_s cm^3_{water}/g_{soil}	H' unitless	w unitless	θ_{ws} cm^3_{water}/cm^3_{soil}
0.328532414	**1.7**	4.528924	**500**	**0.00473**	2.365	**0.0197**	0.3	0.51

θ_T uniltess	θ_{as} cm^3_{air}/cm^3_{soil}	β_2 $=1+(U_{gw}*\delta_{gw})/(I*W)$	K cm/year	i cm/cm	U_{gw} cm/year	δ_{gw} cm	I cm/year	W cm
0.43	-0.08	1.142551181	977.616	0.02	19.55232	200	30	914.4

INPUT PARAMETERS FOR TIER 2 SOIL COMPONENT TO GROUNDWATER INGESTION EVALUATION

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		NAPHTHALENE(P1-F3.5-F) WEST		
Site Name		CHAMPAIGN MGP		
Site Location		CHAMPAIGN, ILLINOIS		
FOR RBCA EQUATION - (R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, and R24)				
Constituent based parameters				
Organic carbon partition coefficient	K_{oc}	500	cm^3/g	Appendix C; Table E
Henry's constant	H'	0.0197	l/gm	Appendix C; Table E
Solubility	S	31	mg/l	Appendix C; Table E
Degradation constant	λ	0.0027	day^{-1}	Appendix C; Table E
Groundwater Objective	GW_{obj}	0.22	mg/l	Appendix B; Table E
Site Specific Data - Soil Zone				
Concentration of Constituent in Soil	$Soil_{(conc)}$	136	mg/kg	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	
Soil moisture content	***w***	0.3	unitless	
Total soil porosity - soil	θ_T	0.43	unitless	
Soil bulk density	ρ_b	1.7	gm/cm^3	
Source width in soil parallel to groundwater flow	W	30	feet	
Site Specific Data - Groundwater Zone				
Hydraulic conductivity	K	3.10E-05	cm/sec	
Groundwater gradient	*i*	0.036	unitless	
Total soil porosity - aquifer	θ_T	0.43	unitless	
Source width in groundwater perpendicular to groundwater flow direction	S_w	30	feet	
Source thickness in groundwater zone	S_d	25	feet	
Distance to point of compliance	X	1175	feet	

TABLE
EQUATION R12 WORKSHEET - SOIL COMPONENT OF GROUNDWATER INGESTION
NAPHTHALENE(P1-F3.5-F) WEST
CHAMPAIGN MGP
CHAMPAIGN MGP

R12	**RO**	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)}$	$= GW_{source}/LF_{sw}$
R12 (modified)	$Soil_{(conc)} * LF_{sw}$	$= GW_{source\text{-}calculated}$
R13	$\mathbf{GW_{source}}$	$= GW_{comp}/[C_{(x)}/C_{(source)}]$

Soil Source Concentration $\mathbf{Soil_{(conc)}}$ **(mg/kg)**	Leachate Factor LF_{sw} $(mg/l_{water})/(mg/kg_{soil})$	**GW Standard** $\mathbf{GW_{comp}}$ **(mg/l)**	GW_{source} $Soil_{(conc)}*LF_{sw}$ (mg/l)
136	0.298716736	**0.22**	40.62547603

Tier 2 Soil Remediation Objective (μg/kg) = **136000**

TABLE
EQUATION R15 WORKSHEET - STEADY STATE ATTENUATION ALONG THE CENTERLINE OF PLUME
SOIL COMPONENT OF GROUNDWATER INGESTION
NAPHTHALENE(P1-F3.5-F) WEST
CHAMPAIGN MGP
CHAMPAIGN MGP

R26 $C_{(x)} = GW_{source}*\{\exp[(X/2\alpha_x)*(1-(1+(4*\lambda*\alpha_x)/U)^{1/2})]*\mathrm{erf}[S_w/(4*(\alpha_y*X)^{1/2})]*\mathrm{erf}[S_d/(2*(\alpha_z*X)^{1/2})]\}$

α_x	=	0.10 * X	Equation R16
α_y	=	$\alpha_x/3$	Equation R17
α_z	=	$\alpha_x/20$	Equation R18
U	=	$K*i/\theta_T$	Equation R19
X	=	1175	feet
K	=	0.000031	cm/sec
S_w	=	914.4	cm
S_d	=	762	cm
i	=	0.036	unitless
$GW_{(source)}$	=	40.625476	mg/l
θ_T	=	0.43	unitless
λ	=	0.0027	day^{-1}
GW_{comp}	=	0.22	mg/l

$C_{(x)}$ (μg/l)	X (feet)	GW_{comp} (mg/l)	$C_{(x)}$ (mg/l)	X (cm)	C_{source} (mg/l)	β_3 =(X/(2α_x))	β_4 =1-[1+(4λ*α_x)/U]^1/2	a_x (cm)	a_y (cm)	a_z (cm)	U (cm/day)	λ (day^{-1})	S_w (cm)	S_d (cm)	K (cm/day)	I (cm/cm)	θ_T (cm^3/cm^3)	β_1 =S_w/(4*[α_y*X]^1/2)	β_2 =S_d/(2*[α_z*X]^1/2)	Error Function erf(β_1)	Error Function erf(β_2)
28501.463	1	0.22	28.50146347	30.5	40.6	5	-0.07088798	3.048	1.016	0.1524	0.22423814	0.0027	914.4	762	2.6784	0.036	0.43	41.07919181	176.77669530	1.00000000	1.00000000
8333.7494	5	0.22	8.333749397	152.4	40.6	5	-0.31681638	15.24	5.08	0.762	0.22423814	0.0027	914.4	762	2.6784	0.036	0.43	8.21583836	35.35533906	1.00000000	1.00000000
2338.3452	10	0.22	2.338345168	304.8	40.6	5	-0.57099037	30.48	10.16	1.524	0.22423814	0.0027	914.4	762	2.6784	0.036	0.43	4.10791918	17.67766953	0.99999999	1.00000000
119.90334	25	0.22	0.119903336	762.0	40.6	5	-1.16102450	76.2	25.4	3.81	0.22423814	0.0027	914.4	762	2.6784	0.036	0.43	1.64316767	7.07106781	0.97986325	1.00000000
51.142223	30	0.22	0.051142223	914.4	40.6	5	-1.32465745	91.44	30.48	4.572	0.22423814	0.0027	914.4	762	2.6784	0.036	0.43	1.36930639	5.89255651	0.94719249	1.00000000
22.706417	35	0.22	0.022706417	1066.8	40.6	5	-1.47750633	106.68	35.56	5.334	0.22423814	0.0027	914.4	762	2.6784	0.036	0.43	1.17369119	5.05076272	0.90305537	1.00000000
19.388077	36	0.22	0.019388077	1097.3	40.6	5	-1.50695806	109.728	36.576	5.4864	0.22423814	0.0027	914.4	762	2.6784	0.036	0.43	1.14108866	4.91046376	0.89341683	1.00000000
2.4379767	50	0.22	0.002437977	1524.0	40.6	5	-1.88791512	152.4	50.8	7.62	0.22423814	0.0027	914.4	762	2.6784	0.036	0.43	0.82158384	3.53553391	0.75472188	0.99999943
295.52805	20	0.22	0.295528045	609.6	40.6	5	-0.98394090	60.96	20.32	3.048	0.22423814	0.0027	914.4	762	2.6784	0.036	0.43	2.05395959	8.83883476	0.99632439	1.00000000
170.81632	23	0.22	0.170816325	701.0	40.6	5	-1.09199061	70.104	23.368	3.5052	0.22423814	0.0027	914.4	762	2.6784	0.036	0.43	1.78605182	7.68594327	0.98845841	1.00000000
142.96455	24	0.22	0.142964548	731.5	40.6	5	-1.12678767	73.152	24.384	3.6576	0.22423814	0.0027	914.4	762	2.6784	0.036	0.43	1.71163299	7.36569564	0.98450571	1.00000000
119.90334	25	0.22	0.119903336	762.0	40.6	5	-1.16102450	76.2	25.4	3.81	0.22423814	0.0027	914.4	762	2.6784	0.036	0.43	1.64316767	7.07106781	0.97986325	1.00000000
100.75871	26	0.22	0.100758706	792.5	40.6	5	-1.19472731	79.248	26.416	3.9624	0.22423814	0.0027	914.4	762	2.6784	0.036	0.43	1.57996892	6.79910367	0.97454412	1.00000000
0.0065828	100	0.22	6.58284E-06	3048.0	40.6	5	-2.95981155	304.8	101.6	15.24	0.22423814	0.0027	914.4	762	2.6784	0.036	0.43	0.41079192	1.76776695	0.43872416	0.98758067
3.975E-14	500	0.22	3.97482E-17	15240.0	40.6	5	-7.62557463	1524	508	76.2	0.22423814	0.0027	914.4	762	2.6784	0.036	0.43	0.08215838	0.35355339	0.09249764	0.38292492
4.807E-16	600	0.22	4.80747E-19	18288.0	40.6	5	-8.43825435	1828.8	609.6	91.44	0.22423814	0.0027	914.4	762	2.6784	0.036	0.43	0.06846532	0.29462783	0.07713430	0.32307776
8.455E-18	700	0.22	8.45483E-21	21336.0	40.6	5	-9.18630221	2133.6	711.2	106.68	0.22423814	0.0027	914.4	762	2.6784	0.036	0.43	0.05868456	0.25253814	0.06614250	0.27901514
1.524E-40	2750	0.22	1.52378E-43	83820.0	40.6	5	-19.11723035	8382	2794	419.1	0.22423814	0.0027	914.4	762	2.6784	0.036	0.43	0.01493789	0.06428243	0.01685435	0.07243517

TABLE
EQUATION R14 WORKSHEET - LEACHING FACTOR
SOIL COMPONENT OF GROUNDWATER INGESTION
NAPHTHALENE(P1-F3.5-F) WEST
CHAMPAIGN MGP
CHAMPAIGN MGP

$LF_{sw} = \rho_b/[\theta_{ws}+(k_s*\rho_b)+(H'*\theta_{as})]*[1+(U_{gw}*\delta_{gw})/(I*W)]$

k_s	=	$K_{oc} * f_{oc}$	R20
U_{gw}	=	$K * i$	R24
f_{oc}	=	0.00473	gm/gm
ρ_b	=	1.7	gm/cm3
w	=	0.3	unitless
θ_T	=	0.43	unitless
W	=	914.4	centimeters
K	=	0.000031	cm/sec
i	=	0.036	unitless
K_{oc}	=	500	L/gm
H'	=	0.0197	unitless
ρ_w	=	1	gm/cm^3
δ_{gw}	=	200	centimeters
I	=	30	cm/year

LFsw	ρ_b	β_1	K_{oc}	f_{oc}	k_s	H'	w	θ_{ws}
$(mg/L_{water})/(mg/kg_{soil})$	g/cm^3	$=\theta_{ws}+(k_s*\rho_s)+(H'*\theta_{as})$	cm^3/g	g/g	cm^3_{water}/g_{soil}	unitless	unitless	cm^3_{water}/cm^3_{soil}
0.298716736	**1.7**	4.528924	**500**	**0.00473**	2.365	**0.0197**	0.3	0.51

θ_T	θ_{as}	β_2	K	i	U_{gw}	δ_{gw}	I	W
uniltess	cm^3_{air}/cm^3_{soil}	$=1+(U_{gw}*\delta_{gw})/(I*W)$	cm/year	cm/cm	cm/year	cm	cm/year	cm
0.43	-0.08	1.256592126	977.616	0.036	35.194176	200	30	914.4

Appendix E Tier 2 Evaluation Calculations and Results – Groundwater Ingestion Pathway

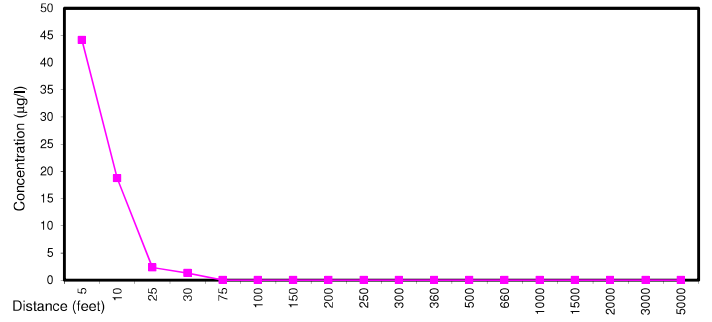
DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		BENZENE (UMW-124) - SOUTH FLOW		
Site Name		CHAMPAIGN MGP		
Site Location		CHAMPAIGN, ILLINOIS		
FOR RBCA EQUATION - (R17, R18, R19, and R26)				
Constituent based parameters				
Degradation constant	λ	0.0009	day^{-1}	Appendix C; Table E
Groundwater Objective	$C_{(x)\ or}\ GW_{obj}$	0.005	mg/l	Appendix B; Table E
Site Specific Data				
Source concentration in groundwater	$C_{(source)}$	0.12	mg/l	
Source width perpendicular to groundwater flow direction	S_w	280	feet	
Source thickness to groundwater flow direction	S_d	25	feet	
Hydraulic conductivity	K	0.0000310	cm/sec	
Groundwater gradient	*i*	0.02	unitless	
Distance to point of compliance	X	Enter distances from source beginning at cell C25 of Conc(x) spreadsheet.	feet	
Soil Type Specific				
Total porosity	θ_T	0.43	unitless	Appendix C; Table D
Soil particle density	ρ_s	2.65	gm/cm^3	Appendix C; Table D

TABLE
EQUATION R26 WORKSHEET
GROUNDWATER INGESTION PATHWAY
BENZENE (UMW-124) - SOUTH FLOW
CHAMPAIGN MGP
CHAMPAIGN, ILLINOIS

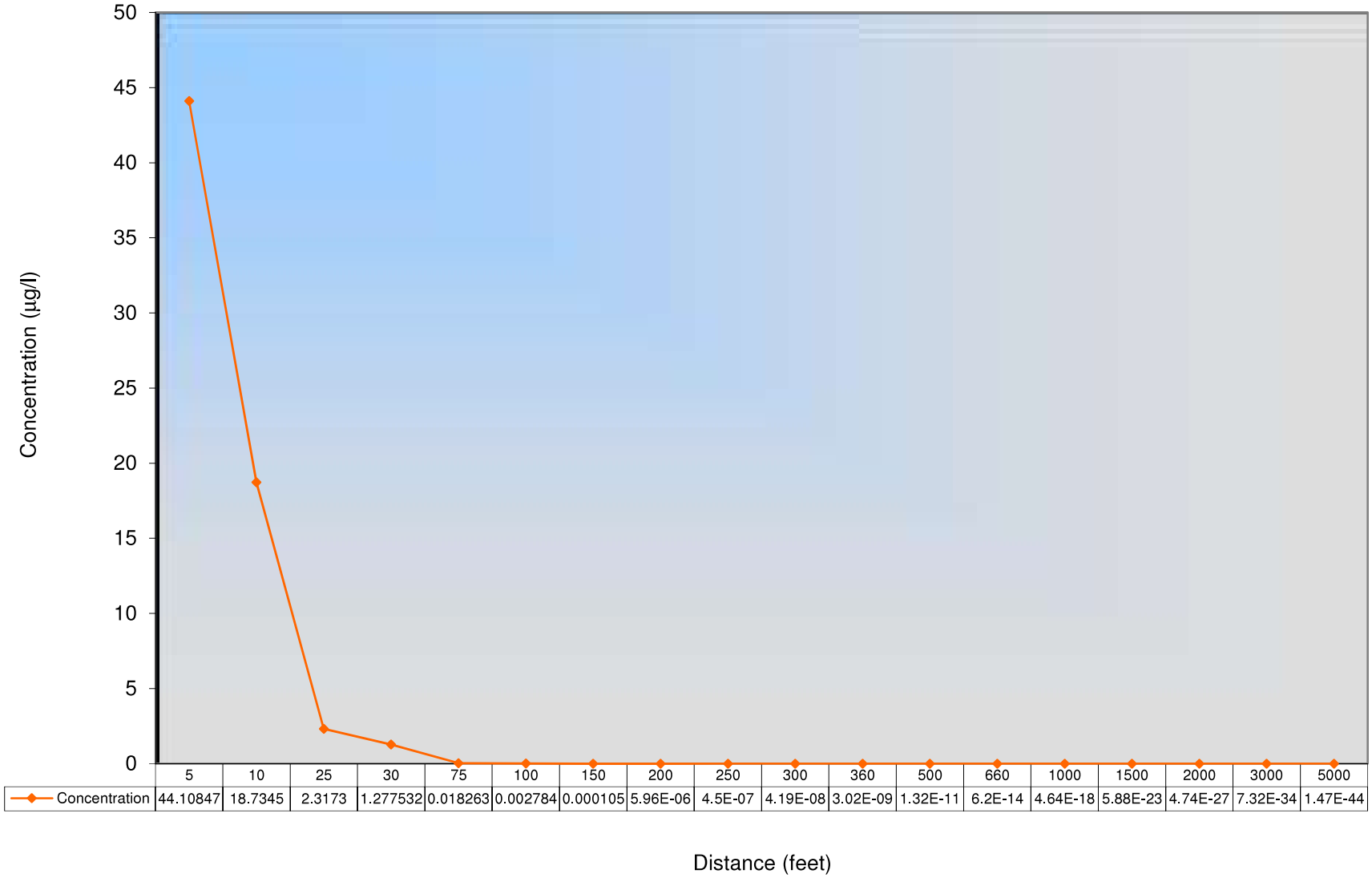
R26 $C_{(x)} = C_{(source)} * \{\exp[(X/2\alpha_x) * (1-((1+(4*\lambda*\alpha_x)/U))^{1/2})] * \mathrm{erf}[S_w/(4*(\alpha_y*X)^{1/2})] * \mathrm{erf}[S_d/(2*(\alpha_z*X)^{1/2})]\}$

α_x	=	0.10 * X	Equation R16
α_y	=	$\alpha_x/3$	Equation R17
α_z	=	$\alpha_x/20$	Equation R18
U	=	$K*i/\theta_T$	Equation R19
X	=	Beginning in cell C25, enter distance from source as feet.	
K	=	0.000031	cm/sec
S_w	=	8534.4	cm
S_d	=	762	cm
i	=	0.02	unitless
$C_{(source)}$	=	0.12	mg/l
θ_T	=	0.43	unitless
λ	=	0.0009	day^{-1}

$C_{(x)}$ (µg/l)		X (feet)	$C_{(x)}$ (mg/l)	X (cm)	C_{source} (mg/l)	β_3 =(X/(2ax))	β_4 =1-[1+(4λ*αx)/U]^1/2	a_x (cm)	a_y (cm)	a_z (cm)	U (cm/day)	λ (day^{-1})	S_w (cm)	S_d (cm)	K (cm/day)	I (cm/cm)	θ_T (cm^3/cm^3)	β_1 =S_w/(4*[α_y*X]^1/2)	β_2 =S_d/(2*[α_z*X]^1/2)	Error Function erf(β_1)	erf(β_2)
44.108466		5	0.04410847	152.4	0.12	5	-0.20016800	15.24	5.08	0.762	0.1245767	0.0009	8534.4	762	2.6784	0.02	0.43	76.68115805	35.35533906	1.00000000	1.00000000
18.734503		10	0.0187345	304.8	0.12	5	-0.37142497	30.48	10.16	1.524	0.1245767	0.0009	8534.4	762	2.6784	0.02	0.43	38.34057903	17.67766953	1.00000000	1.00000000
2.3172999		25	0.0023173	762.0	0.12	5	-0.78941782	76.2	25.4	3.81	0.1245767	0.0009	8534.4	762	2.6784	0.02	0.43	15.33623161	7.07106781	1.00000000	1.00000000
1.2775319		30	0.00127753	914.4	0.12	5	-0.90851234	91.44	30.48	4.572	0.1245767	0.0009	8534.4	762	2.6784	0.02	0.43	12.78019301	5.89255651	1.00000000	1.00000000
0.0182626		75	1.8263E-05	2286.0	0.12	5	-1.75790652	228.6	76.2	11.43	0.1245767	0.0009	8534.4	762	2.6784	0.02	0.43	5.11207720	2.35702260	1.00000000	0.99914188
0.0027839		100	2.7839E-06	3048.0	0.12	5	-2.13178296	304.8	101.6	15.24	0.1245767	0.0009	8534.4	762	2.6784	0.02	0.43	3.83405790	1.76776695	0.99999994	0.98758067
0.0001049		150	1.0488E-07	4572.0	0.12	5	-2.76989347	457.2	152.4	22.86	0.1245767	0.0009	8534.4	762	2.6784	0.02	0.43	2.55603860	1.17851130	0.99969940	0.90441930
5.964E-06		200	5.9637E-09	6096.0	0.12	5	-3.31464124	609.6	203.2	30.48	0.1245767	0.0009	8534.4	762	2.6784	0.02	0.43	1.91702895	0.88388348	0.99329372	0.78870045
4.498E-07		250	4.4981E-10	7620.0	0.12	5	-3.79793302	762	254	38.1	0.1245767	0.0009	8534.4	762	2.6784	0.02	0.43	1.53362316	0.70710678	0.96990750	0.68268949
4.188E-08		300	4.1878E-11	9144.0	0.12	5	-4.23681139	914.4	304.8	45.72	0.1245767	0.0009	8534.4	762	2.6784	0.02	0.43	1.27801930	0.58925565	0.92929886	0.59534324
3.019E-09		360	3.0192E-12	10972.8	0.12	5	-4.71918108	1097.28	365.76	54.864	0.1245767	0.0009	8534.4	762	2.6784	0.02	0.43	1.06501608	0.49104638	0.86797394	0.51259647
1.315E-11		500	1.3152E-14	15240.0	0.12	5	-5.71120873	1524	508	76.2	0.1245767	0.0009	8534.4	762	2.6784	0.02	0.43	0.76681158	0.35355339	0.72182818	0.38292492
6.199E-14		660	6.1994E-17	20116.8	0.12	5	-6.68981312	2011.68	670.56	100.584	0.1245767	0.0009	8534.4	762	2.6784	0.02	0.43	0.58091786	0.26784348	0.58866234	0.29515461
4.638E-18		1000	4.6384E-21	30480.0	0.12	5	-8.43825435	3048	1016	152.4	0.1245767	0.0009	8534.4	762	2.6784	0.02	0.43	0.38340579	0.17677670	0.41233143	0.19741265
5.876E-23		1500	5.8756E-26	45720.0	0.12	5	-10.53780602	4572	1524	228.6	0.1245767	0.0009	8534.4	762	2.6784	0.02	0.43	0.25560386	0.11785113	0.28225818	0.13236767
4.736E-27		2000	4.7363E-30	60960.0	0.12	5	-12.31019498	6096	2032	304.8	0.1245767	0.0009	8534.4	762	2.6784	0.02	0.43	0.19170290	0.08838835	0.21369267	0.09947645
7.318E-34		3000	7.3181E-37	91440.0	0.12	5	-15.28624989	9144	3048	457.2	0.1245767	0.0009	8534.4	762	2.6784	0.02	0.43	0.12780193	0.05892557	0.14342773	0.06641350
1.465E-44		5000	1.4653E-47	152400.0	0.12	5	-20.00959842	15240	5080	762	0.1245767	0.0009	8534.4	762	2.6784	0.02	0.43	0.07668116	0.03535534	0.08635613	0.03987761



Concentration versus Distance



	5	10	25	30	75	100	150	200	250	300	360	500	660	1000	1500	2000	3000	5000
Concentration	44.10847	18.7345	2.3173	1.277532	0.018263	0.002784	0.000105	5.96E-06	4.5E-07	4.19E-08	3.02E-09	1.32E-11	6.2E-14	4.64E-18	5.88E-23	4.74E-27	7.32E-34	1.47E-44

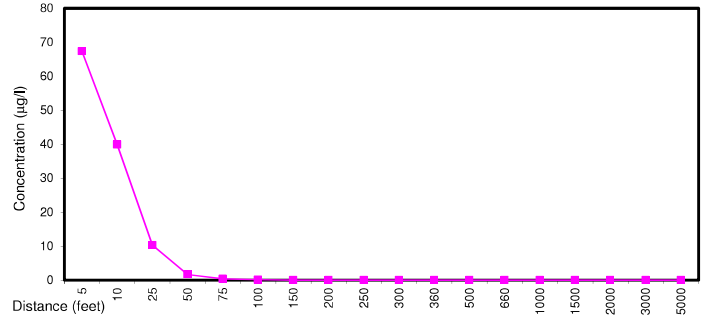
DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		BENZENE (UMW-124) - WEST FLOW		
Site Name		CHAMPAIGN MGP		
Site Location		CHAMPAIGN, ILLINOIS		
FOR RBCA EQUATION - (R17, R18, R19, and R26)				
Constituent based parameters				
Degradation constant	λ	0.0009	day^{-1}	Appendix C; Table E
Groundwater Objective	$C_{(x)\ or}\ GW_{obj}$	0.005	mg/l	Appendix B; Table E
Site Specific Data				
Source concentration in groundwater	$C_{(source)}$	0.12	mg/l	
Source width perpendicular to groundwater flow direction	S_w	325	feet	
Source thickness to groundwater flow direction	S_d	25	feet	
Hydraulic conductivity	K	0.0000310	cm/sec	
Groundwater gradient	*i*	0.036	unitless	
Distance to point of compliance	X	Enter distances from source beginning at cell C25 of Conc(x) spreadsheet.	feet	
Soil Type Specific				
Total porosity	θ_T	0.43	unitless	Appendix C; Table D
Soil particle density	ρ_s	2.65	gm/cm^3	Appendix C; Table D

