# TEKLAB, INC.

### **ENVIRONMENTAL TESTING LABORATORY**

TEL: 618-344-1004 FAX: 618-344-1005

May 16, 2008

Derek Ingram
Philip Environmental
210 West Sand Bank Road
Columbia, IL 62236-0230
TEL: (618) 281-7173

TEL: (618) 281-7173 FAX: (618) 281-5120



NELAP Accredited #100226

**RE:** A831-735002-012901-225/IP Champaign 62403053 **WorkOrder:** 08050440

Dear Derek Ingram:

TEKLAB, INC received 1 sample on 4/16/2008 10:00:00 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. IL ELAP and NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column.

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,

ideather A. White

Heather A. White Project Manager (618)344-1004 ex.20



**ENVIRONMENTAL TESTING LABORATORY** 

TEL: 618-344-1004 FAX: 618-344-1005

Client: Philip Environmental SAMPLE SUMMARY

Project: A831-735002-012901-225/IP Champaign 62403053

Lab Order: 08050440 Report Date: 16-May-08

Lab Sample ID	Client Sample ID	Fractions	<b>Collection Date</b>	
08050440-001	B800 (2-3 ft)	1	4/14/2008 12:15:00 PM	

# TEKLAB, INC.

### **ENVIRONMENTAL TESTING LABORATORY**

TEL: 618-344-1004 FAX: 618-344-1005

Client: Philip Environmental **CASE NARRATIVE** 

Project: A831-735002-012901-225/IP Champaign 62403053

**LabOrder:** 08050440

Report Date: 16-May-08 **Cooler Receipt Temp:** °C

## **State accreditations:**

KS: NELAP #E-10347 | KY: UST #0073 | MO: DNR #00930 | AR: ADEQ #70-028-0

Additional analysis requested to WO #08040620. Analysis requested outside of holding time for total cyanide and amenable cyanide.

### Qualifiers

DF - Dilution Factor

RL - Reporting Limit

ND - Not Detected at the Reporting Limit

Surr - Surrogate Standard added by lab

**TNTC** - Too numerous to count ( > 200 CFU )

Q - QC criteria failed or noncompliant CCV

B - Analyte detected in the associated Method Blank

J - Analyte detected below reporting limits

R - RPD outside accepted recovery limits

S - Spike Recovery outside accepted recovery limits

X - Value exceeds Maximum Contaminant Level

# - Unknown hydrocarbon

NELAP - IL ELAP and NELAP Accredited Field of Testing IDPH - IL Dept. of Public Health C - Client requested RL below

D - Diluted out of sample

E - Value above quantitation range

H - Holding time exceeded

MI - Matrix interference

DNI - Did not ignite



# **ENVIRONMENTAL TESTING LABORATORY**

TEL: 618-344-1004 FAX: 618-344-1005

# LABORATORY RESULTS

Client: Philip Environmental Client Project: A831-735002-012901-225/IP Champ

WorkOrder: 08050440 Client Sample ID: B800 (2-3 ft)

Report Date: 16-May-08 Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed Ana	alyst
SW-846 3050B, 6010B, METALS BY	Y ICP							
Arsenic	NELAP	2.50		6.22	mg/Kg-dry	1	5/14/2008 5:17:14 PM	LAL
Chromium	NELAP	1.00		16.5	mg/Kg-dry	1	5/14/2008 5:17:14 PM	LAL
Lead	NELAP	4.00		74.4	mg/Kg-dry	1	5/15/2008 2:49:37 PM	CRK
SW-846 9010B, 9014								
Cyanide	NELAP	0.61	JH	0.39	mg/Kg-dry	1	5/14/2008	AET
SW-846 9014A								
Cyanide, Amenable to Chlorination		0.61	Н	Interference	mg/Kg-dry	1	5/14/2008	AET

