

Method: HRGC/HRMS Dioxins/Dibenzofurans (EPA Method 1613B)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	/			
Cooler temperature criteria was met.	/			
II. GC/MS Instrument performance check				
Was PFK exact mass 380.9760 verified?	/			
Were the retention time windows established for all homologues?			/	
Was the chromatographic resolution between 2,3,7,8-TCDD and peaks representing any other unlabeled TCDD isomers $\leq 25\%$?	/			
Is the static resolving power at least 10,000 (10% valley definition)?	/			
Was the mass resolution adequately check with PFK?	/			
Was the presence of 1,2,8,9-TCDD and 1,3,4,6,8-PeCDF verified?	X		⊖	
III. Initial calibration				
Was the initial calibration performed at 5 concentration levels?	/			
Were all percent relative standard deviations (%RSD) $\leq 20\%$ for unlabeled compounds and $< 35\%$ for labeled compounds ?	/			
Did all calibration standards meet the Ion Abundance Ratio criteria?	/			
Was the signal to noise ratio for each target compound ≥ 2.5 and for each recovery and internal standard > 10 ?	/			
IV. Continuing calibration				
Was a routine calibration performed at the beginning and end of each 12 hour period?	/			
Were all the concentrations for the unlabeled compounds and labeled compounds within the QC limits (Method 1613B, Table 6)?	/			
Did all routine calibration standards meet the Ion Abundance Ratio criteria?	/			
V. Blanks				
Was a method blank associated with every sample in this SDG?	/			
Was a method blank performed for each matrix and concentration?			/	
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet?	/			
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.		/		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			/	
VII. Laboratory control samples				
Was an LCS analyzed for this SDG?	/			
Was an LCS analyzed per extraction batch?			/	
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	/			

Validation Area	Yes	No	NA	Findings/Comments
VIII. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		/		
Were the performance evaluation (PE) samples within the acceptance limits?			/	
IX. Internal standards				
Were internal standard recoveries within the 25-150% criteria?	/			
Was the minimum S/N ratio of all internal standard peaks ≥ 10 ?	/			
X. Target compound identification				
For 2,3,7,8 substituted congeners with associated labeled standards, were the retention times of the two quantitation peaks within -1 to 3 sec. of the RT of the labeled standard?	/			
For 2,3,7,8 substituted congeners without associated labeled standards, were the relative retention times of the two quantitation peaks within 0.005 time units of the RRT measured in the routine calibration?			/	
For non-2,3,7,8 substituted congeners, were the retention times of the two quantitation peaks within RT established in the performance check solution?			/	
Did compound spectra contain all characteristic ions listed in the table attached?	/			
Was the Ion Abundance Ratio for the two quantitation ions within criteria?	/			
Was the signal to noise ratio for each target compound and labeled standard ≥ 2.5 ?	/			
Does the maximum intensity of each specified characteristic ion coincide within ± 2 seconds (includes labeled standards)?	/			
For PCDF identification, was any signal ($S/N \geq 2.5$, at \pm seconds RT) detected in the corresponding PCDF channel?		/		
Was an acceptable lock mass recorded and monitored?	/			
XI. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	/			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?			/	
XII. System performance				
System performance was found to be acceptable.	/			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.		/		
Target compounds were detected in the field duplicates.			/	
XV. Field blanks				
Field blanks were identified in this SDG.	/			
Target compounds were detected in the field blanks.	/			

VALIDATION FINDINGS WORKSHEET

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA Method 1613B)

A. 2,3,7,8-TCDD	F. 1,2,3,4,6,7,8-HpCDD	K. 1,2,3,4,7,8-HxCDF	P. 1,2,3,4,7,8,9-HpCDF	U. Total HpCDD
B. 1,2,3,7,8-PeCDD	G. OCDD	L. 1,2,3,6,7,8-HxCDF	Q. OCDF	V. Total TCDF
C. 1,2,3,4,7,8-HxCDD	H. 2,3,7,8-TCDF	M. 2,3,4,6,7,8-HxCDF	R. Total TCDD	W. Total PeCDF
D. 1,2,3,6,7,8-HxCDD	I. 1,2,3,7,8-PeCDF	N. 1,2,3,7,8,9-HxCDF	S. Total PeCDD	X. Total HxCDF
E. 1,2,3,7,8,9-HxCDD	J. 2,3,4,7,8-PeCDF	O. 1,2,3,4,6,7,8-HpCDF	T. Total HxCDD	Y. Total HpCDF

Notes: _____

VALIDATION FINDINGS WORKSHEET

Blanks

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA Method 1613B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- Y N N/A Were all samples associated with a method blank?
- Y N N/A Was a method blank performed for each matrix and whenever a sample extraction was performed?
- Y N N/A Was the method blank contaminated?

Blank extraction date: 08/12/13 **Blank analysis date:** 08/13/13 **Associated samples:** All Qual U (B)

Conc. units: ng/kg

Compound	Blank ID	Sample Identification							
	BLK224001	5x	2	5	6				
B	0.0780*	0.390	0.237*	0.201					
D	0.0377*	0.189	0.119*						
F	0.0637*	0.319							
G	0.252*	1.26							
J	0.0474*	0.237	0.198						
O	0.0267*	0.134			0.0875				
P	0.0434*	0.217	0.0574*		0.0496*				
Q	0.202*	1.01	0.355		0.298*				

*EMPC
 CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
 All contaminants within five times the method blank concentration were qualified as not detected, "U".

VALIDATION FINDINGS WORKSHEET Field Blanks

METHOD: HRGC/HRMS Dioxins (EPA Method 1613B)

Blank units: pg/L **Associated sample units:** ng/kg

Sampling date: 04/11/13

Field blank type: (circle one) Field Blank / Rinsate / Other: FB **Associated Samples:** All >5x

Compound	Blank ID	Sample Identification							
	FB-041113	5X							
C	0.125	0.625							
E	0.134*	0.67							
F	0.402*	2.01							
I	0.398*	1.99							
J	0.316*	1.58							
K	0.324	1.62							
L	0.221	1.11							
N	0.211*	1.06							
M	0.149	0.745							
O	0.254*	1.27							
Q	0.840*	4.2							

* EMPC

FB-041113 (PH029)

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the blank concentration were qualified as not detected, "U".

VALIDATION FINDINGS WORKSHEET
Field Blanks

METHOD: HRGC/HRMS Dioxins (EPA Method 1613B)

Blank units: pg/L **Associated sample units:** ng/kg

Sampling date: 08/01/13

Field blank type: (circle one) Field Blank / Rinsate / Other: EB **Associated Samples:** All >5x

Compound	Blank ID	Sample Identification							
		5X							
	EB2-080113	5X							
A	0.270*	1.35							
B	1.84	9.20							
C	1.74*	8.70							
D	1.45*	7.25							
E	1.77*	8.85							
F	1.92	9.60							
G	3.88	19.4							
I	1.94*	9.70							
J	1.58	7.90							
K	1.90*	9.50							
L	1.48	7.40							
N	1.68	8.40							
M	1.48*	7.40							
O	1.65	8.25							
P	1.47*	7.35							
Q	4.13	20.7							

* EMPC

EB2-080113 (PH082)

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the blank concentration were qualified as not detected, "U".

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA Method 1613B)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$$RRF = (A_x)(C_{is}) / (A_{is})(C_x)$$

$$\text{average RRF} = \text{sum of the RRFs} / \text{number of standards}$$

$$\%RSD = 100 * (S/X)$$

 A_x = Area of compound,

 C_x = Concentration of compound,

 S = Standard deviation of the RRFs,

 A_{is} = Area of associated internal standard

 C_{is} = Concentration of internal standard

 X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Reported	Recalculated	Reported	Recalculated	Reported	Recalculated
				Average RRF (initial)	Average RRF (initial)	RRF (CS3 std)	RRF (CS3 std)	%RSD	%RSD
1	ICAL (DB5MS)	06/19/2013	2,3,7,8-TCDF (¹³ C-2,3,7,8-TCDF)	1.056	1.056	1.028	1.028	7.30	7.31
			2,3,7,8-TCDD (¹³ C-2,3,7,8-TCDD)	1.196	1.196	1.107	1.107	10.82	10.80
			1,2,3,6,7,8-HxCDD (¹³ C-1,2,3,6,7,8-HxCDD)	0.955	0.955	0.954	0.954	1.24	1.22
			1,2,3,4,6,7,8-HpCDD (¹³ C-1,2,4,6,7,8,-HpCDD)	1.060	1.0605	1.034	1.034	8.10	8.10
			OCDF (¹³ C-OCDF)	0.962	0.962	0.959	0.959	4.62	4.60
2	ICAL (SP2331)		2,3,7,8-TCDF (¹³ C-2,3,7,8-TCDF)	0.971	0.971	0.981	0.981	3.22	3.21
			2,3,7,8-TCDD (¹³ C-2,3,7,8-TCDD)						
			1,2,3,6,7,8-HxCDD (¹³ C-1,2,3,6,7,8-HxCDD)						
			1,2,3,4,6,7,8-HpCDD (¹³ C-1,2,4,6,7,8,-HpCDD)						
			OCDF (¹³ C-OCDF)						
3			2,3,7,8-TCDF (¹³ C-2,3,7,8-TCDF)						
			2,3,7,8-TCDD (¹³ C-2,3,7,8-TCDD)						
			1,2,3,6,7,8-HxCDD (¹³ C-1,2,3,6,7,8-HxCDD)						
			1,2,3,4,6,7,8-HpCDD (¹³ C-1,2,4,6,7,8,-HpCDD)						
			OCDF (¹³ C-OCDF)						

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET
Routine Calibration Results Verification

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA Method 1613B)

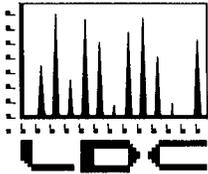
The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
 RRF = (A_x)(C_{is})/(A_{is})(C_x)

Where: ave. RRF = initial calibration average RRF
 RRF = continuing calibration RRF
 A_x = Area of compound,
 C_x = Concentration of compound,
 A_{is} = Area of associated internal standard
 C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Spiked Conc (ng/mL)	Reported	Recalculated	Reported	Recalculated
					Conc (ng/mL)	Conc (ng/mL)	%R	%R
1	CS3CC02 (DBSMS)	8-13-13	2,3,7,8-TCDF (¹³ C-2,3,7,8-TCDF)	10	10.000	9.99	100	100
			2,3,7,8-TCDD (¹³ C-2,3,7,8-TCDD)	10	9.95	9.94	99	99.5
			1,2,3,6,7,8-HxCDD (¹³ C-1,2,3,6,7,8-HxCDD)	50	51.090	51.082	102	102
			1,2,3,4,6,7,8-HpCDD (¹³ C-1,2,4,6,7,8,-HpCDD)	50	49.340	49.349	99	99
			OCDF (¹³ C-OCDF)	100	97.980	97.982	98	98
2	CS3CC03 (DBSMS)	8-14-13	2,3,7,8-TCDF (¹³ C-2,3,7,8-TCDF)	10	9.540	9.538	95	95
			2,3,7,8-TCDD (¹³ C-2,3,7,8-TCDD)	10	9.530	9.532	95	95
			1,2,3,6,7,8-HxCDD (¹³ C-1,2,3,6,7,8-HxCDD)	50	49.410	49.401	99	99
			1,2,3,4,6,7,8-HpCDD (¹³ C-1,2,4,6,7,8,-HpCDD)	50	47.070	47.082	94	94
			OCDF (¹³ C-OCDF)	100	93.170	93.168	93	93
3	CS3CC02 (SP2331)	8-15-13	2,3,7,8-TCDF (¹³ C-2,3,7,8-TCDF)	10	9.550	9.544	95	95.5
			2,3,7,8-TCDD (¹³ C-2,3,7,8-TCDD)	10				
			1,2,3,6,7,8-HxCDD (¹³ C-1,2,3,6,7,8-HxCDD)	50				
			1,2,3,4,6,7,8-HpCDD (¹³ C-1,2,4,6,7,8,-HpCDD)	50				
			OCDF (¹³ C-OCDF)	100				

Comments: Refer to Routine Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.



LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

CDM
555 17th Street, Suite 1100
Denver, CO 80202
ATTN: Mrs. Cherie Zakowski

November 4, 2013

SUBJECT: Santa Susana Field Laboratory, Subarea 8 Data Validation

Dear Mrs. Zakowski,

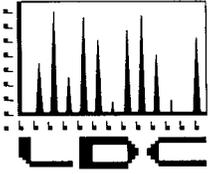
Enclosed are the final validation reports for the fractions listed below. These SDGs were received on September 9, 2013. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 30370:

<u>SDG #</u>	<u>Fraction</u>
PH084 PH086	Volatiles, Semivolatiles, Chlorinated Pesticides, Polychlorinated Biphenyls, Metals, Herbicides, Total Petroleum Hydrocarbons as Gasoline, Total Petroleum Hydrocarbons as Extractables, Dioxins/Dibenzofurans

The data validation was performed under Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan for Santa Susana Field Laboratory, RCRA Facility Investigation, Surficial Media Operable Unit, March 2009, Revision 4
- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- Polychlorinated Dioxins/Dibenzofurans Data Review, September 2005
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007



Please feel free to contact us if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read 'Shauna McKellar', written in a cursive style.

Shauna McKellar
Project Manager/Chemist

**Data Validation Report
Santa Susana Field Laboratory**

Area 8

SDG: PH084

Prepared for

CDM
555 17th Street, Suite 1100
Denver, CO 80202

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, California 92010

November 4, 2013

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on August 5, 2013. Data validation was performed in accordance with the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008), Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005), and for Inorganic Data Review (January 2010). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Semivolatiles (SVOCs) by EPA SW 846 Method 8270D utilizing Selective Ion Monitoring (SIM)
Polychlorinated Biphenyls (PCBs) by EPA SW 846 Method 8082A
Metals by EPA SW 846 Method 6010C, 6020A, and 7471B
Total Petroleum Hydrocarbons as Gasoline (TPH-G) by EPA SW 846 Method 8015M
Total Petroleum Hydrocarbons as Extractables (TPH-E) by EPA SW 846 Method 8015M
Dioxins and Dibenzofurans by EPA Method 1613B

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment II. Level III Automated Data Review outliers are presented in Enclosure I.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibration blanks (ICB/CCBs), surrogates, internal standards (dioxins only), matrix spike/matrix spike duplicates (MS/MSD), laboratory duplicates (DUP), laboratory control sample/laboratory control sample duplicates (LCS/LCSD), ICP serial dilutions, method blanks, equipment blanks, field blanks and trip blanks. No samples in this SDG were subjected to Level IV evaluation.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of interference check samples, which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

II. Initial Calibration

Initial Calibration data were not reviewed for level III.

III. Continuing Calibration

Continuing calibration data were not reviewed for level III.

IV. Blanks

Method blanks were performed at the required frequencies. No contaminant concentrations were detected in the method or preparation blanks with the exception of one blank for dioxins and one blank for metals. The associated sample results were qualified as non-detected (U) due to method blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the associated blanks were not qualified. The details regarding the qualification of data are provided in Enclosure I.

No contaminant concentrations were detected in the initial or continuing calibration blanks.

V. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. ICP Interference Check Sample (ICS) Analysis

ICP interference check data were not reviewed for level III.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed at the required frequency. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of one MS/MSD pair for metals. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosure I.

VIII. Laboratory Duplicates Sample

Laboratory duplicates (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits with the exception of one DUP for metals. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosure I.

IX. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

X. Internal Standards

Internal standards were reviewed for dioxins. Percent recoveries (%R) were within QC limits.

XI. ICP Serial Dilution

ICP serial dilution analysis was performed by the laboratory. The analysis criteria were met with the following exceptions:

Diluted Sample	Analyte	%D (Limits)	Associated Samples	Flag	A or P
SL-568-SA8-SB-0.0-0.5	Strontium	15 (≤10)	All soil samples in SDG PH084	J (all detects) UJ (all non-detects)	A

XII. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the RL as detected were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH084	All compounds reported as detected below the RL.	J (all detects)	A

XIII. Field Duplicate Samples

No field duplicates were identified in this SDG.

XIV. Field Blank Samples

One trip blank was collected and analyzed for TPH as gasoline. No contaminants were found in the trip blank.

One equipment blank (from SDG PH086) was collected and analyzed for SVOCs, PCBs, metals, TPH as gasoline, TPH as extractable and dioxins. The equipment blank had several detections for SVOCs, metals and dioxins. The associated sample results were qualified as non-detected (U) due to equipment blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the equipment blanks were not qualified. The equipment blank outlier reports are presented in Enclosure I.

One field blank (from SDG PH029) was collected and analyzed for SVOCs, PCBs, metals, TPH as gasoline, TPH as extractable and dioxins. The field blank had detections for several SVOCs, metals and dioxins. The associated sample results were qualified as non-detected (U) due to field blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the field blank were not qualified. The field blank outlier reports are presented in Enclosure I.

XV. Overall Assessment of Data

No data associated with this sampling event were rejected. The overall assessment of QA/QC data review by automated and manual validation of this sampling event met project requirements and analytical completeness levels with the exceptions noted in the above sections. All data are deemed useable for the intended use.

Data flags are summarized and are presented as Attachment 2.

Attachment 1
Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
05-Aug-2013	TB-080513	7150954	TB	5030B	8015M	III
05-Aug-2013	SL-568-SA8-SB-0.0-0.5	7150955	N	3050B	6010C	III
05-Aug-2013	SL-568-SA8-SB-0.0-0.5	7150955	N	3050B	6020A	III
05-Aug-2013	SL-568-SA8-SB-0.0-0.5	7150955	N	3546	8015M	III
05-Aug-2013	SL-568-SA8-SB-0.0-0.5	7150955	N	3546	8082A	III
05-Aug-2013	SL-568-SA8-SB-0.0-0.5	7150955	N	3546	8270D SIM	III
05-Aug-2013	SL-568-SA8-SB-0.0-0.5	7150955	N	METHOD	1613B	III
05-Aug-2013	SL-568-SA8-SB-0.0-0.5	7150955	N	METHOD	7471B	III
05-Aug-2013	SL-568-SA8-SB-0.0-0.5DUP	P150955D220130	DUP	3050B	6010C	III
05-Aug-2013	SL-568-SA8-SB-0.0-0.5DUP	P150955D220830A	DUP	3050B	6020A	III
05-Aug-2013	SL-568-SA8-SB-0.0-0.5DUP	P150955D220830B	DUP	3050B	6020A	III
05-Aug-2013	SL-568-SA8-SB-0.0-0.5DUP	P150955D221045	DUP	METHOD	7471B	III
05-Aug-2013	SL-568-SA8-SB-0.0-0.5MSD	P150955M220138	MSD	3050B	6010C	III
05-Aug-2013	SL-568-SA8-SB-0.0-0.5MSD	P150955M220834A	MSD	3050B	6020A	III
05-Aug-2013	SL-568-SA8-SB-0.0-0.5MSD	P150955M220834B	MSD	3050B	6020A	III
05-Aug-2013	SL-568-SA8-SB-0.0-0.5MSD	P150955M221049	MSD	METHOD	7471B	III
05-Aug-2013	SL-568-SA8-SB-0.0-0.5MS	P150955R220134	MS	3050B	6010C	III
05-Aug-2013	SL-568-SA8-SB-0.0-0.5MS	P150955R220832A	MS	3050B	6020A	III
05-Aug-2013	SL-568-SA8-SB-0.0-0.5MS	P150955R220832B	MS	3050B	6020A	III
05-Aug-2013	SL-568-SA8-SB-0.0-0.5MS	P150955R221047	MS	METHOD	7471B	III
05-Aug-2013	SL-568-SA8-SB-4.0-5.0	7150956	N	3050B	6010C	III
05-Aug-2013	SL-568-SA8-SB-4.0-5.0	7150956	N	3050B	6020A	III
05-Aug-2013	SL-568-SA8-SB-4.0-5.0	7150956	N	3546	8015M	III
05-Aug-2013	SL-568-SA8-SB-4.0-5.0	7150956	N	3546	8082A	III
05-Aug-2013	SL-568-SA8-SB-4.0-5.0	7150956	N	3546	8270D SIM	III
05-Aug-2013	SL-568-SA8-SB-4.0-5.0	7150956	N	5035A	8015M	III

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
05-Aug-2013	SL-568-SA8-SB-4.0-5.0	7150956	N	METHOD	1613B	III
05-Aug-2013	SL-568-SA8-SB-4.0-5.0	7150956	N	METHOD	7471B	III
05-Aug-2013	SL-569-SA8-SB-0.0-0.5	7150957	N	3050B	6010C	III
05-Aug-2013	SL-569-SA8-SB-0.0-0.5	7150957	N	3050B	6020A	III
05-Aug-2013	SL-569-SA8-SB-0.0-0.5	7150957	N	3546	8015M	III
05-Aug-2013	SL-569-SA8-SB-0.0-0.5	7150957	N	3546	8082A	III
05-Aug-2013	SL-569-SA8-SB-0.0-0.5	7150957	N	3546	8270D SIM	III
05-Aug-2013	SL-569-SA8-SB-0.0-0.5	7150957	N	METHOD	1613B	III
05-Aug-2013	SL-569-SA8-SB-0.0-0.5	7150957	N	METHOD	7471B	III
05-Aug-2013	SL-569-SA8-SB-4.0-5.0	7150958	N	3050B	6010C	III
05-Aug-2013	SL-569-SA8-SB-4.0-5.0	7150958	N	3050B	6020A	III
05-Aug-2013	SL-569-SA8-SB-4.0-5.0	7150958	N	3546	8015M	III
05-Aug-2013	SL-569-SA8-SB-4.0-5.0	7150958	N	3546	8082A	III
05-Aug-2013	SL-569-SA8-SB-4.0-5.0	7150958	N	3546	8270D SIM	III
05-Aug-2013	SL-569-SA8-SB-4.0-5.0	7150958	N	5035A	8015M	III
05-Aug-2013	SL-569-SA8-SB-4.0-5.0	7150958	N	METHOD	1613B	III
05-Aug-2013	SL-569-SA8-SB-4.0-5.0	7150958	N	METHOD	7471B	III
05-Aug-2013	SL-569-SA8-SB-7.0-8.0	7150959	N	3050B	6010C	III
05-Aug-2013	SL-569-SA8-SB-7.0-8.0	7150959	N	3050B	6020A	III
05-Aug-2013	SL-569-SA8-SB-7.0-8.0	7150959	N	3546	8015M	III
05-Aug-2013	SL-569-SA8-SB-7.0-8.0	7150959	N	3546	8082A	III
05-Aug-2013	SL-569-SA8-SB-7.0-8.0	7150959	N	3546	8270D SIM	III
05-Aug-2013	SL-569-SA8-SB-7.0-8.0	7150959	N	5035A	8015M	III
05-Aug-2013	SL-569-SA8-SB-7.0-8.0	7150959	N	METHOD	7471B	III

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH084

Laboratory: LL

EDD Filename: PH084_v1.

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: METALS
Method: 6010C **Matrix:** SO

Sample ID: SL-568-SA8-SB-0.0-0.5 Collected: 8/5/2013 8:10:00 AM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.45	U	0.823	MDL	4.45	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.889	J	0.0745	MDL	1.11	PQL	mg/Kg	J	Z
CADMIUM	0.347	J	0.0845	MDL	1.11	PQL	mg/Kg	J	Z
CALCIUM	15000		3.71	MDL	22.2	PQL	mg/Kg	J	E, E
CHROMIUM	36.9		0.178	MDL	3.33	PQL	mg/Kg	J	Q
MOLYBDENUM	0.353	J	0.189	MDL	2.22	PQL	mg/Kg	U	F, F
PHOSPHORUS	315		3.21	MDL	11.1	PQL	mg/Kg	J	Q
SODIUM	94.3	J	18.6	MDL	111	PQL	mg/Kg	J	Z
TIN	3.03	J	0.245	MDL	11.1	PQL	mg/Kg	U	B
ZINC	73.6		0.222	MDL	4.45	PQL	mg/Kg	J	E

Sample ID: SL-568-SA8-SB-4.0-5.0 Collected: 8/5/2013 8:30:00 AM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.37	U	0.809	MDL	4.37	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.800	J	0.0732	MDL	1.09	PQL	mg/Kg	J	Z
BORON	7.93	J	0.918	MDL	10.9	PQL	mg/Kg	J	Z
CADMIUM	0.192	J	0.0831	MDL	1.09	PQL	mg/Kg	J	Z
CALCIUM	6340		3.65	MDL	21.9	PQL	mg/Kg	J	E, E
CHROMIUM	26.3		0.175	MDL	3.28	PQL	mg/Kg	J	Q
PHOSPHORUS	358		3.16	MDL	10.9	PQL	mg/Kg	J	Q
SODIUM	91.9	J	18.3	MDL	109	PQL	mg/Kg	J	Z
TIN	3.37	J	0.240	MDL	10.9	PQL	mg/Kg	U	B
ZINC	61.1		0.219	MDL	4.37	PQL	mg/Kg	J	E
Zirconium	5.33	J	0.918	MDL	5.46	PQL	mg/Kg	J	Z

Sample ID: SL-569-SA8-SB-0.0-0.5 Collected: 8/5/2013 9:50:00 AM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.27	U	0.791	MDL	4.27	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.810	J	0.0716	MDL	1.07	PQL	mg/Kg	J	Z
BORON	9.97	J	0.897	MDL	10.7	PQL	mg/Kg	J	Z
CADMIUM	0.427	J	0.0812	MDL	1.07	PQL	mg/Kg	J	Z
CALCIUM	8420		3.57	MDL	21.4	PQL	mg/Kg	J	E, E
CHROMIUM	29.4		0.171	MDL	3.21	PQL	mg/Kg	J	Q

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH084

Laboratory: LL

EDD Filename: PH084_v1.

eQAPP Name: CDM_SSFL_131101_Lan

Method Category:	METALS	
Method:	6010C	Matrix: SO

Sample ID: SL-569-SA8-SB-0.0-0.5	Collected: 8/5/2013 9:50:00 AM	Analysis Type: RES	Dilution: 1
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Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.248	J	0.182	MDL	2.14	PQL	mg/Kg	U	F, F
PHOSPHORUS	232		3.09	MDL	10.7	PQL	mg/Kg	J	Q
TIN	3.39	J	0.235	MDL	10.7	PQL	mg/Kg	U	B
ZINC	200		0.214	MDL	4.27	PQL	mg/Kg	J	E

Sample ID: SL-569-SA8-SB-4.0-5.0	Collected: 8/5/2013 10:40:00	Analysis Type: RES	Dilution: 1
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Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.44	U	0.821	MDL	4.44	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.769	J	0.0743	MDL	1.11	PQL	mg/Kg	J	Z
BORON	9.02	J	0.932	MDL	11.1	PQL	mg/Kg	J	Z
CADMIUM	0.132	J	0.0843	MDL	1.11	PQL	mg/Kg	J	Z
CALCIUM	7520		3.70	MDL	22.2	PQL	mg/Kg	J	E, E
CHROMIUM	28.1		0.177	MDL	3.33	PQL	mg/Kg	J	Q
PHOSPHORUS	296		3.21	MDL	11.1	PQL	mg/Kg	J	Q
TIN	3.03	J	0.244	MDL	11.1	PQL	mg/Kg	U	B
ZINC	63.8		0.222	MDL	4.44	PQL	mg/Kg	J	E
Zirconium	4.89	J	0.932	MDL	5.55	PQL	mg/Kg	J	Z

Sample ID: SL-569-SA8-SB-7.0-8.0	Collected: 8/5/2013 1:35:00 PM	Analysis Type: RES	Dilution: 1
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Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.30	U	0.796	MDL	4.30	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.581	J	0.0721	MDL	1.08	PQL	mg/Kg	J	Z
BORON	6.95	J	0.904	MDL	10.8	PQL	mg/Kg	J	Z
CADMIUM	0.183	J	0.0818	MDL	1.08	PQL	mg/Kg	J	Z
CALCIUM	4240		3.59	MDL	21.5	PQL	mg/Kg	J	E, E
CHROMIUM	21.1		0.172	MDL	3.23	PQL	mg/Kg	J	Q
PHOSPHORUS	424		3.11	MDL	10.8	PQL	mg/Kg	J	Q
TIN	2.75	J	0.237	MDL	10.8	PQL	mg/Kg	U	B
ZINC	60.2		0.215	MDL	4.30	PQL	mg/Kg	J	E
Zirconium	4.38	J	0.904	MDL	5.38	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH084

Laboratory: LL

EDD Filename: PH084_v1.

eQAPP Name: CDM_SSFL_131101_Lan

Method Category:	METALS	
Method:	6020A	Matrix: SO

Sample ID: SL-568-SA8-SB-0.0-0.5	Collected: 8/5/2013 8:10:00 AM	Analysis Type: REA	Dilution: 2						
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.150	J	0.111	MDL	0.445	PQL	mg/Kg	J	Z

Sample ID: SL-568-SA8-SB-0.0-0.5	Collected: 8/5/2013 8:10:00 AM	Analysis Type: RES	Dilution: 2						
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0513	J	0.0289	MDL	0.222	PQL	mg/Kg	J	Z
STRONTIUM	46.3		0.0756	MDL	0.445	PQL	mg/Kg	J	A

Sample ID: SL-568-SA8-SB-4.0-5.0	Collected: 8/5/2013 8:30:00 AM	Analysis Type: RES	Dilution: 2						
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0595	J	0.0284	MDL	0.219	PQL	mg/Kg	J	Z
STRONTIUM	35.7		0.0743	MDL	0.437	PQL	mg/Kg	J	A

Sample ID: SL-569-SA8-SB-0.0-0.5	Collected: 8/5/2013 9:50:00 AM	Analysis Type: RES	Dilution: 2						
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0820	J	0.0278	MDL	0.214	PQL	mg/Kg	J	Z
STRONTIUM	45.2		0.0726	MDL	0.427	PQL	mg/Kg	J	A

Sample ID: SL-569-SA8-SB-4.0-5.0	Collected: 8/5/2013 10:40:00	Analysis Type: RES	Dilution: 2						
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0326	J	0.0288	MDL	0.222	PQL	mg/Kg	J	Z
STRONTIUM	43.2		0.0754	MDL	0.444	PQL	mg/Kg	J	A

Sample ID: SL-569-SA8-SB-7.0-8.0	Collected: 8/5/2013 1:35:00 PM	Analysis Type: RES	Dilution: 2						
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0339	J	0.0280	MDL	0.215	PQL	mg/Kg	J	Z
STRONTIUM	25.2		0.0732	MDL	0.430	PQL	mg/Kg	J	A

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH084

Laboratory: LL

EDD Filename: PH084_v1.

eQAPP Name: CDM_SSFL_131101_Lan

Method Category:	SVOA	
Method:	1613B	Matrix: SO

Sample ID: SL-568-SA8-SB-0.0-0.5 Collected: 8/5/2013 8:10:00 AM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	3.16	JB	0.0726	MDL	5.44	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.615	JB	0.0464	MDL	5.44	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0926	JBQ	0.0475	MDL	5.44	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.113	JQ	0.0518	MDL	5.44	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDF	0.547	J	0.0486	MDL	5.44	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HxCDD	0.298	JBQ	0.0587	MDL	5.44	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HxCDF	0.177	J	0.0483	MDL	5.44	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HxCDD	0.390	JQ	0.0505	MDL	5.44	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HxCDF	0.353	J	0.0446	MDL	5.44	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.173	JBQ	0.0645	MDL	5.44	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.517	J	0.0744	MDL	5.44	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HxCDF	0.0925	JQ	0.0466	MDL	5.44	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.320	JB	0.0638	MDL	5.44	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.0663	JQ	0.0544	MDL	1.09	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.118	JQ	0.0880	MDL	1.09	PQL	ng/Kg	J	Z
OCDF	1.06	JB	0.0529	MDL	10.9	PQL	ng/Kg	J	Z

Sample ID: SL-568-SA8-SB-4.0-5.0 Collected: 8/5/2013 8:30:00 AM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.0856	JBQ	0.0360	MDL	5.45	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0523	JBQ	0.0145	MDL	5.45	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDF	0.0797	JQ	0.0158	MDL	5.45	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HxCDD	0.0364	JBQ	0.0302	MDL	5.45	PQL	ng/Kg	U	B
1,2,3,6,7,8-HxCDF	0.0340	JQ	0.0146	MDL	5.45	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HxCDD	0.0332	JQ	0.0294	MDL	5.45	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HxCDF	0.0406	JQ	0.0201	MDL	5.45	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.109	JBQ	0.0563	MDL	5.45	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.0958	JQ	0.0264	MDL	5.45	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HxCDF	0.0249	JQ	0.0147	MDL	5.45	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.0951	JBQ	0.0270	MDL	5.45	PQL	ng/Kg	U	B
OCDD	0.372	JBQ	0.0360	MDL	10.9	PQL	ng/Kg	U	B
OCDF	0.0647	JBQ	0.0432	MDL	10.9	PQL	ng/Kg	U	B

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH084

Laboratory: LL

EDD Filename: PH084_v1.

eQAPP Name: CDM_SSFL_131101_Lan

Method Category:	SVOA		
Method:	1613B	Matrix:	SO

Sample ID: SL-569-SA8-SB-0.0-0.5 Collected: 8/5/2013 9:50:00 AM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	1.77	JB	0.0747	MDL	5.41	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.238	JB	0.0212	MDL	5.41	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0388	JBQ	0.0336	MDL	5.41	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0758	JQ	0.0354	MDL	5.41	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDF	0.0669	JQ	0.0257	MDL	5.41	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HxCDD	0.214	JB	0.0400	MDL	5.41	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HxCDF	0.184	JQ	0.0236	MDL	5.41	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HxCDD	0.307	JQ	0.0400	MDL	5.41	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HxCDF	0.288	JQ	0.0348	MDL	5.41	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.674	J	0.0331	MDL	5.41	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HxCDF	0.0457	JQ	0.0247	MDL	5.41	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.112	JBQ	0.0294	MDL	5.41	PQL	ng/Kg	U	B
OCDF	0.484	JBQ	0.0480	MDL	10.8	PQL	ng/Kg	U	B

Sample ID: SL-569-SA8-SB-4.0-5.0 Collected: 8/5/2013 10:40:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDF	1.41	JB	0.0680	MDL	5.53	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.176	JBQ	0.0702	MDL	5.53	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.206	J	0.0505	MDL	5.53	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDF	0.199	JQ	0.0319	MDL	5.53	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HxCDD	0.530	JBQ	0.0523	MDL	5.53	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HxCDF	0.132	JQ	0.0302	MDL	5.53	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HxCDD	0.434	J	0.0505	MDL	5.53	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HxCDF	0.110	JQ	0.0288	MDL	5.53	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.302	JBQ	0.0456	MDL	5.53	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.240	JQ	0.0293	MDL	5.53	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HxCDF	0.168	J	0.0283	MDL	5.53	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.237	JBQ	0.0239	MDL	5.53	PQL	ng/Kg	U	B
2,3,7,8-TCDD	0.0819	JQ	0.0402	MDL	1.11	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.102	J	0.0423	MDL	1.11	PQL	ng/Kg	J	Z
OCDF	2.32	JB	0.0542	MDL	11.1	PQL	ng/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH084

Laboratory: LL

EDD Filename: PH084_v1.

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: SVOA
Method: 8082A **Matrix:** SO

Sample ID: SL-569-SA8-SB-0.0-0.5 Collected: 8/5/2013 9:50:00 AM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Aroclor 5460	15	J	11	MDL	36	PQL	ug/Kg	J	Z

Method Category: SVOA
Method: 8270D SIM **Matrix:** SO

Sample ID: SL-568-SA8-SB-0.0-0.5 Collected: 8/5/2013 8:10:00 AM Analysis Type: RES Dilution: 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHRYSENE	5.8	J	3.8	MDL	19	PQL	ug/Kg	J	Z

Sample ID: SL-568-SA8-SB-4.0-5.0 Collected: 8/5/2013 8:30:00 AM Analysis Type: RES-BASE/NEUTRAL Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BIS(2-ETHYLHEXYL)PHTHALATE	15	J	6.6	MDL	20	PQL	ug/Kg	J	Z, L
CHRYSENE	0.41	J	0.37	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: SL-569-SA8-SB-0.0-0.5 Collected: 8/5/2013 9:50:00 AM Analysis Type: RES-BASE/NEUTRAL Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)ANTHRACENE	0.85	J	0.74	MDL	1.9	PQL	ug/Kg	J	Z
BENZO(A)PYRENE	1.3	J	0.74	MDL	1.9	PQL	ug/Kg	J	Z
BENZO(G,H,I)PERYLENE	1.2	J	0.74	MDL	1.9	PQL	ug/Kg	J	Z
BENZO(K)FLUORANTHENE	1.1	J	0.74	MDL	1.9	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	7.9	J	6.7	MDL	20	PQL	ug/Kg	J	Z, L
CHRYSENE	1.4	J	0.37	MDL	1.9	PQL	ug/Kg	J	Z
PHENANTHRENE	0.79	J	0.74	MDL	1.9	PQL	ug/Kg	J	Z

Sample ID: SL-569-SA8-SB-4.0-5.0 Collected: 8/5/2013 10:40:00 Analysis Type: RES-BASE/NEUTRAL Dilution: 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)PYRENE	9.0	J	7.5	MDL	19	PQL	ug/Kg	J	Z
BENZO(B)FLUORANTHENE	12	J	7.5	MDL	19	PQL	ug/Kg	J	Z
CHRYSENE	9.4	J	3.8	MDL	19	PQL	ug/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH084

Laboratory: LL

EDD Filename: PH084_v1.

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: SVOA
Method: 8270D SIM **Matrix:** SO

Sample ID: SL-569-SA8-SB-7.0-8.0 Collected: 8/5/2013 1:35:00 PM Analysis Type: RES-BASE/NEUTRAL Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(G,H,I)PERYLENE	1.2	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	16	J	6.5	MDL	20	PQL	ug/Kg	J	Z
CHRYSENE	1.4	J	0.36	MDL	1.8	PQL	ug/Kg	J	Z
FLUORANTHENE	0.89	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z
PYRENE	0.89	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH084

Laboratory: LL

EDD Filename: PH084_v1.

eQAPP Name: CDM_SSFL_131101_Lan

Reason Code Legend

<i>Reason Code</i>	<i>Description</i>
*#	Professional Judgment
A	ICP Serial Dilution
B	Method Blank Contamination
E	Laboratory Duplicate Precision
E	Matrix Spike Precision
F	Equipment Blank Contamination
F	Field Blank Contamination
L	Laboratory Control Spike Upper Estimation
Q	Laboratory Duplicate Precision
Q	Matrix Spike Lower Estimation
Q	Matrix Spike Lower Rejection
Q	Matrix Spike Precision
Q	Matrix Spike Upper Estimation
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

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Enclosure I
EPA Level III ADR Outliers
(Including Manual Review Outliers)

Quality Control Outlier Reports

PH084

Method Blank Outlier Report

Lab Reporting Batch ID: PH084

Laboratory: LL

EDD Filename: PH084_v1.

eQAPP Name: CDM_SSFL_131101_Lan

Method: 1613B
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2240B372137	8/13/2013 9:37:00 PM	1,2,3,4,6,7,8-HPCDD 1,2,3,4,6,7,8-HPCDF 1,2,3,4,7,8,9-HPCDF 1,2,3,6,7,8-HXCDD 1,2,3,7,8-PECDD 2,3,4,7,8-PECDF OCDD OCDF	0.0637 ng/Kg 0.0267 ng/Kg 0.0434 ng/Kg 0.0377 ng/Kg 0.0780 ng/Kg 0.0474 ng/Kg 0.252 ng/Kg 0.202 ng/Kg	SL-568-SA8-SB-0.0-0.5 SL-568-SA8-SB-4.0-5.0 SL-569-SA8-SB-0.0-0.5 SL-569-SA8-SB-4.0-5.0

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-568-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0926 ng/Kg	0.0926U ng/Kg
SL-568-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.173 ng/Kg	0.173U ng/Kg
SL-568-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDD	0.0856 ng/Kg	0.0856U ng/Kg
SL-568-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0523 ng/Kg	0.0523U ng/Kg
SL-568-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDD	0.0364 ng/Kg	0.0364U ng/Kg
SL-568-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDD	0.109 ng/Kg	0.109U ng/Kg
SL-568-SA8-SB-4.0-5.0(RES)	2,3,4,7,8-PECDF	0.0951 ng/Kg	0.0951U ng/Kg
SL-568-SA8-SB-4.0-5.0(RES)	OCDD	0.372 ng/Kg	0.372U ng/Kg
SL-568-SA8-SB-4.0-5.0(RES)	OCDF	0.0647 ng/Kg	0.0647U ng/Kg
SL-569-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0388 ng/Kg	0.0388U ng/Kg
SL-569-SA8-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.112 ng/Kg	0.112U ng/Kg
SL-569-SA8-SB-0.0-0.5(RES)	OCDF	0.484 ng/Kg	0.484U ng/Kg
SL-569-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.176 ng/Kg	0.176U ng/Kg
SL-569-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDD	0.302 ng/Kg	0.302U ng/Kg
SL-569-SA8-SB-4.0-5.0(RES)	2,3,4,7,8-PECDF	0.237 ng/Kg	0.237U ng/Kg

Method: 6010C
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P21837AB220114	8/8/2013 1:14:00 AM	CALCIUM MAGNESIUM TIN ZINC	7.93 mg/Kg 1.98 mg/Kg 1.63 mg/Kg 0.472 mg/Kg	SL-568-SA8-SB-0.0-0.5 SL-568-SA8-SB-4.0-5.0 SL-569-SA8-SB-0.0-0.5 SL-569-SA8-SB-4.0-5.0 SL-569-SA8-SB-7.0-8.0

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-568-SA8-SB-0.0-0.5(RES)	TIN	3.03 mg/Kg	3.03U mg/Kg
SL-568-SA8-SB-4.0-5.0(RES)	TIN	3.37 mg/Kg	3.37U mg/Kg
SL-569-SA8-SB-0.0-0.5(RES)	TIN	3.39 mg/Kg	3.39U mg/Kg
SL-569-SA8-SB-4.0-5.0(RES)	TIN	3.03 mg/Kg	3.03U mg/Kg

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

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Method Blank Outlier Report

Lab Reporting Batch ID: PH084

Laboratory: LL

EDD Filename: PH084_v1.

eQAPP Name: CDM_SSFL_131101_Lan

Method: 6010C

Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
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The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-569-SA8-SB-7.0-8.0(RES)	TIN	2.75 mg/Kg	2.75U mg/Kg

Equipment Rinsate Blank Outlier Report

Lab Reporting Batch ID: PH084

Laboratory: LL

EDD Filename: PrepPH084

eQAPP Name: CDM_SSFL_131101_Lan

Method: 6010C
Matrix: SO

Equipment Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
EB-080713(REA2)	8/7/2013 3:00:00 PM	ALUMINUM MOLYBDENUM TIN	0.143 mg/L 0.0098 mg/L 0.0029 mg/L	SL-568-SA8-SB-0.0-0.5 SL-568-SA8-SB-4.0-5.0 SL-569-SA8-SB-0.0-0.5 SL-569-SA8-SB-4.0-5.0 SL-569-SA8-SB-7.0-8.0

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-568-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.353 mg/Kg	0.353U mg/Kg
SL-569-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.248 mg/Kg	0.248U mg/Kg

Field Blank Outlier Report

Lab Reporting Batch ID: PH084

Laboratory: LL

EDD Filename: PrepPH084

eQAPP Name: CDM_SSFL_131101_Lan

Method: 6010C
Matrix: SO

Field Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
FB-041113(REA2)	4/11/2013 3:00:00 PM	COPPER MOLYBDENUM	0.0036 mg/L 0.0036 mg/L	SL-568-SA8-SB-0.0-0.5 SL-568-SA8-SB-4.0-5.0 SL-569-SA8-SB-0.0-0.5 SL-569-SA8-SB-4.0-5.0 SL-569-SA8-SB-7.0-8.0

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-568-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.353 mg/Kg	0.353U mg/Kg
SL-569-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.248 mg/Kg	0.248U mg/Kg

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH084

Laboratory: LL

EDD Filename: PH084_v1.

eQAPP Name: CDM_SSFL_131101_Lan

Method: 6010C

Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-568-SA8-SB-0.0-0.5MS (TOT) SL-568-SA8-SB-0.0-0.5MSD (TOT) (SL-568-SA8-SB-0.0-0.5 SL-568-SA8-SB-4.0-5.0 SL-569-SA8-SB-0.0-0.5 SL-569-SA8-SB-4.0-5.0 SL-569-SA8-SB-7.0-8.0)	PHOSPHORUS TITANIUM	142 348	- 268	75.00-125.00 75.00-125.00	- -	PHOSPHORUS TITANIUM	J (all detects) Ti, No Qual, >4x
SL-568-SA8-SB-0.0-0.5MS (TOT) SL-568-SA8-SB-0.0-0.5MSD (TOT) (SL-568-SA8-SB-0.0-0.5 SL-568-SA8-SB-4.0-5.0 SL-569-SA8-SB-0.0-0.5 SL-569-SA8-SB-4.0-5.0 SL-569-SA8-SB-7.0-8.0)	ALUMINUM CALCIUM IRON MAGNESIUM MANGANESE	-295 1807 -4442 -218 -4	488 -1119 -2894 -91 48	75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00	- 79 (20.00) - - -	ALUMINUM CALCIUM IRON MAGNESIUM MANGANESE	J(all detects) UJ(all non-detects) No Qual, %R >4x
SL-568-SA8-SB-0.0-0.5MS (TOT) SL-568-SA8-SB-0.0-0.5MSD (TOT) (SL-568-SA8-SB-0.0-0.5 SL-568-SA8-SB-4.0-5.0 SL-569-SA8-SB-0.0-0.5 SL-569-SA8-SB-4.0-5.0 SL-569-SA8-SB-7.0-8.0)	ANTIMONY CHROMIUM	37 64	31 -	75.00-125.00 75.00-125.00	- -	ANTIMONY CHROMIUM	J(all detects) UJ(all non-detects)

Lab Duplicate Outlier Report

Lab Reporting Batch ID: PH084

Laboratory: LL

EDD Filename: PH084_v1.

eQAPP Name: CDM_SSFL_131101_Lan

Method: 6010C
Matrix: SO

QC Sample ID (Associated Sample ID)	Analyte	Sample RPD	eQAPP RPD	Flag
SL-568-SA8-SB-0.0-0.5DUP (TOT)	CALCIUM	24	20.00	J (all detects) UJ (all non-detects)
(SL-568-SA8-SB-0.0-0.5	MOLYBDENUM	52	20.00	
SL-568-SA8-SB-4.0-5.0	ZINC	22	20.00	Mo, Zr, No Qual, OK by Difference
SL-569-SA8-SB-0.0-0.5	Zirconium	21	20.00	
SL-569-SA8-SB-4.0-5.0				
SL-569-SA8-SB-7.0-8.0)				

Reporting Limit Outliers

Lab Reporting Batch ID: PH084

Laboratory: LL

EDD Filename: PH084_v1.

eQAPP Name: CDM_SSFL_131101_Lan

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-568-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	3.16	5.44	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JB	0.615	5.44	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0926	5.44	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.113	5.44	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	J	0.547	5.44	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.298	5.44	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	J	0.177	5.44	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JQ	0.390	5.44	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	J	0.353	5.44	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.173	5.44	PQL	ng/Kg	
	1,2,3,7,8-PECDF	J	0.517	5.44	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JQ	0.0925	5.44	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.320	5.44	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.0663	1.09	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.118	1.09	PQL	ng/Kg	
OCDF	JB	1.06	10.9	PQL	ng/Kg		
SL-568-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.0856	5.45	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0523	5.45	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JQ	0.0797	5.45	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.0364	5.45	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JQ	0.0340	5.45	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JQ	0.0332	5.45	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JQ	0.0406	5.45	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.109	5.45	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JQ	0.0958	5.45	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JQ	0.0249	5.45	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0951	5.45	PQL	ng/Kg	
	OCDD	JBQ	0.372	10.9	PQL	ng/Kg	
OCDF	JBQ	0.0647	10.9	PQL	ng/Kg		
SL-569-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	1.77	5.41	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JB	0.238	5.41	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0388	5.41	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.0758	5.41	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JQ	0.0669	5.41	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.214	5.41	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JQ	0.184	5.41	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JQ	0.307	5.41	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JQ	0.288	5.41	PQL	ng/Kg	
	1,2,3,7,8-PECDF	J	0.674	5.41	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JQ	0.0457	5.41	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.112	5.41	PQL	ng/Kg	
OCDF	JBQ	0.484	10.8	PQL	ng/Kg		
SL-569-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDF	JB	1.41	5.53	PQL	ng/Kg	J (all detects)
	1,2,3,4,7,8,9-HPCDF	JBQ	0.176	5.53	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	J	0.206	5.53	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JQ	0.199	5.53	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.530	5.53	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JQ	0.132	5.53	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	J	0.434	5.53	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JQ	0.110	5.53	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.302	5.53	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JQ	0.240	5.53	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	J	0.168	5.53	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.237	5.53	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.0819	1.11	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.102	1.11	PQL	ng/Kg	
OCDF	JB	2.32	11.1	PQL	ng/Kg		

Reporting Limit Outliers

Lab Reporting Batch ID: PH084

Laboratory: LL

EDD Filename: PH084_v1.

eQAPP Name: CDM_SSFL_131101_Lan

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-568-SA8-SB-0.0-0.5	BERYLLIUM	J	0.889	1.11	PQL	mg/Kg	J (all detects)
	CADMIUM	J	0.347	1.11	PQL	mg/Kg	
	MOLYBDENUM	J	0.353	2.22	PQL	mg/Kg	
	SODIUM	J	94.3	111	PQL	mg/Kg	
	TIN	J	3.03	11.1	PQL	mg/Kg	
SL-568-SA8-SB-4.0-5.0	BERYLLIUM	J	0.800	1.09	PQL	mg/Kg	J (all detects)
	BORON	J	7.93	10.9	PQL	mg/Kg	
	CADMIUM	J	0.192	1.09	PQL	mg/Kg	
	SODIUM	J	91.9	109	PQL	mg/Kg	
	TIN	J	3.37	10.9	PQL	mg/Kg	
	Zirconium	J	5.33	5.46	PQL	mg/Kg	
SL-569-SA8-SB-0.0-0.5	BERYLLIUM	J	0.810	1.07	PQL	mg/Kg	J (all detects)
	BORON	J	9.97	10.7	PQL	mg/Kg	
	CADMIUM	J	0.427	1.07	PQL	mg/Kg	
	MOLYBDENUM	J	0.248	2.14	PQL	mg/Kg	
	TIN	J	3.39	10.7	PQL	mg/Kg	
SL-569-SA8-SB-4.0-5.0	BERYLLIUM	J	0.769	1.11	PQL	mg/Kg	J (all detects)
	BORON	J	9.02	11.1	PQL	mg/Kg	
	CADMIUM	J	0.132	1.11	PQL	mg/Kg	
	TIN	J	3.03	11.1	PQL	mg/Kg	
	Zirconium	J	4.89	5.55	PQL	mg/Kg	
SL-569-SA8-SB-7.0-8.0	BERYLLIUM	J	0.581	1.08	PQL	mg/Kg	J (all detects)
	BORON	J	6.95	10.8	PQL	mg/Kg	
	CADMIUM	J	0.183	1.08	PQL	mg/Kg	
	TIN	J	2.75	10.8	PQL	mg/Kg	
	Zirconium	J	4.38	5.38	PQL	mg/Kg	

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-568-SA8-SB-0.0-0.5	SELENIUM	J	0.150	0.445	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0513	0.222	PQL	mg/Kg	
SL-568-SA8-SB-4.0-5.0	SILVER	J	0.0595	0.219	PQL	mg/Kg	J (all detects)
SL-569-SA8-SB-0.0-0.5	SILVER	J	0.0820	0.214	PQL	mg/Kg	J (all detects)
SL-569-SA8-SB-4.0-5.0	SILVER	J	0.0326	0.222	PQL	mg/Kg	J (all detects)
SL-569-SA8-SB-7.0-8.0	SILVER	J	0.0339	0.215	PQL	mg/Kg	J (all detects)

Method: 8082A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-569-SA8-SB-0.0-0.5	Aroclor 5460	J	15	36	PQL	ug/Kg	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH084

Laboratory: LL

EDD Filename: PH084_v1.

eQAPP Name: CDM_SSFL_131101_Lan

Method: 8270D SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-568-SA8-SB-0.0-0.5	CHRYSENE	J	5.8	19	PQL	ug/Kg	J (all detects)
SL-568-SA8-SB-4.0-5.0	BIS(2-ETHYLHEXYL)PHTHALATE	J	15	20	PQL	ug/Kg	J (all detects)
	CHRYSENE	J	0.41	1.8	PQL	ug/Kg	
SL-569-SA8-SB-0.0-0.5	BENZO(A)ANTHRACENE	J	0.85	1.9	PQL	ug/Kg	J (all detects)
	BENZO(A)PYRENE	J	1.3	1.9	PQL	ug/Kg	
	BENZO(G,H,I)PERYLENE	J	1.2	1.9	PQL	ug/Kg	
	BENZO(K)FLUORANTHENE	J	1.1	1.9	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	7.9	20	PQL	ug/Kg	
	CHRYSENE	J	1.4	1.9	PQL	ug/Kg	
	PHENANTHRENE	J	0.79	1.9	PQL	ug/Kg	
SL-569-SA8-SB-4.0-5.0	BENZO(A)PYRENE	J	9.0	19	PQL	ug/Kg	J (all detects)
	BENZO(B)FLUORANTHENE	J	12	19	PQL	ug/Kg	
	CHRYSENE	J	9.4	19	PQL	ug/Kg	
SL-569-SA8-SB-7.0-8.0	BENZO(G,H,I)PERYLENE	J	1.2	1.8	PQL	ug/Kg	J (all detects)
	BIS(2-ETHYLHEXYL)PHTHALATE	J	16	20	PQL	ug/Kg	
	CHRYSENE	J	1.4	1.8	PQL	ug/Kg	
	FLUORANTHENE	J	0.89	1.8	PQL	ug/Kg	
	PYRENE	J	0.89	1.8	PQL	ug/Kg	

LDC #: 30370A4

VALIDATION COMPLETENESS WORKSHEET

Date: 9/10/13

SDG #: PH084

ADR

Page: 1 of 1

Laboratory: Eurofins Lancaster Laboratories

Reviewer: a

2nd Reviewer: [Signature]

METHOD: Metals (EPA SW 846 Method 6010C/6020A/7000)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/5/13
II.	ICP/MS Tune	F	
III.	Calibration	J	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	-	
VI.	Matrix Spike Analysis	SW	MSID
VII.	Duplicate Sample Analysis	SW	DUP
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	SW	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	N	
XIV.	Field Duplicates	-	
XV.	Field Blanks	SW	EB=EB-080713 FB=FB-041113

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

(PH086)
D = Duplicate
TB = Trip blank
EB = Equipment blank

(PH029)

Validated Samples: soil

1	SL-568-SA8-SB-0.0-0.5	11		21		31	
2	SL-568-SA8-SB-4.0-5.0	12		22		32	
3	SL-569-SA8-SB-0.0-0.5	13		23		33	
4	SL-569-SA8-SB-4.0-5.0	14		24		34	
5	SL-569-SA8-SB-7.0-8.0	15		25		35	
6	(X1) MS	16		26		36	
7	MSD	17		27		37	
8	DUP	18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

VALIDATION FINDINGS WORKSHEET
Field Blanks

METHOD: Trace Metals (EPA SW846 6010B/7000)

Blank units: mg/L **Associated sample units:** mg/Kg Reason: F

Sampling date: 4/11/13 Soil factor applied 100x

Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: All Soil

Analyte	Blank ID	Sample Identification									
	FB-041113 (SDG: PH029)	Action Limit	1	3							
Cu	0.0036	1.8									
Mo	0.0036	1.8	0.353 [~]	0.248 [~] 0.26							

Sampling date: 8/7/13 Soil factor applied 100x

Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: All Soil

Analyte	Blank ID	Sample Identification									
	EB-080713 (SDG: PH086)	Action Limit	1	3							
Al	0.143	71.5									
Mo	0.0098	4.9	See FB	See FB							
Sn	0.0029	1.45									

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".



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QUALITY ASSURANCE SUMMARY

FORM 5A (MS/MSD)

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

SDG No.: PH084

Matrix: SOIL

Level

(low/med):

LOW

74x (Qualified by RPD)

Background Lab Sample ID: 7150955BKG Matrix Spike Lab Sample ID: 7150955MS Matrix Spike Duplicate Lab Sample ID: 7150955MSD
Batch Id(s): P21837A, P21838A

Analyte	Mass	BKG Sample		MS Sample		MSD Sample		MS Spike Added	MSD Spike Added	Units	MS		MSD		RPD	Control Limit		M	
		Result	C	Result	C	Result	C				%R	Q	%R	Q		%R	RPD		
Aluminum		23881.3392		23309.4291		24857.7930		194.1748	200.0000	MG/KG	-295		488		6		20	P	
Antimony		0.7255	U	17.7573		15.5880		48.5437	50.0000	MG/KG	37	N	31	N	13		75 - 125	20	P
Arsenic		4.7500		19.0670		19.2130		14.5631	15.0000	MG/KG	98		96		1		75 - 125	20	P
Barium		101.6402		300.4942		299.1490		194.1748	200.0000	MG/KG	102		99		0		75 - 125	20	P
Beryllium		0.7843	B	5.8951		5.9520		4.8544	5.0000	MG/KG	105		103		1		75 - 125	20	P
Boron		11.5402		202.9408		204.1660		194.1748	200.0000	MG/KG	99		96		1		75 - 125	20	P
Cadmium		0.3059	B	5.1194		5.0600		4.8544	5.0000	MG/KG	99		95		1		75 - 125	20	P
Calcium		13197.4245		20213.6155		8723.3250		388.3495	400.0000	MG/KG	1807		-1119		79	*		20	P
Chromium		32.5402		44.9883		48.2790		19.4175	20.0000	MG/KG	64	N	79		7		75 - 125	20	P
Cobalt		7.5500		53.5369		54.5730		48.5437	50.0000	MG/KG	95		94		2		75 - 125	20	P
Copper		14.6373		38.7913		38.9130		24.2718	25.0000	MG/KG	100		97		0		75 - 125	20	P
Iron		26333.4627		22020.9544		23439.6400		97.0874	100.0000	MG/KG	-4442		-2894		6			20	P
Lead		7.8147		21.1476		21.0470		14.5631	15.0000	MG/KG	92		88		0		75 - 125	20	P
Lithium		24.9765		125.0777		125.5120		97.0874	100.0000	MG/KG	103		101		0		75 - 125	20	P
Magnesium		5874.9745		5451.8408		5693.8140		194.1748	200.0000	MG/KG	-218		-91		4			20	P
Manganese		366.0216		364.1806		390.1540		48.5437	50.0000	MG/KG	-4		48		7			20	P
Mercury		0.0100	U	0.1895		0.1858		0.1580	0.1567	MG/KG	120		119		2		65 - 135	20	CV
Molybdenum		0.3118	B	191.5913		188.2490		194.1748	200.0000	MG/KG	99		94		2		75 - 125	20	P
Nickel		17.7500		62.9583		63.5750		48.5437	50.0000	MG/KG	93		92		1		75 - 125	20	P
Phosphorus		278.2382		416.2718		376.7180		97.0874	100.0000	MG/KG	142	N	98		10		75 - 125	20	P
Potassium		3676.0137		4789.8505		4668.7380		970.8738	1000.0000	MG/KG	115		99		3		75 - 125	20	P
Selenium	78	0.1322	B	2.0175		2.2100		1.9417	2.0000	MG/KG	97		104		9		75 - 125	20	MS
Silver	107	0.0453	B	10.5010		11.4900		9.7087	10.0000	MG/KG	108		114		9		75 - 125	20	MS
Sodium		83.1363	B	1131.3087		1096.1370		970.8738	1000.0000	MG/KG	108		101		3		75 - 125	20	P
Strontium	88	40.8039		48.4660		50.5600		7.7670	8.0000	MG/KG	99		122		4			20	MS
Thallium	203	0.3229		0.7021		0.7230		0.3883	0.4000	MG/KG	98		100		3		75 - 125	20	MS

Note: Results shown are reported on an as-received basis.

METHODS: P = ICP Atomic Emission Spectrometer MS = ICP Mass Spectrometry	CV = Cold Vapor AF = Cold Vapor Atomic Fluorescence	CONCENTRATION QUALIFIERS: U = Below MDL, B = Below LOQ FLAGS: N = Matrix Spike OOS, * = Duplicate OOS
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QUALITY ASSURANCE SUMMARY

FORM 5A (MS/MSD)

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

SDG No.: PH084

Matrix: SOIL

Level

(low/med):

LOW

24x

Background Lab Sample ID: 7150955BKG

Matrix Spike Lab Sample ID: 7150955MS

Matrix Spike Duplicate Lab Sample ID: 7150955MSD

Batch Id(s): P21837A, P21838A

Analyte	Mass	BKG Sample		MS Sample		MSD Sample		MS Spike Added	MSD Spike Added	Units	MS		MSD		RPD	Q	Control Limit		
		Result	C	Result	C	Result	C				%R	Q	%R	Q			%R	RPD	M
Tin		2.6716	B	356.7320		355.4240		388.3495	400.0000	MG/KG	91		88		0		75 - 125	20	P
Titanium		1042.5873		1379.9748		1310.5480		97.0874	100.0000	MG/KG	348		268		5				P
Vanadium		55.1225		103.5447		106.1450		48.5437	50.0000	MG/KG	100		102		2		75 - 125	20	P
Zinc		64.9539		109.6641		108.4280		48.5437	50.0000	MG/KG	92		87		1		75 - 125	20	P
Zirconium		6.0431		106.8515		107.2500		97.0874	100.0000	MG/KG	104		101		0		75 - 125	20	P

Note: Results shown are reported on an as-received basis.

<p>METHODS:</p> <p>P = ICP Atomic Emission Spectrometer CV = Cold Vapor</p> <p>MS = ICP Mass Spectrometry AF = Cold Vapor Atomic Fluorescence</p>	<p>CONCENTRATION QUALIFIERS:</p> <p>U= Below MDL, B= Below LOQ</p> <p>FLAGS:</p> <p>N = Matrix Spike OOS, * = Duplicate OOS</p>
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Background Lab Sample ID: 7150955BKG
 Batch ID(s): P21837A, P21838A
 Concentration Units: MG/KG

Duplicate Lab Sample ID: 7150955DUP

Analyte	Mass	Control Limit	Samples (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum			23881.3392		23959.3069		0		P
Antimony			-1.6931	B	-1.6802	B	-1		P
Arsenic		3.9	4.7500		4.7396		0		P
Barium			101.6402		102.2297		1		P
Beryllium			0.7843	B	0.7980	B	2		P
Boron		9.8	11.5402		10.8129		7		P
Cadmium			0.3059	B	0.3158	B	3		P
Calcium			13197.4245		10350.5812		24	*	P
Chromium			32.5402		29.6921		9		P
Cobalt			7.5500		7.0782		6		P
Copper			14.6373		13.8327		6		P
Iron			26333.4627		27549.0931		5		P
Lead		2.9	7.8147		8.5693		9		P
Lithium			24.9765		24.6663		1		P
Magnesium			5874.9745		5857.2891		0		P
Manganese			366.0216		385.6851		5		P
Mercury			0.0100	U	0.0098	U			CV
Molybdenum			0.3118	B	0.1822	B	52		P
Nickel			17.7500		16.1604		9		P
Phosphorus			278.2382		295.3168		6		P
Potassium			3676.0137		3587.1832		2		P
Selenium	78		0.1322	B	0.1331	B	1		MS
Silver	107		0.0453	B	0.0546	B	19		MS
Sodium			83.1363	B	90.8356	B	9		P
Strontium	88		40.8039		36.4158		11		MS
Thallium	203	0.2	0.3229		0.3473		7		MS
Tin			2.6716	B	2.8000	B	5		P
Titanium			1042.5873		1121.3871		7		P
Vanadium			55.1225		55.5782		1		P
Zinc			64.9539		80.6465		22	*	P
Zirconium		4.9	6.0431		7.4554		21		P

NOTE: An asterisk (*) in column "Q" indicates poor duplicate precision (RPD > 20% OR |(S) - (D)| > LOQ for values < 5x LOQ).
 The data are considered to be valid because the laboratory control sample is within the control limits. See the Laboratory Control Sample.

ok by difference

Note: Results shown are reported on an as-received basis.

METHODS: P = ICP Atomic Emission Spectrometer MS = ICP Mass Spectrometry CV = Cold Vapor AF = Cold Vapor Atomic Fluorescence	CONCENTRATION QUALIFIERS: U= Below MDL B= Below LOQ FLAGS: Duplicate Out of Spec
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Background Lab Sample ID: 7150955BKG
 Batch ID(s): P21837A
 Concentration Units: UG/L

Serial Dilution Lab Sample ID: 7150955L

SL-568-SAB-SB-00-0.

Analyte	Mass	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Diff.	Q	M
Aluminum		243589.6600		257854.3000		6		P
Antimony		7.4000	U	37.0000	U			P
Arsenic		48.4500		48.4000	B	0		P
Barium		1036.7300		1096.5500		6		P
Beryllium		8.0000	B	8.1500	B	2		P
Boron		117.7100		147.2000	B	25		P
Cadmium		3.1200	B	3.8000	U	100		P
Calcium		134613.7300		140567.5500		4		P
Chromium		331.9100		347.5500		5		P
Cobalt		77.0100		84.4500		10		P
Copper		149.3000		161.6500		8		P
Iron		268601.3200		273374.9500		2		P
Lead		79.7100		85.7000	B	8		P
Lithium		254.7600		258.8500		2		P
Magnesium		59924.7400		63059.8000		5		P
Manganese		3733.4200		4043.4500		8		P
Molybdenum		3.1800	B	11.4500	B	260		P
Nickel		181.0500		196.7000		9		P
Phosphorus		2838.0300		2890.6500		2		P
Potassium		37495.3400		39478.5500		5		P
Selenium	78	0.6742	B	2.5000	U	100		MS
Silver	107	0.2309	B	0.6500	U	100		MS
Sodium		847.9900	B	835.0000	U	100		P
Strontium	88	208.1000		176.8000		15	E	MS
Thallium	203	1.6470		1.4835	B	10		MS
Tin		27.2500	B	24.6500	B	10		P
Titanium		10634.3900		10774.4000		1		P
Vanadium		562.2500		587.7000		5		P
Zinc		662.5300		682.1500		3		P
Zirconium		61.6400		88.3500	B	43		P

NOTE: An E in column Q indicates the presence of a chemical or physical interference in the matrix when the % difference is greater than 10%. This applies only when (I) is greater than or equal to 50x MDL for ICP, 100x MDL for ICP-MS (6020), 50x MDL for ICP-MS (200.8), or 25x MDL for GFAA.

SL/5/A (A)

METHODS: P = ICP Atomic Emission Spectrometer MS = ICP Mass Spectrometry	CONCENTRATION QUALIFIERS: U= Below MDL B= Below LOQ FLAGS: E = Matrix Effects exist as proven by Serial Dilution or Spiked Dilution
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**Data Validation Report
Santa Susana Field Laboratory**

Area 8

SDG: PH086

Prepared for

CDM
555 17th Street, Suite 1100
Denver, CO 80202

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, California 92010

November 4, 2013

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on August 7, 2013. Data validation was performed in accordance with the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008), Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005), and for Inorganic Data Review (January 2010). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Volatiles (VOC) by Environmental Protection Agency (EPA) SW 846 Method 8260B
Semivolatiles (SVOCs) by EPA SW 846 Method 8270D
Semivolatiles (SVOCs) by EPA SW 846 Method 8270D utilizing Selective Ion Monitoring (SIM)
Pesticides by EPA SW 846 Method 8081B
Polychlorinated Biphenyls (PCBs) by EPA SW 846 Method 8082A
Metals by EPA SW 846 Method 6010C, 6020A, 7470A and 7471B
Herbicides by EPA SW 846 Method 8151A
Total Petroleum Hydrocarbons as Gasoline (TPH-G) by EPA SW 846 Method 8015M
Total Petroleum Hydrocarbons as Extractables (TPH-E) by EPA SW 846 Method 8015M
Dioxins and Dibenzofurans by EPA Method 1613B

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment II. Level III Automated Data Review outliers are presented in Enclosure I.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibration blanks (ICB/CCBs), surrogates, internal standards (dioxins only), laboratory control sample (LCS), method blanks, equipment blanks, field blanks and trip blanks. No samples in this SDG were subjected to Level IV evaluation.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of interference check samples, which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

II. Initial Calibration

Initial Calibration data were not reviewed for level III.

III. Continuing Calibration

Continuing calibration data were not reviewed for level III.

IV. Blanks

Method blanks were performed at the required frequencies. No contaminant concentrations were detected in the method or preparation blanks with the exception of several blanks for SVOCs, dioxins and metals. The associated sample results were qualified as non-detected (U) due to method blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the associated blanks were not qualified. The details regarding the qualification of data are provided in Enclosure I.

No contaminant concentrations were detected in the initial or continuing calibration blanks with the following exceptions:

SDG/Method	Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PH086/ 6010C	ICB/CCB	Aluminum Molybdenum	78.3 ug/L 4.0 ug/L	EB-080713 SL-575-SA8-SB-0.0-0.5 SL-575-SA8-SB-4.0-4.0 SL-575-SA8-SB-9.0-10.0 SL-566-SA8-SB-0.0-0.5 SL-566-SA8-SB-4.0-5.0

Sample concentrations were compared to concentrations detected in the initial and continuing blanks. The sample concentrations were not detected or were significantly greater than the concentrations found in the associated blanks with the following exceptions:

SDG/Method	Sample	Compound	Reported Concentration	Modified Final Concentration
PH086/ 6010C	EB-080713	Aluminum Molybdenum	143 ug/L 9.8 ug/L	143U ug/L 9.8U ug/L

V. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. ICP Interference Check Sample (ICS) Analysis

ICP interference check data were not reviewed for level III.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed at the required frequency. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Duplicates Sample

The laboratory has indicated that there were no laboratory duplicate (DUP) analyses specified for the samples in this SDG; therefore, laboratory duplicate analyses were not performed for this SDG.

IX. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

X. Internal Standards

Internal standards were reviewed for dioxins. Percent recoveries (%R) were within QC limits.

XI. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XII. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the RL as detected were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH086	All compounds reported as detected below the RL.	J (all detects)	A

XIII. Field Duplicate Samples

No field duplicates were identified in this SDG.

XIV. Field Blank Samples

One trip blank was collected and analyzed for TPH as gasoline. No contaminants were found in the trip blank.

One equipment blank was collected and analyzed for VOCs, SVOCs, pesticides, PCBs,

herbicides, metals, TPH as gasoline, TPH as extractable and dioxins. The equipment blank had several detections for VOCs, SVOCs, metals and dioxins. The associated sample results were qualified as non-detected (U) due to equipment blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the equipment blanks were not qualified. The equipment blank outlier reports are presented in Enclosure I.

One field blank (from SDG PH029) was collected and analyzed for VOCs, SVOCs, pesticides, PCBs, herbicides, metals, TPH as gasoline, TPH as extractable and dioxins. The field blank had detections for several VOCs, SVOCs, metals and dioxins. The associated sample results were qualified as non-detected (U) due to field blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the field blank were not qualified. The field blank outlier reports are presented in Enclosure I.

XV. Overall Assessment of Data

No data associated with this sampling event were rejected. The overall assessment of QA/QC data review by automated and manual validation of this sampling event met project requirements and analytical completeness levels with the exceptions noted in the above sections. All data are deemed useable for the intended use.

Data flags are summarized and are presented as Attachment 2.

Attachment 1
Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
07-Aug-2013	SL-575-SA8-SB-0.0-0.5	7154022	N	3050B	6010C	III
07-Aug-2013	SL-575-SA8-SB-0.0-0.5	7154022	N	3050B	6020A	III
07-Aug-2013	SL-575-SA8-SB-0.0-0.5	7154022	N	3546	8015M	III
07-Aug-2013	SL-575-SA8-SB-0.0-0.5	7154022	N	3546	8081B	III
07-Aug-2013	SL-575-SA8-SB-0.0-0.5	7154022	N	3546	8082A	III
07-Aug-2013	SL-575-SA8-SB-0.0-0.5	7154022	N	3546	8270D SIM	III
07-Aug-2013	SL-575-SA8-SB-0.0-0.5	7154022	N	3550B	8151A	III
07-Aug-2013	SL-575-SA8-SB-0.0-0.5	7154022	N	METHOD	1613B	III
07-Aug-2013	SL-575-SA8-SB-0.0-0.5	7154022	N	METHOD	7471B	III
07-Aug-2013	TB-080713	7154021	TB	5030B	8015M	III
07-Aug-2013	SL-575-SA8-SB-4.0-5.0	7154023	N	3050B	6010C	III
07-Aug-2013	SL-575-SA8-SB-4.0-5.0	7154023	N	3050B	6020A	III
07-Aug-2013	SL-575-SA8-SB-4.0-5.0	7154023	N	3546	8015M	III
07-Aug-2013	SL-575-SA8-SB-4.0-5.0	7154023	N	3546	8081B	III
07-Aug-2013	SL-575-SA8-SB-4.0-5.0	7154023	N	3546	8082A	III
07-Aug-2013	SL-575-SA8-SB-4.0-5.0	7154023	N	3546	8270D SIM	III
07-Aug-2013	SL-575-SA8-SB-4.0-5.0	7154023	N	3550B	8151A	III
07-Aug-2013	SL-575-SA8-SB-4.0-5.0	7154023	N	5035A	8015M	III
07-Aug-2013	SL-575-SA8-SB-4.0-5.0	7154023	N	METHOD	1613B	III
07-Aug-2013	SL-575-SA8-SB-4.0-5.0	7154023	N	METHOD	7471B	III
07-Aug-2013	SL-575-SA8-SB-4.0-5.0MSD	P154023M242259A	MSD	3546	8081B	III
07-Aug-2013	SL-575-SA8-SB-4.0-5.0MS	P154023R242244A	MS	3546	8081B	III
07-Aug-2013	SL-575-SA8-SB-9.0-10.0	7154024	N	3050B	6010C	III
07-Aug-2013	SL-575-SA8-SB-9.0-10.0	7154024	N	3050B	6020A	III
07-Aug-2013	SL-575-SA8-SB-9.0-10.0	7154024	N	3546	8015M	III
07-Aug-2013	SL-575-SA8-SB-9.0-10.0	7154024	N	3546	8081B	III

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
07-Aug-2013	SL-575-SA8-SB-9.0-10.0	7154024	N	3546	8082A	III
07-Aug-2013	SL-575-SA8-SB-9.0-10.0	7154024	N	3546	8270D SIM	III
07-Aug-2013	SL-575-SA8-SB-9.0-10.0	7154024	N	3550B	8151A	III
07-Aug-2013	SL-575-SA8-SB-9.0-10.0	7154024	N	5035A	8015M	III
07-Aug-2013	SL-575-SA8-SB-9.0-10.0	7154024	N	METHOD	7471B	III
07-Aug-2013	SL-566-SA8-SB-0.0-0.5	7154025	N	3050B	6010C	III
07-Aug-2013	SL-566-SA8-SB-0.0-0.5	7154025	N	3050B	6020A	III
07-Aug-2013	SL-566-SA8-SB-0.0-0.5	7154025	N	3546	8015M	III
07-Aug-2013	SL-566-SA8-SB-0.0-0.5	7154025	N	3546	8082A	III
07-Aug-2013	SL-566-SA8-SB-0.0-0.5	7154025	N	3546	8270D SIM	III
07-Aug-2013	SL-566-SA8-SB-0.0-0.5	7154025	N	METHOD	1613B	III
07-Aug-2013	SL-566-SA8-SB-0.0-0.5	7154025	N	METHOD	7471B	III
07-Aug-2013	SL-566-SA8-SB-4.0-5.0	7154026	N	3050B	6010C	III
07-Aug-2013	SL-566-SA8-SB-4.0-5.0	7154026	N	3050B	6020A	III
07-Aug-2013	SL-566-SA8-SB-4.0-5.0	7154026	N	3546	8015M	III
07-Aug-2013	SL-566-SA8-SB-4.0-5.0	7154026	N	3546	8082A	III
07-Aug-2013	SL-566-SA8-SB-4.0-5.0	7154026	N	3546	8270D SIM	III
07-Aug-2013	SL-566-SA8-SB-4.0-5.0	7154026	N	5035A	8015M	III
07-Aug-2013	SL-566-SA8-SB-4.0-5.0	7154026	N	METHOD	1613B	III
07-Aug-2013	SL-566-SA8-SB-4.0-5.0	7154026	N	METHOD	7471B	III
07-Aug-2013	EB-080713	7154020	EB	3005A	6010C	III
07-Aug-2013	EB-080713	7154020	EB	3510C	8015M	III
07-Aug-2013	EB-080713	7154020	EB	3510C	8081B	III
07-Aug-2013	EB-080713	7154020	EB	3510C	8082A	III
07-Aug-2013	EB-080713	7154020	EB	3510C	8270D	III
07-Aug-2013	EB-080713	7154020	EB	3510C	8270D SIM	III

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
07-Aug-2013	EB-080713	7154020	EB	5030B	8015M	III
07-Aug-2013	EB-080713	7154020	EB	5030B	8260B	III
07-Aug-2013	EB-080713	7154020	EB	M3010A	6020A	III
07-Aug-2013	EB-080713	7154020	EB	METHOD	1613B	III
07-Aug-2013	EB-080713	7154020	EB	METHOD	7470A	III
07-Aug-2013	EB-080713	7154020	EB	METHOD	8151A	III

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH086

Laboratory: LL

EDD Filename: PH086_v1.

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: METALS
Method: 6010C **Matrix: AQ**

Sample ID: EB-080713 Collected: 8/7/2013 3:00:00 PM Analysis Type: REA2 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	0.143	J	0.0828	MDL	0.400	PQL	mg/L	U	B
MOLYBDENUM	0.0098	J	0.0017	MDL	0.0200	PQL	mg/L	U	B
TIN	0.0029	J	0.0029	MDL	0.0400	PQL	mg/L	J	Z

Method Category: METALS
Method: 6010C **Matrix: SO**

Sample ID: SL-566-SA8-SB-0.0-0.5 Collected: 8/7/2013 12:00:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	3.69	J	0.706	MDL	4.03	PQL	mg/Kg	J	Z
CADMIUM	0.268	J	0.0766	MDL	1.01	PQL	mg/Kg	J	Z
SODIUM	85.2	J	16.8	MDL	101	PQL	mg/Kg	J	Z
TIN	3.12	J	0.222	MDL	10.1	PQL	mg/Kg	U	B
Zirconium	4.39	J	0.847	MDL	5.04	PQL	mg/Kg	J	Z

Sample ID: SL-566-SA8-SB-4.0-5.0 Collected: 8/7/2013 12:40:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	4.11	J	0.762	MDL	4.35	PQL	mg/Kg	J	Z
BERYLLIUM	1.01	J	0.0729	MDL	1.09	PQL	mg/Kg	J	Z
CADMIUM	0.104	J	0.0827	MDL	1.09	PQL	mg/Kg	J	Z
TIN	3.33	J	0.239	MDL	10.9	PQL	mg/Kg	U	B
Zirconium	3.15	J	0.914	MDL	5.44	PQL	mg/Kg	J	Z

Sample ID: SL-575-SA8-SB-0.0-0.5 Collected: 8/7/2013 7:40:00 AM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	2.89	J	0.758	MDL	4.33	PQL	mg/Kg	J	Z
BERYLLIUM	0.931	J	0.0726	MDL	1.08	PQL	mg/Kg	J	Z
CADMIUM	0.337	J	0.0824	MDL	1.08	PQL	mg/Kg	J	Z
SODIUM	75.5	J	18.1	MDL	108	PQL	mg/Kg	J	Z
TIN	3.54	J	0.238	MDL	10.8	PQL	mg/Kg	U	B
Zirconium	3.13	J	0.910	MDL	5.42	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH086

Laboratory: LL

EDD Filename: PH086_v1.