TABLE
EQUATION R26 WORKSHEET
GROUNDWATER INGESTION PATHWAY
BENZENE (UMW-124)
CHAMPAIGN MGP
CHAMPAIGN, ILLINOIS

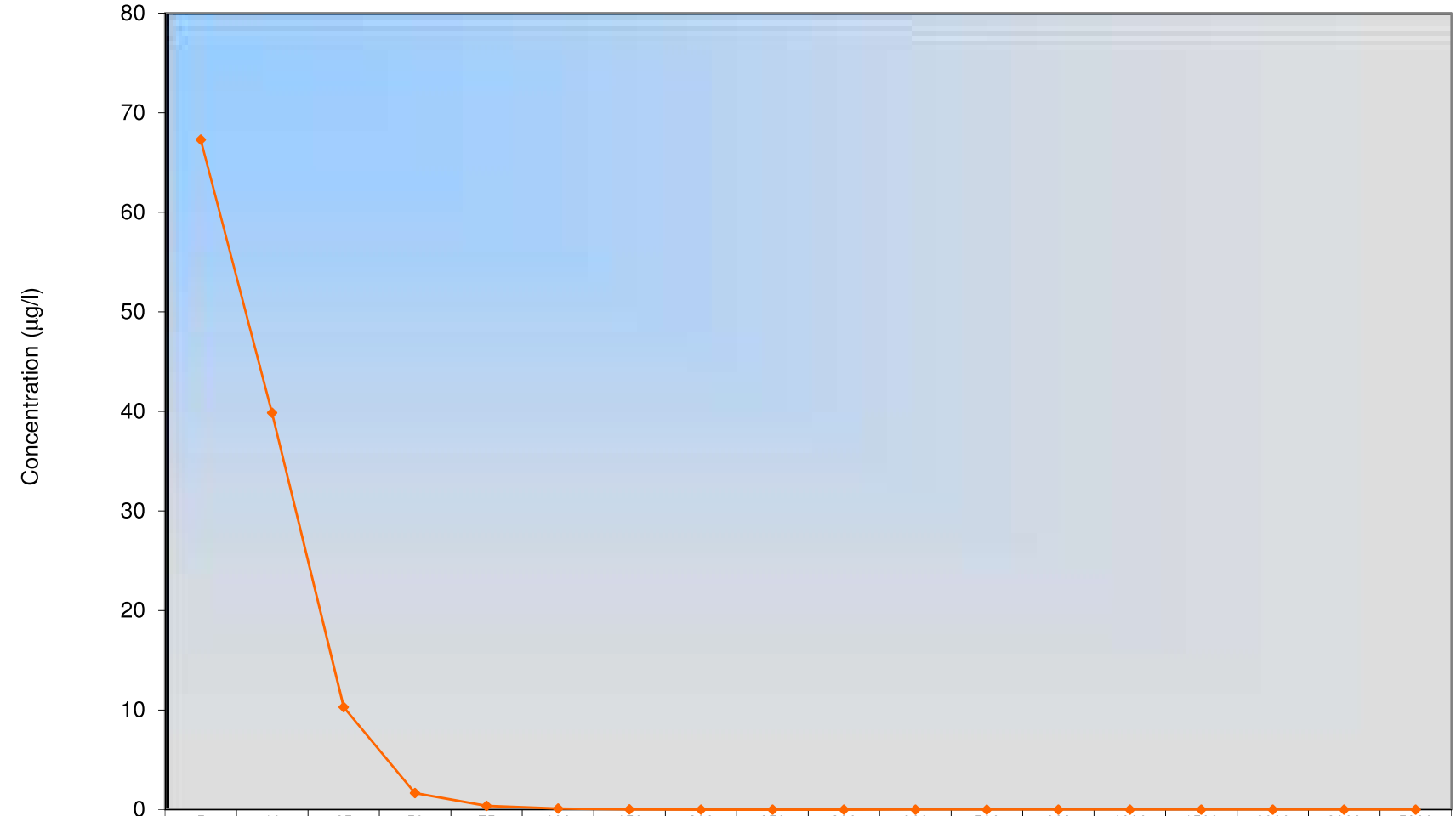
R26 $C_{(x)} = C_{(source)} * \{\exp[(X/2\alpha_x) * (1-((1+(4*\lambda*\alpha_x)/U))^{1/2})] * \text{erf}[S_w/(4*(\alpha_y*X)^{1/2})] * \text{erf}[S_d/(2*(\alpha_z*X)^{1/2})]\}$

α_x	=	0.10 * X	Equation R16
α_y	=	$\alpha_x/3$	Equation R17
α_z	=	$\alpha_x/20$	Equation R18
U	=	$K*i/\theta_T$	Equation R19
X	=	Beginning in cell C25, enter distance from source as feet.	
K	=	0.000031	cm/sec
S_w	=	9906	cm
S_d	=	762	cm
i	=	0.036	unitless
$C_{(source)}$	=	0.12	mg/l
θ_T	=	0.43	unitless
λ	=	0.0009	day^{-1}

$C_{(x)}$ (µg/l)	X (feet)	$C_{(x)}$ (mg/l)	X (cm)	C_{source} (mg/l)	β_3 =(X/(2ax))	β_4 =1-[1+(4λ*αx)/U]^1/2	a_x (cm)	a_y (cm)	a_z (cm)	U (cm/day)	λ (day^{-1})	S_w (cm)	S_d (cm)	K (cm/day)	I (cm/cm)	θ_T (cm^3/cm^3)	β_1 =S_w/(4*[α_y*X]^1/2)	β_2 =S_d/(2*[α_z*X]^1/2)	Error Function erf(β_1)	Error Function erf(β_2)
67.30646	5	0.06730646	152.4	0.12	5	-0.11564710	15.24	5.08	0.762	0.2242381	0.0009	9906	762	2.6784	0.036	0.43	89.00491559	35.35533906	1.00000000	1.00000000
39.867926	10	0.03986793	304.8	0.12	5	-0.22038392	30.48	10.16	1.524	0.2242381	0.0009	9906	762	2.6784	0.036	0.43	44.50245780	17.67766953	1.00000000	1.00000000
10.29907	25	0.01029907	762.0	0.12	5	-0.49108762	76.2	25.4	3.81	0.2242381	0.0009	9906	762	2.6784	0.036	0.43	17.80098312	7.07106781	1.00000000	1.00000000
1.6567649	50	0.00165676	1524.0	0.12	5	-0.85652487	152.4	50.8	7.62	0.2242381	0.0009	9906	762	2.6784	0.036	0.43	8.90049156	3.53553391	1.00000000	0.99999943
0.3611401	75	0.00036114	2286.0	0.12	5	-1.16102450	228.6	76.2	11.43	0.2242381	0.0009	9906	762	2.6784	0.036	0.43	5.93366104	2.35702260	1.00000000	0.99914188
0.0941245	100	9.4125E-05	3048.0	0.12	5	-1.42762624	304.8	101.6	15.24	0.2242381	0.0009	9906	762	2.6784	0.036	0.43	4.45024578	1.76776695	1.00000000	0.98758067
0.0086295	150	8.6295E-06	4572.0	0.12	5	-1.88791512	457.2	152.4	22.86	0.2242381	0.0009	9906	762	2.6784	0.036	0.43	2.96683052	1.17851130	0.99997280	0.90441930
0.0010352	200	1.0352E-06	6096.0	0.12	5	-2.28431703	609.6	203.2	30.48	0.2242381	0.0009	9906	762	2.6784	0.036	0.43	2.22512289	0.88388348	0.99834932	0.78870045
0.0001515	250	1.5149E-07	7620.0	0.12	5	-2.63777720	762	254	38.1	0.2242381	0.0009	9906	762	2.6784	0.036	0.43	1.78009831	0.70710678	0.98817886	0.68268949
2.576E-05	300	2.5758E-08	9144.0	0.12	5	-2.95981155	914.4	304.8	45.72	0.2242381	0.0009	9906	762	2.6784	0.036	0.43	1.48341526	0.58925565	0.96408301	0.59534324
3.588E-06	360	3.5883E-09	10972.8	0.12	5	-3.31464124	1097.28	365.76	54.864	0.2242381	0.0009	9906	762	2.6784	0.036	0.43	1.23617938	0.49104638	0.91957435	0.51259647
5.945E-08	500	5.945E-11	15240.0	0.12	5	-4.04646865	1524	508	76.2	0.2242381	0.0009	9906	762	2.6784	0.036	0.43	0.89004916	0.35355339	0.79186837	0.38292492
1.023E-09	660	1.0234E-12	20116.8	0.12	5	-4.77028912	2011.68	670.56	100.584	0.2242381	0.0009	9906	762	2.6784	0.036	0.43	0.67427966	0.26784348	0.65970141	0.29515461
7.49E-13	1000	7.4903E-16	30480.0	0.12	5	-6.06637756	3048	1016	152.4	0.2242381	0.0009	9906	762	2.6784	0.036	0.43	0.44502458	0.17677670	0.47088647	0.19741265
1.427E-16	1500	1.4269E-19	45720.0	0.12	5	-7.62557463	4572	1524	228.6	0.2242381	0.0009	9906	762	2.6784	0.036	0.43	0.29668305	0.11785113	0.32520273	0.13236767
1.121E-19	2000	1.1211E-22	60960.0	0.12	5	-8.94320791	6096	2032	304.8	0.2242381	0.0009	9906	762	2.6784	0.036	0.43	0.22251229	0.08838835	0.24699529	0.09947645
7.836E-25	3000	7.8363E-28	91440.0	0.12	5	-11.15734656	9144	3048	457.2	0.2242381	0.0009	9906	762	2.6784	0.036	0.43	0.14834153	0.05892557	0.16616577	0.06641350
6.559E-33	5000	6.5592E-36	152400.0	0.12	5	-14.67381443	15240	5080	762	0.2242381	0.0009	9906	762	2.6784	0.036	0.43	0.08900492	0.03535534	0.10016672	0.03987761



Concentration versus Distance



	5	10	25	50	75	100	150	200	250	300	360	500	660	1000	1500	2000	3000	5000
Concentration	67.30646	39.86793	10.29907	1.656765	0.36114	0.094125	0.008629	0.001035	0.000151	2.58E-05	3.59E-06	5.95E-08	1.02E-09	7.49E-13	1.43E-16	1.12E-19	7.84E-25	6.56E-33

Appendix F Tier 2 Evaluation Calculations and Results – Soil Inhalation Pathway (Outdoor Air)

DATA INPUT PARAMETERS			UNITS	SOURCE
Constituent		Benzene		
Site Name		Champaign MGP		
Site Location		Champaign, Illinois		
Exposure Setting		RESIDENTIAL		
Constituent based parameters				
Organic-carbon partition coefficient	K_{oc}	50	cm^3/g	Default Value (TACO 742 Appendix C, Table E)
Henry's Constant	H'	0.23	l/gm	Default Value (TACO 742 Appendix C, Table E)
Solubility	S	1800	mg/l	Default Value (TACO 742 Appendix C, Table E)
Diffusivity in Air	D_i	0.088	cm2/sec	Default Value (TACO 742 Appendix C, Table E)
Diffusivity in Water	D_w	1.02E-05	cm2/sec	Default Value (TACO 742 Appendix C, Table E)
Inhalation Unit Risk Factor	URF	7.80E-06	$(\mu g/m^3)^{-1}$	Integrated Risk Information System (IRIS) EPA Database
FOR SSL EQUATIONS - S6, S7, S8, S10, S19, S20, S21, and S24				
Site Specific Data				
Site Setting - Residential/Commercial/Construction Worker		1	Enter 1 for residential, 2 for commercial, 3 for construction worker	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	Site Specific (Average of foc from B-806, B-814, B-817)
Soil bulk density	ρ_b	1.7	gm/cm^3	Default Value (TACO 742 Appendix C, Table B)
Soil particle density	ρ_s	2.65	gm/cm^3	Default Value (TACO 742 Appendix C, Table B)
Air-filled soil porosity	θ_a	0.13	unitless	Default Value (TACO 742 Appendix C, Table B)
Water-filled soil porosity	θ_w	0.3	unitless	Default Value (TACO 742 Appendix C, Table B)
Total porosity [2]	η	0.43	unitless	Default Value (TACO 742 Appendix C, Table B)
Conditions [2] :	Use equation S24 for calculating total soil porosity?			2 1 = YES 2 = NO
Soil Type Specific				
Saturated hydraulic conductivity	K_s	8	m/yr	Default Value (TACO 742 Appendix C, Table K)
Exponential parameter	1/(2b+3)	0.042	unitless	Default Value (TACO 742 Appendix C, Table K)

EQUATION FOR REMEDIATION OBJECTIVE - CARCINOGENICS
EQUATION S6 AND S7 WORKSHEET - REMEDIATION OBJECTIVES
Benzene
SOIL INHALATION EXPOSURE ROUTE - ORGANIC CONSTITUENTS
Champaign MGP
Champaign, Illinois
RESIDENTIAL

$$RO = TR * AT_c * 365 / [URF * 1000 * EF * ED * (1/VF))]$$

Site Setting Code **1** (residential=1; commercial=2; construction worker=3)

URF = **0.0000078** $(\mu g/m^3)^{-1}$

RO	Interim Calculated Value	Interim Calculated Value	Target Cancer Risk	Average Time	Exposure Frequent	Exposure Duration	Inhalation Unit Risk Factor	Volatilization Factor for Construction Worker	Volatilization Factor
Remediation Objective (mg/kg)	β_1 =TR*AT$_c$*365	β_2 =URF*EF*ED*1000*(1/VF)	TR (unitless)	AT$_c$ (year)	EF (day/year)	ED (year)	URF $(\mu g/m^3)^{-1}$	VF' (m^3/kg)	VF (m^3/kg)
2.6530	**0.0255500**	**0.00963078**	0.000001	70	350	30	**0.0000078**	850.398	8503.984

EQUATION FOR REMEDIATION OBJECTIVE - CARCINOGENICS
EQUATION S8 WORKSHEET - VOLATILIZATION FACTOR
Benzene
SOIL INHALATION EXPOSURE ROUTE - ORGANIC CONSTITUENTS
Champaign MGP
Champaign, Illinois
RESIDENTIAL

$$VF = Q/C * [(3.14*D_A*T)^{1/2}/(2*\rho_b*D_A)]*10^{-4}$$

Site Setting Code **1** (residential=1; commercial=2; construction worker=3)

Q/C =	**68.810**	$(gm/m^2\text{-}s)/(kg/m^3)$	
ρ_b =	**1.7**	gm/cm^3 (site specific)	

Volatilization Factor VF (mg^3/kg)	Interim Calculated Value β_1 $=(3.14*D_A*T)^{1/2}$	Interim Calculated Value β_2 $=(2*\rho_b*D_A)$	Q/C (unitless)	Apparent Diffusivity D_A (cm^2/s)	Exposure Interval T (sec)	Exposure Duration ED (year)	Soil Bulk Density ρ_b (gm/cm^3)
8503.983958	**709.9102748**	**0.000574424**	**68.81**	**0.000168948**	950000000	30	**1.700**

EQUATION FOR REMEDIATION OBJECTIVE - CARCINOGENICS
EQUATION S10 WORKSHEET - APPARENT DIFFUSIVITY
Benzene
SOIL INHALATION EXPOSURE ROUTE - ORGANIC CONSTITUENTS
Champaign MGP
Champaign, Illinois
RESIDENTIAL

$$D_A = [[(\theta_a^{3.33} * D_i * H') + (\theta_w^{3.33} * D_w)]/\eta^2] * [1/((\rho_b * K_d) + \theta_w + (\theta_a * H'))]$$

Henry's constant	H'		0.23	unitless (default value)
Diffusivity in Air	D_i	=	0.088	cm^2/sec
Diffusivity in Water	D_w	=	0.0000102	cm^2/sec
soil bulk density	ρ_b	=	1.7	gm/cm^3 (site specific)
total soil porosity	η	=	0.358	unitless (calculated value based on site-specific bulk density and soil particle density)
water filled soil porosity	θ_w	=	0.312	unitless (calculated value based on calculated total soil porosity and soil density (equation S24))
air filled soil porosity	θ_a	=	0.046	unitless (calculated value based on calculated total soil porosity and soil density (equation S24))
default total soil porosity	$\eta_{(default)}$	=	0.43	unitless (default value from Appendix C; Table B)
default water filled soil porosity	θ_w	=	0.300	unitless (calculated value using default total soil porosity η)
default air filled soil porosity	θ_a	=	0.130	unitless (calculated value using default total soil porosity η)

Apparent Diffusivity D_A (cm^2/s)	Interim Calculated Value $\beta_1 = (\theta_a^{3.33} * D_i * H)$	Interim Calculated Value $\beta_2 = (\theta_w^{3.33} * D_w)$	Interim Calculated Value β_3 $1/[(\rho_b * K_d) + \theta_w + (\theta_a * H'$	Air-Filled Soil Porosity θ_a (unitless)	Water-Filled Soil Porosity θ_w (unitless)	Soil-Water Partition K_d (cm^3/g)	Soil Porosity η (unitless)	Soil Bulk Density ρ_b (gm/cm^3)	Diffusivity in Air D_i (cm^2/sec)	Henry's Constant H' (unitless)	Diffusivity in Water D_w (cm^2/sec)
0.000168948	2.26799E-05	1.85103E-07	1.366213539	0.130	0.300	0.237	0.430	1.700	0.088	0.23	0.0000102

EQUATION FOR AIR-FILLED POROSITY (θ_a), WATER-FILLED SOIL POROSITY (θ_w), PARTITION COEFFICIENT (K_d)
EQUATION S19, S20, S21, AND S24 WORKSHEET - SOIL PROPERTIES
Benzene
Champaign MGP
Champaign, Illinois
RESIDENTIAL

$\eta = 1-(\rho_b)/(\rho_s)$

$\theta_a = \eta - \theta_w$

$\theta_w = \eta * (I/K_s)^{(1/(2b+3))}$

$Kd = K_{oc} * f_{oc}$

K_s	=	**8**	m/yr (by soil type)	saturated hydraulic conductivity
$1/(2b+3)$	=	**0.042**	unitless (by soil type)	exponential parameter
ρ_s	=	**2.65**	gm/cm^3 (default value)	soil particle density
f_{oc}	=	**0.00473**	gm/gm (site specific)	fraction organic carbon content
ρ_b	=	**1.7**	gm/cm^3 (site specific)	soil bulk density
η	=	**0.43**	unitless (by soil type)	total soil porosity (default)
θ_a	=	**0.13**	unitless (by soil type)	air-filled soil porosity (default)
θ_w	=	**0.3**	unitless (by soil type)	water-filled soil porosity (default)
K_{oc}	=	**50**	cm^3/g	Organic Carbon Partition Coefficient
I	=	0.3	meters/year (default value)	infiltration rate

Use Equation	Calculated Water-Filled Soil Porosity	Calculated Air-Filled Soil Porosity	Default Water-Filled Soil Porosity	Default Air-Filled Soil Porosity	Constant Value	Saturated Hydraulic Conductivity	Infiltration Rate	Soil-Water Partition	Organic Carbon Partition Coefficient	Fraction Organic Carbon	Default Porosity Soil	Calculated Soil Porosity	ρ_b	ρ_s
S24 for total	θ_w	θ_a	θ_w	θ_a	1/(2b+3)	K_s	I	K_d	K_{oc}	f_{oc}	$\eta_{(default)}$	η	ρ_b	ρ_s
soil porosity (η)	unitless	unitless	unitless	unitless	(unitless)	(m/yr)	(m/yr)	(cm^3/g)	(cm^3/g)	(gm/gm)	(unitless)	(unitless)	(gm/cm^3)	(gm/cm^3)
YES	**0.312**	**0.046**			**0.042**	**8**	0.3	**0.2365**	**50**	**0.00473**		**0.358**	**1.7**	**2.65**
NO			**0.300**	**0.130**							**0.43**			

DATA INPUT PARAMETERS			UNITS	SOURCE
Constituent		Benzene		
Site Name		Champaign MGP		
Site Location		Champaign, Illinois		
Exposure Setting		COMMERCIAL/INDUSTRIAL		
Constituent based parameters				
Organic-carbon partition coefficient	K_{oc}	50	cm^3/g	Default Value (TACO 742 Appendix C, Table E)
Henry's Constant	H'	0.23	l/gm	Default Value (TACO 742 Appendix C, Table E)
Solubility	S	1800	mg/l	Default Value (TACO 742 Appendix C, Table E)
Diffusivity in Air	D_i	0.088	cm2/sec	Default Value (TACO 742 Appendix C, Table E)
Diffusivity in Water	D_w	1.02E-05	cm2/sec	Default Value (TACO 742 Appendix C, Table E)
Inhalation Unit Risk Factor	URF	7.80E-06	$(\mu g/m^3)^{-1}$	Integrated Risk Information System (IRIS) EPA Database
FOR SSL EQUATIONS - S6, S7, S8, S10, S19, S20, S21, and S24				
Site Specific Data				
Site Setting - Residential/Commercial/Construction Worker		2	Enter 1 for residential, 2 for commercial, 3 for construction worker	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	Site Specific (Average of foc from B-806, B-814, B-817)
Soil bulk density	ρ_b	1.7	gm/cm^3	Default Value (TACO 742 Appendix C, Table B)
Soil particle density	ρ_s	2.65	gm/cm^3	Default Value (TACO 742 Appendix C, Table B)
Air-filled soil porosity	θ_a	0.13	unitless	Default Value (TACO 742 Appendix C, Table B)
Water-filled soil porosity	θ_w	0.3	unitless	Default Value (TACO 742 Appendix C, Table B)
Total porosity [2]	η	0.43	unitless	Default Value (TACO 742 Appendix C, Table B)
Conditions [2] :	Use equation S24 for calculating total soil porosity?			2 1 = YES 2 = NO
Soil Type Specific				
Saturated hydraulic conductivity	K_s	8	m/yr	Default Value (TACO 742 Appendix C, Table K)
Exponential parameter	1/(2b+3)	0.042	unitless	Default Value (TACO 742 Appendix C, Table K)

EQUATION FOR REMEDIATION OBJECTIVE - CARCINOGENICS
EQUATION S6 AND S7 WORKSHEET - REMEDIATION OBJECTIVES
Benzene
SOIL INHALATION EXPOSURE ROUTE - ORGANIC CONSTITUENTS
Champaign MGP
Champaign, Illinois
COMMERCIAL/INDUSTRIAL

$$RO = TR * AT_c * 365 / [URF * 1000 * EF * ED * (1/VF))]$$

Site Setting Code **2** (residential=1; commercial=2; construction worker=3)

URF = **0.0000078** $(\mu g/m^3)^{-1}$

RO Remediation Objective (mg/kg)	Interim Calculated Value β_1 =TR*AT$_c$*365	Interim Calculated Value β_2 =URF*EF*ED*1000*(1/VF)	Target Cancer Risk TR (unitless)	Average Time AT$_c$ (year)	Exposure Frequent EF (day/year)	Exposure Duration ED (year)	Inhalation Unit Risk Factor URF $(\mu g/m^3)^{-1}$	Volatilization Factor for Construction Worker VF' (m^3/kg)	Volatilization Factor VF (m^3/kg)
5.0685	**0.0255500**	**0.00504097**	0.000001	70	250	25	**0.0000078**	967.076	9670.758

EQUATION FOR REMEDIATION OBJECTIVE - CARCINOGENICS
EQUATION S8 WORKSHEET - VOLATILIZATION FACTOR
Benzene
SOIL INHALATION EXPOSURE ROUTE - ORGANIC CONSTITUENTS
Champaign MGP
Champaign, Illinois
COMMERCIAL/INDUSTRIAL

$VF = Q/C * [(3.14*D_A*T)^{1/2}/(2*\rho_b*D_A)]*10^{-4}$

Site Setting Code **2** (residential=1; commercial=2; construction worker=3)

Q/C = **85.810** $(gm/m^2\text{-}s)/(kg/m^3)$

ρ_b = **1.7** gm/cm^3 (site specific)

Volatilization Factor VF (mg^3/kg)	Interim Calculated Value β_1 $=(3.14*D_A*T)^{1/2}$	Interim Calculated Value β_2 $=(2*\rho_b*D_A)$	Q/C (unitless)	Apparent Diffusivity D_A (cm^2/s)	Exposure Interval T (sec)	Exposure Duration ED (year)	Soil Bulk Density ρ_b (gm/cm^3)
9670.758082	**647.3739281**	**0.000574424**	**85.81**	**0.000168948**	790000000	25	**1.700**

EQUATION FOR REMEDIATION OBJECTIVE - CARCINOGENICS
EQUATION S10 WORKSHEET - APPARENT DIFFUSIVITY
Benzene
SOIL INHALATION EXPOSURE ROUTE - ORGANIC CONSTITUENTS
Champaign MGP
Champaign, Illinois
COMMERCIAL/INDUSTRIAL

$$D_A = [[(\theta_a^{3.33} * D_i * H') + (\theta_w^{3.33} * D_w)]/\eta^2] * [1/((\rho_b * K_d) + \theta_w + (\theta_a * H'))]$$

Henry's constant	H'		0.23	unitless (default value)
Diffusivity in Air	D_i	=	0.088	cm^2/sec
Diffusivity in Water	D_w	=	0.0000102	cm^2/sec
soil bulk density	ρ_b	=	1.7	gm/cm^3 (site specific)
total soil porosity	η	=	0.358	unitless (calculated value based on site-specific bulk density and soil particle density)
water filled soil porosity	θ_w	=	0.312	unitless (calculated value based on calculated total soil porosity and soil density (equation S24))
air filled soil porosity	θ_a	=	0.046	unitless (calculated value based on calculated total soil porosity and soil density (equation S24))
default total soil porosity	$\eta_{(default)}$	=	0.43	unitless (default value from Appendix C; Table B)
default water filled soil porosity	θ_w	=	0.300	unitless (calculated value using default total soil porosity η)
default air filled soil porosity	θ_a	=	0.130	unitless (calculated value using default total soil porosity η)

Apparent Diffusivity D_A (cm^2/s)	Interim Calculated Value $\beta_1 = (\theta_a^{3.33} * D_i * H)$	Interim Calculated Value $\beta_2 = (\theta_w^{3.33} * D_w)$	Interim Calculated Value $\beta_3 = 1/[(\rho_b * K_d) + \theta_w + (\theta_a * H'$	Air-Filled Soil Porosity θ_a (unitless)	Water-Filled Soil Porosity θ_w (unitless)	Soil-Water Partition K_d (cm^3/g)	Soil Porosity η (unitless)	Soil Bulk Density ρ_b (gm/cm^3)	Diffusivity in Air D_i (cm^2/sec)	Henry's Constant H' (unitless)	Diffusivity in Water D_w (cm^2/sec)
0.000168948	2.26799E-05	1.85103E-07	1.366213539	0.130	0.300	0.237	0.430	1.700	0.088	0.23	0.0000102

EQUATION FOR AIR-FILLED POROSITY (θ_a), WATER-FILLED SOIL POROSITY (θ_w), PARTITION COEFFICIENT (K_d)
EQUATION S19, S20, S21, AND S24 WORKSHEET - SOIL PROPERTIES
Benzene
Champaign MGP
Champaign, Illinois
COMMERCIAL/INDUSTRIAL

$\eta = 1-(\rho_b)/(\rho_s)$

$\theta_a = \eta - \theta_w$

$\theta_w = \eta * (I/K_s)^{(1/(2b+3))}$

$Kd = K_{oc} * f_{oc}$

K_s	=	**8**	m/yr (by soil type)	saturated hydraulic conductivity
1/(2b+3)	=	**0.042**	unitless (by soil type)	exponential parameter
ρ_s	=	**2.65**	gm/cm^3 (default value)	soil particle density
f_{oc}	=	**0.00473**	gm/gm (site specific)	fraction organic carbon content
ρ_b	=	**1.7**	gm/cm^3 (site specific)	soil bulk density
η	=	**0.43**	unitless (by soil type)	total soil porosity (default)
θ_a	=	**0.13**	unitless (by soil type)	air-filled soil porosity (default)
θ_w	=	**0.3**	unitless (by soil type)	water-filled soil porosity (default)
K_{oc}	=	**50**	cm^3/g	Organic Carbon Partition Coefficient
I	=	0.3	meters/year (default value)	infiltration rate

Use Equation	Calculated Water-Filled Soil Porosity	Calculated Air-Filled Soil Porosity	Default Water-Filled Soil Porosity	Default Air-Filled Soil Porosity	Constant Value	Saturated Hydraulic Conductivity	Infiltration Rate	Soil-Water Partition	Organic Carbon Partition Coefficient	Fraction Organic Carbon	Default Porosity Soil	Calculated Soil Porosity	ρ_b	ρ_s
S24 for total	θ_w	θ_a	θ_w	θ_a	1/(2b+3)	K_s	I	K_d	K_{oc}	f_{oc}	$\eta_{(default)}$	η	ρ_b	ρ_s
soil porosity (η)	unitless	unitless	unitless	unitless	(unitless)	(m/yr)	(m/yr)	(cm^3/g)	(cm^3/g)	(gm/gm)	(unitless)	(unitless)	(gm/cm^3)	(gm/cm^3)
YES	**0.312**	**0.046**			**0.042**	**8**	0.3	**0.2365**	**50**	**0.00473**		**0.358**	**1.7**	**2.65**
NO			**0.300**	**0.130**							**0.43**			