**Sample Narrative** 

# TEKLAB, INC.

# **ENVIRONMENTAL TESTING LABORATORY**

TEL: 618-344-1004 FAX: 618-344-1005

Client: Philip Environmental DATES REPORT

Project: A831-735002-012901-225/IP Champaign 62403053

Lab Order: 08050440 Report Date: 16-May-08

Sample ID	Client Sample ID	<b>Collection Date</b>	Matrix	Test Name	Prep Date	Analysis Date
08050440-001A	B800 (2-3 ft)	4/14/2008	Solid	SW-846 3050B, 6010B, Metals by ICP	5/13/2008	5/13/2008
				SW-846 3050B, 6010B, Metals by ICP	5/13/2008	5/14/2008
				SW-846 3050B, 6010B, Metals by ICP	5/15/2008	5/15/2008
				SW-846 9010B, 9014	5/12/2008	5/14/2008
				SW-846 9014A	5/13/2008	5/14/2008

# ANALYTICAL QC SUMMARY REPORT

# **Key QC concepts:**

- 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.
- **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. (NELAC)
- ICV Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
- 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. (NELAC) The acceptable recovery range is listed in this report.
- 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 this report.
- 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 this report.
- MDL Method detection limit or limit of detection (LOD) means the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.
- MB/LCB Method blank or lab control 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 are present at concentrations that impact the analytical results for sample analyses. (NELAC)
  - PQL Practical quantitation limit or limit of quantitation (LOQ) 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 this report.
  - 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 this report.
  - 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. (NELAC)
  - Surr Surrogates are an organic compound which is similar to the analytes of interest in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples.

Qualifiers
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DF -	Dilution	Factor
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**RL** - Reporting Limit

**ND** - Not Detected at the Reporting Limit

Surr - Surrogate Standard added by lab

**TNTC** - Too numerous to count ( > 200 CFU )

**B** - Analyte detected in the associated Method Blank

**J** - Analyte detected below reporting limits

**R** - RPD outside accepted recovery limits

**S** - Spike Recovery outside accepted recovery limits

X - Value exceeds Maximum Contaminant Level

C - Client requested RL below PQL

**D** - Diluted out of sample

**IDPH** - IL Dept. of Public Health

O - QC criteria failed

# - Unknown hydrocarbon

MI - Matrix interference

**DNI** - Did not ignite

E - Value above quantitation range

H - Holding time exceeded

**NELAP** - IL ELAP and NELAP Accredited

**Project:** A831-735002-012901-225/IP Champaign 62403053

**Lab Order:** 08050440 **Report Date:** 16-May-08

ANALYTICAL QC SUMMARY REPORT

TestCode: I\_TCN\_S\_MT

Sample ID: MB-R108067	SampType: MBLK			Units: mg/Kg		Prep Da	te: <b>5/12/20</b>	08	RunNo: <b>108</b>	8067	
Client ID: ZZZZZZ	Batch ID: 44826			SW9010		Analysis Da	te: <b>5/13/20</b>	08	SeqNo: <b>194</b>	5262	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide	< 0.01	0.01									
Sample ID: LCS-R108067	SampType: LCS			Units: mg/Kg		Prep Da	te: <b>5/12/20</b>	08	RunNo: <b>108</b>	8067	
Client ID: ZZZZZZ	Batch ID: 44826			SW9010		Analysis Da	te: <b>5/13/20</b>	80	SeqNo: <b>194</b>	5263	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide	0.19	0.01	0.2000	0	94.1	85	115				
Sample ID: LCSD-R108067	SampType: LCSD			Units: mg/Kg		Prep Da	te: <b>5/12/20</b>	08	RunNo: <b>108</b>	8067	
Client ID: ZZZZZZ	Batch ID: 44826			SW9010		Analysis Da	te: <b>5/13/20</b>	08	SeqNo: <b>194</b>	5264	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide	0.20	0.01	0.2000	0	99.7	85	115	0.1881	5.84	15	