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: METALS
Method: 6010C **Matrix:** SO

Sample ID: SL-575-SA8-SB-4.0-5.0 Collected: 8/7/2013 8:20:00 AM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	4.38	J	0.800	MDL	4.57	PQL	mg/Kg	J	Z
BERYLLIUM	0.312	J	0.0766	MDL	1.14	PQL	mg/Kg	J	Z
CADMIUM	0.136	J	0.0869	MDL	1.14	PQL	mg/Kg	J	Z
MOLYBDENUM	3.29		0.194	MDL	2.29	PQL	mg/Kg	U	F
SODIUM	106	J	19.1	MDL	114	PQL	mg/Kg	J	Z
TIN	2.72	J	0.252	MDL	11.4	PQL	mg/Kg	U	B
Zirconium	2.65	J	0.960	MDL	5.72	PQL	mg/Kg	J	Z

Sample ID: SL-575-SA8-SB-9.0-10.0 Collected: 8/7/2013 9:15:00 AM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	2.29	J	0.784	MDL	4.48	PQL	mg/Kg	J	Z
BERYLLIUM	0.709	J	0.0750	MDL	1.12	PQL	mg/Kg	J	Z
CADMIUM	0.115	J	0.0851	MDL	1.12	PQL	mg/Kg	J	Z
SODIUM	106	J	18.7	MDL	112	PQL	mg/Kg	J	Z
TIN	3.21	J	0.246	MDL	11.2	PQL	mg/Kg	U	B
Zirconium	2.01	J	0.941	MDL	5.60	PQL	mg/Kg	J	Z

Method Category: METALS
Method: 6020A **Matrix:** SO

Sample ID: SL-566-SA8-SB-0.0-0.5 Collected: 8/7/2013 12:00:00 Analysis Type: REA2 Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.326	J	0.101	MDL	0.403	PQL	mg/Kg	J	Z

Sample ID: SL-566-SA8-SB-0.0-0.5 Collected: 8/7/2013 12:00:00 Analysis Type: RES Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0772	J	0.0262	MDL	0.202	PQL	mg/Kg	J	Z

Sample ID: SL-566-SA8-SB-4.0-5.0 Collected: 8/7/2013 12:40:00 Analysis Type: REA2 Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.132	J	0.109	MDL	0.435	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH086

Laboratory: LL

EDD Filename: PH086_v1.

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: METALS
Method: 6020A **Matrix:** SO

Sample ID: SL-566-SA8-SB-4.0-5.0 Collected: 8/7/2013 12:40:00 Analysis Type: RES Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0838	J	0.0283	MDL	0.218	PQL	mg/Kg	J	Z

Sample ID: SL-575-SA8-SB-0.0-0.5 Collected: 8/7/2013 7:40:00 AM Analysis Type: REA2 Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.262	J	0.108	MDL	0.433	PQL	mg/Kg	J	Z

Sample ID: SL-575-SA8-SB-0.0-0.5 Collected: 8/7/2013 7:40:00 AM Analysis Type: RES Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0579	J	0.0282	MDL	0.217	PQL	mg/Kg	J	Z

Sample ID: SL-575-SA8-SB-4.0-5.0 Collected: 8/7/2013 8:20:00 AM Analysis Type: RES Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0864	J	0.0297	MDL	0.229	PQL	mg/Kg	J	Z

Sample ID: SL-575-SA8-SB-9.0-10.0 Collected: 8/7/2013 9:15:00 AM Analysis Type: RES Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0470	J	0.0291	MDL	0.224	PQL	mg/Kg	J	Z

Method Category: METALS
Method: 7471B **Matrix:** SO

Sample ID: SL-566-SA8-SB-0.0-0.5 Collected: 8/7/2013 12:00:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0131	J	0.0102	MDL	0.0169	PQL	mg/Kg	J	Z

Sample ID: SL-575-SA8-SB-0.0-0.5 Collected: 8/7/2013 7:40:00 AM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0110	J	0.0108	MDL	0.0180	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH086

Laboratory: LL

EDD Filename: PH086_v1.

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: METALS
Method: 7471B **Matrix: SO**

Sample ID: SL-575-SA8-SB-4.0-5.0 Collected: 8/7/2013 8:20:00 AM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0163	J	0.0112	MDL	0.0186	PQL	mg/Kg	J	Z

Sample ID: SL-575-SA8-SB-9.0-10.0 Collected: 8/7/2013 9:15:00 AM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0163	J	0.0109	MDL	0.0181	PQL	mg/Kg	J	Z

Method Category: SVOA
Method: 1613B **Matrix: AQ**

Sample ID: EB-080713 Collected: 8/7/2013 3:00:00 PM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.687	JB	0.329	MDL	9.67	PQL	pg/L	U	B
1,2,3,4,6,7,8-HPCDF	0.427	JBQ	0.111	MDL	9.67	PQL	pg/L	U	B
1,2,3,4,7,8,9-HPCDF	0.258	JBQ	0.144	MDL	9.67	PQL	pg/L	U	B
1,2,3,4,7,8-HXCDF	0.396	JBQ	0.153	MDL	9.67	PQL	pg/L	U	B
1,2,3,6,7,8-HXCDD	0.476	JBQ	0.269	MDL	9.67	PQL	pg/L	U	B
1,2,3,6,7,8-HXCDF	0.426	JB	0.167	MDL	9.67	PQL	pg/L	U	B
1,2,3,7,8-PECDF	0.451	JBQ	0.239	MDL	9.67	PQL	pg/L	U	B
2,3,4,7,8-PECDF	0.403	JBQ	0.229	MDL	9.67	PQL	pg/L	U	B
OCDD	1.65	JBQ	0.332	MDL	19.3	PQL	pg/L	U	B
OCDF	1.13	JBQ	0.293	MDL	19.3	PQL	pg/L	U	B

Method Category: SVOA
Method: 1613B **Matrix: SO**

Sample ID: SL-566-SA8-SB-0.0-0.5 Collected: 8/7/2013 12:00:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	4.88	JB	0.0733	MDL	5.00	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.637	JB	0.0277	MDL	5.00	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0906	JQ	0.0360	MDL	5.00	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.0923	J	0.0458	MDL	5.00	PQL	ng/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH086

Laboratory: LL

EDD Filename: PH086_v1.

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: SVOA

Method: 1613B

Matrix: SO

Sample ID: SL-566-SA8-SB-0.0-0.5

Collected: 8/7/2013 12:00:00

Analysis Type: RES

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,7,8-HXCDF	0.0551	JBQ	0.0228	MDL	5.00	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.420	JB	0.0507	MDL	5.00	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0898	JBQ	0.0225	MDL	5.00	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.556	JQ	0.0492	MDL	5.00	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.811	JB	0.0300	MDL	5.00	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.233	JB	0.0284	MDL	5.00	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.0659	JB	0.0226	MDL	5.00	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0731	J	0.0257	MDL	5.00	PQL	ng/Kg	U	B
OCDF	1.53	JB	0.0498	MDL	10.0	PQL	ng/Kg	J	Z

Sample ID: SL-566-SA8-SB-4.0-5.0

Collected: 8/7/2013 12:40:00

Analysis Type: RES

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.915	JB	0.0575	MDL	5.43	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.159	JB	0.0207	MDL	5.43	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0504	JQ	0.0299	MDL	5.43	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.0633	JQ	0.0299	MDL	5.43	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.0505	JBQ	0.0208	MDL	5.43	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.117	JBQ	0.0337	MDL	5.43	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0444	JBQ	0.0186	MDL	5.43	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.145	JQ	0.0345	MDL	5.43	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.168	JB	0.0229	MDL	5.43	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.104	JBQ	0.0299	MDL	5.43	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0269	JBQ	0.0185	MDL	5.43	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.159	JQ	0.0249	MDL	5.43	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.0575	JQ	0.0460	MDL	1.09	PQL	ng/Kg	J	Z
OCDD	7.14	JB	0.0313	MDL	10.9	PQL	ng/Kg	J	Z
OCDF	0.319	JB	0.0455	MDL	10.9	PQL	ng/Kg	U	B

Sample ID: SL-575-SA8-SB-0.0-0.5

Collected: 8/7/2013 7:40:00 AM

Analysis Type: RES

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	3.71	JB	0.0520	MDL	5.39	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.711	JB	0.0310	MDL	5.39	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0411	JQ	0.0333	MDL	5.39	PQL	ng/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH086

Laboratory: LL

EDD Filename: PH086_v1.

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: SVOA
Method: 1613B **Matrix:** SO

Sample ID: SL-575-SA8-SB-0.0-0.5 Collected: 8/7/2013 7:40:00 AM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,7,8-HxCDD	0.0707	JQ	0.0474	MDL	5.39	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.0771	JBQ	0.0294	MDL	5.39	PQL	ng/Kg	U	B
1,2,3,6,7,8-HxCDD	0.420	JB	0.0489	MDL	5.39	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.119	JB	0.0308	MDL	5.39	PQL	ng/Kg	U	B
1,2,3,7,8,9-HxCDD	0.616	J	0.0501	MDL	5.39	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.503	JB	0.0311	MDL	5.39	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.0992	JBQ	0.0689	MDL	5.39	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.239	JBQ	0.0350	MDL	5.39	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.0589	JBQ	0.0271	MDL	5.39	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.116	JQ	0.0287	MDL	5.39	PQL	ng/Kg	U	B
OCDF	1.73	JB	0.0388	MDL	10.8	PQL	ng/Kg	J	Z

Sample ID: SL-575-SA8-SB-4.0-5.0 Collected: 8/7/2013 8:20:00 AM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.237	JB	0.0403	MDL	5.57	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0844	JB	0.0170	MDL	5.57	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0286	J	0.0196	MDL	5.57	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HxCDD	0.0423	JBQ	0.0344	MDL	5.57	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0183	JBQ	0.0178	MDL	5.57	PQL	ng/Kg	U	B
1,2,3,7,8,9-HxCDD	0.0711	JQ	0.0314	MDL	5.57	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.0554	JBQ	0.0182	MDL	5.57	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0646	JBQ	0.0499	MDL	5.57	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.0603	JBQ	0.0247	MDL	5.57	PQL	ng/Kg	U	B
OCDD	1.59	JB	0.0580	MDL	11.1	PQL	ng/Kg	J	Z
OCDF	0.127	JB	0.0518	MDL	11.1	PQL	ng/Kg	U	B

Method Category: SVOA
Method: 8015M **Matrix:** SO

Sample ID: SL-566-SA8-SB-0.0-0.5 Collected: 8/7/2013 12:00:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C15-C20)	3.1	J	2.0	MDL	5.1	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH086

Laboratory: LL

EDD Filename: PH086_v1.

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: SVOA
Method: 8015M **Matrix:** SO

Sample ID: SL-566-SA8-SB-4.0-5.0 Collected: 8/7/2013 12:40:00 Analysis Type: REA Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C15-C20)	2.2	J	2.2	MDL	5.4	PQL	mg/Kg	J	Z

Method Category: SVOA
Method: 8081B **Matrix:** SO

Sample ID: SL-575-SA8-SB-9.0-10.0 Collected: 8/7/2013 9:15:00 AM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALPHA-BHC	0.22	J	0.19	MDL	0.94	PQL	ug/Kg	J	Z

Method Category: SVOA
Method: 8270D SIM **Matrix:** AQ

Sample ID: EB-080713 Collected: 8/7/2013 3:00:00 PM Analysis Type: RES-BASE/NEUTRAL Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-METHYLNAPHTHALENE	0.012	J	0.010	MDL	0.052	PQL	ug/L	J	Z
Diethylphthalate	0.44	J	0.052	MDL	1.0	PQL	ug/L	U	B
Di-n-butylphthalate	0.18	J	0.052	MDL	1.0	PQL	ug/L	U	B
NAPHTHALENE	0.035	J	0.031	MDL	0.052	PQL	ug/L	J	Z

Method Category: SVOA
Method: 8270D SIM **Matrix:** SO

Sample ID: SL-566-SA8-SB-0.0-0.5 Collected: 8/7/2013 12:00:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1-METHYLNAPHTHALENE	1.6	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
2-METHYLNAPHTHALENE	0.76	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(B)FLUORANTHENE	1.2	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
CHRYSENE	1.4	J	0.34	MDL	1.7	PQL	ug/Kg	J	Z
FLUORANTHENE	1.4	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
NAPHTHALENE	0.95	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
PHENANTHRENE	1.2	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH086

Laboratory: LL

EDD Filename: PH086_v1.

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: SVOA
Method: 8270D SIM **Matrix:** SO

Sample ID: SL-566-SA8-SB-0.0-0.5 Collected: 8/7/2013 12:00:00 Analysis Type: RES-BASE/NEUTRAL Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PYRENE	1.1	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: SL-566-SA8-SB-4.0-5.0 Collected: 8/7/2013 12:40:00 Analysis Type: RES-BASE/NEUTRAL Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHRYSENE	0.49	J	0.36	MDL	1.8	PQL	ug/Kg	J	Z
NAPHTHALENE	0.74	J	0.73	MDL	1.8	PQL	ug/Kg	U	F

Sample ID: SL-575-SA8-SB-4.0-5.0 Collected: 8/7/2013 8:20:00 AM Analysis Type: RES-BASE/NEUTRAL Dilution: 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHRYSENE	5.6	J	3.8	MDL	19	PQL	ug/Kg	J	Z

Method Category: VOA
Method: 8260B **Matrix:** AQ

Sample ID: EB-080713 Collected: 8/7/2013 3:00:00 PM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACETONE	8	J	6	MDL	20	PQL	ug/L	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH086

Laboratory: LL

EDD Filename: PH086_v1.

eQAPP Name: CDM_SSFL_131101_Lan

Reason Code Legend

<i>Reason Code</i>	<i>Description</i>
B	Calibration Blank Contamination
B	Method Blank Contamination
F	Equipment Blank Contamination
F	Field Blank Contamination
S	Surrogate/Tracer Recovery Upper Estimation
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

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Enclosure I
EPA Level III ADR Outliers
(Including Manual Review Outliers)

Quality Control Outlier Reports

PH086

Method Blank Outlier Report

Lab Reporting Batch ID: PH086

Laboratory: LL

EDD Filename: PH086_v1.

eQAPP Name: CDM_SSFL_131101_Lan

Method: 1613B
Matrix: AQ

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2280B371232	8/20/2013 12:32:00 PM	1,2,3,4,6,7,8-HPCDD 1,2,3,4,6,7,8-HPCDF 1,2,3,4,7,8,9-HPCDF 1,2,3,4,7,8-HxCDD 1,2,3,4,7,8-HXCDF 1,2,3,6,7,8-HXCDD 1,2,3,6,7,8-HXCDF 1,2,3,7,8,9-HXCDD 1,2,3,7,8,9-HXCDF 1,2,3,7,8-PECDD 1,2,3,7,8-PECDF 2,3,4,6,7,8-HXCDF 2,3,4,7,8-PECDF 2,3,7,8-TCDD OCDD OCDF	2.77 pg/L 2.23 pg/L 2.18 pg/L 2.40 pg/L 2.10 pg/L 2.98 pg/L 2.29 pg/L 2.30 pg/L 1.61 pg/L 2.06 pg/L 1.79 pg/L 2.02 pg/L 1.38 pg/L 1.00 pg/L 7.37 pg/L 6.01 pg/L	EB-080713

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB-080713(RES)	1,2,3,4,6,7,8-HPCDD	0.687 pg/L	0.687U pg/L
EB-080713(RES)	1,2,3,4,6,7,8-HPCDF	0.427 pg/L	0.427U pg/L
EB-080713(RES)	1,2,3,4,7,8,9-HPCDF	0.258 pg/L	0.258U pg/L
EB-080713(RES)	1,2,3,4,7,8-HXCDF	0.396 pg/L	0.396U pg/L
EB-080713(RES)	1,2,3,6,7,8-HXCDD	0.476 pg/L	0.476U pg/L
EB-080713(RES)	1,2,3,6,7,8-HXCDF	0.426 pg/L	0.426U pg/L
EB-080713(RES)	1,2,3,7,8-PECDF	0.451 pg/L	0.451U pg/L
EB-080713(RES)	2,3,4,7,8-PECDF	0.403 pg/L	0.403U pg/L
EB-080713(RES)	OCDD	1.65 pg/L	1.65U pg/L
EB-080713(RES)	OCDF	1.13 pg/L	1.13U pg/L

Method: 1613B
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2270B370710	8/17/2013 7:10:00 AM	1,2,3,4,6,7,8-HPCDD 1,2,3,4,6,7,8-HPCDF 1,2,3,4,7,8-HXCDF 1,2,3,6,7,8-HXCDD 1,2,3,6,7,8-HXCDF 1,2,3,7,8,9-HXCDF 1,2,3,7,8-PECDD 1,2,3,7,8-PECDF 2,3,4,6,7,8-HXCDF 2,3,4,7,8-PECDF OCDD OCDF	0.0682 ng/Kg 0.0368 ng/Kg 0.0398 ng/Kg 0.0344 ng/Kg 0.0310 ng/Kg 0.0558 ng/Kg 0.0796 ng/Kg 0.0421 ng/Kg 0.0316 ng/Kg 0.0576 ng/Kg 0.286 ng/Kg 0.112 ng/Kg	SL-566-SA8-SB-0.0-0.5 SL-566-SA8-SB-4.0-5.0 SL-575-SA8-SB-0.0-0.5 SL-575-SA8-SB-4.0-5.0

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-566-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.0551 ng/Kg	0.0551U ng/Kg

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

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Method Blank Outlier Report

Lab Reporting Batch ID: PH086

Laboratory: LL

EDD Filename: PH086_v1.

eQAPP Name: CDM_SSFL_131101_Lan

Method: 1613B

Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
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The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-566-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.0898 ng/Kg	0.0898U ng/Kg
SL-566-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0659 ng/Kg	0.0659U ng/Kg
SL-566-SA8-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.0731 ng/Kg	0.0731U ng/Kg
SL-566-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.159 ng/Kg	0.159U ng/Kg
SL-566-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.0505 ng/Kg	0.0505U ng/Kg
SL-566-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDD	0.117 ng/Kg	0.117U ng/Kg
SL-566-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.0444 ng/Kg	0.0444U ng/Kg
SL-566-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDF	0.168 ng/Kg	0.168U ng/Kg
SL-566-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.104 ng/Kg	0.104U ng/Kg
SL-566-SA8-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0269 ng/Kg	0.0269U ng/Kg
SL-566-SA8-SB-4.0-5.0(RES)	2,3,4,7,8-PECDF	0.159 ng/Kg	0.159U ng/Kg
SL-566-SA8-SB-4.0-5.0(RES)	OCDF	0.319 ng/Kg	0.319U ng/Kg
SL-575-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.0771 ng/Kg	0.0771U ng/Kg
SL-575-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.119 ng/Kg	0.119U ng/Kg
SL-575-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.0992 ng/Kg	0.0992U ng/Kg
SL-575-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0589 ng/Kg	0.0589U ng/Kg
SL-575-SA8-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.116 ng/Kg	0.116U ng/Kg
SL-575-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDD	0.237 ng/Kg	0.237U ng/Kg
SL-575-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0844 ng/Kg	0.0844U ng/Kg
SL-575-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDD	0.0423 ng/Kg	0.0423U ng/Kg
SL-575-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.0183 ng/Kg	0.0183U ng/Kg
SL-575-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDF	0.0554 ng/Kg	0.0554U ng/Kg
SL-575-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDD	0.0646 ng/Kg	0.0646U ng/Kg
SL-575-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.0603 ng/Kg	0.0603U ng/Kg
SL-575-SA8-SB-4.0-5.0(RES)	OCDF	0.127 ng/Kg	0.127U ng/Kg

Method: 6010C

Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P22037AB221141	8/16/2013 11:41:00 AM	CALCIUM LITHIUM TIN ZINC	3.70 mg/Kg 0.85 mg/Kg 1.92 mg/Kg 0.422 mg/Kg	SL-566-SA8-SB-0.0-0.5 SL-566-SA8-SB-4.0-5.0 SL-575-SA8-SB-0.0-0.5 SL-575-SA8-SB-4.0-5.0 SL-575-SA8-SB-9.0-10.0

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-566-SA8-SB-0.0-0.5(RES)	TIN	3.12 mg/Kg	3.12U mg/Kg
SL-566-SA8-SB-4.0-5.0(RES)	TIN	3.33 mg/Kg	3.33U mg/Kg

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

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Method Blank Outlier Report

Lab Reporting Batch ID: PH086

Laboratory: LL

EDD Filename: PH086_v1.

eQAPP Name: CDM_SSFL_131101_Lan

Method:	6010C
Matrix:	SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
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The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-575-SA8-SB-0.0-0.5(RES)	TIN	3.54 mg/Kg	3.54U mg/Kg
SL-575-SA8-SB-4.0-5.0(RES)	TIN	2.72 mg/Kg	2.72U mg/Kg
SL-575-SA8-SB-9.0-10.0(RES)	TIN	3.21 mg/Kg	3.21U mg/Kg

Method:	8270D SIM
Matrix:	AQ

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
PLKWH22B262352	8/19/2013 11:52:00 PM	BIS(2-ETHYLHEXYL)PHTHALATE Diethylphthalate Di-n-butylphthalate	0.077 ug/L 0.077 ug/L 0.14 ug/L	EB-080713

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB-080713(RES)	Diethylphthalate	0.44 ug/L	1.0U ug/L
EB-080713(RES)	Di-n-butylphthalate	0.18 ug/L	1.0U ug/L

Equipment Rinsate Blank Outlier Report

Lab Reporting Batch ID: PH086

Laboratory: LL

EDD Filename: PH086_v1.

eQAPP Name: CDM_SSFL_131101_Lan

Method: 6010C
Matrix: SO

Equipment Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
EB-080713(REA2)	8/7/2013 3:00:00 PM	ALUMINUM MOLYBDENUM TIN	0.143 mg/L 0.0098 mg/L 0.0029 mg/L	SL-566-SA8-SB-0.0-0.5 SL-566-SA8-SB-4.0-5.0 SL-575-SA8-SB-0.0-0.5 SL-575-SA8-SB-4.0-5.0 SL-575-SA8-SB-9.0-10.0

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-575-SA8-SB-4.0-5.0(RES)	MOLYBDENUM	3.29 mg/Kg	3.29U mg/Kg

Field Blank Outlier Report

Lab Reporting Batch ID: PH086

Laboratory: LL

EDD Filename: PH086_v1.

eQAPP Name: CDM_SSFL_131101_Lan

Method: 8270D SIM
Matrix: SO

Field Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
FB-041113(RES)	4/11/2013 3:00:00 PM	1-METHYLNAPHTHALENE 2-METHYLNAPHTHALENE BIS(2-ETHYLHEXYL)PHTHALATE Diethylphthalate Di-n-butylphthalate NAPHTHALENE	0.019 ug/L 0.024 ug/L 0.082 ug/L 0.18 ug/L 0.17 ug/L 0.17 ug/L	SL-566-SA8-SB-0.0-0.5 SL-566-SA8-SB-4.0-5.0 SL-575-SA8-SB-0.0-0.5 SL-575-SA8-SB-4.0-5.0 SL-575-SA8-SB-9.0-10.0

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-566-SA8-SB-4.0-5.0(RES)	NAPHTHALENE	0.74 ug/Kg	1.8U ug/Kg

Reporting Limit Outliers

Lab Reporting Batch ID: PH086

Laboratory: LL

EDD Filename: PH086_v1.

eQAPP Name: CDM_SSFL_131101_Lan

Method: 1613B
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-080713	1,2,3,4,6,7,8-HPCDD	JB	0.687	9.67	PQL	pg/L	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JBQ	0.427	9.67	PQL	pg/L	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.258	9.67	PQL	pg/L	
	1,2,3,4,7,8-HXCDF	JBQ	0.396	9.67	PQL	pg/L	
	1,2,3,6,7,8-HXCDD	JBQ	0.476	9.67	PQL	pg/L	
	1,2,3,6,7,8-HXCDF	JB	0.426	9.67	PQL	pg/L	
	1,2,3,7,8-PECDF	JBQ	0.451	9.67	PQL	pg/L	
	2,3,4,7,8-PECDF	JBQ	0.403	9.67	PQL	pg/L	
	OCDD	JBQ	1.65	19.3	PQL	pg/L	
	OCDF	JBQ	1.13	19.3	PQL	pg/L	

Method: 6010C
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-080713	ALUMINUM	J	0.143	0.400	PQL	mg/L	J (all detects)
	MOLYBDENUM	J	0.0098	0.0200	PQL	mg/L	
	TIN	J	0.0029	0.0400	PQL	mg/L	

Method: 8260B
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-080713	ACETONE	J	8	20	PQL	ug/L	J (all detects)

Method: 8270D SIM
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-080713	2-METHYLNAPHTHALENE	J	0.012	0.052	PQL	ug/L	J (all detects)
	Diethylphthalate	J	0.44	1.0	PQL	ug/L	
	Di-n-butylphthalate	J	0.18	1.0	PQL	ug/L	
	NAPHTHALENE	J	0.035	0.052	PQL	ug/L	

Reporting Limit Outliers

Lab Reporting Batch ID: PH086

Laboratory: LL

EDD Filename: PH086_v1.

eQAPP Name: CDM_SSFL_131101_Lan

Method: 1613B
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-566-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	4.88	5.00	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JB	0.637	5.00	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JQ	0.0906	5.00	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	J	0.0923	5.00	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDF	JBQ	0.0551	5.00	PQL	ng/Kg	
	1,2,3,6,7,8-HxCDD	JB	0.420	5.00	PQL	ng/Kg	
	1,2,3,6,7,8-HxCDF	JBQ	0.0898	5.00	PQL	ng/Kg	
	1,2,3,7,8,9-HxCDD	JQ	0.556	5.00	PQL	ng/Kg	
	1,2,3,7,8,9-HxCDF	JB	0.811	5.00	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.233	5.00	PQL	ng/Kg	
	2,3,4,6,7,8-HxCDF	JB	0.0659	5.00	PQL	ng/Kg	
	2,3,4,7,8-PECDF	J	0.0731	5.00	PQL	ng/Kg	
	OCDF	JB	1.53	10.0	PQL	ng/Kg	
SL-566-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JB	0.915	5.43	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JB	0.159	5.43	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JQ	0.0504	5.43	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.0633	5.43	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDF	JBQ	0.0505	5.43	PQL	ng/Kg	
	1,2,3,6,7,8-HxCDD	JBQ	0.117	5.43	PQL	ng/Kg	
	1,2,3,6,7,8-HxCDF	JBQ	0.0444	5.43	PQL	ng/Kg	
	1,2,3,7,8,9-HxCDD	JQ	0.145	5.43	PQL	ng/Kg	
	1,2,3,7,8,9-HxCDF	JB	0.168	5.43	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.104	5.43	PQL	ng/Kg	
	2,3,4,6,7,8-HxCDF	JBQ	0.0269	5.43	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.159	5.43	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0575	1.09	PQL	ng/Kg	
OCDD	JB	7.14	10.9	PQL	ng/Kg		
OCDF	JB	0.319	10.9	PQL	ng/Kg		
SL-575-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	3.71	5.39	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JB	0.711	5.39	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JQ	0.0411	5.39	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.0707	5.39	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDF	JBQ	0.0771	5.39	PQL	ng/Kg	
	1,2,3,6,7,8-HxCDD	JB	0.420	5.39	PQL	ng/Kg	
	1,2,3,6,7,8-HxCDF	JB	0.119	5.39	PQL	ng/Kg	
	1,2,3,7,8,9-HxCDD	J	0.616	5.39	PQL	ng/Kg	
	1,2,3,7,8,9-HxCDF	JB	0.503	5.39	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.0992	5.39	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.239	5.39	PQL	ng/Kg	
	2,3,4,6,7,8-HxCDF	JBQ	0.0589	5.39	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.116	5.39	PQL	ng/Kg	
OCDF	JB	1.73	10.8	PQL	ng/Kg		
SL-575-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JB	0.237	5.57	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JB	0.0844	5.57	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	J	0.0286	5.57	PQL	ng/Kg	
	1,2,3,6,7,8-HxCDD	JBQ	0.0423	5.57	PQL	ng/Kg	
	1,2,3,6,7,8-HxCDF	JBQ	0.0183	5.57	PQL	ng/Kg	
	1,2,3,7,8,9-HxCDD	JQ	0.0711	5.57	PQL	ng/Kg	
	1,2,3,7,8,9-HxCDF	JBQ	0.0554	5.57	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.0646	5.57	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.0603	5.57	PQL	ng/Kg	
	OCDD	JB	1.59	11.1	PQL	ng/Kg	
	OCDF	JB	0.127	11.1	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH086

Laboratory: LL

EDD Filename: PH086_v1.

eQAPP Name: CDM_SSFL_131101_Lan

Method: 6010C
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-566-SA8-SB-0.0-0.5	ARSENIC	J	3.69	4.03	PQL	mg/Kg	J (all detects)
	CADMIUM	J	0.268	1.01	PQL	mg/Kg	
	SODIUM	J	85.2	101	PQL	mg/Kg	
	TIN	J	3.12	10.1	PQL	mg/Kg	
	Zirconium	J	4.39	5.04	PQL	mg/Kg	
SL-566-SA8-SB-4.0-5.0	ARSENIC	J	4.11	4.35	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	1.01	1.09	PQL	mg/Kg	
	CADMIUM	J	0.104	1.09	PQL	mg/Kg	
	TIN	J	3.33	10.9	PQL	mg/Kg	
	Zirconium	J	3.15	5.44	PQL	mg/Kg	
SL-575-SA8-SB-0.0-0.5	ARSENIC	J	2.89	4.33	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.931	1.08	PQL	mg/Kg	
	CADMIUM	J	0.337	1.08	PQL	mg/Kg	
	SODIUM	J	75.5	108	PQL	mg/Kg	
	TIN	J	3.54	10.8	PQL	mg/Kg	
SL-575-SA8-SB-4.0-5.0	ARSENIC	J	4.38	4.57	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.312	1.14	PQL	mg/Kg	
	CADMIUM	J	0.136	1.14	PQL	mg/Kg	
	SODIUM	J	106	114	PQL	mg/Kg	
	TIN	J	2.72	11.4	PQL	mg/Kg	
SL-575-SA8-SB-9.0-10.0	ARSENIC	J	2.29	4.48	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.709	1.12	PQL	mg/Kg	
	CADMIUM	J	0.115	1.12	PQL	mg/Kg	
	SODIUM	J	106	112	PQL	mg/Kg	
	TIN	J	3.21	11.2	PQL	mg/Kg	
Zirconium	J	2.01	5.60	PQL	mg/Kg		

Method: 6020A
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-566-SA8-SB-0.0-0.5	SELENIUM	J	0.326	0.403	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0772	0.202	PQL	mg/Kg	
SL-566-SA8-SB-4.0-5.0	SELENIUM	J	0.132	0.435	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0838	0.218	PQL	mg/Kg	
SL-575-SA8-SB-0.0-0.5	SELENIUM	J	0.262	0.433	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0579	0.217	PQL	mg/Kg	
SL-575-SA8-SB-4.0-5.0	SILVER	J	0.0864	0.229	PQL	mg/Kg	J (all detects)
SL-575-SA8-SB-9.0-10.0	SILVER	J	0.0470	0.224	PQL	mg/Kg	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH086

Laboratory: LL

EDD Filename: PH086_v1.

eQAPP Name: CDM_SSFL_131101_Lan

Method: 7471B
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-566-SA8-SB-0.0-0.5	MERCURY	J	0.0131	0.0169	PQL	mg/Kg	J (all detects)
SL-575-SA8-SB-0.0-0.5	MERCURY	J	0.0110	0.0180	PQL	mg/Kg	J (all detects)
SL-575-SA8-SB-4.0-5.0	MERCURY	J	0.0163	0.0186	PQL	mg/Kg	J (all detects)
SL-575-SA8-SB-9.0-10.0	MERCURY	J	0.0163	0.0181	PQL	mg/Kg	J (all detects)

Method: 8015M
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-566-SA8-SB-0.0-0.5	EFH (C15-C20)	J	3.1	5.1	PQL	mg/Kg	J (all detects)
SL-566-SA8-SB-4.0-5.0	EFH (C15-C20)	J	2.2	5.4	PQL	mg/Kg	J (all detects)

Method: 8081B
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-575-SA8-SB-9.0-10.0	ALPHA-BHC	J	0.22	0.94	PQL	ug/Kg	J (all detects)

Method: 8270D SIM
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-566-SA8-SB-0.0-0.5	1-METHYLNAPHTHALENE	J	1.6	1.7	PQL	ug/Kg	J (all detects)
	2-METHYLNAPHTHALENE	J	0.76	1.7	PQL	ug/Kg	
	BENZO(B)FLUORANTHENE	J	1.2	1.7	PQL	ug/Kg	
	CHRYSENE	J	1.4	1.7	PQL	ug/Kg	
	FLUORANTHENE	J	1.4	1.7	PQL	ug/Kg	
	NAPHTHALENE	J	0.95	1.7	PQL	ug/Kg	
	PHENANTHRENE	J	1.2	1.7	PQL	ug/Kg	
PYRENE	J	1.1	1.7	PQL	ug/Kg		
SL-566-SA8-SB-4.0-5.0	CHRYSENE	J	0.49	1.8	PQL	ug/Kg	J (all detects)
	NAPHTHALENE	J	0.74	1.8	PQL	ug/Kg	
SL-575-SA8-SB-4.0-5.0	CHRYSENE	J	5.6	19	PQL	ug/Kg	J (all detects)

LDC #: 30370B4

VALIDATION COMPLETENESS WORKSHEET

Date: 9/10/13

SDG #: PH086

ADR

Page: 1 of 1

Laboratory: Eurofins Lancaster Laboratories

Reviewer: ca

2nd Reviewer: w

METHOD: Metals (EPA SW 846 Method 6010C/6020A/7000)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	-	Sampling dates: 8/7/13
II.	ICP/MS Tune	-	
III.	Calibration	-	
IV.	Blanks	SW	
V.	ICP Interference Check Sample (ICS) Analysis	-	
VI.	Matrix Spike Analysis	N	CS
VII.	Duplicate Sample Analysis	N	↓
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	N	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	N	
XIV.	Field Duplicates	-	
XV.	Field Blanks	SW	EB=1 FB=FB-011113

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

(PH029)

Validated Samples:

soil/water

1	EB-080713	11		21		31	
2	SL-575-SA8-SB-0.0-0.5	12		22		32	
3	SL-575-SA8-SB-4.0-5.0	13		23		33	
4	SL-575-SA8-SB-9.0-10.0	14		24		34	
5	SL-566-SA8-SB-0.0-0.5	15		25		35	
6	SL-566-SA8-SB-4.0-5.0	16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

LDC #: 30370B4

**VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES**

Page: 6 of 1

Reviewer: *[Signature]*

2nd Reviewer: *[Signature]*

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000)

Soil preparation factor applied: 100x x Reason: B

Sample Concentration units, unless otherwise noted: ug/L

Associated Samples: All

					Sample Identification											
Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (ug/l)	Maximum ICB/CCB ^a (ug/l)	Action Level	1											
Al			78.3	391.5	143											
Mo			4.0	20	9.8											

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

VALIDATION FINDINGS WORKSHEET
Field Blanks

METHOD: Trace Metals (EPA SW846 6010B/7000)

Blank units: mg/L **Associated sample units:** mg/Kg Reason: F

Sampling date: 4/11/13 Soil factor applied 100x

Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: All Soil

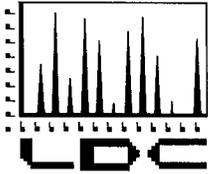
Analyte	Blank ID	Sample Identification									
	FB-041113 (SDG: PH029)	Action Limit									
Cu	0.0036	1.8									
Mo	0.0036	1.8									

Sampling date: 8/7/13 Soil factor applied 100x

Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: All Soil

Analyte	Blank ID	Sample Identification									
	EB-080713 (SDG: PH086)	Action Limit	3								
Al	0.143	71.5									
Mo	0.0098	4.9	3.29 ^{VL}								
Sn	0.0029	1.45									

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".



LABORATORY DATA CONSULTANTS, INC.

2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

CDM
555 17th Street, Suite 1100
Denver, CO 80202
ATTN: Mrs. Cherie Zakowski

November 19, 2013

SUBJECT: Santa Susana Field Laboratory, Subarea 8 Data Validation

Dear Mrs. Zakowski,

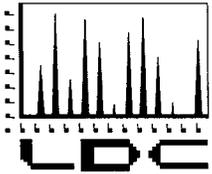
Enclosed are the final validation reports for the fractions listed below. These SDGs were received on September 18, 2013. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 30434:

<u>SDG #</u>	<u>Fraction</u>
PH085, PH087	Volatiles, Semivolatiles, Chlorinated Pesticides, Polychlorinated
PH088, PH089	Biphenyls, Metals, Herbicides, Total Petroleum Hydrocarbons as
PH090	Gasoline, Total Petroleum Hydrocarbons as Extractables, Dioxins/Dibenzofurans

The data validation was performed under Level III & IV guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan for Santa Susana Field Laboratory, RCRA Facility Investigation, Surficial Media Operable Unit, March 2009, Revision 4
- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- Polychlorinated Dioxins/Dibenzofurans Data Review, September 2005
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007



Please feel free to contact us if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read 'S. McKellar', written in a cursive style.

Shauna McKellar
Project Manager/Chemist

90/10 ADR/IV LDC #30434 (CDM Federal Programs-Chantilly VA / Santa Susana Field Laboratory, Subarea 8)

LDC	SDG#	DATE REC'D	(4) DATE DUE	VOA (8260B)		SVOA (8270D)		SVOA (8270D -SIM)		Pest. (8081B)		PCBs (8082)		Metals & Hg (SW846)		Herbs (8151A)		TPH-G (8015M)		TPH-E (8015M)		Dioxins (1613B)																	
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S				
Matrix: Water/Soil				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S		
A	PH085	09/18/13	10/16/13	1	1	0	2	0	6	0	3	0	6	0	6	0	3	1	1	0	6	0	6																
B	PH087	09/18/13	10/16/13	-	-	-	-	0	5	0	3	0	5	0	5	0	3	1	3	0	5	0	4																
C	PH088	09/18/13	10/16/13	-	-	-	-	0	10	0	2	0	10	0	10	0	2	1	6	0	10	0	10																
D	PH089	09/18/13	10/16/13	-	-	-	-	0	9	0	3	0	9	0	8	0	3	1	4	0	9	0	8																
E	PH090	09/18/13	10/16/13	-	-	-	-	0	7	-	-	0	7	0	7	-	-	1	4	0	7	0	7																
Total				1	1	0	2	0	37	0	11	0	37	0	36	0	11	5	18	0	37	0	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	231

Shaded cells indicate Level IV validation (all other cells are ADR review). These sample counts do not include MS/MSD, and DUPs

**Data Validation Report
Santa Susana Field Laboratory**

Subarea 8

SDG: PH085

Prepared for

CDM Smith
555 17th Street, Suite 1100
Denver, CO 80202

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, California 92010

November 16, 2013

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on August 6, 2013. Data validation was performed in accordance with the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008), Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005), and for Inorganic Data Review (January 2010). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Volatiles (VOCs) by Environmental Protection Agency (EPA) SW 846 Method 8260B

Semivolatiles (SVOCs) by EPA SW 846 Method 8270D

SVOCs by EPA SW 846 Method 8270D utilizing Selective Ion Monitoring (SIM)

Pesticides by EPA SW 846 Method 8081B

Polychlorinated Biphenyls (PCBs) by EPA SW 846 Method 8082A

Metals by EPA SW 846 Method 6010C, 6020A, and 7471B

Herbicides by EPA SW 846 Method 8151A

Total Petroleum Hydrocarbons (TPH) as Gasoline by EPA SW 846 Method 8015M

TPH as Extractables by EPA SW 846 Method 8015M

Dioxins and Dibenzofurans by EPA Method 1613B

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment II. Level III Automated Data Review outliers are presented in Enclosure I.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibration blanks (ICB/CCBs), surrogates, internal standards (dioxins only), matrix spike/matrix spike duplicates (MS/MSD), laboratory duplicates (DUP), laboratory control sample/laboratory control sample duplicates (LCS/LCSD), ICP serial dilutions, method blanks, equipment blanks, field blanks, trip blanks and field duplicates. No samples in this SDG were subjected to Level IV evaluation.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of ICB/CCBs and ICP serial dilutions, which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

II. Initial Calibration

Initial Calibration data were not reviewed for level III.

III. Continuing Calibration

Continuing calibration data were not reviewed for level III.

IV. Blanks

Method blanks were performed at the required frequencies. No contaminant concentrations were detected in the method or preparation blanks with the exception of several blanks for dioxins and metals. The associated sample results were qualified as non-detected (U) due to method blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the associated blanks were not qualified. The details regarding the qualification of data are provided in Enclosure I.

No contaminant concentrations were detected in the initial or continuing calibration blanks with the following exceptions:

SDG/Method	Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PH085/6010C	ICB/CCB	Molybdenum	2.4 ug/L	SL-564-SA8-SB-0.0-0.5 SL-582-SA8-SB-0.0-0.5 SL-582-SA8-SB-2.5-3.5 SL-583-SA8-SB-0.0-0.5 SL-883-SA8-SB-0.0-0.5 SL-584-SA8-SB-0.0-0.5

Sample concentrations were compared to concentrations detected in the initial and continuing blanks. The sample concentrations were not detected or were significantly greater than the concentrations found in the associated blanks with the following exceptions:

SDG/Method	Sample	Compound	Reported Concentration	Modified Final Concentration
PH085/6010C	SL-564-SA8-SB-0.0-0.5	Molybdenum	0.405 ug/Kg	0.405U ug/Kg
PH085/6010C	SL-582-SA8-SB-0.0-0.5	Molybdenum	0.459 ug/Kg	0.459U ug/Kg
PH085/6010C	SL-582-SA8-SB-2.5-3.5	Molybdenum	0.446 ug/Kg	0.446U ug/Kg
PH085/6010C	SL-583-SA8-SB-0.0-0.5	Molybdenum	0.853 ug/Kg	0.853U ug/Kg

SDG/Method	Sample	Compound	Reported Concentration	Modified Final Concentration
PH085/ 6010C	SL-883-SA8-SB-0.0-0.5	Molybdenum	0.380 ug/Kg	0.380U ug/Kg
PH085/ 6010C	SL-584-SA8-SB-0.0-0.5	Molybdenum	0.634 ug/Kg	0.634U ug/Kg

V. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the exception of one sample for pesticides. The associated sample results were qualified as detected estimated (J). The details regarding the qualification of data are provided in Enclosure I.

VI. ICP Interference Check Sample (ICS) Analysis

ICP interference check data were not reviewed for level III.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed at the required frequency. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of one MS/MSD pair for SVOCs, TPH as extractables, herbicides, metals and dioxins. The dalapon and benzidine results in sample SL-583-SA8-SB-0.0-0.5 were qualified as rejected (R) due to MS/MSD %Rs grossly outside of QC limits (i.e., $\leq 0\%$). The remainder of the associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosure I.

VIII. Laboratory Duplicates Sample

Laboratory duplicates (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits with the exception of one DUP for metals. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosure I.

IX. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

X. Internal Standards

Internal standards were reviewed for dioxins. Percent recoveries (%R) were within QC limits.

XI. ICP Serial Dilution

ICP serial dilution analysis was performed by the laboratory. The analysis criteria were met with the following exceptions:

Diluted Sample	Analyte	%D (Limits)	Associated Samples	Flag	A or P
SL583-SA8-SB-0.0-0.5	Cobalt Lithium	15 (≤10) 14 (≤10)	All soil samples in SDG PH085	J (all detects) UJ (all non-detects)	A

The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable.

XII. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the RL as detected were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH085	All compounds reported as detected below the RL.	J (all detects)	A

XIII. Field Duplicate Samples

One field duplicate pair was collected and analyzed for SVOCs, pesticides, PCBs, metals, herbicides, TPH as extractable and dioxins. All RPDs were within QC limits with the exception of several SVOCs, PCBs, metals, TPH as extractables and dioxins. In these duplicate pairs, the associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The field duplicate result comparisons are provided in Enclosure I.

XIV. Field Blank Samples

One trip blank was collected and analyzed for TPH as gasoline. No contaminants were found in the trip blank.

One equipment blank (from SDG PH086) was collected and analyzed for VOCs, SVOCs, pesticides, PCBs, metals, herbicides, TPH as gasoline, TPH as extractables and dioxins. The equipment blank had several detections for VOCs, SVOCs, metals and dioxins. The associated sample results were qualified as non-detected (U) due to equipment blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the equipment blanks were not qualified. The equipment blank outlier reports are presented in Enclosure I.

One field blank (from SDG PH029) was collected and analyzed for VOCs, SVOCs, pesticides, PCBs, metals, herbicides, TPH as gasoline, TPH as extractables and dioxins. The field blank had detections for several VOCs, SVOCs, metals and dioxins. The associated sample results were qualified as non-detected (U) due to field blank contamination as applicable. The sample

results that were not detected or were significantly greater than the concentrations found in the field blank were not qualified. The field blank outlier reports are presented in Enclosure I.

XV. Overall Assessment of Data

The dalapon and benzidine result in sample SL-583-SA8-SB-0.0-0.5 were qualified as rejected (R) due to MS/MSD %Rs grossly outside QC limits. These results are not useable for all purposes.

The overall assessment of QA/QC data review by automated and manual validation of this sampling event met project requirements and analytical completeness levels with the exceptions noted in the above sections. The remainder of the data are deemed useable for the intended use.

Data flags are summarized and are presented as Attachment 2.

Attachment 1
Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
06-Aug-2013	SL-582-SA8-SB-0.0-0.5	7152826	N	3050B	6010C	III
06-Aug-2013	SL-582-SA8-SB-0.0-0.5	7152826	N	3050B	6020A	III
06-Aug-2013	SL-582-SA8-SB-0.0-0.5	7152826	N	3546	8015M	III
06-Aug-2013	SL-582-SA8-SB-0.0-0.5	7152826	N	3546	8082A	III
06-Aug-2013	SL-582-SA8-SB-0.0-0.5	7152826	N	3546	8270D SIM	III
06-Aug-2013	SL-582-SA8-SB-0.0-0.5	7152826	N	METHOD	1613B	III
06-Aug-2013	SL-582-SA8-SB-0.0-0.5	7152826	N	METHOD	7471B	III
06-Aug-2013	TB-080613	7152824	TB	5030B	8015M	III
06-Aug-2013	TB-080613	7152824	TB	5030B	8260B	III
06-Aug-2013	SL-582-SA8-SB-2.5-3.5	7152827	N	3050B	6010C	III
06-Aug-2013	SL-582-SA8-SB-2.5-3.5	7152827	N	3050B	6020A	III
06-Aug-2013	SL-582-SA8-SB-2.5-3.5	7152827	N	3546	8015M	III
06-Aug-2013	SL-582-SA8-SB-2.5-3.5	7152827	N	3546	8082A	III
06-Aug-2013	SL-582-SA8-SB-2.5-3.5	7152827	N	3546	8270D SIM	III
06-Aug-2013	SL-582-SA8-SB-2.5-3.5	7152827	N	5035A	8015M	III
06-Aug-2013	SL-582-SA8-SB-2.5-3.5	7152827	N	5035A	8260B	III
06-Aug-2013	SL-582-SA8-SB-2.5-3.5	7152827	N	METHOD	1613B	III
06-Aug-2013	SL-582-SA8-SB-2.5-3.5	7152827	N	METHOD	7471B	III
06-Aug-2013	SL-564-SA8-SB-0.0-0.5	7152825	N	3050B	6010C	III
06-Aug-2013	SL-564-SA8-SB-0.0-0.5	7152825	N	3050B	6020A	III
06-Aug-2013	SL-564-SA8-SB-0.0-0.5	7152825	N	3546	8015M	III
06-Aug-2013	SL-564-SA8-SB-0.0-0.5	7152825	N	3546	8081B	III
06-Aug-2013	SL-564-SA8-SB-0.0-0.5	7152825	N	3546	8082A	III
06-Aug-2013	SL-564-SA8-SB-0.0-0.5	7152825	N	3546	8270D SIM	III
06-Aug-2013	SL-564-SA8-SB-0.0-0.5	7152825	N	3550B	8151A	III
06-Aug-2013	SL-564-SA8-SB-0.0-0.5	7152825	N	METHOD	1613B	III

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
06-Aug-2013	SL-564-SA8-SB-0.0-0.5	7152825	N	METHOD	7471B	III
06-Aug-2013	SL-583-SA8-SB-0.0-0.5	7152828	N	3050B	6010C	III
06-Aug-2013	SL-583-SA8-SB-0.0-0.5	7152828	N	3050B	6020A	III
06-Aug-2013	SL-583-SA8-SB-0.0-0.5	7152828	N	3546	8015M	III
06-Aug-2013	SL-583-SA8-SB-0.0-0.5	7152828	N	3546	8081B	III
06-Aug-2013	SL-583-SA8-SB-0.0-0.5	7152828	N	3546	8082A	III
06-Aug-2013	SL-583-SA8-SB-0.0-0.5	7152828	N	3546	8270D	III
06-Aug-2013	SL-583-SA8-SB-0.0-0.5	7152828	N	3546	8270D SIM	III
06-Aug-2013	SL-583-SA8-SB-0.0-0.5	7152828	N	3550B	8151A	III
06-Aug-2013	SL-583-SA8-SB-0.0-0.5	7152828	N	METHOD	1613B	III
06-Aug-2013	SL-583-SA8-SB-0.0-0.5	7152828	N	METHOD	7471B	III
06-Aug-2013	SL-583-SA8-SB-0.0-0.5MS	7152829	MS	3050B	6010C	III
06-Aug-2013	SL-583-SA8-SB-0.0-0.5MS	7152829	MS	3050B	6020A	III
06-Aug-2013	SL-583-SA8-SB-0.0-0.5MS	7152829	MS	3546	8015M	III
06-Aug-2013	SL-583-SA8-SB-0.0-0.5MS	7152829	MS	3546	8081B	III
06-Aug-2013	SL-583-SA8-SB-0.0-0.5MS	7152829	MS	3546	8082A	III
06-Aug-2013	SL-583-SA8-SB-0.0-0.5MS	7152829	MS	3546	8270D	III
06-Aug-2013	SL-583-SA8-SB-0.0-0.5MS	7152829	MS	3546	8270D SIM	III
06-Aug-2013	SL-583-SA8-SB-0.0-0.5MS	7152829	MS	3550B	8151A	III
06-Aug-2013	SL-583-SA8-SB-0.0-0.5MS	7152829	MS	METHOD	1613B	III
06-Aug-2013	SL-583-SA8-SB-0.0-0.5MS	7152829	MS	METHOD	7471B	III
06-Aug-2013	SL-583-SA8-SB-0.0-0.5MSD	7152830	MSD	3050B	6010C	III
06-Aug-2013	SL-583-SA8-SB-0.0-0.5MSD	7152830	MSD	3050B	6020A	III
06-Aug-2013	SL-583-SA8-SB-0.0-0.5MSD	7152830	MSD	3546	8015M	III
06-Aug-2013	SL-583-SA8-SB-0.0-0.5MSD	7152830	MSD	3546	8081B	III
06-Aug-2013	SL-583-SA8-SB-0.0-0.5MSD	7152830	MSD	3546	8082A	III

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
06-Aug-2013	SL-583-SA8-SB-0.0-0.5MSD	7152830	MSD	3546	8270D	III
06-Aug-2013	SL-583-SA8-SB-0.0-0.5MSD	7152830	MSD	3546	8270D SIM	III
06-Aug-2013	SL-583-SA8-SB-0.0-0.5MSD	7152830	MSD	3550B	8151A	III
06-Aug-2013	SL-583-SA8-SB-0.0-0.5MSD	7152830	MSD	METHOD	1613B	III
06-Aug-2013	SL-583-SA8-SB-0.0-0.5MSD	7152830	MSD	METHOD	7471B	III
06-Aug-2013	SL-583-SA8-SB-0.0-0.5DUP	7152831	DUP	3050B	6010C	III
06-Aug-2013	SL-583-SA8-SB-0.0-0.5DUP	7152831	DUP	3050B	6020A	III
06-Aug-2013	SL-583-SA8-SB-0.0-0.5DUP	7152831	DUP	METHOD	7471B	III
06-Aug-2013	SL-883-SA8-SB-0.0-0.5	7152832	FD	3050B	6010C	III
06-Aug-2013	SL-883-SA8-SB-0.0-0.5	7152832	FD	3050B	6020A	III
06-Aug-2013	SL-883-SA8-SB-0.0-0.5	7152832	FD	3546	8015M	III
06-Aug-2013	SL-883-SA8-SB-0.0-0.5	7152832	FD	3546	8081B	III
06-Aug-2013	SL-883-SA8-SB-0.0-0.5	7152832	FD	3546	8082A	III
06-Aug-2013	SL-883-SA8-SB-0.0-0.5	7152832	FD	3546	8270D	III
06-Aug-2013	SL-883-SA8-SB-0.0-0.5	7152832	FD	3546	8270D SIM	III
06-Aug-2013	SL-883-SA8-SB-0.0-0.5	7152832	FD	3550B	8151A	III
06-Aug-2013	SL-883-SA8-SB-0.0-0.5	7152832	FD	METHOD	1613B	III
06-Aug-2013	SL-883-SA8-SB-0.0-0.5	7152832	FD	METHOD	7471B	III
06-Aug-2013	SL-584-SA8-SB-0.0-0.5	7152833	N	3050B	6010C	III
06-Aug-2013	SL-584-SA8-SB-0.0-0.5	7152833	N	3050B	6020A	III
06-Aug-2013	SL-584-SA8-SB-0.0-0.5	7152833	N	3546	8015M	III
06-Aug-2013	SL-584-SA8-SB-0.0-0.5	7152833	N	3546	8082A	III
06-Aug-2013	SL-584-SA8-SB-0.0-0.5	7152833	N	3546	8270D SIM	III
06-Aug-2013	SL-584-SA8-SB-0.0-0.5	7152833	N	METHOD	1613B	III
06-Aug-2013	SL-584-SA8-SB-0.0-0.5	7152833	N	METHOD	7471B	III

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH085

Laboratory: LL

EDD Filename: PrepPH085

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: METALS
Method: 6010C **Matrix:** SO

Sample ID: SL-564-SA8-SB-0.0-0.5 Collected: 8/6/2013 10:00:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.05	U	0.749	MDL	4.05	PQL	mg/Kg	UJ	Q
ARSENIC	3.02	J	0.709	MDL	4.05	PQL	mg/Kg	J	Z
BERYLLIUM	0.728	J	0.0678	MDL	1.01	PQL	mg/Kg	J	Z
CADMIUM	0.198	J	0.0769	MDL	1.01	PQL	mg/Kg	J	Z
COBALT	7.12		0.100	MDL	1.01	PQL	mg/Kg	J	A
LEAD	16.2		0.506	MDL	3.04	PQL	mg/Kg	J	Q
LITHIUM	21.8		0.34	MDL	4.0	PQL	mg/Kg	J	A
MOLYBDENUM	0.405	J	0.172	MDL	2.02	PQL	mg/Kg	U	B, F, F
POTASSIUM	4100		8.44	MDL	101	PQL	mg/Kg	J	Q
SODIUM	62.8	J	16.9	MDL	101	PQL	mg/Kg	J	Z
TIN	2.90	J	0.223	MDL	10.1	PQL	mg/Kg	U	B
ZINC	62.3		0.202	MDL	4.05	PQL	mg/Kg	J	Q, E
Zirconium	3.02	J	0.850	MDL	5.06	PQL	mg/Kg	J	Z

Sample ID: SL-582-SA8-SB-0.0-0.5 Collected: 8/6/2013 7:45:00 AM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	2.05	J	0.779	MDL	4.21	PQL	mg/Kg	J	Z, Q
ARSENIC	2.89	J	0.737	MDL	4.21	PQL	mg/Kg	J	Z
BERYLLIUM	0.680	J	0.0706	MDL	1.05	PQL	mg/Kg	J	Z
CADMIUM	0.594	J	0.0801	MDL	1.05	PQL	mg/Kg	J	Z
COBALT	6.96		0.104	MDL	1.05	PQL	mg/Kg	J	A
LEAD	18.0		0.527	MDL	3.16	PQL	mg/Kg	J	Q
LITHIUM	19.7		0.36	MDL	4.2	PQL	mg/Kg	J	A
MOLYBDENUM	0.459	J	0.179	MDL	2.11	PQL	mg/Kg	U	B, F, F
POTASSIUM	3860		8.78	MDL	105	PQL	mg/Kg	J	Q
SODIUM	65.6	J	17.6	MDL	105	PQL	mg/Kg	J	Z
TIN	2.78	J	0.232	MDL	10.5	PQL	mg/Kg	U	B
ZINC	179		0.211	MDL	4.21	PQL	mg/Kg	J	Q, E
Zirconium	2.32	J	0.885	MDL	5.27	PQL	mg/Kg	J	Z

Sample ID: SL-582-SA8-SB-2.5-3.5 Collected: 8/6/2013 8:50:00 AM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.21	U	0.779	MDL	4.21	PQL	mg/Kg	UJ	Q

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH085

Laboratory: LL

EDD Filename: PrepPH085

eQAPP Name: CDM_SSFL_131101_Lan

Method Category:	METALS	
Method:	6010C	Matrix: SO

Sample ID: SL-582-SA8-SB-2.5-3.5 Collected: 8/6/2013 8:50:00 AM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	2.37	J	0.737	MDL	4.21	PQL	mg/Kg	J	Z
BERYLLIUM	0.784	J	0.0705	MDL	1.05	PQL	mg/Kg	J	Z
CADMIUM	0.253	J	0.0800	MDL	1.05	PQL	mg/Kg	J	Z
COBALT	6.78		0.104	MDL	1.05	PQL	mg/Kg	J	A
LEAD	8.15		0.526	MDL	3.16	PQL	mg/Kg	J	Q
LITHIUM	20.1		0.36	MDL	4.2	PQL	mg/Kg	J	A
MOLYBDENUM	0.446	J	0.179	MDL	2.10	PQL	mg/Kg	U	B, F, F
POTASSIUM	3770		8.78	MDL	105	PQL	mg/Kg	J	Q
SODIUM	69.8	J	17.6	MDL	105	PQL	mg/Kg	J	Z
TIN	2.69	J	0.231	MDL	10.5	PQL	mg/Kg	U	B
ZINC	59.7		0.210	MDL	4.21	PQL	mg/Kg	J	Q, E
Zirconium	1.86	J	0.884	MDL	5.26	PQL	mg/Kg	J	Z

Sample ID: SL-583-SA8-SB-0.0-0.5 Collected: 8/6/2013 12:20:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.00	U	0.740	MDL	4.00	PQL	mg/Kg	UJ	Q, FD
ARSENIC	1.72	J	0.700	MDL	4.00	PQL	mg/Kg	J	Z
BERYLLIUM	0.621	J	0.0670	MDL	0.999	PQL	mg/Kg	J	Z
CADMIUM	0.584	J	0.0760	MDL	0.999	PQL	mg/Kg	J	Z, FD
COBALT	5.46		0.0989	MDL	0.999	PQL	mg/Kg	J	A
LEAD	15.4		0.500	MDL	3.00	PQL	mg/Kg	J	Q, FD
LITHIUM	19.6		0.34	MDL	4.0	PQL	mg/Kg	J	A
MOLYBDENUM	0.853	J	0.170	MDL	2.00	PQL	mg/Kg	UJ	FD, B, F, F
POTASSIUM	3290		8.33	MDL	99.9	PQL	mg/Kg	J	Q
SODIUM	64.5	J	16.7	MDL	99.9	PQL	mg/Kg	J	Z
TIN	2.75	J	0.220	MDL	9.99	PQL	mg/Kg	U	B
ZINC	106		0.200	MDL	4.00	PQL	mg/Kg	J	Q, E, FD
Zirconium	2.53	J	0.839	MDL	5.00	PQL	mg/Kg	J	Z

Sample ID: SL-584-SA8-SB-0.0-0.5 Collected: 8/6/2013 2:15:00 PM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.01	U	0.742	MDL	4.01	PQL	mg/Kg	UJ	Q
ARSENIC	2.82	J	0.702	MDL	4.01	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH085

Laboratory: LL

EDD Filename: PrepPH085

eQAPP Name: CDM_SSFL_131101_Lan

Method Category:	METALS		
Method:	6010C	Matrix:	SO

Sample ID: SL-584-SA8-SB-0.0-0.5

Collected: 8/6/2013 2:15:00 PM

Analysis Type: RES

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	0.674	J	0.0672	MDL	1.00	PQL	mg/Kg	J	Z
CADMIUM	0.164	J	0.0762	MDL	1.00	PQL	mg/Kg	J	Z
COBALT	5.11		0.0993	MDL	1.00	PQL	mg/Kg	J	A
LEAD	8.83		0.502	MDL	3.01	PQL	mg/Kg	J	Q
LITHIUM	23.1		0.34	MDL	4.0	PQL	mg/Kg	J	A
MOLYBDENUM	0.634	J	0.171	MDL	2.01	PQL	mg/Kg	U	B, F, F
POTASSIUM	3560		8.37	MDL	100	PQL	mg/Kg	J	Q
SODIUM	64.0	J	16.8	MDL	100	PQL	mg/Kg	J	Z
TIN	2.66	J	0.221	MDL	10.0	PQL	mg/Kg	U	B
ZINC	117		0.201	MDL	4.01	PQL	mg/Kg	J	Q, E
Zirconium	0.847	J	0.843	MDL	5.02	PQL	mg/Kg	J	Z

Sample ID: SL-883-SA8-SB-0.0-0.5

Collected: 8/6/2013 12:25:00

Analysis Type: RES

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	8.98		0.757	MDL	4.09	PQL	mg/Kg	J	Q, FD
ARSENIC	2.32	J	0.716	MDL	4.09	PQL	mg/Kg	J	Z
BERYLLIUM	0.614	J	0.0686	MDL	1.02	PQL	mg/Kg	J	Z
CADMIUM	1.39		0.0778	MDL	1.02	PQL	mg/Kg	J	FD
COBALT	5.76		0.101	MDL	1.02	PQL	mg/Kg	J	A
LEAD	27.3		0.512	MDL	3.07	PQL	mg/Kg	J	Q, FD
LITHIUM	20.4		0.35	MDL	4.1	PQL	mg/Kg	J	A
MOLYBDENUM	0.380	J	0.174	MDL	2.05	PQL	mg/Kg	UJ	FD, B, F, F
POTASSIUM	3440		8.54	MDL	102	PQL	mg/Kg	J	Q
SODIUM	66.7	J	17.1	MDL	102	PQL	mg/Kg	J	Z
TIN	4.14	J	0.225	MDL	10.2	PQL	mg/Kg	U	B
ZINC	219		0.205	MDL	4.09	PQL	mg/Kg	J	Q, E, FD
Zirconium	1.94	J	0.860	MDL	5.12	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH085

Laboratory: LL

EDD Filename: PrepPH085

eQAPP Name: CDM_SSFL_131101_Lan

Method Category:	METALS	
Method:	6020A	Matrix: SO

Sample ID: SL-564-SA8-SB-0.0-0.5	Collected: 8/6/2013 10:00:00	Analysis Type: REA	Dilution: 2						
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.183	J	0.101	MDL	0.405	PQL	mg/Kg	J	Z, Q

Sample ID: SL-564-SA8-SB-0.0-0.5	Collected: 8/6/2013 10:00:00	Analysis Type: RES	Dilution: 2						
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0500	J	0.0263	MDL	0.202	PQL	mg/Kg	J	Z, Q, E
STRONTIUM	29.0		0.0688	MDL	0.405	PQL	mg/Kg	J	Q, E, E
THALLIUM	0.328		0.0304	MDL	0.202	PQL	mg/Kg	J	Q, E

Sample ID: SL-582-SA8-SB-0.0-0.5	Collected: 8/6/2013 7:45:00 AM	Analysis Type: REA	Dilution: 2						
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.219	J	0.105	MDL	0.421	PQL	mg/Kg	J	Z, Q

Sample ID: SL-582-SA8-SB-0.0-0.5	Collected: 8/6/2013 7:45:00 AM	Analysis Type: RES	Dilution: 2						
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0849	J	0.0274	MDL	0.211	PQL	mg/Kg	J	Z, Q, E
STRONTIUM	29.8		0.0716	MDL	0.421	PQL	mg/Kg	J	Q, E, E
THALLIUM	0.399		0.0316	MDL	0.211	PQL	mg/Kg	J	Q, E

Sample ID: SL-582-SA8-SB-2.5-3.5	Collected: 8/6/2013 8:50:00 AM	Analysis Type: REA	Dilution: 2						
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.275	J	0.105	MDL	0.421	PQL	mg/Kg	J	Z, Q

Sample ID: SL-582-SA8-SB-2.5-3.5	Collected: 8/6/2013 8:50:00 AM	Analysis Type: RES	Dilution: 2						
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0375	J	0.0274	MDL	0.210	PQL	mg/Kg	J	Z, Q, E
STRONTIUM	38.2		0.0715	MDL	0.421	PQL	mg/Kg	J	Q, E, E
THALLIUM	0.443		0.0316	MDL	0.210	PQL	mg/Kg	J	Q, E

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH085

Laboratory: LL

EDD Filename: PrepPH085

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: METALS
Method: 6020A **Matrix:** SO

Sample ID: SL-583-SA8-SB-0.0-0.5 Collected: 8/6/2013 12:20:00 Analysis Type: REA Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.144	J	0.0999	MDL	0.400	PQL	mg/Kg	J	Z, Q

Sample ID: SL-583-SA8-SB-0.0-0.5 Collected: 8/6/2013 12:20:00 Analysis Type: RES Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0432	J	0.0260	MDL	0.200	PQL	mg/Kg	J	Z, Q, E, FD
STRONTIUM	23.4		0.0680	MDL	0.400	PQL	mg/Kg	J	Q, E, E
THALLIUM	0.262		0.0300	MDL	0.200	PQL	mg/Kg	J	Q, E

Sample ID: SL-584-SA8-SB-0.0-0.5 Collected: 8/6/2013 2:15:00 PM Analysis Type: REA Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.241	J	0.100	MDL	0.401	PQL	mg/Kg	J	Z, Q

Sample ID: SL-584-SA8-SB-0.0-0.5 Collected: 8/6/2013 2:15:00 PM Analysis Type: RES Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0339	J	0.0261	MDL	0.201	PQL	mg/Kg	J	Z, Q, E
STRONTIUM	31.0		0.0682	MDL	0.401	PQL	mg/Kg	J	Q, E, E
THALLIUM	0.338		0.0301	MDL	0.201	PQL	mg/Kg	J	Q, E

Sample ID: SL-883-SA8-SB-0.0-0.5 Collected: 8/6/2013 12:25:00 Analysis Type: REA Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.215	J	0.102	MDL	0.409	PQL	mg/Kg	J	Z, Q

Sample ID: SL-883-SA8-SB-0.0-0.5 Collected: 8/6/2013 12:25:00 Analysis Type: RES Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.101	J	0.0266	MDL	0.205	PQL	mg/Kg	J	Z, Q, E, FD
STRONTIUM	34.7		0.0696	MDL	0.409	PQL	mg/Kg	J	Q, E, E
THALLIUM	0.381		0.0307	MDL	0.205	PQL	mg/Kg	J	Q, E

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH085

Laboratory: LL

EDD Filename: PrepPH085

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: SVOA
Method: 1613B **Matrix:** SO

Sample ID: SL-564-SA8-SB-0.0-0.5 Collected: 8/6/2013 10:00:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDF	1.38	JB	0.0606	MDL	5.06	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.146	JBQ	0.0972	MDL	5.06	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.157	J	0.0533	MDL	5.06	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.211	JQ	0.0386	MDL	5.06	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HxCDD	0.426	JB	0.0567	MDL	5.06	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.196	J	0.0382	MDL	5.06	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HxCDD	0.437	J	0.0569	MDL	5.06	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.295	JQ	0.0515	MDL	5.06	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.155	JB	0.0819	MDL	5.06	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.456	J	0.0508	MDL	5.06	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.222	J	0.0357	MDL	5.06	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.147	JB	0.0464	MDL	5.06	PQL	ng/Kg	U	B
2,3,7,8-TCDD	0.0834	JQ	0.0688	MDL	1.01	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.241	J	0.103	MDL	1.01	PQL	ng/Kg	J	Z
OCDF	3.91	JB	0.105	MDL	10.1	PQL	ng/Kg	J	Z

Sample ID: SL-582-SA8-SB-0.0-0.5 Collected: 8/6/2013 7:45:00 AM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDF	1.98	JB	0.0441	MDL	5.19	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.207	JB	0.0673	MDL	5.19	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.206	JQ	0.0671	MDL	5.19	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.327	J	0.0566	MDL	5.19	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HxCDD	0.978	JB	0.0737	MDL	5.19	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.441	J	0.0524	MDL	5.19	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HxCDD	0.918	J	0.0703	MDL	5.19	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.896	J	0.0686	MDL	5.19	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.362	JB	0.0663	MDL	5.19	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	2.74	J	0.0786	MDL	5.19	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.284	J	0.0546	MDL	5.19	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.534	JB	0.0820	MDL	5.19	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.135	JQ	0.0453	MDL	1.04	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.444	JQ	0.170	MDL	1.04	PQL	ng/Kg	J	Z
OCDF	3.45	JB	0.0511	MDL	10.4	PQL	ng/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH085

Laboratory: LL

EDD Filename: PrepPH085

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: SVOA
Method: 1613B **Matrix:** SO

Sample ID: SL-582-SA8-SB-2.5-3.5 Collected: 8/6/2013 8:50:00 AM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.453	JB	0.0363	MDL	5.12	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.0800	JB	0.0188	MDL	5.12	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.444	JBQ	0.0550	MDL	5.12	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.650	J	0.0528	MDL	5.12	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.940	JQ	0.0223	MDL	5.12	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.0679	JBQ	0.0583	MDL	5.12	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.173	J	0.0286	MDL	5.12	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.0207	JQ	0.0181	MDL	5.12	PQL	ng/Kg	J	Z
OCDD	3.23	JB	0.0294	MDL	10.2	PQL	ng/Kg	J	Z
OCDF	0.156	JBQ	0.0348	MDL	10.2	PQL	ng/Kg	U	B

Sample ID: SL-583-SA8-SB-0.0-0.5 Collected: 8/6/2013 12:20:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	12.8	B	0.0621	MDL	4.95	PQL	ng/Kg	J	FD
1,2,3,4,6,7,8-HPCDF	1.65	JB	0.0256	MDL	4.95	PQL	ng/Kg	J	Z, FD
1,2,3,4,7,8,9-HPCDF	0.189	JB	0.0448	MDL	4.95	PQL	ng/Kg	UJ	B, FD
1,2,3,4,7,8-HxCDD	0.266	JQ	0.0615	MDL	4.95	PQL	ng/Kg	J	Z, FD
1,2,3,4,7,8-HXCDF	0.347	J	0.0378	MDL	4.95	PQL	ng/Kg	J	Z, FD
1,2,3,6,7,8-HXCDD	0.870	JB	0.0673	MDL	4.95	PQL	ng/Kg	J	Z, FD
1,2,3,6,7,8-HXCDF	0.403	J	0.0379	MDL	4.95	PQL	ng/Kg	J	Z, FD
1,2,3,7,8,9-HXCDD	0.861	J	0.0667	MDL	4.95	PQL	ng/Kg	J	Z, FD
1,2,3,7,8,9-HXCDF	0.396	J	0.0440	MDL	4.95	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.151	JB	0.0482	MDL	4.95	PQL	ng/Kg	UJ	B, FD
1,2,3,7,8-PECDF	2.10	J	0.0504	MDL	4.95	PQL	ng/Kg	J	Z, FD
2,3,4,6,7,8-HXCDF	0.237	J	0.0391	MDL	4.95	PQL	ng/Kg	J	Z, FD
2,3,4,7,8-PECDF	0.252	JB	0.0484	MDL	4.95	PQL	ng/Kg	J	Z, FD
2,3,7,8-TCDD	0.990	U	0.0325	MDL	0.990	PQL	ng/Kg	UJ	FD
2,3,7,8-TCDF	0.581	J	0.0903	MDL	0.990	PQL	ng/Kg	J	Z, FD
OCDD	122	B	0.0284	MDL	9.90	PQL	ng/Kg	J	Q, Q, FD
OCDF	3.08	JB	0.0263	MDL	9.90	PQL	ng/Kg	J	Z, FD

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH085

Laboratory: LL

EDD Filename: PrepPH085

eQAPP Name: CDM_SSFL_131101_Lan

Method Category:	SVOA	Method:	1613B	Matrix:	SO
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Sample ID: SL-584-SA8-SB-0.0-0.5 Collected: 8/6/2013 2:15:00 PM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	1.60	JB	0.0559	MDL	4.86	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.326	JB	0.0201	MDL	4.86	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0350	J	0.0280	MDL	4.86	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.0701	J	0.0379	MDL	4.86	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDF	0.0585	JBQ	0.0214	MDL	4.86	PQL	ng/Kg	U	B
1,2,3,6,7,8-HxCDD	0.489	JBQ	0.0409	MDL	4.86	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HxCDF	0.0440	JBQ	0.0211	MDL	4.86	PQL	ng/Kg	U	B
1,2,3,7,8,9-HxCDD	0.584	J	0.0399	MDL	4.86	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HxCDF	0.352	JB	0.0262	MDL	4.86	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.0953	JBQ	0.0532	MDL	4.86	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.143	JB	0.0280	MDL	4.86	PQL	ng/Kg	U	B
2,3,4,6,7,8-HxCDF	0.0696	JBQ	0.0201	MDL	4.86	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0809	JQ	0.0273	MDL	4.86	PQL	ng/Kg	U	B
OCDF	0.646	JBQ	0.0424	MDL	9.72	PQL	ng/Kg	J	Z

Sample ID: SL-883-SA8-SB-0.0-0.5 Collected: 8/6/2013 12:25:00 Analysis Type: REA Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,3,7,8-TCDF	2.32	C	0.152	MDL	0.997	PQL	ng/Kg	J	FD

Sample ID: SL-883-SA8-SB-0.0-0.5 Collected: 8/6/2013 12:25:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	45.6	B	0.118	MDL	4.98	PQL	ng/Kg	J	FD
1,2,3,4,6,7,8-HPCDF	5.73	B	0.0586	MDL	4.98	PQL	ng/Kg	J	FD
1,2,3,4,7,8,9-HPCDF	0.551	JQ	0.0793	MDL	4.98	PQL	ng/Kg	J	Z, FD
1,2,3,4,7,8-HxCDD	0.778	J	0.115	MDL	4.98	PQL	ng/Kg	J	Z, FD
1,2,3,4,7,8-HxCDF	1.37	JB	0.0745	MDL	4.98	PQL	ng/Kg	J	Z, FD
1,2,3,6,7,8-HxCDD	2.27	JB	0.120	MDL	4.98	PQL	ng/Kg	J	Z, FD
1,2,3,6,7,8-HxCDF	1.11	JB	0.0798	MDL	4.98	PQL	ng/Kg	J	Z, FD
1,2,3,7,8,9-HxCDD	1.93	J	0.121	MDL	4.98	PQL	ng/Kg	J	Z, FD
1,2,3,7,8,9-HxCDF	0.642	JB	0.0854	MDL	4.98	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.548	JB	0.135	MDL	4.98	PQL	ng/Kg	J	Z, FD
1,2,3,7,8-PECDF	5.96	B	0.122	MDL	4.98	PQL	ng/Kg	J	FD
2,3,4,6,7,8-HxCDF	0.767	JB	0.0750	MDL	4.98	PQL	ng/Kg	J	Z, FD

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH085

Laboratory: LL

EDD Filename: PrepPH085

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: SVOA
Method: 1613B **Matrix:** SO

Sample ID: SL-883-SA8-SB-0.0-0.5 Collected: 8/6/2013 12:25:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,3,4,7,8-PECDF	1.66	J	0.105	MDL	4.98	PQL	ng/Kg	J	Z, FD
2,3,7,8-TCDD	0.0550	J	0.0532	MDL	0.997	PQL	ng/Kg	J	Z, FD
OCDD	414	B	0.0605	MDL	9.97	PQL	ng/Kg	J	FD
OCDF	11.5	B	0.0592	MDL	9.97	PQL	ng/Kg	J	FD

Method Category: SVOA
Method: 8015M **Matrix:** SO

Sample ID: SL-582-SA8-SB-0.0-0.5 Collected: 8/6/2013 7:45:00 AM Analysis Type: RES Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C15-C20)	5.8	J	4.2	MDL	11	PQL	mg/Kg	J	Z

Sample ID: SL-582-SA8-SB-2.5-3.5 Collected: 8/6/2013 8:50:00 AM Analysis Type: REA Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C21-C30)	2.5	J	2.1	MDL	5.3	PQL	mg/Kg	J	Z

Sample ID: SL-583-SA8-SB-0.0-0.5 Collected: 8/6/2013 12:20:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C15-C20)	5.1	U	2.0	MDL	5.1	PQL	mg/Kg	UJ	FD
EFH (C21-C30)	13		2.0	MDL	5.1	PQL	mg/Kg	J	Q, FD
EFH (C30-C40)	34		4.1	MDL	10	PQL	mg/Kg	J	FD

Sample ID: SL-883-SA8-SB-0.0-0.5 Collected: 8/6/2013 12:25:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C15-C20)	2.4	J	2.0	MDL	5.1	PQL	mg/Kg	J	Z, FD
EFH (C21-C30)	24		2.0	MDL	5.1	PQL	mg/Kg	J	FD
EFH (C30-C40)	66		4.1	MDL	10	PQL	mg/Kg	J	FD

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH085

Laboratory: LL

EDD Filename: PrepPH085

eQAPP Name: CDM_SSFL_131101_Lan

Method Category:	SVOA	Matrix:	SO
Method:	8081B		

Sample ID: SL-564-SA8-SB-0.0-0.5 Collected: 8/6/2013 10:00:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDE	1.3	J	0.35	MDL	1.8	PQL	ug/Kg	J	Z, S
4,4'-DDT	1.1	J	0.37	MDL	1.8	PQL	ug/Kg	J	Z, S

Method Category:	SVOA	Matrix:	SO
Method:	8082A		

Sample ID: SL-582-SA8-SB-0.0-0.5 Collected: 8/6/2013 7:45:00 AM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1260	9.5	J	4.1	MDL	18	PQL	ug/Kg	J	Z

Sample ID: SL-583-SA8-SB-0.0-0.5 Collected: 8/6/2013 12:20:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1254	20		4.5	MDL	17	PQL	ug/Kg	J	FD
AROCLOR 1260	9.2	J	4.0	MDL	17	PQL	ug/Kg	J	Z, FD
Aroclor 5460	34	U	10	MDL	34	PQL	ug/Kg	UJ	FD

Sample ID: SL-883-SA8-SB-0.0-0.5 Collected: 8/6/2013 12:25:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1254	96		4.5	MDL	17	PQL	ug/Kg	J	FD
AROCLOR 1260	17	U	4.0	MDL	17	PQL	ug/Kg	UJ	FD
Aroclor 5460	22	J	10	MDL	34	PQL	ug/Kg	J	Z, FD

Method Category:	SVOA	Matrix:	SO
Method:	8151A		

Sample ID: SL-564-SA8-SB-0.0-0.5 Collected: 8/6/2013 10:00:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4-D	23	J	12	MDL	37	PQL	ug/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH085

Laboratory: LL

EDD Filename: PrepPH085

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: SVOA
Method: 8151A **Matrix:** SO

Sample ID: SL-583-SA8-SB-0.0-0.5 Collected: 8/6/2013 12:20:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4-D	23	J	12	MDL	37	PQL	ug/Kg	J	Z
DALAPON	91	U	45	MDL	91	PQL	ug/Kg	R	Q

Sample ID: SL-883-SA8-SB-0.0-0.5 Collected: 8/6/2013 12:25:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4-D	23	J	12	MDL	37	PQL	ug/Kg	J	Z

Method Category: SVOA
Method: 8270D **Matrix:** SO

Sample ID: SL-583-SA8-SB-0.0-0.5 Collected: 8/6/2013 12:20:00 Analysis Type: RES-BASE/NEUTRAL Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZIDINE	1700	U	710	MDL	1700	PQL	ug/Kg	R	Q
BENZO(A)ANTHRACENE	7	J	3	MDL	17	PQL	ug/Kg	J	Z
BENZO(B)FLUORANTHENE	8	J	3	MDL	17	PQL	ug/Kg	J	Z
BENZO(K)FLUORANTHENE	8	J	3	MDL	17	PQL	ug/Kg	J	Z, FD
CHRYSENE	7	J	3	MDL	17	PQL	ug/Kg	J	Z
FLUORANTHENE	4	J	3	MDL	17	PQL	ug/Kg	J	Z, FD
PHENANTHRENE	5	J	3	MDL	17	PQL	ug/Kg	J	Z

Sample ID: SL-583-SA8-SB-0.0-0.5 Collected: 8/6/2013 12:20:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PYRENE	8	J	3	MDL	17	PQL	ug/Kg	J	Z

Sample ID: SL-883-SA8-SB-0.0-0.5 Collected: 8/6/2013 12:25:00 Analysis Type: RES-BASE/NEUTRAL Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTHRACENE	3	J	3	MDL	17	PQL	ug/Kg	J	Z
BENZO(A)ANTHRACENE	5	J	3	MDL	17	PQL	ug/Kg	J	Z
BENZO(A)PYRENE	8	J	3	MDL	17	PQL	ug/Kg	J	Z
BENZO(B)FLUORANTHENE	9	J	3	MDL	17	PQL	ug/Kg	J	Z
BENZO(G,H,I)PERYLENE	6	J	3	MDL	17	PQL	ug/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH085

Laboratory: LL

EDD Filename: PrepPH085

eQAPP Name: CDM_SSFL_131101_Lan

Method Category:	SVOA	Method:	8270D	Matrix:	SO
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Sample ID: SL-883-SA8-SB-0.0-0.5 Collected: 8/6/2013 12:25:00 Analysis Type: RES-BASE/NEUTRAL Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(K)FLUORANTHENE	4	J	3	MDL	17	PQL	ug/Kg	J	Z, FD
FLUORANTHENE	8	J	3	MDL	17	PQL	ug/Kg	J	Z, FD
INDENO(1,2,3-CD)PYRENE	5	J	3	MDL	17	PQL	ug/Kg	J	Z
PHENANTHRENE	6	J	3	MDL	17	PQL	ug/Kg	J	Z
PYRENE	10	J	3	MDL	17	PQL	ug/Kg	J	Z