DATA INPUT PARAMETERS			UNITS	SOURCE
Constituent		Benzene		
Site Name		Champaign MGP		
Site Location		Champaign, Illinois		
Exposure Setting		CONSTRUCTION WORKER		
Constituent based parameters				
Organic-carbon partition coefficient	K_{oc}	50	cm^3/g	Default Value (TACO 742 Appendix C, Table E)
Henry's Constant	H'	0.23	l/gm	Default Value (TACO 742 Appendix C, Table E)
Solubility	S	1800	mg/l	Default Value (TACO 742 Appendix C, Table E)
Diffusivity in Air	D_i	0.088	cm2/sec	Default Value (TACO 742 Appendix C, Table E)
Diffusivity in Water	D_w	1.02E-05	cm2/sec	Default Value (TACO 742 Appendix C, Table E)
Inhalation Unit Risk Factor	URF	7.80E-06	$(\mu g/m^3)^{-1}$	Integrated Risk Information System (IRIS) EPA Database
FOR SSL EQUATIONS - S6, S7, S8, S10, S19, S20, S21, and S24				
Site Specific Data				
Site Setting - Residential/Commercial/Construction Worker		3		Enter 1 for residential, 2 for commercial, 3 for construction worker
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	Site Specific (Average of foc from B-806, B-814, B-817)
Soil bulk density	ρ_b	1.7	gm/cm^3	Default Value (TACO 742 Appendix C, Table B)
Soil particle density	ρ_s	2.65	gm/cm^3	Default Value (TACO 742 Appendix C, Table B)
Air-filled soil porosity	θ_a	0.13	unitless	Default Value (TACO 742 Appendix C, Table B)
Water-filled soil porosity	θ_w	0.3	unitless	Default Value (TACO 742 Appendix C, Table B)
Total porosity [2]	η	0.43	unitless	Default Value (TACO 742 Appendix C, Table B)
Conditions [2] :	Use equation S24 for calculating total soil porosity?			2 1 = YES 2 = NO
Soil Type Specific				
Saturated hydraulic conductivity	K_s	8	m/yr	Default Value (TACO 742 Appendix C, Table K)
Exponential parameter	1/(2b+3)	0.042	unitless	Default Value (TACO 742 Appendix C, Table K)

EQUATION FOR REMEDIATION OBJECTIVE - CARCINOGENICS
EQUATION S6 AND S7 WORKSHEET - REMEDIATION OBJECTIVES
Benzene
SOIL INHALATION EXPOSURE ROUTE - ORGANIC CONSTITUENTS
Champaign MGP
Champaign, Illinois
CONSTRUCTION WORKER

$$RO = TR * AT_c * 365 / [URF * 1000 * EF * ED * (1/VF))]$$

Site Setting Code **3** (residential=1; commercial=2; construction worker=3)

URF = **0.0000078** $(\mu g/m^3)^{-1}$

RO	Interim Calculated Value	Interim Calculated Value	Target Cancer Risk	Average Time	Exposure Frequent	Exposure Duration	Inhalation Unit Risk Factor	Volatilization Factor for Construction Worker	Volatilization Factor
Remediation Objective (mg/kg)	β_1 =TR*AT$_c$*365	β_2 =URF*EF*ED*1000*(1/VF)	TR (unitless)	AT$_c$ (year)	EF (day/year)	ED (year)	URF $(\mu g/m^3)^{-1}$	VF' (m^3/kg)	VF (m^3/kg)
7.1281	**0.0255500**	**0.00358441**	0.000001	70	30	1	**0.0000078**	65.283	652.827

EQUATION FOR REMEDIATION OBJECTIVE - CARCINOGENICS
EQUATION S8 WORKSHEET - VOLATILIZATION FACTOR
Benzene
SOIL INHALATION EXPOSURE ROUTE - ORGANIC CONSTITUENTS
Champaign MGP
Champaign, Illinois
CONSTRUCTION WORKER

$VF = Q/C * [(3.14*D_A*T)^{1/2}/(2*\rho_b*D_A)]*10^{-4}$

Site Setting Code **3** (residential=1; commercial=2; construction worker=3)

Q/C =	**85.810**	$(gm/m^2\text{-}s)/(kg/m^3)$	
ρ_b =	**1.7**	gm/cm^3 (site specific)	

Volatilization Factor VF (mg^3/kg)	Interim Calculated Value β_1 $=(3.14*D_A*T)^{1/2}$	Interim Calculated Value β_2 $=(2*\rho_b*D_A)$	Q/C (unitless)	Apparent Diffusivity D_A (cm^2/s)	Exposure Interval T (sec)	Exposure Duration ED (year)	Soil Bulk Density ρ_b (gm/cm^3)
652.8271747	**43.70115443**	**0.000574424**	**85.81**	**0.000168948**	3600000	1	**1.700**

EQUATION FOR REMEDIATION OBJECTIVE - CARCINOGENICS
EQUATION S10 WORKSHEET - APPARENT DIFFUSIVITY
Benzene
SOIL INHALATION EXPOSURE ROUTE - ORGANIC CONSTITUENTS
Champaign MGP
Champaign, Illinois
CONSTRUCTION WORKER

$$D_A = [[(\theta_a^{3.33} * D_i * H') + (\theta_w^{3.33} * D_w)]/\eta^2] * [1/((\rho_b * K_d) + \theta_w + (\theta_a * H'))]$$

Henry's constant	H'		0.23	unitless (default value)
Diffusivity in Air	D_i	=	0.088	cm^2/sec
Diffusivity in Water	D_w	=	0.0000102	cm^2/sec
soil bulk density	ρ_b	=	1.7	gm/cm^3 (site specific)
total soil porosity	η	=	0.358	unitless (calculated value based on site-specific bulk density and soil particle density)
water filled soil porosity	θ_w	=	0.312	unitless (calculated value based on calculated total soil porosity and soil density (equation S24))
air filled soil porosity	θ_a	=	0.046	unitless (calculated value based on calculated total soil porosity and soil density (equation S24))
default total soil porosity	$\eta_{(default)}$	=	0.43	unitless (default value from Appendix C; Table B)
default water filled soil porosity	θ_w	=	0.300	unitless (calculated value using default total soil porosity η)
default air filled soil porosity	θ_a	=	0.130	unitless (calculated value using default total soil porosity η)

Apparent Diffusivity D_A (cm^2/s)	Interim Calculated Value $\beta_1 = (\theta_a^{3.33} * D_i * H)$	Interim Calculated Value $\beta_2 = (\theta_w^{3.33} * D_w)$	Interim Calculated Value $\beta_3 = 1/[(\rho_b * K_d) + \theta_w + (\theta_a * H'$	Air-Filled Soil Porosity θ_a (unitless)	Water-Filled Soil Porosity θ_w (unitless)	Soil-Water Partition K_d (cm^3/g)	Soil Porosity η (unitless)	Soil Bulk Density ρ_b (gm/cm^3)	Diffusivity in Air D_i (cm^2/sec)	Henry's Constant H' (unitless)	Diffusivity in Water D_w (cm^2/sec)
0.000168948	2.26799E-05	1.85103E-07	1.366213539	0.130	0.300	0.237	0.430	1.700	0.088	0.23	0.0000102

EQUATION FOR AIR-FILLED POROSITY (θ_a), WATER-FILLED SOIL POROSITY (θ_w), PARTITION COEFFICIENT (K_d)
EQUATION S19, S20, S21, AND S24 WORKSHEET - SOIL PROPERTIES
Benzene
Champaign MGP
Champaign, Illinois
CONSTRUCTION WORKER

$\eta = 1-(\rho_b)/(\rho_s)$

$\theta_a = \eta - \theta_w$

$\theta_w = \eta * (I/K_s)^{(1/(2b+3))}$

$Kd = K_{oc} * f_{oc}$

K_s	=	**8**	m/yr (by soil type)	saturated hydraulic conductivity
$1/(2b+3)$	=	**0.042**	unitless (by soil type)	exponential parameter
ρ_s	=	**2.65**	gm/cm^3 (default value)	soil particle density
f_{oc}	=	**0.00473**	gm/gm (site specific)	fraction organic carbon content
ρ_b	=	**1.7**	gm/cm^3 (site specific)	soil bulk density
η	=	**0.43**	unitless (by soil type)	total soil porosity (default)
θ_a	=	**0.13**	unitless (by soil type)	air-filled soil porosity (default)
θ_w	=	**0.3**	unitless (by soil type)	water-filled soil porosity (default)
K_{oc}	=	**50**	cm^3/g	Organic Carbon Partition Coefficient
I	=	0.3	meters/year (default value)	infiltration rate

Use Equation	Calculated Water-Filled Soil Porosity	Calculated Air-Filled Soil Porosity	Default Water-Filled Soil Porosity	Default Air-Filled Soil Porosity	Constant Value	Saturated Hydraulic Conductivity	Infiltration Rate	Soil-Water Partition	Organic Carbon Partition Coefficient	Fraction Organic Carbon	Default Porosity Soil	Calculated Soil Porosity	ρ_b	ρ_s
S24 for total	θ_w	θ_a	θ_w	θ_a	1/(2b+3)	K_s	I	K_d	K_{oc}	f_{oc}	$\eta_{(default)}$	η	ρ_b	ρ_s
soil porosity (η)	unitless	unitless	unitless	unitless	(unitless)	(m/yr)	(m/yr)	(cm^3/g)	(cm^3/g)	(gm/gm)	(unitless)	(unitless)	(gm/cm^3)	(gm/cm^3)
YES	**0.312**	**0.046**			**0.042**	**8**	0.3	**0.2365**	**50**	**0.00473**		**0.358**	**1.7**	**2.65**
NO			**0.300**	**0.130**							**0.43**			

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		Naphthalene		
Site Name		Champaign MGP		
Site Location		Champaign, Illinois		
Exposure Setting		RESIDENTIAL		
Sample Depth				
Constituent based parameters				
Organic-carbon partition coefficient	K_{oc}	500	cm^3/g	Default Value (TACO 742 Appendix C, Table E)
Henry's Constant	H'	0.0197	l/gm	Default Value (TACO 742 Appendix C, Table E)
Solubility	S	31	mg/l	Default Value (TACO 742 Appendix C, Table E)
Diffusivity in Air	D_i	0.059	cm2/sec	Default Value (TACO 742 Appendix C, Table E)
Diffusivity in Water	D_w	7.50E-06	cm2/sec	Default Value (TACO 742 Appendix C, Table E)
Inhalation Reference Concentration	RfC	3.00E-03	mg/m3	Integrated Risk Information System (IRIS) EPA Database
FOR SSL EQUATIONS - S4, S5, S8, S10, S19, S20, S21, and S24				
Site Specific Data				
Site Setting - Residential/Commercial/Construction Worker		1	Enter 1 for residential, 2 for commercial, 3 for construction worker	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	Site Specific (Average of foc from B-800, B-814, B-817)
Soil bulk density	ρ_b	1.7	gm/cm^3	Default Value (TACO 742 Appendix C, Table B)
Soil particle density	ρ_s	2.65	gm/cm^3	Default Value (TACO 742 Appendix C, Table B)
Air-filled soil porosity	θ_a	0.13	unitless	Site Specific Value from B845 (0.5 - 1.0 ft bgs)
Water-filled soil porosity	θ_w	0.3	unitless	Site Specific Value from B-845 (14.5 - 15.0, 19.5 - 20.0 ft bgs)
Total porosity (2)	η	0.43	unitless	Default Value (TACO 742 Appendix C, Table B)
Conditions (2) :		Use equation S24 for calculating total soil porosity?		2 1 = YES 2 = NO
Soil Type Specific				
Saturated hydraulic conductivity	K_s	8	m/yr	Default Value (TACO 742 Appendix C, Table K)
Exponential parameter	1/(2b+3)	0.042	unitless	Default Value (TACO 742 Appendix C, Table K)

EQUATION FOR REMEDIATION OBJECTIVE - NONCARCINOGENICS
EQUATION S4 AND S5 WORKSHEET - REMEDIATION OBJECTIVES
Naphthalene
SOIL INHALATION EXPOSURE ROUTE - ORGANIC CONSTITUENTS
Champaign MGP
Champaign, Illinois
RESIDENTIAL

$$RO = THQ * AT * 365 / [EF * ED * ((1/RfC) * (1/VF))]$$

Site Setting Code = **1** (residential=1; commercial=2; construction worker=3)

RfC = **0.003** mg/m^3 **Inhalation Reference Concentration**

Borehole Location	Depth Interval (feet)	**RO** Remediation Objective (mg/kg)	Target Hazard Quotient THQ (unitless)	Average Time AT (year)	Exposure Frequent EF (day/year)	Exposure Duration ED (year)	Inhalation Reference Concentration RfC (mg/m^3)	Volatilization Factor for Construction Worker VF' (m^3/kg)	Volatilization Factor VF (m^3/kg)
0	0	**257.7813**	1	30	350	30	**0.003**	8239.584	82395.845

EQUATION FOR REMEDIATION OBJECTIVE - NONCARCINOGENICS
EQUATION S8 WORKSHEET - VOLATILIZATION FACTOR
Naphthalene
SOIL INHALATION EXPOSURE ROUTE - ORGANIC CONSTITUENTS
Champaign MGP
Champaign, Illinois
RESIDENTIAL

$VF = Q/C * [(3.14*D_A*T)^{1/2}/(2*\rho_b*D_A)]*10^{-4}$

Site Setting Code		**1**	(residential=1; commercial=2; construction worker=3)	
Q/C	=	**68.810**	$(gm/m^2\text{-}s)/(kg/m^3)$	Inverse mean concentration @ center of square source
ρ_b	=	**1.7**	gm/cm^3 (site specific)	soil bulk density

Volatilization Factor VF (mg^3/kg)	Interim Calculated Value β_1 **$=(3.14*D_A*T)^{1/2}$**	Interim Calculated Value β_2 **$=(2*\rho_b*D_A)$**	Q/C (unitless)	Apparent Diffusivity D_A (cm^2/s)	Exposure Interval T (sec)	Exposure Duration ED (year)	Soil Bulk Density ρ_b (gm/cm^3)
82395.8449	**73.26905374**	**6.11881E-06**	**68.81**	**1.79965E-06**	950000000	30	**1.700**

EQUATION FOR REMEDIATION OBJECTIVE - NONCARCINOGENICS
EQUATION S10 WORKSHEET - APPARENT DIFFUSIVITY
Naphthalene
SOIL INHALATION EXPOSURE ROUTE - ORGANIC CONSTITUENTS
Champaign MGP
Champaign, Illinois
RESIDENTIAL

$$D_A = [[(\theta_a^{3.33} * D_i * H') + (\theta_w^{3.33} * D_w)]/\eta^2] * [1/((\rho_b * K_d) + \theta_w + (\theta_a * H'))]$$

Henry's constant	H'	=	**0.0197**	unitless (default value)
Diffusivity in Air	D_i	=	**0.059**	cm^2/sec
Diffusivity in Water	D_w	=	**0.0000075**	cm^2/sec
soil bulk density	ρ_b	=	**1.7**	gm/cm^3 (site specific)
total soil porosity	η	=	**0.358**	unitless (calculated value based on site-specific bulk density and soil particle density)
water filled soil porosity	θ_w	=	**0.312**	unitless (calculated value based on calculated total soil porosity (equation S24))
air filled soil porosity	θ_a	=	**0.046**	unitless (calculated value based on calculated total soil porosity (equation S24))
default total soil porosity	$\eta_{(default)}$	=	**0.430**	unitless (default value from Appendix C; Table B)
default water filled soil porosity	θ_w	=	**0.300**	unitless (calculated value using default total soil porosity η)
default air filled soil porosity	θ_a	=	**0.130**	unitless (calculated value using default total soil porosity η)

Apparent Diffusivity D_A (cm^2/s)	Interim Calculated Value $\beta_1 = (\theta_a^{3.33} * D_i * H)$	Interim Calculated Value $\beta_2 = (\theta_w^{3.33} * D_w)$	Interim Calculated Value $\beta_3 = 1/[(\rho_b * K_d) + \theta_w + (\theta_a * H')]$	Air-Filled Soil Porosity θ_a (unitless)	Water-Filled Soil Porosity θ_w (unitless)	Soil-Water Partition K_d (cm^3/g)	Soil Porosity η (unitless)	Soil Bulk Density ρ_b (gm/cm^3)	Diffusivity in Air D_i (cm^2/sec)	Henry's Constant H' (unitless)	Diffusivity in Water D_w (cm^2/sec)
1.79965E-06	1.30242E-06	1.36105E-07	0.231317578	**0.130**	**0.300**	**2.365**	**0.430**	**1.700**	**0.059**	**0.0197**	**0.0000075**

EQUATION FOR AIR-FILLED POROSITY (θ_a), WATER-FILLED SOIL POROSITY (θ_w), PARTITION COEFFICIENT (K_d)
EQUATION S19, S20, S21, AND S24 WORKSHEET - SOIL PROPERTIES
Naphthalene
Champaign MGP
Champaign, Illinois
RESIDENTIAL

$\eta = 1-(\rho_b)/(\rho_s)$

$\theta_a = \eta - \theta_w$

$\theta_w = \eta * (I/K_s)^{(1/(2b+3))}$

$Kd = K_{oc} * f_{oc}$

K_s	=	**8**	m/yr (by soil type)	saturated hydraulic conductivity
$1/(2b+3)$	=	**0.042**	unitless (by soil type)	exponential parameter
ρ_s	=	**2.65**	gm/cm^3 (default value)	soil particle density
f_{oc}	=	**0.00473**	gm/gm (site specific)	fraction organic carbon content
ρ_b	=	**1.7**	gm/cm^3 (site specific)	soil bulk density
η	=	**0.43**	unitless (by soil type)	total soil porosity (default)
θ_a	=	**0.13**	unitless (by soil type)	air-filled soil porosity (default)
θ_w	=	**0.3**	unitless (by soil type)	water-filled soil porosity (default)
K_{oc}	=	**500**	cm^3/g	Organic Carbon Partition Coefficient
I	=	0.3	meters/year (default value)	infiltration rate

Use Equation	Calculated Water-Filled Soil Porosity	Calculated Air-Filled Soil Porosity	Default Water-Filled Soil Porosity	Default Air-Filled Soil Porosity	Constant Value	Saturated Hydraulic Conductivity	Infiltration Rate	Soil-Water Partition	Organic Carbon Partition Coefficient	Fraction Organic Carbon	Default Porosity Soil	Calculated Soil Porosity	ρ_b	ρ_s
S24 for total	θ_w	θ_a	θ_w	θ_a	1/(2b+3)	K_s	I	K_d	K_{oc}	f_{oc}	$\eta_{(default)}$	η	ρ_b	ρ_s
soil porosity (η)	unitless	unitless	unitless	unitless	(unitless)	(m/yr)	(m/yr)	(cm^3/g)	(cm^3/g)	(gm/gm)	(unitless)	(unitless)	(gm/cm^3)	(gm/cm^3)
YES	**0.312**	**0.046**			**0.042**	**8**	0.3	**2.365**	**500**	**0.00473**		**0.358**	**1.7**	**2.65**
NO			**0.300**	**0.130**							**0.43**			

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		Naphthalene		
Site Name		Champaign MGP		
Site Location		Champaign, Illinois		
Exposure Setting		COMMERCIAL/INDUSTRIAL		
Sample Depth				
Constituent based parameters				
Organic-carbon partition coefficient	K_{oc}	500	cm^3/g	Default Value (TACO 742 Appendix C, Table E)
Henry's Constant	H'	0.0197	l/gm	Default Value (TACO 742 Appendix C, Table E)
Solubility	S	31	mg/l	Default Value (TACO 742 Appendix C, Table E)
Diffusivity in Air	D_i	0.059	cm2/sec	Default Value (TACO 742 Appendix C, Table E)
Diffusivity in Water	D_w	7.50E-06	cm2/sec	Default Value (TACO 742 Appendix C, Table E)
Inhalation Reference Concentration	RfC	3.00E-03	mg/m3	Integrated Risk Information System (IRIS) EPA Database
FOR SSL EQUATIONS - S4, S5, S8, S10, S19, S20, S21, and S24				
Site Specific Data				
Site Setting - Residential/Commercial/Construction Worker		2	Enter 1 for residential, 2 for commercial, 3 for construction worker	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	Site Specific (Average of foc from B-800, B-814, B-817)
Soil bulk density	ρ_b	1.7	gm/cm^3	Default Value (TACO 742 Appendix C, Table B)
Soil particle density	ρ_s	2.65	gm/cm^3	Default Value (TACO 742 Appendix C, Table B)
Air-filled soil porosity	θ_a	0.13	unitless	Site Specific Value from B845 (0.5 - 1.0 ft bgs)
Water-filled soil porosity	θ_w	0.3	unitless	Site Specific Value from B-845 (14.5 - 15.0, 19.5 - 20.0 ft bgs)
Total porosity (2)	η	0.43	unitless	Default Value (TACO 742 Appendix C, Table B)
Conditions (2) :		Use equation S24 for calculating total soil porosity?		2 1 = YES 2 = NO
Soil Type Specific				
Saturated hydraulic conductivity	K_s	8	m/yr	Default Value (TACO 742 Appendix C, Table K)
Exponential parameter	1/(2b+3)	0.042	unitless	Default Value (TACO 742 Appendix C, Table K)

EQUATION FOR REMEDIATION OBJECTIVE - NONCARCINOGENICS
EQUATION S4 AND S5 WORKSHEET - REMEDIATION OBJECTIVES
Naphthalene
SOIL INHALATION EXPOSURE ROUTE - ORGANIC CONSTITUENTS
Champaign MGP
Champaign, Illinois
COMMERCIAL/INDUSTRIAL

RO = THQ * AT * 365 / [EF * ED * ((1/R*f*C) * (1/VF))]

Site Setting Code = **2** (residential=1; commercial=2; construction worker=3)

R*f*C = **0.003** mg/m^3 **Inhalation Reference Concentration**

Borehole Location	Depth Interval (feet)	**RO** Remediation Objective (mg/kg)	Target Hazard Quotient THQ (unitless)	Average Time AT (year)	Exposure Frequent EF (day/year)	Exposure Duration ED (year)	Inhalation Reference Concentration R*f*C (mg/m^3)	Volatilization Factor for Construction Worker VF' (m^3/kg)	Volatilization Factor VF (m^3/kg)
ERCIAL/INDUS	0	**410.4096**	1	25	250	25	**0.003**	9370.082	93700.822

EQUATION FOR REMEDIATION OBJECTIVE - NONCARCINOGENICS
EQUATION S8 WORKSHEET - VOLATILIZATION FACTOR
Naphthalene
SOIL INHALATION EXPOSURE ROUTE - ORGANIC CONSTITUENTS
Champaign MGP
Champaign, Illinois
COMMERCIAL/INDUSTRIAL

$VF = Q/C * [(3.14*D_A*T)^{1/2}/(2*\rho_b*D_A)]*10^{-4}$

Site Setting Code		**2**	(residential=1; commercial=2; construction worker=3)	
Q/C	=	**85.810**	$(gm/m^2\text{-}s)/(kg/m^3)$	Inverse mean concentration @ center of square source
ρ_b	=	**1.7**	gm/cm^3 (site specific)	soil bulk density

Volatilization Factor VF (mg^3/kg)	Interim Calculated Value β_1 **$=(3.14*D_A*T)^{1/2}$**	Interim Calculated Value β_2 **$=(2*\rho_b*D_A)$**	Q/C (unitless)	Apparent Diffusivity D_A (cm^2/s)	Exposure Interval T (sec)	Exposure Duration ED (year)	Soil Bulk Density ρ_b (gm/cm^3)
93700.82151	**66.81474661**	**6.11881E-06**	**85.81**	**1.79965E-06**	790000000	25	**1.700**

EQUATION FOR REMEDIATION OBJECTIVE - NONCARCINOGENICS
EQUATION S10 WORKSHEET - APPARENT DIFFUSIVITY
Naphthalene
SOIL INHALATION EXPOSURE ROUTE - ORGANIC CONSTITUENTS
Champaign MGP
Champaign, Illinois
COMMERCIAL/INDUSTRIAL

$$D_A = [[(\theta_a^{3.33} * D_i * H') + (\theta_w^{3.33} * D_w)]/\eta^2] * [1/((\rho_b * K_d) + \theta_w + (\theta_a * H'))]$$

Henry's constant	H'	=	**0.0197**	unitless (default value)
Diffusivity in Air	D_i	=	**0.059**	cm^2/sec
Diffusivity in Water	D_w	=	**0.0000075**	cm^2/sec
soil bulk density	ρ_b	=	**1.7**	gm/cm^3 (site specific)
total soil porosity	η	=	**0.358**	unitless (calculated value based on site-specific bulk density and soil particle density)
water filled soil porosity	θ_w	=	**0.312**	unitless (calculated value based on calculated total soil porosity (equation S24))
air filled soil porosity	θ_a	=	**0.046**	unitless (calculated value based on calculated total soil porosity (equation S24))
default total soil porosity	$\eta_{(default)}$	=	**0.430**	unitless (default value from Appendix C; Table B)
default water filled soil porosity	θ_w	=	**0.300**	unitless (calculated value using default total soil porosity η)
default air filled soil porosity	θ_a	=	**0.130**	unitless (calculated value using default total soil porosity η)

Apparent Diffusivity D_A (cm^2/s)	Interim Calculated Value $\beta_1 = (\theta_a^{3.33} * D_i * H)$	Interim Calculated Value $\beta_2 = (\theta_w^{3.33} * D_w)$	Interim Calculated Value $\beta_3 = 1/[(\rho_b * K_d) + \theta_w + (\theta_a * H')]$	Air-Filled Soil Porosity θ_a (unitless)	Water-Filled Soil Porosity θ_w (unitless)	Soil-Water Partition K_d (cm^3/g)	Soil Porosity η (unitless)	Soil Bulk Density ρ_b (gm/cm^3)	Diffusivity in Air D_i (cm^2/sec)	Henry's Constant H' (unitless)	Diffusivity in Water D_w (cm^2/sec)
1.79965E-06	1.30242E-06	1.36105E-07	0.231317578	**0.130**	**0.300**	**2.365**	**0.430**	**1.700**	**0.059**	**0.0197**	**0.0000075**

EQUATION FOR AIR-FILLED POROSITY (θ_a), WATER-FILLED SOIL POROSITY (θ_w), PARTITION COEFFICIENT (K_d)
EQUATION S19, S20, S21, AND S24 WORKSHEET - SOIL PROPERTIES
Naphthalene
Champaign MGP
Champaign, Illinois
COMMERCIAL/INDUSTRIAL