# ANALYTICAL QC SUMMARY REPORT

Project: A831-735002-012901-225/IP Champaign 62403053

TestCode: M\_SOLIDS\_ICP

**Lab Order:** 08050440 **Report Date:** 16-May-08

Sample ID:	MB-44806	SampType:	MBLK			Units: mg/	/Kg-dry	Prep Dat	e: <b>5/13/20</b>	08	RunNo: <b>10</b> 8	3079	
Client ID:	ZZZZZZ	Batch ID:	44806			SOP 3032		Analysis Dat	e: <b>5/13/20</b>	08	SeqNo: 194	<b>15559</b>	
Analyte			Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic			< 2.50	2.50	2.500	0	0	-100	100				
Lead			< 4.00	4.00	4.000	0	0	-100	100				
Sample ID:	LCS-44806	SampType:	LCS			Units: mg/	/Kg-dry	Prep Dat	e: <b>5/13/20</b>	08	RunNo: <b>108</b>	3079	
Client ID:	ZZZZZZ	Batch ID:	44806			SOP 3032		Analysis Dat	e: <b>5/13/20</b>	08	SeqNo: 194	<b>15560</b>	
Analyte			Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic			192	2.50	200.0	0	96.2	85	115				
Lead			49.7	4.00	50.00	0	99.4	85	115				
Sample ID:	MB-44806	SampType:	MBLK		Units: mg/Kg-dry Prep D		Prep Date: 5/13/2008			RunNo: 108118			
Client ID:	ZZZZZZ	Batch ID:	44806			SOP 3032		Analysis Dat	e: <b>5/14/20</b>	08	SeqNo: 194	17235	
Analyte			Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium			0.64	1.00	1.000	0	64.0	-100	100				J
Sample ID:	LCS-44806	SampType:	LCS			Units: mg/	/Kg-dry	Prep Dat	e: <b>5/13/20</b>	08	RunNo: <b>10</b> 8	3118	
Client ID:	ZZZZZZ	Batch ID:	44806			SOP 3032		Analysis Dat	e: <b>5/14/20</b>	08	SeqNo: 194	<b>17236</b>	
Analyte			Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium			19.7	1.00	20.00	0	98.6	85	115				
Sample ID:	08050440-001AMS	SampType:	MS			Units: mg	/Kg-dry	Prep Dat	e: <b>5/13/20</b>	08	RunNo: <b>108</b>	3118	
Client ID:	B800 (2-3 ft)MS	Batch ID:	44806			SOP 3032		Analysis Dat	e: <b>5/14/20</b>	08	SeqNo: 194	<b>17253</b>	
Analyte			Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic			187	2.50	200.0	6.220	90.3	75	125				
Chromium			34.8	1.00	20.00	16.49	91.5	75	125				

# ANALYTICAL QC SUMMARY REPORT

Project: A831-735002-012901-225/IP Champaign 62403053

TestCode: M\_SOLIDS\_ICP

**Lab Order:** 08050440 **Report Date:** 16-May-08

Sample ID:	08050440-001AMSD	SampType:	MSD			Units: mg/	Kg-dry	Prep Date	: 5/13/20	008	RunNo: <b>108</b>	3118	
Client ID:	B800 (2-3 ft)MSD	Batch ID:	44806			SOP 3032		Analysis Date	: <b>5/14/2</b> 0	800	SeqNo: 194	17254	
Analyte			Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic			195	2.50	200.0	6.220	94.5	75	125	186.8	4.45	20	
Chromium			37.1	1.00	20.00	16.49	103.1	75	125	34.79	6.45	20	
Sample ID:	MB-44863	SampType:	MBLK			Units: mg/	Kg-dry	Prep Date	: 5/15/20	008	RunNo: <b>108</b>	3133	
Client ID:	ZZZZZZ	Batch ID:	44863			SOP 3032		Analysis Date	: <b>5/15/2</b> 0	800	SeqNo: <b>19</b> 4	18451	
Analyte			Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium			< 1.00	1.00	1.000	0	0	-100	100				
Lead			< 4.00	4.00	4.000	0	0	-100	100				
Sample ID:	LCS-44863	SampType:	LCS			Units: mg/	Kg-dry	Prep Date	: 5/15/20	008	RunNo: <b>108</b>	3133	
Client ID:	ZZZZZZ	Batch ID:	44863			SOP 3032		Analysis Date	: 5/15/20	008	SeqNo: <b>19</b> 4	18452	
Analyte			Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium			19.1	1.00	20.00	0	95.6	85	115				
Lead			46.2	4.00	50.00	0	92.4	85	115				
Sample ID:	08050440-001AMS	SampType:	MS			Units: mg/	Kg-dry	Prep Date	: 5/15/20	008	RunNo: <b>108</b>	3133	
Client ID:	B800 (2-3 ft)MS	Batch ID:	44863			SOP 3032		Analysis Date	: 5/15/20	008	SeqNo: <b>19</b> 4	18614	
Analyte			Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead			130	4.00	50.00	74.40	111.4	75	125				
Sample ID:	08050440-001AMSD	SampType:	MSD			Units: mg/	Kg-dry	Prep Date	: 5/15/20	008	RunNo: <b>108</b>	3133	
Client ID:	B800 (2-3 ft)MSD	Batch ID:	44863			SOP 3032		Analysis Date	: <b>5/15/2</b> 0	008	SeqNo: <b>19</b> 4	18615	
Analyte			Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead			115	4.00	50.00	74.40	81.0	75	125	130.1	12.4	20	