Method Category:	SVOA	Method:	8270D SIM	Matrix:	SO
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Sample ID: SL-564-SA8-SB-0.0-0.5 Collected: 8/6/2013 10:00:00 Analysis Type: RES-BASE/NEUTRAL Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)ANTHRACENE	0.75	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	8.2	J	6.3	MDL	19	PQL	ug/Kg	J	Z

Sample ID: SL-582-SA8-SB-0.0-0.5 Collected: 8/6/2013 7:45:00 AM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1-METHYLNAPHTHALENE	1.3	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: SL-582-SA8-SB-0.0-0.5 Collected: 8/6/2013 7:45:00 AM Analysis Type: RES-BASE/NEUTRAL Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)ANTHRACENE	0.85	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(A)PYRENE	0.93	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(K)FLUORANTHENE	0.73	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z
Butylbenzylphthalate	9.7	J	6.4	MDL	19	PQL	ug/Kg	J	Z

Sample ID: SL-583-SA8-SB-0.0-0.5 Collected: 8/6/2013 12:20:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1-METHYLNAPHTHALENE	1.7	U	0.68	MDL	1.7	PQL	ug/Kg	UJ	FD

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH085

Laboratory: LL

EDD Filename: PrepPH085

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: SVOA
Method: 8270D SIM **Matrix:** SO

Sample ID: SL-583-SA8-SB-0.0-0.5 Collected: 8/6/2013 12:20:00 Analysis Type: RES-BASE/NEUTRAL Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-METHYLNAPHTHALENE	1.0	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z, FD
BENZO(A)PYRENE	1.1	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(E)PYRENE	17	U	3.4	MDL	17	PQL	ug/Kg	UJ	FD
BENZO(G,H,I)PERYLENE	0.71	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	11	J	6.1	MDL	18	PQL	ug/Kg	J	Z, FD
Butylbenzylphthalate	18	U	6.1	MDL	18	PQL	ug/Kg	UJ	FD
DIBENZO(A,H)ANTHRACENE	1.7	U	0.68	MDL	1.7	PQL	ug/Kg	UJ	FD
NAPHTHALENE	1.2	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z, FD

Sample ID: SL-584-SA8-SB-0.0-0.5 Collected: 8/6/2013 2:15:00 PM Analysis Type: RES-BASE/NEUTRAL Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(B)FLUORANTHENE	1.0	J	0.67	MDL	1.7	PQL	ug/Kg	J	Z
CHRYSENE	1.1	J	0.34	MDL	1.7	PQL	ug/Kg	J	Z
FLUORANTHENE	1.1	J	0.67	MDL	1.7	PQL	ug/Kg	J	Z
PHENANTHRENE	0.78	J	0.67	MDL	1.7	PQL	ug/Kg	J	Z
PYRENE	0.93	J	0.67	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: SL-883-SA8-SB-0.0-0.5 Collected: 8/6/2013 12:25:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1-METHYLNAPHTHALENE	0.79	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z, FD

Sample ID: SL-883-SA8-SB-0.0-0.5 Collected: 8/6/2013 12:25:00 Analysis Type: RES-BASE/NEUTRAL Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-METHYLNAPHTHALENE	2.2		0.68	MDL	1.7	PQL	ug/Kg	J	FD
BENZO(E)PYRENE	4.5	J	3.4	MDL	17	PQL	ug/Kg	J	Z, FD
BIS(2-ETHYLHEXYL)PHTHALATE	29		6.1	MDL	18	PQL	ug/Kg	J	FD
Butylbenzylphthalate	27		6.1	MDL	18	PQL	ug/Kg	J	FD
DIBENZO(A,H)ANTHRACENE	0.69	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z, FD
NAPHTHALENE	2.3		0.68	MDL	1.7	PQL	ug/Kg	J	FD

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH085

Laboratory: LL

EDD Filename: PrepPH085

eQAPP Name: CDM_SSFL_131101_Lan

Reason Code Legend

<i>Reason Code</i>	<i>Description</i>
*#	Professional Judgment
A	ICP Serial Dilution
B	Calibration Blank Contamination
B	Method Blank Contamination
E	Laboratory Duplicate Precision
E	Matrix Spike Precision
F	Equipment Blank Contamination
F	Field Blank Contamination
FD	Field Duplicate Precision
Q	Laboratory Duplicate Precision
Q	Matrix Spike Lower Estimation
Q	Matrix Spike Lower Rejection
Q	Matrix Spike Precision
Q	Matrix Spike Upper Estimation
S	Surrogate/Tracer Recovery Upper Estimation
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

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Enclosure I
EPA Level III ADR Outliers
(Including Manual Review Outliers)

Quality Control Outlier Reports

PH085

Method Blank Outlier Report

Lab Reporting Batch ID: PH085

Laboratory: LL

EDD Filename: PH085_v2

eQAPP Name: CDM_SSFL_131101_Lan

Method: 1613B
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2240B372137	8/13/2013 9:37:00 PM	1,2,3,4,6,7,8-HPCDD 1,2,3,4,6,7,8-HPCDF 1,2,3,4,7,8,9-HPCDF 1,2,3,6,7,8-HXCDD 1,2,3,7,8-PECDD 2,3,4,7,8-PECDF OCDD OCDF	0.0637 ng/Kg 0.0267 ng/Kg 0.0434 ng/Kg 0.0377 ng/Kg 0.0780 ng/Kg 0.0474 ng/Kg 0.252 ng/Kg 0.202 ng/Kg	SL-564-SA8-SB-0.0-0.5 SL-582-SA8-SB-0.0-0.5 SL-582-SA8-SB-2.5-3.5 SL-583-SA8-SB-0.0-0.5
BLK2270B370710	8/17/2013 7:10:00 AM	1,2,3,4,6,7,8-HPCDD 1,2,3,4,6,7,8-HPCDF 1,2,3,4,7,8-HXCDF 1,2,3,6,7,8-HXCDD 1,2,3,6,7,8-HXCDF 1,2,3,7,8,9-HXCDF 1,2,3,7,8-PECDD 1,2,3,7,8-PECDF 2,3,4,6,7,8-HXCDF 2,3,4,7,8-PECDF OCDD OCDF	0.0682 ng/Kg 0.0368 ng/Kg 0.0398 ng/Kg 0.0344 ng/Kg 0.0310 ng/Kg 0.0558 ng/Kg 0.0796 ng/Kg 0.0421 ng/Kg 0.0316 ng/Kg 0.0576 ng/Kg 0.286 ng/Kg 0.112 ng/Kg	SL-584-SA8-SB-0.0-0.5 SL-883-SA8-SB-0.0-0.5

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-564-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.146 ng/Kg	0.146U ng/Kg
SL-564-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.155 ng/Kg	0.155U ng/Kg
SL-564-SA8-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.147 ng/Kg	0.147U ng/Kg
SL-582-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.207 ng/Kg	0.207U ng/Kg
SL-582-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.362 ng/Kg	0.362U ng/Kg
SL-582-SA8-SB-2.5-3.5(RES)	1,2,3,4,6,7,8-HPCDF	0.0800 ng/Kg	0.0800U ng/Kg
SL-582-SA8-SB-2.5-3.5(RES)	1,2,3,7,8-PECDD	0.0679 ng/Kg	0.0679U ng/Kg
SL-582-SA8-SB-2.5-3.5(RES)	OCDF	0.156 ng/Kg	0.156U ng/Kg
SL-583-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.189 ng/Kg	0.189U ng/Kg
SL-583-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.151 ng/Kg	0.151U ng/Kg
SL-584-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.0585 ng/Kg	0.0585U ng/Kg
SL-584-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.0440 ng/Kg	0.0440U ng/Kg
SL-584-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.0953 ng/Kg	0.0953U ng/Kg
SL-584-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.143 ng/Kg	0.143U ng/Kg
SL-584-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0696 ng/Kg	0.0696U ng/Kg
SL-584-SA8-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.0809 ng/Kg	0.0809U ng/Kg

Method: 6010C
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P22037AB221141	8/16/2013 11:41:00 AM	CALCIUM LITHIUM TIN ZINC	3.70 mg/Kg 0.85 mg/Kg 1.92 mg/Kg 0.422 mg/Kg	SL-564-SA8-SB-0.0-0.5 SL-582-SA8-SB-0.0-0.5 SL-582-SA8-SB-2.5-3.5 SL-583-SA8-SB-0.0-0.5 SL-584-SA8-SB-0.0-0.5 SL-883-SA8-SB-0.0-0.5

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

11/13/2013 10:42:14 AM

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Method Blank Outlier Report

Lab Reporting Batch ID: PH085

Laboratory: LL

EDD Filename: PH085_v2

eQAPP Name: CDM_SSFL_131101_Lan

Method: 6010C

Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
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The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-564-SA8-SB-0.0-0.5(RES)	TIN	2.90 mg/Kg	2.90U mg/Kg
SL-582-SA8-SB-0.0-0.5(RES)	TIN	2.78 mg/Kg	2.78U mg/Kg
SL-582-SA8-SB-2.5-3.5(RES)	TIN	2.69 mg/Kg	2.69U mg/Kg
SL-583-SA8-SB-0.0-0.5(RES)	TIN	2.75 mg/Kg	2.75U mg/Kg
SL-584-SA8-SB-0.0-0.5(RES)	TIN	2.66 mg/Kg	2.66U mg/Kg
SL-883-SA8-SB-0.0-0.5(RES)	TIN	4.14 mg/Kg	4.14U mg/Kg

Equipment Rinsate Blank Outlier Report

Lab Reporting Batch ID: PH085

Laboratory: LL

EDD Filename: PrepPH085

eQAPP Name: CDM_SSFL_131101_Lan

Method: 6010C
Matrix: SO

Equipment Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
EB-080713(REA2)	8/7/2013 3:00:00 PM	ALUMINUM MOLYBDENUM TIN	0.143 mg/L 0.0098 mg/L 0.0029 mg/L	SL-564-SA8-SB-0.0-0.5 SL-582-SA8-SB-0.0-0.5 SL-582-SA8-SB-2.5-3.5 SL-583-SA8-SB-0.0-0.5 SL-584-SA8-SB-0.0-0.5 SL-883-SA8-SB-0.0-0.5

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-564-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.405 mg/Kg	0.405U mg/Kg
SL-582-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.459 mg/Kg	0.459U mg/Kg
SL-582-SA8-SB-2.5-3.5(RES)	MOLYBDENUM	0.446 mg/Kg	0.446U mg/Kg
SL-583-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.853 mg/Kg	0.853U mg/Kg
SL-584-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.634 mg/Kg	0.634U mg/Kg
SL-883-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.380 mg/Kg	0.380U mg/Kg

Field Blank Outlier Report

Lab Reporting Batch ID: PH085

Laboratory: LL

EDD Filename: PrepPH085

eQAPP Name: CDM_SSFL_131101_Lan

Method: 6010C
Matrix: SO

Field Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
FB-041113(REA2)	4/11/2013 3:00:00 PM	COPPER MOLYBDENUM	0.0036 mg/L 0.0036 mg/L	SL-564-SA8-SB-0.0-0.5 SL-582-SA8-SB-0.0-0.5 SL-582-SA8-SB-2.5-3.5 SL-583-SA8-SB-0.0-0.5 SL-584-SA8-SB-0.0-0.5 SL-883-SA8-SB-0.0-0.5

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-564-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.405 mg/Kg	0.405U mg/Kg
SL-582-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.459 mg/Kg	0.459U mg/Kg
SL-582-SA8-SB-2.5-3.5(RES)	MOLYBDENUM	0.446 mg/Kg	0.446U mg/Kg
SL-583-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.853 mg/Kg	0.853U mg/Kg
SL-584-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.634 mg/Kg	0.634U mg/Kg
SL-883-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.380 mg/Kg	0.380U mg/Kg

Surrogate Outlier Report

Lab Reporting Batch ID: PH085

Laboratory: LL

EDD Filename: PH085_v2

eQAPP Name: CDM_SSFL_131101_Lan

Method: 8081B

Matrix: SO

<i>Sample ID (Analysis Type)</i>	<i>Surrogate</i>	<i>Sample % Recovery</i>	<i>% Recovery Limits</i>	<i>Affected Compounds</i>	<i>Flag</i>
SL-564-SA8-SB-0.0 -0.5	DECACHLOROBIPHENYL	124	20.00-120.00	All Target Analytes	J (all detects)

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH085

Laboratory: LL

EDD Filename: PH085_v2

eQAPP Name: CDM_SSFL_131101_Lan

Method: 8015M

Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-583-SA8-SB-0.0-0.5MS	EFH (C15-C20)	178	246	49.00-123.00	32 (20.00)	EFH (C15-C20)	J (all detects)
SL-583-SA8-SB-0.0-0.5MSD	EFH (C21-C30)	478	436	49.00-123.00	-	EFH (C21-C30)	EFH (C30-C40), No Qual, >4x
(SL-583-SA8-SB-0.0-0.5)	EFH (C30-C40)	267	703	49.00-123.00	38 (20.00)	EFH (C30-C40)	

Method: 1613B

Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-583-SA8-SB-0.0-0.5MSD	OCDD	-	143	40.00-135.00	29 (20.00)	OCDD	J(all detects)
(SL-583-SA8-SB-0.0-0.5)							

Method: 8151A

Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-583-SA8-SB-0.0-0.5MSD	DALAPON	-	0	19.00-109.00	200 (50.00)	DALAPON	J(all detects) R(all non-detects)
(SL-583-SA8-SB-0.0-0.5)							

Method: 6010C

Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-583-SA8-SB-0.0-0.5MS	ALUMINUM	3208	2690	75.00-125.00	-	ALUMINUM	J(all detects) Al, Ca, Fe, Mg, Mn, P, Ti, No Qual, >4x
(TOT)	CALCIUM	210	171	75.00-125.00	-	CALCIUM	
SL-583-SA8-SB-0.0-0.5MSD	IRON	1992	1863	75.00-125.00	-	IRON	
(TOT)	LEAD	-	133	75.00-125.00	-	LEAD	
(SL-564-SA8-SB-0.0-0.5)	MAGNESIUM	361	296	75.00-125.00	-	MAGNESIUM	
SL-582-SA8-SB-0.0-0.5	MANGANESE	-	133	75.00-125.00	-	MANGANESE	
SL-582-SA8-SB-2.5-3.5	PHOSPHORUS	-	149	75.00-125.00	-	PHOSPHORUS	
SL-583-SA8-SB-0.0-0.5	POTASSIUM	157	149	75.00-125.00	-	POTASSIUM	
SL-584-SA8-SB-0.0-0.5	TITANIUM	391	369	75.00-125.00	-	TITANIUM	
SL-883-SA8-SB-0.0-0.5)							
SL-583-SA8-SB-0.0-0.5MS	ANTIMONY	34	38	75.00-125.00	-	ANTIMONY	J(all detects) UJ(all non-detects)
(TOT)	ZINC	-	198	75.00-125.00	26 (20.00)	ZINC	
SL-583-SA8-SB-0.0-0.5MSD							
(TOT)							
(SL-564-SA8-SB-0.0-0.5)							
SL-582-SA8-SB-0.0-0.5							
SL-582-SA8-SB-2.5-3.5							
SL-583-SA8-SB-0.0-0.5							
SL-584-SA8-SB-0.0-0.5							
SL-883-SA8-SB-0.0-0.5)							

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH085

Laboratory: LL

EDD Filename: PH085_v2

eQAPP Name: CDM_SSFL_131101_Lan

Method: 6020A
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-583-SA8-SB-0.0-0.5MS (TOT) SL-583-SA8-SB-0.0-0.5MSD (TOT) (SL-564-SA8-SB-0.0-0.5 SL-582-SA8-SB-0.0-0.5 SL-582-SA8-SB-2.5-3.5 SL-583-SA8-SB-0.0-0.5 SL-584-SA8-SB-0.0-0.5 SL-883-SA8-SB-0.0-0.5)	SILVER STRONTIUM THALLIUM	- 145 -	152 307 182	75.00-125.00 75.00-125.00 75.00-125.00	25 (20.00) 32 (20.00) 29 (20.00)	SILVER STRONTIUM THALLIUM	J(all detects) UJ(all non-detects)
SL-583-SA8-SB-0.0-0.5MSD (TOT) (SL-564-SA8-SB-0.0-0.5 SL-582-SA8-SB-0.0-0.5 SL-582-SA8-SB-2.5-3.5 SL-583-SA8-SB-0.0-0.5 SL-584-SA8-SB-0.0-0.5 SL-883-SA8-SB-0.0-0.5)	SELENIUM	-	136	75.00-125.00	-	SELENIUM	J(all detects)

Method: 8270D SIM
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-583-SA8-SB-0.0-0.5MS SL-583-SA8-SB-0.0-0.5MSD (SL-583-SA8-SB-0.0-0.5)	Di-n-octylphthalate	184	183	52.00-162.00	-	Di-n-octylphthalate	J(all detects)

Method: 8270D
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-583-SA8-SB-0.0-0.5MS SL-583-SA8-SB-0.0-0.5MSD (SL-583-SA8-SB-0.0-0.5)	BENZIDINE	0	0	35.00-141.00	-	BENZIDINE	J(all detects) R(all non-detects)

Lab Duplicate Outlier Report

Lab Reporting Batch ID: PH085

Laboratory: LL

EDD Filename: PH085_v2

eQAPP Name: CDM_SSFL_131101_Lan

Method: 6010C
Matrix: SO

QC Sample ID (Associated Sample ID)	Analyte	Sample RPD	eQAPP RPD	Flag
SL-583-SA8-SB-0.0-0.5DUP (TOT)	ARSENIC	33	20.00	No Qual, OK by Difference
(SL-564-SA8-SB-0.0-0.5)	MOLYBDENUM	56	20.00	
SL-582-SA8-SB-0.0-0.5	Zirconium	27	20.00	
SL-582-SA8-SB-2.5-3.5				
SL-583-SA8-SB-0.0-0.5				
SL-584-SA8-SB-0.0-0.5				
SL-883-SA8-SB-0.0-0.5)				

Method: 6020A
Matrix: SO

QC Sample ID (Associated Sample ID)	Analyte	Sample RPD	eQAPP RPD	Flag
SL-583-SA8-SB-0.0-0.5DUP (TOT)	STRONTIUM	25	20.00	J(all detects) UJ(all non-detects)
(SL-564-SA8-SB-0.0-0.5)	THALLIUM	31	20.00	
SL-582-SA8-SB-0.0-0.5				TI, No Qual, OK by Difference
SL-582-SA8-SB-2.5-3.5				
SL-583-SA8-SB-0.0-0.5				
SL-584-SA8-SB-0.0-0.5				
SL-883-SA8-SB-0.0-0.5)				

Field Duplicate RPD Report

Lab Reporting Batch ID: PH085

Laboratory: LL

EDD Filename: PH085_v2

eQAPP Name: CDM_SSFL_131101_Lan

Method: 160.3M
Matrix: SO

Analyte	Concentration (%)		Sample RPD	eQAPP RPD	Flag
	SL-583-SA8-SB-0.0-0.5	SL-883-SA8-SB-0.0-0.5			
MOISTURE	1.9	2.3	19		No Qualifiers Applied

Method: 1613B
Matrix: SO

Analyte	Concentration (ng/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-583-SA8-SB-0.0-0.5	SL-883-SA8-SB-0.0-0.5			
1,2,3,7,8,9-HXCDF	0.396	0.642	47	50.00	No Qualifiers Applied
1,2,3,4,6,7,8-HPCDD	12.8	45.6	112	50.00	J(all detects) UJ(all non-detects)
1,2,3,4,6,7,8-HPCDF	1.65	5.73	111	50.00	
1,2,3,4,7,8,9-HPCDF	0.189	0.551	98	50.00	
1,2,3,4,7,8-HxCDD	0.266	0.778	98	50.00	
1,2,3,4,7,8-HXCDF	0.347	1.37	119	50.00	
1,2,3,6,7,8-HXCDD	0.870	2.27	89	50.00	
1,2,3,6,7,8-HXCDF	0.403	1.11	93	50.00	
1,2,3,7,8,9-HXCDD	0.861	1.93	77	50.00	
1,2,3,7,8-PECDD	0.151	0.548	114	50.00	
1,2,3,7,8-PECDF	2.10	5.96	96	50.00	
2,3,4,6,7,8-HXCDF	0.237	0.767	106	50.00	
2,3,4,7,8-PECDF	0.252	1.66	147	50.00	
2,3,7,8-TCDD	0.990 U	0.0550	200	50.00	
2,3,7,8-TCDF	0.581	2.32	120	50.00	
OCDD	122	414	109	50.00	
OCDF	3.08	11.5	116	50.00	

Method: 6010C
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-583-SA8-SB-0.0-0.5 (TOT)	SL-883-SA8-SB-0.0-0.5 (TOT)			
ALUMINUM	18000	18800	4	50.00	No Qualifiers Applied
ARSENIC	1.72	2.32	30	50.00	
BARIUM	92.1	93.7	2	50.00	
BERYLLIUM	0.621	0.614	1	50.00	
BORON	12.2	12.9	6	50.00	
CALCIUM	3380	3400	1	50.00	
CHROMIUM	20.0	22.6	12	50.00	
COBALT	5.46	5.76	5	50.00	
COPPER	14.8	17.2	15	50.00	
IRON	20400	21000	3	50.00	
LITHIUM	19.6	20.4	4	50.00	
MAGNESIUM	4040	4130	2	50.00	
MANGANESE	288	296	3	50.00	
NICKEL	11.8	12.8	8	50.00	
PHOSPHORUS	416	443	6	50.00	
POTASSIUM	3290	3440	4	50.00	
SODIUM	64.5	66.7	3	50.00	
TIN	2.75	4.14	40	50.00	
TITANIUM	980	1050	7	50.00	
VANADIUM	37.0	39.0	5	50.00	
Zirconium	2.53	1.94	26	50.00	

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

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Field Duplicate RPD Report

Lab Reporting Batch ID: PH085

Laboratory: LL

EDD Filename: PH085_v2

eQAPP Name: CDM_SSFL_131101_Lan

Method: 6010C					
Matrix: SO					
ANTIMONY	4.00 U	8.98	200	50.00	J(all detects) UJ(all non-detects)
CADMIUM	0.584	1.39	82	50.00	
LEAD	15.4	27.3	56	50.00	
MOLYBDENUM	0.853	0.380	77	50.00	
ZINC	106	219	70	50.00	

Method: 6020A					
Matrix: SO					

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-583-SA8-SB-0.0-0.5 (TOT)	SL-883-SA8-SB-0.0-0.5 (TOT)			
SELENIUM	0.144	0.215	40	50.00	No Qualifiers Applied
STRONTIUM	23.4	34.7	39	50.00	
THALLIUM	0.262	0.381	37	50.00	
SILVER	0.0432	0.101	80	50.00	J(all detects)

Method: 7471B					
Matrix: SO					

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-583-SA8-SB-0.0-0.5 (TOT)	SL-883-SA8-SB-0.0-0.5 (TOT)			
MERCURY	0.0225	0.0359	46	50.00	No Qualifiers Applied

Method: 8015M					
Matrix: SO					

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-583-SA8-SB-0.0-0.5	SL-883-SA8-SB-0.0-0.5			
EFH (C15-C20)	5.1 U	2.4	200	50.00	J(all detects) UJ(all non-detects)
EFH (C21-C30)	13	24	59	50.00	
EFH (C30-C40)	34	66	64	50.00	

Method: 8082A					
Matrix: SO					

Analyte	Concentration (ug/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-583-SA8-SB-0.0-0.5	SL-883-SA8-SB-0.0-0.5			
AROCLOR 1254	20	96	131	50.00	J(all detects) UJ(all non-detects)
AROCLOR 1260	9.2	17 U	200	50.00	
Aroclor 5460	34 U	22	200	50.00	

Method: 8151A					
Matrix: SO					

Analyte	Concentration (ug/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-583-SA8-SB-0.0-0.5	SL-883-SA8-SB-0.0-0.5			
2,4,5-T	1.7	2.3	30	50.00	No Qualifiers Applied
2,4-D	23	23	0	50.00	

Field Duplicate RPD Report

Lab Reporting Batch ID: PH085

Laboratory: LL

EDD Filename: PH085_v2

eQAPP Name: CDM_SSFL_131101_Lan

Method: 8270D SIM

Matrix: SO

Analyte	Concentration (ug/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-583-SA8-SB-0.0-0.5	SL-883-SA8-SB-0.0-0.5			
1-METHYLNAPHTHALENE	1.7 U	0.79	200	50.00	J(all detects) UJ(all non-detects)
2-METHYLNAPHTHALENE	1.0	2.2	75	50.00	
BENZO(E)PYRENE	17 U	4.5	200	50.00	
BIS(2-ETHYLHEXYL)PHTHALATE	11	29	90	50.00	
Butylbenzylphthalate	18 U	27	200	50.00	
DIBENZO(A,H)ANTHRACENE	1.7 U	0.69	200	50.00	
NAPHTHALENE	1.2	2.3	63	50.00	

Method: 8270D

Matrix: SO

Analyte	Concentration (ug/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-583-SA8-SB-0.0-0.5	SL-883-SA8-SB-0.0-0.5			
BENZO(A)ANTHRACENE	7	5	33	50.00	No Qualifiers Applied
BENZO(B)FLUORANTHENE	8	9	12	50.00	
PHENANTHRENE	5	6	18	50.00	
PYRENE	8	10	22	50.00	
BENZO(K)FLUORANTHENE	8	4	67	50.00	J(all detects)
FLUORANTHENE	4	8	67	50.00	

Method: 9045M

Matrix: SO

Analyte	Concentration (pH unit)		Sample RPD	eQAPP RPD	Flag
	SL-583-SA8-SB-0.0-0.5	SL-883-SA8-SB-0.0-0.5			
PH	6.52	6.71	3	50.00	No Qualifiers Applied

Reporting Limit Outliers

Lab Reporting Batch ID: PH085

Laboratory: LL

EDD Filename: PH085_v2

eQAPP Name: CDM_SSFL_131101_Lan

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-564-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDF	JB	1.38	5.06	PQL	ng/Kg	J (all detects)
	1,2,3,4,7,8,9-HPCDF	JBQ	0.146	5.06	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	J	0.157	5.06	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JQ	0.211	5.06	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.426	5.06	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	J	0.196	5.06	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	J	0.437	5.06	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JQ	0.295	5.06	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JB	0.155	5.06	PQL	ng/Kg	
	1,2,3,7,8-PECDF	J	0.456	5.06	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	J	0.222	5.06	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.147	5.06	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.0834	1.01	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.241	1.01	PQL	ng/Kg	
OCDF	JB	3.91	10.1	PQL	ng/Kg		
SL-582-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDF	JB	1.98	5.19	PQL	ng/Kg	J (all detects)
	1,2,3,4,7,8,9-HPCDF	JB	0.207	5.19	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.206	5.19	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	J	0.327	5.19	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.978	5.19	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	J	0.441	5.19	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	J	0.918	5.19	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	J	0.896	5.19	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JB	0.362	5.19	PQL	ng/Kg	
	1,2,3,7,8-PECDF	J	2.74	5.19	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	J	0.284	5.19	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.534	5.19	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.135	1.04	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.444	1.04	PQL	ng/Kg	
OCDF	JB	3.45	10.4	PQL	ng/Kg		
SL-582-SA8-SB-2.5-3.5	1,2,3,4,6,7,8-HPCDD	JB	0.453	5.12	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JB	0.0800	5.12	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.444	5.12	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	J	0.650	5.12	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JQ	0.940	5.12	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.0679	5.12	PQL	ng/Kg	
	1,2,3,7,8-PECDF	J	0.173	5.12	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JQ	0.0207	5.12	PQL	ng/Kg	
	OCDD	JB	3.23	10.2	PQL	ng/Kg	
	OCDF	JBQ	0.156	10.2	PQL	ng/Kg	
SL-583-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDF	JB	1.65	4.95	PQL	ng/Kg	J (all detects)
	1,2,3,4,7,8,9-HPCDF	JB	0.189	4.95	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.266	4.95	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	J	0.347	4.95	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.870	4.95	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	J	0.403	4.95	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	J	0.861	4.95	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	J	0.396	4.95	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JB	0.151	4.95	PQL	ng/Kg	
	1,2,3,7,8-PECDF	J	2.10	4.95	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	J	0.237	4.95	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.252	4.95	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.581	0.990	PQL	ng/Kg	
	OCDF	JB	3.08	9.90	PQL	ng/Kg	

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

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Reporting Limit Outliers

Lab Reporting Batch ID: PH085

Laboratory: LL

EDD Filename: PH085_v2

eQAPP Name: CDM_SSFL_131101_Lan

Method: 1613B
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-584-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	1.60	4.86	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JB	0.326	4.86	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	J	0.0350	4.86	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	J	0.0701	4.86	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDF	JBQ	0.0585	4.86	PQL	ng/Kg	
	1,2,3,6,7,8-HxCDD	JBQ	0.489	4.86	PQL	ng/Kg	
	1,2,3,6,7,8-HxCDF	JBQ	0.0440	4.86	PQL	ng/Kg	
	1,2,3,7,8,9-HxCDD	J	0.584	4.86	PQL	ng/Kg	
	1,2,3,7,8,9-HxCDF	JB	0.352	4.86	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.0953	4.86	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.143	4.86	PQL	ng/Kg	
	2,3,4,6,7,8-HxCDF	JBQ	0.0696	4.86	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.0809	4.86	PQL	ng/Kg	
	OCDF	JBQ	0.646	9.72	PQL	ng/Kg	
SL-883-SA8-SB-0.0-0.5	1,2,3,4,7,8,9-HPCDF	JQ	0.551	4.98	PQL	ng/Kg	J (all detects)
	1,2,3,4,7,8-HxCDD	J	0.778	4.98	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDF	JB	1.37	4.98	PQL	ng/Kg	
	1,2,3,6,7,8-HxCDD	JB	2.27	4.98	PQL	ng/Kg	
	1,2,3,6,7,8-HxCDF	JB	1.11	4.98	PQL	ng/Kg	
	1,2,3,7,8,9-HxCDD	J	1.93	4.98	PQL	ng/Kg	
	1,2,3,7,8,9-HxCDF	JB	0.642	4.98	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JB	0.548	4.98	PQL	ng/Kg	
	2,3,4,6,7,8-HxCDF	JB	0.767	4.98	PQL	ng/Kg	
	2,3,4,7,8-PECDF	J	1.66	4.98	PQL	ng/Kg	
	2,3,7,8-TCDD	J	0.0550	0.997	PQL	ng/Kg	

Method: 6010C
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-564-SA8-SB-0.0-0.5	ARSENIC	J	3.02	4.05	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.728	1.01	PQL	mg/Kg	
	CADMIUM	J	0.198	1.01	PQL	mg/Kg	
	MOLYBDENUM	J	0.405	2.02	PQL	mg/Kg	
	SODIUM	J	62.8	101	PQL	mg/Kg	
	TIN	J	2.90	10.1	PQL	mg/Kg	
	Zirconium	J	3.02	5.06	PQL	mg/Kg	
SL-582-SA8-SB-0.0-0.5	ANTIMONY	J	2.05	4.21	PQL	mg/Kg	J (all detects)
	ARSENIC	J	2.89	4.21	PQL	mg/Kg	
	BERYLLIUM	J	0.680	1.05	PQL	mg/Kg	
	CADMIUM	J	0.594	1.05	PQL	mg/Kg	
	MOLYBDENUM	J	0.459	2.11	PQL	mg/Kg	
	SODIUM	J	65.6	105	PQL	mg/Kg	
	TIN	J	2.78	10.5	PQL	mg/Kg	
	Zirconium	J	2.32	5.27	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH085

Laboratory: LL

EDD Filename: PH085_v2

eQAPP Name: CDM_SSFL_131101_Lan

Method: 6010C
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-582-SA8-SB-2.5-3.5	ARSENIC	J	2.37	4.21	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.784	1.05	PQL	mg/Kg	
	CADMIUM	J	0.253	1.05	PQL	mg/Kg	
	MOLYBDENUM	J	0.446	2.10	PQL	mg/Kg	
	SODIUM	J	69.8	105	PQL	mg/Kg	
	TIN	J	2.69	10.5	PQL	mg/Kg	
	Zirconium	J	1.86	5.26	PQL	mg/Kg	
SL-583-SA8-SB-0.0-0.5	ARSENIC	J	1.72	4.00	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.621	0.999	PQL	mg/Kg	
	CADMIUM	J	0.584	0.999	PQL	mg/Kg	
	MOLYBDENUM	J	0.853	2.00	PQL	mg/Kg	
	SODIUM	J	64.5	99.9	PQL	mg/Kg	
	TIN	J	2.75	9.99	PQL	mg/Kg	
	Zirconium	J	2.53	5.00	PQL	mg/Kg	
SL-584-SA8-SB-0.0-0.5	ARSENIC	J	2.82	4.01	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.674	1.00	PQL	mg/Kg	
	CADMIUM	J	0.164	1.00	PQL	mg/Kg	
	MOLYBDENUM	J	0.634	2.01	PQL	mg/Kg	
	SODIUM	J	64.0	100	PQL	mg/Kg	
	TIN	J	2.66	10.0	PQL	mg/Kg	
	Zirconium	J	0.847	5.02	PQL	mg/Kg	
SL-883-SA8-SB-0.0-0.5	ARSENIC	J	2.32	4.09	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.614	1.02	PQL	mg/Kg	
	MOLYBDENUM	J	0.380	2.05	PQL	mg/Kg	
	SODIUM	J	66.7	102	PQL	mg/Kg	
	TIN	J	4.14	10.2	PQL	mg/Kg	
	Zirconium	J	1.94	5.12	PQL	mg/Kg	

Method: 6020A
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-564-SA8-SB-0.0-0.5	SELENIUM	J	0.183	0.405	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0500	0.202	PQL	mg/Kg	
SL-582-SA8-SB-0.0-0.5	SELENIUM	J	0.219	0.421	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0849	0.211	PQL	mg/Kg	
SL-582-SA8-SB-2.5-3.5	SELENIUM	J	0.275	0.421	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0375	0.210	PQL	mg/Kg	
SL-583-SA8-SB-0.0-0.5	SELENIUM	J	0.144	0.400	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0432	0.200	PQL	mg/Kg	
SL-584-SA8-SB-0.0-0.5	SELENIUM	J	0.241	0.401	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0339	0.201	PQL	mg/Kg	
SL-883-SA8-SB-0.0-0.5	SELENIUM	J	0.215	0.409	PQL	mg/Kg	J (all detects)
	SILVER	J	0.101	0.205	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH085

Laboratory: LL

EDD Filename: PH085_v2

eQAPP Name: CDM_SSFL_131101_Lan

Method: 8015M

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-582-SA8-SB-0.0-0.5	EFH (C15-C20)	J	5.8	11	PQL	mg/Kg	J (all detects)
SL-582-SA8-SB-2.5-3.5	EFH (C21-C30)	J	2.5	5.3	PQL	mg/Kg	J (all detects)
SL-883-SA8-SB-0.0-0.5	EFH (C15-C20)	J	2.4	5.1	PQL	mg/Kg	J (all detects)

Method: 8081B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-564-SA8-SB-0.0-0.5	4,4'-DDE	J	1.3	1.8	PQL	ug/Kg	J (all detects)
	4,4'-DDT	J	1.1	1.8	PQL	ug/Kg	

Method: 8082A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-582-SA8-SB-0.0-0.5	AROCLOR 1260	J	9.5	18	PQL	ug/Kg	J (all detects)
SL-583-SA8-SB-0.0-0.5	AROCLOR 1260	J	9.2	17	PQL	ug/Kg	J (all detects)
SL-883-SA8-SB-0.0-0.5	Aroclor 5460	J	22	34	PQL	ug/Kg	J (all detects)

Method: 8151A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-564-SA8-SB-0.0-0.5	2,4-D	J	23	37	PQL	ug/Kg	J (all detects)
SL-583-SA8-SB-0.0-0.5	2,4-D	J	23	37	PQL	ug/Kg	J (all detects)
SL-883-SA8-SB-0.0-0.5	2,4-D	J	23	37	PQL	ug/Kg	J (all detects)

Method: 8270D

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-583-SA8-SB-0.0-0.5	BENZO(A)ANTHRACENE	J	7	17	PQL	ug/Kg	J (all detects)
	BENZO(B)FLUORANTHENE	J	8	17	PQL	ug/Kg	
	BENZO(K)FLUORANTHENE	J	8	17	PQL	ug/Kg	
	CHRYSENE	J	7	17	PQL	ug/Kg	
	FLUORANTHENE	J	4	17	PQL	ug/Kg	
	PHENANTHRENE	J	5	17	PQL	ug/Kg	
	PYRENE	J	8	17	PQL	ug/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH085

Laboratory: LL

EDD Filename: PH085_v2

eQAPP Name: CDM_SSFL_131101_Lan

Method: 8270D
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-883-SA8-SB-0.0-0.5	ANTHRACENE	J	3	17	PQL	ug/Kg	J (all detects)
	BENZO(A)ANTHRACENE	J	5	17	PQL	ug/Kg	
	BENZO(A)PYRENE	J	8	17	PQL	ug/Kg	
	BENZO(B)FLUORANTHENE	J	9	17	PQL	ug/Kg	
	BENZO(G,H,I)PERYLENE	J	6	17	PQL	ug/Kg	
	BENZO(K)FLUORANTHENE	J	4	17	PQL	ug/Kg	
	FLUORANTHENE	J	8	17	PQL	ug/Kg	
	INDENO(1,2,3-CD)PYRENE	J	5	17	PQL	ug/Kg	
	PHENANTHRENE	J	6	17	PQL	ug/Kg	
PYRENE	J	10	17	PQL	ug/Kg		

Method: 8270D SIM
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-564-SA8-SB-0.0-0.5	BENZO(A)ANTHRACENE	J	0.75	1.7	PQL	ug/Kg	J (all detects)
	BIS(2-ETHYLHEXYL)PHTHALATE	J	8.2	19	PQL	ug/Kg	
SL-582-SA8-SB-0.0-0.5	1-METHYLNAPHTHALENE	J	1.3	1.8	PQL	ug/Kg	J (all detects)
	BENZO(A)ANTHRACENE	J	0.85	1.8	PQL	ug/Kg	
	BENZO(A)PYRENE	J	0.93	1.8	PQL	ug/Kg	
	BENZO(K)FLUORANTHENE	J	0.73	1.8	PQL	ug/Kg	
	Butylbenzylphthalate	J	9.7	19	PQL	ug/Kg	
SL-583-SA8-SB-0.0-0.5	2-METHYLNAPHTHALENE	J	1.0	1.7	PQL	ug/Kg	J (all detects)
	BENZO(A)PYRENE	J	1.1	1.7	PQL	ug/Kg	
	BENZO(G,H,I)PERYLENE	J	0.71	1.7	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	11	18	PQL	ug/Kg	
	NAPHTHALENE	J	1.2	1.7	PQL	ug/Kg	
SL-584-SA8-SB-0.0-0.5	BENZO(B)FLUORANTHENE	J	1.0	1.7	PQL	ug/Kg	J (all detects)
	CHRYSENE	J	1.1	1.7	PQL	ug/Kg	
	FLUORANTHENE	J	1.1	1.7	PQL	ug/Kg	
	PHENANTHRENE	J	0.78	1.7	PQL	ug/Kg	
	PYRENE	J	0.93	1.7	PQL	ug/Kg	
SL-883-SA8-SB-0.0-0.5	1-METHYLNAPHTHALENE	J	0.79	1.7	PQL	ug/Kg	J (all detects)
	BENZO(E)PYRENE	J	4.5	17	PQL	ug/Kg	
	DIBENZO(A,H)ANTHRACENE	J	0.69	1.7	PQL	ug/Kg	

LDC #: 30434A4

VALIDATION COMPLETENESS WORKSHEET

Date: 9/26/13

SDG #: PH085

ADR

Page: 1 of 1

Laboratory: Eurofins Lancaster Laboratories

Reviewer: [Signature]

2nd Reviewer: [Signature]

METHOD: Metals (EPA SW 846 Method 6010C/6020A/7000)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	—	Sampling dates: 8/6/13
II.	ICP/MS Tune	—	
III.	Calibration	—	
IV.	Blanks	SW	
V.	ICP Interference Check Sample (ICS) Analysis	—	
VI.	Matrix Spike Analysis	SW	MS/D
VII.	Duplicate Sample Analysis	SW	DUP
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	SW	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	N	
XIV.	Field Duplicates	—	(4,5)
XV.	Field Blanks	SW	FB = FB-041113 EB = EB-080713

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

(PH02a)
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

(PH086)

Validated Samples:

soil

1	SL-564-SA8-SB-0.0-0.5	11		21		31	
2	SL-582-SA8-SB-0.0-0.5	12		22		32	
3	SL-582-SA8-SB-2.5-3.5	13		23		33	
4	SL-583-SA8-SB-0.0-0.5	14		24		34	
5	SL-883-SA8-SB-0.0-0.5	15		25		35	
6	SL-584-SA8-SB-0.0-0.5	16		26		36	
7	SL-583-SA8-SB-0.0-0.5MS	17		27		37	
8	SL-583-SA8-SB-0.0-0.5MSD	18		28		38	
9	SL-583-SA8-SB-0.0-0.5DUP	19		29		39	
10		20		30		40	

Notes: _____

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000)

Soil preparation factor applied: 100x

Reason: B

Sample Concentration units, unless otherwise noted: mg/Kg

Associated Samples: All

					Sample Identification										
Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (ug/L)	Maximum ICB/CCB ^a (ug/L)	Action Level	1	2	3	4	5	6					
Mo			2.4	1.2	0.405	0.459 0.46	0.446 0.45	0.853 0.86	0.380	0.634					

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".
 Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

VALIDATION FINDINGS WORKSHEET
Field Blanks

METHOD: Trace Metals (EPA SW846 6010B/7000)

Blank units: mg/L **Associated sample units:** mg/Kg **Reason:** F
Sampling date: 4/11/13 **Soil factor applied:** 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ **Associated Samples:** All

Analyte	Blank ID	Sample Identification										
	FB-041113 (SDG: PH029)	Action Limit	1	2	3	4	5	6				
Cu	0.0036	1.8										
Mo	0.0036	1.8	0.40	0.46	0.45	0.85	0.38	0.63				

Sampling date: 8/7/13 **Soil factor applied:** 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ **Associated Samples:** All

Analyte	Blank ID	Sample Identification										
	EB-080713 (SDG: PH086)	Action Limit	1-6									
Al	0.143	71.5										
Mo	0.0098	4.9	See FB									
Sn	0.0029	1.45										

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
 Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

QUALITY ASSURANCE SUMMARY

FORM 5A (MS/MSD)

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

SDG No.: PH085

Matrix: SOIL

Level

(low/med):

LOW

Background Lab Sample ID: 7152828BKG Matrix Spike Lab Sample ID: 7152829MS Matrix Spike Duplicate Lab Sample ID: 7152830MSD
Batch Id(s): P22037A, P22038A

Analyte	Mass	BKG Sample		MS Sample		MSD Sample		MS Spike Added	MSD Spike Added	Units	MS		MSD		Control Limit				
		Result	C	Result	C	Result	C				%R	Q	%R	Q	RPD	Q	%R	RPD	M
Aluminum		17701.5088		24054.3554		23082.2720		198.0198	200.0000	MG/KG	3208		2690		4		20	P	
Antimony		0.7255	U	16.6386		19.0760		49.5050	50.0000	MG/KG	34	N	38	N	14		75 - 125	20	P
Arsenic		1.6882	B	17.6505		17.5210		14.8515	15.0000	MG/KG	107		106		1		75 - 125	20	P
Barium		90.3922		295.5842		294.2870		198.0198	200.0000	MG/KG	104		102		0		75 - 125	20	P
Beryllium		0.6088	B	5.8416		5.8380		4.9505	5.0000	MG/KG	106		105		0		75 - 125	20	P
Boron		11.9294		199.7495		200.4130		198.0198	200.0000	MG/KG	95		94		0		75 - 125	20	P
Cadmium		0.5725	B	5.4050		5.8350		4.9505	5.0000	MG/KG	98		105		8		75 - 125	20	P
Calcium		3314.8804		4146.7941		3997.8020		396.0396	400.0000	MG/KG	210		171		4			20	P
Chromium		19.6471		43.5842		43.3470		19.8020	20.0000	MG/KG	121		118		1		75 - 125	20	P
Cobalt		5.3539		53.8941		54.4020		49.5050	50.0000	MG/KG	98		98		1		75 - 125	20	P
Copper		14.5676		42.9743		43.9270		24.7525	25.0000	MG/KG	115		117		2		75 - 125	20	P
Iron		20017.0529		21989.8238		21880.0680		99.0099	100.0000	MG/KG	1992		1863		1			20	P
Lead		15.0725		30.9238		35.0820		14.8515	15.0000	MG/KG	107		133	N	13		75 - 125	20	P
Lithium		19.2755		121.6267		121.7690		99.0099	100.0000	MG/KG	103		102		0		75 - 125	20	P
Magnesium		3962.7382		4677.3050		4555.5490		198.0198	200.0000	MG/KG	361		296		3			20	P
Manganese		282.3343		344.3535		348.6520		49.5050	50.0000	MG/KG	125		133		1			20	P
Mercury		0.0221		0.2105		0.2245		0.1577	0.1646	MG/KG	119		123		6		65 - 135	20	CV
Molybdenum		0.8373	B	193.6416		197.3840		198.0198	200.0000	MG/KG	97		98		2		75 - 125	20	P
Nickel		11.5804		61.6881		62.2710		49.5050	50.0000	MG/KG	101		101		1		75 - 125	20	P
Phosphorus		408.0353		517.0347		556.8550		99.0099	100.0000	MG/KG	110		119		7			20	P
Potassium		3223.0814		4780.3614		4709.0040		990.0990	1000.0000	MG/KG	157	N	149	N	2		75 - 125	20	P
Selenium	78	0.1408	B	2.3525		2.8576		1.9802	2.0000	MG/KG	112		136	N	19		75 - 125	20	MS
Silver	107	0.0424	B	11.8893		15.2884		9.9010	10.0000	MG/KG	120		152	N	25	*	75 - 125	20	MS
Sodium		63.3088	B	1090.2683		1088.7390		990.0990	1000.0000	MG/KG	104		103		0		75 - 125	20	P
Strontium	88	22.9345		34.3855		47.5294		7.9208	8.0000	MG/KG	145	N	307	N	32	*	75 - 125	20	MS
Thallium	203	0.2571		0.7400		0.9864		0.3960	0.4000	MG/KG	122		182	N	29	*	75 - 125	20	MS

Note: Results shown are reported on an as-received basis.

<p>METHODS: P = ICP Atomic Emission Spectrometer CV = Cold Vapor MS = ICP Mass Spectrometry AF = Cold Vapor Atomic Fluorescence</p>	<p>CONCENTRATION QUALIFIERS: U= Below MDL, B= Below LOQ FLAGS: N = Matrix Spike OOS, * = Duplicate OOS</p>
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QUALITY ASSURANCE SUMMARY
 FORM 5A (MS/MSD)
 MATRIX SPIKE/MATRIX SPIKE DUPLICATE
 SDG No.: PH085
 Matrix: SOIL Level: LOW
 (low/med):

Background Lab Sample ID: 7152828BKG Matrix Spike Lab Sample ID: 7152829MS Matrix Spike Duplicate Lab Sample ID: 7152830MSD
 Batch Id(s): P22037A, P22038A

Analyte	Mass	BKG Sample		MS Sample		MSD Sample		MS Spike Added	MSD Spike Added	Units	MS		MSD		Control Limit					
		Result	C	Result	C	Result	C				%R	Q	%R	Q	RPD	Q	%R	RPD	M	
Tin		2.6971	B	357.8772		362.3720		396.0396	400.0000	MG/KG	90		90		1		75 - 125	20	P	
Titanium		961.3775		1348.3762		1330.0350		99.0099	100.0000	MG/KG	391		369		1				20	P
Vanadium		36.3353		95.7950		96.0610		49.5050	50.0000	MG/KG	120		119		0		75 - 125	20	P	
Zinc		103.5833		155.4079		202.4700		49.5050	50.0000	MG/KG	105		198	N	26	*	75 - 125	20	P	
Zirconium		2.4775	B	97.1208		97.3570		99.0099	100.0000	MG/KG	96		95		0		75 - 125	20	P	

Note: Results shown are reported on an as-received basis.

<p>METHODS: P = ICP Atomic Emission Spectrometer CV = Cold Vapor MS = ICP Mass Spectrometry AF = Cold Vapor Atomic Fluorescence</p>	<p>CONCENTRATION QUALIFIERS: U= Below MDL, B= Below LOQ FLAGS: N = Matrix Spike OOS, * = Duplicate OOS</p>
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Background Lab Sample ID: 7152828BKG
 Batch ID(s): P22037A, P22038A
 Concentration Units: MG/KG

Duplicate Lab Sample ID: 7152831DUP

Analyte	Mass	Control Limit	Samples (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum			17701.5088		18427.3460		4		P
Antimony			0.7255	U	-1.0550	B	-200		P
Arsenic			1.6882	B	2.3540	B	33		P
Barium			90.3922		89.5440		1		P
Beryllium			0.6088	B	0.6140	B	1		P
Boron		9.8	11.9294		11.7030		2		P
Cadmium			0.5725	B	0.4970	B	14		P
Calcium			3314.8804		3299.2290		0		P
Chromium			19.6471		19.7790		1		P
Cobalt			5.3539		5.3610		0		P
Copper			14.5676		14.6440		1		P
Iron			20017.0529		20014.4100		0		P
Lead			15.0725		14.8470		2		P
Lithium		3.9	19.2755		19.7180		2		P
Magnesium			3962.7382		4021.9070		1		P
Manganese			282.3343		267.3180		5		P
Mercury		0.0	0.0221		0.0217		2		CV
Molybdenum			0.8373	B	0.4690	B	56		P
Nickel			11.5804		11.5660		0		P
Phosphorus			408.0353		401.0720		2		P
Potassium			3223.0814		3290.3820		2		P
Selenium	78		0.1408	B	0.1600	B	13		MS
Silver	107		0.0424	B	0.0480	B	12		MS
Sodium			63.3088	B	58.8770	B	7		P
Strontium	88		22.9345		29.6096		25	*	MS
Thallium	203	0.2	0.2571		0.3498		31		MS
Tin			2.6971	B	2.8840	B	7		P
Titanium			961.3775		1016.9540		6		P
Vanadium			36.3353		36.8820		1		P
Zinc			103.5833		96.0970		7		P
Zirconium			2.4775	B	3.2400	B	27		P

NOTE: An asterisk (*) in column "Q" indicates poor duplicate precision (RPD > 20% OR |(S) - (D)| > LOQ for values < 5x LOQ).
 The data are considered to be valid because the laboratory control sample is within the control limits. See the Laboratory Control Sample.

ok by difference

Note: Results shown are reported on an as-received basis.

METHODS: P = ICP Atomic Emission Spectrometer MS = ICP Mass Spectrometry CV = Cold Vapor AF = Cold Vapor Atomic Fluorescence	CONCENTRATION QUALIFIERS: U= Below MDL B= Below LOQ FLAGS: * = Duplicate Out of Spec
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Background Lab Sample ID: 7152828BKG Serial Dilution Lab Sample ID: 7152828L
 Batch ID(s): P22037A
 Concentration Units: UG/L

Analyte	Mass	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Diff.	Q	M
Aluminum		180555.3900		189291.6500		5		P
Antimony		7.4000	U	37.0000	U			P
Arsenic		17.2200	B	35.0000	U	100		P
Barium		922.0000		981.9500		7		P
Beryllium		6.2100	B	6.1000	B	2		P
Boron		121.6800		181.8000	B	49		P
Cadmium		5.8400	B	4.5000	B	23		P
Calcium		33811.7800		35939.7000		6		P
Chromium		200.4000		209.4500		5		P
Cobalt		54.6100		62.6500		15	E	P
Copper		148.5900		134.6000		9		P
Iron		204173.9400		207166.9500		1		P
Lead		153.7400		153.5500		0		P
Lithium		196.6100		224.4500		14	E	P
Magnesium		40419.9300		43377.2500		7		P
Manganese		2879.8100		3082.8500		7		P
Molybdenum		8.5400	B	35.4000	B	315		P
Nickel		118.1200		122.3500		4		P
Phosphorus		4161.9600		4229.6500		2		P
Potassium		32875.4300		33824.4500		3		P
Selenium	78	0.7180	B	2.5000	U	100		MS
Silver	107	0.2160	B	0.6500	U	100		MS
Sodium		645.7500	B	835.0000	U	100		P
Strontium	88	116.9660		108.2350		7		MS
Thallium	203	1.3110		1.2200	B	7		MS
Tin		27.5100	B	42.7000	B	55		P
Titanium		9806.0500		9919.0000		1		P
Vanadium		370.6200		385.3000		4		P
Zinc		1056.5500		1075.1500		2		P
Zirconium		25.2700	B	42.0000	U	100		P

NOTE: An E in column Q indicates the presence of a chemical or physical interference in the matrix when the % difference is greater than 10%. This applies only when (I) is greater than or equal to 50x MDL for ICP, 100x MDL for ICP-MS (6020), 50x MDL for ICP-MS (200.8), or 25x MDL for GFAA.



<p>METHODS: P = ICP Atomic Emission Spectrometer MS = ICP Mass Spectrometry</p>	<p>CONCENTRATION QUALIFIERS: U= Below MDL B= Below LOQ</p> <p>FLAGS: E = Matrix Effects exist as proven by Serial Dilution or Spiked Dilution</p>
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**Data Validation Report
Santa Susana Field Laboratory**

Subarea 8

SDG: PH087

Prepared for

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Prepared by

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November 16, 2013

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on August 8, 2013. Data validation was performed in accordance with the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008), Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005), and for Inorganic Data Review (January 2010). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Semivolatiles (SVOCs) by Environmental Protection Agency (EPA) SW 846 Method 8270D utilizing Selective Ion Monitoring (SIM)
Pesticides by EPA SW 846 Method 8081B
Polychlorinated Biphenyls (PCBs) by EPA SW 846 Method 8082A
Metals by EPA SW 846 Method 6010C, 6020A, and 7471B
Herbicides by EPA SW 846 Method 8151A
Total Petroleum Hydrocarbons (TPH) as Gasoline by EPA SW 846 Method 8015M
TPH as Extractables by EPA SW 846 Method 8015M
Dioxins and Dibenzofurans by EPA Method 1613B

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment II. Level III Automated Data Review outliers are presented in Enclosure I.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibration blanks (ICB/CCBs), surrogates, internal standards (dioxins only), matrix spike/matrix spike duplicates (MS/MSD), laboratory duplicates (DUP), laboratory control sample/laboratory control sample duplicates (LCS/LCSD), ICP serial dilutions, method blanks, equipment blanks, field blanks and trip blanks. No samples in this SDG were subjected to Level IV evaluation.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of ICB/CCBs and ICP serial dilutions, which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

II. Initial Calibration

Initial Calibration data were not reviewed for level III.

III. Continuing Calibration

Continuing calibration data were not reviewed for level III.

IV. Blanks

Method blanks were performed at the required frequencies. No contaminant concentrations were detected in the method or preparation blanks with the exception of two blanks for dioxins and metals. The associated sample results were qualified as non-detected (U) due to method blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the associated blanks were not qualified. The details regarding the qualification of data are provided in Enclosure I.

No contaminant concentrations were detected in the initial or continuing calibration blanks with the following exceptions:

SDG/ Method	Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PH087/ 6010C	ICB/CCB	Molybdenum	1.9 ug/L	SL-565-SA8-SB-0.0-0.5 SL-565-SA8-SB-4.0-5.0 SL-567-SA8-SB-0.0-0.5 SL-567-SA8-SB-4.0-5.0 SL-567-SA8-SB-9.0-10.0

Sample concentrations were compared to concentrations detected in the initial and continuing blanks. The sample concentrations were not detected or were significantly greater than the concentrations found in the associated blanks with the following exceptions:

SDG/Method	Sample	Compound	Reported Concentration	Modified Final Concentration
PH087/ 6010C	SL-565-SA8-SB-0.0-0.5	Molybdenum	0.535 ug/Kg	0.535U ug/Kg
PH087/ 6010C	SL-567-SA8-SB-0.0-0.5	Molybdenum	0.913 ug/Kg	0.913U ug/Kg
PH087/ 6010C	SL-567-SA8-SB-4.0-5.0	Molybdenum	0.581 ug/Kg	0.581U ug/Kg

V. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. ICP Interference Check Sample (ICS) Analysis

ICP interference check data were not reviewed for level III.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed at the required frequency. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of one MS/MSD pairs for metals in SDG PH088. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosure I of the DVR for SDG PH088.

VIII. Laboratory Duplicates Sample

Laboratory duplicates (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits with the exception of one DUP for metals in SDG PH088. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosure I of the DVR for SDG PH088.

IX. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

X. Internal Standards

Internal standards were reviewed for dioxins. Percent recoveries (%R) were within QC limits.

XI. ICP Serial Dilution

ICP serial dilution analysis was performed by the laboratory in SDG PH088. The analysis criteria were met with the following exceptions:

Diluted Sample	Analyte	%D (Limits)	Associated Samples	Flag	A or P
SL-530-SA8-SB-4.0-5.0 (from SDG PH088)	Cobalt	12 (≤10)	All soil samples in SDG PH087	J (all detects) UJ (all non-detects)	A

The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable.

XII. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the RL as detected were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH087	All compounds reported as detected below the RL.	J (all detects)	A

XIII. Field Duplicate Samples

No field duplicates were identified in this SDG.

XIV. Field Blank Samples

One trip blank was collected and analyzed for TPH as gasoline. No contaminants were found in the trip blank.

One equipment blank (from SDG PH086) was collected and analyzed for SVOCs, pesticides, PCBs, metals, herbicides, TPH as gasoline, TPH as extractables and dioxins. The equipment blank had several detections for SVOCs, metals and dioxins. The associated sample results were qualified as non-detected (U) due to equipment blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the equipment blanks were not qualified. The equipment blank outlier reports are presented in Enclosure I.

One field blank (from SDG PH029) was collected and analyzed for SVOCs, pesticides, PCBs, metals, herbicides, TPH as gasoline, TPH as extractables and dioxins. The field blank had detections for several SVOCs, metals and dioxins. The associated sample results were qualified as non-detected (U) due to field blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the field blank were not qualified. The field blank outlier reports are presented in Enclosure I.

XV. Overall Assessment of Data

No data associated with this sampling event were rejected. The overall assessment of QA/QC data review by automated and manual validation of this sampling event met project requirements and analytical completeness levels with the exceptions noted in the above sections. All data are deemed useable for the intended use.

Data flags are summarized and are presented as Attachment 2.

Attachment 1
Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
08-Aug-2013	SL-565-SA8-SB-0.0-0.5	7155505	N	3050B	6010C	III
08-Aug-2013	SL-565-SA8-SB-0.0-0.5	7155505	N	3050B	6020A	III
08-Aug-2013	SL-565-SA8-SB-0.0-0.5	7155505	N	3546	8015M	III
08-Aug-2013	SL-565-SA8-SB-0.0-0.5	7155505	N	3546	8082A	III
08-Aug-2013	SL-565-SA8-SB-0.0-0.5	7155505	N	3546	8270D SIM	III
08-Aug-2013	SL-565-SA8-SB-0.0-0.5	7155505	N	METHOD	1613B	III
08-Aug-2013	SL-565-SA8-SB-0.0-0.5	7155505	N	METHOD	7471B	III
08-Aug-2013	TB-080813	7155504	TB	5030B	8015M	III
08-Aug-2013	SL-565-SA8-SB-4.0-5.0	7155506	N	3050B	6010C	III
08-Aug-2013	SL-565-SA8-SB-4.0-5.0	7155506	N	3050B	6020A	III
08-Aug-2013	SL-565-SA8-SB-4.0-5.0	7155506	N	3546	8015M	III
08-Aug-2013	SL-565-SA8-SB-4.0-5.0	7155506	N	3546	8082A	III
08-Aug-2013	SL-565-SA8-SB-4.0-5.0	7155506	N	3546	8270D SIM	III
08-Aug-2013	SL-565-SA8-SB-4.0-5.0	7155506	N	5035A	8015M	III
08-Aug-2013	SL-565-SA8-SB-4.0-5.0	7155506	N	METHOD	1613B	III
08-Aug-2013	SL-565-SA8-SB-4.0-5.0	7155506	N	METHOD	7471B	III
08-Aug-2013	SL-567-SA8-SB-0.0-0.5	7155507	N	3050B	6010C	III
08-Aug-2013	SL-567-SA8-SB-0.0-0.5	7155507	N	3050B	6020A	III
08-Aug-2013	SL-567-SA8-SB-0.0-0.5	7155507	N	3546	8015M	III
08-Aug-2013	SL-567-SA8-SB-0.0-0.5	7155507	N	3546	8081B	III
08-Aug-2013	SL-567-SA8-SB-0.0-0.5	7155507	N	3546	8082A	III
08-Aug-2013	SL-567-SA8-SB-0.0-0.5	7155507	N	3546	8270D SIM	III
08-Aug-2013	SL-567-SA8-SB-0.0-0.5	7155507	N	3550B	8151A	III
08-Aug-2013	SL-567-SA8-SB-0.0-0.5	7155507	N	METHOD	1613B	III
08-Aug-2013	SL-567-SA8-SB-0.0-0.5	7155507	N	METHOD	7471B	III
08-Aug-2013	SL-567-SA8-SB-4.0-5.0	7155508	N	3050B	6010C	III

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
08-Aug-2013	SL-567-SA8-SB-4.0-5.0	7155508	N	3050B	6020A	III
08-Aug-2013	SL-567-SA8-SB-4.0-5.0	7155508	N	3546	8015M	III
08-Aug-2013	SL-567-SA8-SB-4.0-5.0	7155508	N	3546	8081B	III
08-Aug-2013	SL-567-SA8-SB-4.0-5.0	7155508	N	3546	8082A	III
08-Aug-2013	SL-567-SA8-SB-4.0-5.0	7155508	N	3546	8270D SIM	III
08-Aug-2013	SL-567-SA8-SB-4.0-5.0	7155508	N	3550B	8151A	III
08-Aug-2013	SL-567-SA8-SB-4.0-5.0	7155508	N	5035A	8015M	III
08-Aug-2013	SL-567-SA8-SB-4.0-5.0	7155508	N	METHOD	1613B	III
08-Aug-2013	SL-567-SA8-SB-4.0-5.0	7155508	N	METHOD	7471B	III
08-Aug-2013	SL-567-SA8-SB-9.0-10.0	7155509	N	3050B	6010C	III
08-Aug-2013	SL-567-SA8-SB-9.0-10.0	7155509	N	3050B	6020A	III
08-Aug-2013	SL-567-SA8-SB-9.0-10.0	7155509	N	3546	8015M	III
08-Aug-2013	SL-567-SA8-SB-9.0-10.0	7155509	N	3546	8081B	III
08-Aug-2013	SL-567-SA8-SB-9.0-10.0	7155509	N	3546	8082A	III
08-Aug-2013	SL-567-SA8-SB-9.0-10.0	7155509	N	3546	8270D SIM	III
08-Aug-2013	SL-567-SA8-SB-9.0-10.0	7155509	N	3550B	8151A	III
08-Aug-2013	SL-567-SA8-SB-9.0-10.0	7155509	N	5035A	8015M	III
08-Aug-2013	SL-567-SA8-SB-9.0-10.0	7155509	N	METHOD	7471B	III

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH087

Laboratory: LL

EDD Filename: PH087_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method Category:	METALS	
Method:	6010C	Matrix: SO

Sample ID: SL-565-SA8-SB-0.0-0.5 Collected: 8/8/2013 7:40:00 AM Analysis Type: REA Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	8.92	J	0.852	MDL	10.1	PQL	mg/Kg	J	Z

Sample ID: SL-565-SA8-SB-0.0-0.5 Collected: 8/8/2013 7:40:00 AM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.06	U	0.751	MDL	4.06	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.910	J	0.0680	MDL	1.01	PQL	mg/Kg	J	Z
CALCIUM	6410		3.39	MDL	20.3	PQL	mg/Kg	J	E
COBALT	8.48		0.100	MDL	1.01	PQL	mg/Kg	J	A
MOLYBDENUM	0.535	J	0.172	MDL	2.03	PQL	mg/Kg	U	B, F, F
POTASSIUM	4990		8.46	MDL	101	PQL	mg/Kg	J	Q
SODIUM	100	J	16.9	MDL	101	PQL	mg/Kg	J	Z
TIN	3.47	J	0.223	MDL	10.1	PQL	mg/Kg	U	B
Zirconium	4.54	J	0.852	MDL	5.07	PQL	mg/Kg	J	Z

Sample ID: SL-565-SA8-SB-4.0-5.0 Collected: 8/8/2013 8:30:00 AM Analysis Type: REA Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	8.72	J	0.951	MDL	11.3	PQL	mg/Kg	J	Z

Sample ID: SL-565-SA8-SB-4.0-5.0 Collected: 8/8/2013 8:30:00 AM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.53	U	0.838	MDL	4.53	PQL	mg/Kg	UJ	Q
ARSENIC	4.30	J	0.793	MDL	4.53	PQL	mg/Kg	J	Z
BERYLLIUM	0.992	J	0.0759	MDL	1.13	PQL	mg/Kg	J	Z
CADMIUM	1.11	J	0.0861	MDL	1.13	PQL	mg/Kg	J	Z
CALCIUM	13000		3.78	MDL	22.7	PQL	mg/Kg	J	E
COBALT	11.9		0.112	MDL	1.13	PQL	mg/Kg	J	A
POTASSIUM	2670		9.45	MDL	113	PQL	mg/Kg	J	Q
TIN	3.57	J	0.249	MDL	11.3	PQL	mg/Kg	U	B
Zirconium	2.95	J	0.951	MDL	5.66	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH087

Laboratory: LL

EDD Filename: PH087_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method Category:	METALS	
Method:	6010C	Matrix: SO

Sample ID: SL-567-SA8-SB-0.0-0.5	Collected: 8/8/2013 12:50:00	Analysis Type: REA	Dilution: 1
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Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	9.45	J	0.956	MDL	11.4	PQL	mg/Kg	J	Z

Sample ID: SL-567-SA8-SB-0.0-0.5	Collected: 8/8/2013 12:50:00	Analysis Type: RES	Dilution: 1
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Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.55	U	0.842	MDL	4.55	PQL	mg/Kg	UJ	Q
ARSENIC	4.21	J	0.797	MDL	4.55	PQL	mg/Kg	J	Z
BERYLLIUM	1.07	J	0.0762	MDL	1.14	PQL	mg/Kg	J	Z
CALCIUM	7220		3.80	MDL	22.8	PQL	mg/Kg	J	E
COBALT	10.6		0.113	MDL	1.14	PQL	mg/Kg	J	A
MOLYBDENUM	0.913	J	0.193	MDL	2.28	PQL	mg/Kg	U	B, F, F
POTASSIUM	5980		9.49	MDL	114	PQL	mg/Kg	J	Q
SODIUM	88.0	J	19.0	MDL	114	PQL	mg/Kg	J	Z
TIN	3.45	J	0.250	MDL	11.4	PQL	mg/Kg	U	B
Zirconium	4.11	J	0.956	MDL	5.69	PQL	mg/Kg	J	Z

Sample ID: SL-567-SA8-SB-4.0-5.0	Collected: 8/8/2013 1:25:00 PM	Analysis Type: RES	Dilution: 1
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Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.69	U	0.867	MDL	4.69	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.794	J	0.0785	MDL	1.17	PQL	mg/Kg	J	Z
CALCIUM	55600		3.91	MDL	23.4	PQL	mg/Kg	J	E
COBALT	10.1		0.116	MDL	1.17	PQL	mg/Kg	J	A
MOLYBDENUM	0.581	J	0.199	MDL	2.34	PQL	mg/Kg	U	B, F, F
POTASSIUM	3800		9.77	MDL	117	PQL	mg/Kg	J	Q
TIN	3.52	J	0.258	MDL	11.7	PQL	mg/Kg	U	B
Zirconium	4.30	J	0.984	MDL	5.86	PQL	mg/Kg	J	Z

Sample ID: SL-567-SA8-SB-9.0-10.0	Collected: 8/8/2013 2:40:00 PM	Analysis Type: REA	Dilution: 1
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Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	6.76	J	0.984	MDL	11.7	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH087

Laboratory: LL

EDD Filename: PH087_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method Category:	METALS	
Method:	6010C	Matrix: SO

Sample ID: SL-567-SA8-SB-9.0-10.0 Collected: 8/8/2013 2:40:00 PM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.68	U	0.867	MDL	4.68	PQL	mg/Kg	UJ	Q
BERYLLIUM	1.14	J	0.0785	MDL	1.17	PQL	mg/Kg	J	Z
CALCIUM	13400		3.91	MDL	23.4	PQL	mg/Kg	J	E
COBALT	10.9		0.116	MDL	1.17	PQL	mg/Kg	J	A
POTASSIUM	2650		9.77	MDL	117	PQL	mg/Kg	J	Q
TIN	3.86	J	0.258	MDL	11.7	PQL	mg/Kg	U	B
Zirconium	3.81	J	0.984	MDL	5.85	PQL	mg/Kg	J	Z

Method Category:	METALS	
Method:	6020A	Matrix: SO

Sample ID: SL-565-SA8-SB-0.0-0.5 Collected: 8/8/2013 7:40:00 AM Analysis Type: REA Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	33.0		0.0690	MDL	0.406	PQL	mg/Kg	J	Q

Sample ID: SL-565-SA8-SB-0.0-0.5 Collected: 8/8/2013 7:40:00 AM Analysis Type: REA2 Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.245	J	0.101	MDL	0.406	PQL	mg/Kg	J	Z

Sample ID: SL-565-SA8-SB-0.0-0.5 Collected: 8/8/2013 7:40:00 AM Analysis Type: RES Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0483	J	0.0264	MDL	0.203	PQL	mg/Kg	J	Z

Sample ID: SL-565-SA8-SB-4.0-5.0 Collected: 8/8/2013 8:30:00 AM Analysis Type: REA Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	53.0		0.0770	MDL	0.453	PQL	mg/Kg	J	Q

Sample ID: SL-565-SA8-SB-4.0-5.0 Collected: 8/8/2013 8:30:00 AM Analysis Type: RES Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0458	J	0.0294	MDL	0.227	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH087

Laboratory: LL

EDD Filename: PH087_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method Category:	METALS	
Method:	6020A	Matrix: SO

Sample ID: SL-567-SA8-SB-0.0-0.5		Collected: 8/8/2013 12:50:00		Analysis Type: REA			Dilution: 2		
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	38.2		0.0774	MDL	0.455	PQL	mg/Kg	J	Q

Sample ID: SL-567-SA8-SB-0.0-0.5		Collected: 8/8/2013 12:50:00		Analysis Type: REA2			Dilution: 2		
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.323	J	0.114	MDL	0.455	PQL	mg/Kg	J	Z

Sample ID: SL-567-SA8-SB-0.0-0.5		Collected: 8/8/2013 12:50:00		Analysis Type: RES			Dilution: 2		
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0553	J	0.0296	MDL	0.228	PQL	mg/Kg	J	Z

Sample ID: SL-567-SA8-SB-4.0-5.0		Collected: 8/8/2013 1:25:00 PM		Analysis Type: REA			Dilution: 5		
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	135		0.199	MDL	1.17	PQL	mg/Kg	J	Q

Sample ID: SL-567-SA8-SB-4.0-5.0		Collected: 8/8/2013 1:25:00 PM		Analysis Type: REA2			Dilution: 2		
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.122	J	0.117	MDL	0.469	PQL	mg/Kg	J	Z

Sample ID: SL-567-SA8-SB-4.0-5.0		Collected: 8/8/2013 1:25:00 PM		Analysis Type: RES			Dilution: 2		
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0426	J	0.0305	MDL	0.234	PQL	mg/Kg	J	Z

Sample ID: SL-567-SA8-SB-9.0-10.0		Collected: 8/8/2013 2:40:00 PM		Analysis Type: REA			Dilution: 2		
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	55.5		0.0796	MDL	0.468	PQL	mg/Kg	J	Q

Sample ID: SL-567-SA8-SB-9.0-10.0		Collected: 8/8/2013 2:40:00 PM		Analysis Type: RES			Dilution: 2		
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0677	J	0.0304	MDL	0.234	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH087

Laboratory: LL

EDD Filename: PH087_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method Category:	METALS	
Method:	6020A	Matrix: SO

Method Category:	METALS	
Method:	7471B	Matrix: SO

Sample ID: SL-565-SA8-SB-0.0-0.5 Collected: 8/8/2013 7:40:00 AM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0160	J	0.0103	MDL	0.0172	PQL	mg/Kg	J	Z

Sample ID: SL-567-SA8-SB-9.0-10.0 Collected: 8/8/2013 2:40:00 PM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0136	J	0.0111	MDL	0.0185	PQL	mg/Kg	J	Z

Method Category:	SVOA	
Method:	1613B	Matrix: SO

Sample ID: SL-565-SA8-SB-0.0-0.5 Collected: 8/8/2013 7:40:00 AM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDF	2.64	JB	0.0360	MDL	5.16	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.297	J	0.0455	MDL	5.16	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.356	JQ	0.0774	MDL	5.16	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.323	JBQ	0.0414	MDL	5.16	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HxCDD	1.03	JB	0.0840	MDL	5.16	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.273	JB	0.0426	MDL	5.16	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HxCDD	0.843	J	0.0838	MDL	5.16	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.475	JB	0.0435	MDL	5.16	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.175	JBQ	0.0688	MDL	5.16	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.890	JB	0.0501	MDL	5.16	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.275	JBQ	0.0402	MDL	5.16	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.451	J	0.0494	MDL	5.16	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.0747	JQ	0.0507	MDL	1.03	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.283	J	0.0774	MDL	1.03	PQL	ng/Kg	J	Z
OCDF	5.11	JB	0.0397	MDL	10.3	PQL	ng/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH087

Laboratory: LL

EDD Filename: PH087_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method Category:	SVOA	
Method:	1613B	Matrix: SO

Sample ID: SL-565-SA8-SB-4.0-5.0

Collected: 8/8/2013 8:30:00 AM

Analysis Type: RES

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.135	JBQ	0.0280	MDL	5.83	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0637	JBQ	0.0137	MDL	5.83	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0715	J	0.0197	MDL	5.83	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.0928	J	0.0265	MDL	5.83	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.104	JBQ	0.0168	MDL	5.83	PQL	ng/Kg	U	B
1,2,3,6,7,8-HxCDD	0.0836	JBQ	0.0277	MDL	5.83	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.109	JBQ	0.0171	MDL	5.83	PQL	ng/Kg	U	B
1,2,3,7,8,9-HxCDD	0.0868	JQ	0.0274	MDL	5.83	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.0636	JB	0.0211	MDL	5.83	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0923	JBQ	0.0478	MDL	5.83	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.143	JB	0.0239	MDL	5.83	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0646	JBQ	0.0161	MDL	5.83	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.127	JQ	0.0221	MDL	5.83	PQL	ng/Kg	U	B
2,3,7,8-TCDD	0.102	JQ	0.0425	MDL	1.17	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.0357	JQ	0.0353	MDL	1.17	PQL	ng/Kg	J	Z
OCDD	0.679	JB	0.0297	MDL	11.7	PQL	ng/Kg	U	B
OCDF	0.0492	JBQ	0.0408	MDL	11.7	PQL	ng/Kg	U	B

Sample ID: SL-567-SA8-SB-0.0-0.5

Collected: 8/8/2013 12:50:00

Analysis Type: RES

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	2.81	JB	0.0446	MDL	5.82	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.524	JB	0.0245	MDL	5.82	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0896	JQ	0.0273	MDL	5.82	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.0803	J	0.0418	MDL	5.82	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.102	JBQ	0.0303	MDL	5.82	PQL	ng/Kg	U	B
1,2,3,6,7,8-HxCDD	0.478	JB	0.0449	MDL	5.82	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.146	JB	0.0316	MDL	5.82	PQL	ng/Kg	U	B
1,2,3,7,8,9-HxCDD	0.663	J	0.0419	MDL	5.82	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.864	JB	0.0309	MDL	5.82	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.161	JBQ	0.0612	MDL	5.82	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.416	JB	0.0484	MDL	5.82	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.128	JB	0.0275	MDL	5.82	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.325	JQ	0.0951	MDL	1.16	PQL	ng/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH087

Laboratory: LL

EDD Filename: PH087_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method Category:	SVOA	
Method:	1613B	Matrix: SO

Sample ID: SL-567-SA8-SB-0.0-0.5 Collected: 8/8/2013 12:50:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
OCDF	0.759	JBQ	0.0329	MDL	11.6	PQL	ng/Kg	J	Z

Sample ID: SL-567-SA8-SB-4.0-0.0 Collected: 8/8/2013 1:25:00 PM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDF	0.0503	JBQ	0.0157	MDL	5.84	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0313	JQ	0.0211	MDL	5.84	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.0321	JBQ	0.0176	MDL	5.84	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0280	JBQ	0.0184	MDL	5.84	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0767	J	0.0302	MDL	5.84	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.0817	JBQ	0.0284	MDL	5.84	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0483	JQ	0.0262	MDL	5.84	PQL	ng/Kg	U	B
OCDD	0.512	JBQ	0.0556	MDL	11.7	PQL	ng/Kg	U	B
OCDF	0.0655	JBQ	0.0593	MDL	11.7	PQL	ng/Kg	U	B

Method Category:	SVOA	
Method:	8015M	Matrix: SO

Sample ID: SL-565-SA8-SB-0.0-0.5 Collected: 8/8/2013 7:40:00 AM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C15-C20)	4.1	J	2.1	MDL	5.3	PQL	mg/Kg	J	Z

Method Category:	SVOA	
Method:	8081B	Matrix: SO

Sample ID: SL-567-SA8-SB-0.0-0.5 Collected: 8/8/2013 12:50:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDT	1.0	J	0.41	MDL	2.0	PQL	ug/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH087

Laboratory: LL

EDD Filename: PH087_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method Category:	SVOA	
Method:	8082A	Matrix: SO

Sample ID: SL-565-SA8-SB-0.0-0.5 Collected: 8/8/2013 7:40:00 AM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1260	6.2	J	4.1	MDL	18	PQL	ug/Kg	J	Z

Method Category:	SVOA	
Method:	8270D SIM	Matrix: SO

Sample ID: SL-565-SA8-SB-0.0-0.5 Collected: 8/8/2013 7:40:00 AM Analysis Type: RES-BASE/NEUTRAL Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-METHYLNAPHTHALENE	1.0	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
ANTHRACENE	0.50	J	0.35	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(A)ANTHRACENE	1.1	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(A)PYRENE	1.1	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(G,H,I)PERYLENE	0.86	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(K)FLUORANTHENE	1.2	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
INDENO(1,2,3-CD)PYRENE	0.71	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
NAPHTHALENE	1.3	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: SL-565-SA8-SB-4.0-5.0 Collected: 8/8/2013 8:30:00 AM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1-METHYLNAPHTHALENE	1.6	J	0.78	MDL	2.0	PQL	ug/Kg	J	Z
2-METHYLNAPHTHALENE	1.0	J	0.78	MDL	2.0	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	13	J	7.0	MDL	21	PQL	ug/Kg	J	Z

Sample ID: SL-567-SA8-SB-0.0-0.5 Collected: 8/8/2013 12:50:00 Analysis Type: RES-BASE/NEUTRAL Dilution: 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHRYSENE	5.5	J	3.9	MDL	20	PQL	ug/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH087

Laboratory: LL

EDD Filename: PH087_v1

eQAPP Name: CDM_SSFL_131101_Lan

Reason Code Legend

<i>Reason Code</i>	<i>Description</i>
*#	Professional Judgment
A	ICP Serial Dilution
B	Calibration Blank Contamination
B	Method Blank Contamination
E	Laboratory Duplicate Precision
F	Equipment Blank Contamination
F	Field Blank Contamination
Q	Laboratory Duplicate Precision
Q	Matrix Spike Lower Estimation
Q	Matrix Spike Upper Estimation
S	Surrogate/Tracer Recovery Upper Estimation
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

11/6/2013 8:33:38 AM

ADR version 1.7.0.207

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Enclosure I
EPA Level III ADR Outliers
(Including Manual Review Outliers)