$\eta = 1-(\rho_b)/(\rho_s)$

$\theta_a = \eta - \theta_w$

$\theta_w = \eta * (I/K_s)^{(1/(2b+3))}$

$Kd = K_{oc} * f_{oc}$

K_s	=	**8**	m/yr (by soil type)	saturated hydraulic conductivity
$1/(2b+3)$	=	**0.042**	unitless (by soil type)	exponential parameter
ρ_s	=	**2.65**	gm/cm^3 (default value)	soil particle density
f_{oc}	=	**0.00473**	gm/gm (site specific)	fraction organic carbon content
ρ_b	=	**1.7**	gm/cm^3 (site specific)	soil bulk density
η	=	**0.43**	unitless (by soil type)	total soil porosity (default)
θ_a	=	**0.13**	unitless (by soil type)	air-filled soil porosity (default)
θ_w	=	**0.3**	unitless (by soil type)	water-filled soil porosity (default)
K_{oc}	=	**500**	cm^3/g	Organic Carbon Partition Coefficient
I	=	0.3	meters/year (default value)	infiltration rate

Use Equation	Calculated Water-Filled Soil Porosity	Calculated Air-Filled Soil Porosity	Default Water-Filled Soil Porosity	Default Air-Filled Soil Porosity	Constant Value	Saturated Hydraulic Conductivity	Infiltration Rate	Soil-Water Partition	Organic Carbon Partition Coefficient	Fraction Organic Carbon	Default Porosity Soil	Calculated Soil Porosity	ρ_b	ρ_s
S24 for total	θ_w	θ_a	θ_w	θ_a	1/(2b+3)	K_s	I	K_d	K_{oc}	f_{oc}	$\eta_{(default)}$	η	ρ_b	ρ_s
soil porosity (η)	unitless	unitless	unitless	unitless	(unitless)	(m/yr)	(m/yr)	(cm^3/g)	(cm^3/g)	(gm/gm)	(unitless)	(unitless)	(gm/cm^3)	(gm/cm^3)
YES	**0.312**	**0.046**			**0.042**	**8**	0.3	**2.365**	**500**	**0.00473**		**0.358**	**1.7**	**2.65**
NO			**0.300**	**0.130**							**0.43**			

DATA INPUT PARAMETERS		INPUT VALUES BELOW	UNITS	SOURCE
Constituent		Naphthalene		
Site Name		Champaign MGP		
Site Location		Champaign, Illinois		
Exposure Setting		CONSTRUCTION WORKER		
Sample Depth				
Constituent based parameters				
Organic-carbon partition coefficient	K_{oc}	500	cm^3/g	Default Value (TACO 742 Appendix C, Table E)
Henry's Constant	H'	0.0197	l/gm	Default Value (TACO 742 Appendix C, Table E)
Solubility	S	31	mg/l	Default Value (TACO 742 Appendix C, Table E)
Diffusivity in Air	D_i	0.059	cm2/sec	Default Value (TACO 742 Appendix C, Table E)
Diffusivity in Water	D_w	7.50E-06	cm2/sec	Default Value (TACO 742 Appendix C, Table E)
Inhalation Reference Concentration	RfC	3.00E-03	mg/m3	Integrated Risk Information System (IRIS) EPA Database
FOR SSL EQUATIONS - S4, S5, S8, S10, S19, S20, S21, and S24				
Site Specific Data				
Site Setting - Residential/Commercial/Construction Worker		3	Enter 1 for residential, 2 for commercial, 3 for construction worker	
Fraction organic carbon content	f_{oc}	0.00473	gm/gm	Site Specific (Average of foc from B-800, B-814, B-817)
Soil bulk density	ρ_b	1.7	gm/cm^3	Default Value (TACO 742 Appendix C, Table B)
Soil particle density	ρ_s	2.65	gm/cm^3	Default Value (TACO 742 Appendix C, Table B)
Air-filled soil porosity	θ_a	0.13	unitless	Default Value (TACO 742 Appendix C, Table B)
Water-filled soil porosity	θ_w	0.3	unitless	Default Value (TACO 742 Appendix C, Table B)
Total porosity (2)	η	0.43	unitless	Default Value (TACO 742 Appendix C, Table B)
Conditions (2) :	Use equation S24 for calculating total soil porosity?			2 1 = YES 2 = NO
Soil Type Specific				
Saturated hydraulic conductivity	K_s	8	m/yr	Default Value (TACO 742 Appendix C, Table K)
Exponential parameter	1/(2b+3)	0.042	unitless	Default Value (TACO 742 Appendix C, Table K)

EQUATION FOR REMEDIATION OBJECTIVE - NONCARCINOGENICS
EQUATION S4 AND S5 WORKSHEET - REMEDIATION OBJECTIVES
Naphthalene
SOIL INHALATION EXPOSURE ROUTE - ORGANIC CONSTITUENTS
Champaign MGP
Champaign, Illinois
CONSTRUCTION WORKER

$$RO = THQ * AT * 365 / [EF * ED * ((1/RfC) * (1/VF))]$$

Site Setting Code = **3** (residential=1; commercial=2; construction worker=3)

RfC = **0.003** mg/m^3 **Inhalation Reference Concentration**

Borehole Location	Depth Interval (feet)	**RO** Remediation Objective (mg/kg)	Target Hazard Quotient THQ (unitless)	Average Time AT (year)	Exposure Frequent EF (day/year)	Exposure Duration ED (year)	Inhalation Reference Concentration RfC (mg/m^3)	Volatilization Factor for Construction Worker VF' (m^3/kg)	Volatilization Factor VF (m^3/kg)
TRUCTION WC	0	**2.6550**	1	0.115	30	1	**0.003**	632.530	6325.300

EQUATION FOR REMEDIATION OBJECTIVE - NONCARCINOGENICS
EQUATION S8 WORKSHEET - VOLATILIZATION FACTOR
Naphthalene
SOIL INHALATION EXPOSURE ROUTE - ORGANIC CONSTITUENTS
Champaign MGP
Champaign, Illinois
CONSTRUCTION WORKER

$VF = Q/C * [(3.14*D_A*T)^{1/2}/(2*\rho_b*D_A)]*10^{-4}$

Site Setting Code		**3**	(residential=1; commercial=2; construction worker=3)	
Q/C	=	**85.810**	$(gm/m^2\text{-}s)/(kg/m^3)$	Inverse mean concentration @ center of square source
ρ_b	=	**1.7**	gm/cm^3 (site specific)	soil bulk density

Volatilization Factor VF (mg^3/kg)	Interim Calculated Value β_1 $=(3.14*D_A*T)^{1/2}$	Interim Calculated Value β_2 $=(2*\rho_b*D_A)$	Q/C (unitless)	Apparent Diffusivity D_A (cm^2/s)	Exposure Interval T (sec)	Exposure Duration ED (year)	Soil Bulk Density ρ_b (gm/cm^3)
6325.299636	**4.510347781**	**6.11881E-06**	**85.81**	**1.79965E-06**	3600000	1	**1.700**

EQUATION FOR REMEDIATION OBJECTIVE - NONCARCINOGENICS
EQUATION S10 WORKSHEET - APPARENT DIFFUSIVITY
Naphthalene
SOIL INHALATION EXPOSURE ROUTE - ORGANIC CONSTITUENTS
Champaign MGP
Champaign, Illinois
CONSTRUCTION WORKER

$$D_A = [[(\theta_a^{3.33} * D_i * H') + (\theta_w^{3.33} * D_w)]/\eta^2] * [1/((\rho_b * K_d)+\theta_w+(\theta_a * H'))]$$

Henry's constant	H'	=	**0.0197**	unitless (default value)
Diffusivity in Air	D_i	=	**0.059**	cm^2/sec
Diffusivity in Water	D_w	=	**0.0000075**	cm^2/sec
soil bulk density	ρ_b	=	**1.7**	gm/cm^3 (site specific)
total soil porosity	η	=	**0.358**	unitless (calculated value based on site-specific bulk density and soil particle density)
water filled soil porosity	θ_w	=	**0.312**	unitless (calculated value based on calculated total soil porosity (equation S24))
air filled soil porosity	θ_a	=	**0.046**	unitless (calculated value based on calculated total soil porosity (equation S24))
default total soil porosity	$\eta_{(default)}$	=	**0.430**	unitless (default value from Appendix C; Table B)
default water filled soil porosity	θ_w	=	**0.300**	unitless (calculated value using default total soil porosity η)
default air filled soil porosity	θ_a	=	**0.130**	unitless (calculated value using default total soil porosity η)

Apparent Diffusivity D_A (cm^2/s)	Interim Calculated Value β_1 = $(\theta_a^{3.33} * D_i * H)$	Interim Calculated Value β_2 = $(\theta_w^{3.33} * D_w)$	Interim Calculated Value β_3 = $1/[(\rho_b * K_d)+\theta_w+(\theta_a * H')]$	Air-Filled Soil Porosity θ_a (unitless)	Water-Filled Soil Porosity θ_w (unitless)	Soil-Water Partition K_d (cm^3/g)	Soil Porosity η (unitless)	Soil Bulk Density ρ_b (gm/cm^3)	Diffusivity in Air D_i (cm^2/sec)	Henry's Constant H' (unitless)	Diffusivity in Water D_w (cm^2/sec)
1.79965E-06	1.30242E-06	1.36105E-07	0.231317578	**0.130**	**0.300**	**2.365**	**0.430**	**1.700**	**0.059**	**0.0197**	**0.0000075**

EQUATION FOR AIR-FILLED POROSITY (θ_a), WATER-FILLED SOIL POROSITY (θ_w), PARTITION COEFFICIENT (K_d)
EQUATION S19, S20, S21, AND S24 WORKSHEET - SOIL PROPERTIES
Naphthalene
Champaign MGP
Champaign, Illinois
CONSTRUCTION WORKER

$\eta = 1-(\rho_b)/(\rho_s)$

$\theta_a = \eta - \theta_w$

$\theta_w = \eta * (I/K_s)^{(1/(2b+3))}$

$Kd = K_{oc} * f_{oc}$

K_s	=	**8**	m/yr (by soil type)	saturated hydraulic conductivity
$1/(2b+3)$	=	**0.042**	unitless (by soil type)	exponential parameter
ρ_s	=	**2.65**	gm/cm^3 (default value)	soil particle density
f_{oc}	=	**0.00473**	gm/gm (site specific)	fraction organic carbon content
ρ_b	=	**1.7**	gm/cm^3 (site specific)	soil bulk density
η	=	**0.43**	unitless (by soil type)	total soil porosity (default)
θ_a	=	**0.13**	unitless (by soil type)	air-filled soil porosity (default)
θ_w	=	**0.3**	unitless (by soil type)	water-filled soil porosity (default)
K_{oc}	=	**500**	cm^3/g	Organic Carbon Partition Coefficient
I	=	0.3	meters/year (default value)	infiltration rate

Use Equation	Calculated Water-Filled Soil Porosity	Calculated Air-Filled Soil Porosity	Default Water-Filled Soil Porosity	Default Air-Filled Soil Porosity	Constant Value	Saturated Hydraulic Conductivity	Infiltration Rate	Soil-Water Partition	Organic Carbon Partition Coefficient	Fraction Organic Carbon	Default Porosity Soil	Calculated Soil Porosity	ρ_b	ρ_s
S24 for total	θ_w	θ_a	θ_w	θ_a	1/(2b+3)	K_s	I	K_d	K_{oc}	f_{oc}	$\eta_{(default)}$	η	ρ_b	ρ_s
soil porosity (η)	unitless	unitless	unitless	unitless	(unitless)	(m/yr)	(m/yr)	(cm^3/g)	(cm^3/g)	(gm/gm)	(unitless)	(unitless)	(gm/cm^3)	(gm/cm^3)
YES	**0.312**	**0.046**			**0.042**	**8**	0.3	**2.365**	**500**	**0.00473**		**0.358**	**1.7**	**2.65**
NO			**0.300**	**0.130**							**0.43**			

Appendix G Vapor Intrusion Risk Assessment for Off-site Properties

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March 16, 2021

Ms. Jackie French
Ameren Services
1901 Chouteau Avenue
PO Box 66149, Mail Code 602
St. Louis, MO 63166-6149

cc: Brandon Teel & Dave Palmer, Ameren Services

Subject: **Vapor Intrusion Risk Assessment**
Residential Properties Near Former Manufactured Gas Plant
308 N. 5th Street, Champaign, Illinois

Dear Ms. French:

On behalf of TRC, please find the following revised Vapor Intrusion (VI) Risk Assessment for the properties in the area of UMW-302 at the former manufactured gas plant (MGP) located at 308 N. 5th Street in Champaign, Illinois (the Site). This technical memo presents the VI Risk Assessment results, which are organized in the following manner:

- **Section 1.0** provides an overview and scope of the report.
- **Section 2.0** summarizes the Site background information and presents the analytical data set relevant to the VI Assessment.
- **Section 3.0** presents a preliminary data characterization, which includes a comparison of soil gas and groundwater data to Illinois Environmental Protection Agency's (IEPA's) Tier 1 Remediation Objectives (ROs) for soil gas and groundwater, as presented in Tables H and I of Appendix B (Illinois Pollution Control Board [IPCB], 2013). Table H provides Tier 1 ROs assuming groundwater is less than or equal to 5 feet from the building foundation, indicating that both diffusion and advection of vapors would occur; whereas, Table I provides Tier 1 ROs assuming groundwater is greater than 5 feet from the building foundation, indicating that only diffusion is occurring into the building. Comparison of groundwater data to Tier 1 ROs initially identified benzene, ethylbenzene, naphthalene, toluene, and xylenes as groundwater chemicals of concern (COCs); however, after conducting a refined groundwater screen to filter out deeper groundwater and wells located more than 100 feet away from buildings, only ethylbenzene and naphthalene were identified as groundwater COC requiring further evaluation. Comparison of soil gas data to Tier 1 ROs (and US Environmental Protection Agency (EPA) Regional Screening Levels (RSLs) for residential air) identified benzene, ethylbenzene, naphthalene, and xylenes in soil gas to be quantitatively evaluated in the VI Risk Assessment.
- **Section 4.0** presents the exposure assessment, which will include a discussion of complete exposure pathways, including those pathways involving fate and transport of COCs from one medium to another, which are graphically represented in a Conceptual Site Model (CSM). As mentioned above, the main exposure pathway is inhalation of indoor air vapors emanating from the subsurface (e.g., groundwater, soil gas).
- **Section 5.0** presents a toxicity assessment for the identified groundwater and soil gas COC (benzene, ethylbenzene, naphthalene, and xylenes), including a discussion of available toxicological information which are used to quantitatively evaluate human health risk.

- **Section 6.0** presents the risk characterization and uncertainty. To evaluate the attenuation of groundwater vapors up through the unsaturated zone and into each of the six off-site properties, USEPA's Johnson and Ettinger (J&E) vapor intrusion model (USEPA, 2017) was used to calculate indoor air risks for groundwater and soil gas COC using maximum detected concentrations (or maximum reporting limits in certain instances) from groundwater monitoring wells and soil gas probes within 100 feet of the identified off-site properties, in addition to geotechnical information and property-specific building information for each off-site property. Once property-specific indoor air risks were calculated using the J&E model, they were compared to IEPA's acceptable cancer risk value of 1E-06 and noncancer hazard quotient (HQ) of 1. Key site-specific uncertainties in the risk assessment are identified and a sensitivity analysis is conducted for elevated reporting limits.
- **Section 7.0** presents the summary and conclusions of the VI Risk Assessment.
- **Section 8.0** provides all references cited in the report.

1 Overview and Scope

The purpose of this Vapor Intrusion (VI) Risk Assessment is to identify the potential for VI concerns related to analytes detected in groundwater and soil gas samples in the vicinity of UMW-302, including the following six residential properties adjacent to the Site:

- **304 North 5th Street**: short-term housing owned and operated by Courage Connection
- **502 East Church Street**: owned by Canaan Baptist Church
- **504 East Church Street**: short-term housing owned and operated by Courage Connection
- **506 East Church Street**: short-term housing owned and operated by Courage Connection
- **508 East Church Street**: short-term housing owned and operated by Courage Connection
- **510 East Church Street**: owned by private resident

These six properties are located immediately south of the Site, of which four are within USEPA's recommended lateral inclusion zone of 100 feet of UMW-302 (**504/506/508/510 East Church Street**).

The VI Risk Assessment was conducted following a lines of evidence approach in accordance with IEPA and United States Environmental Protection Agency (USEPA) Vapor Intrusion Assessment Guidance, specifically IEPA's Tiered Approach to Corrective Action Objectives (TACO), 35 Illinois Administrative Code 742 (IPCB, 2013), the Interstate Technology & Regulatory Council (ITRC) 2007 Vapor Intrusion Guidance (ITRC, 2007), 2014 Petroleum Vapor Intrusion (PVI) Guidance (ITRC, 2014), and USEPA's 2015 Vapor Intrusion Guidance documents (USEPA, 2015a,b). Conclusions of the VI Risk Assessment identify whether further evaluation is required to eliminate VI concerns to off-site residents.

2 Site Background and Data Investigations

The Site (308 North 5th Street) is the location of a former MGP operated by the former Champaign and Urbana Gas Light Company, and subsequently AmerenIP, from approximately 1869 through the early 1930s. The MGP was placed on standby status from the early 1930s to the mid-1950s and was only used for meeting peak demand up until the mid-1950s. The Site remained vacant and unused from 1960 until the property was sold to American Legion Post 559 in 1979. The Booster House was maintained and used for periodic meetings by the American Legion from 1979 until 1991. AmerenIP repurchased the property from the American Legion in 1991. Since 1991, the Site has remained vacant (PSC, 2008).

Between 2009 and 2011, Ameren performed significant environmental remediation activities at the Site to remove (through excavation and disposal) MGP-impacted subsurface materials. In 2013, Ameren addressed most of the remaining impact around the perimeter of the Site through in-situ remediation (oxidant injections into the subsurface), which was effective in addressing most of the residual MGP-related impacts. In 2017, additional remediation activities were performed (excavation and disposal) to address residual impacts in soil (https://www.ameren.com/-/media/illinois-site/files/community/champaignmgp/fact-sheets/2017-cmgp-fact-sheet.pdf?la=en-us-il&hash=67A1DA6F69AEDD60F14EFC5D4934DB903EE279F7). Based on these remediation efforts, remaining soil and groundwater impacts have been significantly reduced, as indicated by groundwater trends, which show decreased contamination concentrations in the shallow groundwater (1.19 to 7.61 feet below ground surface (bgs) upgradient of the six properties being evaluated (ERM, 2020). Note, a confining layer is present and separates shallow groundwater from a deeper intermediate groundwater, which ranges from 26.35 to 28.99 feet bgs. Specifically, shallow groundwater collected from four off-site wells identified in **Table 1** (UMW-105, UMW-106R, UMW-121, UMW-123) demonstrate that shallow groundwater impacts are not migrating off-site, as recent (2017-present) concentrations from these wells are either non-detect or detected concentrations are below IEPA's Tier 1 Remediation Objectives (ROs) for groundwater ingestion and indoor inhalation (ERM, 2020).

The Site is located within an area of mixed residential and commercial land use and has been the subject of multiple investigations, including those collecting groundwater and soil gas data near these residential buildings immediately south of the Site at the following addresses:

- 304 North 5th Street (no groundwater investigation on property; 2009 and 2013 soil gas investigations)
- 502 East Church Street (no groundwater or soil gas investigations on property)
- 504 East Church Street (no groundwater investigation on property; 2009 and 2013 soil gas investigations)
- 506 East Church Street (quarterly groundwater monitoring on property; 2009 and 2013 soil gas investigations)
- 508 East Church Street (no groundwater investigation on property; 2009 and 2013 soil gas investigations)
- 510 East Church Street (no groundwater or soil gas investigations on property)

A brief summary of the groundwater and soil gas investigations is described below.

Groundwater

Quarterly groundwater monitoring activities have been ongoing at the Site, with the most recent event reviewed for this report occurring in February 2020, as reported in ERM's May 2020 Groundwater Monitoring Update (ERM, 2020). During each quarterly sampling event, groundwater data are collected and analyzed for MGP-related compounds from multiple monitoring wells, including seven on-site monitoring wells and 21 off-site monitoring wells, as shown in Figures 1 and 2 of ERM's May 2020 report. Of the on-site wells, one shallow aquifer well (UMW-

124), with a depth to groundwater of 2.51 feet below ground surface (bgs) and one deep aquifer well (UMW-308), with a depth to groundwater of 27.64 feet bgs, are located near the off-site properties, although UMW-124 is located greater than 100 feet from any off-site property, as shown in **Table 1**.

Of the off-site wells, five (UMW-105, UMW-106R, UMW-121, UMW-123, UMW-302) are located within USEPA's recommended lateral inclusion zone (100 feet) of one or more properties of concern. These five off-site wells are identified on **Table 1** and include four wells that characterize the shallow aquifer (UMW-105, UMW-106R, UMW-121, UMW-123), with depth to groundwater ranging from 2.51 to 6.63 feet bgs, and one well that characterizes the deep aquifer (UMW-302), with a depth to groundwater of 28.99 feet bgs. For each of the on-site and off-site monitoring wells, **Table 1** identifies which properties are within 100 feet laterally.

There is evidence that a confining layer comprised of silty clay exists between the two aquifers, as presented in PSC's 2008 Off-Site Investigation Report (PSC, 2008). This layer is continuous beneath the study area and is believed to be part of the Batestown Till Member of the Wisconsinan Wedron Formation. The Weathered Till layer was contacted at various depths beneath the study area and averages 10 to 15 feet thick beneath the Site (PSC, 2008).

Soil Gas

Although no recent soil gas data have been collected since on-site soil remediation (source removal) activities occurred, two separate soil gas investigations were conducted to characterize subsurface vapor conditions near the four properties of concern:

- December 2009 investigation, where 10 soil gas samples were collected between 3 and 7 feet bgs
- November 2013 investigation, where 10 soil gas samples were collected between 3.5 and 8 feet bgs

The soil gas results from both investigations did not exceed soil gas screening levels, indicating that vapor intrusion was not a concern in 2009 and 2013. It is likely that current soil gas concentrations would be even lower today, as on-site source removal has occurred since 2013. The soil gas sampling locations are summarized in **Table 2** of this VI Risk Assessment**,** and Figure 2 of the RAM Group's January 2014 soil gas evaluation report (RAM Group, 2014). The soil gas samples were analyzed for MGP-related compounds, including benzene, toluene, ethylbenzene, xylenes (BTEX), naphthalene, and styrene.

3 Data Characterization and Screening

Groundwater and soil gas data collected as part of the investigations described in Section 2 were compared against IEPA's Tier 1 ROs for soil gas and groundwater protective of the residential indoor inhalation exposure route (IPCB, 2013). A summary of Tier 1 ROs is presented in **Table 3**, and identifies two categories of ROs:

- **Diffusion and advection:** assumes groundwater is less than or equal to 5 feet from the building foundation, indicating that both diffusion and advection of vapors would occur;

- **Diffusion only:** assumes groundwater is greater than 5 feet from the building foundation, indicating that only diffusion is occurring into the building.

This RO determination is usually made on a well-by-well basis; however, the more conservative diffusion and advection Tier 1 ROs were used for screening purposes in this VI Risk Assessment. According to IEPA guidance (IEPA, 2013), Tier 1 ROs may not be appropriate to screen soil gas or groundwater data when a full concrete slab or concrete basement is not present (e.g., sump pit in basement). Therefore, the Tier 1 ROs were not used to screen the three properties with sumps (504/506/508 East Church Street). Instead, all detected groundwater data were identified for further evaluation at these properties. A modified soil gas data screening at these three properties involved comparing soil gas data against USEPA's residential indoor air Regional Screening Levels (RSL), as shown in **Table 3**.

The groundwater dataset includes the last eight quarters of groundwater sampling events, as identified in **Table 1**. The soil gas dataset includes the 2009 and 2013 sampling events, as summarized in **Table 2**. As shown in **Table 4**, comparing the groundwater dataset's maximum detected concentrations (MDCs) to Tier 1 Inhalation ROs identified the following two wells with Tier 1 Inhalation RO groundwater exceedances:

- **UMW-124 (on-site shallow well):** benzene MDC > Tier 1 Inhalation RO
- **UMW-302 (off-site intermediate well):** benzene, ethylbenzene, and naphthalene > Tier 1 Inhalation RO

Therefore, benzene, ethylbenzene, and naphthalene were identified as preliminary groundwater COC requiring further evaluation through a refined screening approach.

As stated above, Tier 1 RO screening of groundwater data was not conducted for monitoring wells within 100 feet of the properties with sumps (504/506/508 East Church Street), which are identified in red font on **Table 4**. Instead, all detected groundwater data for these wells were identified for further evaluation, including UMW-105 (detections of ethylbenzene and naphthalene), UMW-302 (detections of toluene and xylenes, as well as Tier 1 RO exceedances mentioned above), and UMW-308 (naphthalene detection). Therefore, toluene and xylenes were also identified as preliminary groundwater COC requiring further evaluation through a refined screening approach for only those properties with sumps.

As shown in **Table 5**, when comparing the entire soil gas dataset identified in **Table 2** to Tier 1 Inhalation ROs, no detected soil gas concentrations exceeded Tier 1 Inhalation ROs; however, naphthalene reporting limits at 508-N, 504-N-12, and 508-N-8 exceed the naphthalene Tier 1 Inhalation RO. Therefore, naphthalene was identified as a non-detect soil gas COC requiring further evaluation. As stated above, Tier 1 RO screening of soil gas data was not conducted for soil gas samples collected within 100 feet of the properties with sumps (504/506/508 East Church Street), which are identified in red font on **Table 5**. A modified soil gas data screening at these three properties

involved comparing soil gas detected concentrations and non-detected reporting limits against USEPA's residential indoor air RSL, and identified the following COCs requiring further evaluation:

- Benzene
- Ethylbenzene
- Naphthalene
- Xylenes

Therefore, these four soil gas COCs will be further evaluated based on the specific properties which are color-coded in **Table 5**.

Refined Screening Approach: Separation Distance for Petroleum Hydrocarbons

The preliminary groundwater COCs (all petroleum hydrocarbons) were further evaluated by delineating their lateral and vertical extent and separation distance between impacted groundwater and off-site residential buildings. According to USEPA's 2015 OUST Vapor Intrusion Guidance (USEPA, 2015b), if the vertical separation distance between dissolved-phase petroleum hydrocarbons and the bottom of a building's foundation exceeds six (6) feet, further evaluation of the VI pathway for petroleum hydrocarbons is not necessary due to empirical evidence of biodegradation occurring when adequate oxygen (1 percent or greater) is available in the unsaturated zone.

As shown in **Table 4**, the deeper on-site well's (UMW-308) depth to groundwater is 27.64 feet bgs and deeper off-site well's (UMW-302) depth to groundwater is 28.99 feet bgs; however, the distance vapors would need to travel to reach the basement floors (5 of 6 properties have basements) exceeds EPA's vertical separation distance of 6 feet. If the vertical separation distance between dissolved-phase petroleum hydrocarbons and the bottom of a building's foundation exceeds six (6) feet, further evaluation of the VI pathway for petroleum hydrocarbons is not necessary (USEPA, 2015b). Therefore, further VI evaluation of UMW-302 and UMW-308 is not necessary.