# ANALYTICAL QC SUMMARY REPORT

Project: A831-735002-012901-225/IP Champaign 62403053

TestCode: M\_SOLIDS\_ICP

**Lab Order:** 08050440 **Report Date:** 16-May-08

Sample ID: MB-44863	SampType: <b>MBLK</b>			Units: mg/l	Kg-dry	Prep Date	e: <b>5/15/2008</b>	RunNo: 108193	
Client ID: ZZZZZZ	Batch ID: 44863			SOP 3032		Analysis Dat	e: <b>5/15/2008</b>	SeqNo: <b>1948794</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Lead	< 4.00	4.00	4.000	0	0	-100	100		
Sample ID: LCS-44863	SampType: <b>LCS</b>			Units: mg/l	Kg-dry	Prep Date	e: <b>5/15/2008</b>	RunNo: 108193	
Client ID: ZZZZZZ	Batch ID: 44863			SOP 3032		Analysis Dat	e: <b>5/15/2008</b>	SeqNo: <b>1948795</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Lead	49.8	4.00	50.00	0	99.5	85	115		
Sample ID: MB-44863	SampType: MBLK			Units: mg/l	Kg-dry	Prep Date	e: <b>5/15/2008</b>	RunNo: <b>108224</b>	
Client ID: ZZZZZZ	Batch ID: 44863			SOP 3032		Analysis Dat	e: <b>5/16/2008</b>	SeqNo: <b>1949736</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Arsenic	< 2.50	2.50	2.500	0	0	-100	100		
Chromium	< 1.00	1.00	1.000	0	0	-100	100		
Sample ID: LCS-44863	SampType: LCS			Units: mg/l	Kg-dry	Prep Date	e: <b>5/15/2008</b>	RunNo: <b>108224</b>	
Client ID: ZZZZZZ	Batch ID: 44863			SOP 3032		Analysis Dat	e: <b>5/16/2008</b>	SeqNo: <b>1949737</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Arsenic	212	2.50	200.0	0	106.0	85	115		
Chromium	21.1	1.00	20.00	0	105.6	85	115		



# **CHAIN-OF-CUSTODY RECORD**

WorkOrder: 08050440

Client:

5445 Horseshoe Lake Road

TEKLAB, INC

Collinsville, IL 62234-7425

TEL: (618) 344-1004 FAX: (618) 344-1005

210 West Sand Bank Road Columbia, IL 62236-0230 Philip Environmental

TEL: (618) 281-7173

FAX: (618) 281-5120

Project: A831-735002-012901-225/I

12-May-08

Date/Time Requested Tests SW9014 (A) ⋖ SW9014 ⋖ Received by: Received by: SW6010B ⋖ Bottle Date/Time 4/14/2008 12:15:00 PM Date Collected Matrix Solid ClientSamplD B800 (2-3 ft) data in excel Relinquished by: Relinquished by: 08050440-001 Comments: Sample ID

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.

Received by:

Relinquished by:

Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other