Quality Control Outlier Reports

PH087

Method Blank Outlier Report

Lab Reporting Batch ID: PH087

Laboratory: LL

EDD Filename: PH087_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method: 1613B
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2270B370710	8/17/2013 7:10:00 AM	1,2,3,4,6,7,8-HPCDD 1,2,3,4,6,7,8-HPCDF 1,2,3,4,7,8-HXCDF 1,2,3,6,7,8-HXCDD 1,2,3,6,7,8-HXCDF 1,2,3,7,8,9-HXCDF 1,2,3,7,8-PECDD 1,2,3,7,8-PECDF 2,3,4,6,7,8-HXCDF 2,3,4,7,8-PECDF OCDD OCDF	0.0682 ng/Kg 0.0368 ng/Kg 0.0398 ng/Kg 0.0344 ng/Kg 0.0310 ng/Kg 0.0558 ng/Kg 0.0796 ng/Kg 0.0421 ng/Kg 0.0316 ng/Kg 0.0576 ng/Kg 0.286 ng/Kg 0.112 ng/Kg	SL-565-SA8-SB-0.0-0.5 SL-565-SA8-SB-4.0-5.0 SL-567-SA8-SB-0.0-0.5 SL-567-SA8-SB-4.0-5.0

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-565-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.175 ng/Kg	0.175U ng/Kg
SL-565-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDD	0.135 ng/Kg	0.135U ng/Kg
SL-565-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0637 ng/Kg	0.0637U ng/Kg
SL-565-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.104 ng/Kg	0.104U ng/Kg
SL-565-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDD	0.0836 ng/Kg	0.0836U ng/Kg
SL-565-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.109 ng/Kg	0.109U ng/Kg
SL-565-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDF	0.0636 ng/Kg	0.0636U ng/Kg
SL-565-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDD	0.0923 ng/Kg	0.0923U ng/Kg
SL-565-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.143 ng/Kg	0.143U ng/Kg
SL-565-SA8-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0646 ng/Kg	0.0646U ng/Kg
SL-565-SA8-SB-4.0-5.0(RES)	2,3,4,7,8-PECDF	0.127 ng/Kg	0.127U ng/Kg
SL-565-SA8-SB-4.0-5.0(RES)	OCDD	0.679 ng/Kg	0.679U ng/Kg
SL-565-SA8-SB-4.0-5.0(RES)	OCDF	0.0492 ng/Kg	0.0492U ng/Kg
SL-567-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.102 ng/Kg	0.102U ng/Kg
SL-567-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.146 ng/Kg	0.146U ng/Kg
SL-567-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.161 ng/Kg	0.161U ng/Kg
SL-567-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.128 ng/Kg	0.128U ng/Kg
SL-567-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0503 ng/Kg	0.0503U ng/Kg
SL-567-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.0321 ng/Kg	0.0321U ng/Kg
SL-567-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.0280 ng/Kg	0.0280U ng/Kg
SL-567-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.0817 ng/Kg	0.0817U ng/Kg
SL-567-SA8-SB-4.0-5.0(RES)	2,3,4,7,8-PECDF	0.0483 ng/Kg	0.0483U ng/Kg
SL-567-SA8-SB-4.0-5.0(RES)	OCDD	0.512 ng/Kg	0.512U ng/Kg
SL-567-SA8-SB-4.0-5.0(RES)	OCDF	0.0655 ng/Kg	0.0655U ng/Kg

Method Blank Outlier Report

Lab Reporting Batch ID: PH087

Laboratory: LL

EDD Filename: PH087_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method: 6010C
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P22337AB220606	8/20/2013 6:06:00 AM	ALUMINUM TIN	9.14 mg/Kg 1.77 mg/Kg	SL-565-SA8-SB-0.0-0.5 SL-565-SA8-SB-4.0-5.0 SL-567-SA8-SB-0.0-0.5 SL-567-SA8-SB-4.0-5.0 SL-567-SA8-SB-9.0-10.0

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-565-SA8-SB-0.0-0.5(RES)	TIN	3.47 mg/Kg	3.47U mg/Kg
SL-565-SA8-SB-4.0-5.0(RES)	TIN	3.57 mg/Kg	3.57U mg/Kg
SL-567-SA8-SB-0.0-0.5(RES)	TIN	3.45 mg/Kg	3.45U mg/Kg
SL-567-SA8-SB-4.0-5.0(RES)	TIN	3.52 mg/Kg	3.52U mg/Kg
SL-567-SA8-SB-9.0-10.0(RES)	TIN	3.86 mg/Kg	3.86U mg/Kg

Field Blank Outlier Report

Lab Reporting Batch ID: PH087

Laboratory: LL

EDD Filename: PH087_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method: 6010C
Matrix: SO

Field Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
FB-041113(REA2)	4/11/2013 3:00:00 PM	COPPER MOLYBDENUM	0.0036 mg/L 0.0036 mg/L	SL-565-SA8-SB-0.0-0.5 SL-565-SA8-SB-4.0-5.0 SL-567-SA8-SB-0.0-0.5 SL-567-SA8-SB-4.0-5.0 SL-567-SA8-SB-9.0-10.0

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-565-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.535 mg/Kg	0.535U mg/Kg
SL-567-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.913 mg/Kg	0.913U mg/Kg
SL-567-SA8-SB-4.0-5.0(RES)	MOLYBDENUM	0.581 mg/Kg	0.581U mg/Kg

Equipment Rinsate Blank Outlier Report

Lab Reporting Batch ID: PH087

Laboratory: LL

EDD Filename: PH087_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method: 6010C
Matrix: SO

Equipment Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
EB-080713(REA2)	8/7/2013 3:00:00 PM	ALUMINUM MOLYBDENUM TIN	0.143 mg/L 0.0098 mg/L 0.0029 mg/L	SL-565-SA8-SB-0.0-0.5 SL-565-SA8-SB-4.0-5.0 SL-567-SA8-SB-0.0-0.5 SL-567-SA8-SB-4.0-5.0 SL-567-SA8-SB-9.0-10.0

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-565-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.535 mg/Kg	0.535U mg/Kg
SL-567-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.913 mg/Kg	0.913U mg/Kg
SL-567-SA8-SB-4.0-5.0(RES)	MOLYBDENUM	0.581 mg/Kg	0.581U mg/Kg

Reporting Limit Outliers

Lab Reporting Batch ID: PH087

Laboratory: LL

EDD Filename: PH087_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-565-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDF	JB	2.64	5.16	PQL	ng/Kg	J (all detects)
	1,2,3,4,7,8,9-HPCDF	J	0.297	5.16	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.356	5.16	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.323	5.16	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	1.03	5.16	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.273	5.16	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	J	0.843	5.16	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.475	5.16	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.175	5.16	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.890	5.16	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.275	5.16	PQL	ng/Kg	
	2,3,4,7,8-PECDF	J	0.451	5.16	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.0747	1.03	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.283	1.03	PQL	ng/Kg	
	OCDF	JB	5.11	10.3	PQL	ng/Kg	
SL-565-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.135	5.83	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0637	5.83	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	J	0.0715	5.83	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	J	0.0928	5.83	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.104	5.83	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.0836	5.83	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.109	5.83	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JQ	0.0868	5.83	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.0636	5.83	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.0923	5.83	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.143	5.83	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0646	5.83	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.127	5.83	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.102	1.17	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0357	1.17	PQL	ng/Kg	
OCDD	JB	0.679	11.7	PQL	ng/Kg		
OCDF	JBQ	0.0492	11.7	PQL	ng/Kg		
SL-567-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	2.81	5.82	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JB	0.524	5.82	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JQ	0.0896	5.82	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	J	0.0803	5.82	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.102	5.82	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.478	5.82	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.146	5.82	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	J	0.663	5.82	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.864	5.82	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.161	5.82	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.416	5.82	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.128	5.82	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.325	1.16	PQL	ng/Kg	
OCDF	JBQ	0.759	11.6	PQL	ng/Kg		

Reporting Limit Outliers

Lab Reporting Batch ID: PH087

Laboratory: LL

EDD Filename: PH087_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method: 1613B
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-567-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDF	JBQ	0.0503	5.84	PQL	ng/Kg	J (all detects)
	1,2,3,4,7,8,9-HPCDF	JQ	0.0313	5.84	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0321	5.84	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0280	5.84	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	J	0.0767	5.84	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.0817	5.84	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.0483	5.84	PQL	ng/Kg	
	OCDD	JBQ	0.512	11.7	PQL	ng/Kg	
	OCDF	JBQ	0.0655	11.7	PQL	ng/Kg	

Method: 6010C
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-565-SA8-SB-0.0-0.5	BERYLLIUM	J	0.910	1.01	PQL	mg/Kg	J (all detects)
	BORON	J	8.92	10.1	PQL	mg/Kg	
	MOLYBDENUM	J	0.535	2.03	PQL	mg/Kg	
	SODIUM	J	100	101	PQL	mg/Kg	
	TIN	J	3.47	10.1	PQL	mg/Kg	
	Zirconium	J	4.54	5.07	PQL	mg/Kg	
SL-565-SA8-SB-4.0-5.0	ARSENIC	J	4.30	4.53	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.992	1.13	PQL	mg/Kg	
	BORON	J	8.72	11.3	PQL	mg/Kg	
	CADMIUM	J	1.11	1.13	PQL	mg/Kg	
	TIN	J	3.57	11.3	PQL	mg/Kg	
	Zirconium	J	2.95	5.66	PQL	mg/Kg	
SL-567-SA8-SB-0.0-0.5	ARSENIC	J	4.21	4.55	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	1.07	1.14	PQL	mg/Kg	
	BORON	J	9.45	11.4	PQL	mg/Kg	
	MOLYBDENUM	J	0.913	2.28	PQL	mg/Kg	
	SODIUM	J	88.0	114	PQL	mg/Kg	
	TIN	J	3.45	11.4	PQL	mg/Kg	
	Zirconium	J	4.11	5.69	PQL	mg/Kg	
SL-567-SA8-SB-4.0-5.0	BERYLLIUM	J	0.794	1.17	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.581	2.34	PQL	mg/Kg	
	TIN	J	3.52	11.7	PQL	mg/Kg	
	Zirconium	J	4.30	5.86	PQL	mg/Kg	
SL-567-SA8-SB-9.0-10.0	BERYLLIUM	J	1.14	1.17	PQL	mg/Kg	J (all detects)
	BORON	J	6.76	11.7	PQL	mg/Kg	
	TIN	J	3.86	11.7	PQL	mg/Kg	
	Zirconium	J	3.81	5.85	PQL	mg/Kg	

Method: 6020A
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-565-SA8-SB-0.0-0.5	SELENIUM	J	0.245	0.406	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0483	0.203	PQL	mg/Kg	

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Reporting Limit Outliers

Lab Reporting Batch ID: PH087

Laboratory: LL

EDD Filename: PH087_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method: 6020A
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-565-SA8-SB-4.0-5.0	SILVER	J	0.0458	0.227	PQL	mg/Kg	J (all detects)
SL-567-SA8-SB-0.0-0.5	SELENIUM SILVER	J J	0.323 0.0553	0.455 0.228	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-567-SA8-SB-4.0-5.0	SELENIUM SILVER	J J	0.122 0.0426	0.469 0.234	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-567-SA8-SB-9.0-10.0	SILVER	J	0.0677	0.234	PQL	mg/Kg	J (all detects)

Method: 7471B
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-565-SA8-SB-0.0-0.5	MERCURY	J	0.0160	0.0172	PQL	mg/Kg	J (all detects)
SL-567-SA8-SB-9.0-10.0	MERCURY	J	0.0136	0.0185	PQL	mg/Kg	J (all detects)

Method: 8015M
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-565-SA8-SB-0.0-0.5	EFH (C15-C20)	J	4.1	5.3	PQL	mg/Kg	J (all detects)

Method: 8081B
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-567-SA8-SB-0.0-0.5	4,4'-DDT	J	1.0	2.0	PQL	ug/Kg	J (all detects)

Method: 8082A
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-565-SA8-SB-0.0-0.5	AROCLOR 1260	J	6.2	18	PQL	ug/Kg	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH087

Laboratory: LL

EDD Filename: PH087_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method: 8270D SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-565-SA8-SB-0.0-0.5	2-METHYLNAPHTHALENE	J	1.0	1.8	PQL	ug/Kg	J (all detects)
	ANTHRACENE	J	0.50	1.8	PQL	ug/Kg	
	BENZO(A)ANTHRACENE	J	1.1	1.8	PQL	ug/Kg	
	BENZO(A)PYRENE	J	1.1	1.8	PQL	ug/Kg	
	BENZO(G,H,I)PERYLENE	J	0.86	1.8	PQL	ug/Kg	
	BENZO(K)FLUORANTHENE	J	1.2	1.8	PQL	ug/Kg	
	INDENO(1,2,3-CD)PYRENE	J	0.71	1.8	PQL	ug/Kg	
	NAPHTHALENE	J	1.3	1.8	PQL	ug/Kg	
SL-565-SA8-SB-4.0-5.0	1-METHYLNAPHTHALENE	J	1.6	2.0	PQL	ug/Kg	J (all detects)
	2-METHYLNAPHTHALENE	J	1.0	2.0	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	13	21	PQL	ug/Kg	
SL-567-SA8-SB-0.0-0.5	CHRYSENE	J	5.5	20	PQL	ug/Kg	J (all detects)

LDC #: 30434B4
 SDG #: PH087
 Laboratory: Eurofins Lancaster Laboratories

VALIDATION COMPLETENESS WORKSHEET
 ADR

Date: 9/26/13
 Page: 1 of 1
 Reviewer: al
 2nd Reviewer: [Signature]

METHOD: Metals (EPA SW 846 Method 6010C/6020A/7000)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	—	Sampling dates: 8/8/13
II.	ICP/MS Tune	—	
III.	Calibration	—	
IV.	Blanks	SW	
V.	ICP Interference Check Sample (ICS) Analysis	—	
VI.	Matrix Spike Analysis	SW	MS/D (see PH088)
VII.	Duplicate Sample Analysis	SW	Dup ↓
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	SW	from PH088: Co: 12% (5/5)
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	N	
XIV.	Field Duplicates	—	
XV.	Field Blanks	SW	FB = FB-041113 EB = EB-080713

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

(PH029)
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

(PH086)

Validated Samples:

soil

1	SL-565-SA8-SB-0.0-0.5	11		21		31	
2	SL-565-SA8-SB-4.0-5.0	12		22		32	
3	SL-567-SA8-SB-0.0-0.5	13		23		33	
4	SL-567-SA8-SB-4.0-5.0	14		24		34	
5	SL-567-SA8-SB-9.0-10.0	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000)

Soil preparation factor applied: 100x

Reason: B

Sample Concentration units, unless otherwise noted: mg/Kg

Associated Samples: All

					Sample Identification										
Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (ug/L)	Maximum ICB/CCB ^a (ug/L)	Action Level	1	3	4								
Mo			1.9	0.95	0.535	0.913	0.581								

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

VALIDATION FINDINGS WORKSHEET
Field Blanks

METHOD: Trace Metals (EPA SW846 6010B/7000)

Blank units: mg/L **Associated sample units:** mg/Kg Reason: F
Sampling date: 4/11/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All

Analyte	Blank ID	Sample Identification									
	FB-041113 (SDG: PH029)	Action Limit	1	3	4						
Cu	0.0036	1.8									
Mo	0.0036	1.8	0.53	0.91	0.58						

Sampling date: 8/7/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All

Analyte	Blank ID	Sample Identification									
	EB-080713 (SDG: PH086)	Action Limit	1, 3, 4								
Al	0.143	71.5									
Mo	0.0098	4.9	See FB								
Sn	0.0029	1.45									

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
 Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".



Lancaster
Laboratories

QUALITY ASSURANCE SUMMARY

FORM 5A(MS/MSD)

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

SDG No.: PH088

Matrix: SOIL

Level

(low/med):

LOW

Background Lab Sample ID: 7156754BKG Matrix Spike Lab Sample ID: 7156755MS Matrix Spike Duplicate Lab Sample ID: 7156756MSD
Batch Id(s): P22337A, P23138A

Analyte	Mass	BKG Sample		MS Sample		MSD Sample		MS Spike Added	MSD Spike Added	Units	MS		MSD		Control Limit			
		Result	C	Result	C	Result	C				%R	Q	%R	Q	RPD	Q	%R	RPD
Aluminum		17083.0730		20509.4590		20482.5350		200.0000	200.0000	MG/KG	1713		1700		0			20P
Antimony		0.7400	U	30.9810		31.7740		50.0000	50.0000	MG/KG	62	N	64	N	3	75 - 125		20P
Arsenic		3.2060	B	17.9000		18.3950		15.0000	15.0000	MG/KG	98		101		3	75 - 125		20P
Barium		85.9770		279.2300		281.8090		200.0000	200.0000	MG/KG	97		98		1	75 - 125		20P
Beryllium		0.5820	B	5.5400		5.5620		5.0000	5.0000	MG/KG	99		100		0	75 - 125		20P
Boron		5.1600	B	199.5850		197.8280		200.0000	200.0000	MG/KG	97		96		1	75 - 125		20P
Cadmium		0.9640	B	5.5530		5.7730		5.0000	5.0000	MG/KG	92		96		4	75 - 125		20P
Calcium		12531.1280		13642.1350		14133.5490		400.0000	400.0000	MG/KG	278		401		4			20P
Chromium		24.6090		45.9060		46.3010		20.0000	20.0000	MG/KG	106		108		1	75 - 125		20P
Cobalt		6.2280		50.7940		52.3660		50.0000	50.0000	MG/KG	89		92		3	75 - 125		20P
Copper		14.4690		40.8770		41.0430		25.0000	25.0000	MG/KG	106		106		0	75 - 125		20P
Iron		22577.7970		22906.4520		23148.5520		100.0000	100.0000	MG/KG	329		571		1			20P
Lead		5.8440		19.6370		20.4560		15.0000	15.0000	MG/KG	92		97		4	75 - 125		20P
Lithium		18.9460		113.4440		114.0070		100.0000	100.0000	MG/KG	94		95		0	75 - 125		20P
Magnesium		5699.2620		6101.3830		6143.0950		200.0000	200.0000	MG/KG	201		222		1			20P
Manganese		292.8510		293.0810		311.9510		50.0000	50.0000	MG/KG	0		38		6			20P
Mercury		0.0097	U	0.1826		0.1805		0.1628	0.1630	MG/KG	112		111		1	65 - 135		20CV
Molybdenum		0.4550	B	186.9820		191.7470		200.0000	200.0000	MG/KG	93		96		3	75 - 125		20P
Nickel		13.7540		58.6110		61.3840		50.0000	50.0000	MG/KG	90		95		5	75 - 125		20P
Phosphorus		316.8430		411.7730		414.5770		100.0000	100.0000	MG/KG	95		98		1	75 - 125		20P
Potassium		1621.1240		2989.1230		2982.0330		1000.0000	1000.0000	MG/KG	137	N	136	N	0	75 - 125		20P
Selenium	78	0.1000	U	1.9938		1.9752		2.0000	2.0000	MG/KG	100		99		1	75 - 125		20MS
Silver	107	0.0490	B	10.4456		10.2942		10.0000	10.0000	MG/KG	104		102		1	75 - 125		20MS
Sodium		556.1220		1523.9040		1530.3650		1000.0000	1000.0000	MG/KG	97		97		0	75 - 125		20P
Strontium	88	28.2986		39.1866		37.5476		8.0000	8.0000	MG/KG	136	N	116		4	75 - 125		20MS
Thallium	203	0.2160		0.6324		0.6534		0.4000	0.4000	MG/KG	104		109		3	75 - 125		20MS

Note: Results shown are reported on an as-received basis.

<p>METHODS:</p> <p>P = ICP Atomic Emission Spectrometer CV = Cold Vapor</p> <p>MS = ICP Mass Spectrometry AF = Cold Vapor Atomic Fluorescence</p>	<p>CONCENTRATION QUALIFIERS:</p> <p>U= Below MDL, B= Below LOQ</p> <p>FLAGS:</p> <p>N = Matrix Spike OOS, * = Duplicate OOS</p>
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Lancaster
Laboratories

QUALITY ASSURANCE SUMMARY
FORM 5A (MS/MSD)
MATRIX SPIKE/MATRIX SPIKE DUPLICATE
SDG No.: PH088
Matrix: SOIL Level: LOW
(low/med):

Background Lab Sample ID: 7156754BKG Matrix Spike Lab Sample ID: 7156755MS Matrix Spike Duplicate Lab Sample ID: 7156756MSD
Batch Id(s): P22337A, P23138A

Analyte	Mass	BKG Sample		MS Sample		MSD Sample		MS Spike Added	MSD Spike Added	Units	MS		MSD		Control Limit					
		Result	C	Result	C	Result	C				%R	Q	%R	Q	RPD	Q	%R	RPD	M	
Tin		2.9780	B	347.4710		357.9730		400.0000	400.0000	MG/KG	86		89		3		75 - 125	20	P	
Titanium		1267.1940		1576.1010		1556.1460		100.0000	100.0000	MG/KG	309		289		1				20	P
Vanadium		45.1040		98.5800		99.8080		50.0000	50.0000	MG/KG	107		109		1		75 - 125	20	P	
Zinc		48.3700		96.1810		99.3540		50.0000	50.0000	MG/KG	96		102		3		75 - 125	20	P	
Zirconium		2.2610	B	97.1860		97.9020		100.0000	100.0000	MG/KG	95		96		1		75 - 125	20	P	

Note: Results shown are reported on an as-received basis.

<p>METHODS: P = ICP Atomic Emission Spectrometer CV = Cold Vapor MS = ICP Mass Spectrometry AF = Cold Vapor Atomic Fluorescence</p>	<p>CONCENTRATION QUALIFIERS: U= Below MDL, B= Below LOQ FLAGS: N = Matrix Spike OOS, * = Duplicate OOS</p>
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Background Lab Sample ID: 7156754BKG
 Batch ID(s): P22337A, P23138A
 Concentration Units: MG/KG

Duplicate Lab Sample ID: 7156757DUP

JWS

Analyte	Mass	Control Limit	Samples (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum			17083.0730		17634.2360		3		P
Antimony			-1.0750	B	-0.9410	B	-13		P
Arsenic			3.2060	B	3.5700	B	11		P
Barium			85.9770		86.8650		1		P
Beryllium			0.5820	B	0.5770	B	1		P
Boron			5.1600	B	4.6550	B	10		P
Cadmium			0.9640	B	0.9910	B	3		P
Calcium			12531.1280		21419.9100		52	*	P
Chromium			24.6090		25.5320		4		P
Cobalt			6.2280		5.9390		5		P
Copper			14.4690		14.2330		2		P
Iron			22577.7970		22655.7490		0		P
Lead		3.0	5.8440		5.9950		3		P
Lithium		4.0	18.9460		18.7910		1		P
Magnesium			5699.2620		5892.7890		3		P
Manganese			292.8510		270.5010		8		P
Mercury			0.0097	U	0.0096	U			CV
Molybdenum			0.4550	B	0.1700	U	200		P
Nickel			13.7540		13.6880		0		P
Phosphorus			316.8430		340.6470		7		P
Potassium			1621.1240		1599.3090		1		P
Selenium	78		0.1000	U	0.1000	U			MS
Silver	107		0.0490	B	0.0260	U	200		MS
Sodium			556.1220		600.1470		8		P
Strontium	88		28.2986		30.5108		8		MS
Thallium	203	0.2	0.2160		0.2258		4		MS
Tin			2.9780	B	3.0820	B	3		P
Titanium			1267.1940		1253.4180		1		P
Vanadium			45.1040		46.0340		2		P
Zinc			48.3700		48.6870		1		P
Zirconium			2.2610	B	4.0150	B	56		P

NOTE: An asterisk (*) in column "Q" indicates poor duplicate precision (RPD > 20% OR |(S) - (D)| > LOQ for values < 5x LOQ).
 The data are considered to be valid because the laboratory control sample is within the control limits. See the Laboratory Control Sample.

Note: Results shown are reported on an as-received basis.

METHODS: P = ICP Atomic Emission Spectrometer MS = ICP Mass Spectrometry CV = Cold Vapor AF = Cold Vapor Atomic Fluorescence	CONCENTRATION QUALIFIERS: U= Below MDL B= Below LOQ FLAGS: Duplicate Out of Spec
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QUALITY ASSURANCE SUMMARY

FORM 9

SERIAL DILUTIONS

SDG No.: PH088

Matrix: SOIL

Level

LOW

(low/med):

Background Lab Sample ID: 7156754BKG

Serial Dilution Lab Sample ID: 7156754L

Batch ID(s): P22337A

Concentration Units: UG/L

Analyte	Mass	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Diff.	Q	M
Aluminum		170830.7300		178155.7500		4		P
Antimony		7.4000	U	37.0000	U			P
Arsenic		32.0600	B	35.9000	B	12		P
Barium		859.7700		907.6000		6		P
Beryllium		5.8200	B	5.9000	B	1		P
Boron		51.6000	B	83.0500	B	61		P
Cadmium		9.6400	B	13.2000	B	37		P
Calcium		125311.2800		132497.4000		6		P
Chromium		246.0900		251.8500		2		P
5105 Cobalt		62.2800		70.0000		12	E	P
Copper		144.6900		144.5500		0		P
Iron		225777.9700		226093.8000		0		P
Lead		58.4400		64.5500	B	10		P
Lithium		189.4600		204.4000		8		P
Magnesium		56992.6200		60127.0500		5		P
Manganese		2928.5100		3086.2500		5		P
Molybdenum		4.5500	B	22.8500	B	402		P
Nickel		137.5400		146.3500		6		P
Phosphorus		3168.4300		3234.9500		2		P
Potassium		16211.2400		16350.5500		1		P
Selenium	78	0.5000	U	2.5000	U			MS
Silver	107	0.2450	B	0.6500	U	100		MS
Sodium		5561.2200		5605.0000		1		P
Strontium	88	141.4930		139.1950		2		MS
Thallium	203	1.0800		1.0450	B	3		MS
Tin		29.7800	B	30.4500	B	2		P
Titanium		12671.9400		12884.8500		2		P
Vanadium		451.0400		456.2000		1		P
Zinc		483.7000		495.1500		2		P
Zirconium		22.6100	B	60.4500	B	167		P

NOTE: An E in column Q indicates the presence of a chemical or physical interference in the matrix when the % difference is greater than 10%. This applies only when (I) is greater than or equal to 50x MDL for ICP, 100x MDL for ICP-MS (6020), 50x MDL for ICP-MS (200.8), or 25x MDL for GFAA.

METHODS:

P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry

CONCENTRATION QUALIFIERS:

U= Below MDL
B= Below LOQ

FLAGS:

E = Matrix Effects exist as proven by

**Data Validation Report
Santa Susana Field Laboratory**

Subarea 8

SDG: PH088

Prepared for

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Prepared by

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November 16, 2013

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on August 9, 2013. Data validation was performed in accordance with the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008), Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005), and for Inorganic Data Review (January 2010). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Semivolatiles (SVOCs) by Environmental Protection Agency (EPA) SW 846 Method 8270D utilizing Selective Ion Monitoring (SIM)

Pesticides by EPA SW 846 Method 8081B

Polychlorinated Biphenyls (PCBs) by EPA SW 846 Method 8082A

Metals by EPA SW 846 Method 6010C, 6020A, and 7471B

Herbicides by EPA SW 846 Method 8151A

Total Petroleum Hydrocarbons (TPH) as Gasoline by EPA SW 846 Method 8015M

TPH as Extractables by EPA SW 846 Method 8015M

Dioxins and Dibenzofurans by EPA Method 1613B

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment II. Level III Automated Data Review outliers are presented in Enclosure I.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibration blanks (ICB/CCBs), surrogates, internal standards (dioxins only), matrix spike/matrix spike duplicates (MS/MSD), laboratory duplicates (DUP), laboratory control sample/laboratory control sample duplicates (LCS/LCSD), ICP serial dilutions, method blanks, equipment blanks, field blanks, trip blanks and field duplicates. No samples in this SDG were subjected to Level IV evaluation.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of ICB/CCBs and ICP serial dilutions, which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

II. Initial Calibration

Initial Calibration data were not reviewed for level III.

III. Continuing Calibration

Continuing calibration data were not reviewed for level III.

IV. Blanks

Method blanks were performed at the required frequencies. No contaminant concentrations were detected in the method or preparation blanks with the exception of several blanks for dioxins and metals. The associated sample results were qualified as non-detected (U) due to method blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the associated blanks were not qualified. The details regarding the qualification of data are provided in Enclosure I.

No contaminant concentrations were detected in the initial or continuing calibration blanks with the following exceptions:

SDG/ Method	Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PH088/ 6010C	ICB/CCB	Molybdenum	1.9 ug/L	SL-530-SA8-SB-0.0-0.5 SL-530-SA8-SB-4.0-5.0 SL-830-SA8-SB-4.0-5.0 SL-538-SA8-SB-0.0-0.5

Sample concentrations were compared to concentrations detected in the initial and continuing blanks. The sample concentrations were not detected or were significantly greater than the concentrations found in the associated blanks with the following exceptions:

SDG/Method	Sample	Compound	Reported Concentration	Modified Final Concentration
PH088/ 6010C	SL-530-SA8-SB-0.0-0.5	Molybdenum	0.344 ug/Kg	0.344U ug/Kg
PH088/ 6010C	SL-530-SA8-SB-4.0-5.0	Molybdenum	0.516 ug/Kg	0.516U ug/Kg
PH088/ 6010C	SL-538-SA8-SB-0.0-0.5	Molybdenum	0.282 ug/Kg	0.282U ug/Kg

V. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the exception of one sample for pesticides. The associated sample results were qualified as detected estimated (J). The details regarding the qualification of data are provided in Enclosure I.

VI. ICP Interference Check Sample (ICS) Analysis

ICP interference check data were not reviewed for level III.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed at the required frequency. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of two MS/MSD pairs for TPH as extractables and metals. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosure I.

VIII. Laboratory Duplicates Sample

Laboratory duplicates (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits with the exception of two DUPs for metals. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosure I.

IX. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

X. Internal Standards

Internal standards were reviewed for dioxins. Percent recoveries (%R) were within QC limits.

XI. ICP Serial Dilution

ICP serial dilution analysis was performed by the laboratory. The analysis criteria were met with the following exceptions:

Diluted Sample	Analyte	%D (Limits)	Associated Samples	Flag	A or P
SL-530-SA8-SB-4.0-5.0	Cobalt	12 (≤10)	SL-530-SA8-SB-0.0-0.5 SL-530-SA8-SB-4.0-5.0 SL-830-SA8-SB-4.0-5.0 SL-538-SA8-SB-0.0-0.5	J (all detects) UJ (all non-detects)	A

Diluted Sample	Analyte	%D (Limits)	Associated Samples	Flag	A or P
SL-538-SA8-SB-4.0-5.0	Nickel Strontium	13 (≤10) 19 (≤10)	SL-538-SA8-SB-4.0-5.0 SL-838-SA8-SB-4.0-5.0 SL-541-SA8-SB-0.0-0.5 SL-541-SA8-SB-4.0-5.0 SL-607-SA8-SB-0.0-0.5 SL-607-SA8-SB-5.0-6.0	J (all detects) UJ (all non-detects)	A

The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable.

XII. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the RL as detected were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH088	All compounds reported as detected below the RL.	J (all detects)	A

XIII. Field Duplicate Samples

Two field duplicate pairs were collected and analyzed for SVOCs, PCBs, metals, TPH as gasoline, TPH as extractables and dioxins. All RPDs were within QC limits with the exception of several SVOCs, metals, TPH as extractables and dioxins. In these duplicate pairs, the associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The field duplicate result comparisons are provided in Enclosure I.

XIV. Field Blank Samples

One trip blank was collected and analyzed for TPH as gasoline. No contaminants were found in the trip blank.

One equipment blank (from SDG PH086) was collected and analyzed for SVOCs, pesticides, PCBs, metals, herbicides, TPH as gasoline, TPH as extractables and dioxins. The equipment blank had several detections for SVOCs, metals and dioxins. The associated sample results were qualified as non-detected (U) due to equipment blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the equipment blanks were not qualified. The equipment blank outlier reports are presented in Enclosure I.

One field blank (from SDG PH029) was collected and analyzed for SVOCs, pesticides, PCBs, metals, herbicides, TPH as gasoline, TPH as extractables and dioxins. The field blank had detections for several SVOCs, metals and dioxins. The associated sample results were qualified as non-detected (U) due to field blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the field blank were not qualified. The field blank outlier reports are presented in Enclosure I.

XV. Overall Assessment of Data

No data associated with this sampling event were rejected. The overall assessment of QA/QC data review by automated and manual validation of this sampling event met project requirements and analytical completeness levels with the exceptions noted in the above sections. All data are deemed useable for the intended use.

Data flags are summarized and are presented as Attachment 2.

Attachment 1
Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
09-Aug-2013	SL-530-SA8-SB-0.0-0.5	7156753	N	3050B	6010C	III
09-Aug-2013	SL-530-SA8-SB-0.0-0.5	7156753	N	3050B	6020A	III
09-Aug-2013	SL-530-SA8-SB-0.0-0.5	7156753	N	3546	8015M	III
09-Aug-2013	SL-530-SA8-SB-0.0-0.5	7156753	N	3546	8082A	III
09-Aug-2013	SL-530-SA8-SB-0.0-0.5	7156753	N	3546	8270D SIM	III
09-Aug-2013	SL-530-SA8-SB-0.0-0.5	7156753	N	METHOD	1613B	III
09-Aug-2013	SL-530-SA8-SB-0.0-0.5	7156753	N	METHOD	7471B	III
09-Aug-2013	SL-530-SA8-SB-4.0-5.0	7156754	N	3050B	6010C	III
09-Aug-2013	SL-530-SA8-SB-4.0-5.0	7156754	N	3050B	6020A	III
09-Aug-2013	SL-530-SA8-SB-4.0-5.0	7156754	N	3546	8015M	III
09-Aug-2013	SL-530-SA8-SB-4.0-5.0	7156754	N	3546	8082A	III
09-Aug-2013	SL-530-SA8-SB-4.0-5.0	7156754	N	3546	8270D SIM	III
09-Aug-2013	SL-530-SA8-SB-4.0-5.0	7156754	N	5035A	8015M	III
09-Aug-2013	SL-530-SA8-SB-4.0-5.0	7156754	N	METHOD	1613B	III
09-Aug-2013	SL-530-SA8-SB-4.0-5.0	7156754	N	METHOD	7471B	III
09-Aug-2013	SL-530-SA8-SB-4.0-5.0MS	7156755	MS	3050B	6010C	III
09-Aug-2013	SL-530-SA8-SB-4.0-5.0MS	7156755	MS	3050B	6020A	III
09-Aug-2013	SL-530-SA8-SB-4.0-5.0MS	7156755	MS	3546	8015M	III
09-Aug-2013	SL-530-SA8-SB-4.0-5.0MS	7156755	MS	3546	8082A	III
09-Aug-2013	SL-530-SA8-SB-4.0-5.0MS	7156755	MS	3546	8270D SIM	III
09-Aug-2013	SL-530-SA8-SB-4.0-5.0MS	7156755	MS	5035A	8015M	III
09-Aug-2013	SL-530-SA8-SB-4.0-5.0MS	7156755	MS	METHOD	1613B	III
09-Aug-2013	SL-530-SA8-SB-4.0-5.0MS	7156755	MS	METHOD	7471B	III
09-Aug-2013	SL-530-SA8-SB-4.0-5.0MSD	7156756	MSD	3050B	6010C	III
09-Aug-2013	SL-530-SA8-SB-4.0-5.0MSD	7156756	MSD	3050B	6020A	III
09-Aug-2013	SL-530-SA8-SB-4.0-5.0MSD	7156756	MSD	3546	8015M	III

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
09-Aug-2013	SL-530-SA8-SB-4.0-5.0MSD	7156756	MSD	3546	8082A	III
09-Aug-2013	SL-530-SA8-SB-4.0-5.0MSD	7156756	MSD	3546	8270D SIM	III
09-Aug-2013	SL-530-SA8-SB-4.0-5.0MSD	7156756	MSD	5035A	8015M	III
09-Aug-2013	SL-530-SA8-SB-4.0-5.0MSD	7156756	MSD	METHOD	1613B	III
09-Aug-2013	SL-530-SA8-SB-4.0-5.0MSD	7156756	MSD	METHOD	7471B	III
09-Aug-2013	SL-530-SA8-SB-4.0-5.0DUP	7156757	DUP	3050B	6010C	III
09-Aug-2013	SL-530-SA8-SB-4.0-5.0DUP	7156757	DUP	3050B	6020A	III
09-Aug-2013	SL-530-SA8-SB-4.0-5.0DUP	7156757	DUP	METHOD	7471B	III
09-Aug-2013	SL-830-SA8-SB-4.0-5.0	7156758	FD	3050B	6010C	III
09-Aug-2013	SL-830-SA8-SB-4.0-5.0	7156758	FD	3050B	6020A	III
09-Aug-2013	SL-830-SA8-SB-4.0-5.0	7156758	FD	3546	8015M	III
09-Aug-2013	SL-830-SA8-SB-4.0-5.0	7156758	FD	3546	8082A	III
09-Aug-2013	SL-830-SA8-SB-4.0-5.0	7156758	FD	3546	8270D SIM	III
09-Aug-2013	SL-830-SA8-SB-4.0-5.0	7156758	FD	5035A	8015M	III
09-Aug-2013	SL-830-SA8-SB-4.0-5.0	7156758	FD	METHOD	1613B	III
09-Aug-2013	SL-830-SA8-SB-4.0-5.0	7156758	FD	METHOD	7471B	III
09-Aug-2013	TB-080913	7156752	TB	5030B	8015M	III
09-Aug-2013	SL-538-SA8-SB-0.0-0.5	7156759	N	3050B	6010C	III
09-Aug-2013	SL-538-SA8-SB-0.0-0.5	7156759	N	3050B	6020A	III
09-Aug-2013	SL-538-SA8-SB-0.0-0.5	7156759	N	3546	8015M	III
09-Aug-2013	SL-538-SA8-SB-0.0-0.5	7156759	N	3546	8082A	III
09-Aug-2013	SL-538-SA8-SB-0.0-0.5	7156759	N	3546	8270D SIM	III
09-Aug-2013	SL-538-SA8-SB-0.0-0.5	7156759	N	METHOD	1613B	III
09-Aug-2013	SL-538-SA8-SB-0.0-0.5	7156759	N	METHOD	7471B	III
09-Aug-2013	SL-538-SA8-SB-4.0-5.0	7156760	N	3050B	6010C	III
09-Aug-2013	SL-538-SA8-SB-4.0-5.0	7156760	N	3050B	6020A	III

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
09-Aug-2013	SL-538-SA8-SB-4.0-5.0	7156760	N	3546	8015M	III
09-Aug-2013	SL-538-SA8-SB-4.0-5.0	7156760	N	3546	8082A	III
09-Aug-2013	SL-538-SA8-SB-4.0-5.0	7156760	N	3546	8270D SIM	III
09-Aug-2013	SL-538-SA8-SB-4.0-5.0	7156760	N	5035A	8015M	III
09-Aug-2013	SL-538-SA8-SB-4.0-5.0	7156760	N	METHOD	1613B	III
09-Aug-2013	SL-538-SA8-SB-4.0-5.0	7156760	N	METHOD	7471B	III
09-Aug-2013	SL-538-SA8-SB-4.0-5.0MS	7156761	MS	3050B	6010C	III
09-Aug-2013	SL-538-SA8-SB-4.0-5.0MS	7156761	MS	3050B	6020A	III
09-Aug-2013	SL-538-SA8-SB-4.0-5.0MS	7156761	MS	3546	8015M	III
09-Aug-2013	SL-538-SA8-SB-4.0-5.0MS	7156761	MS	3546	8082A	III
09-Aug-2013	SL-538-SA8-SB-4.0-5.0MS	7156761	MS	3546	8270D SIM	III
09-Aug-2013	SL-538-SA8-SB-4.0-5.0MS	7156761	MS	5035A	8015M	III
09-Aug-2013	SL-538-SA8-SB-4.0-5.0MS	7156761	MS	METHOD	1613B	III
09-Aug-2013	SL-538-SA8-SB-4.0-5.0MS	7156761	MS	METHOD	7471B	III
09-Aug-2013	SL-538-SA8-SB-4.0-5.0MSD	7156762	MSD	3050B	6010C	III
09-Aug-2013	SL-538-SA8-SB-4.0-5.0MSD	7156762	MSD	3050B	6020A	III
09-Aug-2013	SL-538-SA8-SB-4.0-5.0MSD	7156762	MSD	3546	8015M	III
09-Aug-2013	SL-538-SA8-SB-4.0-5.0MSD	7156762	MSD	3546	8082A	III
09-Aug-2013	SL-538-SA8-SB-4.0-5.0MSD	7156762	MSD	3546	8270D SIM	III
09-Aug-2013	SL-538-SA8-SB-4.0-5.0MSD	7156762	MSD	5035A	8015M	III
09-Aug-2013	SL-538-SA8-SB-4.0-5.0MSD	7156762	MSD	METHOD	1613B	III
09-Aug-2013	SL-538-SA8-SB-4.0-5.0MSD	7156762	MSD	METHOD	7471B	III
09-Aug-2013	SL-538-SA8-SB-4.0-5.0DUP	7156763	DUP	3050B	6010C	III
09-Aug-2013	SL-538-SA8-SB-4.0-5.0DUP	7156763	DUP	3050B	6020A	III
09-Aug-2013	SL-538-SA8-SB-4.0-5.0DUP	7156763	DUP	METHOD	7471B	III
09-Aug-2013	SL-538-SA8-SB-4.0-5.0MSD	P156760M371156	MSD	METHOD	1613B	III

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
09-Aug-2013	SL-538-SA8-SB-4.0-5.0MS	P156760R371059	MS	METHOD	1613B	III
09-Aug-2013	SL-838-SA8-SB-4.0-5.0	7156764	FD	3050B	6010C	III
09-Aug-2013	SL-838-SA8-SB-4.0-5.0	7156764	FD	3050B	6020A	III
09-Aug-2013	SL-838-SA8-SB-4.0-5.0	7156764	FD	3546	8015M	III
09-Aug-2013	SL-838-SA8-SB-4.0-5.0	7156764	FD	3546	8082A	III
09-Aug-2013	SL-838-SA8-SB-4.0-5.0	7156764	FD	3546	8270D SIM	III
09-Aug-2013	SL-838-SA8-SB-4.0-5.0	7156764	FD	5035A	8015M	III
09-Aug-2013	SL-838-SA8-SB-4.0-5.0	7156764	FD	METHOD	1613B	III
09-Aug-2013	SL-838-SA8-SB-4.0-5.0	7156764	FD	METHOD	7471B	III
09-Aug-2013	SL-607-SA8-SB-0.0-0.5	7156767	N	3050B	6010C	III
09-Aug-2013	SL-607-SA8-SB-0.0-0.5	7156767	N	3050B	6020A	III
09-Aug-2013	SL-607-SA8-SB-0.0-0.5	7156767	N	3546	8015M	III
09-Aug-2013	SL-607-SA8-SB-0.0-0.5	7156767	N	3546	8081B	III
09-Aug-2013	SL-607-SA8-SB-0.0-0.5	7156767	N	3546	8082A	III
09-Aug-2013	SL-607-SA8-SB-0.0-0.5	7156767	N	3546	8270D SIM	III
09-Aug-2013	SL-607-SA8-SB-0.0-0.5	7156767	N	3550B	8151A	III
09-Aug-2013	SL-607-SA8-SB-0.0-0.5	7156767	N	METHOD	1613B	III
09-Aug-2013	SL-607-SA8-SB-0.0-0.5	7156767	N	METHOD	7471B	III
09-Aug-2013	SL-607-SA8-SB-5.0-6.0	7156768	N	3050B	6010C	III
09-Aug-2013	SL-607-SA8-SB-5.0-6.0	7156768	N	3050B	6020A	III
09-Aug-2013	SL-607-SA8-SB-5.0-6.0	7156768	N	3546	8015M	III
09-Aug-2013	SL-607-SA8-SB-5.0-6.0	7156768	N	3546	8081B	III
09-Aug-2013	SL-607-SA8-SB-5.0-6.0	7156768	N	3546	8082A	III
09-Aug-2013	SL-607-SA8-SB-5.0-6.0	7156768	N	3546	8270D SIM	III
09-Aug-2013	SL-607-SA8-SB-5.0-6.0	7156768	N	3550B	8151A	III
09-Aug-2013	SL-607-SA8-SB-5.0-6.0	7156768	N	5035A	8015M	III

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
09-Aug-2013	SL-607-SA8-SB-5.0-6.0	7156768	N	METHOD	1613B	III
09-Aug-2013	SL-607-SA8-SB-5.0-6.0	7156768	N	METHOD	7471B	III
09-Aug-2013	SL-541-SA8-SB-0.0-0.5	7156765	N	3050B	6010C	III
09-Aug-2013	SL-541-SA8-SB-0.0-0.5	7156765	N	3050B	6020A	III
09-Aug-2013	SL-541-SA8-SB-0.0-0.5	7156765	N	3546	8015M	III
09-Aug-2013	SL-541-SA8-SB-0.0-0.5	7156765	N	3546	8082A	III
09-Aug-2013	SL-541-SA8-SB-0.0-0.5	7156765	N	3546	8270D SIM	III
09-Aug-2013	SL-541-SA8-SB-0.0-0.5	7156765	N	METHOD	1613B	III
09-Aug-2013	SL-541-SA8-SB-0.0-0.5	7156765	N	METHOD	7471B	III
09-Aug-2013	SL-541-SA8-SB-4.0-5.0	7156766	N	3050B	6010C	III
09-Aug-2013	SL-541-SA8-SB-4.0-5.0	7156766	N	3050B	6020A	III
09-Aug-2013	SL-541-SA8-SB-4.0-5.0	7156766	N	3546	8015M	III
09-Aug-2013	SL-541-SA8-SB-4.0-5.0	7156766	N	3546	8082A	III
09-Aug-2013	SL-541-SA8-SB-4.0-5.0	7156766	N	3546	8270D SIM	III
09-Aug-2013	SL-541-SA8-SB-4.0-5.0	7156766	N	5035A	8015M	III
09-Aug-2013	SL-541-SA8-SB-4.0-5.0	7156766	N	METHOD	1613B	III
09-Aug-2013	SL-541-SA8-SB-4.0-5.0	7156766	N	METHOD	7471B	III

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH088

Laboratory: LL

EDD Filename: PrepPH088

eQAPP Name: CDM_SSFL_131101_Lan

Method Category:	METALS	
Method:	6010C	Matrix: SO

Sample ID: SL-530-SA8-SB-0.0-0.5 Collected: 8/9/2013 7:25:00 AM Analysis Type: REA2 Dilution: 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	30800		18.5	MDL	204	PQL	mg/Kg	J	Q

Sample ID: SL-530-SA8-SB-0.0-0.5 Collected: 8/9/2013 7:25:00 AM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.09	U	0.756	MDL	4.09	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.827	J	0.0685	MDL	1.02	PQL	mg/Kg	J	Z
CALCIUM	21900		3.41	MDL	20.4	PQL	mg/Kg	J	E
COBALT	10.5		0.101	MDL	1.02	PQL	mg/Kg	J	A
MOLYBDENUM	0.344	J	0.174	MDL	2.04	PQL	mg/Kg	U	B, F, F
POTASSIUM	5640		8.52	MDL	102	PQL	mg/Kg	J	Q
TIN	3.29	J	0.225	MDL	10.2	PQL	mg/Kg	U	B
Zirconium	3.40	J	0.858	MDL	5.11	PQL	mg/Kg	J	Z

Sample ID: SL-530-SA8-SB-4.0-5.0 Collected: 8/9/2013 7:45:00 AM Analysis Type: REA Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	5.86	J	0.953	MDL	11.4	PQL	mg/Kg	J	Z

Sample ID: SL-530-SA8-SB-4.0-5.0 Collected: 8/9/2013 7:45:00 AM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.54	U	0.840	MDL	4.54	PQL	mg/Kg	UJ	Q
ARSENIC	3.64	J	0.795	MDL	4.54	PQL	mg/Kg	J	Z
BERYLLIUM	0.661	J	0.0760	MDL	1.14	PQL	mg/Kg	J	Z
CADMIUM	1.09	J	0.0863	MDL	1.14	PQL	mg/Kg	J	Z
CALCIUM	14200		3.79	MDL	22.7	PQL	mg/Kg	J	E, FD
COBALT	7.07		0.112	MDL	1.14	PQL	mg/Kg	J	A
IRON	25600		4.11	MDL	45.4	PQL	mg/Kg	J	Q
MOLYBDENUM	0.516	J	0.193	MDL	2.27	PQL	mg/Kg	UJ	FD, B, F, F
POTASSIUM	1840		9.47	MDL	114	PQL	mg/Kg	J	Q
TIN	3.38	J	0.250	MDL	11.4	PQL	mg/Kg	U	B
Zirconium	2.57	J	0.953	MDL	5.68	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

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Data Qualifier Summary

Lab Reporting Batch ID: PH088

Laboratory: LL

EDD Filename: PrepPH088

eQAPP Name: CDM_SSFL_131101_Lan

Method Category:	METALS	
Method:	6010C	Matrix: SO

Sample ID: SL-538-SA8-SB-0.0-0.5 Collected: 8/9/2013 9:10:00 AM Analysis Type: REA2 Dilution: 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	33900		18.8	MDL	208	PQL	mg/Kg	J	Q

Sample ID: SL-538-SA8-SB-0.0-0.5 Collected: 8/9/2013 9:10:00 AM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.16	U	0.770	MDL	4.16	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.851	J	0.0697	MDL	1.04	PQL	mg/Kg	J	Z
CALCIUM	21200		3.48	MDL	20.8	PQL	mg/Kg	J	E
COBALT	8.86		0.103	MDL	1.04	PQL	mg/Kg	J	A
MOLYBDENUM	0.282	J	0.177	MDL	2.08	PQL	mg/Kg	U	B, F, F
POTASSIUM	5480		8.68	MDL	104	PQL	mg/Kg	J	Q
SODIUM	93.6	J	17.4	MDL	104	PQL	mg/Kg	J	Z
TIN	3.26	J	0.229	MDL	10.4	PQL	mg/Kg	U	B
Zirconium	2.78	J	0.874	MDL	5.20	PQL	mg/Kg	J	Z

Sample ID: SL-538-SA8-SB-4.0-5.0 Collected: 8/9/2013 9:20:00 AM Analysis Type: REA3 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.52	U	0.837	MDL	4.52	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.841	J	0.0758	MDL	1.13	PQL	mg/Kg	J	Z
BORON	8.87	J	0.950	MDL	11.3	PQL	mg/Kg	J	Z
CALCIUM	31300		3.78	MDL	22.6	PQL	mg/Kg	J	E, FD
MOLYBDENUM	0.230	J	0.192	MDL	2.26	PQL	mg/Kg	U	F, F
NICKEL	17.8		0.147	MDL	2.26	PQL	mg/Kg	J	A
POTASSIUM	3340		9.43	MDL	113	PQL	mg/Kg	J	Q
SODIUM	93.5	J	18.9	MDL	113	PQL	mg/Kg	J	Z
TIN	3.63	J	0.249	MDL	11.3	PQL	mg/Kg	U	B

Sample ID: SL-541-SA8-SB-0.0-0.5 Collected: 8/9/2013 1:35:00 PM Analysis Type: REA3 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.15	U	0.767	MDL	4.15	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.822	J	0.0694	MDL	1.04	PQL	mg/Kg	J	Z
CADMIUM	0.103	J	0.0788	MDL	1.04	PQL	mg/Kg	J	Z
CALCIUM	50500		3.46	MDL	20.7	PQL	mg/Kg	J	E

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH088

Laboratory: LL

EDD Filename: PrepPH088

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: METALS

Method: 6010C

Matrix: SO

Sample ID: SL-541-SA8-SB-0.0-0.5

Collected: 8/9/2013 1:35:00 PM

Analysis Type: REA3

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.200	J	0.176	MDL	2.07	PQL	mg/Kg	U	F, F
NICKEL	18.5		0.135	MDL	2.07	PQL	mg/Kg	J	A
POTASSIUM	6700		8.64	MDL	104	PQL	mg/Kg	J	Q
TIN	3.64	J	0.228	MDL	10.4	PQL	mg/Kg	U	B
Zirconium	4.89	J	0.871	MDL	5.18	PQL	mg/Kg	J	Z

Sample ID: SL-541-SA8-SB-4.0-5.0

Collected: 8/9/2013 1:55:00 PM

Analysis Type: REA3

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.33	U	0.801	MDL	4.33	PQL	mg/Kg	UJ	Q
ARSENIC	3.34	J	0.758	MDL	4.33	PQL	mg/Kg	J	Z
BERYLLIUM	0.917	J	0.0725	MDL	1.08	PQL	mg/Kg	J	Z
CADMIUM	0.108	J	0.0823	MDL	1.08	PQL	mg/Kg	J	Z
CALCIUM	35400		3.62	MDL	21.6	PQL	mg/Kg	J	E
MOLYBDENUM	0.225	J	0.184	MDL	2.16	PQL	mg/Kg	U	F, F
NICKEL	21.0		0.141	MDL	2.16	PQL	mg/Kg	J	A
POTASSIUM	7080		9.03	MDL	108	PQL	mg/Kg	J	Q
TIN	3.59	J	0.238	MDL	10.8	PQL	mg/Kg	U	B
Zirconium	4.73	J	0.909	MDL	5.41	PQL	mg/Kg	J	Z

Sample ID: SL-607-SA8-SB-0.0-0.5

Collected: 8/9/2013 12:15:00

Analysis Type: REA3

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.791	J	0.759	MDL	4.10	PQL	mg/Kg	J	Z, Q
BERYLLIUM	0.805	J	0.0687	MDL	1.03	PQL	mg/Kg	J	Z
CADMIUM	0.182	J	0.0779	MDL	1.03	PQL	mg/Kg	J	Z
CALCIUM	47500		3.43	MDL	20.5	PQL	mg/Kg	J	E
MOLYBDENUM	0.353	J	0.174	MDL	2.05	PQL	mg/Kg	U	F, F
NICKEL	17.9		0.133	MDL	2.05	PQL	mg/Kg	J	A
POTASSIUM	6440		8.55	MDL	103	PQL	mg/Kg	J	Q
TIN	3.36	J	0.226	MDL	10.3	PQL	mg/Kg	U	B

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH088

Laboratory: LL

EDD Filename: PrepPH088

eQAPP Name: CDM_SSFL_131101_Lan

Method Category:	METALS	
Method:	6010C	Matrix: SO

Sample ID: SL-607-SA8-SB-5.0-6.0 Collected: 8/9/2013 1:00:00 PM Analysis Type: REA3 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.29	U	0.793	MDL	4.29	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.448	J	0.0718	MDL	1.07	PQL	mg/Kg	J	Z
BORON	8.28	J	0.900	MDL	10.7	PQL	mg/Kg	J	Z
CADMIUM	0.303	J	0.0814	MDL	1.07	PQL	mg/Kg	J	Z
NICKEL	12.9		0.139	MDL	2.14	PQL	mg/Kg	J	A
POTASSIUM	2010		8.94	MDL	107	PQL	mg/Kg	J	Q
SODIUM	103	J	17.9	MDL	107	PQL	mg/Kg	J	Z
TIN	2.93	J	0.236	MDL	10.7	PQL	mg/Kg	U	B
Zirconium	3.56	J	0.900	MDL	5.36	PQL	mg/Kg	J	Z

Sample ID: SL-607-SA8-SB-5.0-6.0 Collected: 8/9/2013 1:00:00 PM Analysis Type: REA4 Dilution: 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CALCIUM	206000		35.8	MDL	214	PQL	mg/Kg	J	E

Sample ID: SL-830-SA8-SB-4.0-5.0 Collected: 8/9/2013 7:50:00 AM Analysis Type: REA Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	4.11	J	0.930	MDL	11.1	PQL	mg/Kg	J	Z

Sample ID: SL-830-SA8-SB-4.0-5.0 Collected: 8/9/2013 7:50:00 AM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.43	U	0.820	MDL	4.43	PQL	mg/Kg	UJ	Q
ARSENIC	3.12	J	0.775	MDL	4.43	PQL	mg/Kg	J	Z
BERYLLIUM	0.631	J	0.0742	MDL	1.11	PQL	mg/Kg	J	Z
CADMIUM	0.964	J	0.0842	MDL	1.11	PQL	mg/Kg	J	Z
CALCIUM	7280		3.70	MDL	22.1	PQL	mg/Kg	J	E, FD
COBALT	6.66		0.110	MDL	1.11	PQL	mg/Kg	J	A
IRON	23300		4.01	MDL	44.3	PQL	mg/Kg	J	Q
MOLYBDENUM	2.21	U	0.188	MDL	2.21	PQL	mg/Kg	UJ	FD
POTASSIUM	1440		9.24	MDL	111	PQL	mg/Kg	J	Q
TIN	3.25	J	0.244	MDL	11.1	PQL	mg/Kg	U	B
Zirconium	2.39	J	0.930	MDL	5.54	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH088

Laboratory: LL

EDD Filename: PrepPH088

eQAPP Name: CDM_SSFL_131101_Lan

Method Category:	METALS	
Method:	6010C	Matrix: SO

Sample ID: SL-838-SA8-SB-4.0-5.0 Collected: 8/9/2013 9:30:00 AM Analysis Type: REA3 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.48	U	0.829	MDL	4.48	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.888	J	0.0750	MDL	1.12	PQL	mg/Kg	J	Z
BORON	8.43	J	0.941	MDL	11.2	PQL	mg/Kg	J	Z
CALCIUM	17800		3.74	MDL	22.4	PQL	mg/Kg	J	E, FD
MOLYBDENUM	0.247	J	0.190	MDL	2.24	PQL	mg/Kg	U	F, F
NICKEL	19.3		0.146	MDL	2.24	PQL	mg/Kg	J	A
POTASSIUM	3440		9.34	MDL	112	PQL	mg/Kg	J	Q
SODIUM	95.5	J	18.7	MDL	112	PQL	mg/Kg	J	Z
TIN	3.66	J	0.246	MDL	11.2	PQL	mg/Kg	U	B

Method Category:	METALS	
Method:	6020A	Matrix: SO

Sample ID: SL-530-SA8-SB-0.0-0.5 Collected: 8/9/2013 7:25:00 AM Analysis Type: REA Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	48.5		0.0695	MDL	0.409	PQL	mg/Kg	J	Q

Sample ID: SL-530-SA8-SB-0.0-0.5 Collected: 8/9/2013 7:25:00 AM Analysis Type: REA2 Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.288	J	0.102	MDL	0.409	PQL	mg/Kg	J	Z

Sample ID: SL-530-SA8-SB-0.0-0.5 Collected: 8/9/2013 7:25:00 AM Analysis Type: RES Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0433	J	0.0266	MDL	0.204	PQL	mg/Kg	J	Z

Sample ID: SL-530-SA8-SB-4.0-5.0 Collected: 8/9/2013 7:45:00 AM Analysis Type: REA Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	32.1		0.0772	MDL	0.454	PQL	mg/Kg	J	Q

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH088

Laboratory: LL

EDD Filename: PrepPH088

eQAPP Name: CDM_SSFL_131101_Lan

Method Category:	METALS	
Method:	6020A	Matrix: SO

Sample ID: SL-530-SA8-SB-4.0-5.0 Collected: 8/9/2013 7:45:00 AM Analysis Type: RES Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0556	J	0.0295	MDL	0.227	PQL	mg/Kg	J	Z

Sample ID: SL-538-SA8-SB-0.0-0.5 Collected: 8/9/2013 9:10:00 AM Analysis Type: REA Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	43.4		0.0708	MDL	0.416	PQL	mg/Kg	J	Q

Sample ID: SL-538-SA8-SB-0.0-0.5 Collected: 8/9/2013 9:10:00 AM Analysis Type: REA2 Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.255	J	0.104	MDL	0.416	PQL	mg/Kg	J	Z

Sample ID: SL-538-SA8-SB-0.0-0.5 Collected: 8/9/2013 9:10:00 AM Analysis Type: RES Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0589	J	0.0271	MDL	0.208	PQL	mg/Kg	J	Z

Sample ID: SL-538-SA8-SB-4.0-5.0 Collected: 8/9/2013 9:20:00 AM Analysis Type: REA3 Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0323	J	0.0294	MDL	0.226	PQL	mg/Kg	J	Z, Q, E
STRONTIUM	47.2		0.0769	MDL	0.452	PQL	mg/Kg	J	E, A
THALLIUM	0.411		0.0339	MDL	0.226	PQL	mg/Kg	J	Q, E

Sample ID: SL-538-SA8-SB-4.0-5.0 Collected: 8/9/2013 9:20:00 AM Analysis Type: REA5 Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.190	J	0.113	MDL	0.452	PQL	mg/Kg	J	Z

Sample ID: SL-541-SA8-SB-0.0-0.5 Collected: 8/9/2013 1:35:00 PM Analysis Type: REA3 Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0560	J	0.0269	MDL	0.207	PQL	mg/Kg	J	Z, Q, E
THALLIUM	0.490		0.0311	MDL	0.207	PQL	mg/Kg	J	Q, E

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH088

Laboratory: LL

EDD Filename: PrepPH088

eQAPP Name: CDM_SSFL_131101_Lan

Method Category:	METALS	
Method:	6020A	Matrix: SO

Sample ID: SL-541-SA8-SB-0.0-0.5	Collected: 8/9/2013 1:35:00 PM	Analysis Type: REA4	Dilution: 5						
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	92.9		0.176	MDL	1.04	PQL	mg/Kg	J	E, A

Sample ID: SL-541-SA8-SB-4.0-5.0	Collected: 8/9/2013 1:55:00 PM	Analysis Type: REA3	Dilution: 2						
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0413	J	0.0281	MDL	0.216	PQL	mg/Kg	J	Z, Q, E
STRONTIUM	74.0		0.0736	MDL	0.433	PQL	mg/Kg	J	E, A
THALLIUM	0.397		0.0325	MDL	0.216	PQL	mg/Kg	J	Q, E

Sample ID: SL-541-SA8-SB-4.0-5.0	Collected: 8/9/2013 1:55:00 PM	Analysis Type: REA5	Dilution: 2						
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.316	J	0.108	MDL	0.433	PQL	mg/Kg	J	Z

Sample ID: SL-607-SA8-SB-0.0-0.5	Collected: 8/9/2013 12:15:00	Analysis Type: REA3	Dilution: 2						
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0541	J	0.0267	MDL	0.205	PQL	mg/Kg	J	Z, Q, E
THALLIUM	0.419		0.0308	MDL	0.205	PQL	mg/Kg	J	Q, E

Sample ID: SL-607-SA8-SB-0.0-0.5	Collected: 8/9/2013 12:15:00	Analysis Type: REA4	Dilution: 5						
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	79.5		0.174	MDL	1.03	PQL	mg/Kg	J	E, A

Sample ID: SL-607-SA8-SB-0.0-0.5	Collected: 8/9/2013 12:15:00	Analysis Type: REA5	Dilution: 2						
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.401	J	0.103	MDL	0.410	PQL	mg/Kg	J	Z

Sample ID: SL-607-SA8-SB-5.0-6.0	Collected: 8/9/2013 1:00:00 PM	Analysis Type: REA3	Dilution: 2						
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0639	J	0.0279	MDL	0.214	PQL	mg/Kg	J	Z, Q, E
THALLIUM	0.311		0.0321	MDL	0.214	PQL	mg/Kg	J	Q, E

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH088

Laboratory: LL

EDD Filename: PrepPH088

eQAPP Name: CDM_SSFL_131101_Lan

Method Category:	METALS	
Method:	6020A	Matrix: SO

Sample ID: SL-607-SA8-SB-5.0-6.0 Collected: 8/9/2013 1:00:00 PM Analysis Type: REA4 Dilution: 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	154		0.182	MDL	1.07	PQL	mg/Kg	J	E, A

Sample ID: SL-607-SA8-SB-5.0-6.0 Collected: 8/9/2013 1:00:00 PM Analysis Type: REA5 Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.411	J	0.107	MDL	0.429	PQL	mg/Kg	J	Z

Sample ID: SL-830-SA8-SB-4.0-5.0 Collected: 8/9/2013 7:50:00 AM Analysis Type: REA Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	25.1		0.0753	MDL	0.443	PQL	mg/Kg	J	Q

Sample ID: SL-830-SA8-SB-4.0-5.0 Collected: 8/9/2013 7:50:00 AM Analysis Type: RES Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0357	J	0.0288	MDL	0.221	PQL	mg/Kg	J	Z
THALLIUM	0.212	J	0.0332	MDL	0.221	PQL	mg/Kg	J	Z

Sample ID: SL-838-SA8-SB-4.0-5.0 Collected: 8/9/2013 9:30:00 AM Analysis Type: REA3 Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0412	J	0.0291	MDL	0.224	PQL	mg/Kg	J	Z, Q, E
STRONTIUM	52.8		0.0761	MDL	0.448	PQL	mg/Kg	J	E, A
THALLIUM	0.431		0.0336	MDL	0.224	PQL	mg/Kg	J	Q, E

Sample ID: SL-838-SA8-SB-4.0-5.0 Collected: 8/9/2013 9:30:00 AM Analysis Type: REA5 Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.195	J	0.112	MDL	0.448	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

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Data Qualifier Summary

Lab Reporting Batch ID: PH088

Laboratory: LL

EDD Filename: PrepPH088

eQAPP Name: CDM_SSFL_131101_Lan

Method Category:	METALS	
Method:	7471B	Matrix: SO

Sample ID: SL-541-SA8-SB-0.0-0.5 Collected: 8/9/2013 1:35:00 PM Analysis Type: REA Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0108	J	0.0100	MDL	0.0167	PQL	mg/Kg	J	Z

Sample ID: SL-607-SA8-SB-5.0-6.0 Collected: 8/9/2013 1:00:00 PM Analysis Type: REA Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0144	J	0.0106	MDL	0.0177	PQL	mg/Kg	J	Z

Method Category:	SVOA	
Method:	1613B	Matrix: SO

Sample ID: SL-530-SA8-SB-0.0-0.5 Collected: 8/9/2013 7:25:00 AM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDF	0.964	JB	0.0288	MDL	5.13	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.108	J	0.0365	MDL	5.13	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.144	J	0.0346	MDL	5.13	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.154	JB	0.0235	MDL	5.13	PQL	ng/Kg	U	B
1,2,3,6,7,8-HxCDD	0.316	JB	0.0378	MDL	5.13	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.177	JB	0.0232	MDL	5.13	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HxCDD	0.292	J	0.0372	MDL	5.13	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.150	JB	0.0266	MDL	5.13	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0754	JB	0.0553	MDL	5.13	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	1.02	JB	0.0401	MDL	5.13	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.127	JBQ	0.0218	MDL	5.13	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.138	JB	0.0377	MDL	5.13	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.226	J	0.0643	MDL	1.03	PQL	ng/Kg	J	Z
OCDF	2.73	JB	0.0360	MDL	10.3	PQL	ng/Kg	J	Z

Sample ID: SL-530-SA8-SB-4.0-5.0 Collected: 8/9/2013 7:45:00 AM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.252	JBQ	0.0361	MDL	5.46	PQL	ng/Kg	UJ	B, FD
1,2,3,4,6,7,8-HPCDF	0.0604	JBQ	0.0148	MDL	5.46	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0212	JQ	0.0199	MDL	5.46	PQL	ng/Kg	J	Z, FD
1,2,3,4,7,8-HxCDD	5.46	U	0.0232	MDL	5.46	PQL	ng/Kg	UJ	FD

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH088

Laboratory: LL

EDD Filename: PrepPH088

eQAPP Name: CDM_SSFL_131101_Lan

Method Category:	SVOA		
Method:	1613B	Matrix:	SO

Sample ID: SL-530-SA8-SB-4.0-5.0 Collected: 8/9/2013 7:45:00 AM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,7,8-HXCDF	5.46	U	0.0126	MDL	5.46	PQL	ng/Kg	UJ	FD
1,2,3,6,7,8-HXCDD	5.46	U	0.0258	MDL	5.46	PQL	ng/Kg	UJ	FD
1,2,3,6,7,8-HXCDF	5.46	U	0.0138	MDL	5.46	PQL	ng/Kg	UJ	FD
1,2,3,7,8,9-HXCDD	0.0392	JQ	0.0250	MDL	5.46	PQL	ng/Kg	J	Z, FD
1,2,3,7,8,9-HXCDF	0.0236	JBQ	0.0161	MDL	5.46	PQL	ng/Kg	UJ	B, FD
1,2,3,7,8-PECDF	0.0519	JBQ	0.0222	MDL	5.46	PQL	ng/Kg	UJ	B, FD
2,3,4,6,7,8-HXCDF	0.0159	JBQ	0.0120	MDL	5.46	PQL	ng/Kg	UJ	B, FD
2,3,4,7,8-PECDF	0.0416	JBQ	0.0204	MDL	5.46	PQL	ng/Kg	U	B
OCDD	1.59	JB	0.0277	MDL	10.9	PQL	ng/Kg	J	Z, FD
OCDF	0.158	JBQ	0.0325	MDL	10.9	PQL	ng/Kg	U	B

Sample ID: SL-538-SA8-SB-0.0-0.5 Collected: 8/9/2013 9:10:00 AM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,7,8,9-HPCDF	0.807	J	0.0747	MDL	5.29	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	1.26	J	0.0929	MDL	5.29	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	1.40	JB	0.0725	MDL	5.29	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	1.17	JB	0.0727	MDL	5.29	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	3.32	J	0.0988	MDL	5.29	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.989	JB	0.0854	MDL	5.29	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.869	JB	0.0720	MDL	5.29	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	1.93	JB	0.0561	MDL	5.29	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	1.98	JB	0.0684	MDL	5.29	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.615	JBQ	0.0537	MDL	5.29	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.0675	JQ	0.0397	MDL	1.06	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.343	JQ	0.0892	MDL	1.06	PQL	ng/Kg	J	Z
OCDF	8.30	JB	0.0451	MDL	10.6	PQL	ng/Kg	J	Z

Sample ID: SL-538-SA8-SB-4.0-5.0 Collected: 8/9/2013 9:20:00 AM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	6.07	B	0.0535	MDL	5.55	PQL	ng/Kg	J	FD
1,2,3,4,6,7,8-HPCDF	0.543	JB	0.0173	MDL	5.55	PQL	ng/Kg	J	Z, FD
1,2,3,4,7,8,9-HPCDF	0.0459	JBQ	0.0254	MDL	5.55	PQL	ng/Kg	UJ	B, FD
1,2,3,4,7,8-HxCDD	0.0716	JBQ	0.0420	MDL	5.55	PQL	ng/Kg	UJ	B, FD

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH088

Laboratory: LL

EDD Filename: PrepPH088

eQAPP Name: CDM_SSFL_131101_Lan

Method Category:	SVOA		
Method:	1613B	Matrix:	SO

Sample ID: SL-538-SA8-SB-4.0-5.0 Collected: 8/9/2013 9:20:00 AM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,7,8-HXCDF	0.106	JB	0.0209	MDL	5.55	PQL	ng/Kg	UJ	B, FD
1,2,3,6,7,8-HXCDD	0.381	JB	0.0459	MDL	5.55	PQL	ng/Kg	UJ	B, FD
1,2,3,6,7,8-HXCDF	0.107	JBQ	0.0213	MDL	5.55	PQL	ng/Kg	UJ	B, FD
1,2,3,7,8,9-HXCDD	0.179	JB	0.0445	MDL	5.55	PQL	ng/Kg	UJ	B, FD
1,2,3,7,8,9-HXCDF	0.0716	JBQ	0.0255	MDL	5.55	PQL	ng/Kg	UJ	B, FD
1,2,3,7,8-PECDD	5.55	U	0.0467	MDL	5.55	PQL	ng/Kg	UJ	FD
1,2,3,7,8-PECDF	0.0709	JB	0.0278	MDL	5.55	PQL	ng/Kg	UJ	B, FD
2,3,4,6,7,8-HXCDF	0.0895	JB	0.0194	MDL	5.55	PQL	ng/Kg	UJ	B, FD
2,3,4,7,8-PECDF	0.0502	JBQ	0.0247	MDL	5.55	PQL	ng/Kg	UJ	B, FD
2,3,7,8-TCDD	1.11	U	0.0502	MDL	1.11	PQL	ng/Kg	UJ	FD
2,3,7,8-TCDF	1.11	U	0.0439	MDL	1.11	PQL	ng/Kg	UJ	FD
OCDD	56.6	B	0.0409	MDL	11.1	PQL	ng/Kg	J	FD
OCDF	0.552	JB	0.0337	MDL	11.1	PQL	ng/Kg	UJ	B, FD

Sample ID: SL-541-SA8-SB-0.0-0.5 Collected: 8/9/2013 1:35:00 PM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	3.06	JB	0.0872	MDL	5.24	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.796	JB	0.0288	MDL	5.24	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0930	JB	0.0434	MDL	5.24	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0999	JBQ	0.0499	MDL	5.24	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.212	JBQ	0.0485	MDL	5.24	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.220	JB	0.0562	MDL	5.24	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.664	JB	0.0480	MDL	5.24	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.147	JBQ	0.0584	MDL	5.24	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.203	JB	0.135	MDL	5.24	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.400	JB	0.0460	MDL	5.24	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.307	JBQ	0.0812	MDL	5.24	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.603	J	0.149	MDL	1.05	PQL	ng/Kg	J	Z
OCDF	1.23	JB	0.0478	MDL	10.5	PQL	ng/Kg	J	Z

Sample ID: SL-541-SA8-SB-4.0-5.0 Collected: 8/9/2013 1:55:00 PM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.310	JBQ	0.0387	MDL	5.40	PQL	ng/Kg	U	B

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH088

Laboratory: LL

EDD Filename: PrepPH088

eQAPP Name: CDM_SSFL_131101_Lan

Method Category:	SVOA	
Method:	1613B	Matrix: SO

Sample ID: SL-541-SA8-SB-4.0-5.0 Collected: 8/9/2013 1:55:00 PM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDF	0.0588	JB	0.0163	MDL	5.40	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0418	JBQ	0.0254	MDL	5.40	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0483	JBQ	0.0342	MDL	5.40	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0442	JBQ	0.0223	MDL	5.40	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0731	JBQ	0.0226	MDL	5.40	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0490	JBQ	0.0365	MDL	5.40	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0319	JBQ	0.0305	MDL	5.40	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0867	JBQ	0.0381	MDL	5.40	PQL	ng/Kg	U	B
OCDD	1.81	JB	0.0326	MDL	10.8	PQL	ng/Kg	U	B
OCDF	0.0876	JBQ	0.0438	MDL	10.8	PQL	ng/Kg	U	B

Sample ID: SL-607-SA8-SB-0.0-0.5 Collected: 8/9/2013 12:15:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDF	1.01	JBQ	0.0385	MDL	5.12	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0890	JBQ	0.0495	MDL	5.12	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.201	JBQ	0.0726	MDL	5.12	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.288	JB	0.0432	MDL	5.12	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.269	JBQ	0.0822	MDL	5.12	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.328	JBQ	0.0459	MDL	5.12	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.413	JB	0.0865	MDL	5.12	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.187	JBQ	0.0935	MDL	5.12	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.487	JBQ	0.0880	MDL	5.12	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.336	JB	0.0408	MDL	5.12	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.194	JBQ	0.0801	MDL	5.12	PQL	ng/Kg	U	B
OCDF	1.67	JB	0.0423	MDL	10.2	PQL	ng/Kg	J	Z

Sample ID: SL-607-SA8-SB-5.0-6.0 Collected: 8/9/2013 1:00:00 PM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.0945	JBQ	0.0432	MDL	5.42	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0638	JBQ	0.0169	MDL	5.42	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0729	JBQ	0.0294	MDL	5.42	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.157	JBQ	0.0199	MDL	5.42	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0949	JBQ	0.0330	MDL	5.42	PQL	ng/Kg	U	B

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH088

Laboratory: LL

EDD Filename: PrepPH088

eQAPP Name: CDM_SSFL_131101_Lan

Method Category:	SVOA	
Method:	1613B	Matrix: SO

Sample ID: SL-607-SA8-SB-5.0-6.0 Collected: 8/9/2013 1:00:00 PM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,6,7,8-HXCDF	0.131	JBQ	0.0199	MDL	5.42	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0774	JB	0.0381	MDL	5.42	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0820	JBQ	0.0277	MDL	5.42	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.114	JBQ	0.0744	MDL	5.42	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.127	JBQ	0.0381	MDL	5.42	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0691	JBQ	0.0148	MDL	5.42	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.158	JBQ	0.0348	MDL	5.42	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.0941	JQ	0.0608	MDL	1.08	PQL	ng/Kg	J	Z
OCDD	0.627	JB	0.0372	MDL	10.8	PQL	ng/Kg	U	B
OCDF	0.139	JBQ	0.0450	MDL	10.8	PQL	ng/Kg	U	B

Sample ID: SL-830-SA8-SB-4.0-5.0 Collected: 8/9/2013 7:50:00 AM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.146	JB	0.0318	MDL	5.46	PQL	ng/Kg	UJ	B, FD
1,2,3,4,6,7,8-HPCDF	0.0572	JB	0.0158	MDL	5.46	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0620	JQ	0.0205	MDL	5.46	PQL	ng/Kg	J	Z, FD
1,2,3,4,7,8-HxCDD	0.0499	JQ	0.0267	MDL	5.46	PQL	ng/Kg	J	Z, FD
1,2,3,4,7,8-HXCDF	0.0715	JBQ	0.0174	MDL	5.46	PQL	ng/Kg	UJ	B, FD
1,2,3,6,7,8-HXCDD	0.0902	JBQ	0.0289	MDL	5.46	PQL	ng/Kg	UJ	B, FD
1,2,3,6,7,8-HXCDF	0.0473	JBQ	0.0178	MDL	5.46	PQL	ng/Kg	UJ	B, FD
1,2,3,7,8,9-HXCDD	0.0771	JQ	0.0285	MDL	5.46	PQL	ng/Kg	J	Z, FD
1,2,3,7,8,9-HXCDF	0.0850	JB	0.0227	MDL	5.46	PQL	ng/Kg	UJ	B, FD
1,2,3,7,8-PECDF	0.0889	JB	0.0279	MDL	5.46	PQL	ng/Kg	UJ	B, FD
2,3,4,6,7,8-HXCDF	0.0513	JBQ	0.0162	MDL	5.46	PQL	ng/Kg	UJ	B, FD
2,3,4,7,8-PECDF	0.0571	JBQ	0.0248	MDL	5.46	PQL	ng/Kg	U	B
OCDD	0.845	JB	0.0318	MDL	10.9	PQL	ng/Kg	UJ	B, FD
OCDF	0.173	JBQ	0.0409	MDL	10.9	PQL	ng/Kg	U	B

Sample ID: SL-838-SA8-SB-4.0-5.0 Collected: 8/9/2013 9:30:00 AM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	18.2	B	0.0869	MDL	5.72	PQL	ng/Kg	J	FD
1,2,3,4,6,7,8-HPCDF	1.43	JB	0.0298	MDL	5.72	PQL	ng/Kg	J	Z, FD
1,2,3,4,7,8,9-HPCDF	0.139	JB	0.0448	MDL	5.72	PQL	ng/Kg	UJ	B, FD

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH088

Laboratory: LL

EDD Filename: PrepPH088

eQAPP Name: CDM_SSFL_131101_Lan

Method Category:	SVOA	Method:	1613B	Matrix:	SO
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Sample ID: SL-838-SA8-SB-4.0-5.0 Collected: 8/9/2013 9:30:00 AM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,7,8-HxCDD	0.243	JBQ	0.0539	MDL	5.72	PQL	ng/Kg	UJ	B, FD
1,2,3,4,7,8-HxCDF	0.178	JBQ	0.0382	MDL	5.72	PQL	ng/Kg	UJ	B, FD
1,2,3,6,7,8-HxCDD	1.07	JB	0.0618	MDL	5.72	PQL	ng/Kg	J	Z, FD
1,2,3,6,7,8-HxCDF	0.198	JBQ	0.0415	MDL	5.72	PQL	ng/Kg	UJ	B, FD
1,2,3,7,8,9-HxCDD	0.526	JB	0.0618	MDL	5.72	PQL	ng/Kg	J	Z, FD
1,2,3,7,8,9-HxCDF	0.120	JB	0.0495	MDL	5.72	PQL	ng/Kg	UJ	B, FD
1,2,3,7,8-PECDD	0.196	JBQ	0.0722	MDL	5.72	PQL	ng/Kg	UJ	B, FD
1,2,3,7,8-PECDF	0.250	JBQ	0.0412	MDL	5.72	PQL	ng/Kg	UJ	B, FD
2,3,4,6,7,8-HxCDF	0.217	JBQ	0.0374	MDL	5.72	PQL	ng/Kg	UJ	B, FD
2,3,4,7,8-PECDF	0.106	JBQ	0.0345	MDL	5.72	PQL	ng/Kg	UJ	B, FD
2,3,7,8-TCDD	0.106	JQ	0.0556	MDL	1.14	PQL	ng/Kg	J	Z, FD
2,3,7,8-TCDF	0.104	JQ	0.0717	MDL	1.14	PQL	ng/Kg	J	Z, FD
OCDD	166	B	0.0542	MDL	11.4	PQL	ng/Kg	J	FD
OCDF	1.45	JBQ	0.0453	MDL	11.4	PQL	ng/Kg	J	Z, FD

Method Category:	SVOA	Method:	8015M	Matrix:	SO
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Sample ID: SL-530-SA8-SB-0.0-0.5 Collected: 8/9/2013 7:25:00 AM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C15-C20)	2.7	J	2.1	MDL	5.3	PQL	mg/Kg	J	Z