Although empirical oxygen data are not available from the unsaturated zone, UMW-302's co-located shallow well, UMW-121, does not have any Tier 1 groundwater RO inhalation exceedances (or any detections), which indicates that vapors coming up from the shallow groundwater (closest to bottom of buildings) are undergoing biodegradation as they diffuse upward, resulting in undetectable concentrations, which are not a concern. This relation between UMW-121 and UMW-302 makes sense, given that a confining layer exists between the shallow and intermediate aquifer. Based on these multiple lines of evidence, vapor intrusion related to UMW-302 would not be a concern.

The depth to groundwater at on-site well, UWM-124, is approximately 2.51 feet bgs, which is within USEPA's vertical separation distance, and could result in a vapor intrusion concern. However, as shown in **Table 4**, the distance from UMW-124 to the nearest off-site property is approximately 140 feet, which is greater than EPA's maximum lateral distance of 100 feet (USEPA, 2015a, b). Therefore, further evaluation of UMW-124 is not required. Based on the refined groundwater screening approach, only ethylbenzene and naphthalene require further evaluation at 504/506/508 East Church Street based on the results of UMW-105, as shown in **Table 4**.

4 Exposure Assessment

The Exposure Assessment includes a discussion of complete exposure pathways, including those pathways involving fate and transport of COCs from one medium to another. As mentioned above, the only exposure pathway for purposes of this VI Risk Assessment is inhalation of indoor air vapors emanating from the subsurface (e.g., groundwater, soil gas). As stated previously, four of the six properties of concern are utilized as short-term housing facilities operated by Courage Connection, one property is owned by Canaan Baptist Church, and the remaining property is owned by a private resident. Although four properties accommodate short-term residents, and the church property may also be used for short-term residents, USEPA's and IPCB's default long-term residential exposure parameters were selected, which assume a resident is indoors 24 hours each day for 50 weeks out of the year for a span of 26 years. A summary of residential exposure assumptions is presented in **Table 6**. Actual exposure at the short-term residential buildings would be significantly less.

Evaluation of the three properties with sumps (504/506/508 East Church Street) includes some additional assumptions, as the sump area must be estimated and added to the crack area of each building's footprint. Although sumps may be fitted with sump pumps, which are placed within a high-density polyethylene (HDPE) sump basin and enclosed with a 24-inch diameter sump basin cover, an open sump pit not fitted with a HDPE sump basin was conservatively assumed. As a result, a sump area of 452 inches^2 (or 2,919 cm^2) was assumed based on a 24-inch diameter, as shown in **Table 6**. In order to add this sump area into the fraction of foundation area with cracks, the perimeter of the foundation was calculated by taking the square root of the floor area and multiplying that value by 4 (for each wall) to calculate the crack length. That value was multiplied by IEPA's default floor-wall seam crack width (0.1 cm) to calculate the crack area. This crack area was added to the sump area, then divided by the entire floor area to determine the fraction of foundation area with cracks, which are as presented in **Table 6**. Crack area is a sensitive modeling input parameter, as it dictates the flow of soil gas vapor into the building.

5 Toxicity Assessment

The purpose of a toxicity assessment is to weigh available evidence regarding the potential for COCs to cause adverse health effects in exposed individuals and to provide, where possible, an estimate of the relationship between the extent of exposure to a chemical and the increased likelihood, or severity, of the adverse effect. The toxic effects of a chemical generally depend on the inherent toxicity of the constituents and the level of exposure (dose), as well as on the route of exposure (inhalation) and the duration of exposure (subchronic, chronic, or lifetime). The toxicity assessment process is usually divided into two parts: the first characterizes and quantifies the noncancer effects of the chemical while the second addresses the cancer effects of the chemical. This two-part approach is employed because there are typically major differences in the time-course of action and the shape of the dose-response curve for cancer and noncancer effects.

Toxicological information was identified using the hierarchy below:

- USEPA's Integrated Risk Information System (IRIS) database.
- USEPA Provisional Peer Reviewed Toxicity Values (PPRTVs) developed by the Office of Research and Development and National Center for Environmental Assessment (https://hhpprtv.ornl.gov/).
- Other toxicity values: Agency for Toxic Substances and Disease Registry minimal risk levels (ATSDR), California Environmental Protection Agency/Office of Environmental Health Hazard Assessment peer reviewed toxicity data (CalEPA), and non-discontinued Health Effects Assessment Summary Table (HEAST) values.

This hierarchy is consistent with recent USEPA guidance in which toxicity values were reviewed and the preferred sources for toxicity data were updated. USEPA's RSL Table (USEPA, 2020) follows this hierarchy and therefore, was the primary source for toxicity values in this risk assessment. **Table 7** provides a summary of inhalation toxicity information for the four COC, including references.

6 Risk Characterization and Uncertainty

In addition to estimating the vertical separation distance between impacted media and off-site residential buildings, this VI Risk Assessment provides results from the following VI model: EPA's Johnson and Ettinger (J&E) VI model, version 6.0 (USEPA, 2017). The J&E model has been adjusted accordingly to account for shallow groundwater, soil gas sample depths that are not deeper than building foundation depths, and the presence of sump pits at three properties (504/506/508 E. Church St), as discussed in Section 4. The J&E model calculates site-specific, groundwater and soil gas residential indoor air risks to determine whether VI is a human health concern to off-site residents. All J&E VI model runs are provided electronically in **Attachment 1**.

J&E Model Inputs

Soil Parameters

Table 8 presents the site-specific geotechnical input parameters, including extrapolated depth to groundwater at each property based on shallow groundwater contours from Land Surface measurements of nearby wells presented in Table 1 and Figure 1, respectively, as reported in ERM's May 2020 Groundwater Monitoring Update (ERM, 2020). **Table 8** also identifies a silty clay soil type, and EPA's J&E model default silty clay values for total soil porosity, air- and water-filled porosity, soil particle density, and soil bulk density. In addition, the average groundwater temperature (18.03° C) is based on the third quarter of 2019 measurements. As mentioned above, the J&E model was run assuming EPA's 2017 default soil values for silty clay, which was identified as the predominant soil type in the unsaturated zone.

Exposure Assumptions and Building Parameters

Table 9 presents the building-specific input parameters, including foundation type and building dimensions for all six residences. **Tables 4** and **5** provide the specific properties requiring modeling of groundwater (504/506/508 East Church Street) and for soil gas (502/504/506/508/510 East Church Street). **Table 6** provides a summary of exposure assumptions for an off-site resident, as well as two additional residential building parameters. The residential exposure assumptions are taken from standard default values presented in USEPA's Update of Standard Default Exposure Factors (USEPA, 2014), as well as IEPA's TACO guidance (IPCB, 2013). As mentioned previously, the J&E model was adjusted to account for shallow groundwater and soil gas collection depths by adjusting the building foundation depth to just above the soil gas or groundwater sample depth, if required. This adjustment is required to run the J&E model and conservatively shortens the basement height, which reduces the air mixing volume of the basement. The reduced air mixing volume results in slightly higher indoor air concentrations than if the full basement height and air mixing volume was applied.

Groundwater J&E Modeling Results

Based on the refined groundwater screening approach, only ethylbenzene and naphthalene required further evaluation at 504/506/508 East Church Street based on the results of UMW-105. **Table 10** presents ethylbenzene and naphthalene modeled indoor air risks for these three properties, of which all results are less than IEPA's cancer target risk level (TRL) of 1E-06 and a noncancer target hazard quotient (HQ) of 1.0 for residential scenarios, indicating that vapor intrusion risks are below acceptable human health risk thresholds for ethylbenzene or naphthalene in groundwater at these three properties.

Soil Gas J&E Modeling Results

Table 11 presents benzene, ethylbenzene, naphthalene, and total xylene modeled indoor air risks for 502/504/506/508/510 East Church Street, of which detected results are less than IEPA's cancer target risk level (TRL) of 1E-06 and a noncancer target hazard quotient (HQ) of 1.0 for residential scenarios, indicating that vapor intrusion risks are below acceptable human health risk thresholds for detected constituents in soil gas at these five properties. It is interesting to note that the only elevated cancer risks and noncancer HQs (benzene at 508-N, naphthalene at 504-N-12 and 508-N) are based on non-detected reporting limits from the following two soil gas locations:

- **504-N-12 (sampled 11/13/2013):** All analytes were undetected, except for 1,1-difluoroethane (leak detection analyte), which was detected at a concentration exceeding the instrument calibration range, resulting in a large dilution factor, and elevated reporting limits for all reported analytes. This is identified below as a source of uncertainty.
- **508-N (sampled 12/2/2009):** All analytes were undetected, except for 1,1-difluoroethane (leak detection analyte), which was detected at a concentration exceeding the instrument calibration range, resulting in a large dilution factor, and elevated reporting limits for all reported analytes. This is identified below as a source of uncertainty; however, a more recent 2013 soil gas sample (508-N-8) collected in the vicinity of 508-N resulted in no detectable concentrations of any analytes, as shown in **Table 5**.

Based on this evaluation, soil gas risks are acceptable, even though elevated reporting limits for benzene and naphthalene show cancer risk exceedances and noncancer HQs above one (1.25). In addition, current soil gas concentrations would have likely decreased since 2009 and 2013 due to post-2013 remedial activities at the Site. Therefore, risk estimates based on detected concentrations of COCs in soil gas indicate that potential vapor intrusion is unlikely to result in risk to human health.

Uncertainty

Evaluation of uncertainty is a standard component of risk assessment, as defined by the USEPA (USEPA, 1989). The methods used, and assumptions made in assessing potential human health risks, are subject to a certain degree of uncertainty. Although HHRAs follow a formal scientific approach, making assumptions or estimates based on limited data that are available or incorporating professional judgement is an inherent part of the process. Uncertainties built into the estimation of exposure and risks may act either to increase or decrease the identified risks depending on the source of uncertainty.

The key site-related variables and assumptions that contribute most to the uncertainty in this risk assessment are the elevated non-detect soil gas values, as previously mentioned. The only elevated risks identified in **Table 11** (four locations for naphthalene, one location for benzene) are based on non-detected reporting limits from two soil gas locations, one of which, upon resampling four years later, resulted in no detectable concentrations of any analytes. The IPCB guidance recommends a tiered approach for risk assessment, with the first screening step (Tier 1) using detected concentrations. In this way, conducting a risk assessment using elevated non-detected values is a conservative approach and likely overestimates the potential for risk. Furthermore, if non-detects were excluded from this analysis, there would be no unacceptable soil gas risks at any of the off-site residential properties that were evaluated.

To address the potential uncertainty of the elevated reporting limits, soil gas risks were recalculated using one-half the reporting limit for non-detected concentrations. As shown in **Table 12**, benzene's indoor air risks fall below the acceptable cancer risk level (1E-06), while four naphthalene locations still exceed the cancer risk level. Additionally, all noncancer hazards drop below an HQ = 1.0 when assuming one-half the reporting limit for non-

detects. As previously stated, the only elevated cancer risks or noncancer hazards stem from elevated non-detected soil gas concentrations assuming the full reporting limit, which is a conservative calculation that likely overestimates indoor air risks at the off-Site residential properties.

7 Summary and Conclusions

For the purpose of this VI Risk Assessment, potential exposure to chemicals volatilizing from the subsurface to indoor air is considered a potentially complete exposure pathway for the off-site resident. To evaluate the potential for adverse indoor air risk from vapor intrusion, groundwater and soil gas data were compared against IEPA's 2013 Tier 1 ROs protective of residential inhalation (and EPA indoor air RSLs for wells near homes with sump pits), which ultimately identified ethylbenzene and naphthalene as groundwater COCs, as well as benzene, ethylbenzene, naphthalene, and total xylenes as soil gas COCs. Therefore, these groundwater and soil gas COCs were further evaluated using USEPA's 2017 version of the J&E model (USEPA, 2017) to estimate indoor air risks at off-site residential properties.

The results of the J&E modeling indicate that groundwater is unlikely to result in a risk to human health from vapor intrusion for off-site residential properties based on extended exposure (26 years). Risk estimates based on detected soil gas results are less than IEPA's cancer TRL of 1E-06 and a noncancer target HQ of 1.0 for residential scenarios, indicating that soil gas is unlikely to result in a risk to human health from vapor intrusion for off-site residential properties. Even though elevated reporting limits for benzene and naphthalene result in elevated cancer risk estimates and noncancer HQs above one (1.25), this is a conservative approach that likely overestimates the indoor air risks at the off-site residential properties. Ultimately, risk estimates based on detected concentrations of COCs in groundwater and soil gas indicate that indoor air risks due to vapor intrusion are acceptable at the off-site residential properties.

8 References

ERM, 2020. Groundwater Monitoring Update - Quarter 1 2020 Sampling Event, Champaign Former Manufactured Gas Plant, Champaign, Illinois. Prepared by ERM, Rolling Meadows, IL.

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RAM Group, 2014. Evaluation of Soil Gas Data Collected at the Center for Women in Transition, 304 N. 5th St., 504, 506, and 508 E. Church St., Champaign, Illinois. January 7.

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USEPA. 2015a. *OSWER Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Sources to Indoor Air.* Office of Solid Waste and Emergency Response, OSWER Publication 9200.2-154. June.

USEPA. 2015b. *Technical Guide for Addressing Petroleum Vapor Intrusion at Leaking Underground Storage Tank Sites*. June.

USEPA. 2017. User's Guide for the Johnson and Ettinger (2017) Model, Version 6.0 for Subsurface Vapor Intrusion into Buildings. Available online at: https://www.epa.gov/vaporintrusion/epa-spreadsheet-modeling-subsurface-vapor-intrusion

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Tables

Table 1
Summary of Groundwater Sampling Locations
Champaign Former Manufactured Gas Plant, Champaign, Illinois

Monitoring Well [a]	Location / Interval Category	Monitored Interval (ft bgs) [b]	Depth to Groundwater (ft bgs)	Sampling Dates				Properties Within 100 feet
UMW-105	Off-Site, Shallow	9.5 - 19.70	6.58	6/27/2018	12/5/2018	5/15/2019	11/6/2019	304 N 5th St, 504 E Church St, 506 E Church St, 508 E Church St
				9/19/2018	3/6/2019	8/21/2019	2/12/2020	
UMW-106R	Off-Site, Shallow	7.00 - 17.00	5.93	6/25/2018	12/4/2018	5/14/2019	11/5/2019	304 N 5th St
				9/18/2018	3/5/2019	8/20/2019	2/12/2020	
UMW-121	Off-Site, Shallow	5.00 - 15.00	5.71	6/27/2018	12/5/2018	5/15/2019	11/6/2019	504 E Church St, 506 E Church St, 508 E Church St, 510 E Church St
				9/19/2018	3/6/2019	8/21/2019	2/12/2020	
UMW-123	Off-Site, Shallow	5.89 - 15.89	6.63	6/26/2018	12/4/2018	5/14/2019	11/5/2019	304 N 5th St, 502 E Church St
				9/18/2018	3/5/2019	8/20/2019	2/12/2020	
UMW-124	On-Site, Shallow	4.97 - 15.02	2.51	6/25/2018	12/5/2018	5/15/2019	11/6/2019	No properties
				9/19/2018	3/6/2019	8/21/2019	2/12/2020	
UMW-302	Off-Site, Intermediate	35.00 - 45.00	28.99 [c]	6/27/2018	12/5/2018	5/15/2019	11/6/2019	504 E Church St, 506 E Church St, 508 E Church St, 510 E Church St
				9/19/2018	3/6/2019	8/21/2019	2/12/2020	
UMW-308	On-Site, Intermediate	35.14 - 44.69	27.64 [c]	6/27/2018	12/4/2018	5/15/2019	11/6/2019	506 E Church St, 508 E Church St 510 E Church St
				9/19/2018	3/6/2019	8/21/2019	2/12/2020	

Notes:

[a] Only monitoring wells located within 100 lateral feet of the properties of concern are identified in this table.

[b] As presented in Table 1 of May 14, 2020 Groundwater Monitoring Update - Quarter 1 2020 Sampling Event (ERM, 2020)

[c] According to USEPA's 2015 OUST Vapor Intrusion Guidance (USEPA, 2015), if the vertical separation distance between dissolved-phase petroleum hydrocarbons and the bottom of a building's foundation exceeds six (6) feet, further evaluation of the VI pathway for petroleum hydrocarbons is not necessary due to empirical evidence of biodegradation occurring when adequate oxygen (1 percent or greater) is available in the unsaturated zone. Even if a basement extends down 12 feet, the separation distance still exceeds 6 feet for UMW-302 and UMW-308. Therefore, further evaluation of the VI pathway for these two wells is not necessary.

Reference:

ERM, 2020. Groundwater Monitoring Update - Quarter 1 2020 Sampling Event, Champaign Former Manufactured Gas Plant, Champaign, Illinois.
Prepared by ERM, Rolling Meadows, IL.

Table 2
Summary of Soil Gas Sampling Locations
Champaign Former Manufactured Gas Plant, Champaign, Illinois

Soil Gas Sample [a,b]	Sample Depth (ft bgs)	Property	Sampling Date
304-W	5	304 N 5th St. [c]	12/1/2009
304-N	5		
304-E	7		
504-N	7	504 E Church St. [c]	
504-E	6		
506-E	4	506 E Church St.	
506-EF	4	506 E Church St.	
508-E	6.5	508 E Church St. [d]	
508-E Lab Dup	6.5		
506-N	3	506 E Church St.	12/2/2009
508-N	6.5	508 E Church St. [d]	
304-W-1	5-6	304 N 5th St. [c]	11/12/2013
304-N-2	5-6		
304-E-3	7-8		
504-N-4	6-8	504 E Church St. [c]	
504-E-5	5-7	504 E Church St. [c]	11/13/2013
504-N-12	6-7		
506-N-6	3.5-4.5	506 E Church St.	
506-E-7	4-5		
508-N-8	5.5-7.5	508 E Church St. [d]	
508-N-9	5-6		
508-N-9D	5-6		

Notes:
[a] Only soil gas probes located within 100 lateral feet of the properties of concern are identified in this
[b] As presented in January 2014 Evaluation of Soil Gas Data Collected at the Center for Women in Transition, 304 N. 5th St., 504, 506, and 508 E. Church St., Champaign, Illinois (RAM Group, 2014)
[c] Also represents soil gas conditions at 502 E. Church St.
[d] Also represents soil gas conditions at 510 E. Church St.

Reference:
RAM Group, 2014. Evaluation of Soil Gas Data Collected at the Center for Women in Transition, 304 N. 5th St., 504, 506, and 508 E. Church St., Champaign, Illinois. January 7.

Table 3
Summary of Tier 1 Remediation Objectives for Residential Properties
Champaign Former Manufactured Gas Plant, Champaign, Illinois

Analyte	CAS Number	Indoor Air Stds [a]	Diffusion and Advection (IPCB, 2013a) [b]		Diffusion Only (IPCB, 2013b) [b]	
		Indoor Air Regional Screening Level (2020)	Soil Gas Objectives for the Indoor Inhalation Exposure Route	Groundwater Remediation Objectives for the Indoor Inhalation Exposure Route	Soil Gas Objectives for the Indoor Inhalation Exposure Route	Groundwater Remediation Objectives for the Indoor Inhalation Exposure Route
		Residential (ug/m^3)	Residential (mg/m^3)	Residential (mg/L)	Residential (mg/m^3)	Residential (mg/L)
Acenaphthene	88-32-9	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	NA	NA	NA	NA	NA
Anthracene	120-12-7	NA	NA	NA	NA	NA
Benzene	71-43-2	0.36	0.37	0.11	41	0.41
Ethylbenzene	100-41-4	1.1	1.3	0.37	150	1.3
Fluorene	86-73-7	NA	NA	NA	NA	NA
Naphthalene	91-20-3	0.083	0.11	0.075	14	1.8
Pyrene	129-00-0	NA	NA	NA	NA	NA
Styrene	100-42-5	1000	1,400	310	34,000	310
Toluene	108-88-3	5200	6,200	530	140,000	530
Xylenes, m-	108-38-3	100	140	43	17,000	160
Xylenes, o-	95-47-6	100	120	40	14,000	170
Xylenes, p-	106-42-3	100	130	38	16,000	140

Notes:
[a] Indoor air standards used to screen soil gas at buildings with sumps (504, 506, 508 E. Church St.)
[b] Remedial Objectives(ROs) cannot be used to screen buildings with sumps (504, 506, 508 E. Church St.)
mg/kg = milligrams per kilogram
mg/L = milligrams per liter
mg/m^3 = milligrams per cubic meter
NA = not available

Reference:
IPCB. 2013a. Illinois Pollution Control Board (IPCB) Tiered Approach to Corrective Action Objective, 35 Illinois Administrative Code 742, Appendix B. Updated May 15.
Table H: Tier 1 Soil Gas and Groundwater Remediation Objectives for the Indoor Inhalation Exposure Route - Diffusion and Advection
IPCB. 2013b. Illinois Pollution Control Board (IPCB) Tiered Approach to Corrective Action Objective, 35 Illinois Administrative Code 742, Appendix B. Updated May 15.
Table I: Tier 1 Soil Gas and Groundwater Remediation Objectives for the Indoor Inhalation Exposure Route - Diffusion Only

Table 4
Maximum Detected Groundwater Concentration Comparison to Tier 1 ROs
Champaign Former Manufactured Gas Plant, Champaign, Illinois

Tier 1 Groundwater RO [a] (mg/L)			Benzene		Ethylbenzene		Naphthalene		Toluene		Xylenes		Further Evaluation Required?
			0.11		0.37		0.075		530		38 [a]		
Sample ID	Representative Properties	Depth to GW (ft bgs)	Maximum Detected Concentration (mg/L)										
UMW-105	304 N 5th St, 504/506/508 E Church St	6.58	<0.0005	02/12/20	**0.004**	06/27/18	**0.0162**	06/27/18	<0.002	02/12/20	<0.004	02/12/20	E, N (504/506/508 Church St)
UMW-106R	304 N 5th St	5.93	<0.0005	02/12/20	<0.002	02/12/20	<0.0002	02/12/20	<0.002	02/12/20	<0.004	02/12/20	No (all non-detect)
UMW-121	504/506/508 E Church St, 510 E Church St	5.71	<0.0005	02/12/20	<0.002	02/12/20	<0.0002	02/12/20	<0.002	02/12/20	<0.004	02/12/20	No (all non-detect)
UMW-123	304 N 5th St, 502 E Church St	6.63	<0.0005	02/12/20	<0.002	02/12/20	<0.0002	02/12/20	<0.0002	02/12/20	<0.004	02/12/20	No (all non-detect)
UMW-124	No Properties	2.51	**0.166**	05/15/19	**0.0177**	05/15/19	**0.0709**	05/15/19	**0.0926**	02/12/20	**0.048**	05/15/19	No (outside 100 ft radius)
UMW-302	504/506/508 E Church St, 510 E Church St	28.99	**0.516**	03/06/19	**0.929**	03/06/19	**3.53**	09/19/18	**0.0094**	05/15/19	**0.256**	02/12/20	No [b]
UMW-308	506/508 E Church St, 510 E Church St	27.64	<0.0005	02/12/20	<0.002	02/12/20	**0.005**	09/19/18	<0.002	02/12/20	<0.004	02/12/20	

Notes:

[a] Assumes minimum groundwater RO across all xylenes (p-xylene)

[b] According to USEPA's 2015 OUST Vapor Intrusion Guidance (USEPA, 2015), if the vertical separation distance between dissolved-phase petroleum hydrocarbons and the bottom of a building's foundation exceeds six (6) feet, further evaluation of the VI pathway for petroleum hydrocarbons is not necessary due to empirical evidence of biodegradation occurring when adequate oxygen (1 percent or greater) is available in the unsaturated zone. Even if a basement extends down 12 feet, the separation distance still exceeds 6 feet for UMW-302 and UMW-308. Therefore, further evaluation of the VI pathway for these two wells is not necessary.

B = benzene
EB = ethylbenzene
GW = groundwater
mg/L = milligrams per liter
N = naphthalene
RO = Remediation Objective
T = toluene
X = xylenes
Red addresses can not be screened because homes have sumps
BOLD = detected concentration
shaded = Tier 1 RO exceedance (for homes without sumps)
shaded = detected concentration (for homes with sumps)

Reference:

[a] IPCB. 2013. Illinois Pollution Control Board (IPCB) Tiered Approach to Corrective Action Objective, 35 Illinois Administrative Code 742, Appendix B. Updated May 15. Table H: Tier 1 Soil Gas and Groundwater Remediation Objectives for the Indoor Inhalation Exposure Route - Diffusion and Advection

Table 5
Maximum Detected Soil Gas Concentration Comparison to Tier 1 SG ROs or Indoor Air ROs/RSLs
Champaign Former Manufactured Gas Plant, Champaign, Illinois

Soil Gas Samples		Analyte	Benzene	Ethylbenzene	Naphthalene	Styrene	Toluene	m,p-Xylene	o-Xylene	Further Evaluation Required? (addresses are color-coded)
		Tier 1 SG RO [a]	370	1,300	110	1,400,000	6,200,000	130,000	120,000	
		Indoor Air RSL	0.36	1.1	0.083	1,000	5,200	100	100	
Sample ID	Representative Property	Date	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	
304-W	304 N. 5th St, 502 E Church St.	12/1/2009	<15	<20	<98	<20	<18	<20	<20	No (all below Tier 1 SG RO)
304-N			**4.5**	<5.5	<27	<5.4	<4.8	<5.5	<5.5	
304-E			**4.8**	<5.6	<27	<5.5	7.3	<5.6	<5.6	
504-N	502 E Church St. 504 E Church St.		<16	<22	<100	<22	<19	<22	<22	B,E,N (504 E Church St)
504-E			<4.0	<5.4	<26	<5.3	<4.7	<5.4	<5.4	
506-E	506 E Church St.		<3.8	<5.1	<25	<5.0	<4.5	<5.1	<5.1	B,E,N (506 E Church St)
508-EF	508 E Church St. 510 E Church St.		<3.8	**6.3**	<25	<5.0	<4.5	**5.7**	<5.1	B,E,N (508 E Church St)
508-E			**8.3**	<4.9	<23	<4.8	**12.0**	<4.9	<4.9	
508-E Lab Dup			**8.0**	<9.7	<47	<9.5	**11.0**	<9.7	<9.7	
506-N	506 E Church St.	12/2/2009	**5.4**	<5.2	<25	<5.2	**6.2**	<5.2	<5.2	B,E,N (506 E Church St)
508-N	508 E Church St. 510 E Church St.		<190	<260	<1,300	<260	<230	<260	<260	B,E,N, m,p-X, o-X (508 E Church St) N (510 E Church St)
304-W-1	304 N. 5th St, 502 E Church St.	11/12/2013	<3.8	<5.1	<25	<5.0	<4.5	<5.1	<5.1	No (all below Tier 1 SG RO)
304-N-2			<3.8	<5.2	<25	<5.1	<4.5	<5.2	<5.2	
304-E-3			**11.0**	<6.3	<30	<6.2	**6.8**	<6.3	<6.3	
504-N-4	502 E Church St. 504 E Church St.		<4.7	<6.4	<31	<6.3	<5.6	<6.4	<6.4	B,E,N (504 E Church St)
504-E-5	502 E Church St. 504 E Church St.	11/13/2013	<3.9	<5.3	<26	<5.2	<4.6	<5.3	<5.3	B,E,N (504 E Church St)
504-N-12			<26	<36	<170	<35	<31	<36	<36	N (502 E Church St)
506-N-6	506 E. Church St.		<3.8	<5.1	<25	<5.0	**6.7**	<5.1	<5.1	B,E,N (506 E Church St)
506-E-7			<3.7	<5.0	<24	<4.9	<4.3	<5.0	<5.0	
508-N-8	508 E Church St. 510 E Church St.		<18	<24	<120	<23	<21	<24	<24	B,E,N (508 E Church St)
508-N-9			4.1	<5.2	<25	<5.1	<4.5	<5.2	<5.2	
508-N-9D			3.9	<4.4	<21	<4.3	**11.0**	**7.8**	<4.4	N (510 E Church St)

Notes:
µg/m^3 = micrograms per cubic meter of air
BOLD = detected concentration
Addresses requiring further evaluation are color-coded for ease in grouping
Red addresses can't be screened against Tier 1 SG ROs because homes have sumps. Instead, soil gas data are screened against indoor air RO/RSL at these addresses
shaded = Tier 1 RO exceedance (for homes without sumps)
shaded = Indoor Air RO/RSL exceedance (for homes with sumps)
B = benzene
EB = ethylbenzene
GW = groundwater
mg/L = milligrams per liter
N = naphthalene
RO = Remediation Objective
SG = soil gas
T = toluene
X = xylenes (m,p-X = m,p-xylenes; o-X = o-xylene)

Reference:
[a] IPCB. 2013. Illinois Pollution Control Board (IPCB) Tiered Approach to Corrective Action Objective, 35 Illinois Administrative Code 742, Appendix B. Updated May 15. Table H: Tier 1 Soil Gas and Groundwater Remediation Objectives for the Indoor Inhalation Exposure Route - Diffusion and Advection

Table 6
Summary of Residential Exposure Assumptions
Champaign Former Manufactured Gas Plant, Champaign, Illinois

General Assumptions	Value	Reference
AT (averaging times):		
Carcinogenic effects	70 yrs	Recommended life expectancy value [IEPA, 2013; USEPA, 2014]
Chronic effects (noncarc.)	26 yrs	EPA recommended residential value [USEPA, 2014]
Exposure Assumptions		
EF (exposure frequency)	350 days/yr	Recommended residential value [IEPA, 2013; USEPA, 2014]
ED (exposure duration)	26 yrs	EPA recommended residential value [USEPA, 2014]
Inhalation of Subsurface Volatiles in Indoor Air		
IR (inhalation rate)	20 m^3/day	EPA recommended daily inhalation rate [USEPA 2004]
ET (exposure time)	24 hr/day	EPA recommended residential value [USEPA, 2014]
Residential Building Assumptions		
Soil-building pressure differential	40 g/cm-s^2	Default value [USEPA, 2017]
Floor-wall seam crack width	0.1 cm	Default value [IEPA, 2013; USEPA 2017]
Sump Area (applies to 504/506/508 Church St)	452 in^2 (2,919 cm^2)	Conservatively assumes a standard 24-inch open sump diameter (12 inch radius) (professional judgment)
Fraction of foundation area with cracks (504 E Church St)	0.00159	Calculated estimating crack area (square root of floor area x 4 walls x crack width). Crack Area + Sump Area / Floor Area = fraction of foundation area with cracks
Fraction of foundation area with cracks (506 E Church St)	0.0034	
Fraction of foundation area with cracks (508 E Church St)	0.0023	

References:

IPCB. 2013. Illinois Pollution Control Board (IPCB) Tiered Approach to Corrective Action Objective, 35 Illinois Administrative Code 742, Appendix C. Updated May 15. Table M: J&E Parameters

USEPA 2014. Human Health Evaluation Manual, Supplemental Guidance: Update of Standard Default Exposure Factors. Office of Solid Waste and Emergency Response, Washington, D.C. OSWER Directive 9200.1-120. February 6.

USEPA. 2017. User's Guide for the Johnson and Ettinger (2017) Model, Version 6.0 for Subsurface Vapor Intrusion into Buildings. Available online at: https://www.epa.gov/vaporintrusion/epa-spreadsheet-modeling-subsurface-vapor-intrusion

Table 7
Summary of Inhalation Toxicity Values
Champaign Former Manufactured Gas Plant, Champaign, Illinois

Analytes of Concern [a]	CAS	Inhalation Unit Risk Factor $(\mu g/m^3)^{-1}$	Reference	Inhalation Reference Concentration (mg/m^3)	Reference
Benzene	71-43-2	7.80E-06	IRIS	3.00E-02	IRIS
Ethylbenzene	100-41-4	2.50E-06	CalEPA	1.00E+00	IRIS
Naphthalene	91-20-3	3.40E-05	CalEPA	3.00E-03	IRIS
Xylenes, Total	1330-20-7	NA		1.00E-01	IRIS

Notes:

[a] All toxicity values taken from USEPA's November 2020 Screening Level Table (USEPA, 2020).

COC = constituent of concern

ug/m^3 = microgram per cubic meter

mg/m^3 = milligram per cubic meter

References:

IRIS = Integrated Risk Information System Database. Available online at: www.epa.gov/iris

USEPA, 2020. Regional Screening Level (RSL) Table, November 2020 update. Available online at: https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables

Table 8
Summary of Site-Specific Geotechnical Input Parameters
Champaign Former Manufactured Gas Plant, Champaign, Illinois

Modeling Input Parameters	Depth to Groundwater [a]	Soil Type [b]	Total Soil Porosity (θ_T) [c]	Air-Filled Porosity ($\theta_A = \theta_T - \theta_W$) [c]	Water-Filled Porosity (θ_W) [c]	Stratum Soil Particle Density (ρs) [c]	Stratum Soil Bulk Density (ρb) [c]	Thickness of Soil Stratum (depth to soil gas sample) [f]	Average Soil/ GW Temp. [d]
	cm (ft)	NA	Unitless	Unitless	Unitless	g/cm^3	g/cm^3	cm (ft)	degree C
304 N 5th St	NA [e]	Silty Clay	0.481	0.265	0.216	2.65	1.38	NA [g]	18.03
502 E Church St								152.4 (5) @ 504-E-5	
504 E Church St	223.4 (7.33) (UMW-105)								
506 E Church St								91.4 (3) @ 506-N	
508 E Church St	211.2 (6.93) (UMW-121)							152.4 (5) @ 508-N-9	
510 E Church St	NA [e]								

Notes:

[a] Depth to groundwater extrapolated by subtracting shallow groundwater contours from Land Surface measurement of nearby wells (provided in parentheses) presented in Tables 1 and Figure 1, respectively (Ameren, 2020).

[b] Based on UMW-302 borelog. Silty clay determined as appropriate soil type; however, to run J&E model, "sand" was chosen to reduce capillary fringe thickness, and silty clay geotechnical parameters were hand-entered.

[c] Default assumption, as presented in Sept 2017 J&E Model, Version 6.0 (https://www.epa.gov/vaporintrusion/epa-spreadsheet-modeling-subsurface-vapor-intrusion)

[d] Site-specific average groundwater temperature from Q3, 2019.

[e] 304 N 5th St, 502, and 510 E Church St are not a groundwater VI concern.

[f] For modeling purposes, the building foundation depth was adjusted to just above the soil gas sample depth.

[g] 304 N 5th St is not a soil gas VI concern.

NA = not applicable

Reference:

Ameren, 2020. Groundwater Monitoring Update - Quarter 1 2020 Sampling Event, Champaign Former Manufactured Gas Plant, Champaign, Illinois. May 15.

Table 9
Summary of Property-Specific Building Information
Champaign Former Manufactured Gas Plant, Champaign, Illinois

Property Address	Foundation Type (basement, crawl space, slab-on-grade)	Above-Ground Floors	Depth below Grade to Bottom of Building cm (ft)	Air Exchange Rate (changes/hr) (IEPA, 2013)	Enclosed Space Mixing Height [a] m (ft)	Enclosed Space Floor Area m^2 (ft^2) [b]
304 N 5th St	2-ft crawl space (slab concrete)	1	61 (2) [b]	0.53	2.44 (8)	140.5 (1,512)
502 E Church St	Basement	2	200 (6.6) (IEPA, 2013)		4.88 (16)	79.5 (856)
504 E Church St	Basement (with sump)	2	200 (6.6) (IEPA, 2013)		4.88 (16)	220.4 (2,372)
506 E Church St	Basement (with sump)	2	173.7 (5.7) [c]		4.88 (16)	97.6 (1,051)
508 E Church St	Basement (with sump)	2	176.7 (5.8) [c]		4.88 (16)	144.9 (1,560)
510 E Church St	Basement	2	200 (6.6.) (IEPA, 2013)		4.88 (16)	106.3 (1,144)

Notes:
[a] Assumes each floor is 244 cm (8 ft) (IPCB, 2013)
[b] Based on appraisal or property record information.
[c] As presented in Tables 2 and 3 of January 2014 Evaluation of Soil Gas Data Collected at the Center for Women in Transition, 304 N. 5th St., 504, 506, and 508 E. Church St., Champaign, Illinois (RAM Group, 2014)

Reference:

IPCB. 2013. Illinois Pollution Control Board (IPCB) Tiered Approach to Corrective Action Objective, 35 Illinois Administrative Code 742, Appendix C. Updated May 15. Table M: J&E Parameters

RAM Group, 2014. Evaluation of Soil Gas Data Collected at the Center for Women in Transition, 304 N. 5th St., 504, 506, and 508 E. Church St., Champaign, Illinois. January 7.

Table 10
Modeled Groundwater Human Health Risks
Champaign Former Manufactured Gas Plant, Champaign, Illinois

Analyte	CAS Number	Groundwater Conc (mg/L)		2017 USEPA J&E Model (no biodegradation) [a]					
				504 E. Church St	506 E. Church St	508 E. Church St	504 E. Church St	506 E. Church St	508 E. Church St
				Modeled Cancer Risk (unitless)			Modeled Noncancer Hazard Quotient (HQ) (unitless)		
Ethylbenzene	100-41-4	0.004	UMW-105	3.3E-07	3.2E-07	3.4E-07	0.0004	0.0003	0.0004
Naphthalene	91-20-3	0.0162	UMW-105	9.1E-07	9.0E-07	9.2E-07	0.02	0.02	0.02

Notes:

[a] USEPA. 2017. User's Guide for the Johnson and Ettinger (2017) Model, Version 6.0 for Subsurface Vapor Intrusion into Buildings. Available online at: https://www.epa.gov/vaporintrusion/epa-spreadsheet-modeling-subsurface-vapor-intrusion

Table 11
Modeled Soil Gas Human Health Risks Assuming Full Detection Limit
Champaign Former Manufactured Gas Plant, Champaign, Illinois

Analyte	CAS Number	Soil Gas Concentrations Used for Modeling ($\mu g/m^3$)					2017 USEPA J&E Model (no biodegradation) [a]									
		502 E Church St	504 E Church St	506 E Church St	508 E Church St	510 E Church St	502 E Church St	504 E. Church St	506 E. Church St	508 E. Church St	510 E Church St	502 E Church St	504 E. Church St	506 E. Church St	508 E Church St	510 E. Church St
		Soil Gas Concentrations Used for Modeling ($\mu g/m^3$)					Modeled Cancer Risk (unitless)					Modeled Noncancer Hazard Quotient (HQ) (unitless)				
Benzene	71-43-2	NA	<16 (504-N)	**5.4** (506-N)	<190 (508-N)	NA	NA	1.33E-07	4.50E-08	1.58E-06	NA	NA	1.53E-03	5.18E-04	1.82E-02	NA
Ethylbenzene	100-41-4	NA	<22 (504-N)	<5.2 (506-N)	<260 (508-N)	NA	NA	5.88E-08	1.39E-08	6.95E-07	NA	NA	6.33E-05	1.50E-05	7.48E-04	NA
Naphthalene	91-20-3	<170 (504-N-12)	<170 (504-N-12)	<25 (506-N)	<1,300 (508-N)	<1,300 (508-N)	6.18E-06	6.18E-06	9.08E-07	4.72E-05	4.72E-05	0.163	0.163	2.40E-02	1.25	1.25
Xylenes, Total	1330-20-7	NA	NA	NA	<260 (508-N)	NA	NA	NA	NA	No tox	NA	NA	NA	NA	7.48E-03	NA

Notes:
Indicates non-detect soil gas concentration used for modeling.
Indicates cancer risk > 1E-06 or noncancer HQ > 1.
< = not detected
THQ = target hazard quotient (for noncarcinogens)
TRL = target risk level (for carcinogens)

References:
[a] USEPA. 2017. User's Guide for the Johnson and Ettinger (2017) Model, Version 6.0 for Subsurface Vapor Intrusion into Buildings. Available online at: https://www.epa.gov/vaporintrusion/epa-spreadsheet-modeling-subsurface-vapor-intrusion

Table 12
Modeled Soil Gas Human Health Risks Assuming 1/2 Detection Limit
Champaign Former Manufactured Gas Plant, Champaign, Illinois

Analyte	CAS Number	Soil Gas Concentrations Used for Modeling ($\mu g/m^3$)					2017 USEPA J&E Model (no biodegradation) [a]									
		502 E Church St	504 E Church St	506 E Church St	508 E Church St	510 E Church St	502 E Church St	504 E. Church St	506 E. Church St	508 E. Church St	510 E Church St	502 E Church St	504 E. Church St	506 E. Church St	508 E Church St	510 E. Church St
		Soil Gas Concentrations Used for Modeling ($\mu g/m^3$)					Modeled Cancer Risk (assuming 1/2 det limit for ND) (unitless)					Modeled Noncancer Hazard Quotient (HQ) (assuming 1/2 det limit for ND) (unitless)				
Benzene	71-43-2	NA	<16 (504-N)	**5.4** (506-N)	<190 (508-N)	NA	NA	6.65E-08	4.50E-08	7.90E-07	NA	NA	7.65E-04	5.18E-04	9.10E-03	NA
Ethylbenzene	100-41-4	NA	<22 (504-N)	<5.2 (506-N)	<260 (508-N)	NA	NA	2.94E-08	6.95E-09	3.48E-07	NA	NA	3.17E-05	7.50E-06	3.74E-04	NA
Naphthalene	91-20-3	<170 (504-N-12)	<170 (504-N-12)	<25 (506-N)	<1,300 (508-N)	<1,300 (508-N)	3.09E-06	3.09E-06	4.54E-07	2.36E-05	2.36E-05	0.0815	0.0815	1.20E-02	0.625	0.625
Xylenes, Total	1330-20-7	NA	NA	NA	<260 (508-N)	NA	NA	NA	NA	No tox	NA	NA	NA	NA	3.74E-03	NA

Notes:
Indicates non-detect soil gas concentration used for modeling.
Indicates cancer risk > 1E-06 or noncancer HQ > 1. All elevated risks are based on non-detected soil gas concentrations.
< = not detected
THQ = target hazard quotient (for noncarcinogens)
TRL = target risk level (for carcinogens)

References:
[a] USEPA. 2017. User's Guide for the Johnson and Ettinger (2017) Model, Version 6.0 for Subsurface Vapor Intrusion into Buildings. Available online at: https://www.epa.gov/vaporintrusion/epa-spreadsheet-modeling-subsurface-vapor-intrusion

Figures

DRAWN BY: GIS
REVISED: 05/13/2020 , SCALE: 1:1,200 when printed at 11x17
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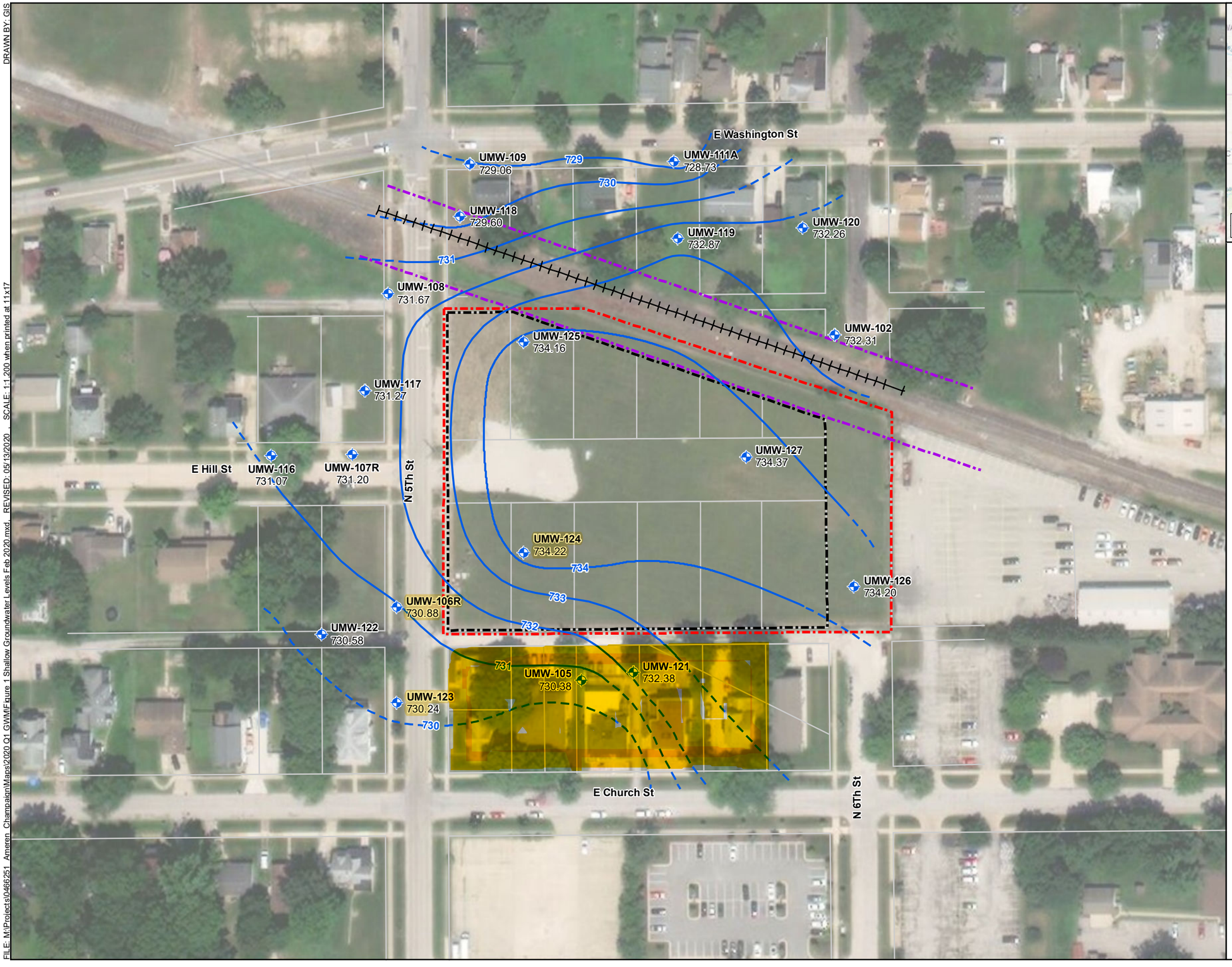

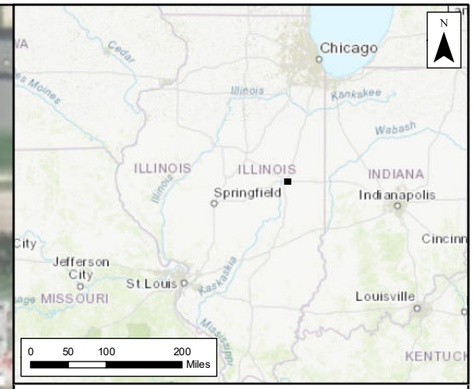

Legend

- Shallow Monitoring Well with February 10 2020 Groundwater Elevation
- February 10 2020 Water Table Contour (Dashed Where Inferred)
- Railroad
- Ameren Property Boundary
- 2009 Remediation Site Boundary
- Norfolk Southern Railroad Property Boundary
- Parcel Lot Line

Notes:
All water levels in feet above NAVD88 datum.

Off-site Properties & Wells Identified for VI Evaluation

N

0 100 200
Feet

Figure 1
Shallow Groundwater Elevation Contours
February 2020
Ameren Services
Champaign, Illinois

Environmental Resources Management
www.erm.com
ERM

DRAWN BY: Jake Sullivan
FILE: M:\Projects\0466251_Ameren_Champaign\Maps\2020 Q1 GWMF\Figure 2 Intermediate Water Levels Feb 2020.mxd REVISED: 05/13/2020 , SCALE: 1:1,200 when printed at 11x17

E Washington St
E Washington St
N 6Th St
E Hill St
N 5Th St
E Church St
N 6Th St

UMW-300
709.85

UMW-303
710.16

UMW-304R
709.39

UMW-301R
709.29

UMW-308
709.20

UMW-302
709.22

UMW-305
709.13

UMW-306
709.05

UMW-307
709.00

709.8
709.7
709.6
709.5
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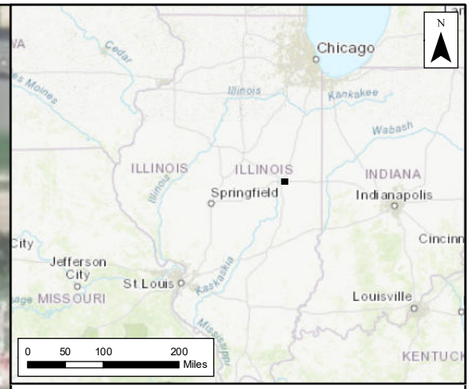
710.0



Legend

- Intermediate Monitoring Well with February 10 2020 Groundwater Elevation
- February 10 2020 Potentiometric Surface Contour)
- Railroad
- Ameren Property Boundary
- 2009 Remediation Site Boundary
- Norfolk Southern Railroad Property Boundary
- Parcel Lot Line

Notes:
All water levels in feet above NAVD88 datum.

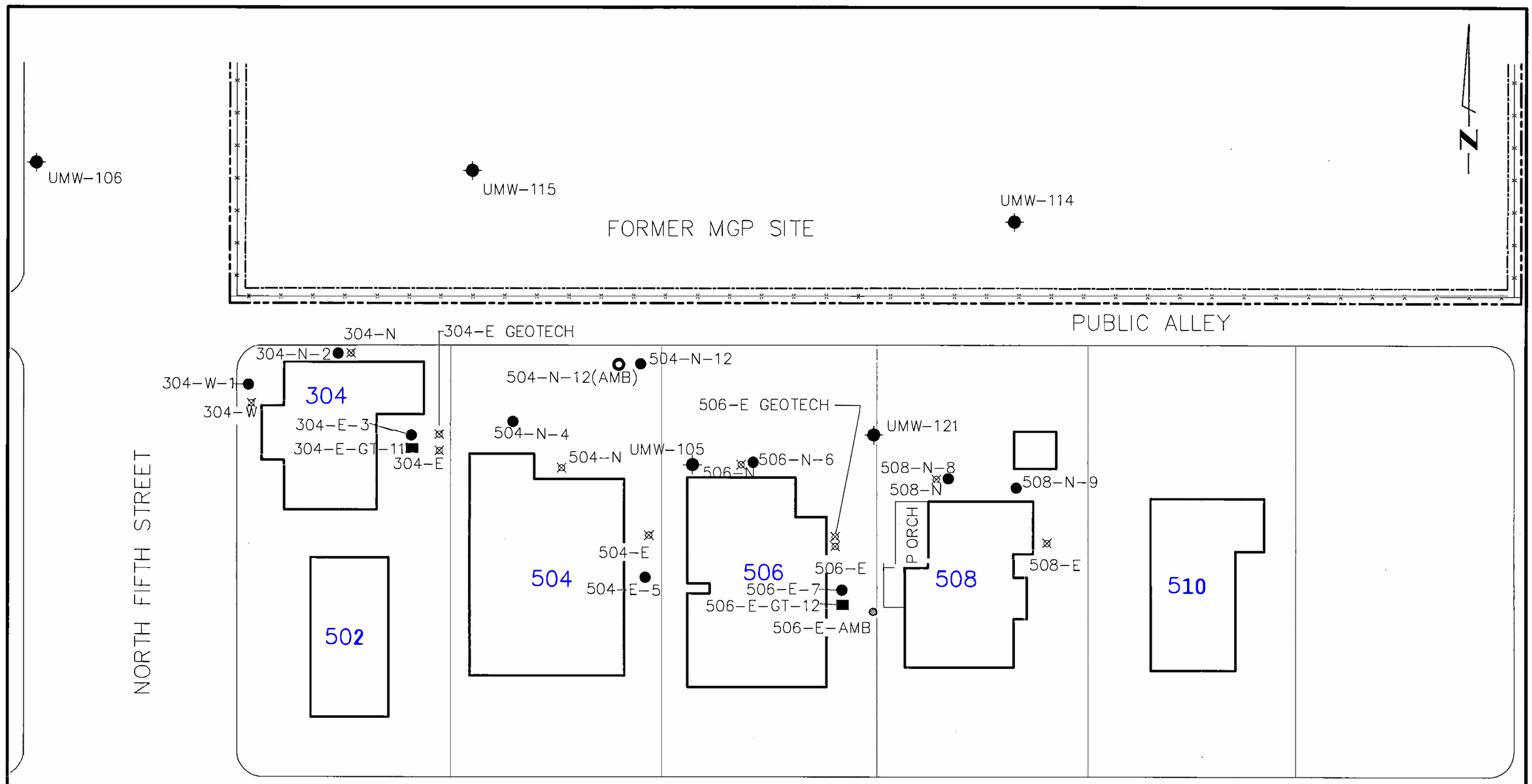
Off-Site Properties & Wells Identified for VI Evaluation

N

0 100 200
Feet

Figure 2
Intermediate Groundwater Elevation Contours
February 2020
Ameren Services
Champaign, Illinois

Environmental Resources Management
www.erm.com
ERM



LEGEND

- SOIL VAPOR SAMPLE LOCATION (NOVEMBER 2013)
- AMBIENT AIR SAMPLE LOCATION (NOVEMBER 2013)
- GEOTECHNICAL SOIL SAMPLE LOCATION (NOVEMBER 2013)
- SOIL VAPOR SAMPLE LOCATION (DECEMBER 2009)
- AMBIENT AIR SAMPLE LOCATION (DECEMBER 2009)
- SHALLOW MONITORING WELL LOCATION (DECEMBER 2009)

0 30

APPROX. SCALE (FEET)

RAM Group of Gannett Fleming, Inc.
5433 Westheimer, Suite 725, Houston, TX 77056

Figure 2
Soil Gas Sampling Locations
Ameren Illinois Company
Center for Women in Transition
Champaign, Illinois

PROJ. NO: 050067E	D/B: BR	DATE: 1/7/2014

Appendix H City of Champaign Groundwater Use Prohibition Ordinance

Sec. 16-20. - Use of groundwater as a potable water supply prohibited.

(a) Potable water is any water used for human or domestic consumption, including, but not limited to, water used for drinking, bathing, swimming, washing dishes, or preparing foods.

(b) Except for such uses or methods in existence before the effective date of this ordinance, the use of, or attempt to use as a potable water supply groundwater from within the corporate limits of the City of Champaign by the installation or drilling of wells or by any other method is hereby prohibited, except at points of withdrawal by the City of Champaign.