Sample ID: SL-530-SA8-SB-4.0-5.0 Collected: 8/9/2013 7:45:00 AM Analysis Type: REA Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C21-C30)	7.1		2.2	MDL	5.6	PQL	mg/Kg	J	Q, Q, Q
EFH (C30-C40)	6.1	J	4.5	MDL	11	PQL	mg/Kg	J	Z, Q, Q, Q

Sample ID: SL-538-SA8-SB-4.0-5.0 Collected: 8/9/2013 9:20:00 AM Analysis Type: REA Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C21-C30)	5.8	U	2.3	MDL	5.8	PQL	mg/Kg	UJ	FD
EFH (C30-C40)	12	U	4.6	MDL	12	PQL	mg/Kg	UJ	FD

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH088

Laboratory: LL

EDD Filename: PrepPH088

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: SVOA

Method: 8015M

Matrix: SO

Sample ID: SL-541-SA8-SB-0.0-0.5

Collected: 8/9/2013 1:35:00 PM

Analysis Type: RES

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C15-C20)	4.5	J	2.1	MDL	5.3	PQL	mg/Kg	J	Z

Sample ID: SL-541-SA8-SB-4.0-5.0

Collected: 8/9/2013 1:55:00 PM

Analysis Type: REA

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C15-C20)	2.7	J	2.2	MDL	5.6	PQL	mg/Kg	J	Z

Sample ID: SL-607-SA8-SB-0.0-0.5

Collected: 8/9/2013 12:15:00

Analysis Type: RES

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C15-C20)	3.3	J	2.1	MDL	5.2	PQL	mg/Kg	J	Z

Sample ID: SL-607-SA8-SB-5.0-6.0

Collected: 8/9/2013 1:00:00 PM

Analysis Type: REA

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C21-C30)	5.4	J	2.2	MDL	5.5	PQL	mg/Kg	J	Z

Sample ID: SL-830-SA8-SB-4.0-5.0

Collected: 8/9/2013 7:50:00 AM

Analysis Type: REA

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C21-C30)	4.8	J	2.2	MDL	5.6	PQL	mg/Kg	J	Z
EFH (C30-C40)	4.8	J	4.5	MDL	11	PQL	mg/Kg	J	Z

Sample ID: SL-838-SA8-SB-4.0-5.0

Collected: 8/9/2013 9:30:00 AM

Analysis Type: REA

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C21-C30)	3.3	J	2.3	MDL	5.8	PQL	mg/Kg	J	Z, FD
EFH (C30-C40)	5.6	J	4.6	MDL	12	PQL	mg/Kg	J	Z, FD

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

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Data Qualifier Summary

Lab Reporting Batch ID: PH088

Laboratory: LL

EDD Filename: PrepPH088

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: SVOA
Method: 8081B **Matrix:** SO

Sample ID: SL-607-SA8-SB-0.0-0.5 Collected: 8/9/2013 12:15:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDE	11		0.35	MDL	1.8	PQL	ug/Kg	J	S
4,4'-DDT	9.8		0.37	MDL	1.8	PQL	ug/Kg	J	S
DIELDRIN	0.61	J	0.35	MDL	1.8	PQL	ug/Kg	J	Z, S
ENDRIN ALDEHYDE	0.54	J	0.35	MDL	1.8	PQL	ug/Kg	J	Z, S
HEPTACHLOR EPOXIDE	0.23	J	0.18	MDL	0.87	PQL	ug/Kg	J	Z, S

Method Category: SVOA
Method: 8082A **Matrix:** SO

Sample ID: SL-541-SA8-SB-0.0-0.5 Collected: 8/9/2013 1:35:00 PM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Aroclor 5460	25	J	11	MDL	35	PQL	ug/Kg	J	Z

Sample ID: SL-541-SA8-SB-4.0-5.0 Collected: 8/9/2013 1:55:00 PM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1254	8.5	J	4.9	MDL	19	PQL	ug/Kg	J	Z

Method Category: SVOA
Method: 8151A **Matrix:** SO

Sample ID: SL-607-SA8-SB-0.0-0.5 Collected: 8/9/2013 12:15:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4-D	19	J	12	MDL	37	PQL	ug/Kg	J	Z

Method Category: SVOA
Method: 8270D SIM **Matrix:** SO

Sample ID: SL-530-SA8-SB-0.0-0.5 Collected: 8/9/2013 7:25:00 AM Analysis Type: RES-BASE/NEUTRAL Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)ANTHRACENE	1.3	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH088

Laboratory: LL

EDD Filename: PrepPH088

eQAPP Name: CDM_SSFL_131101_Lan

Method Category:	SVOA
Method:	8270D SIM
Matrix:	SO

Sample ID: SL-530-SA8-SB-0.0-0.5 Collected: 8/9/2013 7:25:00 AM Analysis Type: RES-BASE/NEUTRAL Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)PYRENE	1.4	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(G,H,I)PERYLENE	1.2	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(K)FLUORANTHENE	1.2	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: SL-530-SA8-SB-0.0-0.5 Collected: 8/9/2013 7:25:00 AM Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
INDENO(1,2,3-CD)PYRENE	0.97	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: SL-530-SA8-SB-4.0-5.0 Collected: 8/9/2013 7:45:00 AM Analysis Type: RES-BASE/NEUTRAL Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BIS(2-ETHYLHEXYL)PHTHALATE	20	U	6.8	MDL	20	PQL	ug/Kg	UJ	FD
CHRYSENE	0.48	J	0.38	MDL	1.9	PQL	ug/Kg	J	Z, FD

Sample ID: SL-538-SA8-SB-0.0-0.5 Collected: 8/9/2013 9:10:00 AM Analysis Type: RES-BASE/NEUTRAL Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)ANTHRACENE	0.80	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(A)PYRENE	0.86	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(G,H,I)PERYLENE	0.74	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(K)FLUORANTHENE	0.76	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	6.6	J	6.4	MDL	19	PQL	ug/Kg	J	Z
NAPHTHALENE	0.82	J	0.71	MDL	1.8	PQL	ug/Kg	U	F
PHENANTHRENE	1.3	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: SL-538-SA8-SB-4.0-5.0 Collected: 8/9/2013 9:20:00 AM Analysis Type: RES-BASE/NEUTRAL Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BIS(2-ETHYLHEXYL)PHTHALATE	7.3	J	6.9	MDL	21	PQL	ug/Kg	J	Z, FD
CHRYSENE	1.9	U	0.38	MDL	1.9	PQL	ug/Kg	UJ	FD

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH088

Laboratory: LL

EDD Filename: PrepPH088

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: SVOA
Method: 8270D SIM **Matrix:** SO

Sample ID: SL-541-SA8-SB-0.0-0.5 **Collected:** 8/9/2013 1:35:00 PM **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(G,H,I)PERYLENE	0.94	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(K)FLUORANTHENE	1.4	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
INDENO(1,2,3-CD)PYRENE	0.97	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: SL-541-SA8-SB-4.0-5.0 **Collected:** 8/9/2013 1:55:00 PM **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(B)FLUORANTHENE	0.95	J	0.74	MDL	1.9	PQL	ug/Kg	J	Z
CHRYSENE	0.48	J	0.37	MDL	1.9	PQL	ug/Kg	J	Z

Sample ID: SL-607-SA8-SB-0.0-0.5 **Collected:** 8/9/2013 12:15:00 **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-METHYLNAPHTHALENE	0.88	J	0.70	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(A)ANTHRACENE	1.1	J	0.70	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(A)PYRENE	0.83	J	0.70	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(G,H,I)PERYLENE	0.84	J	0.70	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(K)FLUORANTHENE	0.71	J	0.70	MDL	1.7	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	16	J	6.3	MDL	19	PQL	ug/Kg	J	Z
INDENO(1,2,3-CD)PYRENE	0.97	J	0.70	MDL	1.7	PQL	ug/Kg	J	Z
NAPHTHALENE	1.1	J	0.70	MDL	1.7	PQL	ug/Kg	J	Z
PHENANTHRENE	1.5	J	0.70	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: SL-830-SA8-SB-4.0-5.0 **Collected:** 8/9/2013 7:50:00 AM **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BIS(2-ETHYLHEXYL)PHTHALATE	7.2	J	6.7	MDL	20	PQL	ug/Kg	J	Z, FD
CHRYSENE	1.9	U	0.37	MDL	1.9	PQL	ug/Kg	UJ	FD

Sample ID: SL-838-SA8-SB-4.0-5.0 **Collected:** 8/9/2013 9:30:00 AM **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BIS(2-ETHYLHEXYL)PHTHALATE	21	U	6.9	MDL	21	PQL	ug/Kg	UJ	FD
CHRYSENE	0.47	J	0.38	MDL	1.9	PQL	ug/Kg	J	Z, FD

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH088
EDD Filename: PrepPH088

Laboratory: LL
eQAPP Name: CDM_SSFL_131101_Lan

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

11/18/2013 6:55:18 AM

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Data Qualifier Summary

Lab Reporting Batch ID: PH088

Laboratory: LL

EDD Filename: PrepPH088

eQAPP Name: CDM_SSFL_131101_Lan

Reason Code Legend

<i>Reason Code</i>	<i>Description</i>
*#	Professional Judgment
A	ICP Serial Dilution
B	Calibration Blank Contamination
B	Method Blank Contamination
E	Laboratory Duplicate Precision
E	Matrix Spike Precision
F	Equipment Blank Contamination
F	Field Blank Contamination
FD	Field Duplicate Precision
Q	Laboratory Duplicate Precision
Q	Matrix Spike Lower Estimation
Q	Matrix Spike Lower Rejection
Q	Matrix Spike Precision
Q	Matrix Spike Upper Estimation
S	Surrogate/Tracer Recovery Upper Estimation
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

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Enclosure I
EPA Level III ADR Outliers
(Including Manual Review Outliers)

Quality Control Outlier Reports

PH088

Method Blank Outlier Report

Lab Reporting Batch ID: PH088

Laboratory: LL

EDD Filename: PH088_v2

eQAPP Name: CDM_SSFL_131101_Lan

Method: 1613B
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2270B370710	8/17/2013 7:10:00 AM	1,2,3,4,6,7,8-HPCDD 1,2,3,4,6,7,8-HPCDF 1,2,3,4,7,8-HXCDF 1,2,3,6,7,8-HXCDD 1,2,3,6,7,8-HXCDF 1,2,3,7,8,9-HXCDF 1,2,3,7,8-PECDD 1,2,3,7,8-PECDF 2,3,4,6,7,8-HXCDF 2,3,4,7,8-PECDF OCDD OCDF	0.0682 ng/Kg 0.0368 ng/Kg 0.0398 ng/Kg 0.0344 ng/Kg 0.0310 ng/Kg 0.0558 ng/Kg 0.0796 ng/Kg 0.0421 ng/Kg 0.0316 ng/Kg 0.0576 ng/Kg 0.286 ng/Kg 0.112 ng/Kg	SL-530-SA8-SB-0.0-0.5 SL-530-SA8-SB-4.0-5.0 SL-538-SA8-SB-0.0-0.5 SL-830-SA8-SB-4.0-5.0
BLK2320B370906	8/22/2013 9:06:00 AM	1,2,3,4,6,7,8-HPCDD 1,2,3,4,6,7,8-HPCDF 1,2,3,4,7,8,9-HPCDF 1,2,3,4,7,8-HxCDD 1,2,3,4,7,8-HXCDF 1,2,3,6,7,8-HXCDD 1,2,3,6,7,8-HXCDF 1,2,3,7,8,9-HXCDD 1,2,3,7,8,9-HXCDF 1,2,3,7,8-PECDD 1,2,3,7,8-PECDF 2,3,4,6,7,8-HXCDF 2,3,4,7,8-PECDF OCDD OCDF	0.110 ng/Kg 0.0933 ng/Kg 0.0762 ng/Kg 0.0685 ng/Kg 0.101 ng/Kg 0.106 ng/Kg 0.0806 ng/Kg 0.0775 ng/Kg 0.0474 ng/Kg 0.117 ng/Kg 0.0798 ng/Kg 0.0879 ng/Kg 0.0923 ng/Kg 0.396 ng/Kg 0.201 ng/Kg	SL-538-SA8-SB-4.0-5.0 SL-541-SA8-SB-0.0-0.5 SL-541-SA8-SB-4.0-5.0 SL-607-SA8-SB-0.0-0.5 SL-607-SA8-SB-5.0-6.0 SL-838-SA8-SB-4.0-5.0

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-530-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.154 ng/Kg	0.154U ng/Kg
SL-530-SA8-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.150 ng/Kg	0.150U ng/Kg
SL-530-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.0754 ng/Kg	0.0754U ng/Kg
SL-530-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.127 ng/Kg	0.127U ng/Kg
SL-530-SA8-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.138 ng/Kg	0.138U ng/Kg
SL-530-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDD	0.252 ng/Kg	0.252U ng/Kg
SL-530-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0604 ng/Kg	0.0604U ng/Kg
SL-530-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDF	0.0236 ng/Kg	0.0236U ng/Kg
SL-530-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.0519 ng/Kg	0.0519U ng/Kg
SL-530-SA8-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0159 ng/Kg	0.0159U ng/Kg
SL-530-SA8-SB-4.0-5.0(RES)	2,3,4,7,8-PECDF	0.0416 ng/Kg	0.0416U ng/Kg
SL-530-SA8-SB-4.0-5.0(RES)	OCDF	0.158 ng/Kg	0.158U ng/Kg
SL-538-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0459 ng/Kg	0.0459U ng/Kg
SL-538-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HxCDD	0.0716 ng/Kg	0.0716U ng/Kg
SL-538-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.106 ng/Kg	0.106U ng/Kg
SL-538-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDD	0.381 ng/Kg	0.381U ng/Kg
SL-538-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.107 ng/Kg	0.107U ng/Kg
SL-538-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDD	0.179 ng/Kg	0.179U ng/Kg
SL-538-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDF	0.0716 ng/Kg	0.0716U ng/Kg
SL-538-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.0709 ng/Kg	0.0709U ng/Kg
SL-538-SA8-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0895 ng/Kg	0.0895U ng/Kg

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

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Method Blank Outlier Report

Lab Reporting Batch ID: PH088

Laboratory: LL

EDD Filename: PH088_v2

eQAPP Name: CDM_SSFL_131101_Lan

Method: 1613B

Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
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The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-538-SA8-SB-4.0-5.0(RES)	2,3,4,7,8-PECDF	0.0502 ng/Kg	0.0502U ng/Kg
SL-538-SA8-SB-4.0-5.0(RES)	OCDF	0.552 ng/Kg	0.552U ng/Kg
SL-541-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0930 ng/Kg	0.0930U ng/Kg
SL-541-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.0999 ng/Kg	0.0999U ng/Kg
SL-541-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.212 ng/Kg	0.212U ng/Kg
SL-541-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDD	0.220 ng/Kg	0.220U ng/Kg
SL-541-SA8-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDD	0.147 ng/Kg	0.147U ng/Kg
SL-541-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.203 ng/Kg	0.203U ng/Kg
SL-541-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.400 ng/Kg	0.400U ng/Kg
SL-541-SA8-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.307 ng/Kg	0.307U ng/Kg
SL-541-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDD	0.310 ng/Kg	0.310U ng/Kg
SL-541-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0588 ng/Kg	0.0588U ng/Kg
SL-541-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0418 ng/Kg	0.0418U ng/Kg
SL-541-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HxCDD	0.0483 ng/Kg	0.0483U ng/Kg
SL-541-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.0442 ng/Kg	0.0442U ng/Kg
SL-541-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.0731 ng/Kg	0.0731U ng/Kg
SL-541-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDD	0.0490 ng/Kg	0.0490U ng/Kg
SL-541-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDF	0.0319 ng/Kg	0.0319U ng/Kg
SL-541-SA8-SB-4.0-5.0(RES)	2,3,4,7,8-PECDF	0.0867 ng/Kg	0.0867U ng/Kg
SL-541-SA8-SB-4.0-5.0(RES)	OCDD	1.81 ng/Kg	1.81U ng/Kg
SL-541-SA8-SB-4.0-5.0(RES)	OCDF	0.0876 ng/Kg	0.0876U ng/Kg
SL-607-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0890 ng/Kg	0.0890U ng/Kg
SL-607-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.201 ng/Kg	0.201U ng/Kg
SL-607-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.288 ng/Kg	0.288U ng/Kg
SL-607-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDD	0.269 ng/Kg	0.269U ng/Kg
SL-607-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.328 ng/Kg	0.328U ng/Kg
SL-607-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.187 ng/Kg	0.187U ng/Kg
SL-607-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.336 ng/Kg	0.336U ng/Kg
SL-607-SA8-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.194 ng/Kg	0.194U ng/Kg
SL-607-SA8-SB-5.0-6.0(RES)	1,2,3,4,6,7,8-HPCDD	0.0945 ng/Kg	0.0945U ng/Kg
SL-607-SA8-SB-5.0-6.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0638 ng/Kg	0.0638U ng/Kg
SL-607-SA8-SB-5.0-6.0(RES)	1,2,3,4,7,8-HxCDD	0.0729 ng/Kg	0.0729U ng/Kg
SL-607-SA8-SB-5.0-6.0(RES)	1,2,3,4,7,8-HXCDF	0.157 ng/Kg	0.157U ng/Kg
SL-607-SA8-SB-5.0-6.0(RES)	1,2,3,6,7,8-HXCDD	0.0949 ng/Kg	0.0949U ng/Kg
SL-607-SA8-SB-5.0-6.0(RES)	1,2,3,6,7,8-HXCDF	0.131 ng/Kg	0.131U ng/Kg
SL-607-SA8-SB-5.0-6.0(RES)	1,2,3,7,8,9-HXCDD	0.0774 ng/Kg	0.0774U ng/Kg
SL-607-SA8-SB-5.0-6.0(RES)	1,2,3,7,8,9-HXCDF	0.0820 ng/Kg	0.0820U ng/Kg
SL-607-SA8-SB-5.0-6.0(RES)	1,2,3,7,8-PECDD	0.114 ng/Kg	0.114U ng/Kg
SL-607-SA8-SB-5.0-6.0(RES)	1,2,3,7,8-PECDF	0.127 ng/Kg	0.127U ng/Kg
SL-607-SA8-SB-5.0-6.0(RES)	2,3,4,6,7,8-HXCDF	0.0691 ng/Kg	0.0691U ng/Kg

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

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Method Blank Outlier Report

Lab Reporting Batch ID: PH088

Laboratory: LL

EDD Filename: PH088_v2

eQAPP Name: CDM_SSFL_131101_Lan

Method: 1613B
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
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The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-607-SA8-SB-5.0-6.0(RES)	2,3,4,7,8-PECDF	0.158 ng/Kg	0.158U ng/Kg
SL-607-SA8-SB-5.0-6.0(RES)	OCDD	0.627 ng/Kg	0.627U ng/Kg
SL-607-SA8-SB-5.0-6.0(RES)	OCDF	0.139 ng/Kg	0.139U ng/Kg
SL-830-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDD	0.146 ng/Kg	0.146U ng/Kg
SL-830-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0572 ng/Kg	0.0572U ng/Kg
SL-830-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.0715 ng/Kg	0.0715U ng/Kg
SL-830-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDD	0.0902 ng/Kg	0.0902U ng/Kg
SL-830-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.0473 ng/Kg	0.0473U ng/Kg
SL-830-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-HXCDF	0.0850 ng/Kg	0.0850U ng/Kg
SL-830-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.0889 ng/Kg	0.0889U ng/Kg
SL-830-SA8-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0513 ng/Kg	0.0513U ng/Kg
SL-830-SA8-SB-4.0-5.0(RES)	2,3,4,7,8-PECDF	0.0571 ng/Kg	0.0571U ng/Kg
SL-830-SA8-SB-4.0-5.0(RES)	OCDD	0.845 ng/Kg	0.845U ng/Kg
SL-830-SA8-SB-4.0-5.0(RES)	OCDF	0.173 ng/Kg	0.173U ng/Kg
SL-838-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.139 ng/Kg	0.139U ng/Kg
SL-838-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HxCDD	0.243 ng/Kg	0.243U ng/Kg
SL-838-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.178 ng/Kg	0.178U ng/Kg
SL-838-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.198 ng/Kg	0.198U ng/Kg
SL-838-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDF	0.120 ng/Kg	0.120U ng/Kg
SL-838-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDD	0.196 ng/Kg	0.196U ng/Kg
SL-838-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.250 ng/Kg	0.250U ng/Kg
SL-838-SA8-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.217 ng/Kg	0.217U ng/Kg
SL-838-SA8-SB-4.0-5.0(RES)	2,3,4,7,8-PECDF	0.106 ng/Kg	0.106U ng/Kg

Method: 6010C
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P22337AB220606	8/20/2013 6:06:00 AM	ALUMINUM TIN	9.14 mg/Kg 1.77 mg/Kg	SL-530-SA8-SB-0.0-0.5 SL-530-SA8-SB-4.0-5.0 SL-538-SA8-SB-0.0-0.5 SL-830-SA8-SB-4.0-5.0
P22337BB221918	8/22/2013 7:18:00 PM	TIN ZINC	1.70 mg/Kg 0.240 mg/Kg	SL-538-SA8-SB-4.0-5.0 SL-541-SA8-SB-0.0-0.5 SL-541-SA8-SB-4.0-5.0 SL-607-SA8-SB-0.0-0.5 SL-607-SA8-SB-5.0-6.0 SL-838-SA8-SB-4.0-5.0

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-530-SA8-SB-0.0-0.5(RES)	TIN	3.29 mg/Kg	3.29U mg/Kg

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

11/13/2013 11:15:29 AM

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Method Blank Outlier Report

Lab Reporting Batch ID: PH088

Laboratory: LL

EDD Filename: PH088_v2

eQAPP Name: CDM_SSFL_131101_Lan

Method: 6010C
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
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The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-530-SA8-SB-4.0-5.0(RES)	TIN	3.38 mg/Kg	3.38U mg/Kg
SL-538-SA8-SB-0.0-0.5(RES)	TIN	3.26 mg/Kg	3.26U mg/Kg
SL-538-SA8-SB-4.0-5.0(REA3)	TIN	3.63 mg/Kg	3.63U mg/Kg
SL-541-SA8-SB-0.0-0.5(REA3)	TIN	3.64 mg/Kg	3.64U mg/Kg
SL-541-SA8-SB-4.0-5.0(REA3)	TIN	3.59 mg/Kg	3.59U mg/Kg
SL-607-SA8-SB-0.0-0.5(REA3)	TIN	3.36 mg/Kg	3.36U mg/Kg
SL-607-SA8-SB-5.0-6.0(REA3)	TIN	2.93 mg/Kg	2.93U mg/Kg
SL-830-SA8-SB-4.0-5.0(RES)	TIN	3.25 mg/Kg	3.25U mg/Kg
SL-838-SA8-SB-4.0-5.0(REA3)	TIN	3.66 mg/Kg	3.66U mg/Kg

Field Blank Outlier Report

Lab Reporting Batch ID: PH088

Laboratory: LL

EDD Filename: PH088_v2

eQAPP Name: CDM_SSFL_131101_Lan

Method: 6010C
Matrix: SO

Field Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
FB-041113(REA2)	4/11/2013 3:00:00 PM	COPPER MOLYBDENUM	0.0036 mg/L 0.0036 mg/L	SL-530-SA8-SB-0.0-0.5 SL-530-SA8-SB-4.0-5.0 SL-538-SA8-SB-0.0-0.5 SL-538-SA8-SB-4.0-5.0 SL-541-SA8-SB-0.0-0.5 SL-541-SA8-SB-4.0-5.0 SL-607-SA8-SB-0.0-0.5 SL-607-SA8-SB-5.0-6.0 SL-830-SA8-SB-4.0-5.0 SL-838-SA8-SB-4.0-5.0

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-530-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.344 mg/Kg	0.344U mg/Kg
SL-530-SA8-SB-4.0-5.0(RES)	MOLYBDENUM	0.516 mg/Kg	0.516U mg/Kg
SL-538-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.282 mg/Kg	0.282U mg/Kg
SL-538-SA8-SB-4.0-5.0(REA3)	MOLYBDENUM	0.230 mg/Kg	0.230U mg/Kg
SL-541-SA8-SB-0.0-0.5(REA3)	MOLYBDENUM	0.200 mg/Kg	0.200U mg/Kg
SL-541-SA8-SB-4.0-5.0(REA3)	MOLYBDENUM	0.225 mg/Kg	0.225U mg/Kg
SL-607-SA8-SB-0.0-0.5(REA3)	MOLYBDENUM	0.353 mg/Kg	0.353U mg/Kg
SL-838-SA8-SB-4.0-5.0(REA3)	MOLYBDENUM	0.247 mg/Kg	0.247U mg/Kg

Method: 8270D SIM
Matrix: SO

Field Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
FB-041113(RES)	4/11/2013 3:00:00 PM	1-METHYLNAPHTHALENE 2-METHYLNAPHTHALENE BIS(2-ETHYLHEXYL)PHTHALATE Diethylphthalate Di-n-butylphthalate NAPHTHALENE	0.019 ug/L 0.024 ug/L 0.082 ug/L 0.18 ug/L 0.17 ug/L 0.17 ug/L	SL-530-SA8-SB-0.0-0.5 SL-530-SA8-SB-4.0-5.0 SL-538-SA8-SB-0.0-0.5 SL-538-SA8-SB-4.0-5.0 SL-541-SA8-SB-0.0-0.5 SL-541-SA8-SB-4.0-5.0 SL-607-SA8-SB-0.0-0.5 SL-607-SA8-SB-5.0-6.0 SL-830-SA8-SB-4.0-5.0 SL-838-SA8-SB-4.0-5.0

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-538-SA8-SB-0.0-0.5(RES)	NAPHTHALENE	0.82 ug/Kg	1.8U ug/Kg

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

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Equipment Rinsate Blank Outlier Report

Lab Reporting Batch ID: PH088

Laboratory: LL

EDD Filename: PrepPH088

eQAPP Name: CDM_SSFL_131101_Lan

Method: 6010C
Matrix: SO

Equipment Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
EB-080713(REA2)	8/7/2013 3:00:00 PM	ALUMINUM MOLYBDENUM TIN	0.143 mg/L 0.0098 mg/L 0.0029 mg/L	SL-530-SA8-SB-0.0-0.5 SL-530-SA8-SB-4.0-5.0 SL-538-SA8-SB-0.0-0.5 SL-538-SA8-SB-4.0-5.0 SL-541-SA8-SB-0.0-0.5 SL-541-SA8-SB-4.0-5.0 SL-607-SA8-SB-0.0-0.5 SL-607-SA8-SB-5.0-6.0 SL-830-SA8-SB-4.0-5.0 SL-838-SA8-SB-4.0-5.0

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-530-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.344 mg/Kg	0.344U mg/Kg
SL-530-SA8-SB-4.0-5.0(RES)	MOLYBDENUM	0.516 mg/Kg	0.516U mg/Kg
SL-538-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.282 mg/Kg	0.282U mg/Kg
SL-538-SA8-SB-4.0-5.0(REA3)	MOLYBDENUM	0.230 mg/Kg	0.230U mg/Kg
SL-541-SA8-SB-0.0-0.5(REA3)	MOLYBDENUM	0.200 mg/Kg	0.200U mg/Kg
SL-541-SA8-SB-4.0-5.0(REA3)	MOLYBDENUM	0.225 mg/Kg	0.225U mg/Kg
SL-607-SA8-SB-0.0-0.5(REA3)	MOLYBDENUM	0.353 mg/Kg	0.353U mg/Kg
SL-838-SA8-SB-4.0-5.0(REA3)	MOLYBDENUM	0.247 mg/Kg	0.247U mg/Kg

Surrogate Outlier Report

Lab Reporting Batch ID: PH088

Laboratory: LL

EDD Filename: PH088_v2

eQAPP Name: CDM_SSFL_131101_Lan

Method: 8081B

Matrix: SO

<i>Sample ID (Analysis Type)</i>	<i>Surrogate</i>	<i>Sample % Recovery</i>	<i>% Recovery Limits</i>	<i>Affected Compounds</i>	<i>Flag</i>
SL-607-SA8-SB-0.0 -0.5	DECACHLOROBIPHENYL	131	20.00-120.00	All Target Analytes	J (all detects)

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

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Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH088

Laboratory: LL

EDD Filename: PH088_v2

eQAPP Name: CDM_SSFL_131101_Lan

Method: 8015M

Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-530-SA8-SB-4.0-5.0MS SL-530-SA8-SB-4.0-5.0MSD (SL-530-SA8-SB-4.0-5.0)	EFH (C15-C20) EFH (C8-C11)	169 -	- -	49.00-123.00 49.00-123.00	37 (20.00) 22 (20.00)	EFH (C15-C20) EFH (C8-C11)	J (all detects)
SL-530-SA8-SB-4.0-5.0MS SL-530-SA8-SB-4.0-5.0MSD (SL-530-SA8-SB-4.0-5.0)	EFH (C21-C30)	279	-24	49.00-123.00	109 (20.00)	EFH (C21-C30)	J(all detects) R(all non-detects)
SL-530-SA8-SB-4.0-5.0MS SL-530-SA8-SB-4.0-5.0MSD (SL-530-SA8-SB-4.0-5.0)	EFH (C30-C40)	635	9	49.00-123.00	146 (20.00)	EFH (C30-C40)	J(all detects) UJ(all non-detects)
SL-538-SA8-SB-4.0-5.0MSD (SL-538-SA8-SB-4.0-5.0)	EFH (C21-C30) EFH (C30-C40)	- -	142 197	49.00-123.00 49.00-123.00	26 (20.00) 58 (20.00)	EFH (C21-C30) EFH (C30-C40)	J(all detects)

Method: 6010C

Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-530-SA8-SB-4.0-5.0MS (TOT) SL-530-SA8-SB-4.0-5.0MSD (TOT) (SL-530-SA8-SB-0.0-0.5 SL-530-SA8-SB-4.0-5.0 SL-538-SA8-SB-0.0-0.5 SL-830-SA8-SB-4.0-5.0)	ALUMINUM CALCIUM IRON MAGNESIUM POTASSIUM TITANIUM	1713 278 329 201 137 309	1700 401 571 222 136 289	75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00	- - - - - -	ALUMINUM CALCIUM IRON MAGNESIUM POTASSIUM TITANIUM	J(all detects) Al, Ca, Mg, Ti No Qual, >4x
SL-530-SA8-SB-4.0-5.0MS (TOT) SL-530-SA8-SB-4.0-5.0MSD (TOT) (SL-530-SA8-SB-0.0-0.5 SL-530-SA8-SB-4.0-5.0 SL-538-SA8-SB-0.0-0.5 SL-830-SA8-SB-4.0-5.0)	MANGANESE	0	38	75.00-125.00	-	MANGANESE	No Qual, >4x
SL-530-SA8-SB-4.0-5.0MS (TOT) SL-530-SA8-SB-4.0-5.0MSD (TOT) (SL-530-SA8-SB-0.0-0.5 SL-530-SA8-SB-4.0-5.0 SL-538-SA8-SB-0.0-0.5 SL-830-SA8-SB-4.0-5.0)	ANTIMONY	62	64	75.00-125.00	-	ANTIMONY	J(all detects) UJ(all non-detects)

Method: 6020A

Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-530-SA8-SB-4.0-5.0MS (TOT) (SL-530-SA8-SB-0.0-0.5 SL-530-SA8-SB-4.0-5.0 SL-538-SA8-SB-0.0-0.5 SL-830-SA8-SB-4.0-5.0)	STRONTIUM	136	-	75.00-125.00	-	STRONTIUM	J(all detects)

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

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Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH088

Laboratory: LL

EDD Filename: PH088_v2

eQAPP Name: CDM_SSFL_131101_Lan

Method: 6010C
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-538-SA8-SB-4.0-5.0MS (TOT) SL-538-SA8-SB-4.0-5.0MSD (TOT) (SL-538-SA8-SB-4.0-5.0 SL-541-SA8-SB-0.0-0.5 SL-541-SA8-SB-4.0-5.0 SL-607-SA8-SB-0.0-0.5 SL-607-SA8-SB-5.0-6.0 SL-838-SA8-SB-4.0-5.0)	ALUMINUM IRON MAGNESIUM POTASSIUM TITANIUM	2265 630 294 174 252	2304 2388 297 157 305	75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00	- - - - -	ALUMINUM IRON MAGNESIUM POTASSIUM TITANIUM	J(all detects) Al, Fe, Mg, Ti No Qual, >4x
SL-538-SA8-SB-4.0-5.0MS (TOT) SL-538-SA8-SB-4.0-5.0MSD (TOT) (SL-538-SA8-SB-4.0-5.0 SL-541-SA8-SB-0.0-0.5 SL-541-SA8-SB-4.0-5.0 SL-607-SA8-SB-0.0-0.5 SL-607-SA8-SB-5.0-6.0 SL-838-SA8-SB-4.0-5.0)	CALCIUM	-2143	-2856	75.00-125.00	-	CALCIUM	No Qual, >4x
SL-538-SA8-SB-4.0-5.0MS (TOT) SL-538-SA8-SB-4.0-5.0MSD (TOT) (SL-538-SA8-SB-4.0-5.0 SL-541-SA8-SB-0.0-0.5 SL-541-SA8-SB-4.0-5.0 SL-607-SA8-SB-0.0-0.5 SL-607-SA8-SB-5.0-6.0 SL-838-SA8-SB-4.0-5.0)	ANTIMONY MANGANESE	54 67	55 175	75.00-125.00 75.00-125.00	- -	ANTIMONY MANGANESE	J(all detects) UJ(all non-detects) Mn, No Qual, >4x

Method: 6020A
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-538-SA8-SB-4.0-5.0MS (TOT) SL-538-SA8-SB-4.0-5.0MSD (TOT) (SL-538-SA8-SB-4.0-5.0 SL-541-SA8-SB-0.0-0.5 SL-541-SA8-SB-4.0-5.0 SL-607-SA8-SB-0.0-0.5 SL-607-SA8-SB-5.0-6.0 SL-838-SA8-SB-4.0-5.0)	STRONTIUM	208	29	75.00-125.00	28 (20.00)	STRONTIUM	J(all detects) UJ(all non-detects) No Qual %R >4x
SL-538-SA8-SB-4.0-5.0MS (TOT) SL-538-SA8-SB-4.0-5.0MSD (TOT) (SL-538-SA8-SB-4.0-5.0 SL-541-SA8-SB-0.0-0.5 SL-541-SA8-SB-4.0-5.0 SL-607-SA8-SB-0.0-0.5 SL-607-SA8-SB-5.0-6.0 SL-838-SA8-SB-4.0-5.0)	SILVER THALLIUM	138 146	- -	75.00-125.00 75.00-125.00	23 (20.00) 24 (20.00)	SILVER THALLIUM	J(all detects) UJ(all non-detects)

Lab Duplicate Outlier Report

Lab Reporting Batch ID: PH088

Laboratory: LL

EDD Filename: PH088_v2

eQAPP Name: CDM_SSFL_131101_Lan

Method: 6010C
Matrix: SO

QC Sample ID (Associated Sample ID)	Analyte	Sample RPD	eQAPP RPD	Flag
SL-530-SA8-SB-4.0-5.0DUP (TOT) (SL-530-SA8-SB-0.0-0.5 SL-530-SA8-SB-4.0-5.0 SL-538-SA8-SB-0.0-0.5 SL-830-SA8-SB-4.0-5.0)	CALCIUM MOLYBDENUM Zirconium	52 200 56	20.00 20.00 20.00	J (all detects) UJ (all non-detects) Mo, Zr, No Qual, OK by Difference

Method: 6020A
Matrix: SO

QC Sample ID (Associated Sample ID)	Analyte	Sample RPD	eQAPP RPD	Flag
SL-530-SA8-SB-4.0-5.0DUP (TOT) (SL-530-SA8-SB-0.0-0.5 SL-530-SA8-SB-4.0-5.0 SL-538-SA8-SB-0.0-0.5 SL-830-SA8-SB-4.0-5.0)	SILVER	200	20.00	No Qual, OK by Difference

Method: 6010C
Matrix: SO

QC Sample ID (Associated Sample ID)	Analyte	Sample RPD	eQAPP RPD	Flag
SL-538-SA8-SB-4.0-5.0DUP (TOT) (SL-538-SA8-SB-4.0-5.0 SL-541-SA8-SB-0.0-0.5 SL-541-SA8-SB-4.0-5.0 SL-607-SA8-SB-0.0-0.5 SL-607-SA8-SB-5.0-6.0 SL-838-SA8-SB-4.0-5.0)	CALCIUM MOLYBDENUM	49 200	20.00 20.00	J(all detects) UJ(all non-detects) Mo, No Qual, OK by Difference

Method: 6020A
Matrix: SO

QC Sample ID (Associated Sample ID)	Analyte	Sample RPD	eQAPP RPD	Flag
SL-538-SA8-SB-4.0-5.0DUP (TOT) (SL-538-SA8-SB-4.0-5.0 SL-541-SA8-SB-0.0-0.5 SL-541-SA8-SB-4.0-5.0 SL-607-SA8-SB-0.0-0.5 SL-607-SA8-SB-5.0-6.0 SL-838-SA8-SB-4.0-5.0)	SILVER	200	20.00	No Qual, OK by Difference

Field Duplicate RPD Report

Lab Reporting Batch ID: PH088

Laboratory: LL

EDD Filename: PH088_v2

eQAPP Name: CDM_SSFL_131101_Lan

Method: 160.3M
Matrix: SO

Analyte	Concentration (%)		Sample RPD	eQAPP RPD	Flag
	SL-530-SA8-SB-4.0-5.0	SL-830-SA8-SB-4.0-5.0			
MOISTURE	11.9	10.6	12		No Qualifiers Applied

Analyte	Concentration (%)		Sample RPD	eQAPP RPD	Flag
	SL-538-SA8-SB-4.0-5.0	SL-838-SA8-SB-4.0-5.0			
MOISTURE	13.3	13.3	0		No Qualifiers Applied

Method: 1613B
Matrix: SO

Analyte	Concentration (ng/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-530-SA8-SB-4.0-5.0	SL-830-SA8-SB-4.0-5.0			
1,2,3,4,6,7,8-HPCDF	0.0604	0.0572	5	50.00	No Qualifiers Applied
2,3,4,7,8-PCDF	0.0416	0.0571	31	50.00	
OCDF	0.158	0.173	9	50.00	
1,2,3,4,6,7,8-HPCDD	0.252	0.146	53	50.00	J(all detects) UJ(all non-detects)
1,2,3,4,7,8,9-HPCDF	0.0212	0.0620	98	50.00	
1,2,3,4,7,8-HxCDD	5.46 U	0.0499	200	50.00	
1,2,3,4,7,8-HxCDF	5.46 U	0.0715	200	50.00	
1,2,3,6,7,8-HxCDD	5.46 U	0.0902	200	50.00	
1,2,3,6,7,8-HxCDF	5.46 U	0.0473	200	50.00	
1,2,3,7,8,9-HxCDD	0.0392	0.0771	65	50.00	
1,2,3,7,8,9-HxCDF	0.0236	0.0850	113	50.00	
1,2,3,7,8-PCDF	0.0519	0.0889	53	50.00	
2,3,4,6,7,8-HxCDF	0.0159	0.0513	105	50.00	
OCDD	1.59	0.845	61	50.00	

Analyte	Concentration (ng/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-538-SA8-SB-4.0-5.0	SL-838-SA8-SB-4.0-5.0			
1,2,3,4,6,7,8-HPCDD	6.07	18.2	100	50.00	J(all detects) UJ(all non-detects)
1,2,3,4,6,7,8-HPCDF	0.543	1.43	90	50.00	
1,2,3,4,7,8,9-HPCDF	0.0459	0.139	101	50.00	
1,2,3,4,7,8-HxCDD	0.0716	0.243	109	50.00	
1,2,3,4,7,8-HxCDF	0.106	0.178	51	50.00	
1,2,3,6,7,8-HxCDD	0.381	1.07	95	50.00	
1,2,3,6,7,8-HxCDF	0.107	0.198	60	50.00	
1,2,3,7,8,9-HxCDD	0.179	0.526	98	50.00	
1,2,3,7,8,9-HxCDF	0.0716	0.120	51	50.00	
1,2,3,7,8-PCDD	5.55 U	0.196	200	50.00	
1,2,3,7,8-PCDF	0.0709	0.250	112	50.00	
2,3,4,6,7,8-HxCDF	0.0895	0.217	83	50.00	
2,3,4,7,8-PCDF	0.0502	0.106	71	50.00	
2,3,7,8-TCDD	1.11 U	0.106	200	50.00	
2,3,7,8-TCDF	1.11 U	0.104	200	50.00	
OCDD	56.6	166	98	50.00	
OCDF	0.552	1.45	90	50.00	

Field Duplicate RPD Report

Lab Reporting Batch ID: PH088

Laboratory: LL

EDD Filename: PH088_v2

eQAPP Name: CDM_SSFL_131101_Lan

Method: 6010C

Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-530-SA8-SB-4.0-5.0 (TOT)	SL-830-SA8-SB-4.0-5.0 (TOT)			
ALUMINUM	19400	16900	14	50.00	No Qualifiers Applied
ARSENIC	3.64	3.12	15	50.00	
BARIUM	97.6	93.4	4	50.00	
BERYLLIUM	0.661	0.631	5	50.00	
BORON	5.86	4.11	35	50.00	
CADMIUM	1.09	0.964	12	50.00	
CHROMIUM	27.9	23.7	16	50.00	
COBALT	7.07	6.66	6	50.00	
COPPER	16.4	13.2	22	50.00	
IRON	25600	23300	9	50.00	
LEAD	6.63	6.18	7	50.00	
LITHIUM	21.5	18.9	13	50.00	
MAGNESIUM	6470	5570	15	50.00	
MANGANESE	332	373	12	50.00	
NICKEL	15.6	16.2	4	50.00	
PHOSPHORUS	360	281	25	50.00	
POTASSIUM	1840	1440	24	50.00	
SODIUM	631	538	16	50.00	
TIN	3.38	3.25	4	50.00	
TITANIUM	1440	1170	21	50.00	
VANADIUM	51.2	43.5	16	50.00	
ZINC	54.9	46.7	16	50.00	
Zirconium	2.57	2.39	7	50.00	
CALCIUM	14200	7280	64	50.00	J(all detects)
MOLYBDENUM	0.516	2.21 U	200	50.00	UJ(all non-detects)

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-538-SA8-SB-4.0-5.0 (TOT)	SL-838-SA8-SB-4.0-5.0 (TOT)			
ALUMINUM	28000	28300	1	50.00	No Qualifiers Applied
ARSENIC	6.65	5.72	15	50.00	
BARIUM	96.2	98.0	2	50.00	
BERYLLIUM	0.841	0.888	5	50.00	
BORON	8.87	8.43	5	50.00	
CHROMIUM	34.1	35.9	5	50.00	
COBALT	8.54	9.43	10	50.00	
COPPER	15.1	16.5	9	50.00	
IRON	30700	32500	6	50.00	
LEAD	9.62	10.3	7	50.00	
LITHIUM	25.4	25.5	0	50.00	
MAGNESIUM	7020	7330	4	50.00	
MANGANESE	409	457	11	50.00	
MOLYBDENUM	0.230	0.247	7	50.00	
NICKEL	17.8	19.3	8	50.00	
PHOSPHORUS	347	371	7	50.00	
POTASSIUM	3340	3440	3	50.00	
SODIUM	93.5	95.5	2	50.00	
TIN	3.63	3.66	1	50.00	
TITANIUM	1580	1520	4	50.00	
VANADIUM	62.0	65.5	5	50.00	
ZINC	61.3	63.5	4	50.00	
Zirconium	8.30	8.38	1	50.00	
CALCIUM	31300	17800	55	50.00	J(all detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: PH088

Laboratory: LL

EDD Filename: PH088_v2

eQAPP Name: CDM_SSFL_131101_Lan

Method: 6020A
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-530-SA8-SB-4.0-5.0 (TOT)	SL-830-SA8-SB-4.0-5.0 (TOT)			
SILVER	0.0556	0.0357	44	50.00	No Qualifiers Applied
STRONTIUM	32.1	25.1	24	50.00	
THALLIUM	0.245	0.212	14	50.00	

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-538-SA8-SB-4.0-5.0 (TOT)	SL-838-SA8-SB-4.0-5.0 (TOT)			
SELENIUM	0.190	0.195	3	50.00	No Qualifiers Applied
SILVER	0.0323	0.0412	24	50.00	
STRONTIUM	47.2	52.8	11	50.00	
THALLIUM	0.411	0.431	5	50.00	

Method: 8015M
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-530-SA8-SB-4.0-5.0	SL-830-SA8-SB-4.0-5.0			
EFH (C21-C30)	7.1	4.8	39	50.00	No Qualifiers Applied
EFH (C30-C40)	6.1	4.8	24	50.00	

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-538-SA8-SB-4.0-5.0	SL-838-SA8-SB-4.0-5.0			
EFH (C21-C30)	5.8 U	3.3	200	50.00	J(all detects)
EFH (C30-C40)	12 U	5.6	200	50.00	UJ(all non-detects)

Method: 8270D SIM
Matrix: SO

Analyte	Concentration (ug/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-530-SA8-SB-4.0-5.0	SL-830-SA8-SB-4.0-5.0			
BIS(2-ETHYLHEXYL)PHTHALATE	20 U	7.2	200	50.00	J(all detects)
CHRYSENE	0.48	1.9 U	200	50.00	UJ(all non-detects)

Analyte	Concentration (ug/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-538-SA8-SB-4.0-5.0	SL-838-SA8-SB-4.0-5.0			
BIS(2-ETHYLHEXYL)PHTHALATE	7.3	21 U	200	50.00	J(all detects)
CHRYSENE	1.9 U	0.47	200	50.00	UJ(all non-detects)

Method: 9045M
Matrix: SO

Analyte	Concentration (pH unit)		Sample RPD	eQAPP RPD	Flag
	SL-530-SA8-SB-4.0-5.0	SL-830-SA8-SB-4.0-5.0			
PH	8.41	8.72	4	50.00	No Qualifiers Applied

Analyte	Concentration (pH unit)		Sample RPD	eQAPP RPD	Flag
	SL-538-SA8-SB-4.0-5.0	SL-838-SA8-SB-4.0-5.0			
PH	7.86	7.95	1	50.00	No Qualifiers Applied

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Reporting Limit Outliers

Lab Reporting Batch ID: PH088

Laboratory: LL

EDD Filename: PH088_v2

eQAPP Name: CDM_SSFL_131101_Lan

Method: 1613B
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-530-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDF	JB	0.964	5.13	PQL	ng/Kg	J (all detects)
	1,2,3,4,7,8,9-HPCDF	J	0.108	5.13	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	J	0.144	5.13	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.154	5.13	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.316	5.13	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.177	5.13	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	J	0.292	5.13	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.150	5.13	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JB	0.0754	5.13	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	1.02	5.13	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.127	5.13	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.138	5.13	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.226	1.03	PQL	ng/Kg	
	OCDF	JB	2.73	10.3	PQL	ng/Kg	
	SL-530-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.252	5.46	PQL	
1,2,3,4,6,7,8-HPCDF		JBQ	0.0604	5.46	PQL	ng/Kg	
1,2,3,4,7,8,9-HPCDF		JQ	0.0212	5.46	PQL	ng/Kg	
1,2,3,7,8,9-HXCDD		JQ	0.0392	5.46	PQL	ng/Kg	
1,2,3,7,8,9-HXCDF		JBQ	0.0236	5.46	PQL	ng/Kg	
1,2,3,7,8-PECDF		JBQ	0.0519	5.46	PQL	ng/Kg	
2,3,4,6,7,8-HXCDF		JBQ	0.0159	5.46	PQL	ng/Kg	
2,3,4,7,8-PECDF		JBQ	0.0416	5.46	PQL	ng/Kg	
OCDD		JB	1.59	10.9	PQL	ng/Kg	
OCDF		JBQ	0.158	10.9	PQL	ng/Kg	
SL-538-SA8-SB-0.0-0.5	1,2,3,4,7,8,9-HPCDF	J	0.807	5.29	PQL	ng/Kg	J (all detects)
	1,2,3,4,7,8-HxCDD	J	1.26	5.29	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	1.40	5.29	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	1.17	5.29	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	J	3.32	5.29	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.989	5.29	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JB	0.869	5.29	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	1.93	5.29	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	1.98	5.29	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.615	5.29	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.0675	1.06	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.343	1.06	PQL	ng/Kg	
	OCDF	JB	8.30	10.6	PQL	ng/Kg	
SL-538-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDF	JB	0.543	5.55	PQL	ng/Kg	J (all detects)
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0459	5.55	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0716	5.55	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.106	5.55	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.381	5.55	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.107	5.55	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.179	5.55	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.0716	5.55	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.0709	5.55	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.0895	5.55	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0502	5.55	PQL	ng/Kg	
	OCDF	JB	0.552	11.1	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH088

Laboratory: LL

EDD Filename: PH088_v2

eQAPP Name: CDM_SSFL_131101_Lan

Method: 1613B
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-541-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	3.06	5.24	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JB	0.796	5.24	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.0930	5.24	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0999	5.24	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.212	5.24	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.220	5.24	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.664	5.24	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.147	5.24	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JB	0.203	5.24	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.400	5.24	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.307	5.24	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.603	1.05	PQL	ng/Kg	
	OCDF	JB	1.23	10.5	PQL	ng/Kg	
SL-541-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.310	5.40	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JB	0.0588	5.40	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0418	5.40	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0483	5.40	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0442	5.40	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0731	5.40	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.0490	5.40	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.0319	5.40	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0867	5.40	PQL	ng/Kg	
	OCDD	JB	1.81	10.8	PQL	ng/Kg	
OCDF	JBQ	0.0876	10.8	PQL	ng/Kg		
SL-607-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDF	JBQ	1.01	5.12	PQL	ng/Kg	J (all detects)
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0890	5.12	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.201	5.12	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.288	5.12	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.269	5.12	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.328	5.12	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.413	5.12	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.187	5.12	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.487	5.12	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.336	5.12	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.194	5.12	PQL	ng/Kg	
OCDF	JB	1.67	10.2	PQL	ng/Kg		
SL-607-SA8-SB-5.0-6.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.0945	5.42	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0638	5.42	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0729	5.42	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.157	5.42	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.0949	5.42	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.131	5.42	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.0774	5.42	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.0820	5.42	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.114	5.42	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.127	5.42	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0691	5.42	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.158	5.42	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0941	1.08	PQL	ng/Kg	
	OCDD	JB	0.627	10.8	PQL	ng/Kg	
OCDF	JBQ	0.139	10.8	PQL	ng/Kg		

Reporting Limit Outliers

Lab Reporting Batch ID: PH088

Laboratory: LL

EDD Filename: PH088_v2

eQAPP Name: CDM_SSFL_131101_Lan

Method: 1613B
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-830-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JB	0.146	5.46	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JB	0.0572	5.46	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JQ	0.0620	5.46	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.0499	5.46	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0715	5.46	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.0902	5.46	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0473	5.46	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JQ	0.0771	5.46	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.0850	5.46	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.0889	5.46	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0513	5.46	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0571	5.46	PQL	ng/Kg	
	OCDD	JB	0.845	10.9	PQL	ng/Kg	
	OCDF	JBQ	0.173	10.9	PQL	ng/Kg	
SL-838-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDF	JB	1.43	5.72	PQL	ng/Kg	J (all detects)
	1,2,3,4,7,8,9-HPCDF	JB	0.139	5.72	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.243	5.72	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.178	5.72	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	1.07	5.72	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.198	5.72	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.526	5.72	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.120	5.72	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.196	5.72	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.250	5.72	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.217	5.72	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.106	5.72	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.106	1.14	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.104	1.14	PQL	ng/Kg	
	OCDF	JBQ	1.45	11.4	PQL	ng/Kg	

Method: 6010C
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-530-SA8-SB-0.0-0.5	BERYLLIUM	J	0.827	1.02	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.344	2.04	PQL	mg/Kg	
	TIN	J	3.29	10.2	PQL	mg/Kg	
	Zirconium	J	3.40	5.11	PQL	mg/Kg	
SL-530-SA8-SB-4.0-5.0	ARSENIC	J	3.64	4.54	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.661	1.14	PQL	mg/Kg	
	BORON	J	5.86	11.4	PQL	mg/Kg	
	CADMIUM	J	1.09	1.14	PQL	mg/Kg	
	MOLYBDENUM	J	0.516	2.27	PQL	mg/Kg	
	TIN	J	3.38	11.4	PQL	mg/Kg	
Zirconium	J	2.57	5.68	PQL	mg/Kg		
SL-538-SA8-SB-0.0-0.5	BERYLLIUM	J	0.851	1.04	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.282	2.08	PQL	mg/Kg	
	SODIUM	J	93.6	104	PQL	mg/Kg	
	TIN	J	3.26	10.4	PQL	mg/Kg	
	Zirconium	J	2.78	5.20	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH088

Laboratory: LL

EDD Filename: PH088_v2

eQAPP Name: CDM_SSFL_131101_Lan

Method: 6010C
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-538-SA8-SB-4.0-5.0	BERYLLIUM	J	0.841	1.13	PQL	mg/Kg	J (all detects)
	BORON	J	8.87	11.3	PQL	mg/Kg	
	MOLYBDENUM	J	0.230	2.26	PQL	mg/Kg	
	SODIUM	J	93.5	113	PQL	mg/Kg	
	TIN	J	3.63	11.3	PQL	mg/Kg	
SL-541-SA8-SB-0.0-0.5	BERYLLIUM	J	0.822	1.04	PQL	mg/Kg	J (all detects)
	CADMIUM	J	0.103	1.04	PQL	mg/Kg	
	MOLYBDENUM	J	0.200	2.07	PQL	mg/Kg	
	TIN	J	3.64	10.4	PQL	mg/Kg	
SL-541-SA8-SB-4.0-5.0	Zirconium	J	4.89	5.18	PQL	mg/Kg	J (all detects)
	ARSENIC	J	3.34	4.33	PQL	mg/Kg	
	BERYLLIUM	J	0.917	1.08	PQL	mg/Kg	
	CADMIUM	J	0.108	1.08	PQL	mg/Kg	
	MOLYBDENUM	J	0.225	2.16	PQL	mg/Kg	
SL-607-SA8-SB-0.0-0.5	TIN	J	3.59	10.8	PQL	mg/Kg	J (all detects)
	Zirconium	J	4.73	5.41	PQL	mg/Kg	
	ANTIMONY	J	0.791	4.10	PQL	mg/Kg	
	BERYLLIUM	J	0.805	1.03	PQL	mg/Kg	
	CADMIUM	J	0.182	1.03	PQL	mg/Kg	
SL-607-SA8-SB-5.0-6.0	MOLYBDENUM	J	0.353	2.05	PQL	mg/Kg	J (all detects)
	TIN	J	3.36	10.3	PQL	mg/Kg	
	BERYLLIUM	J	0.448	1.07	PQL	mg/Kg	
	BORON	J	8.28	10.7	PQL	mg/Kg	
	CADMIUM	J	0.303	1.07	PQL	mg/Kg	
SL-830-SA8-SB-4.0-5.0	SODIUM	J	103	107	PQL	mg/Kg	J (all detects)
	TIN	J	2.93	10.7	PQL	mg/Kg	
	Zirconium	J	3.56	5.36	PQL	mg/Kg	
	ARSENIC	J	3.12	4.43	PQL	mg/Kg	
	BERYLLIUM	J	0.631	1.11	PQL	mg/Kg	
	BORON	J	4.11	11.1	PQL	mg/Kg	
SL-838-SA8-SB-4.0-5.0	CADMIUM	J	0.964	1.11	PQL	mg/Kg	J (all detects)
	TIN	J	3.25	11.1	PQL	mg/Kg	
	Zirconium	J	2.39	5.54	PQL	mg/Kg	
	BERYLLIUM	J	0.888	1.12	PQL	mg/Kg	
	BORON	J	8.43	11.2	PQL	mg/Kg	
	MOLYBDENUM	J	0.247	2.24	PQL	mg/Kg	
SL-530-SA8-SB-0.0-0.5	SODIUM	J	95.5	112	PQL	mg/Kg	J (all detects)
	TIN	J	3.66	11.2	PQL	mg/Kg	

Method: 6020A
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-530-SA8-SB-0.0-0.5	SELENIUM	J	0.288	0.409	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0433	0.204	PQL	mg/Kg	
SL-530-SA8-SB-4.0-5.0	SILVER	J	0.0556	0.227	PQL	mg/Kg	J (all detects)
SL-538-SA8-SB-0.0-0.5	SELENIUM	J	0.255	0.416	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0589	0.208	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH088

Laboratory: LL

EDD Filename: PH088_v2

eQAPP Name: CDM_SSFL_131101_Lan

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-538-SA8-SB-4.0-5.0	SELENIUM	J	0.190	0.452	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0323	0.226	PQL	mg/Kg	
SL-541-SA8-SB-0.0-0.5	SILVER	J	0.0560	0.207	PQL	mg/Kg	J (all detects)
SL-541-SA8-SB-4.0-5.0	SELENIUM	J	0.316	0.433	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0413	0.216	PQL	mg/Kg	
SL-607-SA8-SB-0.0-0.5	SELENIUM	J	0.401	0.410	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0541	0.205	PQL	mg/Kg	
SL-607-SA8-SB-5.0-6.0	SELENIUM	J	0.411	0.429	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0639	0.214	PQL	mg/Kg	
SL-830-SA8-SB-4.0-5.0	SILVER	J	0.0357	0.221	PQL	mg/Kg	J (all detects)
	THALLIUM	J	0.212	0.221	PQL	mg/Kg	
SL-838-SA8-SB-4.0-5.0	SELENIUM	J	0.195	0.448	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0412	0.224	PQL	mg/Kg	

Method: 7471B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-541-SA8-SB-0.0-0.5	MERCURY	J	0.0108	0.0167	PQL	mg/Kg	J (all detects)
SL-607-SA8-SB-5.0-6.0	MERCURY	J	0.0144	0.0177	PQL	mg/Kg	J (all detects)

Method: 8015M

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-530-SA8-SB-0.0-0.5	EFH (C15-C20)	J	2.7	5.3	PQL	mg/Kg	J (all detects)
SL-530-SA8-SB-4.0-5.0	EFH (C30-C40)	J	6.1	11	PQL	mg/Kg	J (all detects)
SL-541-SA8-SB-0.0-0.5	EFH (C15-C20)	J	4.5	5.3	PQL	mg/Kg	J (all detects)
SL-541-SA8-SB-4.0-5.0	EFH (C15-C20)	J	2.7	5.6	PQL	mg/Kg	J (all detects)
SL-607-SA8-SB-0.0-0.5	EFH (C15-C20)	J	3.3	5.2	PQL	mg/Kg	J (all detects)
SL-607-SA8-SB-5.0-6.0	EFH (C21-C30)	J	5.4	5.5	PQL	mg/Kg	J (all detects)
SL-830-SA8-SB-4.0-5.0	EFH (C21-C30)	J	4.8	5.6	PQL	mg/Kg	J (all detects)
	EFH (C30-C40)	J	4.8	11	PQL	mg/Kg	
SL-838-SA8-SB-4.0-5.0	EFH (C21-C30)	J	3.3	5.8	PQL	mg/Kg	J (all detects)
	EFH (C30-C40)	J	5.6	12	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH088

Laboratory: LL

EDD Filename: PH088_v2

eQAPP Name: CDM_SSFL_131101_Lan

Method: 8081B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-607-SA8-SB-0.0-0.5	DIELDRIN	J	0.61	1.8	PQL	ug/Kg	J (all detects)
	ENDRIN ALDEHYDE	J	0.54	1.8	PQL	ug/Kg	
	HEPTACHLOR EPOXIDE	J	0.23	0.87	PQL	ug/Kg	

Method: 8082A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-541-SA8-SB-0.0-0.5	Aroclor 5460	J	25	35	PQL	ug/Kg	J (all detects)
SL-541-SA8-SB-4.0-5.0	AROCLOR 1254	J	8.5	19	PQL	ug/Kg	J (all detects)

Method: 8151A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-607-SA8-SB-0.0-0.5	2,4-D	J	19	37	PQL	ug/Kg	J (all detects)

Method: 8270D SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-530-SA8-SB-0.0-0.5	BENZO(A)ANTHRACENE	J	1.3	1.8	PQL	ug/Kg	J (all detects)
	BENZO(A)PYRENE	J	1.4	1.8	PQL	ug/Kg	
	BENZO(G,H,I)PERYLENE	J	1.2	1.8	PQL	ug/Kg	
	BENZO(K)FLUORANTHENE	J	1.2	1.8	PQL	ug/Kg	
	INDENO(1,2,3-CD)PYRENE	J	0.97	1.8	PQL	ug/Kg	
SL-530-SA8-SB-4.0-5.0	CHRYSENE	J	0.48	1.9	PQL	ug/Kg	J (all detects)
SL-538-SA8-SB-0.0-0.5	BENZO(A)ANTHRACENE	J	0.80	1.8	PQL	ug/Kg	J (all detects)
	BENZO(A)PYRENE	J	0.86	1.8	PQL	ug/Kg	
	BENZO(G,H,I)PERYLENE	J	0.74	1.8	PQL	ug/Kg	
	BENZO(K)FLUORANTHENE	J	0.76	1.8	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	6.6	19	PQL	ug/Kg	
	NAPHTHALENE	J	0.82	1.8	PQL	ug/Kg	
	PHENANTHRENE	J	1.3	1.8	PQL	ug/Kg	
SL-538-SA8-SB-4.0-5.0	BIS(2-ETHYLHEXYL)PHTHALATE	J	7.3	21	PQL	ug/Kg	J (all detects)
SL-541-SA8-SB-0.0-0.5	BENZO(G,H,I)PERYLENE	J	0.94	1.8	PQL	ug/Kg	J (all detects)
	BENZO(K)FLUORANTHENE	J	1.4	1.8	PQL	ug/Kg	
	INDENO(1,2,3-CD)PYRENE	J	0.97	1.8	PQL	ug/Kg	
SL-541-SA8-SB-4.0-5.0	BENZO(B)FLUORANTHENE	J	0.95	1.9	PQL	ug/Kg	J (all detects)
	CHRYSENE	J	0.48	1.9	PQL	ug/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH088

Laboratory: LL

EDD Filename: PH088_v2

eQAPP Name: CDM_SSFL_131101_Lan

Method: 8270D SIM
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-607-SA8-SB-0.0-0.5	2-METHYLNAPHTHALENE	J	0.88	1.7	PQL	ug/Kg	J (all detects)
	BENZO(A)ANTHRACENE	J	1.1	1.7	PQL	ug/Kg	
	BENZO(A)PYRENE	J	0.83	1.7	PQL	ug/Kg	
	BENZO(G,H,I)PERYLENE	J	0.84	1.7	PQL	ug/Kg	
	BENZO(K)FLUORANTHENE	J	0.71	1.7	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	16	19	PQL	ug/Kg	
	INDENO(1,2,3-CD)PYRENE	J	0.97	1.7	PQL	ug/Kg	
	NAPHTHALENE	J	1.1	1.7	PQL	ug/Kg	
	PHENANTHRENE	J	1.5	1.7	PQL	ug/Kg	
SL-830-SA8-SB-4.0-5.0	BIS(2-ETHYLHEXYL)PHTHALATE	J	7.2	20	PQL	ug/Kg	J (all detects)
SL-838-SA8-SB-4.0-5.0	CHRYSENE	J	0.47	1.9	PQL	ug/Kg	J (all detects)

LDC #: 30434C4

VALIDATION COMPLETENESS WORKSHEET

Date: 9/26/13

SDG #: PH088

ADR

Page: 1 of 1

Laboratory: Eurofins Lancaster Laboratories

Reviewer: *al*

2nd Reviewer: *✓*

METHOD: Metals (EPA SW 846 Method 6010C/6020A/7000)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	<i>-</i>	Sampling dates: <i>8/9/13</i>
II.	ICP/MS Tune	<i>-</i>	
III.	Calibration	<i>-</i>	
IV.	Blanks	<i>SW</i>	
V.	ICP Interference Check Sample (ICS) Analysis	<i>-</i>	
VI.	Matrix Spike Analysis	<i>SW</i>	<i>MS/D</i>
VII.	Duplicate Sample Analysis	<i>SW</i>	<i>DUP</i>
VIII.	Laboratory Control Samples (LCS)	<i>A</i>	<i>LCS</i>
IX.	Internal Standard (ICP-MS)	<i>N</i>	
X.	Furnace Atomic Absorption QC	<i>N</i>	
XI.	ICP Serial Dilution	<i>SW</i>	
XII.	Sample Result Verification	<i>N</i>	
XIII.	Overall Assessment of Data	<i>N</i>	
XIV.	Field Duplicates	<i>-</i>	<i>(2,3) (5,6)</i>
XV.	Field Blanks	<i>SW</i>	<i>FB=FB-041113 EB=EB-080713</i>

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

(PH029)
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank
(PH086)

Validated Samples: *soil*

<i>✓</i> 1	SL-530-SA8-SB-0.0-0.5	<i>✓</i> 11	SL-530-SA8-SB-4.0-5.0MS	21		31	
2	SL-530-SA8-SB-4.0-5.0	12	SL-530-SA8-SB-4.0-5.0MSD	22		32	
3	SL-830-SA8-SB-4.0-5.0	<i>✓</i> 13	SL-530-SA8-SB-4.0-5.0DUP	23		33	
<i>✓</i> 4	SL-538-SA8-SB-0.0-0.5	<i>✓</i> 14	SL-538-SA8-SB-4.0-5.0MS	24		34	
<i>✓</i> 5	SL-538-SA8-SB-4.0-5.0	<i>✓</i> 15	SL-538-SA8-SB-4.0-5.0MSD	25		35	
6	SL-838-SA8-SB-4.0-5.0	<i>✓</i> 16	SL-538-SA8-SB-4.0-5.0DUP	26		36	
7	SL-541-SA8-SB-0.0-0.5	17		27		37	
8	SL-541-SA8-SB-4.0-5.0	18		28		38	
9	SL-607-SA8-SB-0.0-0.5	19		29		39	
<i>✓</i> 10	SL-607-SA8-SB-5.0-6.0	20		30		40	

Notes: _____

LDC #: 30434C4

VALIDATION FINDINGS WORKSHEET
 PB/ICB/CCB QUALIFIED SAMPLES

Page: 2 of 3

Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000)

Soil preparation factor applied: 100x

Reason: B

Sample Concentration units, unless otherwise noted: mg/Kg

Associated Samples: 1-4

Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (ug/l)	Maximum ICB/CCB ^a (ug/l)	Action Level	Sample Identification											
					1	2	4									
Mo			1.9	0.95	0.344 0.34	0.516 0.52	0.282 0.28									

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

VALIDATION FINDINGS WORKSHEET

Field Blanks

METHOD: Trace Metals (EPA SW846 6010B/7000)

Blank units: mg/L **Associated sample units:** mg/Kg Reason: F

Sampling date: 4/11/13 Soil factor applied 100x

Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: All

Analyte	Blank ID	Sample Identification										
	FB-041113 (SDG: PH029)	Action Limit	1	2	4	5	6	7	8	9		
Cu	0.0036	1.8										
Mo	0.0036	1.8	0.344 0.34	0.516 0.52	0.287 0.28	0.230 0.23	0.247 0.25	0.200 0.20	0.225 0.23	0.353 0.36		

Sampling date: 8/7/13 Soil factor applied 100x

Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: All

Analyte	Blank ID	Sample Identification										
	EB-080713 (SDG: PH086)	Action Limit	1, 2, 4-9									
Al	0.143	71.5										
Mo	0.0098	4.9	See FB									
Sn	0.0029	1.45										

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
 Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".



Lancaster
Laboratories

duplicate 1-4

QUALITY ASSURANCE SUMMARY
FORM 5A (MS/MSD)
MATRIX SPIKE/MATRIX SPIKE DUPLICATE
SDG No.: PH088
Matrix: SOIL

Level
(low/med): LOW

SL-530-SA8-SB-4.0-5.0

Background Lab Sample ID: 7156754BKG Matrix Spike Lab Sample ID: 7156755MS Matrix Spike Duplicate Lab Sample ID: 7156756MSD
Batch Id(s): P22337A, P23138A

Analyte	Mass	BKG Sample		MS Sample		MSD Sample		MS Spike Added	MSD Spike Added	Units	MS		MSD		RPD	Control Limit			
		Result	C	Result	C	Result	C				%R	Q	%R	Q		%R	RPD	M	
Aluminum		17083.0730		20509.4590		20482.5350		200.0000	200.0000	MG/KG	117	113	170	100	0		20	P	
Antimony		0.7400	U	30.9810		31.7740		50.0000	50.0000	MG/KG	62	N	64	N	3	75 - 125	20	P	
Arsenic		3.2060	B	17.9000		18.3950		15.0000	15.0000	MG/KG	98		101		3	75 - 125	20	P	
Barium		85.9770		279.2300		281.8090		200.0000	200.0000	MG/KG	97		98		1	75 - 125	20	P	
Beryllium		0.5820	B	5.5400		5.5620		5.0000	5.0000	MG/KG	99		100		0	75 - 125	20	P	
Boron		5.1600	B	199.5850		197.8280		200.0000	200.0000	MG/KG	97		96		1	75 - 125	20	P	
Cadmium		0.9640	B	5.5530		5.7730		5.0000	5.0000	MG/KG	92		96		4	75 - 125	20	P	
Calcium		12531.1280		13642.1350		14133.5490		400.0000	400.0000	MG/KG	278		401		4			20	P
Chromium		24.6090		45.9060		46.3010		20.0000	20.0000	MG/KG	106		108		1	75 - 125	20	P	
Cobalt		6.2280		50.7940		52.3660		50.0000	50.0000	MG/KG	89		92		3	75 - 125	20	P	
Copper		14.4690		40.8770		41.0430		25.0000	25.0000	MG/KG	106		106		0	75 - 125	20	P	
Iron		22577.7970		22906.4520		23148.5520		100.0000	100.0000	MG/KG	329		571		1			20	P
Lead		5.8440		19.6370		20.4560		15.0000	15.0000	MG/KG	92		97		4	75 - 125	20	P	
Lithium		18.9460		113.4440		114.0070		100.0000	100.0000	MG/KG	94		95		0	75 - 125	20	P	
Magnesium		5699.2620		6101.3830		6143.0950		200.0000	200.0000	MG/KG	201		222		1			20	P
Manganese		292.8510		293.0810		311.9510		50.0000	50.0000	MG/KG	0		38		6			20	P
Mercury		0.0097	U	0.1826		0.1805		0.1628	0.1630	MG/KG	112		111		1	65 - 135	20	CV	
Molybdenum		0.4550	B	186.9820		191.7470		200.0000	200.0000	MG/KG	93		96		3	75 - 125	20	P	
Nickel		13.7540		58.6110		61.3840		50.0000	50.0000	MG/KG	90		95		5	75 - 125	20	P	
Phosphorus		316.8430		411.7730		414.5770		100.0000	100.0000	MG/KG	95		98		1	75 - 125	20	P	
Potassium		1621.1240		2989.1230		2982.0330		1000.0000	1000.0000	MG/KG	137	N	136	N	0	75 - 125	20	P	
Selenium	78	0.1000	U	1.9938		1.9752		2.0000	2.0000	MG/KG	100		99		1	75 - 125	20	MS	
Silver	107	0.0490	B	10.4456		10.2942		10.0000	10.0000	MG/KG	104		102		1	75 - 125	20	MS	
Sodium		556.1220		1523.9040		1530.3650		1000.0000	1000.0000	MG/KG	97		97		0	75 - 125	20	P	
Strontium	88	28.2986		39.1866		37.5476		8.0000	8.0000	MG/KG	136	N	116		4	75 - 125	20	MS	
Thallium	203	0.2160		0.6324		0.6534		0.4000	0.4000	MG/KG	104		109		3	75 - 125	20	MS	

Note: Results shown are reported on an as-received basis.

METHODS: P = ICP Atomic Emission Spectrometer MS = ICP Mass Spectrometry	CV = Cold Vapor AF = Cold Vapor Atomic Fluorescence	CONCENTRATION QUALIFIERS: U= Below MDL, B= Below LOQ FLAGS: N = Matrix Spike OOS, * = Duplicate OOS
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ADDC 1-4

QUALITY ASSURANCE SUMMARY
 FORM 5A (MS/MSD)
 MATRIX SPIKE/MATRIX SPIKE DUPLICATE
 SDG No.: PH088
 Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7156754BKG Matrix Spike Lab Sample ID: 7156755MS Matrix Spike Duplicate Lab Sample ID: 7156756MSD
 Batch Id(s): P22337A, P23138A

Analyte	Mass	BKG Sample		MS Sample		MSD Sample		MS Spike Added	MSD Spike Added	Units	MS		MSD		Control Limit				
		Result	C	Result	C	Result	C				%R	Q	%R	Q	RPD	Q	%R	RPD	M
Tin		2.9780	B	347.4710		357.9730		400.0000	400.0000	MG/KG	86		89		3	75 - 125	20	P	
Titanium		1267.1940		1576.1010		1556.1460		100.0000	100.0000	MG/KG	309		289		1			20	P
Vanadium		45.1040		98.5800		99.8080		50.0000	50.0000	MG/KG	107		109		1	75 - 125	20	P	
Zinc		48.3700		96.1810		99.3540		50.0000	50.0000	MG/KG	96		102		3	75 - 125	20	P	
Zirconium		2.2610	B	97.1860		97.9020		100.0000	100.0000	MG/KG	95		96		1	75 - 125	20	P	

Note: Results shown are reported on an as-received basis.

<p>METHODS: P = ICP Atomic Emission Spectrometer CV = Cold Vapor MS = ICP Mass Spectrometry AF = Cold Vapor Atomic Fluorescence</p>	<p>CONCENTRATION QUALIFIERS: U= Below MDL, B= Below LOQ FLAGS: N = Matrix Spike OOS, * = Duplicate OOS</p>
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Background Lab Sample ID: 7156754BKG
 Batch ID(s): P22337A, P23138A
 Concentration Units: MG/KG

Duplicate Lab Sample ID: 7156757DUP

Analyte	Mass	Control Limit	Samples (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum			17083.0730		17634.2360		3		P
Antimony			-1.0750	B	-0.9410	B	-13		P
Arsenic			3.2060	B	3.5700	B	11		P
Barium			85.9770		86.8650		1		P
Beryllium			0.5820	B	0.5770	B	1		P
Boron			5.1600	B	4.6550	B	10		P
Cadmium			0.9640	B	0.9910	B	3		P
Calcium			12531.1280		21419.9100		52	*	P
Chromium			24.6090		25.5320		4		P
Cobalt			6.2280		5.9390		5		P
Copper			14.4690		14.2330		2		P
Iron			22577.7970		22655.7490		0		P
Lead		3.0	5.8440		5.9950		3		P
Lithium		4.0	18.9460		18.7910		1		P
Magnesium			5699.2620		5892.7890		3		P
Manganese			292.8510		270.5010		8		P
Mercury			0.0097	U	0.0096	U			CV
Molybdenum			0.4550	B	0.1700	U	200		P
Nickel			13.7540		13.6880		0		P
Phosphorus			316.8430		340.6470		7		P
Potassium			1621.1240		1599.3090		1		P
Selenium	78		0.1000	U	0.1000	U			MS
Silver	107		0.0490	B	0.0260	U	200		MS
Sodium			556.1220		600.1470		8		P
Strontium	88		28.2986		30.5108		8		MS
Thallium	203	0.2	0.2160		0.2258		4		MS
Tin			2.9780	B	3.0820	B	3		P
Titanium			1267.1940		1253.4180		1		P
Vanadium			45.1040		46.0340		2		P
Zinc			48.3700		48.6870		1		P
Zirconium			2.2610	B	4.0150	B	56		P

NOTE: An asterisk (*) in column "Q" indicates poor duplicate precision (RPD > 20% OR |(S) - (D)| > LOQ for values < 5x LOQ).
 The data are considered to be valid because the laboratory control sample is within the control limits. See the Laboratory Control Sample.

~~Subtract Reference~~

Associate
14

Note: Results shown are reported on an as-received basis.

METHODS: P = ICP Atomic Emission Spectrometer MS = ICP Mass Spectrometry CV = Cold Vapor AF = Cold Vapor Atomic Fluorescence	CONCENTRATION QUALIFIERS: U= Below MDL B= Below LOQ FLAGS: Duplicate Out of Spec
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QUALITY ASSURANCE SUMMARY

FORM 9

SERIAL DILUTIONS

SDG No.: PH088

Matrix: SOIL

Level

LOW

(low/med):

Background Lab Sample ID: 7156754BKG

Serial Dilution Lab Sample ID: 7156754L

Batch ID(s): P22337A

Concentration Units: UG/L

Analyte	Mass	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Diff.	Q	M
Aluminum		170830.7300		178155.7500		4		P
Antimony		7.4000	U	37.0000	U			P
Arsenic		32.0600	B	35.9000	B	12		P
Barium		859.7700		907.6000		6		P
Beryllium		5.8200	B	5.9000	B	1		P
Boron		51.6000	B	83.0500	B	61		P
Cadmium		9.6400	B	13.2000	B	37		P
Calcium		125311.2800		132497.4000		6		P
Chromium		246.0900		251.8500		2		P
Cobalt		62.2800		70.0000		12	E	P
Copper		144.6900		144.5500		0		P
Iron		225777.9700		226093.8000		0		P
Lead		58.4400		64.5500	B	10		P
Lithium		189.4600		204.4000		8		P
Magnesium		56992.6200		60127.0500		5		P
Manganese		2928.5100		3086.2500		5		P
Molybdenum		4.5500	B	22.8500	B	402		P
Nickel		137.5400		146.3500		6		P
Phosphorus		3168.4300		3234.9500		2		P
Potassium		16211.2400		16350.5500		1		P
Selenium	78	0.5000	U	2.5000	U			MS
Silver	107	0.2450	B	0.6500	U	100		MS
Sodium		5561.2200		5605.0000		1		P
Strontium	88	141.4930		139.1950		2		MS
Thallium	203	1.0800		1.0450	B	3		MS
Tin		29.7800	B	30.4500	B	2		P
Titanium		12671.9400		12884.8500		2		P
Vanadium		451.0400		456.2000		1		P
Zinc		483.7000		495.1500		2		P
Zirconium		22.6100	B	60.4500	B	167		P

NOTE: An E in column Q indicates the presence of a chemical or physical interference in the matrix when the % difference is greater than 10%. This applies only when (I) is greater than or equal to 50x MDL for ICP, 100x MDL for ICP-MS (6020), 50x MDL for ICP-MS (200.8), or 25x MDL for GFAA.

~~PH088 (A) associate 14~~

<p>METHODS: P = ICP Atomic Emission Spectrometer MS = ICP Mass Spectrometry</p>	<p>CONCENTRATION QUALIFIERS: U= Below MDL B= Below LOQ</p> <p>FLAGS: E = Matrix Effects exist as proven by Serial Dilution or Spiked Dilution</p>
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Lancaster Laboratories

QUALITY ASSURANCE SUMMARY

FORM 5A (MS/MSD)

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

SDG No.: PH088

Matrix: SOIL

Level

(low/med):

LOW

Handwritten: Sr RPD out

SL 538-SA8-SB-4.0-5.0

Background Lab Sample ID: 7156760BKG Matrix Spike Lab Sample ID: 7156761MS Matrix Spike Duplicate Lab Sample ID: 7156762MSD
Batch Id(s): P22337B, P23138B

Analyte	Mass	BKG Sample		MS Sample		MSD Sample		MS Spike Added	MSD Spike Added	Units	MS		MSD		RPD	Control Limit		
		Result	C	Result	C	Result	C				%R	Q	%R	Q		%R	RPD	M
Aluminum		243.08	8843	287.45	1422	288.21	5931	196.0784	196.0784	MG/KG	2265	N	2304	N	0			20P
Antimony		0.7255	U	26.5078		26.8402		49.0196	49.0196	MG/KG	54	N	55	N	1	75 - 125		20P
Arsenic		5.7676		19.5461		19.6510		14.7059	14.7059	MG/KG	94		94		1	75 - 125		20P
Barium		83.3647		284.6275		288.9725		196.0784	196.0784	MG/KG	103		105		2	75 - 125		20P
Beryllium		0.7294	B	5.5108		5.6167		4.9020	4.9020	MG/KG	98		100		2	75 - 125		20P
Boron		7.6931	B	199.5088		201.5647		196.0784	196.0784	MG/KG	98		99		1	75 - 125		20P
Cadmium		0.0745	U	4.6294		4.6186		4.9020	4.9020	MG/KG	94		94		0	75 - 125		20P
Calcium		27149.8843		18744.5745		15949.2765		392.1569	392.1569	MG/KG	2143		2856		16			20P
Chromium		29.5814		49.8480		50.6000		19.6078	19.6078	MG/KG	103		107		1	75 - 125		20P
Cobalt		7.4000		53.3627		54.7020		49.0196	49.0196	MG/KG	94		96		2	75 - 125		20P
Copper		13.1294		38.8461		39.3931		24.5098	24.5098	MG/KG	105		107		1	75 - 125		20P
Iron		26576.8412		27194.6686		28917.8000		98.0392	98.0392	MG/KG	630		2388		6			20P
Lead		8.3431		22.1539		22.5157		14.7059	14.7059	MG/KG	94		96		2	75 - 125		20P
Lithium		22.0255		121.4010		122.3951		98.0392	98.0392	MG/KG	101		102		1	75 - 125		20P
Magnesium		6083.4451		6660.2657		6666.4059		196.0784	196.0784	MG/KG	294		297		0			20P
Manganese		354.8882		387.5627		440.4814		49.0196	49.0196	MG/KG	67		175		13			20P
Mercury		0.0100	U	0.1875		0.1905		0.1575	0.1615	MG/KG	119		118		2	65 - 135		20CV
Molybdenum		0.1990	B	181.9284		183.7490		196.0784	196.0784	MG/KG	93		94		1	75 - 125		20P
Nickel		15.3902		61.7814		63.2696		49.0196	49.0196	MG/KG	95		98		2	75 - 125		20P
Phosphorus		300.8225		414.5304		402.0333		98.0392	98.0392	MG/KG	116		103		3	75 - 125		20P
Potassium		2891.8931		4593.4010		4428.4402		980.3922	980.3922	MG/KG	174	N	157	N	4	75 - 125		20P
Selenium	78	0.1647	B	2.4829		2.0873		1.9608	1.9608	MG/KG	118		98		17	75 - 125		20MS
Silver	107	0.0280	B	13.5929		10.7853		9.8039	9.8039	MG/KG	138	N	110		23	* 75 - 125		20MS
Sodium		81.0882	B	1060.2314		1051.6637		980.3922	980.3922	MG/KG	100		99		1	75 - 125		20P
Sulfur	88	40.8998		57.2292		43.1665		7.8431	7.8431	MG/KG	208		29		28	*		20MS
Thallium	203	0.3563		0.9275		0.7278		0.3922	0.3922	MG/KG	146	N	95		24	* 75 - 125		20MS

Note: Results shown are reported on an as-received basis.

METHODS:		CONCENTRATION QUALIFIERS:	
P = ICP Atomic Emission Spectrometer	CV = Cold Vapor	U = Below MDL, B = Below LOQ	
MS = ICP Mass Spectrometry	AF = Cold Vapor Atomic Fluorescence	FLAGS:	
		N = Matrix Spike OOS, * = Duplicate OOS	

QUALITY ASSURANCE SUMMARY

FORM 6

DUPLICATES

SDG No.: PH088

Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7156760BK
 Batch ID(s): P22337B, P23138B
 Concentration Units: MG/KG

Duplicate Lab Sample ID: 7156763DUP

Analyte	Mass	Control Limit	Samples (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum			24303.8843		23887.2069		2		P
Antimony			0.7255	U	0.7255	U			P
Arsenic		3.9	5.7676		5.3843		7		P
Barium			83.3647		82.9000		1		P
Beryllium			0.7294	B	0.7353	B	1		P
Boron			7.6931	B	7.0765	B	8		P
Cadmium			0.0745	U	0.0745	U			P
Calcium			27149.8843		16430.5814		49	*	P
Chromium			29.5814		29.6490		0		P
Cobalt			7.4000		7.1304		4		P
Copper			13.1294		13.4784		3		P
Iron			26576.8412		26919.8412		1		P
Lead		2.9	8.3431		8.1137		3		P
Lithium			22.0255		21.8510		1		P
Magnesium			6083.4451		6171.6441		1		P
Manganese			354.8882		338.2647		5		P
Mercury			0.0100	U	0.0099	U			CV
Molybdenum			0.1990	B	0.1667	U	200		P
Nickel			15.3902		15.4696		1		P
Phosphorus			300.8225		308.1363		2		P
Potassium			2891.8931		2890.6971		0		P
Selenium	78		0.1647	B	0.1341	B	20		MS
Silver	107		0.0280	B	0.0255	U	200		MS
Sodium			81.0882	B	80.7667	B	0		P
Strontium	88		40.8998		38.8159		5		MS
Thallium	203	0.2	0.3563		0.3190		11		MS
Tin			3.1441	B	3.1471	B	0		P
Titanium			1372.2745		1323.8294		4		P
Vanadium			53.7863		53.9363		0		P
Zinc			53.1784		53.3686		0		P
Zirconium		4.9	7.1931		7.0510		2		P

NOTE: An asterisk (*) in column "Q" indicates poor duplicate precision (RPD > 20% OR |(S) - (D)| > LOQ for values < 5x LOQ).
 The data are considered to be valid because the laboratory control sample is within the control limits. See the Laboratory Control Sample.

*as by reference
 associate w/ 5-10*

Note: Results shown are reported on an as-received basis.

<p>METHODS:</p> <p>P = ICP Atomic Emission Spectrometer MS = ICP Mass Spectrometry CV = Cold Vapor AF = Cold Vapor Atomic Fluorescence</p>	<p>CONCENTRATION QUALIFIERS:</p> <p>U= Below MDL B= Below LOQ</p> <p>FLAGS: 3387* = Duplicate Out of Spec</p>
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QUALITY ASSURANCE SUMMARY

FORM 9

SERIAL DILUTIONS

SDG No.: PH088

Matrix: SOIL

Level

LOW

(low/med):

Background Lab Sample ID: 7156760BKG

Serial Dilution Lab Sample ID: 7156760L

Batch ID(s): P22337B

Concentration Units: UG/L

Analyte	Mass	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Diff.	Q	M
Aluminum		247899.6200		256686.5500		4		P
Antimony		7.4000	U	37.0000	U			P
Arsenic		58.8300		109.8000	B	87		P
Barium		850.3200		883.1500		4		P
Beryllium		7.4400	B	8.0500	B	8		P
Boron		78.4700	B	118.6000	B	51		P
Cadmium		0.7600	U	3.8000	U			P
Calcium		276928.8200		287301.2000		4		P
Chromium		301.7300		329.2500		9		P
Cobalt		75.4800		78.7000		4		P
Copper		133.9200		135.9500		2		P
Iron		135541.8900		130820.9500		3		P
Lead		85.1000		94.1500	B	11		P
Lithium		224.6600		220.4000		2		P
Magnesium		62051.1400		64918.8000		5		P
Manganese		3619.8600		3911.0000		8		P
Molybdenum		2.0300	B	8.5000	U	100		P
Nickel		156.9800		176.7500		13		P
Phosphorus		3068.3900		3156.4500		3		P
Potassium		29497.3100		30433.1000		3		P
Selenium	78	0.8400	B	2.5000	U	100		MS
Silver	107	0.1430	B	0.6500	U	100		MS
Sodium		827.1000	B	868.1500	B	5		P
Strontium	88	208.5890		169.6000		19		MS
Thallium	203	1.8170		1.4450	B	20		MS
Tin		32.0700	B	29.7500	B	7		P
Titanium		6998.6000		6931.7000		1		P
Vanadium		548.6200		577.1500		5		P
Zinc		542.4200		569.2000		5		P
Zirconium		73.3700		85.2500	B	16		P

NOTE: An E in column Q indicates the presence of a chemical or physical interference in the matrix when the % difference is greater than 10%. This applies only when (I) is greater than or equal to 50x MDL for ICP, 100x MDL for ICP-MS (6020), 50x MDL for ICP-MS (200.8), or 25x MDL for GFAA.

(Signature)
associate w/ 510

<p>METHODS:</p> <p>P = ICP Atomic Emission Spectrometer</p> <p>MS = ICP Mass Spectrometry</p>	<p>CONCENTRATION QUALIFIERS:</p> <p>U= Below MDL</p> <p>B= Below LOQ</p> <p>FLAGS:</p> <p>E = Matrix Effects exist as proven by Serial Dilution or Spiked Dilution</p>
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**Data Validation Report
Santa Susana Field Laboratory**

Subarea 8

SDG: PH089

Prepared for

CDM Smith
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Prepared by

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November 16, 2013

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on August 12, 2013. Data validation was performed in accordance with the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008), Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005), and for Inorganic Data Review (January 2010). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Semivolatiles (SVOCs) by Environmental Protection Agency (EPA) SW 846 Method 8270D utilizing Selective Ion Monitoring (SIM)

Pesticides by EPA SW 846 Method 8081B

Polychlorinated Biphenyls (PCBs) by EPA SW 846 Method 8082A

Metals by EPA SW 846 Method 6010C, 6020A, and 7471B

Herbicides by EPA SW 846 Method 8151A

Total Petroleum Hydrocarbons (TPH) as Gasoline by EPA SW 846 Method 8015M

TPH as Extractables by EPA SW 846 Method 8015M

Dioxins and Dibenzofurans by EPA Method 1613B

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment II. Level III Automated Data Review outliers are presented in Enclosure I.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibration blanks (ICB/CCBs), surrogates, internal standards (dioxins only), matrix spike/matrix spike duplicates (MS/MSD), laboratory duplicates (DUP), laboratory control sample/laboratory control sample duplicates (LCS/LCSD), ICP serial dilutions, method blanks, equipment blanks, field blanks and trip blanks. No samples in this SDG were subjected to Level IV evaluation.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of ICB/CCBs and ICP serial dilutions, which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

II. Initial Calibration

Initial Calibration data were not reviewed for level III.

III. Continuing Calibration

Continuing calibration data were not reviewed for level III.

IV. Blanks

Method blanks were performed at the required frequencies. No contaminant concentrations were detected in the method or preparation blanks with the exception of several blanks for dioxins and metals. The associated sample results were qualified as non-detected (U) due to method blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the associated blanks were not qualified. The details regarding the qualification of data are provided in Enclosure I.

No contaminant concentrations were detected in the initial or continuing calibration blanks.

V. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. ICP Interference Check Sample (ICS) Analysis

ICP interference check data were not reviewed for level III.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed at the required frequency. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of one MS/MSD pair for metals in SDG PH090. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosure I of the DVR for SDG PH090.

VIII. Laboratory Duplicates Sample

Laboratory duplicates (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits with the exception of one DUP for metals in SDG PH090. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosure I of the DVR for SDG PH090.

IX. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of one LCS/LCSD pair for PCBs. The associated sample results were qualified as detected estimated (J) as applicable. The details regarding the qualification of data are provided in Enclosure I.

X. Internal Standards

Internal standards were reviewed for dioxins. Percent recoveries (%R) were within QC limits.

XI. ICP Serial Dilution

ICP serial dilution analysis was performed by the laboratory. The analysis criteria were met.

XII. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the RL as detected were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH089	All compounds reported as detected below the RL.	J (all detects)	A

XIII. Field Duplicate Samples

No field duplicates were identified in this SDG.

XIV. Field Blank Samples

One trip blank was collected and analyzed for TPH as gasoline. No contaminants were found in the trip blank.

One equipment blank (from SDG PH091) was collected and analyzed for SVOCs, pesticides, PCBs, metals, herbicides, TPH as gasoline, TPH as extractables and dioxins. The equipment blank had several detections for SVOCs, metals and dioxins. The associated sample results were qualified as non-detected (U) due to equipment blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the equipment blanks were not qualified. The equipment blank outlier reports are presented in Enclosure I.

One field blank (from SDG PH029) was collected and analyzed for SVOCs, pesticides, PCBs, metals, herbicides, TPH as gasoline, TPH as extractables and dioxins. The field blank had detections for several SVOCs, metals and dioxins. The associated sample results were qualified as non-detected (U) due to field blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the field blank were not qualified. The field blank outlier reports are presented in Enclosure I.

XV. Overall Assessment of Data

No data associated with this sampling event were rejected. The overall assessment of QA/QC data review by automated and manual validation of this sampling event met project requirements and analytical completeness levels with the exceptions noted in the above sections. All data are deemed useable for the intended use.

Data flags are summarized and are presented as Attachment 2.

Attachment 1
Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
12-Aug-2013	TB-081213	7158598	TB	5030B	8015M	III
12-Aug-2013	SL-593-SA8-SB-0.0-0.5	7158605	N	3050B	6010C	III
12-Aug-2013	SL-593-SA8-SB-0.0-0.5	7158605	N	3050B	6020A	III
12-Aug-2013	SL-593-SA8-SB-0.0-0.5	7158605	N	3546	8015M	III
12-Aug-2013	SL-593-SA8-SB-0.0-0.5	7158605	N	3546	8082A	III
12-Aug-2013	SL-593-SA8-SB-0.0-0.5	7158605	N	3546	8270D SIM	III
12-Aug-2013	SL-593-SA8-SB-0.0-0.5	7158605	N	METHOD	1613B	III
12-Aug-2013	SL-593-SA8-SB-0.0-0.5	7158605	N	METHOD	7471B	III
12-Aug-2013	SL-593-SA8-SB-4.0-5.0	7158606	N	3050B	6010C	III
12-Aug-2013	SL-593-SA8-SB-4.0-5.0	7158606	N	3050B	6020A	III
12-Aug-2013	SL-593-SA8-SB-4.0-5.0	7158606	N	3546	8015M	III
12-Aug-2013	SL-593-SA8-SB-4.0-5.0	7158606	N	3546	8082A	III
12-Aug-2013	SL-593-SA8-SB-4.0-5.0	7158606	N	3546	8270D SIM	III
12-Aug-2013	SL-593-SA8-SB-4.0-5.0	7158606	N	5035A	8015M	III
12-Aug-2013	SL-593-SA8-SB-4.0-5.0	7158606	N	METHOD	1613B	III
12-Aug-2013	SL-593-SA8-SB-4.0-5.0	7158606	N	METHOD	7471B	III
12-Aug-2013	SL-592-SA8-SB-0.0-0.5	7158603	N	3050B	6010C	III
12-Aug-2013	SL-592-SA8-SB-0.0-0.5	7158603	N	3050B	6020A	III
12-Aug-2013	SL-592-SA8-SB-0.0-0.5	7158603	N	3546	8015M	III
12-Aug-2013	SL-592-SA8-SB-0.0-0.5	7158603	N	3546	8082A	III
12-Aug-2013	SL-592-SA8-SB-0.0-0.5	7158603	N	3546	8270D SIM	III
12-Aug-2013	SL-592-SA8-SB-0.0-0.5	7158603	N	METHOD	1613B	III
12-Aug-2013	SL-592-SA8-SB-0.0-0.5	7158603	N	METHOD	7471B	III
12-Aug-2013	SL-592-SA8-SB-3.5-4.5	7158604	N	3050B	6010C	III
12-Aug-2013	SL-592-SA8-SB-3.5-4.5	7158604	N	3050B	6020A	III
12-Aug-2013	SL-592-SA8-SB-3.5-4.5	7158604	N	3546	8015M	III

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
12-Aug-2013	SL-592-SA8-SB-3.5-4.5	7158604	N	3546	8082A	III
12-Aug-2013	SL-592-SA8-SB-3.5-4.5	7158604	N	3546	8270D SIM	III
12-Aug-2013	SL-592-SA8-SB-3.5-4.5	7158604	N	5035A	8015M	III
12-Aug-2013	SL-592-SA8-SB-3.5-4.5	7158604	N	METHOD	1613B	III
12-Aug-2013	SL-592-SA8-SB-3.5-4.5	7158604	N	METHOD	7471B	III
12-Aug-2013	SL-591-SA8-SB-0.0-0.5	7158602	N	3050B	6010C	III
12-Aug-2013	SL-591-SA8-SB-0.0-0.5	7158602	N	3050B	6020A	III
12-Aug-2013	SL-591-SA8-SB-0.0-0.5	7158602	N	3546	8015M	III
12-Aug-2013	SL-591-SA8-SB-0.0-0.5	7158602	N	3546	8082A	III
12-Aug-2013	SL-591-SA8-SB-0.0-0.5	7158602	N	3546	8270D SIM	III
12-Aug-2013	SL-591-SA8-SB-0.0-0.5	7158602	N	METHOD	1613B	III
12-Aug-2013	SL-591-SA8-SB-0.0-0.5	7158602	N	METHOD	7471B	III
12-Aug-2013	SL-590-SA8-SB-0.0-0.5	7158599	N	3546	8015M	III
12-Aug-2013	SL-590-SA8-SB-0.0-0.5	7158599	N	3546	8081B	III
12-Aug-2013	SL-590-SA8-SB-0.0-0.5	7158599	N	3546	8082A	III
12-Aug-2013	SL-590-SA8-SB-0.0-0.5	7158599	N	3546	8270D SIM	III
12-Aug-2013	SL-590-SA8-SB-0.0-0.5	7158599	N	3550B	8151A	III
12-Aug-2013	SL-590-SA8-SB-0.0-0.5	7158599	N	METHOD	1613B	III
12-Aug-2013	SL-590-SA8-SB-0.0-0.5MSD	P158599M242322A	MSD	3546	8082A	III
12-Aug-2013	SL-590-SA8-SB-0.0-0.5MS	P158599R242304A	MS	3546	8082A	III
12-Aug-2013	SL-590-SA8-SB-4.0-5.0	7158600	N	3050B	6010C	III
12-Aug-2013	SL-590-SA8-SB-4.0-5.0	7158600	N	3050B	6020A	III
12-Aug-2013	SL-590-SA8-SB-4.0-5.0	7158600	N	3546	8015M	III
12-Aug-2013	SL-590-SA8-SB-4.0-5.0	7158600	N	3546	8081B	III
12-Aug-2013	SL-590-SA8-SB-4.0-5.0	7158600	N	3546	8082A	III
12-Aug-2013	SL-590-SA8-SB-4.0-5.0	7158600	N	3546	8270D SIM	III

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
12-Aug-2013	SL-590-SA8-SB-4.0-5.0	7158600	N	3550B	8151A	III
12-Aug-2013	SL-590-SA8-SB-4.0-5.0	7158600	N	5035A	8015M	III
12-Aug-2013	SL-590-SA8-SB-4.0-5.0	7158600	N	METHOD	1613B	III
12-Aug-2013	SL-590-SA8-SB-4.0-5.0	7158600	N	METHOD	7471B	III
12-Aug-2013	SL-590-SA8-SB-7.0-8.0	7158601	N	3050B	6010C	III
12-Aug-2013	SL-590-SA8-SB-7.0-8.0	7158601	N	3050B	6020A	III
12-Aug-2013	SL-590-SA8-SB-7.0-8.0	7158601	N	3546	8015M	III
12-Aug-2013	SL-590-SA8-SB-7.0-8.0	7158601	N	3546	8081B	III
12-Aug-2013	SL-590-SA8-SB-7.0-8.0	7158601	N	3546	8082A	III
12-Aug-2013	SL-590-SA8-SB-7.0-8.0	7158601	N	3546	8270D SIM	III
12-Aug-2013	SL-590-SA8-SB-7.0-8.0	7158601	N	3550B	8151A	III
12-Aug-2013	SL-590-SA8-SB-7.0-8.0	7158601	N	5035A	8015M	III
12-Aug-2013	SL-590-SA8-SB-7.0-8.0	7158601	N	METHOD	7471B	III
12-Aug-2013	SL-590-SA8-SB-7.0-8.0DUP	P158601D221614	DUP	METHOD	7471B	III
12-Aug-2013	SL-590-SA8-SB-7.0-8.0MSD	P158601M221619	MSD	METHOD	7471B	III
12-Aug-2013	SL-590-SA8-SB-7.0-8.0MS	P158601R221616	MS	METHOD	7471B	III
12-Aug-2013	SL-585-SA8-SB-0.0-0.5	7158607	N	3050B	6010C	III
12-Aug-2013	SL-585-SA8-SB-0.0-0.5	7158607	N	3050B	6020A	III
12-Aug-2013	SL-585-SA8-SB-0.0-0.5	7158607	N	3546	8015M	III
12-Aug-2013	SL-585-SA8-SB-0.0-0.5	7158607	N	3546	8082A	III
12-Aug-2013	SL-585-SA8-SB-0.0-0.5	7158607	N	3546	8270D SIM	III
12-Aug-2013	SL-585-SA8-SB-0.0-0.5	7158607	N	METHOD	1613B	III
12-Aug-2013	SL-585-SA8-SB-0.0-0.5	7158607	N	METHOD	7471B	III

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH089

Laboratory: LL

EDD Filename: PH089_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: METALS
Method: 6010C **Matrix:** SO

Sample ID: SL-585-SA8-SB-0.0-0.5 Collected: 8/12/2013 1:35:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	3.99	U	0.738	MDL	3.99	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.598	J	0.0668	MDL	0.997	PQL	mg/Kg	J	Z
BORON	3.31	J	0.837	MDL	9.97	PQL	mg/Kg	U	F
CADMIUM	0.0927	J	0.0758	MDL	0.997	PQL	mg/Kg	J	Z
MOLYBDENUM	0.416	J	0.169	MDL	1.99	PQL	mg/Kg	U	F
PHOSPHORUS	503		2.88	MDL	9.97	PQL	mg/Kg	J	Q
SODIUM	71.9	J	16.6	MDL	99.7	PQL	mg/Kg	J	Z
TIN	3.26	J	0.219	MDL	9.97	PQL	mg/Kg	U	B
Zirconium	2.73	J	0.837	MDL	4.98	PQL	mg/Kg	J	Z

Sample ID: SL-590-SA8-SB-4.0-5.0 Collected: 8/12/2013 10:45:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.09	U	0.757	MDL	4.09	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.628	J	0.0685	MDL	1.02	PQL	mg/Kg	J	Z
BORON	3.59	J	0.859	MDL	10.2	PQL	mg/Kg	U	F
MOLYBDENUM	0.488	J	0.174	MDL	2.04	PQL	mg/Kg	U	F
PHOSPHORUS	365		2.95	MDL	10.2	PQL	mg/Kg	J	Q
TIN	3.21	J	0.225	MDL	10.2	PQL	mg/Kg	U	B
Zirconium	3.91	J	0.859	MDL	5.11	PQL	mg/Kg	J	Z

Sample ID: SL-590-SA8-SB-7.0-8.0 Collected: 8/12/2013 11:10:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.08	U	0.756	MDL	4.08	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.550	J	0.0684	MDL	1.02	PQL	mg/Kg	J	Z
BORON	1.73	J	0.858	MDL	10.2	PQL	mg/Kg	U	F
MOLYBDENUM	0.213	J	0.174	MDL	2.04	PQL	mg/Kg	U	F
PHOSPHORUS	403		2.95	MDL	10.2	PQL	mg/Kg	J	Q
TIN	3.28	J	0.225	MDL	10.2	PQL	mg/Kg	U	B
Zirconium	4.30	J	0.858	MDL	5.11	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH089

Laboratory: LL

EDD Filename: PH089_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: METALS
Method: 6010C **Matrix:** SO

Sample ID: SL-591-SA8-SB-0.0-0.5 Collected: 8/12/2013 9:50:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.01	U	0.742	MDL	4.01	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.541	J	0.0671	MDL	1.00	PQL	mg/Kg	J	Z
BORON	3.36	J	0.842	MDL	10.0	PQL	mg/Kg	U	F
CADMIUM	0.104	J	0.0762	MDL	1.00	PQL	mg/Kg	J	Z
MOLYBDENUM	0.446	J	0.170	MDL	2.00	PQL	mg/Kg	U	F
PHOSPHORUS	500		2.90	MDL	10.0	PQL	mg/Kg	J	Q
SODIUM	79.3	J	16.7	MDL	100	PQL	mg/Kg	J	Z
TIN	3.04	J	0.220	MDL	10.0	PQL	mg/Kg	U	B
Zirconium	2.35	J	0.842	MDL	5.01	PQL	mg/Kg	J	Z

Sample ID: SL-592-SA8-SB-0.0-0.5 Collected: 8/12/2013 9:00:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.01	U	0.742	MDL	4.01	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.646	J	0.0672	MDL	1.00	PQL	mg/Kg	J	Z
BORON	3.08	J	0.843	MDL	10.0	PQL	mg/Kg	U	F
MOLYBDENUM	0.481	J	0.171	MDL	2.01	PQL	mg/Kg	U	F
PHOSPHORUS	407		2.90	MDL	10.0	PQL	mg/Kg	J	Q
SODIUM	75.1	J	16.8	MDL	100	PQL	mg/Kg	J	Z
TIN	3.34	J	0.221	MDL	10.0	PQL	mg/Kg	U	B
Zirconium	2.56	J	0.843	MDL	5.02	PQL	mg/Kg	J	Z

Sample ID: SL-592-SA8-SB-3.5-4.5 Collected: 8/12/2013 9:20:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.00	U	0.740	MDL	4.00	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.630	J	0.0670	MDL	1.00	PQL	mg/Kg	J	Z
BORON	1.66	J	0.840	MDL	10.0	PQL	mg/Kg	U	F
MOLYBDENUM	0.446	J	0.170	MDL	2.00	PQL	mg/Kg	U	F
PHOSPHORUS	258		2.89	MDL	10.0	PQL	mg/Kg	J	Q
TIN	3.24	J	0.220	MDL	10.0	PQL	mg/Kg	U	B
Zirconium	2.77	J	0.840	MDL	5.00	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH089

Laboratory: LL

EDD Filename: PH089_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: METALS
Method: 6010C **Matrix:** SO

Sample ID: SL-593-SA8-SB-0.0-0.5 Collected: 8/12/2013 8:05:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.02	U	0.743	MDL	4.02	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.539	J	0.0673	MDL	1.00	PQL	mg/Kg	J	Z
BORON	3.24	J	0.843	MDL	10.0	PQL	mg/Kg	U	F
CADMIUM	0.119	J	0.0763	MDL	1.00	PQL	mg/Kg	J	Z
MOLYBDENUM	0.355	J	0.171	MDL	2.01	PQL	mg/Kg	U	F
PHOSPHORUS	477		2.90	MDL	10.0	PQL	mg/Kg	J	Q
SODIUM	74.5	J	16.8	MDL	100	PQL	mg/Kg	J	Z
TIN	3.28	J	0.221	MDL	10.0	PQL	mg/Kg	U	B
Zirconium	2.35	J	0.843	MDL	5.02	PQL	mg/Kg	J	Z

Sample ID: SL-593-SA8-SB-4.0-5.0 Collected: 8/12/2013 8:20:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.13	U	0.764	MDL	4.13	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.642	J	0.0692	MDL	1.03	PQL	mg/Kg	J	Z
BORON	2.69	J	0.867	MDL	10.3	PQL	mg/Kg	U	F
MOLYBDENUM	0.498	J	0.176	MDL	2.06	PQL	mg/Kg	U	F
PHOSPHORUS	558		2.98	MDL	10.3	PQL	mg/Kg	J	Q
SODIUM	86.3	J	17.2	MDL	103	PQL	mg/Kg	J	Z
TIN	3.32	J	0.227	MDL	10.3	PQL	mg/Kg	U	B
Zirconium	2.77	J	0.867	MDL	5.16	PQL	mg/Kg	J	Z

Method Category: METALS
Method: 6020A **Matrix:** SO

Sample ID: SL-585-SA8-SB-0.0-0.5 Collected: 8/12/2013 1:35:00 Analysis Type: REA Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.191	J	0.0997	MDL	0.399	PQL	mg/Kg	J	Z

Sample ID: SL-585-SA8-SB-0.0-0.5 Collected: 8/12/2013 1:35:00 Analysis Type: RES Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0440	J	0.0259	MDL	0.199	PQL	mg/Kg	J	Z
STRONTIUM	30.2		0.0678	MDL	0.399	PQL	mg/Kg	J	E

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH089

Laboratory: LL

EDD Filename: PH089_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: METALS
Method: 6020A **Matrix:** SO

Sample ID: SL-585-SA8-SB-0.0-0.5 Collected: 8/12/2013 1:35:00 Analysis Type: RES Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
THALLIUM	0.321		0.0299	MDL	0.199	PQL	mg/Kg	J	Q

Sample ID: SL-590-SA8-SB-4.0-5.0 Collected: 8/12/2013 10:45:00 Analysis Type: REA Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.165	J	0.102	MDL	0.409	PQL	mg/Kg	J	Z

Sample ID: SL-590-SA8-SB-4.0-5.0 Collected: 8/12/2013 10:45:00 Analysis Type: RES Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0470	J	0.0266	MDL	0.204	PQL	mg/Kg	J	Z
STRONTIUM	28.8		0.0695	MDL	0.409	PQL	mg/Kg	J	E
THALLIUM	0.338		0.0307	MDL	0.204	PQL	mg/Kg	J	Q

Sample ID: SL-590-SA8-SB-7.0-8.0 Collected: 8/12/2013 11:10:00 Analysis Type: REA Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.116	J	0.102	MDL	0.408	PQL	mg/Kg	J	Z

Sample ID: SL-590-SA8-SB-7.0-8.0 Collected: 8/12/2013 11:10:00 Analysis Type: RES Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	25.2		0.0694	MDL	0.408	PQL	mg/Kg	J	E
THALLIUM	0.273		0.0306	MDL	0.204	PQL	mg/Kg	J	Q

Sample ID: SL-591-SA8-SB-0.0-0.5 Collected: 8/12/2013 9:50:00 Analysis Type: REA Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.142	J	0.100	MDL	0.401	PQL	mg/Kg	J	Z

Sample ID: SL-591-SA8-SB-0.0-0.5 Collected: 8/12/2013 9:50:00 Analysis Type: RES Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0407	J	0.0261	MDL	0.200	PQL	mg/Kg	J	Z
STRONTIUM	23.4		0.0681	MDL	0.401	PQL	mg/Kg	J	E
THALLIUM	0.241		0.0301	MDL	0.200	PQL	mg/Kg	J	Q

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH089

Laboratory: LL

EDD Filename: PH089_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: METALS
Method: 6020A **Matrix:** SO

Sample ID: SL-592-SA8-SB-0.0-0.5 **Collected:** 8/12/2013 9:00:00 **Analysis Type:** REA **Dilution:** 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.172	J	0.100	MDL	0.401	PQL	mg/Kg	J	Z

Sample ID: SL-592-SA8-SB-0.0-0.5 **Collected:** 8/12/2013 9:00:00 **Analysis Type:** RES **Dilution:** 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0479	J	0.0261	MDL	0.201	PQL	mg/Kg	J	Z
STRONTIUM	29.5		0.0682	MDL	0.401	PQL	mg/Kg	J	E
THALLIUM	0.318		0.0301	MDL	0.201	PQL	mg/Kg	J	Q

Sample ID: SL-592-SA8-SB-3.5-4.5 **Collected:** 8/12/2013 9:20:00 **Analysis Type:** REA **Dilution:** 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.364	J	0.100	MDL	0.400	PQL	mg/Kg	J	Z

Sample ID: SL-592-SA8-SB-3.5-4.5 **Collected:** 8/12/2013 9:20:00 **Analysis Type:** RES **Dilution:** 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0378	J	0.0260	MDL	0.200	PQL	mg/Kg	J	Z
STRONTIUM	19.0		0.0680	MDL	0.400	PQL	mg/Kg	J	E
THALLIUM	0.341		0.0300	MDL	0.200	PQL	mg/Kg	J	Q

Sample ID: SL-593-SA8-SB-0.0-0.5 **Collected:** 8/12/2013 8:05:00 **Analysis Type:** REA **Dilution:** 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.166	J	0.100	MDL	0.402	PQL	mg/Kg	J	Z

Sample ID: SL-593-SA8-SB-0.0-0.5 **Collected:** 8/12/2013 8:05:00 **Analysis Type:** RES **Dilution:** 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0479	J	0.0261	MDL	0.201	PQL	mg/Kg	J	Z
STRONTIUM	22.4		0.0683	MDL	0.402	PQL	mg/Kg	J	E
THALLIUM	0.264		0.0301	MDL	0.201	PQL	mg/Kg	J	Q

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH089

Laboratory: LL

EDD Filename: PH089_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: METALS
Method: 6020A **Matrix:** SO

Sample ID: SL-593-SA8-SB-4.0-5.0 Collected: 8/12/2013 8:20:00 Analysis Type: REA Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.212	J	0.103	MDL	0.413	PQL	mg/Kg	J	Z

Sample ID: SL-593-SA8-SB-4.0-5.0 Collected: 8/12/2013 8:20:00 Analysis Type: RES Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0448	J	0.0268	MDL	0.206	PQL	mg/Kg	J	Z
STRONTIUM	20.5		0.0702	MDL	0.413	PQL	mg/Kg	J	E
THALLIUM	0.277		0.0310	MDL	0.206	PQL	mg/Kg	J	Q

Method Category: METALS
Method: 7471B **Matrix:** SO

Sample ID: SL-585-SA8-SB-0.0-0.5 Collected: 8/12/2013 1:35:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0152	J	0.0099	MDL	0.0165	PQL	mg/Kg	J	Z

Sample ID: SL-593-SA8-SB-4.0-5.0 Collected: 8/12/2013 8:20:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0152	J	0.0104	MDL	0.0173	PQL	mg/Kg	J	Z

Method Category: SVOA
Method: 1613B **Matrix:** SO

Sample ID: SL-585-SA8-SB-0.0-0.5 Collected: 8/12/2013 1:35:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	3.49	JB	0.0830	MDL	4.98	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.601	JB	0.0848	MDL	4.98	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.0883	JBQ	0.0318	MDL	4.98	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.233	JBQ	0.0680	MDL	4.98	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.124	JBQ	0.0308	MDL	4.98	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.252	JBQ	0.0666	MDL	4.98	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.243	JB	0.0422	MDL	4.98	PQL	ng/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH089

Laboratory: LL

EDD Filename: PH089_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: SVOA

Method: 1613B

Matrix: SO

Sample ID: SL-585-SA8-SB-0.0-0.5

Collected: 8/12/2013 1:35:00

Analysis Type: RES

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,7,8-PECDD	0.102	JBQ	0.0819	MDL	4.98	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.302	JBQ	0.0546	MDL	4.98	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.118	JBQ	0.0289	MDL	4.98	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0675	JBQ	0.0418	MDL	4.98	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.161	J	0.0836	MDL	0.996	PQL	ng/Kg	J	Z
OCDF	1.10	JB	0.0670	MDL	9.96	PQL	ng/Kg	J	Z

Sample ID: SL-590-SA8-SB-0.0-0.5

Collected: 8/12/2013 10:20:00

Analysis Type: RES

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	4.00	JB	0.0648	MDL	5.07	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.640	JBQ	0.0395	MDL	5.07	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.239	JBQ	0.0429	MDL	5.07	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.408	JBQ	0.0755	MDL	5.07	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.363	JBQ	0.0393	MDL	5.07	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.530	JB	0.0798	MDL	5.07	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.426	JB	0.0414	MDL	5.07	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.462	JB	0.0742	MDL	5.07	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.323	JB	0.0370	MDL	5.07	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.363	JBQ	0.0737	MDL	5.07	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.746	JB	0.0578	MDL	5.07	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.358	JB	0.0366	MDL	5.07	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.497	JB	0.0469	MDL	5.07	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.177	J	0.0841	MDL	1.01	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.275	JQ	0.106	MDL	1.01	PQL	ng/Kg	J	Z
OCDF	1.47	JB	0.0396	MDL	10.1	PQL	ng/Kg	J	Z

Sample ID: SL-590-SA8-SB-4.0-5.0

Collected: 8/12/2013 10:45:00

Analysis Type: RES

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.976	JBQ	0.0606	MDL	5.12	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.225	JBQ	0.0216	MDL	5.12	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0958	JB	0.0529	MDL	5.12	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.111	JBQ	0.0283	MDL	5.12	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.146	JB	0.0565	MDL	5.12	PQL	ng/Kg	U	B

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH089

Laboratory: LL

EDD Filename: PH089_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method Category:	SVOA	
Method:	1613B	Matrix: SO

Sample ID: SL-590-SA8-SB-4.0-5.0 Collected: 8/12/2013 10:45:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,6,7,8-HXCDF	0.0784	JBQ	0.0274	MDL	5.12	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.157	JBQ	0.0542	MDL	5.12	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.133	JBQ	0.0267	MDL	5.12	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.276	JBQ	0.0712	MDL	5.12	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.272	JBQ	0.0388	MDL	5.12	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0793	JBQ	0.0252	MDL	5.12	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.212	JB	0.0348	MDL	5.12	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.109	JQ	0.0657	MDL	1.02	PQL	ng/Kg	J	Z
OCDD	9.36	JB	0.0433	MDL	10.2	PQL	ng/Kg	J	Z
OCDF	0.389	JB	0.0626	MDL	10.2	PQL	ng/Kg	U	B

Sample ID: SL-591-SA8-SB-0.0-0.5 Collected: 8/12/2013 9:50:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	2.68	JB	0.0896	MDL	4.91	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.510	JBQ	0.0376	MDL	4.91	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.114	JBQ	0.0717	MDL	4.91	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0419	JBQ	0.0385	MDL	4.91	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.243	JBQ	0.0828	MDL	4.91	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.120	JBQ	0.0366	MDL	4.91	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.173	JBQ	0.0847	MDL	4.91	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.159	JBQ	0.0422	MDL	4.91	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.174	JB	0.0917	MDL	4.91	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.130	JBQ	0.0351	MDL	4.91	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.186	JBQ	0.0531	MDL	4.91	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.143	J	0.0840	MDL	0.982	PQL	ng/Kg	J	Z
OCDF	1.07	JB	0.0664	MDL	9.82	PQL	ng/Kg	J	Z

Sample ID: SL-592-SA8-SB-0.0-0.5 Collected: 8/12/2013 9:00:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	2.40	JB	0.0644	MDL	4.92	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.477	JB	0.0327	MDL	4.92	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.0494	JB	0.0312	MDL	4.92	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.158	JBQ	0.0734	MDL	4.92	PQL	ng/Kg	U	B

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH089

Laboratory: LL

EDD Filename: PH089_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: SVOA
Method: 1613B **Matrix:** SO

Sample ID: SL-592-SA8-SB-0.0-0.5	Collected: 8/12/2013 9:00:00	Analysis Type: RES	Dilution: 1						
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,6,7,8-HXCDF	0.121	JBQ	0.0295	MDL	4.92	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.261	JBQ	0.0735	MDL	4.92	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0951	JB	0.0299	MDL	4.92	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.134	JBQ	0.0745	MDL	4.92	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.142	JBQ	0.0390	MDL	4.92	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0888	JB	0.0276	MDL	4.92	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0817	JB	0.0381	MDL	4.92	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.0976	J	0.0736	MDL	0.984	PQL	ng/Kg	J	Z
OCDF	0.770	JBQ	0.0574	MDL	9.84	PQL	ng/Kg	U	B

Sample ID: SL-592-SA8-SB-3.5-4.5	Collected: 8/12/2013 9:20:00	Analysis Type: RES	Dilution: 1						
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.773	JB	0.0916	MDL	5.17	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.190	JB	0.0378	MDL	5.17	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0871	JBQ	0.0570	MDL	5.17	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0474	JBQ	0.0435	MDL	5.17	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0665	JBQ	0.0557	MDL	5.17	PQL	ng/Kg	U	B
OCDD	7.93	JB	0.0632	MDL	10.3	PQL	ng/Kg	J	Z
OCDF	0.808	JBQ	0.0860	MDL	10.3	PQL	ng/Kg	U	B

Sample ID: SL-593-SA8-SB-0.0-0.5	Collected: 8/12/2013 8:05:00	Analysis Type: RES	Dilution: 1						
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDF	1.69	JB	0.0521	MDL	4.90	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.139	JB	0.0728	MDL	4.90	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.208	JB	0.107	MDL	4.90	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.354	JBQ	0.0685	MDL	4.90	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.828	JBQ	0.116	MDL	4.90	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.341	JBQ	0.0678	MDL	4.90	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.663	JBQ	0.107	MDL	4.90	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.152	JB	0.0666	MDL	4.90	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.133	JBQ	0.0971	MDL	4.90	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	1.21	JB	0.116	MDL	4.90	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.283	JB	0.0623	MDL	4.90	PQL	ng/Kg	U	B

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH089

Laboratory: LL

EDD Filename: PH089_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: SVOA
Method: 1613B **Matrix:** SO

Sample ID: SL-593-SA8-SB-0.0-0.5 Collected: 8/12/2013 8:05:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,3,4,7,8-PECDF	0.178	JBQ	0.105	MDL	4.90	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.532	JQ	0.199	MDL	0.981	PQL	ng/Kg	J	Z
OCDF	3.36	JB	0.0734	MDL	9.81	PQL	ng/Kg	J	Z

Sample ID: SL-593-SA8-SB-4.0-5.0 Collected: 8/12/2013 8:20:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	4.32	JB	0.0828	MDL	5.10	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.599	JBQ	0.124	MDL	5.10	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.239	JBQ	0.157	MDL	5.10	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0752	JBQ	0.0319	MDL	5.10	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.249	JBQ	0.0775	MDL	5.10	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.135	JBQ	0.0761	MDL	5.10	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0956	JB	0.0417	MDL	5.10	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.0930	JBQ	0.0693	MDL	5.10	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0709	JB	0.0330	MDL	5.10	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.114	J	0.0993	MDL	1.02	PQL	ng/Kg	J	Z
OCDF	1.25	JB	0.0740	MDL	10.2	PQL	ng/Kg	J	Z

Method Category: SVOA
Method: 8015M **Matrix:** SO

Sample ID: SL-585-SA8-SB-0.0-0.5 Collected: 8/12/2013 1:35:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C15-C20)	2.3	J	2.0	MDL	5.0	PQL	mg/Kg	J	Z

Sample ID: SL-590-SA8-SB-0.0-0.5 Collected: 8/12/2013 10:20:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C15-C20)	4.1	J	2.0	MDL	5.1	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH089

Laboratory: LL

EDD Filename: PH089_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: SVOA
Method: 8015M **Matrix:** SO

Sample ID: SL-590-SA8-SB-4.0-5.0 Collected: 8/12/2013 10:45:00 Analysis Type: REA Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C15-C20)	2.3	J	2.1	MDL	5.2	PQL	mg/Kg	J	Z

Sample ID: SL-592-SA8-SB-3.5-4.5 Collected: 8/12/2013 9:20:00 Analysis Type: REA Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C21-C30)	4.6	J	2.1	MDL	5.2	PQL	mg/Kg	J	Z

Sample ID: SL-593-SA8-SB-0.0-0.5 Collected: 8/12/2013 8:05:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C21-C30)	4.3	J	2.0	MDL	5.1	PQL	mg/Kg	J	Z

Method Category: SVOA
Method: 8081B **Matrix:** SO

Sample ID: SL-590-SA8-SB-0.0-0.5 Collected: 8/12/2013 10:20:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDE	1.0	J	0.34	MDL	1.7	PQL	ug/Kg	J	Z
4,4'-DDT	0.67	J	0.36	MDL	1.7	PQL	ug/Kg	J	Z

Method Category: SVOA
Method: 8082A **Matrix:** SO

Sample ID: SL-592-SA8-SB-0.0-0.5 Collected: 8/12/2013 9:00:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1254	8.8	J	4.5	MDL	17	PQL	ug/Kg	J	Z, L
Aroclor 5460	18	J	10	MDL	33	PQL	ug/Kg	J	Z

Sample ID: SL-593-SA8-SB-0.0-0.5 Collected: 8/12/2013 8:05:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1254	9.4	J	4.5	MDL	17	PQL	ug/Kg	J	Z, L
Aroclor 5460	20	J	10	MDL	33	PQL	ug/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH089

Laboratory: LL

EDD Filename: PH089_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: SVOA
Method: 8082A **Matrix:** SO

Method Category: SVOA
Method: 8151A **Matrix:** SO

Sample ID: SL-590-SA8-SB-0.0-0.5 Collected: 8/12/2013 10:20:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4-D	25	J	12	MDL	37	PQL	ug/Kg	J	Z

Sample ID: SL-590-SA8-SB-4.0-5.0 Collected: 8/12/2013 10:45:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4-D	20	J	13	MDL	38	PQL	ug/Kg	J	Z

Method Category: SVOA
Method: 8270D SIM **Matrix:** SO

Sample ID: SL-585-SA8-SB-0.0-0.5 Collected: 8/12/2013 1:35:00 Analysis Type: RES-BASE/NEUTRAL Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(B)FLUORANTHENE	0.87	J	0.67	MDL	1.7	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	8.2	J	6.0	MDL	18	PQL	ug/Kg	J	Z
CHRYSENE	0.87	J	0.34	MDL	1.7	PQL	ug/Kg	J	Z
FLUORANTHENE	0.90	J	0.67	MDL	1.7	PQL	ug/Kg	J	Z
PYRENE	0.77	J	0.67	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: SL-590-SA8-SB-0.0-0.5 Collected: 8/12/2013 10:20:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1-METHYLNAPHTHALENE	1.4	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
ANTHRACENE	0.40	J	0.34	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(A)ANTHRACENE	0.68	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(B)FLUORANTHENE	1.4	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	8.6	J	6.1	MDL	18	PQL	ug/Kg	J	Z
FLUORENE	1.4	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
PYRENE	1.6	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH089

Laboratory: LL

EDD Filename: PH089_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: SVOA
Method: 8270D SIM **Matrix:** SO

Sample ID: SL-590-SA8-SB-4.0-5.0 Collected: 8/12/2013 10:45:00 Analysis Type: RES-BASE/NEUTRAL Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHRYSENE	0.39	J	0.35	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: SL-591-SA8-SB-0.0-5.0 Collected: 8/12/2013 9:50:00 Analysis Type: RES-BASE/NEUTRAL Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(B)FLUORANTHENE	1.4	J	0.67	MDL	1.7	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	9.1	J	6.1	MDL	18	PQL	ug/Kg	J	Z
CHRYSENE	1.3	J	0.34	MDL	1.7	PQL	ug/Kg	J	Z
FLUORANTHENE	1.5	J	0.67	MDL	1.7	PQL	ug/Kg	J	Z
PHENANTHRENE	0.98	J	0.67	MDL	1.7	PQL	ug/Kg	J	Z
PYRENE	1.3	J	0.67	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: SL-592-SA8-SB-0.0-5.0 Collected: 8/12/2013 9:00:00 Analysis Type: RES-BASE/NEUTRAL Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(B)FLUORANTHENE	0.83	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	10	J	6.1	MDL	18	PQL	ug/Kg	J	Z
CHRYSENE	0.79	J	0.34	MDL	1.7	PQL	ug/Kg	J	Z
FLUORANTHENE	0.85	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
PYRENE	0.74	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: SL-593-SA8-SB-0.0-5.0 Collected: 8/12/2013 8:05:00 Analysis Type: RES-BASE/NEUTRAL Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(G,H,I)PERYLENE	1.1	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(K)FLUORANTHENE	1.6	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	16	J	6.1	MDL	18	PQL	ug/Kg	J	Z
FLUORENE	0.99	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
INDENO(1,2,3-CD)PYRENE	0.98	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH089

Laboratory: LL

EDD Filename: PH089_v1

eQAPP Name: CDM_SSFL_131101_Lan

Reason Code Legend

<i>Reason Code</i>	<i>Description</i>
B	Method Blank Contamination
E	Laboratory Duplicate Precision
F	Equipment Blank Contamination
F	Field Blank Contamination
L	Laboratory Control Spike Upper Estimation
Q	Laboratory Duplicate Precision
Q	Matrix Spike Lower Estimation
Q	Matrix Spike Upper Estimation
S	Surrogate/Tracer Recovery Upper Estimation
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

11/6/2013 8:14:20 AM

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Enclosure I
EPA Level III ADR Outliers
(Including Manual Review Outliers)

Quality Control Outlier Reports

PH089

Method Blank Outlier Report

Lab Reporting Batch ID: PH089

Laboratory: LL

EDD Filename: PH089_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method: 1613B
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2320B370906	8/22/2013 9:06:00 AM	1,2,3,4,6,7,8-HPCDD 1,2,3,4,6,7,8-HPCDF 1,2,3,4,7,8,9-HPCDF 1,2,3,4,7,8-HxCDD 1,2,3,4,7,8-HXCDF 1,2,3,6,7,8-HXCDD 1,2,3,6,7,8-HXCDF 1,2,3,7,8,9-HXCDD 1,2,3,7,8,9-HXCDF 1,2,3,7,8-PECDD 1,2,3,7,8-PECDF 2,3,4,6,7,8-HXCDF 2,3,4,7,8-PECDF OCDD OCDF	0.110 ng/Kg 0.0933 ng/Kg 0.0762 ng/Kg 0.0685 ng/Kg 0.101 ng/Kg 0.106 ng/Kg 0.0806 ng/Kg 0.0775 ng/Kg 0.0474 ng/Kg 0.117 ng/Kg 0.0798 ng/Kg 0.0879 ng/Kg 0.0923 ng/Kg 0.396 ng/Kg 0.201 ng/Kg	SL-585-SA8-SB-0.0-0.5 SL-590-SA8-SB-0.0-0.5 SL-590-SA8-SB-4.0-5.0 SL-591-SA8-SB-0.0-0.5 SL-592-SA8-SB-0.0-0.5 SL-592-SA8-SB-3.5-4.5 SL-593-SA8-SB-0.0-0.5 SL-593-SA8-SB-4.0-5.0

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-585-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.0883 ng/Kg	0.0883U ng/Kg
SL-585-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDD	0.233 ng/Kg	0.233U ng/Kg
SL-585-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.124 ng/Kg	0.124U ng/Kg
SL-585-SA8-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDD	0.252 ng/Kg	0.252U ng/Kg
SL-585-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.102 ng/Kg	0.102U ng/Kg
SL-585-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.302 ng/Kg	0.302U ng/Kg
SL-585-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.118 ng/Kg	0.118U ng/Kg
SL-585-SA8-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.0675 ng/Kg	0.0675U ng/Kg
SL-590-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.239 ng/Kg	0.239U ng/Kg
SL-590-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.363 ng/Kg	0.363U ng/Kg
SL-590-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDD	0.530 ng/Kg	0.530U ng/Kg
SL-590-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.363 ng/Kg	0.363U ng/Kg
SL-590-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.358 ng/Kg	0.358U ng/Kg
SL-590-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.225 ng/Kg	0.225U ng/Kg
SL-590-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HxCDD	0.0958 ng/Kg	0.0958U ng/Kg
SL-590-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.111 ng/Kg	0.111U ng/Kg
SL-590-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDD	0.146 ng/Kg	0.146U ng/Kg
SL-590-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.0784 ng/Kg	0.0784U ng/Kg
SL-590-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDD	0.157 ng/Kg	0.157U ng/Kg
SL-590-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDF	0.133 ng/Kg	0.133U ng/Kg
SL-590-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDD	0.276 ng/Kg	0.276U ng/Kg
SL-590-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.272 ng/Kg	0.272U ng/Kg
SL-590-SA8-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0793 ng/Kg	0.0793U ng/Kg
SL-590-SA8-SB-4.0-5.0(RES)	2,3,4,7,8-PECDF	0.212 ng/Kg	0.212U ng/Kg
SL-590-SA8-SB-4.0-5.0(RES)	OCDF	0.389 ng/Kg	0.389U ng/Kg
SL-591-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.114 ng/Kg	0.114U ng/Kg
SL-591-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.0419 ng/Kg	0.0419U ng/Kg
SL-591-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDD	0.243 ng/Kg	0.243U ng/Kg
SL-591-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.120 ng/Kg	0.120U ng/Kg

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

11/6/2013 7:51:33 AM

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Method Blank Outlier Report

Lab Reporting Batch ID: PH089

Laboratory: LL

EDD Filename: PH089_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method: 1613B
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
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The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-591-SA8-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDD	0.173 ng/Kg	0.173U ng/Kg
SL-591-SA8-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.159 ng/Kg	0.159U ng/Kg
SL-591-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.174 ng/Kg	0.174U ng/Kg
SL-591-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.130 ng/Kg	0.130U ng/Kg
SL-591-SA8-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.186 ng/Kg	0.186U ng/Kg
SL-592-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.0494 ng/Kg	0.0494U ng/Kg
SL-592-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDD	0.158 ng/Kg	0.158U ng/Kg
SL-592-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.121 ng/Kg	0.121U ng/Kg
SL-592-SA8-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDD	0.261 ng/Kg	0.261U ng/Kg
SL-592-SA8-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.0951 ng/Kg	0.0951U ng/Kg
SL-592-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.134 ng/Kg	0.134U ng/Kg
SL-592-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.142 ng/Kg	0.142U ng/Kg
SL-592-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0888 ng/Kg	0.0888U ng/Kg
SL-592-SA8-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.0817 ng/Kg	0.0817U ng/Kg
SL-592-SA8-SB-0.0-0.5(RES)	OCDF	0.770 ng/Kg	0.770U ng/Kg
SL-592-SA8-SB-3.5-4.5(RES)	1,2,3,4,6,7,8-HPCDF	0.190 ng/Kg	0.190U ng/Kg
SL-592-SA8-SB-3.5-4.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0871 ng/Kg	0.0871U ng/Kg
SL-592-SA8-SB-3.5-4.5(RES)	1,2,3,7,8,9-HXCDF	0.0474 ng/Kg	0.0474U ng/Kg
SL-592-SA8-SB-3.5-4.5(RES)	2,3,4,7,8-PECDF	0.0665 ng/Kg	0.0665U ng/Kg
SL-592-SA8-SB-3.5-4.5(RES)	OCDF	0.808 ng/Kg	0.808U ng/Kg
SL-593-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.139 ng/Kg	0.139U ng/Kg
SL-593-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.208 ng/Kg	0.208U ng/Kg
SL-593-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.354 ng/Kg	0.354U ng/Kg
SL-593-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.341 ng/Kg	0.341U ng/Kg
SL-593-SA8-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.152 ng/Kg	0.152U ng/Kg
SL-593-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.133 ng/Kg	0.133U ng/Kg
SL-593-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.283 ng/Kg	0.283U ng/Kg
SL-593-SA8-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.178 ng/Kg	0.178U ng/Kg
SL-593-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.239 ng/Kg	0.239U ng/Kg
SL-593-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.0752 ng/Kg	0.0752U ng/Kg
SL-593-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDD	0.249 ng/Kg	0.249U ng/Kg
SL-593-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDD	0.135 ng/Kg	0.135U ng/Kg
SL-593-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDF	0.0956 ng/Kg	0.0956U ng/Kg
SL-593-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.0930 ng/Kg	0.0930U ng/Kg
SL-593-SA8-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0709 ng/Kg	0.0709U ng/Kg

Method Blank Outlier Report

Lab Reporting Batch ID: PH089

Laboratory: LL

EDD Filename: PH089_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method: 6010C
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P22537BB220520	8/23/2013 5:20:00 AM	TIN ZINC	1.83 mg/Kg 0.316 mg/Kg	SL-585-SA8-SB-0.0-0.5 SL-590-SA8-SB-4.0-5.0 SL-590-SA8-SB-7.0-8.0 SL-591-SA8-SB-0.0-0.5 SL-592-SA8-SB-0.0-0.5 SL-592-SA8-SB-3.5-4.5 SL-593-SA8-SB-0.0-0.5 SL-593-SA8-SB-4.0-5.0

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-585-SA8-SB-0.0-0.5(RES)	TIN	3.26 mg/Kg	3.26U mg/Kg
SL-590-SA8-SB-4.0-5.0(RES)	TIN	3.21 mg/Kg	3.21U mg/Kg
SL-590-SA8-SB-7.0-8.0(RES)	TIN	3.28 mg/Kg	3.28U mg/Kg
SL-591-SA8-SB-0.0-0.5(RES)	TIN	3.04 mg/Kg	3.04U mg/Kg
SL-592-SA8-SB-0.0-0.5(RES)	TIN	3.34 mg/Kg	3.34U mg/Kg
SL-592-SA8-SB-3.5-4.5(RES)	TIN	3.24 mg/Kg	3.24U mg/Kg
SL-593-SA8-SB-0.0-0.5(RES)	TIN	3.28 mg/Kg	3.28U mg/Kg
SL-593-SA8-SB-4.0-5.0(RES)	TIN	3.32 mg/Kg	3.32U mg/Kg

Equipment Rinsate Blank Outlier Report

Lab Reporting Batch ID: PH089

Laboratory: LL

EDD Filename: PrepPH089

eQAPP Name: CDM_SSFL_131101_Lan

Method: 6010C
Matrix: SO

Equipment Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
EB-081413(RES)	8/14/2013 3:00:00 PM	BORON CALCIUM	0.0106 mg/L 0.0798 mg/L	SL-585-SA8-SB-0.0-0.5 SL-590-SA8-SB-0.0-0.5 SL-590-SA8-SB-4.0-5.0 SL-590-SA8-SB-7.0-8.0 SL-591-SA8-SB-0.0-0.5 SL-592-SA8-SB-0.0-0.5 SL-592-SA8-SB-3.5-4.5 SL-593-SA8-SB-0.0-0.5 SL-593-SA8-SB-4.0-5.0

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-585-SA8-SB-0.0-0.5(RES)	BORON	3.31 mg/Kg	3.31U mg/Kg
SL-590-SA8-SB-4.0-5.0(RES)	BORON	3.59 mg/Kg	3.59U mg/Kg
SL-590-SA8-SB-7.0-8.0(RES)	BORON	1.73 mg/Kg	1.73U mg/Kg
SL-591-SA8-SB-0.0-0.5(RES)	BORON	3.36 mg/Kg	3.36U mg/Kg
SL-592-SA8-SB-0.0-0.5(RES)	BORON	3.08 mg/Kg	3.08U mg/Kg
SL-592-SA8-SB-3.5-4.5(RES)	BORON	1.66 mg/Kg	1.66U mg/Kg
SL-593-SA8-SB-0.0-0.5(RES)	BORON	3.24 mg/Kg	3.24U mg/Kg
SL-593-SA8-SB-4.0-5.0(RES)	BORON	2.69 mg/Kg	2.69U mg/Kg

Field Blank Outlier Report

Lab Reporting Batch ID: PH089

Laboratory: LL

EDD Filename: PrepPH089

eQAPP Name: CDM_SSFL_131101_Lan

Method: 6010C
Matrix: SO

Field Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
FB-041113(REA2)	4/11/2013 3:00:00 PM	COPPER MOLYBDENUM	0.0036 mg/L 0.0036 mg/L	SL-585-SA8-SB-0.0-0.5 SL-590-SA8-SB-0.0-0.5 SL-590-SA8-SB-4.0-5.0 SL-590-SA8-SB-7.0-8.0 SL-591-SA8-SB-0.0-0.5 SL-592-SA8-SB-0.0-0.5 SL-592-SA8-SB-3.5-4.5 SL-593-SA8-SB-0.0-0.5 SL-593-SA8-SB-4.0-5.0

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-585-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.416 mg/Kg	0.416U mg/Kg
SL-590-SA8-SB-4.0-5.0(RES)	MOLYBDENUM	0.488 mg/Kg	0.488U mg/Kg
SL-590-SA8-SB-7.0-8.0(RES)	MOLYBDENUM	0.213 mg/Kg	0.213U mg/Kg
SL-591-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.446 mg/Kg	0.446U mg/Kg
SL-592-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.481 mg/Kg	0.481U mg/Kg
SL-592-SA8-SB-3.5-4.5(RES)	MOLYBDENUM	0.446 mg/Kg	0.446U mg/Kg
SL-593-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.355 mg/Kg	0.355U mg/Kg
SL-593-SA8-SB-4.0-5.0(RES)	MOLYBDENUM	0.498 mg/Kg	0.498U mg/Kg

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH089

Laboratory: LL

EDD Filename: PH089_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method: 8082A

Matrix: SO

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
P32323AQ240855A (SL-585-SA8-SB-0.0-0.5 SL-590-SA8-SB-0.0-0.5 SL-590-SA8-SB-4.0-5.0 SL-590-SA8-SB-7.0-8.0 SL-591-SA8-SB-0.0-0.5 SL-592-SA8-SB-0.0-0.5 SL-592-SA8-SB-3.5-4.5 SL-593-SA8-SB-0.0-0.5 SL-593-SA8-SB-4.0-5.0)	AROCLOR 1260	121	-	72.00-120.00	-	AROCLOR 1242 AROCLOR 1248 AROCLOR 1254 AROCLOR 1260 AROCLOR 1262 AROCLOR 1268	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH089

Laboratory: LL

EDD Filename: PH089_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-585-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	3.49	4.98	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JB	0.601	4.98	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0883	4.98	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.233	4.98	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.124	4.98	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.252	4.98	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.243	4.98	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.102	4.98	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.302	4.98	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.118	4.98	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0675	4.98	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.161	0.996	PQL	ng/Kg	
	OCDF	JB	1.10	9.96	PQL	ng/Kg	
	SL-590-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	4.00	5.07	PQL	
1,2,3,4,6,7,8-HPCDF		JBQ	0.640	5.07	PQL	ng/Kg	
1,2,3,4,7,8,9-HPCDF		JBQ	0.239	5.07	PQL	ng/Kg	
1,2,3,4,7,8-HxCDD		JBQ	0.408	5.07	PQL	ng/Kg	
1,2,3,4,7,8-HXCDF		JBQ	0.363	5.07	PQL	ng/Kg	
1,2,3,6,7,8-HXCDD		JB	0.530	5.07	PQL	ng/Kg	
1,2,3,6,7,8-HXCDF		JB	0.426	5.07	PQL	ng/Kg	
1,2,3,7,8,9-HXCDD		JB	0.462	5.07	PQL	ng/Kg	
1,2,3,7,8,9-HXCDF		JB	0.323	5.07	PQL	ng/Kg	
1,2,3,7,8-PECDD		JBQ	0.363	5.07	PQL	ng/Kg	
1,2,3,7,8-PECDF		JB	0.746	5.07	PQL	ng/Kg	
2,3,4,6,7,8-HXCDF		JB	0.358	5.07	PQL	ng/Kg	
2,3,4,7,8-PECDF		JB	0.497	5.07	PQL	ng/Kg	
2,3,7,8-TCDD		J	0.177	1.01	PQL	ng/Kg	
2,3,7,8-TCDF		JQ	0.275	1.01	PQL	ng/Kg	
OCDF	JB	1.47	10.1	PQL	ng/Kg		
SL-590-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.976	5.12	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JBQ	0.225	5.12	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.0958	5.12	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.111	5.12	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.146	5.12	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0784	5.12	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.157	5.12	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.133	5.12	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.276	5.12	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.272	5.12	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0793	5.12	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.212	5.12	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.109	1.02	PQL	ng/Kg	
OCDD	JB	9.36	10.2	PQL	ng/Kg		
OCDF	JB	0.389	10.2	PQL	ng/Kg		
SL-591-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	2.68	4.91	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JBQ	0.510	4.91	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.114	4.91	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0419	4.91	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.243	4.91	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.120	4.91	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.173	4.91	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.159	4.91	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JB	0.174	4.91	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.130	4.91	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.186	4.91	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.143	0.982	PQL	ng/Kg	
	OCDF	JB	1.07	9.82	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH089

Laboratory: LL

EDD Filename: PH089_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-592-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	2.40	4.92	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JB	0.477	4.92	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.0494	4.92	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.158	4.92	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.121	4.92	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.261	4.92	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.0951	4.92	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.134	4.92	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.142	4.92	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.0888	4.92	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.0817	4.92	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.0976	0.984	PQL	ng/Kg	
	OCDF	JBQ	0.770	9.84	PQL	ng/Kg	
SL-592-SA8-SB-3.5-4.5	1,2,3,4,6,7,8-HPCDD	JB	0.773	5.17	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JB	0.190	5.17	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0871	5.17	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.0474	5.17	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0665	5.17	PQL	ng/Kg	
	OCDD	JB	7.93	10.3	PQL	ng/Kg	
OCDF	JBQ	0.808	10.3	PQL	ng/Kg		
SL-593-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDF	JB	1.69	4.90	PQL	ng/Kg	J (all detects)
	1,2,3,4,7,8,9-HPCDF	JB	0.139	4.90	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.208	4.90	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.354	4.90	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.828	4.90	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.341	4.90	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.663	4.90	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.152	4.90	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.133	4.90	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	1.21	4.90	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.283	4.90	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.178	4.90	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.532	0.981	PQL	ng/Kg	
OCDF	JB	3.36	9.81	PQL	ng/Kg		
SL-593-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JB	4.32	5.10	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JBQ	0.599	5.10	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.239	5.10	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0752	5.10	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.249	5.10	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.135	5.10	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.0956	5.10	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.0930	5.10	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.0709	5.10	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.114	1.02	PQL	ng/Kg	
	OCDF	JB	1.25	10.2	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH089

Laboratory: LL

EDD Filename: PH089_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-585-SA8-SB-0.0-0.5	BERYLLIUM	J	0.598	0.997	PQL	mg/Kg	J (all detects)
	BORON	J	3.31	9.97	PQL	mg/Kg	
	CADMIUM	J	0.0927	0.997	PQL	mg/Kg	
	MOLYBDENUM	J	0.416	1.99	PQL	mg/Kg	
	SODIUM	J	71.9	99.7	PQL	mg/Kg	
	TIN	J	3.26	9.97	PQL	mg/Kg	
	Zirconium	J	2.73	4.98	PQL	mg/Kg	
SL-590-SA8-SB-4.0-5.0	BERYLLIUM	J	0.628	1.02	PQL	mg/Kg	J (all detects)
	BORON	J	3.59	10.2	PQL	mg/Kg	
	MOLYBDENUM	J	0.488	2.04	PQL	mg/Kg	
	TIN	J	3.21	10.2	PQL	mg/Kg	
	Zirconium	J	3.91	5.11	PQL	mg/Kg	
SL-590-SA8-SB-7.0-8.0	BERYLLIUM	J	0.550	1.02	PQL	mg/Kg	J (all detects)
	BORON	J	1.73	10.2	PQL	mg/Kg	
	MOLYBDENUM	J	0.213	2.04	PQL	mg/Kg	
	TIN	J	3.28	10.2	PQL	mg/Kg	
	Zirconium	J	4.30	5.11	PQL	mg/Kg	
SL-591-SA8-SB-0.0-0.5	BERYLLIUM	J	0.541	1.00	PQL	mg/Kg	J (all detects)
	BORON	J	3.36	10.0	PQL	mg/Kg	
	CADMIUM	J	0.104	1.00	PQL	mg/Kg	
	MOLYBDENUM	J	0.446	2.00	PQL	mg/Kg	
	SODIUM	J	79.3	100	PQL	mg/Kg	
	TIN	J	3.04	10.0	PQL	mg/Kg	
	Zirconium	J	2.35	5.01	PQL	mg/Kg	
SL-592-SA8-SB-0.0-0.5	BERYLLIUM	J	0.646	1.00	PQL	mg/Kg	J (all detects)
	BORON	J	3.08	10.0	PQL	mg/Kg	
	MOLYBDENUM	J	0.481	2.01	PQL	mg/Kg	
	SODIUM	J	75.1	100	PQL	mg/Kg	
	TIN	J	3.34	10.0	PQL	mg/Kg	
	Zirconium	J	2.56	5.02	PQL	mg/Kg	
SL-592-SA8-SB-3.5-4.5	BERYLLIUM	J	0.630	1.00	PQL	mg/Kg	J (all detects)
	BORON	J	1.66	10.0	PQL	mg/Kg	
	MOLYBDENUM	J	0.446	2.00	PQL	mg/Kg	
	TIN	J	3.24	10.0	PQL	mg/Kg	
	Zirconium	J	2.77	5.00	PQL	mg/Kg	
SL-593-SA8-SB-0.0-0.5	BERYLLIUM	J	0.539	1.00	PQL	mg/Kg	J (all detects)
	BORON	J	3.24	10.0	PQL	mg/Kg	
	CADMIUM	J	0.119	1.00	PQL	mg/Kg	
	MOLYBDENUM	J	0.355	2.01	PQL	mg/Kg	
	SODIUM	J	74.5	100	PQL	mg/Kg	
	TIN	J	3.28	10.0	PQL	mg/Kg	
	Zirconium	J	2.35	5.02	PQL	mg/Kg	
SL-593-SA8-SB-4.0-5.0	BERYLLIUM	J	0.642	1.03	PQL	mg/Kg	J (all detects)
	BORON	J	2.69	10.3	PQL	mg/Kg	
	MOLYBDENUM	J	0.498	2.06	PQL	mg/Kg	
	SODIUM	J	86.3	103	PQL	mg/Kg	
	TIN	J	3.32	10.3	PQL	mg/Kg	
	Zirconium	J	2.77	5.16	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH089

Laboratory: LL

EDD Filename: PH089_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method: 6020A
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-585-SA8-SB-0.0-0.5	SELENIUM	J	0.191	0.399	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0440	0.199	PQL	mg/Kg	
SL-590-SA8-SB-4.0-5.0	SELENIUM	J	0.165	0.409	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0470	0.204	PQL	mg/Kg	
SL-590-SA8-SB-7.0-8.0	SELENIUM	J	0.116	0.408	PQL	mg/Kg	J (all detects)
SL-591-SA8-SB-0.0-0.5	SELENIUM	J	0.142	0.401	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0407	0.200	PQL	mg/Kg	
SL-592-SA8-SB-0.0-0.5	SELENIUM	J	0.172	0.401	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0479	0.201	PQL	mg/Kg	
SL-592-SA8-SB-3.5-4.5	SELENIUM	J	0.364	0.400	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0378	0.200	PQL	mg/Kg	
SL-593-SA8-SB-0.0-0.5	SELENIUM	J	0.166	0.402	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0479	0.201	PQL	mg/Kg	
SL-593-SA8-SB-4.0-5.0	SELENIUM	J	0.212	0.413	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0448	0.206	PQL	mg/Kg	

Method: 7471B
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-585-SA8-SB-0.0-0.5	MERCURY	J	0.0152	0.0165	PQL	mg/Kg	J (all detects)
SL-593-SA8-SB-4.0-5.0	MERCURY	J	0.0152	0.0173	PQL	mg/Kg	J (all detects)

Method: 8015M
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-585-SA8-SB-0.0-0.5	EFH (C15-C20)	J	2.3	5.0	PQL	mg/Kg	J (all detects)
SL-590-SA8-SB-0.0-0.5	EFH (C15-C20)	J	4.1	5.1	PQL	mg/Kg	J (all detects)
SL-590-SA8-SB-4.0-5.0	EFH (C15-C20)	J	2.3	5.2	PQL	mg/Kg	J (all detects)
SL-592-SA8-SB-3.5-4.5	EFH (C21-C30)	J	4.6	5.2	PQL	mg/Kg	J (all detects)
SL-593-SA8-SB-0.0-0.5	EFH (C21-C30)	J	4.3	5.1	PQL	mg/Kg	J (all detects)

Method: 8081B
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-590-SA8-SB-0.0-0.5	4,4'-DDE	J	1.0	1.7	PQL	ug/Kg	J (all detects)
	4,4'-DDT	J	0.67	1.7	PQL	ug/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH089

Laboratory: LL

EDD Filename: PH089_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method: 8082A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-592-SA8-SB-0.0-0.5	AROCLOR 1254	J	8.8	17	PQL	ug/Kg	J (all detects)
	Aroclor 5460	J	18	33	PQL	ug/Kg	
SL-593-SA8-SB-0.0-0.5	AROCLOR 1254	J	9.4	17	PQL	ug/Kg	J (all detects)
	Aroclor 5460	J	20	33	PQL	ug/Kg	

Method: 8151A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-590-SA8-SB-0.0-0.5	2,4-D	J	25	37	PQL	ug/Kg	J (all detects)
SL-590-SA8-SB-4.0-5.0	2,4-D	J	20	38	PQL	ug/Kg	J (all detects)

Method: 8270D SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-585-SA8-SB-0.0-0.5	BENZO(B)FLUORANTHENE	J	0.87	1.7	PQL	ug/Kg	J (all detects)
	BIS(2-ETHYLHEXYL)PHTHALATE	J	8.2	18	PQL	ug/Kg	
	CHRYSENE	J	0.87	1.7	PQL	ug/Kg	
	FLUORANTHENE	J	0.90	1.7	PQL	ug/Kg	
	PYRENE	J	0.77	1.7	PQL	ug/Kg	
SL-590-SA8-SB-0.0-0.5	1-METHYLNAPHTHALENE	J	1.4	1.7	PQL	ug/Kg	J (all detects)
	ANTHRACENE	J	0.40	1.7	PQL	ug/Kg	
	BENZO(A)ANTHRACENE	J	0.68	1.7	PQL	ug/Kg	
	BENZO(B)FLUORANTHENE	J	1.4	1.7	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	8.6	18	PQL	ug/Kg	
	FLUORENE	J	1.4	1.7	PQL	ug/Kg	
SL-590-SA8-SB-4.0-5.0	CHRYSENE	J	0.39	1.7	PQL	ug/Kg	J (all detects)
SL-591-SA8-SB-0.0-0.5	BENZO(B)FLUORANTHENE	J	1.4	1.7	PQL	ug/Kg	J (all detects)
	BIS(2-ETHYLHEXYL)PHTHALATE	J	9.1	18	PQL	ug/Kg	
	CHRYSENE	J	1.3	1.7	PQL	ug/Kg	
	FLUORANTHENE	J	1.5	1.7	PQL	ug/Kg	
	PHENANTHRENE	J	0.98	1.7	PQL	ug/Kg	
	PYRENE	J	1.3	1.7	PQL	ug/Kg	
SL-592-SA8-SB-0.0-0.5	BENZO(B)FLUORANTHENE	J	0.83	1.7	PQL	ug/Kg	J (all detects)
	BIS(2-ETHYLHEXYL)PHTHALATE	J	10	18	PQL	ug/Kg	
	CHRYSENE	J	0.79	1.7	PQL	ug/Kg	
	FLUORANTHENE	J	0.85	1.7	PQL	ug/Kg	
	PYRENE	J	0.74	1.7	PQL	ug/Kg	
SL-593-SA8-SB-0.0-0.5	BENZO(G,H,I)PERYLENE	J	1.1	1.7	PQL	ug/Kg	J (all detects)
	BENZO(K)FLUORANTHENE	J	1.6	1.7	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	16	18	PQL	ug/Kg	
	FLUORENE	J	0.99	1.7	PQL	ug/Kg	
	INDENO(1,2,3-CD)PYRENE	J	0.98	1.7	PQL	ug/Kg	

LDC #: 30434D4

VALIDATION COMPLETENESS WORKSHEET

Date: 9/20/13

SDG #: PH089

ADR

Page: 1 of 1

Laboratory: Eurofins Lancaster Laboratories

Reviewer: [Signature]

2nd Reviewer: [Signature]

METHOD: Metals (EPA SW 846 Method 6010C/6020A/7000)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	—	Sampling dates:
II.	ICP/MS Tune	—	
III.	Calibration	—	
IV.	Blanks	Δ	
V.	ICP Interference Check Sample (ICS) Analysis	—	
VI.	Matrix Spike Analysis	N	MS/D (see PH090)
VII.	Duplicate Sample Analysis	N	Dup ↓
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	A	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	N	
XIV.	Field Duplicates	—	
XV.	Field Blanks	SW	FB = FB-041113 EB = EB-081413

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

(PH029)

(PH091)

Validated Samples: soil

1	SL-590-SA8-SB-4.0-5.0	11	(#2) Dup #5	21		31	
2	SL-590-SA8-SB-7.0-8.0	12		22		32	
3	SL-591-SA8-SB-0.0-0.5	13		23		33	
4	SL-592-SA8-SB-0.0-0.5	14		24		34	
5	SL-592-SA8-SB-3.5-4.5	15		25		35	
6	SL-593-SA8-SB-0.0-0.5	16		26		36	
7	SL-593-SA8-SB-4.0-5.0	17		27		37	
8	SL-585-SA8-SB-0.0-0.5	18		28		38	
9	(#2) MS ↓ MS ↓	19		29		39	
10		20		30		40	

Notes: _____

VALIDATION FINDINGS WORKSHEET Field Blanks

METHOD: Trace Metals (EPA SW846 6010B/7000)

Blank units: mg/L **Associated sample units:** mg/Kg Reason: F

Sampling date: 4/11/13 Soil factor applied 100x

Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: All

Analyte	Blank ID	Action Limit	Sample Identification									
			1	2	3	4	5	6	7	8		
	FB-041113 (SDG: PH029)	1.8										
Cu	0.0036	1.8										
Mo	0.0036	1.8	0.488 0.49	0.213	0.446 0.45	0.481	0.446 0.45	0.355 0.36	0.498 0.50	0.416 0.42		

Sampling date: 8/14/13 Soil factor applied 100x

Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: All

Analyte	Blank ID	Action Limit	Sample Identification									
			1	2	3	4	5	6	7	8		
	EB-081413 (SDG: PH091)	39.9										
Ca	0.0798	39.9										
B	0.0106	5.3	3.59 3.6	1.73	3.36 3.4	3.08 3.1	1.66 1.7	3.24	2.69 2.7	3.31		

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:

Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

**Data Validation Report
Santa Susana Field Laboratory**

Subarea 8

SDG: PH090

Prepared for

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Prepared by

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November 16, 2013

INTRODUCTION

This Data Validation Report (DVR) presents Level IV data validation results for samples collected on August 13, 2013. Data validation was performed in accordance with the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008), Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005), and for Inorganic Data Review (January 2010). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Semivolatiles (SVOCs) by Environmental Protection Agency (EPA) SW 846 Method 8270D utilizing Selective Ion Monitoring (SIM)

Polychlorinated Biphenyls (PCBs) by EPA SW 846 Method 8082A

Metals by EPA SW 846 Method 6010C, 6020A, and 7471B

Total Petroleum Hydrocarbons (TPH) as Gasoline by EPA SW 846 Method 8015M

TPH as Extractables by EPA SW 846 Method 8015M

Dioxins and Dibenzofurans by EPA Method 1613B

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment II. Automated Data Review outliers are presented in Enclosure I. Method specific Level IV DVRs are presented in Enclosure II.

All sample results were subjected to Level IV data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibrations, initial and continuing calibration blanks (ICB/CCBs), surrogates, internal standards, interference check (ICSA and ICSAB) samples, matrix spike/matrix spike duplicates (MS/MSD), laboratory duplicates (DUP), laboratory control sample/laboratory control sample duplicates (LCS/LCSD), ICP serial dilutions, method blanks, trip blanks, equipment blanks, field blanks, field duplicate samples, and the raw data to confirm sample quantitation and identification.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of initial and continuing calibrations, ICB/CCBs, interference check samples, and ICP serial dilutions, which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Continuing Calibration

All criteria for the initial calibration verifications and continuing calibration of each method were met.

IV. Blanks

Method blanks were performed at the required frequencies. No contaminant concentrations were detected in the method or preparation blanks with the exception of two blanks for dioxins and metals. The associated sample results were qualified as non-detected (U) due to method blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the associated blanks were not qualified. The details regarding the qualification of data are provided in Enclosure I.

No contaminant concentrations were detected in the initial or continuing calibration blanks with the exceptions of several metals. The details regarding the qualification of data are provided in Enclosure II.

V. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed at the required frequency. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of one MS/MSD pair for SVOCs, TPH as extractables and metals. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosure I.

VIII. Laboratory Duplicates Sample

Laboratory duplicates (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits with the exception of one DUP for metals. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosure I.

IX. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. ICP Serial Dilution

ICP serial dilution analysis was performed by the laboratory. The analysis criteria were met.

XII. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the RL as detected were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH090	All compounds reported as detected below the RL.	J (all detects)	A

XIII. Field Duplicate Samples

One field duplicate pair was collected and analyzed for SVOCs, PCBs, metals, TPH as gasoline, TPH as extractables and dioxins. All RPDs were within QC limits with the exception of several SVOCs and dioxins. In these duplicate pairs, the associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The field duplicate result comparisons are provided in Enclosure I.

XIV. Field Blank Samples

One trip blank was collected and analyzed for TPH as gasoline. No contaminants were found in the trip blank.

One equipment blank (from SDG PH091) was collected and analyzed for SVOCs, PCBs, metals, TPH as gasoline, TPH as extractables and dioxins. The equipment blank had several detections for SVOCs, metals and dioxins. The associated sample results were not detected or were significantly greater than the concentrations found in the equipment blank, therefore no data were qualified.

One field blank (from SDG PH029) was collected and analyzed for SVOCs, PCBs, metals, TPH as gasoline, TPH as extractables and dioxins. The field blank had detections for several SVOCs, metals and dioxins. The associated sample results were qualified as non-detected (U) due to field blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the field blank were not qualified. The field blank outlier reports are presented in Enclosure I.

XV. Overall Assessment of Data

No data associated with this sampling event were rejected. The overall assessment of QA/QC data review by automated and manual validation of this sampling event met project requirements and analytical completeness levels with the exceptions noted in the above sections. All data are deemed useable for the intended use.

Data flags are summarized and are presented as Attachment 2.