(c) The City Engineer will notify the IEPA Bureau of Land of any proposed ordinance changes or requests for variance at least thirty (30) days prior to the date the city is scheduled to take action on the proposed change or request.

(d) The City Engineer will maintain a registry of all sites within its corporate limits that have received "No Further Remediation" determinations from the IEPA.

(e) The City Engineer will review the registry of sites established under this section prior to siting public potable water supply wells within the area covered by this section.

(f) The City Engineer will determine whether the potential source of potable water has been or may be affected by contamination left in place at the sites tracked and reviewed under this section.

(g) The City Engineer will take action as necessary to ensure that the potential source of potable water is protected from contamination or treated before it is used as a potable water supply.

(C.B. No. 2007-138, § 1, 6-5-07)

Appendix I Environmental Land Use Controls to be Applied to the Site

Environmental Land Use Control

PREPARED BY:

Name: _____

Address: _____

RETURN TO:

Name: _____

Address: _____

THE ABOVE SPACE FOR RECORDER'S OFFICE

Environmental Land Use Control

THIS ENVIRONMENTAL LAND USE CONTROL ("ELUC"), is made this _____ day of_____, 20__, by Ameren Services, ("Property Owner") of the real property located at the common address 308 North Fifth Street, Champaign, IL 61820 ("Property").

WHEREAS, 415 ILCS 5/58.17 and 35 Ill. Adm. Code 742 provide for the use of an ELUC as an institutional control in order to impose land use limitations or requirements related to environmental contamination so that persons conducting remediation can obtain a No Further Remediation determination from the Illinois Environmental Protection Agency ("IEPA"). The reason for an ELUC is to ensure protection of human health and the environment. The limitations and requirements contained herein are necessary in order to protect against exposure to contaminated soil, groundwater, or soil gas that may be present on the property as a result of previous manufactured gas plant activities. Under 35 Ill. Adm. Code 742, the use of risk-based, site-specific remediation objectives may require the use of an ELUC on real property, and the ELUC may apply to certain physical features (e.g., engineered barriers, indoor inhalation building control technologies, monitoring wells, caps, etc.).

WHEREAS, Ameren Services intends to request risk-based, site specific soil, groundwater, or soil gas remediation objectives from IEPAunder 35 Ill. Adm. Code 742 to obtain risk-based closure of the site, identified by Bureau of Land 0190100008, utilizing an ELUC.

NOW, THEREFORE, the recitals set forth above are incorporated by reference as if fully set forth herein, and the Property Owner agrees as follows:

Section One. Property Owner does hereby establish an ELUC on the real estate, situated in the County of Champaign, State of Illinois and further described in Exhibit A attached hereto and incorporated herein by reference (the "Property").

Attached as Exhibit B are site maps that show the legal boundary of the Property, any physical features to which the ELUC applies, the horizontal and vertical extent of the contaminants of concern above the applicable remediation objectives for soil, groundwater, or soil gas, and the nature, location of the source, and direction of movement of the contaminants of concern, as required under 35 Ill. Adm. Code 742.

Section Two. Property Owner represents and warrants it is the current owner of the Property and has the authority to record this ELUC on the chain of title for the Property with the Office of the Recorder or Registrar of Titles in Champaign County, Illinois.

Section Three. The Property Owner hereby agrees, for itself, and its heirs, grantees, successors, assigns, transferees and any other owner, occupant, lessee, possessoror user of the Property or the holder of any portion thereof or interest therein, that

Parcel 46-21-07-332-018 in its entirety:

1. Land use is restricted to industrial/commercial land use;
2. Construction worker notification is required for any surface or subsurface excavation or work. Construction workers must be notified of conditions at the Property exceeding worker protection ROs, and any future constructions activities shall be conducted in accordance with applicable OSHA HAZWOPER regulations pursuant to 29 CFR 1910.120; and
3. The groundwater under the Property shall not be used as a potable supply of water, installation of groundwater supply wells is prohibited, and any contaminated groundwater that is removed or disturbed from the Property described in Exhibit A must be handled in accordance with all applicable laws and regulations;

Parcel 46-21-07-332-018 in its entirety excluding a 20' x 130' portion of land in the southeast corner of the parcel, as presented in Exhibits B2 and B3;

4. The clean fill barrier, which is comprised of a minimum of three (3) feet of clean soil covering the area shown on the map provided as Exhibit B2 and Exhibit B3, must remain over the contaminated soil. This clean fill barrier must be properly maintain as an engineered barrier to inhibit ingestion exposure to the contaminated media; and

Lot 7 and Lot 8 on Parcel 46-21-07-332-018:

5. Construction of buildings on the Property is prohibited unless design/construction of the buildings incorporates TACO building control technologies to address potential vapor intrusion.

Section Four. This ELUC is binding on the Property Owner, its heirs, grantees, successors, assigns, transferees and any other owner, occupant, lessee, possessor or user of the Property or the holder of any portion thereof or interest therein. This ELUC shall apply in perpetuity against the Property and shall not be released until the IEPA determines there is no longer a need for this ELUC as an institutional control; until the IEPA, upon written request, issues to the site that received the no further remediation determination a new no further remediation determination approving modification or removal of the limitation(s) or

requirement(s); the new no further remediation determination is filed on the chain of title of the site subject to the no further remediation determination; and until a release or modification of the land use limitation or requirement is filed on the chain of title for the Property.

Section Five. Information regarding the remediation performed on the Property may be obtained from the IEPA through a request under the Freedom of Information Act (5 ILCS 140) and rules promulgated thereunder by providing the IEPA with the 0190100008 identification number listed above.

Section Six. The effective date of this ELUC shall be the date that it is officially recorded in the chain of title for the Property to which the ELUC applies.

WITNESS the following signatures:

Property Owner(s)

By:_____

Its: _____

Date: _____

STATE OF ILLINOIS)
) SS:
COUNTY OF)

I,_____the undersigned, a Notary Public for said County and State, DO HEREBY CERTIFY, that_____and_____, personally known to me to be the Property Owner(s) of_____, and personally known to me to be the same persons whose names are subscribed to the foregoing instrument, appeared before me this day in person and severally acknowledged that in said capacities they signed and delivered the said instrument as their free and voluntary act for the uses and purposes therein set forth.

Given under my hand and official seal, this_____day of_____, 20_.

Notary Public

STATE OF _____)
) S.S.
COUNTY OF _____)

I,_____, a notary public, do hereby certify that before me this day in person appeared _____, personally known to me to be the Property Owner(s), of _____, each severally acknowledged that they signed and delivered the foregoing instrument as the Property Owner(s) herein set forth, and as their own free and voluntary act, for the uses and purposes herein set forth.

Given under my hand and seal this_____day of_____, 20_.

Notary Public

PIN NO. 46-21-07-332-018
(Parcel Index Number)

Exhibit A

The subject property is located in the City of Champaign, Champaign County, State of Illinois, commonly known as 308 North Fifth Street, Champaign, Illinois and moreparticularly described as:

COMMON ADDRESS:

308 North Fifth Street, Champaign, IL 61820

LEGAL DESCRIPTION:

Part of the SW ¼, of Sec. 7 T.19N. R.9E. of the 3rd. PM., City of Champaign, Champaign County, Illinois, more particularly described as follows:

Lots 7, 8, 9, 10, 11, and 12 in block 29 (except railroad right-of-way) of Seminary Addition to Urbana, now a part of the City of Champaign lying south of the railroad right-of-way;

And lots 1, 2, and 3 in block 31 of Seminary Addition to Urbana, now a part of the City of Champaign;

And a strip of land 66 feet in width known as vacated Hill Street lying between blocks 29 and 31;

And lots 1, 2, and 3 of Assessor's Plat of subdivision of lot 8 in M.W. Busey's subdivision of south part of lot 1 of the south west quarter of Section 1, Township 19 North, Range 9 East of the third principal meridian, and lots 4, 5 and 6 in block 31 of Seminary Addition to Urbana, now a part of the City of Champaign, as per plat recorded in deed record 35 page 66;

All situated in the City of Champaign, County of Champaign and the State of Illinois.

REAL ESTATE TAX INDEX OR PARCEL #
(PURSUANT TO SECTION 742. 1010(d)(2)):

Parcel # 46-21-07-332-018

PIN NO. 46-21-07-332-018

Exhibit B

IN ACCORDANCE WITH SECTION 742.1010(d)(8)(A) through (D), PROVIDE ALL THE FOLLOWING ELEMENTS. ATTACH SEPARATE SHEETS, LABELED AS EXHIBIT B, WHERE NECESSARY.

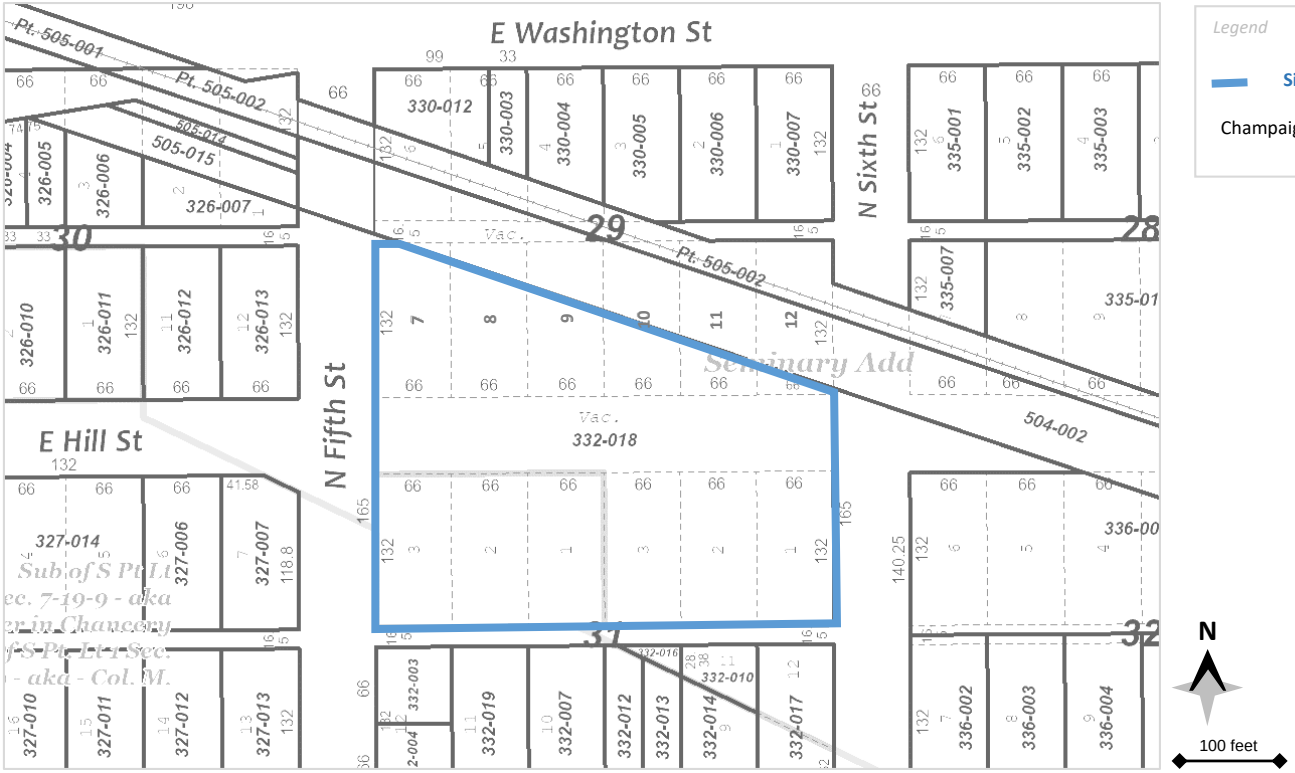
(A) A scaled map showing the legal boundary of the property to which the ELUC applies.

(B) Scaled maps showing the horizontal and vertical extent of contaminants of concern above the applicable remediation objectives for soil, groundwater, and soil gas to which the ELUC applies.

(C) Scaled maps showing the physical features to which an ELUC applies (e.g., engineered barriers, indoor inhalation building control technologies, monitoring wells, caps, etc.).

(D) Scaled maps showing the nature, location of the source, and direction of movement of the contaminants of concern.

(Source: Amended at 37 Ill. Reg. 7506, effective July 15



Source: Champaign County GIS https://www.maps.ccgisc.org/public/Default.aspx#

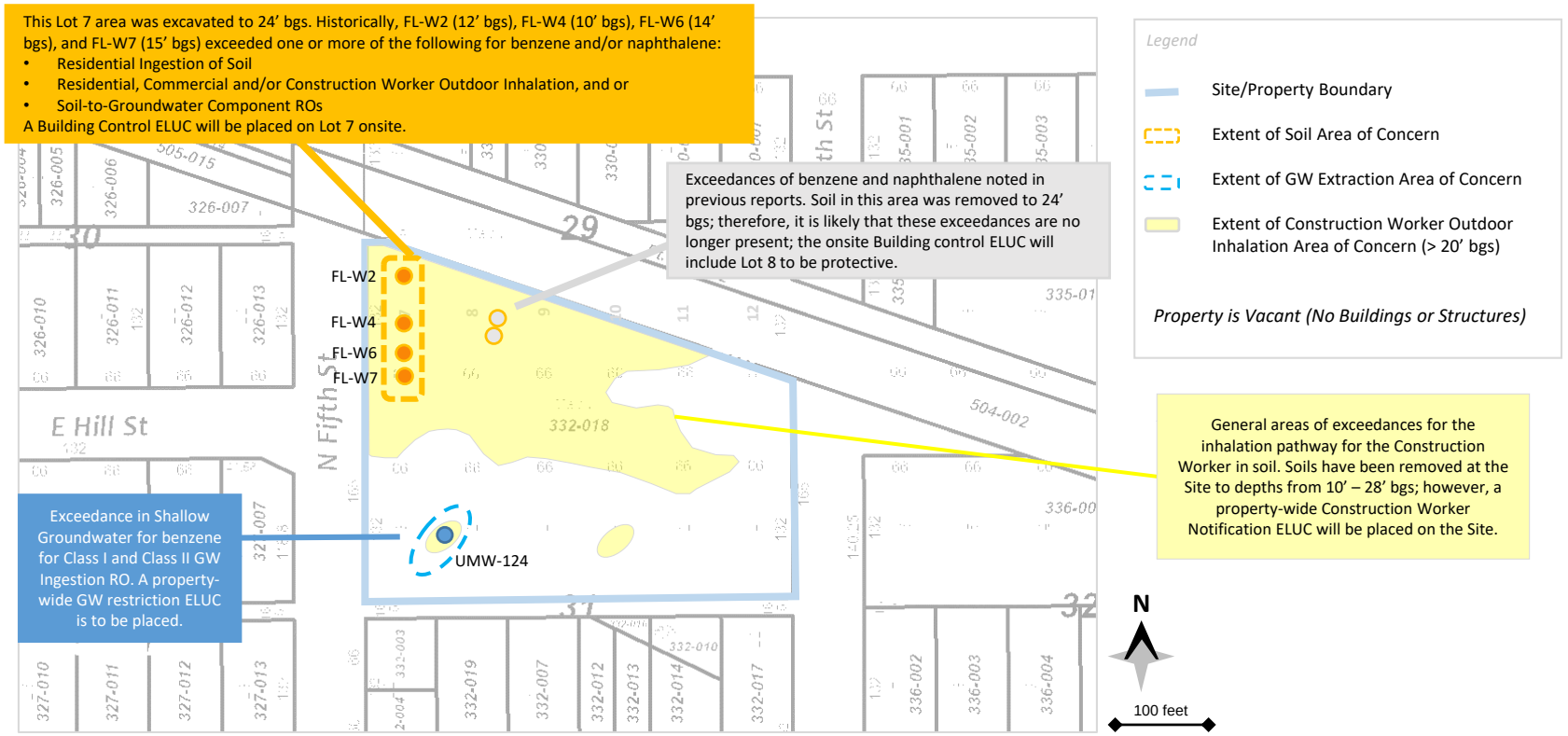
ERM Inc.
2 CityPlace
Suite 70
St. Louis, MO 63141
Ph: +1 913 981 9416

Property for Environmental Land Use Control

308 North Fifth Street, Champaign, IL

Exhibit:

B-A



Source: Champaign County GIS https://www.maps.ccgisc.org/public/Default.aspx#

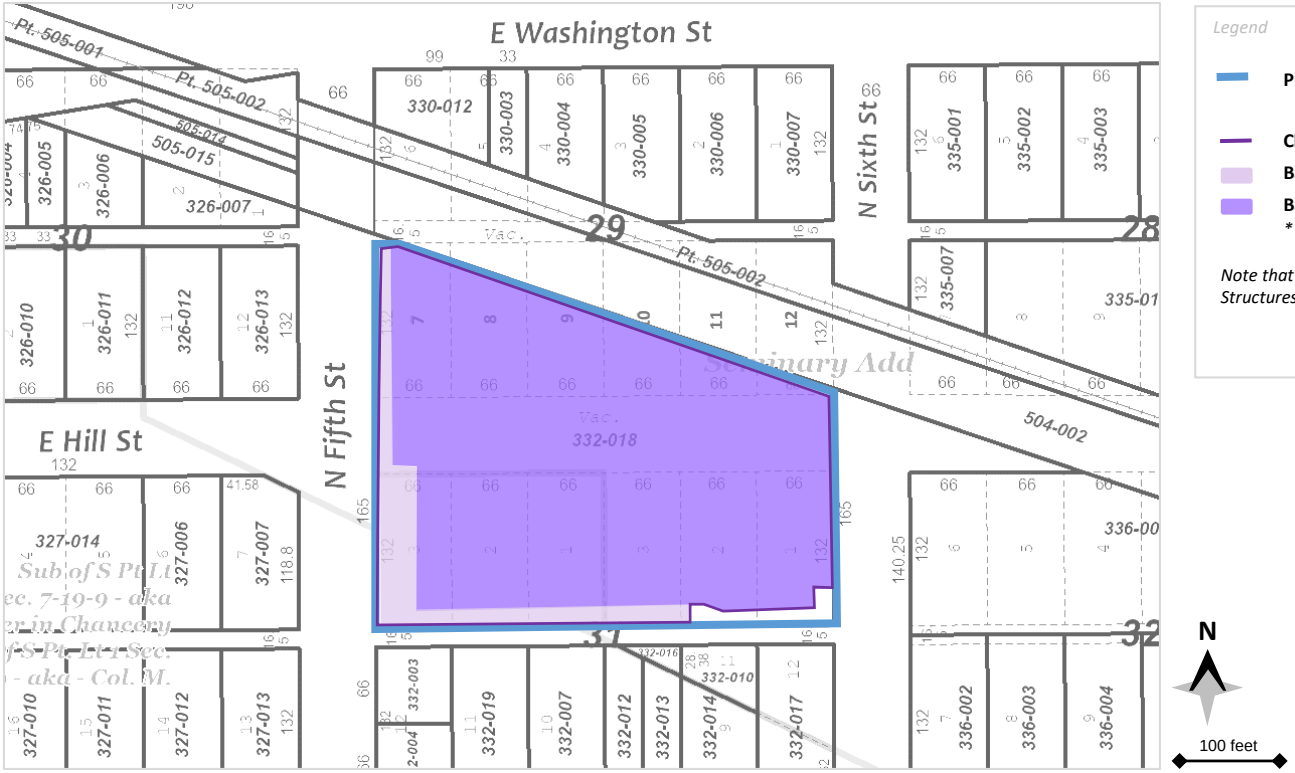
ERM Inc.
2 CityPlace
Suite 70
St. Louis, MO 63141
Ph: +1 913 981 9416

Contaminants of Concern – Locations and Media

308 North Fifth Street, Champaign, IL

Exhibit:

B-B



Source: Champaign County GIS https://www.maps.ccgisc.org/public/Default.aspx#

ERM Inc.
2 CityPlace
Suite 70
St. Louis, MO 63141
Ph: +1 913 981 9416

"Clean Soil" Engineered Barrier on Property

308 North Fifth Street, Champaign, IL

Exhibit:

B-C



Legend

- **Property Boundary**
  - Extent of GW Use Restriction ELUC
  - Extent of Ind/Comm Use Only ELUC
  - Extent of Construction Worker Notification ELUC

  (All Lot Portions on Owned Property)
- **Owned Portion of Lots 7 and 8**
  - Extent of Building Control ELUC
- **Lots with Clean Soil Barrier**
  - Extent of Engineered Barrier

Note that Property is Vacant (No Buildings or Structures)

Source: Champaign County GIS https://www.maps.ccgisc.org/public/Default.aspx#

ERM Inc.
2 CityPlace
Suite 70
St. Louis, MO 63141
Ph: +1 913 981 9416

Extents of ELUCs on Property

308 North Fifth Street, Champaign, IL

Exhibit:

B-D

Appendix J Highway Authority Agreement for Sixth Street ROW

Illinois Environmental Protection Agency

Bureau of Land • 1021 N. Grand Avenue E. • P.O. Box 19276 • Springfield • Illinois • 62794-9276

HIGHWAY AUTHORITY AGREEMENT

This Agreement is entered into this ____ day of _____ , 20___ pursuant to 35 Ill. Adm. Code 742.1020 by and between the (1) Ameren Services ("Property Owner") [*or, in the case of a petroleum leaking underground storage tank (UST), the owner/operator of the tank ("Owner/Operator")*] and (2) City of Champaign [*Name of Entity in Control of the Right-of-Way*] ("Highway Authority"), collectively known as the "Parties."

[*Use this paragraph for sites with petroleum leaking underground storage tank(s)*]
WHEREAS, _____ is the owner or operator of one or more leaking underground storage tanks presently or formerly located at _____ ("the Site");

[*Use this paragraph for sites that do not have petroleum leaking USTs*]
WHEREAS, Ameren Services is the owner of the property located at 308 North Fifth Street ("the Site");

WHEREAS, as a result of one or more releases of contaminants at the above referenced Site ("the Release(s)"), soil and/or groundwater contamination at the Site exceeds the Tier 1 residential remediation objectives of 35 Ill. Adm. Code 742;

WHEREAS, the soil and/or groundwater contamination exceeding Tier 1 residential remediation objectives extends or may extend into the Highway Authority's right-of-way;

WHEREAS, the Owner/Operator or Property Owner is conducting corrective action in response to the Release(s);

WHEREAS, the Parties desire to prevent groundwater beneath the Highway Authority's right-of-way that exceeds Tier 1 remediation objectives from use as a supply of potable or domestic water and to limit access to soil within the right-of-way that exceeds Tier 1 residential remediation objectives so that human health and the environment are protected during and after any access;

NOW, THEREFORE, the Parties agree as follows:

1. The recitals set forth above are incorporated by reference as if fully set forth herein.

2. [*Use this paragraph if IEMA has issued an incident number*] The Illinois Emergency Management Agency has assigned incident number(s) _____ to the Release(s).

3. Attached as Exhibit A is a scaled map(s) prepared by the Property Owner that shows the Site and surrounding area and delineates the current and estimated future extent of soil and groundwater contamination above the applicable Tier 1 residential remediation objectives as a result of the Release(s). [*Use the following sentence if either soil or groundwater is not contaminated above applicable Tier 1 residential remediation objectives*: _____ is not contaminated above the applicable Tier 1 residential remediation objectives.]

4. Attached as Exhibit B is a table(s) prepared by the Property Owner that lists each contaminant of concern that exceeds its Tier 1 residential remediation objective, its Tier 1 residential remediation objective and its concentrations within the zone where Tier 1 residential remediation objectives are exceeded. The locations of the concentrations listed in Exhibit B are identified on the map(s) in Exhibit A.

5. Attached as Exhibit C is a scaled map prepared by the __Property Owner__ showing the area of the Highway Authority's right-of-way that is governed by this agreement ("Right-of-Way"). Because Exhibit C is not a surveyed plat, the Right-of-Way boundary may be an approximation of the actual Right-of-Way lines.

6. [*Use this paragraph if samples have not been collected within the Right-of-Way, sampling within the Right-of-Way is not practical, and contamination does not extend beyond the Right-of-Way.*] Because the collection of samples within the Right-of-Way is not practical, the Parties stipulate that, based on modeling, soil and groundwater contamination exceeding Tier 1 residential remediation objectives does not and will not extend beyond the boundaries of the Right-of- Way.

7. The Highway Authority stipulates it has jurisdiction over the Right-of-Way that gives it sole control over the use of the groundwater and access to the soil located within or beneath the Right-of-Way.

8. The Highway Authority agrees to prohibit within the Right-of-Way all potable and domestic uses of groundwater exceeding Tier 1 residential remediation objectives.

9. The Highway Authority further agrees to limit access by itself and others to soil within the Right-of-Way exceeding Tier 1 residential remediation objectives. Access shall be allowed only if human health (including worker safety) and the environment are protected during and after any access. The Highway Authority may construct, reconstruct, improve, repair, maintain and operate a highway upon the Right-of-Way, or allow others to do the same by permit. In addition, the Highway Authority and others using or working in the Right-of-Way under permit have the right to remove soil or groundwater from the Right-of-Way and dispose of the same in accordance with applicable environmental laws and regulations. The Highway Authority agrees to issue all permits for work in the Right-of-Way, and make all existing permits for work in the Right-of-Way, subject to the following or a substantially similar condition:

As a condition of this permit the permittee shall request the office issuing this permit to identify sites in the Right-of-Way where a Highway Authority Agreement governs access to soil that exceeds the Tier 1 residential remediation objectives of 35 Ill. Adm. Code 742. The permittee shall take all measures necessary to protect human health (including worker safety) and the environment during and after any access to such soil.

10. This agreement shall be referenced in the Agency's no further remediation determination issued for the Release(s).

11. The Agency shall be notified of any transfer of jurisdiction over the Right-of-Way at least 30 days prior to the date the transfer takes effect. This agreement shall be null and void upon the transfer unless the transferee agrees to be bound by this agreement as if the transferee were an original party to this agreement. The transferee's agreement to be bound by the terms of this agreement shall be memorialized at the time of transfer in a writing ("Rider") that references this Highway Authority Agreement and is signed by the Highway Authority, or subsequent transferor, and the transferee.

12. This agreement shall become effective on the date the Agency issues a no further remediation determination for the Release(s). It shall remain effective until the Right-of-Way is demonstrated to be suitable for unrestricted use and the Agency issues a new no further remediation determination to reflect there is no longer a need for this agreement, or until the agreement is otherwise terminated or voided.

13. In addition to any other remedies that may be available, the Agency may bring suit to enforce the terms of this agreement or may, in its sole discretion, declare this agreement null and void if any of the Parties or any transferee violates any term of this agreement. The Parties or transferee shall be notified in writing of any such declaration.

14. This agreement shall be null and void if a court of competent jurisdiction strikes down any part or provision of the agreement.

15. This agreement supersedes any prior written or oral agreements or understandings between the Parties on the subject matter addressed herein. It may be altered, modified or amended only upon the written consent and agreement of the Parties.

16. Any notices or other correspondence regarding this agreement shall be sent to the Parties at following addresses:

Manager, Division of Remediation Management
Bureau of Land
Illinois Environmental Protection Agency
P.O. Box 19276
Springfield, IL 62974-9276

_____
(Contact at Highway Authority)

Address _____

City _____

State _____

Zip Code _____

Property Owner or Owner/Operator

Name Ameren Services

Address _____

City _____

State _____

Zip Code _____

IN WITNESS WHEREOF, the Parties have caused this agreement to be signed by their duly authorized representatives.

[NAME OF LOCAL GOVERNMENT]

Date: _____ By: _____

Its: _____

Property Owner or Owner/Operator

Date: _____ By: _____

Title



Exhibit A1. Soil Impacts

Highway Authority Agreement – LPC #01090100008 Champaign Illinois

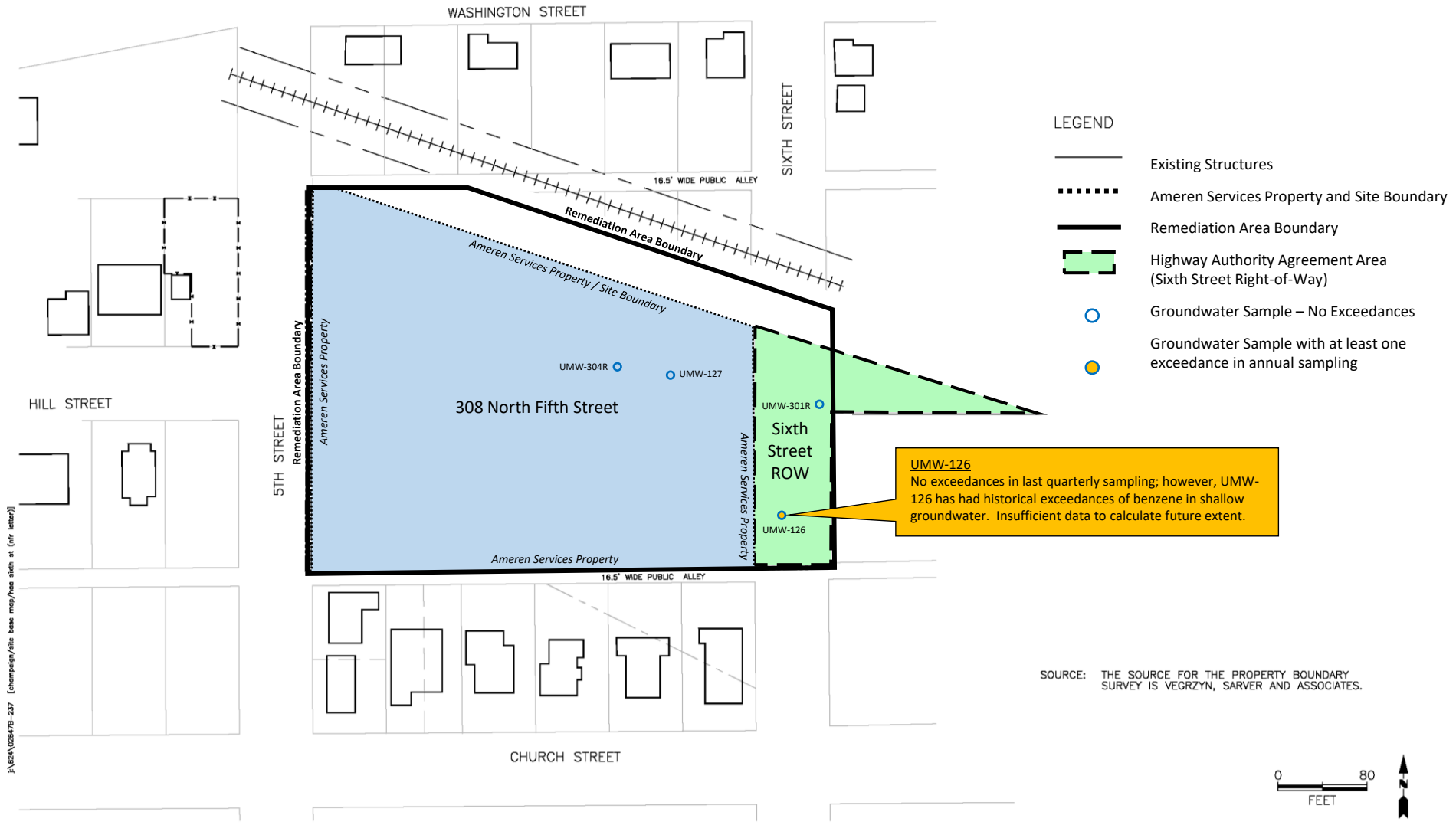


Exhibit A2. Groundwater Impacts

Highway Authority Agreement – LPC #01090100008 Champaign Illinois

HAA Exhibit B1. Soil Concentration Tables

Table 1. Soil Sample Analytical Results – BTEX and PNAs
Former Champaign MGP Site

Constituent	Soil Ingestion Residential	Soil Ingestion Commercial	Soil Ingestion Construction	Soil Inhalation Residential	Soil Inhalation Commercial	Soil Inhalation Construction	Soil Component to Groundwater[3]	IEPA Accepted Background Levels for MSA	Sample Location: / Sample ID: / Sample Date: / ample Depth (feet):	PA5-3 PA5-3 (3) 8/10/2011 3	PA5-08 PA5-08 (3) 8/23/2011 3	PA5-09 PA5-09 (3) 8/22/2011 3	PA5-10 PA5-10 (3) 8/22/2011 3	PA5-11 PA5-11 (3) 8/19/2011 3	PA5-12 PA5-12 (3) 8/19/2011 3	PA5-13 PA5-13 (3) 8/18/2011 3	PA5-14 PA5-14 (3) 8/18/2011 3	PA6-2 PA6-2 (3) 8/9/2011 3	PA6-3 PA6-3 (3) 8/9/2011 3
										Results for other properties not shown.									
BTEX Constituents (mg/kg)																			
Benzene	12	100	2,300	0.8	1.6	2.2	0.03	---										---	---
Ethylbenzene	7,800	200,000	20,000	400	400	58	13	---										---	---
Toluene	16,000	410,000	410,000	650	650	42	12	---										---	---
m,p-Xylenes	16,000	410,000	41,000	420[1]	420[1]	5.9[2]	200[2]	---										---	---
o-Xylene	16,000	410,000	41,000	410	410	6.5	190	---										---	---
Xylenes	16,000	410,000	41,000	320	320	5.6	150	---										---	---
PNA Constituents (mg/kg)																			
Acenaphthene	4,700	120,000	120,000	---	---	---	570	0.13										<0.114	1.07
Acenaphthylene	2,300[4]	61,000[4]	61,000[4]	---	---	---	85[4]	0.07										4.57	20.9
Anthracene	23,000	610,000	610,000	---	---	---	12,000	0.4										0.447	8.43
Benzo(a)anthracene	0.90	8	170	---	---	---	2	1.8										0.916	20.9
Benzo(a)pyrene	0.09	0.80	17	---	---	---	8	2.1										5.67	49.9
Benzo(b)fluoranthene	0.90	8	170	---	---	---	5	2.1										4.17	49.2
Benzo(g,h,i)perylene	2,300[4]	61,000[4]	61,000[4]	---	---	---	27,000[4]	1.7										4.75	28.3
Benzo(k)fluoranthene	9	78	1,700	---	---	---	49	1.7										1.13	14.4
Bis(2-ethylhexyl)phthalate	46	410	4,100	31,000	31,000	31,000	3,600	---										<2.25	<9.74
Chrysene	88	780	17,000	---	---	---	160	2.7										1.69	26.8
Dibenzo(a,h)anthracene	0.09	0.80	17	---	---	---	2	0.42										0.805	5.62
Fluoranthene	3,100	82,000	82,000	---	---	---	4,300	4.1										1.08	42.7
Fluorene	3,100	82,000	82,000	---	---	---	560	0.18										0.425	4.6
Indeno(1,2,3-cd)pyrene	0.90	8.00	170	---	---	---	14	1.6										3.32	24.4
Naphthalene	1,600	41,000	4,100	170	270	1.8	12	0.2										<0.114	2.42
Phenanthrene	2,300[4]	61,000[4]	61,000[4]	---	---	---	200[4]	2.5										<0.114	30.5
Pyrene	2,300	61,000	61,000	---	---	---	4,200	3										3.16	49.1

Notes:

[1] Objective is for m-xylene

[2] Objective is for p-xylene

[3] Objectives are for Class I groundwater.

[4] Non-TACO or provisional ROs provided by the IEPA.

[5] Soil sample PA4-01 (3) is a soil sample location along the western remediation site boundary near 5th Street.

[6] Soil sample PA4-01 (3) is a soil sample location along the northern remediation site boundary near the railroad tracks.

'--- No objective has been published for this constituent by the IEPA, or the sample was not analyzed for this constituent.

Concentration exceeds one or more project remediation objective.

Table 2b. Sixth Street Soil Sample Analytical Results – Excavation Walls – BTEX and PNAs

Former Champaign MGP Site

Constituent	Soil Ingestion Residential	Soil Ingestion Commercial	Soil Ingestion Construction	Soil Inhalation Residential	Soil Inhalation Commercial	Soil Inhalation Construction	Soil Component to Groundwater[3]	IEPA Accepted Background Levels for MSA	Sample Location:	Sample ID:	Sample Date:	Sample Depth (feet):	P5-C5-W	P5-C5-W	P5-C5-W	P6-A4.5-W	P6-A4.5-W	P6-A5.5-W	P6-A5.5-W	P6-B5.5-W	P6-BC5.5-W	P6-CD5.5-W	P6-D5.5-W	P6-D5.5-W	P6-DE5.5-W
										P5-A5-W (8)	P5-A5-W(20)		P5-C5-W (3)	P5-C5-W (8)	P5-C5-W (20)	P6-A4.5-W (3)	P6-A4.5-W (8)	P6-A5.5-W (8)	P6-A5.5-W (21)	P6-B5.5-W (20)	P6-BC5.5-W (20)	P6-CD5.5-W (8)	P6-D5.5-W (8)	P6-D5.5-W (20)	P6-DE5.5-W (20)
										7/13/2010	7/15/2010		7/13/2010	7/13/2010	7/13/2010	10/12/2010	10/12/2010	10/12/2010	10/14/2010	10/14/2010	10/15/2010	10/19/2010	10/19/2010	10/20/2010	10/21/2010
										8	20		3	8	20	3	8	8	21	20	20	8	8	20	20
BTEX Constituents (mg/kg)													*Results for other properties not shown.*												
Benzene	12	100	2,300	0.8	1.6	2.2	0.03	—					0.0028	<0.0657	33.8	0.0566	<0.123	0.0275	3.04	6.24	<0.0182	<0.691	<0.82	<0.98	0.0705
Ethylbenzene	7,800	200,000	20,000	400	400	58	13	—					0.0016	0.655	1.8	0.561	1.5	0.499	3.95	3.5	<0.0912	1.2	3	<4.9	0.061
Toluene	16,000	410,000	410,000	650	650	42	12	—					0.0014	<0.329	59.9	0.044	<0.616	0.032	15.8	18.4	0.037	<3.45	<4.1	<4.9	0.082
m,p-Xylenes	16,000	410,000	41,000	420[1]	420[1]	5.9[2]	200[2]	—					0.0013	<0.329	9.9	0.052	0.16	0.246	9.55	9.51	0.02	1.5	<4.1	<4.9	0.129
o-Xylene	16,000	410,000	41,000	410	410	6.5	190	—					<0.0051	0.15	4.57	0.216	1.54	0.777	4.44	4.48	<0.0912	2.6	1.7	<4.9	0.056
Xylenes	16,000	410,000	41,000	320	320	5.6	150	—					0.0013	0.15	14.47	0.268	1.7	1.023	13.99	13.99	0.02	4.1	1.7	<4.9	0.185
PNA Constituents (mg/kg)																									
Acenaphthene	4,700	120,000	120,000	—	—	—	570	0.13					<0.447	4.65	0.158	17.6	3.25	0.375	7.59	0.539	0.47	1.41	0.25	7.14	0.015
Acenaphthylene	2,300[4]	61,000[4]	61,000[4]	—	—	—	85[4]	0.07					0.833	0.753	0.202	1.64	2.77	0.358	16.2	2.63	1.32	0.209	0.048	1.06	0.009
Anthracene	23,000	610,000	610,000	—	—	—	12,000	0.4					<0.447	4.23	0.183	8.84	5.49	0.297	12.7	1.81	0.78	0.708	0.051	4.09	0.006
Benzo(a)anthracene	0.90	8	170	—	—	—	2	1.8					2.46	2.39	0.149	4.11	3.73	0.144	7.36	1.04	0.56	0.435	0.032	3.52	0.008
Benzo(a)pyrene	0.09	0.80	17	—	—	—	8	2.1					2.68	2.24	0.135	3.81	3.91	0.161	6.88	0.938	0.554	2.88	0.036	3.51	0.008
Benzo(b)fluoranthene	0.90	8	170	—	—	—	5	2.1					2.66	1.55	0.112	2.96	2.75	0.124	5.09	0.729	0.457	1.98	0.041	2.96	0.008
Benzo(g,h,i)perylene	2,300[4]	61,000[4]	61,000[4]	—	—	—	27,000[4]	1.7					1.9	1.03	0.076	1.67	1.82	0.081	3.11	0.435	0.249	1.37	0.013	1.87	0.008
Benzo(k)fluoranthene	9	78	1,700	—	—	—	49	1.7					0.934	0.566	0.037	0.868	0.833	0.039	1.46	0.206	0.134	0.639	0.014	0.921	<0.004
Bis(2-ethylhexyl)phthalate	46	410	4,100	31,000	31,000	31,000	3,600	—					<8.81	<3.83	<0.76	<2.17	<1.88	<0.08	<11.5	<1.85	<0.375	<0.078	<0.077	<8.23	<0.075
Chrysene	88	780	17,000	—	—	—	160	2.7					2.46	2.28	0.144	4.11	3.74	0.149	6.99	0.965	0.535	0.44	0.035	3.51	0.007
Dibenzo(a,h)anthracene	0.09	0.80	17	—	—	—	2	0.42					0.456	0.24	<0.039	0.419	0.426	0.02	0.774	0.107	0.057	0.29	<0.004	0.41	<0.004
Fluoranthene	3,100	82,000	82,000	—	—	—	4,300	4.1					3.21	5.81	0.321	9.92	7.05	0.332	15.5	2.27	1.28	0.891	0.063	5.14	0.012
Fluorene	3,100	82,000	82,000	—	—	—	560	0.18					<0.447	4.02	0.178	9.2	6.67	0.348	13.9	2.02	0.819	0.814	0.085	4.0	0.007
Indeno(1,2,3-cd)pyrene	0.90	8.00	170	—	—	—	14	1.6					1.51	0.758	0.057	1.28	1.32	0.062	2.39	0.33	0.175	0.907	0.009	1.39	0.004
Naphthalene	1,600	41,000	4,100	170	270	1.8	12	0.2					<0.447	8.16	4.15	4.57	31.7	3.78	112	15.2	5.36	33	27.8	7.83	0.151
Phenanthrene	2,300[4]	61,000[4]	61,000[4]	—	—	—	200[4]	2.5					0.658	14	0.671	29.5	17.9	1.02	42.8	6.01	3.1	17.6	0.196	14.5	0.022
Pyrene	2,300	61,000	61,000	—	—	—	4,200	3					3.47	6.99	0.376	13.6	11	0.489	24	3.37	1.75	1.2	0.088	9.28	0.017

Notes:

[1] Objective is for m-xylene

[2] Objective is for p-xylene

[3] Objectives are for Class I groundwater.

[4] Non-TACO or provisional ROs provided by the IEPA.

"—" No objective has been published for this constituent by the IEPA, or the sample was not analyzed for this constituent.

Concentration exceeds one or more project remediation objective.

Table 2c. Sixth Street Soil Sample Analytical Results – Excavation Walls – BTEX and PNAs
Former Champaign MGP Site

Constituent	Soil Ingestion Residential	Soil Ingestion Commercial	Soil Ingestion Construction	Soil Inhalation Residential	Soil Inhalation Commercial	Soil Inhalation Construction	Soil Component to Groundwater[3]	IEPA Accepted Background Levels for MSA	Sample Location: Sample ID: Sample Date: ample Depth (feet):	P6-E5.5-W P6-E5.5-W (20) 10/21/2010 20
BTEX Constituents (mg/kg)										
Benzene	12	100	2,300	0.8	1.6	2.2	0.03	---		1.72
Ethylbenzene	7,800	200,000	20,000	400	400	58	13	---		<0.117
Toluene	16,000	410,000	410,000	650	650	42	12	---		0.313
m,p-Xylenes	16,000	410,000	41,000	420[1]	420[1]	5.9[2]	200[2]	---		0.034
o-Xylene	16,000	410,000	41,000	410	410	6.5	190	---		<0.117
Xylenes	16,000	410,000	41,000	320	320	5.6	150	---		0.034
PNA Constituents (mg/kg)										
Acenaphthene	4,700	120,000	120,000	---	---	---	570	0.13		0.003
Acenaphthylene	2,300[4]	61,000[4]	61,000[4]	---	---	---	85[4]	0.07		0.005
Anthracene	23,000	610,000	610,000	---	---	---	12,000	0.4		<0.004
Benzo(a)anthracene	0.90	8	170	---	---	---	2	1.8		0.003
Benzo(a)pyrene	0.09	0.80	17	---	---	---	8	2.1		<0.004
Benzo(b)fluoranthene	0.90	8	170	---	---	---	5	2.1		<0.004
Benzo(g,h,i)perylene	2,300[4]	61,000[4]	61,000[4]	---	---	---	27,000[4]	1.7		0.004
Benzo(k)fluoranthene	9	78	1,700	---	---	---	49	1.7		<0.004
Bis(2-ethylhexyl)phthalate	46	410	4,100	31,000	31,000	31,000	3,600	---		<0.073
Chrysene	88	780	17,000	---	---	---	160	2.7		0.004
Dibenzo(a,h)anthracene	0.09	0.80	17	---	---	---	2	0.42		<0.004
Fluoranthene	3,100	82,000	82,000	---	---	---	4,300	4.1		0.003
Fluorene	3,100	82,000	82,000	---	---	---	560	0.18		0.003
Indeno(1,2,3-cd)pyrene	0.90	8.00	170	---	---	---	14	1.6		<0.004
Naphthalene	1,600	41,000	4,100	170	270	1.8	12	0.2		0.162
Phenanthrene	2,300[4]	61,000[4]	61,000[4]	---	---	---	200[4]	2.5		0.015
Pyrene	2,300	61,000	61,000	---	---	---	4,200	3		0.007

Notes:

[1] Objective is for m-xylene

[2] Objective is for p-xylene

[3] Objectives are for Class I groundwater.

[4] Non-TACO or provisional ROs provided by the IEPA.

--- No objective has been published for this constituent by the IEPA, or the sample was not analyzed for this constituent.

Concentration exceeds one or more project remediation objective.

Table 3. Sixth Street Soil Sample Analytical Results – Excavation Floor – BTEX and PNAs
Former Champaign MGP Site

Constituent	Soil Ingestion Residential	Soil Ingestion Commercial	Soil Ingestion Construction	Soil Inhalation Residential	Soil Inhalation Commercial	Soil Inhalation Construction	Soil Component Groundwater	IEPA Accepted Background Levels for MSA	Sample Location: Sample ID: Sample Date: ample Depth (feet):	P5-B2-F P5-B2-F(26) 7/16/2010 26	P6-B4.5-F P6-B4.5-F (25) 10/15/2010 25
										Results for other properties not shown.	
BTEX Constituents (mg/kg)											
Benzene	12	100	2,300	0.8	1.6	2.2	0.03	---			0.38
Ethylbenzene	7,800	200,000	20,000	400	400	58	13	---			0.514
Toluene	16,000	410,000	410,000	650	650	42	12	---			2.12
m,p-Xylenes	16,000	410,000	41,000	420[1]	420[1]	5.9[2]	200[2]	---			2.45
o-Xylene	16,000	410,000	41,000	410	410	6.5	190	---			1.03
Xylenes	16,000	410,000	41,000	320	320	5.6	150	---			3.48
PNA Constituents (mg/kg)											
Acenaphthene	4,700	120,000	120,000	---	---	---	570	0.13			0.042
Acenaphthylene	2,300[4]	61,000[4]	61,000[4]	---	---	---	85[4]	0.07			0.034
Anthracene	23,000	610,000	610,000	---	---	---	12,000	0.4			0.048
Benzo(a)anthracene	0.90	8	170	---	---	---	2	1.8			0.031
Benzo(a)pyrene	0.09	0.80	17	---	---	---	8	2.1			0.026
Benzo(b)fluoranthene	0.90	8	170	---	---	---	5	2.1			0.021
Benzo(g,h,i)perylene	2,300[4]	61,000[4]	61,000[4]	---	---	---	27,000[4]	1.7			0.016
Benzo(k)fluoranthene	9	78	1,700	---	---	---	49	1.7			<0.007
Bis(2-ethylhexyl)phthalate	46	410	4,100	31,000	31,000	31,000	3,600	---			<0.145
Chrysene	88	780	17,000	---	---	---	160	2.7			0.026
Dibenzo(a,h)anthracene	0.09	0.80	17	---	---	---	2	0.42			<0.007
Fluoranthene	3,100	82,000	82,000	---	---	---	4,300	4.1			0.063
Fluorene	3,100	82,000	82,000	---	---	---	560	0.18			0.047
Indeno(1,2,3-cd)pyrene	0.90	8.00	170	---	---	---	14	1.6			0.009
Naphthalene	1,600	41,000	4,100	170	270	1.8	12	0.2			0.21
Phenanthrene	2,300[4]	61,000[4]	61,000[4]	---	---	---	200[4]	2.5			0.174
Pyrene	2,300	61,000	61,000	---	---	---	4,200	3			0.089

Notes:

[1] Objective is for m-xylene

[2] Objective is for p-xylene

[3] Objectives are for Class I groundwater.

[4] Non-TACO or provisional ROs provided by the IEPA.

'--- No objective has been published for this constituent by the IEPA, or the sample was not analyzed for this constituent.

Concentration exceeds one or more project remediation objective.

HAA Exhibit B2. Groundwater Concentration Tables

Table 3. Sixth Street Groundwater Analytical Results – October 2020

Former Champaign MGP Site

			Location Group	Shallow Wells (Class II Groundwater Ingestion)								Intermediate Wells (Class I Groundwater Ingestion)				
			Location ID	UMW-122	UMW-123	UMW-124	UMW-124	UMW-125	UMW-126	UMW-126	UMW-127	UMW-300	UMW-301R	UMW-302	UMW-302	UMW-303
			Sample Date	10/13/2020	10/13/2020	10/14/2020	10/14/2020	10/14/2020	10/14/2020	10/14/2020	10/14/2020	10/13/2020	10/14/2020	10/14/2020	10/14/2020	10/13/2020
			Sample Type	N	N	N	FD	N	N	FD	N	N	N	N	FD	N
Parameter/Analyte	CLASS I GROUNDWATER INGESTION	CLASS II GROUNDWATER INGESTION	GW INHALATION DIFFUSION & ADVECTION RES													
Field Parameters																
pH	NS	NS	NS	*Results for other properties not shown.*						7.46			7.21			
Temperature (C)	NS	NS	NS							17.1			14.5			
ORP (mV)	NS	NS	NS							-171.9			-102.8			
Dissolved Oxygen (mg/L)	NS	NS	NS							0.13			0.21			
Turbidity (NTU)	NS	NS	NS							1.18			5.18			
BTEX, mg/L																
Benzene	0.005	0.025	**0.11**							0.0197			< 0.0005			
Ethylbenzene	0.07	1	**0.37**							< 0.0020			< 0.0020			
Toluene	1	2.5	530							< 0.0020			< 0.0020			
Xylene, Total	10	10	30							< 0.0040			< 0.0040			
PAH, mg/L																
Acenaphthene	0.42	2.1	NS							< 0.000100			0.00300			
Acenaphthylene	0.21	1.05	NS							< 0.000100			0.00304			
Anthracene	2.1	10.5	NS							< 0.000300			< 0.000300			
Benzo(a)anthracene	0.00013	0.00065	NS							< 0.000100			< 0.000100			
Benzo(a)pyrene	0.0002	0.002	NS							< 0.000100			< 0.000100			
Benzo(b)fluoranthene	0.00018	0.0009	NS							< 0.000100			< 0.000100			
Benzo(g,h,i)perylene	0.21	1.05	NS							< 0.000200			< 0.000200			
Benzo(k)fluoranthene	0.00017	0.00085	NS							< 0.000100			< 0.000100			
Chrysene	0.0015	0.0075	NS							< 0.000100			< 0.000100			
Dibenzo(a,h)anthracene	0.0003	0.0015	NS							< 0.000100			< 0.000100			
Fluoranthene	0.28	1.4	NS							< 0.000300			< 0.000300			
Fluorene	0.28	1.4	NS							< 0.000200			< 0.000200			
Indeno(1,2,3-cd)pyrene	0.00043	0.00215	NS							< 0.000100			< 0.000100			
Naphthalene	0.14	0.22	**0.075**							< 0.000447			< 0.000400			
Phenanthrene	0.21	1.05	NS							< 0.000600			< 0.000600			
Pyrene	0.21	1.05	NS							< 0.000200			< 0.000200			
General Chemistry, mg/L																
Total Cyanide	0.2	0.6	NS							< 0.005			< 0.005			
Metals, mg/L																
Arsenic	0.05	0.2	NS							< 0.0250			< 0.0250			
Barium	2	2	NS							0.0350			0.0770			
Cadmium	0.005	0.05	NS							< 0.0020			< 0.0020			
Chromium	0.1	1	NS							< 0.0050			< 0.0050			
Lead	0.0075	0.1	NS							< 0.0075			< 0.0075			
Mercury	0.002	0.01	0.053							< 0.00020			< 0.00020			
Selenium	0.05	0.05	NS							< 0.0400			< 0.0400			
Silver	0.05	NS	NS							< 0.0070			< 0.0070			

Notes:
Blue highlight = Exceeds RO for Class I Groundwater Ingestion
Green highlight = Exceeds RO for Class II Groundwater Ingestion
Bold = Exceeds RO for Groundwater Inhalation - Diffusion and Advection for Residential
< = Compound not detected at concentrations above the laboratory reporting detection limit.
The laboratory reporting detection limit is shown.
N = Normal Environmental Sample
FD = Field Duplicate Sample
EB = Equipment Blank Sample
TB = Trip Blank Sample
NS = No Standard
mg/L = milligrams per liter
NA = Not analyzed

Qualifiers:
U = Nondetected
J = Detected Results are estimated
All analyses performed by TekLab.
CLASS I GROUNDWATER INGESTION = IEPA TACO Tier 1 CLASS I Groundwater Ingestion
CLASS II GROUNDWATER INGESTION = IEPA TACO Tier 1 CLASS II Groundwater Ingestion
GW INHALATION DIFFUSION & ADVECTION RES = IEPA TACO Tier 1 Groundwater Inhalation Diffusion & Advection at Residential Sites.
Non-TACO Class I and Class II Groundwater Objectives applied for Acenaphthylene, Benzo(g,h,i)perylene, and Phenanthrene. (Revision Date 3/31/2016)

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