Attachment 1
Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
13-Aug-2013	SL-543-SA8-SB-0.0-0.5	7160447	N	3050B	6010C	IV
13-Aug-2013	SL-543-SA8-SB-0.0-0.5	7160447	N	3050B	6020A	IV
13-Aug-2013	SL-543-SA8-SB-0.0-0.5	7160447	N	3546	8015M	IV
13-Aug-2013	SL-543-SA8-SB-0.0-0.5	7160447	N	3546	8082A	IV
13-Aug-2013	SL-543-SA8-SB-0.0-0.5	7160447	N	3546	8270D SIM	IV
13-Aug-2013	SL-543-SA8-SB-0.0-0.5	7160447	N	METHOD	1613B	IV
13-Aug-2013	SL-543-SA8-SB-0.0-0.5	7160447	N	METHOD	7471B	IV
13-Aug-2013	TB-081313	7160446	TB	5030B	8015M	IV
13-Aug-2013	SL-543-SA8-SB-4.0-5.0	7160448	N	3050B	6010C	IV
13-Aug-2013	SL-543-SA8-SB-4.0-5.0	7160448	N	3050B	6020A	IV
13-Aug-2013	SL-543-SA8-SB-4.0-5.0	7160448	N	3546	8015M	IV
13-Aug-2013	SL-543-SA8-SB-4.0-5.0	7160448	N	3546	8082A	IV
13-Aug-2013	SL-543-SA8-SB-4.0-5.0	7160448	N	3546	8270D SIM	IV
13-Aug-2013	SL-543-SA8-SB-4.0-5.0	7160448	N	5035A	8015M	IV
13-Aug-2013	SL-543-SA8-SB-4.0-5.0	7160448	N	METHOD	1613B	IV
13-Aug-2013	SL-543-SA8-SB-4.0-5.0	7160448	N	METHOD	7471B	IV
13-Aug-2013	SL-543-SA8-SB-4.0-5.0MS	7160449	MS	3050B	6010C	IV
13-Aug-2013	SL-543-SA8-SB-4.0-5.0MS	7160449	MS	3050B	6020A	IV
13-Aug-2013	SL-543-SA8-SB-4.0-5.0MS	7160449	MS	3546	8015M	IV
13-Aug-2013	SL-543-SA8-SB-4.0-5.0MS	7160449	MS	3546	8082A	IV
13-Aug-2013	SL-543-SA8-SB-4.0-5.0MS	7160449	MS	3546	8270D SIM	IV
13-Aug-2013	SL-543-SA8-SB-4.0-5.0MS	7160449	MS	5035A	8015M	IV
13-Aug-2013	SL-543-SA8-SB-4.0-5.0MS	7160449	MS	METHOD	1613B	IV
13-Aug-2013	SL-543-SA8-SB-4.0-5.0MS	7160449	MS	METHOD	7471B	IV
13-Aug-2013	SL-543-SA8-SB-4.0-5.0MSD	7160450	MSD	3050B	6010C	IV
13-Aug-2013	SL-543-SA8-SB-4.0-5.0MSD	7160450	MSD	3050B	6020A	IV

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
13-Aug-2013	SL-543-SA8-SB-4.0-5.0MSD	7160450	MSD	3546	8015M	IV
13-Aug-2013	SL-543-SA8-SB-4.0-5.0MSD	7160450	MSD	3546	8082A	IV
13-Aug-2013	SL-543-SA8-SB-4.0-5.0MSD	7160450	MSD	3546	8270D SIM	IV
13-Aug-2013	SL-543-SA8-SB-4.0-5.0MSD	7160450	MSD	5035A	8015M	IV
13-Aug-2013	SL-543-SA8-SB-4.0-5.0MSD	7160450	MSD	METHOD	1613B	IV
13-Aug-2013	SL-543-SA8-SB-4.0-5.0MSD	7160450	MSD	METHOD	7471B	IV
13-Aug-2013	SL-543-SA8-SB-4.0-5.0DUP	7160451	DUP	3050B	6010C	IV
13-Aug-2013	SL-543-SA8-SB-4.0-5.0DUP	7160451	DUP	3050B	6020A	IV
13-Aug-2013	SL-543-SA8-SB-4.0-5.0DUP	7160451	DUP	METHOD	7471B	IV
13-Aug-2013	SL-843-SA8-SB-4.0-5.0	7160452	FD	3050B	6010C	IV
13-Aug-2013	SL-843-SA8-SB-4.0-5.0	7160452	FD	3050B	6020A	IV
13-Aug-2013	SL-843-SA8-SB-4.0-5.0	7160452	FD	3546	8015M	IV
13-Aug-2013	SL-843-SA8-SB-4.0-5.0	7160452	FD	3546	8082A	IV
13-Aug-2013	SL-843-SA8-SB-4.0-5.0	7160452	FD	3546	8270D SIM	IV
13-Aug-2013	SL-843-SA8-SB-4.0-5.0	7160452	FD	5035A	8015M	IV
13-Aug-2013	SL-843-SA8-SB-4.0-5.0	7160452	FD	METHOD	1613B	IV
13-Aug-2013	SL-843-SA8-SB-4.0-5.0	7160452	FD	METHOD	7471B	IV
13-Aug-2013	SL-609-SA8-SB-0.0-0.5	7160453	N	3050B	6010C	IV
13-Aug-2013	SL-609-SA8-SB-0.0-0.5	7160453	N	3050B	6020A	IV
13-Aug-2013	SL-609-SA8-SB-0.0-0.5	7160453	N	3546	8015M	IV
13-Aug-2013	SL-609-SA8-SB-0.0-0.5	7160453	N	3546	8082A	IV
13-Aug-2013	SL-609-SA8-SB-0.0-0.5	7160453	N	3546	8270D SIM	IV
13-Aug-2013	SL-609-SA8-SB-0.0-0.5	7160453	N	METHOD	1613B	IV
13-Aug-2013	SL-609-SA8-SB-0.0-0.5	7160453	N	METHOD	7471B	IV
13-Aug-2013	SL-609-SA8-SB-4.0-5.0	7160454	N	3050B	6010C	IV
13-Aug-2013	SL-609-SA8-SB-4.0-5.0	7160454	N	3050B	6020A	IV

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
13-Aug-2013	SL-609-SA8-SB-4.0-5.0	7160454	N	3546	8015M	IV
13-Aug-2013	SL-609-SA8-SB-4.0-5.0	7160454	N	3546	8082A	IV
13-Aug-2013	SL-609-SA8-SB-4.0-5.0	7160454	N	3546	8270D SIM	IV
13-Aug-2013	SL-609-SA8-SB-4.0-5.0	7160454	N	5035A	8015M	IV
13-Aug-2013	SL-609-SA8-SB-4.0-5.0	7160454	N	METHOD	1613B	IV
13-Aug-2013	SL-609-SA8-SB-4.0-5.0	7160454	N	METHOD	7471B	IV
13-Aug-2013	SL-614-SA8-SB-0.0-0.5	7160455	N	3050B	6010C	IV
13-Aug-2013	SL-614-SA8-SB-0.0-0.5	7160455	N	3050B	6020A	IV
13-Aug-2013	SL-614-SA8-SB-0.0-0.5	7160455	N	3546	8015M	IV
13-Aug-2013	SL-614-SA8-SB-0.0-0.5	7160455	N	3546	8082A	IV
13-Aug-2013	SL-614-SA8-SB-0.0-0.5	7160455	N	3546	8270D SIM	IV
13-Aug-2013	SL-614-SA8-SB-0.0-0.5	7160455	N	METHOD	1613B	IV
13-Aug-2013	SL-614-SA8-SB-0.0-0.5	7160455	N	METHOD	7471B	IV
13-Aug-2013	SL-614-SA8-SB-4.0-5.0	7160456	N	3050B	6010C	IV
13-Aug-2013	SL-614-SA8-SB-4.0-5.0	7160456	N	3050B	6020A	IV
13-Aug-2013	SL-614-SA8-SB-4.0-5.0	7160456	N	3546	8015M	IV
13-Aug-2013	SL-614-SA8-SB-4.0-5.0	7160456	N	3546	8082A	IV
13-Aug-2013	SL-614-SA8-SB-4.0-5.0	7160456	N	3546	8270D SIM	IV
13-Aug-2013	SL-614-SA8-SB-4.0-5.0	7160456	N	5035A	8015M	IV
13-Aug-2013	SL-614-SA8-SB-4.0-5.0	7160456	N	METHOD	1613B	IV
13-Aug-2013	SL-614-SA8-SB-4.0-5.0	7160456	N	METHOD	7471B	IV

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH090

Laboratory: LL

EDD Filename: PH090_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: METALS
Method: 6010C **Matrix:** SO

Sample ID: SL-543-SA8-SB-0.0-0.5 Collected: 8/13/2013 7:45:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.07	U	0.753	MDL	4.07	PQL	mg/Kg	UJ	Q
ARSENIC	3.35	J	0.712	MDL	4.07	PQL	mg/Kg	J	Z
BERYLLIUM	0.906	J	0.0682	MDL	1.02	PQL	mg/Kg	J	Z
BORON	9.80	J	0.855	MDL	10.2	PQL	mg/Kg	J	Z
CADMIUM	0.123	J	0.0773	MDL	1.02	PQL	mg/Kg	J	Z
MOLYBDENUM	0.294	J	0.173	MDL	2.04	PQL	mg/Kg	U	F
PHOSPHORUS	591		2.94	MDL	10.2	PQL	mg/Kg	J	Q
SODIUM	97.6	J	17.0	MDL	102	PQL	mg/Kg	J	Z
TIN	3.52	J	0.224	MDL	10.2	PQL	mg/Kg	U	B

Sample ID: SL-543-SA8-SB-4.0-5.0 Collected: 8/13/2013 8:15:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.43	U	0.820	MDL	4.43	PQL	mg/Kg	UJ	Q
ARSENIC	2.60	J	0.775	MDL	4.43	PQL	mg/Kg	J	Z
BERYLLIUM	1.08	J	0.0742	MDL	1.11	PQL	mg/Kg	J	Z
BORON	7.60	J	0.930	MDL	11.1	PQL	mg/Kg	J	Z
MOLYBDENUM	0.250	J	0.188	MDL	2.21	PQL	mg/Kg	U	F
PHOSPHORUS	261		3.20	MDL	11.1	PQL	mg/Kg	J	Q
TIN	4.06	J	0.244	MDL	11.1	PQL	mg/Kg	U	B

Sample ID: SL-609-SA8-SB-0.0-0.5 Collected: 8/13/2013 12:15:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.17	U	0.771	MDL	4.17	PQL	mg/Kg	UJ	Q
ARSENIC	2.82	J	0.729	MDL	4.17	PQL	mg/Kg	J	Z
BERYLLIUM	0.923	J	0.0698	MDL	1.04	PQL	mg/Kg	J	Z
MOLYBDENUM	0.189	J	0.177	MDL	2.08	PQL	mg/Kg	U	F
PHOSPHORUS	766		3.01	MDL	10.4	PQL	mg/Kg	J	Q
TIN	3.63	J	0.229	MDL	10.4	PQL	mg/Kg	U	B

Sample ID: SL-609-SA8-SB-4.0-5.0 Collected: 8/13/2013 12:45:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.39	U	0.812	MDL	4.39	PQL	mg/Kg	UJ	Q

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH090

Laboratory: LL

EDD Filename: PH090_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: METALS

Method: 6010C

Matrix: SO

Sample ID: SL-609-SA8-SB-4.0-5.0

Collected: 8/13/2013 12:45:00

Analysis Type: RES

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	4.34	J	0.768	MDL	4.39	PQL	mg/Kg	J	Z
BERYLLIUM	0.857	J	0.0735	MDL	1.10	PQL	mg/Kg	J	Z
PHOSPHORUS	568		3.17	MDL	11.0	PQL	mg/Kg	J	Q
TIN	3.61	J	0.241	MDL	11.0	PQL	mg/Kg	U	B

Sample ID: SL-614-SA8-SB-0.0-5.0

Collected: 8/13/2013 1:45:00

Analysis Type: RES

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.20	U	0.776	MDL	4.20	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.692	J	0.0703	MDL	1.05	PQL	mg/Kg	J	Z
CADMIUM	0.148	J	0.0797	MDL	1.05	PQL	mg/Kg	J	Z
MOLYBDENUM	0.208	J	0.178	MDL	2.10	PQL	mg/Kg	U	F
PHOSPHORUS	539		3.03	MDL	10.5	PQL	mg/Kg	J	Q
TIN	3.42	J	0.231	MDL	10.5	PQL	mg/Kg	U	B

Sample ID: SL-614-SA8-SB-4.0-5.0

Collected: 8/13/2013 2:10:00

Analysis Type: RES

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.25	U	0.787	MDL	4.25	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.713	J	0.0712	MDL	1.06	PQL	mg/Kg	J	Z
CADMIUM	0.101	J	0.0808	MDL	1.06	PQL	mg/Kg	J	Z
PHOSPHORUS	529		3.07	MDL	10.6	PQL	mg/Kg	J	Q
TIN	3.56	J	0.234	MDL	10.6	PQL	mg/Kg	U	B

Sample ID: SL-843-SA8-SB-4.0-5.0

Collected: 8/13/2013 8:30:00

Analysis Type: RES

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.50	U	0.832	MDL	4.50	PQL	mg/Kg	UJ	Q
ARSENIC	3.25	J	0.787	MDL	4.50	PQL	mg/Kg	J	Z
BERYLLIUM	1.07	J	0.0754	MDL	1.12	PQL	mg/Kg	J	Z
BORON	7.10	J	0.945	MDL	11.2	PQL	mg/Kg	J	Z
MOLYBDENUM	0.297	J	0.191	MDL	2.25	PQL	mg/Kg	U	F
PHOSPHORUS	287		3.25	MDL	11.2	PQL	mg/Kg	J	Q
TIN	3.90	J	0.247	MDL	11.2	PQL	mg/Kg	U	B

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

11/6/2013 9:52:31 AM

ADR version 1.7.0.207

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Data Qualifier Summary

Lab Reporting Batch ID: PH090

Laboratory: LL

EDD Filename: PH090_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method Category:	METALS	
Method:	6020A	Matrix: SO

Sample ID: SL-543-SA8-SB-0.0-0.5	Collected: 8/13/2013 7:45:00	Analysis Type: REA2	Dilution: 2						
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.345	J	0.102	MDL	0.407	PQL	mg/Kg	J	Z

Sample ID: SL-543-SA8-SB-0.0-0.5	Collected: 8/13/2013 7:45:00	Analysis Type: RES	Dilution: 2						
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0469	J	0.0265	MDL	0.204	PQL	mg/Kg	J	Z
STRONTIUM	57.0		0.0692	MDL	0.407	PQL	mg/Kg	J	E
THALLIUM	0.463		0.0305	MDL	0.204	PQL	mg/Kg	J	Q

Sample ID: SL-543-SA8-SB-4.0-5.0	Collected: 8/13/2013 8:15:00	Analysis Type: REA2	Dilution: 2						
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.198	J	0.111	MDL	0.443	PQL	mg/Kg	J	Z

Sample ID: SL-543-SA8-SB-4.0-5.0	Collected: 8/13/2013 8:15:00	Analysis Type: RES	Dilution: 2						
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0507	J	0.0288	MDL	0.221	PQL	mg/Kg	J	Z
STRONTIUM	49.2		0.0753	MDL	0.443	PQL	mg/Kg	J	E
THALLIUM	0.401		0.0332	MDL	0.221	PQL	mg/Kg	J	Q

Sample ID: SL-609-SA8-SB-0.0-0.5	Collected: 8/13/2013 12:15:00	Analysis Type: REA	Dilution: 5						
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	109		0.177	MDL	1.04	PQL	mg/Kg	J	E

Sample ID: SL-609-SA8-SB-0.0-0.5	Collected: 8/13/2013 12:15:00	Analysis Type: RES	Dilution: 2						
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0368	J	0.0271	MDL	0.208	PQL	mg/Kg	J	Z
THALLIUM	0.391		0.0313	MDL	0.208	PQL	mg/Kg	J	Q

Sample ID: SL-609-SA8-SB-4.0-5.0	Collected: 8/13/2013 12:45:00	Analysis Type: REA	Dilution: 10						
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	187		0.373	MDL	2.20	PQL	mg/Kg	J	E

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH090

Laboratory: LL

EDD Filename: PH090_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: METALS
Method: 6020A **Matrix:** SO

Sample ID: SL-609-SA8-SB-4.0-5.0 Collected: 8/13/2013 12:45:00 Analysis Type: REA2 Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.278	J	0.110	MDL	0.439	PQL	mg/Kg	J	Z

Sample ID: SL-609-SA8-SB-4.0-5.0 Collected: 8/13/2013 12:45:00 Analysis Type: RES Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0362	J	0.0285	MDL	0.220	PQL	mg/Kg	J	Z
THALLIUM	0.405		0.0329	MDL	0.220	PQL	mg/Kg	J	Q

Sample ID: SL-614-SA8-SB-0.0-0.5 Collected: 8/13/2013 1:45:00 Analysis Type: REA Dilution: 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	191		0.357	MDL	2.10	PQL	mg/Kg	J	E

Sample ID: SL-614-SA8-SB-0.0-0.5 Collected: 8/13/2013 1:45:00 Analysis Type: REA2 Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.344	J	0.105	MDL	0.420	PQL	mg/Kg	J	Z

Sample ID: SL-614-SA8-SB-0.0-0.5 Collected: 8/13/2013 1:45:00 Analysis Type: RES Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0465	J	0.0273	MDL	0.210	PQL	mg/Kg	J	Z
THALLIUM	0.349		0.0315	MDL	0.210	PQL	mg/Kg	J	Q

Sample ID: SL-614-SA8-SB-4.0-5.0 Collected: 8/13/2013 2:10:00 Analysis Type: REA Dilution: 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	186		0.362	MDL	2.13	PQL	mg/Kg	J	E

Sample ID: SL-614-SA8-SB-4.0-5.0 Collected: 8/13/2013 2:10:00 Analysis Type: REA2 Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.218	J	0.106	MDL	0.425	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH090

Laboratory: LL

EDD Filename: PH090_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: METALS
Method: 6020A **Matrix:** SO

Sample ID: SL-614-SA8-SB-4.0-5.0 Collected: 8/13/2013 2:10:00 Analysis Type: RES Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0338	J	0.0276	MDL	0.213	PQL	mg/Kg	J	Z
THALLIUM	0.368		0.0319	MDL	0.213	PQL	mg/Kg	J	Q

Sample ID: SL-843-SA8-SB-4.0-5.0 Collected: 8/13/2013 8:30:00 Analysis Type: REA2 Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.262	J	0.112	MDL	0.450	PQL	mg/Kg	J	Z

Sample ID: SL-843-SA8-SB-4.0-5.0 Collected: 8/13/2013 8:30:00 Analysis Type: RES Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0616	J	0.0292	MDL	0.225	PQL	mg/Kg	J	Z
STRONTIUM	59.0		0.0765	MDL	0.450	PQL	mg/Kg	J	E
THALLIUM	0.445		0.0337	MDL	0.225	PQL	mg/Kg	J	Q

Method Category: METALS
Method: 7471B **Matrix:** SO

Sample ID: SL-543-SA8-SB-0.0-0.5 Collected: 8/13/2013 7:45:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0108	J	0.0098	MDL	0.0163	PQL	mg/Kg	J	Z

Sample ID: SL-609-SA8-SB-0.0-0.5 Collected: 8/13/2013 12:15:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0156	J	0.0100	MDL	0.0167	PQL	mg/Kg	J	Z

Sample ID: SL-609-SA8-SB-4.0-5.0 Collected: 8/13/2013 12:45:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0178	J	0.0108	MDL	0.0181	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH090

Laboratory: LL

EDD Filename: PH090_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: METALS
Method: 7471B **Matrix:** SO

Sample ID: SL-614-SA8-SB-4.0-5.0 Collected: 8/13/2013 2:10:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0119	J	0.0102	MDL	0.0170	PQL	mg/Kg	J	Z

Method Category: SVOA
Method: 1613B **Matrix:** SO

Sample ID: SL-543-SA8-SB-0.0-5.0 Collected: 8/13/2013 7:45:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	3.71	JBQ	0.140	MDL	5.17	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	1.05	JB	0.0388	MDL	5.17	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0945	JB	0.0783	MDL	5.17	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0961	JQ	0.0747	MDL	5.17	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.149	JBQ	0.0612	MDL	5.17	PQL	ng/Kg	U	B
1,2,3,6,7,8-HxCDD	0.532	JQ	0.0854	MDL	5.17	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HxCDD	0.532	JQ	0.0903	MDL	5.17	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.266	JQ	0.0755	MDL	5.17	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.195	JBQ	0.150	MDL	5.17	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	1.48	J	0.0835	MDL	5.17	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.164	JQ	0.0611	MDL	5.17	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.103	JBQ	0.0786	MDL	5.17	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.355	JQ	0.158	MDL	1.03	PQL	ng/Kg	J	Z
OCDF	2.33	JB	0.105	MDL	10.3	PQL	ng/Kg	J	Z

Sample ID: SL-543-SA8-SB-4.0-5.0 Collected: 8/13/2013 8:15:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.436	JBQ	0.0559	MDL	5.54	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.0899	JBQ	0.0168	MDL	5.54	PQL	ng/Kg	UJ	B, FD
1,2,3,4,7,8,9-HPCDF	5.54	U	0.0426	MDL	5.54	PQL	ng/Kg	UJ	FD
1,2,3,4,7,8-HxCDD	5.54	U	0.0559	MDL	5.54	PQL	ng/Kg	UJ	FD
1,2,3,4,7,8-HXCDF	0.0429	JBQ	0.0368	MDL	5.54	PQL	ng/Kg	UJ	B, FD
1,2,3,6,7,8-HxCDD	0.245	JQ	0.0607	MDL	5.54	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0787	JB	0.0321	MDL	5.54	PQL	ng/Kg	U	B
1,2,3,7,8,9-HxCDD	0.380	JQ	0.0604	MDL	5.54	PQL	ng/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH090

Laboratory: LL

EDD Filename: PH090_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: SVOA

Method: 1613B

Matrix: SO

Sample ID: SL-543-SA8-SB-4.0-5.0

Collected: 8/13/2013 8:15:00

Analysis Type: RES

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,7,8,9-HXCDF	0.359	J	0.0457	MDL	5.54	PQL	ng/Kg	J	Z, FD
1,2,3,7,8-PECDD	5.54	U	0.0849	MDL	5.54	PQL	ng/Kg	UJ	FD
1,2,3,7,8-PECDF	0.181	JQ	0.0359	MDL	5.54	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	5.54	U	0.0349	MDL	5.54	PQL	ng/Kg	UJ	FD
2,3,4,7,8-PECDF	5.54	U	0.0418	MDL	5.54	PQL	ng/Kg	UJ	FD
OCDD	2.26	JB	0.0431	MDL	11.1	PQL	ng/Kg	J	Z, FD
OCDF	0.265	JBQ	0.0953	MDL	11.1	PQL	ng/Kg	U	B

Sample ID: SL-609-SA8-SB-0.0-0.5

Collected: 8/13/2013 12:15:00

Analysis Type: RES

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	1.08	JB	0.0658	MDL	5.16	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.172	JBQ	0.0168	MDL	5.16	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0507	JBQ	0.0421	MDL	5.16	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0781	JBQ	0.0339	MDL	5.16	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.109	JQ	0.0535	MDL	5.16	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0890	JBQ	0.0290	MDL	5.16	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.107	JQ	0.0526	MDL	5.16	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.114	JQ	0.0413	MDL	5.16	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.0676	JQ	0.0326	MDL	5.16	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.0766	JBQ	0.0469	MDL	5.16	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.148	J	0.0951	MDL	1.03	PQL	ng/Kg	J	Z
OCDD	6.00	JB	0.0440	MDL	10.3	PQL	ng/Kg	J	Z
OCDF	0.281	JB	0.0823	MDL	10.3	PQL	ng/Kg	U	B

Sample ID: SL-609-SA8-SB-4.0-5.0

Collected: 8/13/2013 12:45:00

Analysis Type: RES

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.302	JB	0.0424	MDL	5.47	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.0859	JBQ	0.0102	MDL	5.47	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0811	JBQ	0.0292	MDL	5.47	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0806	J	0.0292	MDL	5.47	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.0408	JBQ	0.0276	MDL	5.47	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0532	J	0.0309	MDL	5.47	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0581	JBQ	0.0226	MDL	5.47	PQL	ng/Kg	U	B

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH090

Laboratory: LL

EDD Filename: PH090_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: SVOA
Method: 1613B **Matrix:** SO

Sample ID: SL-609-SA8-SB-4.0-5.0 Collected: 8/13/2013 12:45:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,7,8,9-HXCDD	0.0377	JQ	0.0308	MDL	5.47	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.0309	JQ	0.0251	MDL	5.47	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.0642	JB	0.0378	MDL	5.47	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.0753	JQ	0.0724	MDL	1.09	PQL	ng/Kg	J	Z
OCDD	1.75	JB	0.0335	MDL	10.9	PQL	ng/Kg	J	Z
OCDF	0.209	JB	0.0731	MDL	10.9	PQL	ng/Kg	U	B

Sample ID: SL-614-SA8-SB-0.0-5.0 Collected: 8/13/2013 1:45:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	4.27	JB	0.0576	MDL	5.15	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.832	JB	0.0251	MDL	5.15	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.169	JB	0.0583	MDL	5.15	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.201	JQ	0.0478	MDL	5.15	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.236	JBQ	0.0505	MDL	5.15	PQL	ng/Kg	U	B
1,2,3,6,7,8-HxCDD	0.296	J	0.0528	MDL	5.15	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.223	JBQ	0.0439	MDL	5.15	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HxCDD	0.228	JQ	0.0520	MDL	5.15	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.337	JBQ	0.0666	MDL	5.15	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.358	J	0.0469	MDL	5.15	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.266	J	0.0445	MDL	5.15	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.470	JBQ	0.0524	MDL	5.15	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.106	J	0.0656	MDL	1.03	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.262	J	0.0944	MDL	1.03	PQL	ng/Kg	J	Z
OCDF	1.56	JBQ	0.0565	MDL	10.3	PQL	ng/Kg	J	Z

Sample ID: SL-614-SA8-SB-4.0-5.0 Collected: 8/13/2013 2:10:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	2.73	JB	0.0581	MDL	5.41	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.406	JB	0.0218	MDL	5.41	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0823	JBQ	0.0557	MDL	5.41	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.208	JQ	0.0441	MDL	5.41	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.229	JB	0.0389	MDL	5.41	PQL	ng/Kg	U	B
1,2,3,6,7,8-HxCDD	0.215	JQ	0.0484	MDL	5.41	PQL	ng/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH090

Laboratory: LL

EDD Filename: PH090_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: SVOA
Method: 1613B **Matrix:** SO

Sample ID: SL-614-SA8-SB-4.0-5.0 Collected: 8/13/2013 2:10:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,6,7,8-HXCDF	0.213	JBQ	0.0329	MDL	5.41	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.169	J	0.0514	MDL	5.41	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.129	JBQ	0.0674	MDL	5.41	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.438	J	0.0508	MDL	5.41	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.176	JQ	0.0359	MDL	5.41	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.284	JBQ	0.0525	MDL	5.41	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.224	JQ	0.0857	MDL	1.08	PQL	ng/Kg	J	Z
OCDF	0.958	JB	0.0761	MDL	10.8	PQL	ng/Kg	J	Z

Sample ID: SL-843-SA8-SB-4.0-5.0 Collected: 8/13/2013 8:30:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.690	JB	0.0634	MDL	5.37	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.195	JBQ	0.0165	MDL	5.37	PQL	ng/Kg	UJ	B, FD
1,2,3,4,7,8,9-HPCDF	0.0842	JBQ	0.0372	MDL	5.37	PQL	ng/Kg	UJ	B, FD
1,2,3,4,7,8-HxCDD	0.0875	J	0.0444	MDL	5.37	PQL	ng/Kg	J	Z, FD
1,2,3,4,7,8-HXCDF	0.105	JBQ	0.0357	MDL	5.37	PQL	ng/Kg	UJ	B, FD
1,2,3,6,7,8-HXCDD	0.220	JQ	0.0494	MDL	5.37	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.126	JB	0.0298	MDL	5.37	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.386	JQ	0.0497	MDL	5.37	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.607	JQ	0.0443	MDL	5.37	PQL	ng/Kg	J	Z, FD
1,2,3,7,8-PECDD	0.194	JB	0.0816	MDL	5.37	PQL	ng/Kg	UJ	B, FD
1,2,3,7,8-PECDF	0.219	J	0.0369	MDL	5.37	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.112	JQ	0.0322	MDL	5.37	PQL	ng/Kg	J	Z, FD
2,3,4,7,8-PECDF	0.0563	JB	0.0415	MDL	5.37	PQL	ng/Kg	UJ	B, FD
OCDD	5.06	JB	0.0402	MDL	10.7	PQL	ng/Kg	J	Z, FD
OCDF	0.422	JB	0.0777	MDL	10.7	PQL	ng/Kg	U	B

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH090

Laboratory: LL

EDD Filename: PH090_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: SVOA
Method: 8015M **Matrix:** SO

Sample ID: SL-609-SA8-SB-4.0-5.0 Collected: 8/13/2013 12:45:00 Analysis Type: REA Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C21-C30)	2.9	J	2.2	MDL	5.5	PQL	mg/Kg	J	Z
EFH (C30-C40)	9.2	J	4.4	MDL	11	PQL	mg/Kg	J	Z

Method Category: SVOA
Method: 8082A **Matrix:** SO

Sample ID: SL-543-SA8-SB-0.0-0.5 Collected: 8/13/2013 7:45:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1254	17	J	4.6	MDL	18	PQL	ug/Kg	J	Z

Method Category: SVOA
Method: 8270D SIM **Matrix:** SO

Sample ID: SL-543-SA8-SB-0.0-0.5 Collected: 8/13/2013 7:45:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1-METHYLNAPHTHALENE	0.76	J	0.70	MDL	1.7	PQL	ug/Kg	J	Z
2-METHYLNAPHTHALENE	1.5	J	0.70	MDL	1.7	PQL	ug/Kg	J	Z
ACENAPHTHYLENE	1.0	J	0.35	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: SL-543-SA8-SB-4.0-5.0 Collected: 8/13/2013 8:15:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1-METHYLNAPHTHALENE	1.9	U	0.75	MDL	1.9	PQL	ug/Kg	UJ	FD
2-METHYLNAPHTHALENE	1.9	U	0.75	MDL	1.9	PQL	ug/Kg	UJ	FD
BIS(2-ETHYLHEXYL)PHTHALATE	20	U	6.7	MDL	20	PQL	ug/Kg	UJ	FD
CHRYSENE	1.9	U	0.37	MDL	1.9	PQL	ug/Kg	UJ	FD
NAPHTHALENE	1.1	J	0.75	MDL	1.9	PQL	ug/Kg	J	Z

Sample ID: SL-609-SA8-SB-0.0-0.5 Collected: 8/13/2013 12:15:00 Analysis Type: RES-BASE/NEUTRAL Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-METHYLNAPHTHALENE	0.73	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(B)FLUORANTHENE	1.3	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH090

Laboratory: LL

EDD Filename: PH090_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: SVOA
Method: 8270D SIM **Matrix:** SO

Sample ID: SL-609-SA8-SB-0.0-0.5 Collected: 8/13/2013 12:15:00 Analysis Type: RES-BASE/NEUTRAL Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Butylbenzylphthalate	6.9	J	6.3	MDL	19	PQL	ug/Kg	J	Z
CHRYSENE	0.97	J	0.35	MDL	1.7	PQL	ug/Kg	J	Z
NAPHTHALENE	1.5	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: SL-609-SA8-SB-4.0-5.0 Collected: 8/13/2013 12:45:00 Analysis Type: RES-BASE/NEUTRAL Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NAPHTHALENE	1.3	J	0.74	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: SL-614-SA8-SB-0.0-0.5 Collected: 8/13/2013 1:45:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1-METHYLNAPHTHALENE	0.97	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z
2-METHYLNAPHTHALENE	1.0	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(A)PYRENE	0.76	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(G,H,I)PERYLENE	0.87	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(K)FLUORANTHENE	1.1	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z
CHRYSENE	1.0	J	0.35	MDL	1.8	PQL	ug/Kg	J	Z
FLUORANTHENE	0.90	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z
INDENO(1,2,3-CD)PYRENE	0.77	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z
PYRENE	0.97	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: SL-614-SA8-SB-4.0-5.0 Collected: 8/13/2013 2:10:00 Analysis Type: RES-BASE/NEUTRAL Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(B)FLUORANTHENE	0.86	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z
CHRYSENE	1.1	J	0.36	MDL	1.8	PQL	ug/Kg	J	Z
FLUORANTHENE	0.97	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z
PYRENE	1.1	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: SL-843-SA8-SB-4.0-5.0 Collected: 8/13/2013 8:30:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1-METHYLNAPHTHALENE	0.94	J	0.75	MDL	1.9	PQL	ug/Kg	J	Z, FD
2-METHYLNAPHTHALENE	1.1	J	0.75	MDL	1.9	PQL	ug/Kg	J	Z, FD

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH090

Laboratory: LL

EDD Filename: PH090_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: SVOA
Method: 8270D SIM **Matrix:** SO

Sample ID: SL-843-SA8-SB-4.0-5.0

Collected: 8/13/2013 8:30:00

Analysis Type: RES-BASE/NEUTRAL Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BIS(2-ETHYLHEXYL)PHTHALATE	7.5	J	6.7	MDL	20	PQL	ug/Kg	J	Z, FD
CHRYSENE	0.48	J	0.37	MDL	1.9	PQL	ug/Kg	J	Z, FD
NAPHTHALENE	1.6	J	0.75	MDL	1.9	PQL	ug/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

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Data Qualifier Summary

Lab Reporting Batch ID: PH090

Laboratory: LL

EDD Filename: PH090_v1

eQAPP Name: CDM_SSFL_131101_Lan

Reason Code Legend

<i>Reason Code</i>	<i>Description</i>
B	Method Blank Contamination
E	Laboratory Duplicate Precision
E	Matrix Spike Precision
F	Field Blank Contamination
FD	Field Duplicate Precision
Q	Laboratory Duplicate Precision
Q	Matrix Spike Lower Estimation
Q	Matrix Spike Precision
Q	Matrix Spike Upper Estimation
S	Surrogate/Tracer Recovery Upper Estimation
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

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Enclosure I
EPA Level III ADR Outliers
(Including Manual Review Outliers)

Quality Control Outlier Reports

PH090

Method Blank Outlier Report

Lab Reporting Batch ID: PH090

Laboratory: LL

EDD Filename: PH090_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method: 1613B
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2340B370919	8/24/2013 9:19:00 AM	1,2,3,4,6,7,8-HPCDD 1,2,3,4,6,7,8-HPCDF 1,2,3,4,7,8,9-HPCDF 1,2,3,4,7,8-HXCDF 1,2,3,6,7,8-HXCDF 1,2,3,7,8-PECDD 2,3,4,7,8-PECDF OCDD OCDF	0.0505 ng/Kg 0.0404 ng/Kg 0.0549 ng/Kg 0.0573 ng/Kg 0.0277 ng/Kg 0.0869 ng/Kg 0.0473 ng/Kg 0.294 ng/Kg 0.126 ng/Kg	SL-543-SA8-SB-0.0-0.5 SL-543-SA8-SB-4.0-5.0 SL-609-SA8-SB-0.0-0.5 SL-609-SA8-SB-4.0-5.0 SL-614-SA8-SB-0.0-0.5 SL-614-SA8-SB-4.0-5.0 SL-843-SA8-SB-4.0-5.0

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-543-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0945 ng/Kg	0.0945U ng/Kg
SL-543-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.149 ng/Kg	0.149U ng/Kg
SL-543-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.195 ng/Kg	0.195U ng/Kg
SL-543-SA8-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.103 ng/Kg	0.103U ng/Kg
SL-543-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0899 ng/Kg	0.0899U ng/Kg
SL-543-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.0429 ng/Kg	0.0429U ng/Kg
SL-543-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.0787 ng/Kg	0.0787U ng/Kg
SL-543-SA8-SB-4.0-5.0(RES)	OCDF	0.265 ng/Kg	0.265U ng/Kg
SL-609-SA8-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDF	0.172 ng/Kg	0.172U ng/Kg
SL-609-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0507 ng/Kg	0.0507U ng/Kg
SL-609-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.0781 ng/Kg	0.0781U ng/Kg
SL-609-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.0890 ng/Kg	0.0890U ng/Kg
SL-609-SA8-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.0766 ng/Kg	0.0766U ng/Kg
SL-609-SA8-SB-0.0-0.5(RES)	OCDF	0.281 ng/Kg	0.281U ng/Kg
SL-609-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0859 ng/Kg	0.0859U ng/Kg
SL-609-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0811 ng/Kg	0.0811U ng/Kg
SL-609-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.0408 ng/Kg	0.0408U ng/Kg
SL-609-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.0581 ng/Kg	0.0581U ng/Kg
SL-609-SA8-SB-4.0-5.0(RES)	2,3,4,7,8-PECDF	0.0642 ng/Kg	0.0642U ng/Kg
SL-609-SA8-SB-4.0-5.0(RES)	OCDF	0.209 ng/Kg	0.209U ng/Kg
SL-614-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.169 ng/Kg	0.169U ng/Kg
SL-614-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.236 ng/Kg	0.236U ng/Kg
SL-614-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.337 ng/Kg	0.337U ng/Kg
SL-614-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0823 ng/Kg	0.0823U ng/Kg
SL-614-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.229 ng/Kg	0.229U ng/Kg
SL-614-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDD	0.129 ng/Kg	0.129U ng/Kg
SL-843-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.195 ng/Kg	0.195U ng/Kg
SL-843-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0842 ng/Kg	0.0842U ng/Kg
SL-843-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.105 ng/Kg	0.105U ng/Kg
SL-843-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.126 ng/Kg	0.126U ng/Kg
SL-843-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDD	0.194 ng/Kg	0.194U ng/Kg
SL-843-SA8-SB-4.0-5.0(RES)	2,3,4,7,8-PECDF	0.0563 ng/Kg	0.0563U ng/Kg
SL-843-SA8-SB-4.0-5.0(RES)	OCDF	0.422 ng/Kg	0.422U ng/Kg

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

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Method Blank Outlier Report

Lab Reporting Batch ID: PH090

Laboratory: LL

EDD Filename: PH090_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method: 6010C
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P22537BB220520	8/23/2013 5:20:00 AM	TIN ZINC	1.83 mg/Kg 0.316 mg/Kg	SL-543-SA8-SB-0.0-0.5 SL-543-SA8-SB-4.0-5.0 SL-609-SA8-SB-0.0-0.5 SL-609-SA8-SB-4.0-5.0 SL-614-SA8-SB-0.0-0.5 SL-614-SA8-SB-4.0-5.0 SL-843-SA8-SB-4.0-5.0

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-543-SA8-SB-0.0-0.5(RES)	TIN	3.52 mg/Kg	3.52U mg/Kg
SL-543-SA8-SB-4.0-5.0(RES)	TIN	4.06 mg/Kg	4.06U mg/Kg
SL-609-SA8-SB-0.0-0.5(RES)	TIN	3.63 mg/Kg	3.63U mg/Kg
SL-609-SA8-SB-4.0-5.0(RES)	TIN	3.61 mg/Kg	3.61U mg/Kg
SL-614-SA8-SB-0.0-0.5(RES)	TIN	3.42 mg/Kg	3.42U mg/Kg
SL-614-SA8-SB-4.0-5.0(RES)	TIN	3.56 mg/Kg	3.56U mg/Kg
SL-843-SA8-SB-4.0-5.0(RES)	TIN	3.90 mg/Kg	3.90U mg/Kg

Field Blank Outlier Report

Lab Reporting Batch ID: PH090

Laboratory: LL

EDD Filename: PH090_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method: 6010C
Matrix: SO

Field Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
FB-041113(REA2)	4/11/2013 3:00:00 PM	COPPER MOLYBDENUM	0.0036 mg/L 0.0036 mg/L	SL-543-SA8-SB-0.0-0.5 SL-543-SA8-SB-4.0-5.0 SL-609-SA8-SB-0.0-0.5 SL-609-SA8-SB-4.0-5.0 SL-614-SA8-SB-0.0-0.5 SL-614-SA8-SB-4.0-5.0 SL-843-SA8-SB-4.0-5.0

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-543-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.294 mg/Kg	0.294U mg/Kg
SL-543-SA8-SB-4.0-5.0(RES)	MOLYBDENUM	0.250 mg/Kg	0.250U mg/Kg
SL-609-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.189 mg/Kg	0.189U mg/Kg
SL-614-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.208 mg/Kg	0.208U mg/Kg
SL-843-SA8-SB-4.0-5.0(RES)	MOLYBDENUM	0.297 mg/Kg	0.297U mg/Kg

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH090

Laboratory: LL

EDD Filename: PH090_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method: 8015M

Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-543-SA8-SB-4.0-5.0MSD (SL-543-SA8-SB-4.0-5.0)	EFH (C30-C40)	-	163	49.00-123.00	40 (20.00)	EFH (C30-C40)	J (all detects)

Method: 6010C

Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-543-SA8-SB-4.0-5.0MS (TOT)	ALUMINUM	1975	2935	75.00-125.00	-	ALUMINUM	J(all detects) Al, Ca, Mg, Mn, K, Ti, No Qual, >4x
SL-543-SA8-SB-4.0-5.0MSD (TOT)	CALCIUM	176	-	75.00-125.00	-	CALCIUM	
(SL-543-SA8-SB-0.0-0.5)	MAGNESIUM	198	278	75.00-125.00	-	MAGNESIUM	
SL-543-SA8-SB-4.0-5.0	MANGANESE	132	129	75.00-125.00	-	MANGANESE	
SL-609-SA8-SB-0.0-0.5	PHOSPHORUS	161	-	75.00-125.00	-	PHOSPHORUS	
SL-609-SA8-SB-4.0-5.0	POTASSIUM	190	152	75.00-125.00	-	POTASSIUM	
SL-614-SA8-SB-0.0-0.5	TITANIUM	225	242	75.00-125.00	-	TITANIUM	
SL-614-SA8-SB-4.0-5.0							
SL-843-SA8-SB-4.0-5.0)							
SL-543-SA8-SB-4.0-5.0MS (TOT)	ANTIMONY	51	52	75.00-125.00	-	ANTIMONY	
SL-543-SA8-SB-4.0-5.0MSD (TOT)	IRON	854	40	75.00-125.00	-	IRON	
(SL-543-SA8-SB-0.0-0.5)							
SL-543-SA8-SB-4.0-5.0							
SL-609-SA8-SB-0.0-0.5							
SL-609-SA8-SB-4.0-5.0							
SL-614-SA8-SB-0.0-0.5							
SL-614-SA8-SB-4.0-5.0							
SL-843-SA8-SB-4.0-5.0)							

Method: 6020A

Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-543-SA8-SB-4.0-5.0MS (TOT)	STRONTIUM	221	266	75.00-125.00	-	STRONTIUM	J(all detects) Sr, No Qual, >4x
SL-543-SA8-SB-4.0-5.0MSD (TOT)	THALLIUM	-	134	75.00-125.00	-	THALLIUM	
(SL-543-SA8-SB-0.0-0.5)							
SL-543-SA8-SB-4.0-5.0							
SL-609-SA8-SB-0.0-0.5							
SL-609-SA8-SB-4.0-5.0							
SL-614-SA8-SB-0.0-0.5							
SL-614-SA8-SB-4.0-5.0							
SL-843-SA8-SB-4.0-5.0)							

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH090

Laboratory: LL

EDD Filename: PH090_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method: 8270D SIM

Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-543-SA8-SB-4.0-5.0MSD (SL-543-SA8-SB-4.0-5.0)	N-NITROSODIMETHYLAMINE	-	115	48.00-113.00	-	N-NITROSODIMETHYLAMINE	J(all detects)

Lab Duplicate Outlier Report

Lab Reporting Batch ID: PH090

Laboratory: LL

EDD Filename: PH090_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method: 6010C
Matrix: SO

QC Sample ID (Associated Sample ID)	Analyte	Sample RPD	eQAPP RPD	Flag
SL-543-SA8-SB-4.0-5.0DUP (TOT) (SL-543-SA8-SB-0.0-0.5 SL-543-SA8-SB-4.0-5.0 SL-609-SA8-SB-0.0-0.5 SL-609-SA8-SB-4.0-5.0 SL-614-SA8-SB-0.0-0.5 SL-614-SA8-SB-4.0-5.0 SL-843-SA8-SB-4.0-5.0)	MOLYBDENUM	200	20.00	No Qual, OK by Difference

Method: 6020A
Matrix: SO

QC Sample ID (Associated Sample ID)	Analyte	Sample RPD	eQAPP RPD	Flag
SL-543-SA8-SB-4.0-5.0DUP (TOT) (SL-543-SA8-SB-0.0-0.5 SL-543-SA8-SB-4.0-5.0 SL-609-SA8-SB-0.0-0.5 SL-609-SA8-SB-4.0-5.0 SL-614-SA8-SB-0.0-0.5 SL-614-SA8-SB-4.0-5.0 SL-843-SA8-SB-4.0-5.0)	SELENIUM STRONTIUM	43 23	20.00 20.00	J(all detects) UJ(all non-detects) Se, No Qual, OK by Difference

Field Duplicate RPD Report

Lab Reporting Batch ID: PH090

Laboratory: LL

EDD Filename: PH090_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method: 160.3M
Matrix: SO

Analyte	Concentration (%)		Sample RPD	eQAPP RPD	Flag
	SL-543-SA8-SB-4.0-5.0	SL-843-SA8-SB-4.0-5.0			
MOISTURE	10.6	11.1	5		No Qualifiers Applied

Method: 1613B
Matrix: SO

Analyte	Concentration (ng/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-543-SA8-SB-4.0-5.0	SL-843-SA8-SB-4.0-5.0			
1,2,3,4,6,7,8-HPCDD	0.436	0.690	45	50.00	No Qualifiers Applied
1,2,3,6,7,8-HXCDD	0.245	0.220	11	50.00	
1,2,3,6,7,8-HXCDF	0.0787	0.126	46	50.00	
1,2,3,7,8,9-HXCDD	0.380	0.386	2	50.00	
1,2,3,7,8-PECDF	0.181	0.219	19	50.00	
OCDF	0.265	0.422	46	50.00	
1,2,3,4,6,7,8-HPCDF	0.0899	0.195	74	50.00	J(all detects) UJ(all non-detects)
1,2,3,4,7,8,9-HPCDF	5.54 U	0.0842	200	50.00	
1,2,3,4,7,8-HxCDD	5.54 U	0.0875	200	50.00	
1,2,3,4,7,8-HXCDF	0.0429	0.105	84	50.00	
1,2,3,7,8,9-HXCDF	0.359	0.607	51	50.00	
1,2,3,7,8-PCDD	5.54 U	0.194	200	50.00	
2,3,4,6,7,8-HXCDF	5.54 U	0.112	200	50.00	
2,3,4,7,8-PECDF	5.54 U	0.0563	200	50.00	
OCDD	2.26	5.06	77	50.00	

Method: 6010C
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-543-SA8-SB-4.0-5.0 (TOT)	SL-843-SA8-SB-4.0-5.0 (TOT)			
ALUMINUM	36500	35700	2	50.00	No Qualifiers Applied
ARSENIC	2.60	3.25	22	50.00	
BARIUM	160	159	1	50.00	
BERYLLIUM	1.08	1.07	1	50.00	
BORON	7.60	7.10	7	50.00	
CALCIUM	8040	10700	28	50.00	
CHROMIUM	41.1	41.1	0	50.00	
COBALT	10.1	10.8	7	50.00	
COPPER	18.9	19.1	1	50.00	
IRON	36500	36100	1	50.00	
LEAD	11.6	11.7	1	50.00	
LITHIUM	27.9	27.8	0	50.00	
MAGNESIUM	7890	7810	1	50.00	
MANGANESE	445	498	11	50.00	
MOLYBDENUM	0.250	0.297	17	50.00	
NICKEL	21.9	23.1	5	50.00	
PHOSPHORUS	261	287	9	50.00	
POTASSIUM	4910	5050	3	50.00	
SODIUM	320	257	22	50.00	
TIN	4.06	3.90	4	50.00	
TITANIUM	1890	1830	3	50.00	
VANADIUM	76.9	75.9	1	50.00	
ZINC	74.6	75.2	1	50.00	
Zirconium	8.30	8.28	0	50.00	

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

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Field Duplicate RPD Report

Lab Reporting Batch ID: PH090

Laboratory: LL

EDD Filename: PH090_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method: 6020A

Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-543-SA8-SB-4.0-5.0 (TOT)	SL-843-SA8-SB-4.0-5.0 (TOT)			
SELENIUM	0.198	0.262	28	50.00	No Qualifiers Applied
SILVER	0.0507	0.0616	19	50.00	
STRONTIUM	49.2	59.0	18	50.00	
THALLIUM	0.401	0.445	10	50.00	

Method: 8270D SIM

Matrix: SO

Analyte	Concentration (ug/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-543-SA8-SB-4.0-5.0	SL-843-SA8-SB-4.0-5.0			
NAPHTHALENE	1.1	1.6	37	50.00	No Qualifiers Applied
1-METHYLNAPHTHALENE	1.9 U	0.94	200	50.00	J(all detects) UJ(all non-detects)
2-METHYLNAPHTHALENE	1.9 U	1.1	200	50.00	
BIS(2-ETHYLHEXYL)PHTHALATE	20 U	7.5	200	50.00	
CHRYSENE	1.9 U	0.48	200	50.00	

Method: 9045M

Matrix: SO

Analyte	Concentration (pH unit)		Sample RPD	eQAPP RPD	Flag
	SL-543-SA8-SB-4.0-5.0	SL-843-SA8-SB-4.0-5.0			
PH	7.63	8.09	6	50.00	No Qualifiers Applied

Reporting Limit Outliers

Lab Reporting Batch ID: PH090

Laboratory: LL

EDD Filename: PH090_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method: 1613B
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-543-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JBQ	3.71	5.17	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JB	1.05	5.17	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.0945	5.17	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.0961	5.17	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDF	JBQ	0.149	5.17	PQL	ng/Kg	
	1,2,3,6,7,8-HxCDD	JQ	0.532	5.17	PQL	ng/Kg	
	1,2,3,7,8,9-HxCDD	JQ	0.532	5.17	PQL	ng/Kg	
	1,2,3,7,8,9-HxCDF	JQ	0.266	5.17	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.195	5.17	PQL	ng/Kg	
	1,2,3,7,8-PECDF	J	1.48	5.17	PQL	ng/Kg	
	2,3,4,6,7,8-HxCDF	JQ	0.164	5.17	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.103	5.17	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.355	1.03	PQL	ng/Kg	
	OCDF	JB	2.33	10.3	PQL	ng/Kg	
SL-543-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.436	5.54	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0899	5.54	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDF	JBQ	0.0429	5.54	PQL	ng/Kg	
	1,2,3,6,7,8-HxCDD	JQ	0.245	5.54	PQL	ng/Kg	
	1,2,3,6,7,8-HxCDF	JB	0.0787	5.54	PQL	ng/Kg	
	1,2,3,7,8,9-HxCDD	JQ	0.380	5.54	PQL	ng/Kg	
	1,2,3,7,8,9-HxCDF	J	0.359	5.54	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JQ	0.181	5.54	PQL	ng/Kg	
	OCDD	JB	2.26	11.1	PQL	ng/Kg	
	OCDF	JBQ	0.265	11.1	PQL	ng/Kg	
SL-609-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	1.08	5.16	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JBQ	0.172	5.16	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0507	5.16	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDF	JBQ	0.0781	5.16	PQL	ng/Kg	
	1,2,3,6,7,8-HxCDD	JQ	0.109	5.16	PQL	ng/Kg	
	1,2,3,6,7,8-HxCDF	JBQ	0.0890	5.16	PQL	ng/Kg	
	1,2,3,7,8,9-HxCDD	JQ	0.107	5.16	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JQ	0.114	5.16	PQL	ng/Kg	
	2,3,4,6,7,8-HxCDF	JQ	0.0676	5.16	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0766	5.16	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.148	1.03	PQL	ng/Kg	
	OCDD	JB	6.00	10.3	PQL	ng/Kg	
OCDF	JB	0.281	10.3	PQL	ng/Kg		
SL-609-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JB	0.302	5.47	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0859	5.47	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0811	5.47	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	J	0.0806	5.47	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDF	JBQ	0.0408	5.47	PQL	ng/Kg	
	1,2,3,6,7,8-HxCDD	J	0.0532	5.47	PQL	ng/Kg	
	1,2,3,6,7,8-HxCDF	JBQ	0.0581	5.47	PQL	ng/Kg	
	1,2,3,7,8,9-HxCDD	JQ	0.0377	5.47	PQL	ng/Kg	
	2,3,4,6,7,8-HxCDF	JQ	0.0309	5.47	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.0642	5.47	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0753	1.09	PQL	ng/Kg	
	OCDD	JB	1.75	10.9	PQL	ng/Kg	
	OCDF	JB	0.209	10.9	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH090

Laboratory: LL

EDD Filename: PH090_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method: 1613B
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-614-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	4.27	5.15	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JB	0.832	5.15	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.169	5.15	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.201	5.15	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDF	JBQ	0.236	5.15	PQL	ng/Kg	
	1,2,3,6,7,8-HxCDD	J	0.296	5.15	PQL	ng/Kg	
	1,2,3,6,7,8-HxCDF	JBQ	0.223	5.15	PQL	ng/Kg	
	1,2,3,7,8,9-HxCDD	JQ	0.228	5.15	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.337	5.15	PQL	ng/Kg	
	1,2,3,7,8-PECDF	J	0.358	5.15	PQL	ng/Kg	
	2,3,4,6,7,8-HxCDF	J	0.266	5.15	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.470	5.15	PQL	ng/Kg	
	2,3,7,8-TCDD	J	0.106	1.03	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.262	1.03	PQL	ng/Kg	
OCDF	JBQ	1.56	10.3	PQL	ng/Kg		
SL-614-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JB	2.73	5.41	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JB	0.406	5.41	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0823	5.41	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.208	5.41	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDF	JB	0.229	5.41	PQL	ng/Kg	
	1,2,3,6,7,8-HxCDD	JQ	0.215	5.41	PQL	ng/Kg	
	1,2,3,6,7,8-HxCDF	JBQ	0.213	5.41	PQL	ng/Kg	
	1,2,3,7,8,9-HxCDD	J	0.169	5.41	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.129	5.41	PQL	ng/Kg	
	1,2,3,7,8-PECDF	J	0.438	5.41	PQL	ng/Kg	
	2,3,4,6,7,8-HxCDF	JQ	0.176	5.41	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.284	5.41	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.224	1.08	PQL	ng/Kg	
	OCDF	JB	0.958	10.8	PQL	ng/Kg	
SL-843-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JB	0.690	5.37	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JBQ	0.195	5.37	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0842	5.37	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	J	0.0875	5.37	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDF	JBQ	0.105	5.37	PQL	ng/Kg	
	1,2,3,6,7,8-HxCDD	JQ	0.220	5.37	PQL	ng/Kg	
	1,2,3,6,7,8-HxCDF	JB	0.126	5.37	PQL	ng/Kg	
	1,2,3,7,8,9-HxCDD	JQ	0.386	5.37	PQL	ng/Kg	
	1,2,3,7,8,9-HxCDF	JQ	0.607	5.37	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JB	0.194	5.37	PQL	ng/Kg	
	1,2,3,7,8-PECDF	J	0.219	5.37	PQL	ng/Kg	
	2,3,4,6,7,8-HxCDF	JQ	0.112	5.37	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.0563	5.37	PQL	ng/Kg	
	OCDD	JB	5.06	10.7	PQL	ng/Kg	
OCDF	JB	0.422	10.7	PQL	ng/Kg		

Reporting Limit Outliers

Lab Reporting Batch ID: PH090

Laboratory: LL

EDD Filename: PH090_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method: 6010C
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-543-SA8-SB-0.0-0.5	ARSENIC	J	3.35	4.07	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.906	1.02	PQL	mg/Kg	
	BORON	J	9.80	10.2	PQL	mg/Kg	
	CADMIUM	J	0.123	1.02	PQL	mg/Kg	
	MOLYBDENUM	J	0.294	2.04	PQL	mg/Kg	
	SODIUM	J	97.6	102	PQL	mg/Kg	
	TIN	J	3.52	10.2	PQL	mg/Kg	
SL-543-SA8-SB-4.0-5.0	ARSENIC	J	2.60	4.43	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	1.08	1.11	PQL	mg/Kg	
	BORON	J	7.60	11.1	PQL	mg/Kg	
	MOLYBDENUM	J	0.250	2.21	PQL	mg/Kg	
	TIN	J	4.06	11.1	PQL	mg/Kg	
SL-609-SA8-SB-0.0-0.5	ARSENIC	J	2.82	4.17	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.923	1.04	PQL	mg/Kg	
	MOLYBDENUM	J	0.189	2.08	PQL	mg/Kg	
	TIN	J	3.63	10.4	PQL	mg/Kg	
SL-609-SA8-SB-4.0-5.0	ARSENIC	J	4.34	4.39	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.857	1.10	PQL	mg/Kg	
	TIN	J	3.61	11.0	PQL	mg/Kg	
SL-614-SA8-SB-0.0-0.5	BERYLLIUM	J	0.692	1.05	PQL	mg/Kg	J (all detects)
	CADMIUM	J	0.148	1.05	PQL	mg/Kg	
	MOLYBDENUM	J	0.208	2.10	PQL	mg/Kg	
	TIN	J	3.42	10.5	PQL	mg/Kg	
SL-614-SA8-SB-4.0-5.0	BERYLLIUM	J	0.713	1.06	PQL	mg/Kg	J (all detects)
	CADMIUM	J	0.101	1.06	PQL	mg/Kg	
	TIN	J	3.56	10.6	PQL	mg/Kg	
SL-843-SA8-SB-4.0-5.0	ARSENIC	J	3.25	4.50	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	1.07	1.12	PQL	mg/Kg	
	BORON	J	7.10	11.2	PQL	mg/Kg	
	MOLYBDENUM	J	0.297	2.25	PQL	mg/Kg	
	TIN	J	3.90	11.2	PQL	mg/Kg	

Method: 6020A
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-543-SA8-SB-0.0-0.5	SELENIUM	J	0.345	0.407	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0469	0.204	PQL	mg/Kg	
SL-543-SA8-SB-4.0-5.0	SELENIUM	J	0.198	0.443	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0507	0.221	PQL	mg/Kg	
SL-609-SA8-SB-0.0-0.5	SILVER	J	0.0368	0.208	PQL	mg/Kg	J (all detects)
SL-609-SA8-SB-4.0-5.0	SELENIUM	J	0.278	0.439	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0362	0.220	PQL	mg/Kg	
SL-614-SA8-SB-0.0-0.5	SELENIUM	J	0.344	0.420	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0465	0.210	PQL	mg/Kg	
SL-614-SA8-SB-4.0-5.0	SELENIUM	J	0.218	0.425	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0338	0.213	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH090

Laboratory: LL

EDD Filename: PH090_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-843-SA8-SB-4.0-5.0	SELENIUM	J	0.262	0.450	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0616	0.225	PQL	mg/Kg	

Method: 7471B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-543-SA8-SB-0.0-0.5	MERCURY	J	0.0108	0.0163	PQL	mg/Kg	J (all detects)
SL-609-SA8-SB-0.0-0.5	MERCURY	J	0.0156	0.0167	PQL	mg/Kg	J (all detects)
SL-609-SA8-SB-4.0-5.0	MERCURY	J	0.0178	0.0181	PQL	mg/Kg	J (all detects)
SL-614-SA8-SB-4.0-5.0	MERCURY	J	0.0119	0.0170	PQL	mg/Kg	J (all detects)

Method: 8015M

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-609-SA8-SB-4.0-5.0	EFH (C21-C30)	J	2.9	5.5	PQL	mg/Kg	J (all detects)
	EFH (C30-C40)	J	9.2	11	PQL	mg/Kg	

Method: 8082A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-543-SA8-SB-0.0-0.5	AROCLOR 1254	J	17	18	PQL	ug/Kg	J (all detects)

Method: 8270D SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-543-SA8-SB-0.0-0.5	1-METHYLNAPHTHALENE	J	0.76	1.7	PQL	ug/Kg	J (all detects)
	2-METHYLNAPHTHALENE	J	1.5	1.7	PQL	ug/Kg	
	ACENAPHTHYLENE	J	1.0	1.7	PQL	ug/Kg	
SL-543-SA8-SB-4.0-5.0	NAPHTHALENE	J	1.1	1.9	PQL	ug/Kg	J (all detects)
SL-609-SA8-SB-0.0-0.5	2-METHYLNAPHTHALENE	J	0.73	1.7	PQL	ug/Kg	J (all detects)
	BENZO(B)FLUORANTHENE	J	1.3	1.7	PQL	ug/Kg	
	Butylbenzylphthalate	J	6.9	19	PQL	ug/Kg	
	CHRYSENE	J	0.97	1.7	PQL	ug/Kg	
	NAPHTHALENE	J	1.5	1.7	PQL	ug/Kg	
SL-609-SA8-SB-4.0-5.0	NAPHTHALENE	J	1.3	1.8	PQL	ug/Kg	J (all detects)

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

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Reporting Limit Outliers

Lab Reporting Batch ID: PH090

Laboratory: LL

EDD Filename: PH090_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method: 8270D SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-614-SA8-SB-0.0-0.5	1-METHYLNAPHTHALENE	J	0.97	1.8	PQL	ug/Kg	J (all detects)
	2-METHYLNAPHTHALENE	J	1.0	1.8	PQL	ug/Kg	
	BENZO(A)PYRENE	J	0.76	1.8	PQL	ug/Kg	
	BENZO(G,H,I)PERYLENE	J	0.87	1.8	PQL	ug/Kg	
	BENZO(K)FLUORANTHENE	J	1.1	1.8	PQL	ug/Kg	
	CHRYSENE	J	1.0	1.8	PQL	ug/Kg	
	FLUORANTHENE	J	0.90	1.8	PQL	ug/Kg	
	INDENO(1,2,3-CD)PYRENE	J	0.77	1.8	PQL	ug/Kg	
	PYRENE	J	0.97	1.8	PQL	ug/Kg	
SL-614-SA8-SB-4.0-5.0	BENZO(B)FLUORANTHENE	J	0.86	1.8	PQL	ug/Kg	J (all detects)
	CHRYSENE	J	1.1	1.8	PQL	ug/Kg	
	FLUORANTHENE	J	0.97	1.8	PQL	ug/Kg	
	PYRENE	J	1.1	1.8	PQL	ug/Kg	
SL-843-SA8-SB-4.0-5.0	1-METHYLNAPHTHALENE	J	0.94	1.9	PQL	ug/Kg	J (all detects)
	2-METHYLNAPHTHALENE	J	1.1	1.9	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	7.5	20	PQL	ug/Kg	
	CHRYSENE	J	0.48	1.9	PQL	ug/Kg	
	NAPHTHALENE	J	1.6	1.9	PQL	ug/Kg	

Enclosure II

EPA Level IV Data Validation Reports

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Santa Susana Field Laboratory
Collection Date: August 13, 2013
LDC Report Date: September 26, 2013
Matrix: Soil
Parameters: Semivolatiles
Validation Level: Level IV
Laboratory: Eurofins Lancaster Laboratories
Sample Delivery Group (SDG): PH090

Sample Identification

SL-543-SA8-SB-0.0-0.5
SL-543-SA8-SB-4.0-5.0
SL-843-SA8-SB-4.0-5.0
SL-609-SA8-SB-0.0-0.5
SL-609-SA8-SB-4.0-5.0
SL-614-SA8-SB-0.0-0.5
SL-614-SA8-SB-4.0-5.0
SL-543-SA8-SB-4.0-5.0MS
SL-543-SA8-SB-4.0-5.0MSD

Introduction

This data review covers 9 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270D using Selected Ion Monitoring (SIM) for Semivolatiles.

This review follows the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs) and 25.0% for all other compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method.

Sample EB-081413 (from SDG PH091) was identified as an equipment blank. No semivolatile contaminants were found with the following exceptions:

Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB-081413	8/14/13	Naphthalene 2-Methylnaphthalene Diethylphthalate Di-n-butylphthalate Bis(2-ethylhexyl)phthalate	0.058 ug/L 0.012 ug/L 0.31 ug/L 0.2 ug/L 0.3 ug/L	All samples in SDG PH090

Sample FB-041113 (from SDG PH029) was identified as a field blank. No semivolatile contaminants were found with the following exceptions:

Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB-041113	4/11/13	Di-n-butylphthalate Diethylphthalate Bis(2-ethylhexyl)phthalate 1-Methylnaphthalene 2-Methylnaphthalene Naphthalene	0.17 ug/L 0.18 ug/L 0.082 ug/L 0.019 ug/L 0.024 ug/L 0.17 ug/L	All samples in SDG PH090

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
SL-543-SA8-SB-4.0-5.0MS/MSD (SL-543-SA8-SB-4.0-5.0)	N-Nitrosodimethylamine	-	115 (48-113)	-	J (all detects)	A

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limit.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation

All compound quantitation were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH090	All compounds reported below the RL.	J (all detects)	A

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples SL-543-SA8-SB-4.0-5.0 and SL-843-SA8-SB-4.0-5.0 were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/Kg)		RPD (Limits)	Flag	A or P
	SL-543-SA8-SB-4.0-5.0	SL-843-SA8-SB-4.0-5.0			
Naphthalene	1.1	1.6	37 (≤50)	-	-

Compound	Concentration (ug/Kg)		RPD (Limits)	Flag	A or P
	SL-543-SA8-SB-4.0-5.0	SL-843-SA8-SB-4.0-5.0			
Chrysene	1.9U	0.48	200 (≤50)	J (all detects) UJ (all non-detects)	A
Bis(2-ethylhexyl)phthalate	20U	7.5	200 (≤50)	J (all detects) UJ (all non-detects)	A
1-Methylnaphthalene	1.9U	0.94	200 (≤50)	J (all detects) UJ (all non-detects)	A
2-Methylnaphthalene	1.9U	1.1	200 (≤50)	J (all detects) UJ (all non-detects)	A

**Santa Susana Field Laboratory
Semivolatiles - Data Qualification Summary - SDG PH090**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
PH090	SL-543-SA8-SB-4.0-5.0	N-Nitrosodimethylamine	J (all detects)	A	Matrix spike/Matrix spike duplicate (%R) (Q)
PH090	SL-543-SA8-SB-0.0-0.5 SL-543-SA8-SB-4.0-5.0 SL-843-SA8-SB-4.0-5.0 SL-609-SA8-SB-0.0-0.5 SL-609-SA8-SB-4.0-5.0 SL-614-SA8-SB-0.0-0.5 SL-614-SA8-SB-4.0-5.0	All compounds reported below the RL.	J (all detects)	A	Compound quantitation (Z)
PH090	SL-543-SA8-SB-4.0-5.0 SL-843-SA8-SB-4.0-5.0	Chrysene Bis(2-ethylhexyl)phthalate 1-Methylnaphthalene 2-Methylnaphthalene	J (all detects) UJ (all non-detects)	A	Field duplicates (RPD) (FD)

**Santa Susana Field Laboratory
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG PH090**

No Sample Data Qualified in this SDG

**Santa Susana Field Laboratory
Semivolatiles - Field Blank Data Qualification Summary - SDG PH090**

No Sample Data Qualified in this SDG

LDC #: 30434E2b **VALIDATION COMPLETENESS WORKSHEET**

SDG #: PH090 Level IV

Laboratory: Eurofins Lancaster Laboratories

Date: 9/25/13

Page: 1 of 1

Reviewer: [Signature]

2nd Reviewer: [Signature]

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/13/13
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 30
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 25
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LC9
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	A	
XII.	Compound quantitation/RL/LOQ/LODs	A	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	A	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	D = 2 & 3
XVII.	Field blanks	SW	EB = EB-08/43 SDG # PH091 FB = PB-04/113 SDG # PH029

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

SOLL

1	SL-543-SA8-SB-0.0-0.5	11	SBLKLB232	21		31	
2	SL-543-SA8-SB-4.0-5.0	12		22		32	
3	SL-843-SA8-SB-4.0-5.0	13		23		33	
4	SL-609-SA8-SB-0.0-0.5	14		24		34	
5	SL-609-SA8-SB-4.0-5.0	15		25		35	
6	SL-614-SA8-SB-0.0-0.5	16		26		36	
7	SL-614-SA8-SB-4.0-5.0	17		27		37	
8	SL-543-SA8-SB-4.0-5.0MS	18		28		38	
9	SL-543-SA8-SB-4.0-5.0MSD	19		29		39	
10		20		30		40	

Method: Semivolatiles (EPA SW 846 Method 8270C)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	/			
Cooler temperature criteria was met.	/			
II. GC/MS Instrument performance check				
Were the DFTPP performance results reviewed and found to be within the specified criteria?	/			
Were all samples analyzed within the 12 hour clock criteria?	/			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	/			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	/			
Was a curve fit used for evaluation?		/		
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990 ?			/	
Were all percent relative standard deviations (%RSD) $\leq 30\%$ and relative response factors (RRF) ≥ 0.05 ?	/			<u>F7</u>
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	/			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	/			
Were all percent differences (%D) $\leq 20\%$ and relative response factors (RRF) ≥ 0.05 ?	/			<u>F7</u> <u>25</u>
V. Blanks				
Was a method blank associated with every sample in this SDG?	/			
Was a method blank analyzed for each matrix and concentration?	/			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		/		
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	/			
If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?			/	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			/	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	/			
Was a MS/MSD analyzed every 20 samples of each matrix?	/			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	/			
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	/			

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per extraction batch?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Were the performance evaluation (PE) samples within the acceptance limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
X. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were retention times within ± 30 seconds from the associated calibration standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XI. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were chromatogram peaks verified and accounted for?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XII. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Were relative intensities of the major ions within $\pm 20\%$ between the sample and the reference spectra?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
XIV. System performance				
System performance was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Target compounds were detected in the field duplicates.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
XVII. Field blanks				
Field blanks were identified in this SDG.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Target compounds were detected in the field blanks.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS SVOA

A. Phenol	T. 4-Chloroaniline	MM. 4-Chlorophenyl-phenyl ether	FFF. Di-n-octylphthalate	YYY. 2,3,5-Trimethylnaphthalene
B. Bis (2-chloroethyl) ether	U. Hexachlorobutadiene	NN. Fluorene	GGG. Benzo(b)fluoranthene	ZZZ. Perylene
C. 2-Chlorophenol	V. 4-Chloro-3-methylphenol	OO. 4-Nitroaniline	HHH. Benzo(k)fluoranthene	AAAA. Dibenzothiophene
D. 1,3-Dichlorobenzene	W. 2-Methylnaphthalene	PP. 4,6-Dinitro-2-methylphenol	III. Benzo(a)pyrene	BBBB. Benzo(a)fluoranthene
E. 1,4-Dichlorobenzene	X. Hexachlorocyclopentadiene	QQ. N-Nitrosodiphenylamine	JJJ. Indeno(1,2,3-cd)pyrene	CCCC. Benzo(b)fluorene
F. 1,2-Dichlorobenzene	Y. 2,4,6-Trichlorophenol	RR. 4-Bromophenyl-phenylether	KKK. Dibenz(a,h)anthracene	DDDD. cis/trans-Decalin
G. 2-Methylphenol	Z. 2,4,5-Trichlorophenol	SS. Hexachlorobenzene	LLL. Benzo(g,h,i)perylene	EEEE. Biphenyl
H. 2,2'-Oxybis(1-chloropropane)	AA. 2-Chloronaphthalene	TT. Pentachlorophenol	MMM. Bis(2-Chloroisopropyl)ether	FFFF. Retene
I. 4-Methylphenol	BB. 2-Nitroaniline	UU. Phenanthrene	NNN. Aniline	GGGG. C30-Hopane
J. N-Nitroso-di-n-propylamine	CC. Dimethylphthalate	VV. Anthracene	OOO. N-Nitrosodimethylamine	HHHH. 1-Methylphenanthrene
K. Hexachloroethane	DD. Acenaphthylene	WW. Carbazole	PPP. Benzoic Acid	IIII. 1,4-Dioxane
L. Nitrobenzene	EE. 2,6-Dinitrotoluene	XX. Di-n-butylphthalate	QQQ. Benzyl alcohol	JJJJ. Acetophenone
M. Isophorone	FF. 3-Nitroaniline	YY. Fluoranthene	RRR. Pyridine	KKKK. Atrazine
N. 2-Nitrophenol	GG. Acenaphthene	ZZ. Pyrene	SSS. Benzidine	LLLL. Benzaldehyde
O. 2,4-Dimethylphenol	HH. 2,4-Dinitrophenol	AAA. Butylbenzylphthalate	TTT. 1-Methylnaphthalene	MMMM. Caprolactam
P. Bis(2-chloroethoxy)methane	II. 4-Nitrophenol	BBB. 3,3'-Dichlorobenzidine	UUU. Benzo(b)thiophene	NNNN.
Q. 2,4-Dichlorophenol	JJ. Dibenzofuran	CCC. Benzo(a)anthracene	VVV. Benzonaphthothiophene	OOOO.
R. 1,2,4-Trichlorobenzene	KK. 2,4-Dinitrotoluene	DDD. Chrysene	WWW. Benzo(e)pyrene	PPPP.
S. Naphthalene	LL. Diethylphthalate	EEE. Bis(2-ethylhexyl)phthalate	XXX. 2,6-Dimethylnaphthalene	QQQQ.

Field Blanks

METHOD: GC/MS BNA (EPA SW 846 Method 8270^P)

Y N N/A Were field blanks identified in this SDG?

Y N N/A Were target compounds detected in the field blanks?

EB = EB - 081413

Blank units: ug/L Associated sample units: ug/kg

Sampling date: 8/14/13

Field blank type: (circle one) Field Blank / Rinsate / Other: EB Associated Samples: All (ND + 75X)

Compound	Blank ID	Sample Identification							
	EB	SX							
S	0.058	0.29							
W	0.012	0.06							
LL	0.31	1.55							
XX	0.2	1.00							
EEE	0.3	1.5							

Blank units: ug/L Associated sample units: ug/kg FB = FB - 041113

Sampling date: 4/11/13

Field blank type: (circle one) Field Blank / Rinsate / Other: FB Associated Samples: All (ND + 75X)

Compound	Blank ID	Sample Identification							
	FB	SX							
XX	0.17	0.85							
LL	0.18	0.90							
EEE	0.082	0.41							
TTT	0.019	0.095							
W	0.024	0.12							
S	0.17	0.85							

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Common contaminants such as the phthalates and TICs noted above that were detected in samples within ten times the associated field blank concentration were qualified as not detected, "U". Other contaminants within five times the field blank concentration were also qualified as not detected, "U".

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

Y N N/A
Y N N/A

Were field duplicate pairs identified in this SDG?
Were target compounds identified in the field duplicate pairs?

(Fd)

Compound	Concentration ()		≤ 50 RPD
	2	3	
S	1.1	1.4	37
DDD	1.9u	0.48	200 ↓ / u ↓ / A
EEE	2.04	7.5	↓ ↓
TTT	1.9u	0.94	
W	1.9u	1.1	

Compound	Concentration ()		RPD

Compound	Concentration ()		RPD

Compound	Concentration ()		RPD

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: GC/MS BNA (EPA SW 846 Method 8270 ^D~~00~~ _{F7})

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

RRF = $(A_x)(C_{is}) / (A_{is})(C_x)$ A_x = Area of compound, A_{is} = Area of associated internal standard
 average RRF = sum of the RRFs/number of standards C_x = Concentration of compound, C_{is} = Concentration of internal standard
 %RSD = $100 * (S/X)$ S = Standard deviation of the RRFs, X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Reported	Recalculated	Reported	Recalculated	Reported	Recalculated
				RRF (std)	RRF (std)	Average RRF (initial)	Average RRF (initial)	%RSD	%RSD
1	1CAL	8/9/13	000 (1st internal standard)	0.769	0.769	0.770	0.770	5	5
			S (2nd internal standard)	1.051	1.051	1.046	1.046	2	2
			NN (3rd internal standard)	1.324	1.324	1.298	1.298	3	3
			YY (4th internal standard)	1.304	1.304	1.298	1.298	3	3
			EE (5th internal standard)	0.707	0.707	0.734	0.734	8	8
			II (6th internal standard)	1.152	1.152	1.116	1.116	2	2
2									
3									

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 30434E2b

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Page: 1 of 1

Reviewer: FT

2nd Reviewer: ←

METHOD: GC/MS BNA (EPA SW 846 Method 82700) ^D F1

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = $100 * (\text{ave. RRF} - \text{RRF}) / \text{ave. RRF}$
 $\text{RRF} = (A_x)(C_b) / (A_b)(C_x)$

Where: ave. RRF = initial calibration average RRF
 RRF = continuing calibration RRF
 A_x = Area of compound,
 C_x = Concentration of compound,

A_b = Area of associated internal standard
 C_b = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Average RRF (initial)	Reported	Recalculated	Reported	Recalculated
					RRF (CC)	RRF (CC)	%D	%D
1	CCN	8/23/13	000 (1st internal standard)	0.770	0.909	0.909	18	18
			S (2nd internal standard)	1.046	1.027	1.027	2	2
			NN (3rd internal standard)	1.298	1.299	1.299	0	0
			YY (4th internal standard)	1.298	1.302	1.302	0	0
			EEF (5th internal standard)	0.734	0.745	0.745	2	2
			III (6th internal standard)	1.116	1.182	1.182	6	6
2			(1st internal standard)					
			(2nd internal standard)					
			(3rd internal standard)					
			(4th internal standard)					
			(5th internal standard)					
			(6th internal standard)					
3			(2nd internal standard)					
			(3rd internal standard)					
			(4th internal standard)					
			(5th internal standard)					
			(6th internal standard)					

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270^D) f7

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5 <i>Fluoranthene</i>	1.0	0.883	88	88	0
2-Fluorobiphenyl <i>Benzo(a)pyrene-d12</i>	↓	0.919	92	92	↓
Terphenyl-d14 <i>1-methyl-naphthalene</i>	↓	0.988	99	99	↓
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

Sample ID: _____

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

Sample ID: _____

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

METHOD: GC/MS BNA (EPA SW 846 Method 8270) ^D F7

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SSC - SC)/SA

Where: SSC = Spiked sample concentration
 SA = Spike added

SC = Sample concentration

RPD = | MSC - MSC | * 2/(MSC + MSDC)

MSC = Matrix spike concentration

MSDC = Matrix spike duplicate concentration

MS/MSD samples: 8 + 9

Compound	Spike Added (ug/kg)		Sample Concentration (ug/kg)	Spiked Sample Concentration (ug/kg)		Matrix Spike		Matrix Spike Duplicate		MS/MSD	
	MS	MSD		MS	MSD	Percent Recovery		Percent Recovery		RPD	
						Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
Phenol											
N-Nitroso-di-n-propylamine											
4-Chloro-3-methylphenol											
Acenaphthene	33.33	33.33	ND	31.98	32.53	96	96	98	98	2	2
Pentachlorophenol											
Pyrene	33.33	33.33	ND	31.86	32.09	96	96	96	96	1	1

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

^D
METHOD: GC/MS BNA (EPA SW 846 Method 8270) ^f

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SC/SA)

Where: SSC = Spike concentration
 SA = Spike added

RPD = | LCSC - LCSDC | * 2 / (LCSC + LCSDC)

LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: 232 LBLCD

Compound	Spike Added (ug/kg)		Spike Concentration (ug/kg)		LCS		LCSD		LCS/LCSD	
	LCS	LCSD	LCS	LCSD	Percent Recovery		Percent Recovery		RPD	
					Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
Phenol										
N-Nitroso-di-n-propylamine										
4-Chloro-3-methylphenol										
Acenaphthene	33.33	NA	33.4	NA	100	100				
Pentachlorophenol										
Pyrene	33.33	NA	33.45	NA	100	100	NA			

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Santa Susana Field Laboratory
Collection Date: August 13, 2013
LDC Report Date: September 26, 2013
Matrix: Soil
Parameters: Polychlorinated Biphenyls
Validation Level: Level IV
Laboratory: Eurofins Lancaster Laboratories
Sample Delivery Group (SDG): PH090

Sample Identification

SL-543-SA8-SB-0.0-0.5
SL-543-SA8-SB-4.0-5.0
SL-843-SA8-SB-4.0-5.0
SL-609-SA8-SB-0.0-0.5
SL-609-SA8-SB-4.0-5.0
SL-614-SA8-SB-0.0-0.5
SL-614-SA8-SB-4.0-5.0
SL-543-SA8-SB-4.0-5.0MS
SL-543-SA8-SB-4.0-5.0MSD

Introduction

This data review covers 9 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082A for Polychlorinated Biphenyls.

This review follows the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of multicomponent compounds was performed for the primary (quantitation) column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Retention time windows were evaluated and considered technically acceptable.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 20.0% QC limits.

The percent difference (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

Retention times (RT) of all compounds in the calibration standards were within QC limits.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

Sample EB-081413 (from SDG PH091) was identified as an equipment blank. No polychlorinated biphenyl contaminants were found.

Sample FB-041113 (from SDG PH029) was identified as a field blank. No polychlorinated biphenyl contaminants were found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

XI. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XII. Target Compound Identification

All target compound identifications were within validation criteria.

XIII. Compound Quantitation

All compound quantitations were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH090	All compounds reported below the RL.	J (all detects)	A

XIV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XV. Field Duplicates

Samples SL-543-SA8-SB-4.0-5.0 and SL-843-SA8-SB-4.0-5.0 were identified as field duplicates. No polychlorinated biphenyls were detected in any of the samples.

**Santa Susana Field Laboratory
 Polychlorinated Biphenyls - Data Qualification Summary - SDG PH090**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
PH090	SL-543-SA8-SB-0.0-0.5 SL-543-SA8-SB-4.0-5.0 SL-843-SA8-SB-4.0-5.0 SL-609-SA8-SB-0.0-0.5 SL-609-SA8-SB-4.0-5.0 SL-614-SA8-SB-0.0-0.5 SL-614-SA8-SB-4.0-5.0	All compounds reported below the RL.	J (all detects)	A	Compound quantitation (Z)

**Santa Susana Field Laboratory
 Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG PH090**

No Sample Data Qualified in this SDG

**Santa Susana Field Laboratory
 Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG PH090**

No Sample Data Qualified in this SDG

METHOD: GC Polychlorinated Biphenyls (EPA SW 846 Method 8082A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	Δ	Sampling dates: 8/13/13
II.	GC/ECD Instrument Performance Check	NA	
III.	Initial calibration	Δ	% PSD ≤ 20
IV.	Continuing calibration/ICV	A	ICV / CCV ≤ 20
V.	Blanks	Δ	
VI.	Surrogate spikes	Δ	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS
IX.	Regional quality assurance and quality control	N	
X.	Florisol cartridge check	N	
XI.	GPC Calibration	N	
XII.	Target compound identification	Δ	
XIII.	Compound quantitation/RL/LOQ/LODs	Δ	
XIV.	Overall assessment of data	Δ	
XV.	Field duplicates	ND	D = 2 + 3
XVI.	Field blanks	NO	EB = EB-081413 SDG # PH091 PB = PB-041113 SDG # PH029

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

SOIL

1	SL-543-SA8-SB-0.0-0.5	11	PBLK10233	21		31	
2	SL-543-SA8-SB-4.0-5.0	12		22		32	
3	SL-843-SA8-SB-4.0-5.0	13		23		33	
4	SL-609-SA8-SB-0.0-0.5	14		24		34	
5	SL-609-SA8-SB-4.0-5.0	15		25		35	
6	SL-614-SA8-SB-0.0-0.5	16		26		36	
7	SL-614-SA8-SB-4.0-5.0	17		27		37	
8	SL-543-SA8-SB-4.0-5.0MS	18		28		38	
9	SL-543-SA8-SB-4.0-5.0MSD	19		29		39	
10		20		30		40	

Notes: _____

Method: GC HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cooler temperature criteria was met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent relative standard deviations (%RSD) < 20%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a curve fit used for evaluation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Did the initial calibration meet the curve fit acceptance criteria of > 0.990?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Were the RT windows properly established?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IV. Continuing calibration				
Was a continuing calibration analyzed daily?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) < 20% or percent recoveries 80-120%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all the retention times within the acceptance windows?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
V. Blanks				
Was a method blank associated with every sample in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a method blank analyzed for each matrix and concentration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a MS/MSD analyzed every 20 samples of each matrix?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was an LCS analyzed per extraction batch?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Were the performance evaluation (PE) samples within the acceptance limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

LDC #: 30434E3b

VALIDATION FINDINGS CHECKLIST

Page: 2 of 2
 Reviewer: FT
 2nd Reviewer: Ⓢ

Validation Area	Yes	No	NA	Findings/Comments
X. Target compound identification				
Were the retention times of reported detects within the RT windows?	/			
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
XII. System performance				
System performance was found to be acceptable.	/			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.		/		
Target compounds were detected in the field duplicates.			/	
XV. Field blanks				
Field blanks were identified in this SDG.	/			
Target compounds were detected in the field blanks.		/		

LDC #: 30434E36

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
 Reviewer: F7
 2nd Reviewer: [Signature]

METHOD: GC _____ HPLC _____

The calibration factors (CF) and relative standard deviation (%RSD) were recalculated using the following calculations:

CF = A/C
 Average CF = sum of the CF/number of standards
 %RSD = 100 * (S/X)

Where: A = Area of compound
 C = Concentration of compound
 S = Standard deviation of calibration factors
 X = Mean of calibration factors

#	Standard ID	Calibration Date	Compound	Reported	Recalculated	Reported	Recalculated	Reported	Recalculated
				CF (200 std)	CF (200 std)	Ave CF (initial)	Ave CF (initial)	%RSD	%RSD
1	ICAL	8/21/13							
	ZBMR1		1260-1	25336	25336	25364	25364	10	10
	ZBMR2		1260-1	85418	856181	85405	85405	4	4
2									
3									
4									

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 30434E3b

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Page: 1 of 1
 Reviewer: F7
 2nd reviewer: [Signature]

METHOD: GC HPLC

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
 SS = Surrogate Spiked

Sample ID: #1

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
TCMX	ZBMR1	10.0	10.492276	104	105	0.96
PCB	ZBMR2	10.0	10.501973	103	105	1.94

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

VALIDATION FINDINGS WORKSHEET

Matrix Spike/Matrix Spike Duplicates Results Verification

METHOD: GC HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

$$\% \text{Recovery} = 100 * (\text{SSC} - \text{SC}) / \text{SA}$$

Where

SSC = Spiked sample concentration

SC = Sample concentration

SA = Spike added

MS = Matrix spike

MSD = Matrix spike duplicate

$$\text{RPD} = \frac{(|\text{SSCMS} - \text{SSCMSD}| * 2)}{(\text{SSCMS} + \text{SSCMSD})} * 100$$

MS/MSD samples: 8 + 9

Compound	Spike Added (<u>ug/kg</u>)		Sample Conc. (<u>ug/kg</u>)	Spike Sample Concentration (<u>ug/kg</u>)		Matrix spike		Matrix Spike Duplicate		MS/MSD	
	MS	MSD		MS	MSD	Percent Recovery		Percent Recovery		RPD	
						Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)											
Diesel (8015)											
Benzene (8021B)											
Methane (RSK-175)											
2,4-D (8151)											
Dinoseb (8151)											
Naphthalene (8310)											
Anthracene (8310)											
HMX (8330)											
2,4,6-Trinitrotoluene (8330)											
<u>PCB - 1260</u>	<u>167</u>	<u>167</u>	<u>ND</u>	<u>17878</u>	<u>181.49</u>	<u>107</u>	<u>107</u>	<u>109</u>	<u>109</u>	<u>2</u>	<u>2</u>

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

METHOD: GC HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

$\%Recovery = 100 * (SSC - SC) / SA$

Where SSC = Spiked sample concentration

SC = Sample concentration

$RPD = ((SSCLCS - SSCLCSD) * 2) / (SSCLCS + SSCLCSD) * 100$

SA = Spike added

LCS = Laboratory Control Sample

LCSD = Laboratory Control Sample duplicate

LCS/LCSD samples: LCS / D

Compound	Spike Added (ng/kg)		Sample Conc. (ng/kg)	Spike Sample Concentration (ng/kg)		LCS		LCSD		LCS/LCSD		
	LCS	LCSD		---	LCS	LCSD	Percent Recovery		Percent Recovery		RPD	
							Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)												
Diesel (8015)												
Benzene (8021B)												
Methane (RSK-175)												
2,4-D (8151)												
Dinoseb (8151)												
Naphthalene (8310)												
Anthracene (8310)												
HMX (8330)												
2,4,6-Trinitrotoluene (8330)												
PCB - 1260	167	NA	ND	178.62	NA	107	107	NA				

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

METHOD: GC HPLC

Y N N/A
Y N N/A

Were all reported results recalculated and verified for all level IV samples?
 Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration = $\frac{(A)(Fv)(Df)}{(RF)(Vs \text{ or } Ws)(\%S/100)}$

Example:

Sample ID. #1 Compound Name 1254

- A= Area or height of the compound to be measured
- Fv= Final Volume of extract
- Df= Dilution Factor
- RF= Average response factor of the compound in the initial calibration
- Vs= Initial volume of the sample
- Ws= Initial weight of the sample
- %S= Percent Solid

Concentration = $\frac{16.22}{0.954}$

= 17 ug/kg

#	Sample ID	Compound	Reported Concentrations ()	Recalculated Results Concentrations ()	Qualifications
	1254-1 = $\frac{1411248}{58321}$ (10)		1254-1 = 8.06598		
			-2 = 9.76751		
			-3 = 10.429221		
	= 8.06598		-4 = 24.66425		
			-5 = 16.412416		
			-6 = 28.015107		
			Ave = 16.22		

Comments: _____

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Santa Susana Field Laboratory
Collection Date: August 13, 2013
LDC Report Date: September 26, 2013
Matrix: Soil
Parameters: Metals
Validation Level: Level IV
Laboratory: Eurofins Lancaster Laboratories
Sample Delivery Group (SDG): PH090

Sample Identification

SL-543-SA8-SB-0.0-0.5
SL-543-SA8-SB-4.0-5.0
SL-843-SA8-SB-4.0-5.0
SL-609-SA8-SB-0.0-0.5
SL-609-SA8-SB-4.0-5.0
SL-614-SA8-SB-0.0-0.5
SL-614-SA8-SB-4.0-5.0
SL-543-SA8-SB-4.0-5.0MS
SL-543-SA8-SB-4.0-5.0MSD
SL-543-SA8-SB-4.0-5.0DUP

Introduction

This data review covers 10 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010C, 6020A, and 7471B for Metals. The metals analyzed were Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc, and Zirconium.

This review follows the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Calibration

The initial and continuing calibrations were performed at the required frequency.

The calibration standards criteria were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No metal contaminants were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Tin Zinc	1.825 mg/Kg 0.316 mg/Kg	All samples in SDG PH090
ICB/CCB	Chromium Vanadium	1.3 ug/L 1.2 ug/L	All samples in SDG PH090
ICB/CCB	Lead	2.0 ug/L	SL-543-SA8-SB-0.0-0.5 SL-543-SA8-SB-4.0-5.0 SL-843-SA8-SB-4.0-5.0 SL-609-SA8-SB-0.0-0.5 SL-609-SA8-SB-4.0-5.0
ICB/CCB	Nickel	1.3 ug/L	SL-543-SA8-SB-4.0-5.0
ICB/CCB	Nickel Tin	1.4 ug/L 1.4 ug/L	SL-543-SA8-SB-0.0-0.5 SL-843-SA8-SB-4.0-5.0 SL-609-SA8-SB-0.0-0.5 SL-609-SA8-SB-4.0-5.0 SL-614-SA8-SB-0.0-0.5 SL-614-SA8-SB-4.0-5.0

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
SL-543-SA8-SB-0.0-0.5	Tin	3.52 mg/Kg	3.52U mg/Kg
SL-543-SA8-SB-4.0-5.0	Tin	4.06 mg/Kg	4.06U mg/Kg
SL-843-SA8-SB-4.0-5.0	Tin	3.90 mg/Kg	3.90U mg/Kg
SL-609-SA8-SB-0.0-0.5	Tin	3.63 mg/Kg	3.63U mg/Kg
SL-609-SA8-SB-4.0-5.0	Tin	3.61 mg/Kg	3.61U mg/Kg
SL-614-SA8-SB-0.0-0.5	Tin	3.42 mg/Kg	3.42U mg/Kg
SL-614-SA8-SB-4.0-5.0	Tin	3.56 mg/Kg	3.56U mg/Kg

Sample EB-081413 (from SDG PH091) was identified as an equipment blank. No metal contaminants were found with the following exceptions:

Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
EB-081413	8/14/13	Calcium Boron	0.0798 mg/L 0.0106 mg/L	All samples in SDG PH090

Sample FB-041113 (from SDG PH029) was identified as a field blank. No metal contaminants were found with the following exceptions:

Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
FB-041113	4/11/13	Copper Molybdenum	0.0036 mg/L 0.0036 mg/L	All samples in SDG PH090

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
SL-543-SA8-SB-0.0-0.5	Molybdenum	0.294 mg/Kg	0.294U mg/Kg
SL-543-SA8-SB-4.0-5.0	Molybdenum	0.250 mg/Kg	0.250U mg/Kg
SL-843-SA8-SB-4.0-5.0	Molybdenum	0.297 mg/Kg	0.297U mg/Kg
SL-609-SA8-SB-0.0-0.5	Molybdenum	0.189 mg/Kg	0.189U mg/Kg
SL-614-SA8-SB-0.0-0.5	Molybdenum	0.208 mg/Kg	0.208U mg/Kg

V. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VI. Matrix Spike Analysis

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
SL-543-SA8-SB-4.0-5.0MS/MSD (All samples in SDG PH090)	Antimony	51 (75-125)	52 (75-125)	-	J (all detects) UJ (all non-detects)	A
SL-543-SA8-SB-4.0-5.0MS/MSD (All samples in SDG PH090)	Phosphorus Thallium	161 (75-125) -	- 134 (75-125)	- -	J (all detects) J (all detects)	A

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits with the following exceptions:

DUP ID (Associated Samples)	Analyte	RPD (Limits)	Difference (Limits)	Flag	A or P
SL-543-SA8-SB-4.0-5.0DUP (All samples in SDG PH090)	Strontium	23 (≤ 20)	-	J (all detects) UJ (all non-detects)	A

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Internal Standards

All internal standard percent recoveries (%R) were within QC limits.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution analysis was performed by the laboratory. The analysis criteria were met.

XII. Sample Result Verification

All sample result verifications were acceptable.

All metals reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG PH090	All analytes reported below the RL and above the MDL.	J (all detects)	A

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

Samples SL-543-SA8-SB-4.0-5.0 and SL-843-SA8-SB-4.0-5.0 were identified as field duplicates. No metals were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD (Limits)	Flag	A or P
	SL-543-SA8-SB-4.0-5.0	SL-843-SA8-SB-4.0-5.0			
Aluminum	36500	35700	2 (≤50)	-	-
Arsenic	2.60	3.25	22 (≤50)	-	-

Analyte	Concentration (mg/Kg)		RPD (Limits)	Flag	A or P
	SL-543-SA8-SB-4.0-5.0	SL-843-SA8-SB-4.0-5.0			
Barium	160	159	1 (≤50)	-	-
Beryllium	1.08	1.07	1 (≤50)	-	-
Boron	7.60	7.10	7 (≤50)	-	-
Calcium	8040	10700	28 (≤50)	-	-
Chromium	41.1	41.1	0 (≤50)	-	-
Cobalt	10.1	10.8	7 (≤50)	-	-
Copper	18.9	19.1	1 (≤50)	-	-
Iron	36500	36100	1 (≤50)	-	-
Lead	11.6	11.7	1 (≤50)	-	-
Lithium	27.9	27.8	0 (≤50)	-	-
Magnesium	7890	7810	1 (≤50)	-	-
Manganese	445	498	11 (≤50)	-	-
Molybdenum	0.250	0.297	17 (≤50)	-	-
Nickel	21.9	23.1	5 (≤50)	-	-
Phosphorus	261	287	9 (≤50)	-	-
Potassium	4910	5050	3 (≤50)	-	-
Selenium	0.198	0.262	28 (≤50)	-	-
Silver	0.0507	0.0616	19 (≤50)	-	-
Sodium	320	257	22 (≤50)	-	-
Strontium	49.2	59.0	18 (≤50)	-	-
Thallium	0.401	0.445	10 (≤50)	-	-
Tin	4.06	3.90	4 (≤50)	-	-

Analyte	Concentration (mg/Kg)		RPD (Limits)	Flag	A or P
	SL-543-SA8-SB-4.0-5.0	SL-843-SA8-SB-4.0-5.0			
Titanium	1890	1830	3 (≤ 50)	-	-
Vanadium	76.9	75.9	1 (≤ 50)	-	-
Zinc	74.6	75.2	1 (≤ 50)	-	-
Zirconium	8.30	8.28	0 (≤ 50)	-	-

**Santa Susana Field Laboratory
Metals - Data Qualification Summary - SDG PH090**

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
PH090	SL-543-SA8-SB-0.0-0.5 SL-543-SA8-SB-4.0-5.0 SL-843-SA8-SB-4.0-5.0 SL-609-SA8-SB-0.0-0.5 SL-609-SA8-SB-4.0-5.0 SL-614-SA8-SB-0.0-0.5 SL-614-SA8-SB-4.0-5.0	Antimony	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (%R) (Q)
PH090	SL-543-SA8-SB-0.0-0.5 SL-543-SA8-SB-4.0-5.0 SL-843-SA8-SB-4.0-5.0 SL-609-SA8-SB-0.0-0.5 SL-609-SA8-SB-4.0-5.0 SL-614-SA8-SB-0.0-0.5 SL-614-SA8-SB-4.0-5.0	Phosphorus Thallium	J (all detects) J (all detects)	A	Matrix spike/Matrix spike duplicate (%R) (Q)
PH090	SL-543-SA8-SB-0.0-0.5 SL-543-SA8-SB-4.0-5.0 SL-843-SA8-SB-4.0-5.0 SL-609-SA8-SB-0.0-0.5 SL-609-SA8-SB-4.0-5.0 SL-614-SA8-SB-0.0-0.5 SL-614-SA8-SB-4.0-5.0	Strontium	J (all detects) UJ (all non-detects)	A	Duplicate sample analysis (RPD) (E)
PH090	SL-543-SA8-SB-0.0-0.5 SL-543-SA8-SB-4.0-5.0 SL-843-SA8-SB-4.0-5.0 SL-609-SA8-SB-0.0-0.5 SL-609-SA8-SB-4.0-5.0 SL-614-SA8-SB-0.0-0.5 SL-614-SA8-SB-4.0-5.0	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (Z)

**Santa Susana Field Laboratory
Metals - Laboratory Blank Data Qualification Summary - SDG PH090**

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
PH090	SL-543-SA8-SB-0.0-0.5	Tin	3.52U mg/Kg	A	B
PH090	SL-543-SA8-SB-4.0-5.0	Tin	4.06U mg/Kg	A	B
PH090	SL-843-SA8-SB-4.0-5.0	Tin	3.90U mg/Kg	A	B
PH090	SL-609-SA8-SB-0.0-0.5	Tin	3.63U mg/Kg	A	B
PH090	SL-609-SA8-SB-4.0-5.0	Tin	3.61U mg/Kg	A	B
PH090	SL-614-SA8-SB-0.0-0.5	Tin	3.42U mg/Kg	A	B

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
PH090	SL-614-SA8-SB-4.0-5.0	Tin	3.56U mg/Kg	A	B

**Santa Susana Field Laboratory
Metals - Field Blank Data Qualification Summary - SDG PH090**

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
PH090	SL-543-SA8-SB-0.0-0.5	Molybdenum	0.294U mg/Kg	A	F
PH090	SL-543-SA8-SB-4.0-5.0	Molybdenum	0.250U mg/Kg	A	F
PH090	SL-843-SA8-SB-4.0-5.0	Molybdenum	0.297U mg/Kg	A	F
PH090	SL-609-SA8-SB-0.0-0.5	Molybdenum	0.189U mg/Kg	A	F
PH090	SL-614-SA8-SB-0.0-0.5	Molybdenum	0.208U mg/Kg	A	F

LDC #: 30434E4

VALIDATION COMPLETENESS WORKSHEET

Date: 9/25/13

SDG #: PH090

Level IV

Page: 1 of 1

Laboratory: Eurofins Lancaster Laboratories

Reviewer: CR

2nd Reviewer: ✓

METHOD: Metals (EPA SW 846 Method 6010C/6020A/7000)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/13/13
II.	ICP/MS Tune	A	
III.	Calibration	A	
IV.	Blanks	SW	
V.	ICP Interference Check Sample (ICS) Analysis	A	
VI.	Matrix Spike Analysis	SW	MS/D
VII.	Duplicate Sample Analysis	SW	Dup
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	A	
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	A	
XII.	Sample Result Verification	A	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	SW	(2,3)
XV.	Field Blanks	SW	FB=FB-041113 EB=EB081413

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

(PH029)
D = Duplicate
TB = Trip blank
EB = Equipment blank

(PH091)

Validated Samples:

soil

1	SL-543-SA8-SB-0.0-0.5	11		21		31	
2	SL-543-SA8-SB-4.0-5.0	12		22		32	
3	SL-843-SA8-SB-4.0-5.0	13		23		33	
4	SL-609-SA8-SB-0.0-0.5	14		24		34	
5	SL-609-SA8-SB-4.0-5.0	15		25		35	
6	SL-614-SA8-SB-0.0-0.5	16		26		36	
7	SL-614-SA8-SB-4.0-5.0	17		27		37	
8	SL-543-SA8-SB-4.0-5.0MS	18		28		38	
9	SL-543-SA8-SB-4.0-5.0MSD	19		29		39	
10	SL-543-SA8-SB-4.0-5.0DUP	20		30		40	

Notes: _____

30434E9

VALIDATION FINDINGS CHECKLIST

Method: Metals (EPA SW 846 Method 6010B/7000/6020)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	/			
Cooler temperature criteria was met.	/			
II. ICP/MS Tune				
Were all isotopes in the tuning solution mass resolution within 0.1 amu?	/			
Were %RSD of isotopes in the tuning solution $\leq 5\%$?	/			
III. Calibration				
Were all instruments calibrated daily, each set-up time?	/			
Were the proper number of standards used?	/			
Were all initial and continuing calibration verification %Rs within the 90-110% (80-120% for mercury) QC limits?	/			
Were all initial calibration correlation coefficients > 0.995 ?	/			
IV. Blanks				
Was a method blank associated with every sample in this SDG?	/			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	/			
V. ICP Interference Check Sample				
Were ICP interference check samples performed daily?	/			
Were the AB solution percent recoveries (%R) with the 80-120% QC limits?	/			
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	/			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.		/		
Were the MS/MSD or duplicate relative percent differences (RPD) $\leq 20\%$ for waters and $\leq 35\%$ for soil samples? A control limit of $\pm RL$ ($\pm 2X RL$ for soil) was used for samples that were $\leq 5X$ the RL, including when only one of the duplicate sample values were $\leq 5X$ the RL.	/			
VII. Laboratory control samples				
Was an LCS analyzed for this SDG?	/			
Was an LCS analyzed per extraction batch?	/			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% QC limits for water samples and laboratory established QC limits for soils?	/			

Validation Area	Yes	No	NA	Findings/Comments
VIII. Furnace Atomic Absorption QC				
If MSA was performed, was the correlation coefficients > 0.995?			/	
Do all applicable analyses have duplicate injections? (Level IV only)			/	
For sample concentrations > RL, are applicable duplicate injection RSD values < 20%? (Level IV only)			/	
Were analytical spike recoveries within the 85-115% QC limits?			/	
IX. ICP Serial Dilution				
Was an ICP serial dilution analyzed if analyte concentrations were > 50X the MDL (ICP)/>100X the MDL(ICP/MS)?	/			
Were all percent differences (%Ds) < 10%?	/			
Was there evidence of negative interference? If yes, professional judgement will be used to qualify the data.			/	
X. Internal Standards (EPA SW 846 Method 6020/EPA 200.8)				
Were all the percent recoveries (%R) within the 30-120% (6020)/60-125% (200.8) of the intensity of the internal standard in the associated initial calibration?	/			
If the %Rs were outside the criteria, was a reanalysis performed?			/	
XI. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		/		
Were the performance evaluation (PE) samples within the acceptance limits?			/	
XII. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.	/			
Target analytes were detected in the field duplicates.	/			
XV. Field blanks				
Field blanks were identified in this SDG.	/			
Target analytes were detected in the field blanks.	/			

**VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES**

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000)
 Sample Concentration units, unless otherwise noted: mg/Kg

Soil preparation factor applied: 100x
 Associated Samples: All Soil

Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (ug/l)	Maximum ICB/CCB ^a (ug/l)	Action Level	Sample Identification								
					1	2	3	4	5	6	7		
Cr			1.3	0.65									
Sn	1.825			9.125	3.52	4.06	3.90	3.63	3.61	3.42	3.56		
V			1.2	0.65									
Zn	0.316			1.58									

Sample Concentration units, unless otherwise noted: mg/Kg Associated Samples: 1-5

Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (ug/l)	Maximum ICB/CCB ^a (ug/l)	Action Level	Sample Identification								
					No Qualifiers								
Pb			2.0	1									

Sample Concentration units, unless otherwise noted: mg/Kg Associated Samples: 2

Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (ug/l)	Maximum ICB/CCB ^a (ug/l)	Action Level	Sample Identification								
					No Qualifiers								
Ni			1.3	0.65									

Sample Concentration units, unless otherwise noted: mg/Kg Associated Samples: 1, 3-7

Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (ug/l)	Maximum ICB/CCB ^a (ug/l)	Action Level	Sample Identification								
					No Qualifiers								
Ni			1.4	0.7									
Sn			1.4	0.7									

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".
 Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

VALIDATION FINDINGS WORKSHEET Field Blanks

METHOD: Trace Metals (EPA SW846 6010B/7000)

Blank units: mg/L **Associated sample units:** mg/Kg Reason: F
Sampling date: 4/11/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: All

Analyte	Blank ID	Sample Identification									
	FB-041113 (SDG: PH029)	Action Limit	1	2	3	4	6				
Cu	0.0036	1.8									
Mo	0.0036	1.8	0.294	0.250	0.297 0.30	0.189 0.45	0.208				

Sampling date: 8/14/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: All

Analyte	Blank ID	Sample Identification									
	EB-081413 (SDG: PH091)	Action Limit	No Qualifiers								
Ca	0.0798	39.9									
B	0.0106	5.3									

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
 Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

LDC#: 30434E4

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 2
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: Metals (EPA Method 6010B/7000)

Analyte	Concentration (mg/Kg)		RPD (≤50)	
	2	3		
Aluminum	36500	35700	2	
Arsenic	2.60	3.25	22	
Barium	160	159	1	
Beryllium	1.08	1.07	81	✓
Boron	7.60	7.10	7	
Calcium	8040	10700	28	
Chromium	41.1	41.1	0	
Cobalt	10.1	10.8	7	
Copper	18.9	19.1	1	
Iron	36500	36100	1	
Lead	11.6	11.7	1	
Lithium	27.9	27.8	0	
Magnesium	7890	7810	1	
Manganese	445	498	11	
Molybdenum	0.250	0.297 0.30	18 17	✓
Nickel	21.9	23.1	5	
Phosphorus	261	287	9	
Potassium	4910	5050	3	
Selenium	0.198 0.20	0.262	28	✓

LDC#: 30434E4

VALIDATION FINDINGS WORKSHEET Field Duplicates

Page: 22 of
Reviewer:
2nd Reviewer:

METHOD: Metals (EPA Method 6010B/7000)

Analyte	Concentration (mg/Kg)		RPD (≤50)	
	2	3		
Silver	0.0507	0.0616 <i>or</i>	19	
Sodium	320	257	22	
Strontium	49.2	59.0	18	
Thallium	0.401	0.445	10	
Tin	4.06	3.90	84 <i>or</i>	
Titanium	1890	1830	3	
Vanadium	76.9	75.9	1	
Zinc	74.6	75.2	1	
Zirconium	8.30	8.26	0	

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LDC #: 3043464

VALIDATION FINDINGS WORKSHEET
Initial and Continuing Calibration Calculation Verification

Page: 1 of 1

Reviewer: CR

2nd Reviewer: LN

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

An initial and continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

$$\%R = \frac{\text{Found}}{\text{True}} \times 100$$

Where, Found = concentration (in ug/L) of each analyte measured in the analysis of the ICV or CCV solution
 True = concentration (in ug/L) of each analyte in the ICV or CCV source

Standard ID	Type of Analysis	Element	Found (ug/L)	True (ug/L)	Recalculated	Reported	Acceptable (Y/N)
					%R	%R	
ICV	ICP (Initial calibration)	Cd	579.26	600	96.5	96.5	Y
ICV	ICP/MS (Initial calibration)	Sr	50.75	50	101.5	101.5 101.5	
ICV	CVAA (Initial calibration)	Hg	2.65	2.5	106.1	106.1	
CCV3	ICP (Continuing calibration)	Mo	504.68	50	100.9	100.9	
CCV3	ICP/MS (Continuing calibration)	Pb	25.37	25	101.5	25 101.5	
CCV3	CVAA (Continuing calibration)	Hg	1.07	1	107	107	
	GFAA (Initial calibration)						
	GFAA (Continuing calibration)						

Comments: Refer to Calibration Verification findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 3043489

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Page: 1 of 1
Reviewer: GR
2nd Reviewer: LN

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Percent recoveries (%R) for an ICP interference check sample, a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$$\%R = \frac{\text{Found}}{\text{True}} \times 100$$
 Where, Found = Concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, Found = SSR (spiked sample result) - SR (sample result).
 True = Concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$$RPD = \frac{|S-D|}{(S+D)/2} \times 100$$
 Where, S = Original sample concentration
 D = Duplicate sample concentration

An ICP serial dilution percent difference (%D) was recalculated using the following formula:

$$\%D = \frac{|I-SDR|}{I} \times 100$$
 Where, I = Initial Sample Result (mg/L)
 SDR = Serial Dilution Result (mg/L) (Instrument Reading x 5)

Sample ID	Type of Analysis	Element	Found / S / I (units)	True / D / SDR (units)	Recalculated	Reported	Acceptable (Y/N)
					%R / RPD / %D	%R / RPD / %D	
<u>ICSB</u>	ICP interference check	<u>Be</u>	<u>511.9</u>	<u>500</u>	<u>102.4</u>	<u>102.4</u>	<u>Y</u>
<u>LCS</u>	Laboratory control sample	<u>Se</u>	<u>1189</u>	<u>1000</u>	<u>119</u>	<u>119</u>	<u>Y</u>
<u>8</u>	Matrix spike	<u>Sb</u>	(SSR-SR) <u>25,006.9</u>	<u>49,505.0</u>	<u>51</u>	<u>51</u>	<u>Y</u>
<u>10</u>	Duplicate	<u>Na</u>	<u>286.098</u>	<u>275.5317</u>	<u>4</u>	<u>4</u>	<u>Y</u>
<u>2</u>	ICP serial dilution	<u>Ni</u>	<u>198.06</u>	<u>207.40</u>	<u>5</u>	<u>5</u>	<u>Y</u>

Comments: Refer to appropriate worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET

Sample Calculation Verification

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- Y N N/A Have results been reported and calculated correctly?
- Y N N/A Are results within the calibrated range of the instruments and within the linear range of the ICP?
- Y N N/A Are all detection limits below the CRDL?

Detected analyte results for N_i were recalculated and verified using the following equation:

Concentration = $\frac{(RD)(FV)(Dil)}{(In. Vol.)}$

Recalculation:

- RD = Raw data concentration
- FV = Final volume (ml)
- In. Vol. = Initial volume (ml) or weight (G)
- Dil = Dilution factor

$$\frac{100 \text{ mL } (0.19806 \text{ mg/L})}{0.894 (1.01g)} = 21.94 \text{ mg/Kg}$$

#	Sample ID	Analyte	Reported Concentration (mg/Kg)	Calculated Concentration (mg/Kg)	Acceptable (Y/N)
	2	Aluminum	36500	36500	Y
		Arsenic	2.6	2.6	
		Barium	160	160	
		Beryllium	1.1	1.1	
		Boron	7.6	7.6	
		Calcium	8040	8040	
		Chromium	41.1	41.1	
		Cobalt	10.1	10.1	
		Copper	18.9	18.9	
		Iron	36500	36500	
		Lead	11.6	11.6	
		Lithium	27.9	27.9	
		Magnesium	7890	7890	
		Manganese	445	445	
		Molybdenum	0.25	0.25	
		Nickel	21.9	21.9	
		Phosphorus	261	261	
		Potassium	4910	4910	
		Selenium	0.20	0.20	
		Silver	0.051	0.051	
		Sodium	320	320	

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- Y N N/A Have results been reported and calculated correctly?
- Y N N/A Are results within the calibrated range of the instruments and within the linear range of the ICP?
- Y N N/A Are all detection limits below the CRDL?

Detected analyte results for _____ were recalculated and verified using the following equation:

Concentration = $\frac{(RD)(FV)(Dil)}{(In. Vol.)}$

Recalculation:

- RD = Raw data concentration
- FV = Final volume (ml)
- In. Vol. = Initial volume (ml) or weight (G)
- Dil = Dilution factor

see pg. 1

#	Sample ID	Analyte	Reported Concentration (mg/Kg)	Calculated Concentration (mg/Kg)	Acceptable (Y/N)
		Strontium	49.2	49.2	Y
		Thallium	0.40	0.40	
		Tin	4.1	4.1	
		Titanium	1890	1890	
		Vanadium	76.9	76.9	
		Zinc	74.6	74.6	
		Zirconium	8.3	8.3	

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Santa Susana Field Laboratory
Collection Date: August 13, 2013
LDC Report Date: September 26, 2013
Matrix: Soil/Water
Parameters: Total Petroleum Hydrocarbons as Gasoline
Validation Level: Level IV
Laboratory: Eurofins Lancaster Laboratories
Sample Delivery Group (SDG): PH090

Sample Identification

TB-081313
SL-543-SA8-SB-4.0-5.0
SL-843-SA8-SB-4.0-5.0
SL-609-SA8-SB-4.0-5.0
SL-614-SA8-SB-4.0-5.0
SL-543-SA8-SB-4.0-5.0MS
SL-543-SA8-SB-4.0-5.0MSD

Introduction

This data review covers 6 soil samples and one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015B for Total Petroleum Hydrocarbons (TPH) as Gasoline.

This review follows the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for all compounds were less than or equal to 20.0%.

III. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as gasoline contaminants were found in the method blanks.

Sample TB-081313 was identified as a trip blank. No total petroleum hydrocarbons as gasoline contaminants were found.

Sample EB-081413 (from SDG PH091) was identified as an equipment blank. No total petroleum hydrocarbons as gasoline contaminants were found.

Sample FB-041113 (from SDG PH029) was identified as a field blank. No total petroleum hydrocarbons as gasoline contaminants were found.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
SL-543-SA8-SB-4.0-5.0	a,a,a-Trifluorotoluene	127 (61-122)	TPH as gasoline	J (all detects)	A

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

All target compound identifications were within validation criteria.

IX. Compound Quantitation

All compound quantitations were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH090	All compounds reported below the RL.	J (all detects)	A

X. System Performance

The system performance was acceptable.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

Samples SL-543-SA8-SB-4.0-5.0 and SL-843-SA8-SB-4.0-5.0 were identified as field duplicates. No total petroleum hydrocarbons as gasoline were detected in any of the samples.

**Santa Susana Field Laboratory
 Total Petroleum Hydrocarbons as Gasoline - Data Qualification Summary - SDG
 PH090**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
PH090	SL-543-SA8-SB-4.0-5.0	TPH as gasoline	J (all detects)	A	Surrogate spikes (%R) (S)
PH090	TB-081313 SL-543-SA8-SB-4.0-5.0 SL-843-SA8-SB-4.0-5.0 SL-609-SA8-SB-4.0-5.0 SL-614-SA8-SB-4.0-5.0	All compounds reported below the RL.	J (all detects)	A	Compound quantitation (Z)

**Santa Susana Field Laboratory
 Total Petroleum Hydrocarbons as Gasoline - Laboratory Blank Data Qualification
 Summary - SDG PH090**

No Sample Data Qualified in this SDG

**Santa Susana Field Laboratory
 Total Petroleum Hydrocarbons as Gasoline - Field Blank Data Qualification
 Summary - SDG PH090**

No Sample Data Qualified in this SDG

METHOD: GC TPH as Gasoline (EPA SW 846 Method 8015B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/13/13
II	Initial calibration	Δ	% PSD ≤ 20
III.	Calibration verification/ICV	Δ	ICV/CV ≤ 20
IV.	Blanks	Δ	
V	Surrogate recovery	SW	
VI.	Matrix spike/Matrix spike duplicates	A	
VII.	Laboratory control samples	A	LC > 10
VIII.	Target compound identification	Δ	
IX.	Compound quantitation/RL/LOQ/LODs	Δ	
X.	System Performance	A	
XI.	Overall assessment of data	Δ	D = 2 + 3
XII.	Field duplicates	ND	FB = FB-041113 SDG # PH029
XIII.	Field blanks	ND	TB = TB-081313

EB = EB-081413 SDG # PH091

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

water 2012

12	TB-081313	W	111	BLKPC	211	31
21	SL-543-SA8-SB-4.0-5.0	S	122	BLKPE	22	32
3	SL-843-SA8-SB-4.0-5.0		13		23	33
4	SL-609-SA8-SB-4.0-5.0		14		24	34
5	SL-614-SA8-SB-4.0-5.0		15		25	35
6	SL-543-SA8-SB-4.0-5.0MS		16		26	36
7	SL-543-SA8-SB-4.0-5.0MSD		17		27	37
8			18		28	38
9			19		29	39
10			20		30	40

Notes: _____

Method: GC HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cooler temperature criteria was met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent relative standard deviations (%RSD) < 20%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a curve fit used for evaluation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Did the initial calibration meet the curve fit acceptance criteria of > 0.990?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Were the RT windows properly established?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IV. Continuing calibration				
Was a continuing calibration analyzed daily?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) < 20% or percent recoveries 80-120%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all the retention times within the acceptance windows?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
V. Blanks				
Was a method blank associated with every sample in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a method blank analyzed for each matrix and concentration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a MS/MSD analyzed every 20 samples of each matrix?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was an LCS analyzed per extraction batch?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Were the performance evaluation (PE) samples within the acceptance limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Validation Area	Yes	No	NA	Findings/Comments
X. Target compound identification				
Were the retention times of reported detects within the RT windows?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XII. System performance				
System performance was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Target compounds were detected in the field duplicates.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
XV. Field blanks				
Field blanks were identified in this SDG.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Target compounds were detected in the field blanks.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

LDC #: 30434E7

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
 Reviewer: F7
 2nd Reviewer: [Signature]

METHOD: GC ✓ HPLC _____

The calibration factors (CF) and relative standard deviation (%RSD) were recalculated using the following calculations:

CF = A/C
 Average CF = sum of the CF/number of standards
 %RSD = 100 * (S/X)

Where: A = Area of compound
 C = Concentration of compound
 S = Standard deviation of calibration factors
 X = Mean of calibration factors

#	Standard ID	Calibration Date	Compound	Reported	Recalculated	Reported	Recalculated	Reported	Recalculated
				CF (550 std)	CF (550 std)	Ave CF (initial)	Ave CF (initial)	%RSD	%RSD
1	KAL	9/22/11	GRD	24480	24480	24482	24482	7.0	7.0
	16394F								
				(220)	(220)				
2	KAL	5/23/13	GRD	60597	60597	61516	61516	3	3.0
	11379F								
3									
4									

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 30434E7

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Page: 1 of 1
Reviewer: F7
2nd Reviewer: [Signature]

METHOD: GC ✓ HPLC _____

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration CF were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. CF - CF)/ave.CF

Where: ave. CF = initial calibration average CF
CF = continuing calibration CF
A = Area of compound
C = Concentration of compound

#	Standard ID	Calibration Date	Compound	Average CF(Ical)/ CCV Conc.	Reported	Recalculated	Reported	Recalculated
					CF/ Conc. CCV	CF/ Conc. CCV	%D	%D
1	94227B- 0026	8/16/13	GRU	1100.0	1042.98	1042.98	5	5
2	16227B- 0003	8/16/13	GRU	220.00	206.84	206.84	6	6
3								
4								

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

METHOD: GC HPLC

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: $SF/SS * 100$

Where: SF = Surrogate Found
 SS = Surrogate Spiked

Sample ID: #1

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
TFT	NS	857.35	1088.83	127	127	0

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

METHOD: GC HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

$\% \text{Recovery} = 100 * (\text{SSC} - \text{SC}) / \text{SA}$

Where

SSC = Spiked sample concentration

SC = Sample concentration

SA = Spike added

MS = Matrix spike

MSD = Matrix spike duplicate

$\text{RPD} = ((\text{SSCMS} - \text{SSCMSD}) * 2) / (\text{SSCMS} + \text{SSCMSD}) * 100$

MS/MSD samples: 647

Compound	Spike Added (mg/kg)		Sample Conc. (mg/kg)	Spike Sample Concentration (mg/kg)		Matrix spike		Matrix Spike Duplicate		MS/MSD	
	MS	MSD		MS	MSD	Percent Recovery		Percent Recovery		RPD	
						Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)	14.8	14.8	ND	9.17	9.62	62	62	74	76	5	5
Diesel (8015)											
Benzene (8021B)											
Methane (RSK-175)											
2,4-D (8151)											
Dinoseb (8151)											
Naphthalene (8310)											
Anthracene (8310)											
HMX (8330)											
2,4,6-Trinitrotoluene (8330)											

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

METHOD: GC HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

$\%Recovery = 100 * (SSC - SC) / SA$

Where SSC = Spiked sample concentration

SC = Sample concentration

SA = Spike added

$RPD = ((SSCLCS - SSCLCSD) * 2) / (SSCLCS + SSCLCSD) * 100$

LCS = Laboratory Control Sample

LCSD = Laboratory Control Sample duplicate

LCS/LCSD samples: LCS 79

Compound	Spike Added (mg/kg)		Sample Conc. (mg/kg)	Spike Sample Concentration (mg/kg)		LCS		LCSD		LCS/LCSD	
	LCS	LCSD		LCS	LCSD	Percent Recovery		Percent Recovery		RPD	
						Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)	11	NA	ND	8.74	NA	79	79	NA			
Diesel (8015)											
Benzene (8021B)											
Methane (RSK-175)											
2,4-D (8151)											
Dinoseb (8151)											
Naphthalene (8310)											
Anthracene (8310)											
HMX (8330)											
2,4,6-Trinitrotoluene (8330)											

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

METHOD: GC HPLC

(Y) N N/A
Y N N/A

Were all reported results recalculated and verified for all level IV samples?
Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration = $\frac{(A)(Fv)(Df)}{(RF)(Vs \text{ or } Ws)(\%S/100)}$

Example:

Sample ID: les soil Compound Name GRO

- A= Area or height of the compound to be measured
- Fv= Final Volume of extract
- Df= Dilution Factor
- RF= Average response factor of the compound
In the initial calibration
- Vs= Initial volume of the sample
- Ws= Initial weight of the sample
- %S= Percent Solid

Concentration = $\frac{21499710 (25)}{61516 (1) (1000)}$

 $= 8.7 \text{ mg/kg}$

#	Sample ID	Compound	Reported Concentrations ()	Recalculated Results Concentrations ()	Qualifications

Comments: _____

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Santa Susana Field Laboratory
Collection Date: August 13, 2013
LDC Report Date: September 26, 2013
Matrix: Soil
Parameters: Total Petroleum Hydrocarbons as Extractables
Validation Level: Level IV
Laboratory: Eurofins Lancaster Laboratories
Sample Delivery Group (SDG): PH090

Sample Identification

SL-543-SA8-SB-0.0-0.5
SL-543-SA8-SB-4.0-5.0
SL-843-SA8-SB-4.0-5.0
SL-609-SA8-SB-0.0-0.5
SL-609-SA8-SB-4.0-5.0
SL-614-SA8-SB-0.0-0.5
SL-614-SA8-SB-4.0-5.0
SL-543-SA8-SB-4.0-5.0MS
SL-543-SA8-SB-4.0-5.0MSD

Introduction

This data review covers 9 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015B for Total Petroleum Hydrocarbons (TPH) as Extractables.

This review follows the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0%.

III. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as extractables contaminants were found in the method blanks.

Sample EB-081413 (from SDG PH091) was identified as an equipment blank. No total petroleum hydrocarbons as extractables contaminants were found.

Sample FB-041113 (from SDG PH029) was identified as a field blank. No total petroleum hydrocarbons as extractables contaminants were found.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
SL-543-SA8-SB-4.0-5.0MS/MSD (SL-543-SA8-SB-4.0-5.0)	Extractable fuel hydrocarbons (C30-C40)	-	163 (49-123)	40 (≤20)	J (all detects)	A

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Target Compound Identification

All target compound identifications were within validation criteria.

IX. Compound Quantitation

All compound quantitations were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH090	All compounds reported below the RL.	J (all detects)	A

X. System Performance

The system performance was acceptable.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

Samples SL-543-SA8-SB-4.0-5.0 and SL-843-SA8-SB-4.0-5.0 were identified as field duplicates. No total petroleum hydrocarbons as extractables were detected in any of the samples.

**Santa Susana Field Laboratory
 Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary -
 SDG PH090**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
PH090	SL-543-SA8-SB-4.0-5.0	Extractable fuel hydrocarbons (C30-C40)	J (all detects)	A	Matrix spike/Matrix spike duplicate (%R)(RPD) (Q)
PH090	SL-543-SA8-SB-0.0-0.5 SL-543-SA8-SB-4.0-5.0 SL-843-SA8-SB-4.0-5.0 SL-609-SA8-SB-0.0-0.5 SL-609-SA8-SB-4.0-5.0 SL-614-SA8-SB-0.0-0.5 SL-614-SA8-SB-4.0-5.0	All compounds reported below the RL.	J (all detects)	A	Compound quantitation (Z)

**Santa Susana Field Laboratory
 Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data
 Qualification Summary - SDG PH090**

No Sample Data Qualified in this SDG

**Santa Susana Field Laboratory
 Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification
 Summary - SDG PH090**

No Sample Data Qualified in this SDG

LDC #: 30434E8

VALIDATION COMPLETENESS WORKSHEET

Date: 9/25/13

SDG #: PH090

Level IV

Page: 1 of 1

Laboratory: Eurofins Lancaster Laboratories

Reviewer: [Signature]

2nd Reviewer: [Signature]

METHOD: GC TPH as Extractables (EPA SW 846 Method 8015B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	Δ	Sampling dates: 8/13/13
II.	Initial calibration	Δ	% RSD ≤ 20
III.	Calibration verification/ICV	Δ	ICV/CCV = 20
IV.	Blanks	Δ	
V.	Surrogate recovery	Δ	
VI.	Matrix spike/Matrix spike duplicates	SW	
VII.	Laboratory control samples	A	LC5
VIII.	Target compound identification	Δ	
IX.	Compound quantitation/RL/LOQ/LODs	Δ	
X.	System Performance	A	
XI.	Overall assessment of data	Δ	
XII.	Field duplicates	ND	D = 2, 3
XIII.	Field blanks	ND	FB = EB-081413 SDG # PH091 FB = FB-041113 SDG # PH029

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

SOIL

1	SL-543-SA8-SB-0.0-0.5	11	PBLK18233	21	31
2	SL-543-SA8-SB-4.0-5.0	12		22	32
3	SL-843-SA8-SB-4.0-5.0	13		23	33
4	SL-609-SA8-SB-0.0-0.5	14		24	34
5	SL-609-SA8-SB-4.0-5.0	15		25	35
6	SL-614-SA8-SB-0.0-0.5	16		26	36
7	SL-614-SA8-SB-4.0-5.0	17		27	37
8	SL-543-SA8-SB-4.0-5.0MS	18		28	38
9	SL-543-SA8-SB-4.0-5.0MSD	19		29	39
10		20		30	40

Notes: _____

Method: GC HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cooler temperature criteria was met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent relative standard deviations (%RSD) < 20%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a curve fit used for evaluation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Did the initial calibration meet the curve fit acceptance criteria of > 0.990?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Were the RT windows properly established?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IV. Continuing calibration				
Was a continuing calibration analyzed daily?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) < 20% or percent recoveries 80-120%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all the retention times within the acceptance windows?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
V. Blanks				
Was a method blank associated with every sample in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a method blank analyzed for each matrix and concentration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a MS/MSD analyzed every 20 samples of each matrix?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was an LCS analyzed per extraction batch?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Were the performance evaluation (PE) samples within the acceptance limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Validation Area	Yes	No	NA	Findings/Comments
X. Target compound identification				
Were the retention times of reported detects within the RT windows?	/			
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
XII. System performance				
System performance was found to be acceptable.	/			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.		/		
Target compounds were detected in the field duplicates.			/	
XV. Field blanks				
Field blanks were identified in this SDG.	/			
Target compounds were detected in the field blanks.		/		

LDC #: 30434E8

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
 Reviewer: F7
 2nd Reviewer: ←

METHOD: GC HPLC

The calibration factors (CF) and relative standard deviation (%RSD) were recalculated using the following calculations:

CF = A/C
 Average CF = sum of the CF/number of standards
 %RSD = 100 * (S/X)

Where: A = Area of compound
 C = Concentration of compound
 S = Standard deviation of calibration factors
 X = Mean of calibration factors

#	Standard ID	Calibration Date	Compound	Reported	Recalculated	Reported	Recalculated	Reported	Recalculated
				CF (288 std)	CF (288 std)	Ave CF (initial)	Ave CF (initial)	%RSD	%RSD
1	ICAL	8/19/13	C8-C40	25541.87	25541.87	27097	27097	10	10
2									
3									
4									

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

METHOD: GC HPLC

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: $SF/SS * 100$

Where: SF = Surrogate Found
 SS = Surrogate Spiked

Sample ID: # 1

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
chlorobenzene	NS	2	1.507679	75	75	0
or thoterphenyl	↓	2	1.590998	80	80	0

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

METHOD: GC HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC - SC)/SA

Where

SSC = Spiked sample concentration

SC = Sample concentration

SA = Spike added

MS = Matrix spike

MSD = Matrix spike duplicate

RPD = (((SSCMS - SSCMSD) * 2) / (SSCMS + SSCMSD)) * 100

MS/MSD samples: 8 + 9

Compound	Spike Added		Sample Conc.	Spike Sample Concentration		Matrix spike		Matrix Spike Duplicate		MS/MSD	
	()			()		Percent Recovery		Percent Recovery		RPD	
	MS	MSD		---	MS	MSD	Reported	Recalc.	Reported	Recalc.	Reported
Gasoline (8015)											
Diesel (8015)											
Benzene (8021B)											
Methane (RSK-175)											
2,4-D (8151)											
Dinoseb (8151)											
Naphthalene (8310)											
Anthracene (8310)											
HMX (8330)											
2,4,6-Trinitrotoluene (8330)											
EFH (CG-211)	1.68	1.68	ND	1.12	1.16	66	66	69	69	4	4

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 30434E8

VALIDATION FINDINGS WORKSHEET

Page: 1 of 1

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: FJ

2nd Reviewer: [Signature]

METHOD: GC HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

$\% \text{Recovery} = 100 * (\text{SSC} - \text{SC}) / \text{SA}$

Where SSC = Spiked sample concentration

SC = Sample concentration

SA = Spike added

LCS = Laboratory Control Sample

LCSD = Laboratory Control Sample duplicate

$\text{RPD} = ((\text{SSCLCS} - \text{SSCLCSD}) * 2) / (\text{SSCLCS} + \text{SSCLCSD}) * 100$

LCS/LCSD samples: LCS 18233

Compound	Spike Added (mg/kg)		Sample Conc. (mg/L)	Spike Sample Concentration (mg/L)		LCS		LCSD		LCS/LCSD	
	LCS	LCSD		LCS	LCSD	Percent Recovery		Percent Recovery		RPD	
						Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)			---								
Diesel (8015)											
Benzene (8021B)											
Methane (RSK-175)											
2,4-D (8151)											
Dinoseb (8151)											
Naphthalene (8310)											
Anthracene (8310)											
HMX (8330)											
2,4,6-Trinitrotoluene (8330)											
EFH (CG-011)	1.68	NA	ND	1.16	NA	69	69	NA			

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 30434ES

VALIDATION FINDINGS WORKSHEET Sample Calculation Verification

Page: 1 of 1
Reviewer: F7
2nd Reviewer: [Signature]

METHOD: GC HPLC

Y N N/A
Y N N/A

Were all reported results recalculated and verified for all level IV samples?
Were all recalculated results for detected target compounds within 10% of the reported results?

$$\text{Concentration} = \frac{(A)(Fv)(Df)}{(RF)(Vs \text{ or } Ws)(\%S/100)}$$

Example:

Sample ID. #1 Compound Name C21-C30

- A= Area or height of the compound to be measured
- Fv= Final Volume of extract
- Df= Dilution Factor
- RF= Average response factor of the compound
In the initial calibration
- Vs= Initial volume of the sample
- Ws= Initial weight of the sample
- %S= Percent Solid

$$\begin{aligned} \text{Concentration} &= \frac{6285711 (1)}{27097 (30)(0.954)} \\ &= 8.1 \text{ mg/kg} \end{aligned}$$

#	Sample ID	Compound	Reported Concentrations ()	Recalculated Results Concentrations ()	Qualifications

Comments: _____

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Santa Susana Field Laboratory
Collection Date: August 13, 2013
LDC Report Date: November 6, 2013
Matrix: Soil
Parameters: Dioxins/Dibenzofurans
Validation Level: Level IV
Laboratory: Eurofins Lancaster Laboratories
Sample Delivery Group (SDG): PH090

Sample Identification

SL-543-SA8-SB-0.0-0.5
SL-543-SA8-SB-4.0-5.0
SL-843-SA8-SB-4.0-5.0
SL-609-SA8-SB-0.0-0.5
SL-609-SA8-SB-4.0-5.0
SL-614-SA8-SB-0.0-0.5
SL-614-SA8-SB-4.0-5.0
SL-543-SA8-SB-4.0-5.0MS
SL-543-SA8-SB-4.0-5.0MSD

Introduction

This data review covers 9 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 1613B for Polychlorinated Dioxins/Dibenzofurans.

This review follows the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and the USEPA Contract Laboratory Program National Functional Guidelines for Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. HRGC/HRMS Instrument Performance Check

Instrument performance was checked at the required daily frequency.

The chromatographic resolution between 2,3,7,8-TCDD and the peaks representing any other unlabeled TCDD isomers was resolved with a valley of less than or equal to 25%.

PFK and static resolving power were within validation criteria.

III. Initial Calibration

A five point initial calibration was performed as required by the method.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for unlabeled compounds and less than or equal to 35.0% for labeled compounds.

The ion abundance ratios for all PCDDs and PCDFs were within validation criteria.

The minimum S/N ratio was greater than or equal to 10 for each unlabeled compound and labeled compound.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within QC limits.

The percent differences (%D) of the second source calibration standard were within QC limits.

The ion abundance ratios for all PCDDs and PCDFs were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated dioxin/dibenzofuran contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
BLK234002	8/22/13	1,2,3,7,8-PeCDD 1,2,3,4,6,7,8-HpCDD OCDD 2,3,4,7,8-PeCDF 1,2,3,4,7,8-HxCDF 1,2,3,6,7,8-HxCDF 1,2,3,4,6,7,8-HpCDF 1,2,3,4,7,8,9-HpCDF OCDF	0.0869 ng/Kg 0.0505 ng/Kg 0.294 ng/Kg 0.0473 ng/Kg 0.0573 ng/Kg 0.0277 ng/Kg 0.0404 ng/Kg 0.0549 ng/Kg 0.126 ng/Kg	All samples in SDG PH090

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
SL-543-SA8-SB-0.0-0.5	1,2,3,7,8-PeCDD 2,3,4,7,8-PeCDF 1,2,3,4,7,8-HxCDF 1,2,3,4,7,8,9-HpCDF	0.195 ng/Kg 0.103 ng/Kg 0.149 ng/Kg 0.0945 ng/Kg	0.195U ng/Kg 0.103U ng/Kg 0.149U ng/Kg 0.0945U ng/Kg
SL-543-SA8-SB-4.0-5.0	1,2,3,4,7,8-HxCDF 1,2,3,6,7,8-HxCDF 1,2,3,4,6,7,8-HpCDF OCDF	0.0429 ng/Kg 0.0787 ng/Kg 0.0899 ng/Kg 0.265 ng/Kg	0.0429U ng/Kg 0.0787U ng/Kg 0.0899U ng/Kg 0.265U ng/Kg
SL-843-SA8-SB-4.0-5.0	1,2,3,7,8-PeCDD 2,3,4,7,8-PeCDF 1,2,3,4,7,8-HxCDF 1,2,3,6,7,8-HxCDF 1,2,3,4,6,7,8-HpCDF 1,2,3,4,7,8,9-HpCDF OCDF	0.194 ng/Kg 0.0563 ng/Kg 0.105 ng/Kg 0.126 ng/Kg 0.195 ng/Kg 0.0842 ng/Kg 0.422 ng/Kg	0.194U ng/Kg 0.0563U ng/Kg 0.105U ng/Kg 0.126U ng/Kg 0.195U ng/Kg 0.0842U ng/Kg 0.422U ng/Kg
SL-609-SA8-SB-0.0-0.5	2,3,4,7,8-PeCDF 1,2,3,4,7,8-HxCDF 1,2,3,6,7,8-HxCDF 1,2,3,4,6,7,8-HpCDF 1,2,3,4,7,8,9-HpCDF OCDF	0.0766 ng/Kg 0.0781 ng/Kg 0.0890 ng/Kg 0.172 ng/Kg 0.0507 ng/Kg 0.281 ng/Kg	0.0766U ng/Kg 0.0781U ng/Kg 0.0890U ng/Kg 0.172U ng/Kg 0.0507U ng/Kg 0.281U ng/Kg
SL-609-SA8-SB-4.0-5.0	2,3,4,7,8-PeCDF 1,2,3,4,7,8-HxCDF 1,2,3,6,7,8-HxCDF 1,2,3,4,6,7,8-HpCDF 1,2,3,4,7,8,9-HpCDF OCDF	0.0642 ng/Kg 0.0408 ng/Kg 0.0581 ng/Kg 0.0859 ng/Kg 0.0811 ng/Kg 0.209 ng/Kg	0.0642U ng/Kg 0.0408U ng/Kg 0.0581U ng/Kg 0.0859U ng/Kg 0.0811U ng/Kg 0.209U ng/Kg
SL-614-SA8-SB-0.0-0.5	1,2,3,7,8-PeCDD 1,2,3,4,7,8-HxCDF 1,2,3,4,7,8,9-HpCDF	0.337 ng/Kg 0.236 ng/Kg 0.169 ng/Kg	0.337U ng/Kg 0.236U ng/Kg 0.169U ng/Kg

Sample	Compound	Reported Concentration	Modified Final Concentration
SL-614-SA8-SB-4.0-5.0	1,2,3,7,8-PeCDD 1,2,3,4,7,8-HxCDF 1,2,3,4,7,8,9-HpCDF	0.129 ng/Kg 0.229 ng/Kg 0.0823 ng/Kg	0.129U ng/Kg 0.229U ng/Kg 0.0823U ng/Kg

Sample EB-081413 (from SDG PH091) was identified as an equipment blank. No polychlorinated dioxin/dibenzofuran contaminants were found with the following exceptions:

Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB-081413	8/14/13	2,3,7,8-TCDD 1,2,3,7,8-PeCDD 1,2,3,4,7,8-HxCDD 1,2,3,6,7,8-HxCDD 1,2,3,7,8,9-HxCDD 1,2,3,4,6,7,8-HpCDD OCDD 2,3,7,8-TCDF 1,2,3,7,8-PeCDF 2,3,4,7,8-PeCDF 1,2,3,4,7,8-HxCDF 1,2,3,6,7,8-HxCDF 2,3,4,6,7,8-HxCDF 1,2,3,7,8,9-HxCDF 1,2,3,4,6,7,8-HpCDF 1,2,3,4,7,8,9-HpCDF OCDF	0.406 pg/L 0.617 pg/L 0.594 pg/L 0.708 pg/L 0.501 pg/L 1.09 pg/L 1.96 pg/L 0.235 pg/L 0.985 pg/L 0.744 pg/L 0.495 pg/L 0.528 pg/L 0.129 pg/L 0.826 pg/L 0.776 pg/L 0.597 pg/L 1.52 pg/L	All samples in SDG PH090

Sample FB-041113 (from SDH PH029) was identified as a field blank. No polychlorinated dioxin/dibenzofuran contaminants were found with the following exceptions:

Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB-041113	4/11/13	1,2,3,4,7,8-HxCDD 1,2,3,7,8,9-HxCDD 1,2,3,4,6,7,8-HpCDD 1,2,3,7,8-PeCDF 2,3,4,7,8-PeCDF 1,2,3,4,7,8-HxCDF 1,2,3,6,7,8-HxCDF 1,2,3,7,8,9-HxCDF 2,3,4,6,7,8-HxCDF 1,2,3,4,6,7,8-HpCDF OCDF	0.125 pg/L 0.134 pg/L 0.402 pg/L 0.398 pg/L 0.316 pg/L 0.324 pg/L 0.221 pg/L 0.211 pg/L 0.149 pg/L 0.254 pg/L 0.840 pg/L	All samples in SDG PH090

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X for other contaminants) than the concentrations found in the associated field blanks.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Ongoing Precision Recovery (OPR)

Ongoing precision recovery samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Regional Quality Assurance and Quality Control

Not applicable.

IX. Internal Standards

All internal standard recoveries were within QC limits.

X. Target Compound Identifications

All target compound identifications were within validation criteria.

XI. Compound Quantitation

All compound quantitations were within validation criteria.

The 2,3,7,8-TCDF confirmation was performed with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
SL-543-SA8-SB-0.0-0.5 SL-609-SA8-SB-0.0-0.5 SL-609-SA8-SB-4.0-5.0 SL-614-SA8-SB-0.0-0.5 SL-614-SA8-SB-4.0-5.0	2,3,7,8-TCDF	2nd column confirmation was not performed for this compound.	2,3,7,8-TCDF must be confirmed on the 2nd column per the method.	None	P

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDGPH090	All compounds reported below the RL.	J (all detects)	A

XII. System Performance

The system performance was acceptable.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

Samples SL-543-SA8-SB-4.0-5.0 and SL-843-SA8-SB-4.0-5.0 were identified as field duplicates. No polychlorinated dioxins/dibenzofurans were detected in any of the samples with the following exceptions:

Compound	Concentration (ng/Kg)		RPD (Limits)	Flag	A or P
	SL-543-SA8-SB-4.0-5.0	SL-843-SA8-SB-4.0-5.0			
1,2,3,7,8-PeCDD	5.54U	0.194	200 (≤50)	J (all detects) UJ (all non-detects)	A
1,2,3,4,7,8-HxCDD	5.54U	0.0875	200 (≤50)	J (all detects) UJ (all non-detects)	A
1,2,3,6,7,8-HxCDD	0.245	0.220	11 (≤50)	-	-
1,2,3,7,8,9-HxCDD	0.380	0.386	2 (≤50)	-	-
1,2,3,4,6,7,8-HpCDD	0.436	0.690	45 (≤50)	-	-
OCDD	2.26	5.06	77 (≤50)	J (all detects)	A
1,2,3,7,8-PeCDF	0.181	0.219	19 (≤50)	-	-
2,3,4,7,8-PeCDF	5.54U	0.0563	200 (≤50)	J (all detects) UJ (all non-detects)	A
1,2,3,4,7,8-HxCDF	0.0429	0.105	84 (≤50)	J (all detects)	A
1,2,3,6,7,8-HxCDF	0.0787	0.126	46 (≤50)	-	-
2,3,4,6,7,8-HxCDF	5.54U	0.112	200 (≤50)	J (all detects) UJ (all non-detects)	A
1,2,3,7,8,9-HxCDF	0.359	0.607	51 (≤50)	J (all detects)	A
1,2,3,4,6,7,8-HpCDF	0.0899	0.195	74 (≤50)	J (all detects)	A
1,2,3,4,7,8,9-HpCDF	5.54U	0.0842	200 (≤50)	J (all detects) UJ (all non-detects)	A
OCDF	0.265	0.422	46 (≤50)	-	-

**Santa Susana Field Laboratory
Dioxins/Dibenzofurans - Data Qualification Summary - SDG PH090**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
PH090	SL-543-SA8-SB-0.0-0.5 SL-609-SA8-SB-0.0-0.5 SL-609-SA8-SB-4.0-5.0 SL-614-SA8-SB-0.0-0.5 SL-614-SA8-SB-4.0-5.0	2,3,7,8-TCDF	None	P	Compound quantitation (no confirmation analysis)
PH090	SL-543-SA8-SB-0.0-0.5 SL-543-SA8-SB-4.0-5.0 SL-843-SA8-SB-4.0-5.0 SL-609-SA8-SB-0.0-0.5 SL-609-SA8-SB-4.0-5.0 SL-614-SA8-SB-0.0-0.5 SL-614-SA8-SB-4.0-5.0	All compounds reported below the RL.	J (all detects)	A	Compound quantitation (Z)
PH090	SL-543-SA8-SB-4.0-5.0 SL-843-SA8-SB-4.0-5.0	1,2,3,7,8-PeCDD 1,2,3,4,7,8-HxCDD 2,3,4,7,8-PeCDF 2,3,4,6,7,8-HxCDF 1,2,3,4,7,8,9-HpCDF	J (all detects) UJ (all non-detects)	A	Field duplicates (RPD) (FD)
PH090	SL-543-SA8-SB-4.0-5.0 SL-843-SA8-SB-4.0-5.0	OCDD 1,2,3,4,7,8-HxCDF 1,2,3,7,8,9-HxCDF 1,2,3,4,6,7,8-HpCDF	J (all detects) J (all detects) J (all detects) J (all detects)	A	Field duplicates (RPD) (FD)

**Santa Susana Field Laboratory
Dioxins/Dibenzofurans - Laboratory Blank Data Qualification Summary - SDG PH090**

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
PH090	SL-543-SA8-SB-0.0-0.5	1,2,3,7,8-PeCDD 2,3,4,7,8-PeCDF 1,2,3,4,7,8-HxCDF 1,2,3,4,7,8,9-HpCDF	0.195U ng/Kg 0.103U ng/Kg 0.149U ng/Kg 0.0945U ng/Kg	A	B
PH090	SL-543-SA8-SB-4.0-5.0	1,2,3,4,7,8-HxCDF 1,2,3,6,7,8-HxCDF 1,2,3,4,6,7,8-HpCDF OCDF	0.0429U ng/Kg 0.0787U ng/Kg 0.0899U ng/Kg 0.265U ng/Kg	A	B
PH090	SL-843-SA8-SB-4.0-5.0	1,2,3,7,8-PeCDD 2,3,4,7,8-PeCDF 1,2,3,4,7,8-HxCDF 1,2,3,6,7,8-HxCDF 1,2,3,4,6,7,8-HpCDF 1,2,3,4,7,8,9-HpCDF OCDF	0.194U ng/Kg 0.0563U ng/Kg 0.105U ng/Kg 0.126U ng/Kg 0.195U ng/Kg 0.0842U ng/Kg 0.422U ng/Kg	A	B

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
PH090	SL-609-SA8-SB-0.0-0.5	2,3,4,7,8-PeCDF 1,2,3,4,7,8-HxCDF 1,2,3,6,7,8-HxCDF 1,2,3,4,6,7,8-HpCDF 1,2,3,4,7,8,9-HpCDF OCDF	0.0766U ng/Kg 0.0781U ng/Kg 0.0890U ng/Kg 0.172U ng/Kg 0.0507U ng/Kg 0.281U ng/Kg	A	B
PH090	SL-609-SA8-SB-4.0-5.0	2,3,4,7,8-PeCDF 1,2,3,4,7,8-HxCDF 1,2,3,6,7,8-HxCDF 1,2,3,4,6,7,8-HpCDF 1,2,3,4,7,8,9-HpCDF OCDF	0.0642U ng/Kg 0.0408U ng/Kg 0.0581U ng/Kg 0.0859U ng/Kg 0.0811U ng/Kg 0.209U ng/Kg	A	B
PH090	SL-614-SA8-SB-0.0-0.5	1,2,3,7,8-PeCDD 1,2,3,4,7,8-HxCDF 1,2,3,4,7,8,9-HpCDF	0.337U ng/Kg 0.236U ng/Kg 0.169U ng/Kg	A	B
PH090	SL-614-SA8-SB-4.0-5.0	1,2,3,7,8-PeCDD 1,2,3,4,7,8-HxCDF 1,2,3,4,7,8,9-HpCDF	0.129U ng/Kg 0.229U ng/Kg 0.0823U ng/Kg	A	B

**Santa Susana Field Laboratory
Dioxins/Dibenzofurans - Field Blank Data Qualification Summary - SDG PH090**

No Sample Data Qualified in this SDG

LDC #: 30434E21

VALIDATION COMPLETENESS WORKSHEET

SDG #: PH090

Level IV

Laboratory: Eurofins Lancaster Laboratories

Date: 9-19-13

Page: 1 of 1

Reviewer: *gm*

2nd Reviewer: *[Signature]*

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA Method 1613B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/13/13
II.	HRGC/HRMS Instrument performance check	A	
III.	Initial calibration	A	≤ 20/35
IV.	Continuing Calibration	A	QC limits
V.	Blanks	SW	
VI.	Matrix spike/Matrix spike duplicates	A	
VII.	Laboratory control samples	A	OPR
VIII.	Regional quality assurance and quality control	N	
IX.	Internal standards	A	
X.	Target compound identifications	A	
XI.	Compound quantitation/RL/LOQ/LODs	SW	
XII.	System performance	A	
XIII.	Overall assessment of data	A	
XIV.	Field duplicates	SW	D = 2+3
XV.	Field blanks	SW	FB = FB-041113 (PH029), EB = EB-081413 (PH091)

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples: *Soil*

1	SL-543-SA8-SB-0.0-0.5	11		21		31	
2	SL-543-SA8-SB-4.0-5.0	12		22		32	
3	SL-843-SA8-SB-4.0-5.0	13		23		33	
4	SL-609-SA8-SB-0.0-0.5	14		24		34	
5	SL-609-SA8-SB-4.0-5.0	15		25		35	
6	SL-614-SA8-SB-0.0-0.5	16		26		36	
7	SL-614-SA8-SB-4.0-5.0	17		27		37	
8	SL-543-SA8-SB-4.0-5.0MS	18		28		38	
9	SL-543-SA8-SB-4.0-5.0MSD	19		29		39	
10		20		30	BLK 234002	40	

Notes: _____

Method: HRGC/HRMS Dioxins/Dibenzofurans (EPA Method 1613B)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	/			
Cooler temperature criteria was met.	/			
II. GC/MS Instrument performance check				
Was PFK exact mass 380.9760 verified?	/			
Were the retention time windows established for all homologues?			/	
Was the chromatographic resolution between 2,3,7,8-TCDD and peaks representing any other unlabeled TCDD isomers $\leq 25\%$?	/			
Is the static resolving power at least 10,000 (10% valley definition)?	/			
Was the mass resolution adequately check with PFK?	/			
Was the presence of 1,2,8,9-TCDD and 1,3,4,6,8-PeCDF verified?			/	
III. Initial calibration				
Was the initial calibration performed at 5 concentration levels?	/			
Were all percent relative standard deviations (%RSD) $\leq 20\%$ for unlabeled compounds and $\leq 35\%$ for labeled compounds ?	/			
Did all calibration standards meet the Ion Abundance Ratio criteria?	/			
Was the signal to noise ratio for each target compound ≥ 2.5 and for each recovery and internal standard > 10 ?	/			
IV. Continuing calibration				
Was a routine calibration performed at the beginning and end of each 12 hour period?	/			
Were all the concentrations for the unlabeled compounds and labeled compounds within the QC limits (Method 1613B, Table 6)?	/			
Did all routine calibration standards meet the Ion Abundance Ratio criteria?	/			
V. Blanks				
Was a method blank associated with every sample in this SDG?	/			
Was a method blank performed for each matrix and concentration?			/	
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet?	/			
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	/			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	/			
VII. Laboratory control samples				
Was an LCS analyzed for this SDG?	/			
Was an LCS analyzed per extraction batch?			/	
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	/			

VALIDATION FINDINGS CHECKLIST

Validation Area	Yes	No	NA	Findings/Comments
VIII. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			/	
Were the performance evaluation (PE) samples within the acceptance limits?			/	
IX. Internal standards				
Were internal standard recoveries within the 25-150% criteria?	/			
Was the minimum S/N ratio of all internal standard peaks > 10?	/			
X. Target compound identification				
For 2,3,7,8 substituted congeners with associated labeled standards, were the retention times of the two quantitation peaks within -1 to 3 sec. of the RT of the labeled standard?	/			
For 2,3,7,8 substituted congeners without associated labeled standards, were the relative retention times of the two quantitation peaks within 0.005 time units of the RRT measured in the routine calibration?			/	
For non-2,3,7,8 substituted congeners, were the retention times of the two quantitation peaks within RT established in the performance check solution?	/		/	
Did compound spectra contain all characteristic ions listed in the table attached?	/			
Was the Ion Abundance Ratio for the two quantitation ions within criteria?		/		
Was the signal to noise ratio for each target compound and labeled standard \geq 2.5?	/			
Does the maximum intensity of each specified characteristic ion coincide within \pm 2 seconds (includes labeled standards)?	/			
For PCDF identification, was any signal ($S/N \geq 2.5$, at \pm seconds RT) detected in the corresponding PCDF channel?	/	/		
Was an acceptable lock mass recorded and monitored?	/			
XI. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	/			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
XII. System performance				
System performance was found to be acceptable.	/			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.	/			
Target compounds were detected in the field duplicates.	/			
XV. Field blanks				
Field blanks were identified in this SDG.	/			
Target compounds were detected in the field blanks.	/			

VALIDATION FINDINGS WORKSHEET

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA Method 1613B)

A. 2,3,7,8-TCDD	F. 1,2,3,4,6,7,8-HpCDD	K. 1,2,3,4,7,8-HxCDF	P. 1,2,3,4,7,8,9-HpCDF	U. Total HpCDD
B. 1,2,3,7,8-PeCDD	G. OCDD	L. 1,2,3,6,7,8-HxCDF	Q. OCDF	V. Total TCDF
C. 1,2,3,4,7,8-HxCDD	H. 2,3,7,8-TCDF	M. 2,3,4,6,7,8-HxCDF	R. Total TCDD	W. Total PeCDF
D. 1,2,3,6,7,8-HxCDD	I. 1,2,3,7,8-PeCDF	N. 1,2,3,7,8,9-HxCDF	S. Total PeCDD	X. Total HxCDF
E. 1,2,3,7,8,9-HxCDD	J. 2,3,4,7,8-PeCDF	O. 1,2,3,4,6,7,8-HpCDF	T. Total HxCDD	Y. Total HpCDF

Notes: _____

VALIDATION FINDINGS WORKSHEET

Blanks

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA Method 1613B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- Y N N/A Were all samples associated with a method blank?
- Y N N/A Was a method blank performed for each matrix and whenever a sample extraction was performed?
- Y N N/A Was the method blank contaminated?

Blank extraction date: 08/22/13 **Blank analysis date:** 08/24/13 **Associated samples:** All Qual U

Conc. units: ng/kg

Compound	Blank ID	Sample Identification								
		5x	1	2	3	4	5	6	7	
	BLK 234002									
B	0.0869*	0.435	0.195*		0.194			0.337*	0.129*	
F	0.0505*	0.253								
G	0.294*	1.47								
J	0.0473*	0.237	0.103*		0.0563	0.0766*	0.0642			
K	0.0573*	0.287	0.149*	0.0429*	0.105*	0.0781*	0.0408*	0.236*	0.229	
L	0.0277*	0.139		0.0787	0.126	0.0890*	0.0581*			
O	0.0404*	0.202		0.0899*	0.195*	0.172*	0.0859*			
P	0.0549*	0.275	0.0945		0.0842*	0.0507*	0.0811*	0.169	0.0823*	
Q	0.126*	0.630		0.265*	0.422	0.281	0.209			

*EMPC

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
 All contaminants within five times the method blank concentration were qualified as not detected, "U".

VALIDATION FINDINGS WORKSHEET
Field Blanks

METHOD: HRGC/HRMS Dioxins (EPA Method 1613B)

Blank units: pg/L **Associated sample units:** ng/kg

Sampling date: 08/14/13

Field blank type: (circle one) Field Blank / Rinsate / Other: EB **Associated Samples:** All >5x

Compound	Blank ID	Sample Identification							
		5X							
	EB-081413	5X							
A	0.406*	2.03							
B	0.617*	3.09							
C	0.594*	2.97							
D	0.708	3.54							
E	0.501*	2.51							
F	1.09*	5.45							
G	1.96*	9.80							
H	0.235	1.18							
I	0.985*	4.93							
J	0.744*	3.72							
K	0.495*	2.48							
L	0.528*	2.64							
M	0.129*	0.645							
N	0.826*	4.13							
O	0.776	3.88							
P	0.597*	2.99							
Q	1.52	7.60							

* EMPC
EB-081413 (PH091)

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the blank concentration were qualified as not detected, "U".

VALIDATION FINDINGS WORKSHEET
Field Blanks

METHOD: HRGC/HRMS Dioxins (EPA Method 1613B)

Blank units: pg/L **Associated sample units:** ng/kg

Sampling date: 04/11/13

Field blank type: (circle one) Field Blank / Rinsate / Other: FB **Associated Samples:** All >5x

Compound	Blank ID	Sample Identification								
		5X								
	FB-041113	5X								
C	0.125	0.625								
E	0.134*	0.670								
F	0.402*	2.01								
I	0.398*	1.99								
J	0.316*	1.58								
K	0.324	1.62								
L	0.221	1.11								
N	0.211*	1.06								
M	0.149	0.745								
O	0.254*	1.27								
Q	0.840*	4.20								

* EMPC

FB-041113 (PH029)

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the blank concentration were qualified as not detected, "U".

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: HRGC/HRMS Dioxins and Furans (EPA Method 1613B)

Y N NA
Y N NA

Were field duplicate pairs identified in this SDG?

Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ng/kg)		RPD (≤ 50)	Qualification (Parent Sample Only)
	2	3		
B	5.54U	0.194	200	J/UJ/A (FD)
C	5.54U	0.0875	200	J/UJ/A (FD)
D	0.245*	0.220*	11	--
E	0.380*	0.386*	2	--
F	0.436*	0.690	45	--
G	2.26	5.06	77	Jdets/A (FD)
I	0.181*	0.219	19	--
J	5.54U	0.0563	200	J/UJ/A (FD)
K	0.0429*	0.105*	84	Jdets/A (FD)
L	0.0787	0.126	46	--
M	5.54U	0.112*	200	J/UJ/A (FD)
N	0.359	0.607*	51	Jdets/A (FD)
O	0.0899*	0.195*	74	Jdets/A (FD)
P	5.54U	0.0842*	200	J/UJ/A (FD)
Q	0.265*	0.422	46	--

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA Method 1613B)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is}) / (A_{is})(C_x)$

average RRF = sum of the RRFs/number of standards

%RSD = 100 * (S/X)

A_x = Area of compound,

C_x = Concentration of compound,

S = Standard deviation of the RRFs,

A_{is} = Area of associated internal standard

C_{is} = Concentration of internal standard

X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Reported	Recalculated	Reported	Recalculated	Reported	Recalculated
				Average RRF (initial)	Average RRF (initial)	RRF (CS3 std)	RRF (CS3 std)	%RSD	%RSD
1	ICAL (DB5MS)	06/19/2013	2,3,7,8-TCDF (¹³ C-2,3,7,8-TCDF)	1.056	1.056	1.028	1.028	7.30	7.31
			2,3,7,8-TCDD (¹³ C-2,3,7,8-TCDD)	1.196	1.196	1.107	1.107	10.82	10.80
			1,2,3,6,7,8-HxCDD (¹³ C-1,2,3,6,7,8-HxCDD)	0.955	0.955	0.954	0.954	1.24	1.22
			1,2,3,4,6,7,8-HpCDD (¹³ C-1,2,4,6,7,8,-HpCDD)	1.060	1.0605	1.034	1.034	8.10	8.10
			OCDF (¹³ C-OCDF)	0.962	0.962	0.959	0.959	4.62	4.60
2			2,3,7,8-TCDF (¹³ C-2,3,7,8-TCDF)						
			2,3,7,8-TCDD (¹³ C-2,3,7,8-TCDD)						
			1,2,3,6,7,8-HxCDD (¹³ C-1,2,3,6,7,8-HxCDD)						
			1,2,3,4,6,7,8-HpCDD (¹³ C-1,2,4,6,7,8,-HpCDD)						
			OCDF (¹³ C-OCDF)						
3			2,3,7,8-TCDF (¹³ C-2,3,7,8-TCDF)						
			2,3,7,8-TCDD (¹³ C-2,3,7,8-TCDD)						
			1,2,3,6,7,8-HxCDD (¹³ C-1,2,3,6,7,8-HxCDD)						
			1,2,3,4,6,7,8-HpCDD (¹³ C-1,2,4,6,7,8,-HpCDD)						
			OCDF (¹³ C-OCDF)						

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET
Routine Calibration Results Verification

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA Method 1613B)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

$$\% \text{ Difference} = 100 * (\text{ave. RRF} - \text{RRF}) / \text{ave. RRF}$$

$$\text{RRF} = (A_x)(C_{is}) / (A_{is})(C_x)$$

Where: ave. RRF = initial calibration average RRF
 RRF = continuing calibration RRF
 A_x = Area of compound,
 C_x = Concentration of compound,
 A_{is} = Area of associated internal standard
 C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Spiked Conc (ng/mL)	Reported	Recalculated	Reported	Recalculated
					Conc (ng/mL)	Conc (ng/mL)	%R	%R
1	CS3CC03	8-24-13	2,3,7,8-TCDF (¹³ C-2,3,7,8-TCDF)	10	9.840	9.84	98	98
			2,3,7,8-TCDD (¹³ C-2,3,7,8-TCDD)	10	10.040	10.04	100	100
			1,2,3,6,7,8-HxCDD (¹³ C-1,2,3,6,7,8-HxCDD)	50	50.100	50.09	100	100
			1,2,3,4,6,7,8-HpCDD (¹³ C-1,2,4,6,7,8,-HpCDD)	50	47.790	47.80	96	96
			OCDF (¹³ C-OCDF)	100	91.970	91.97	92	92
2	CS3CC02	8-26-13	2,3,7,8-TCDF (¹³ C-2,3,7,8-TCDF)	10	10.920	10.91	109	109
			2,3,7,8-TCDD (¹³ C-2,3,7,8-TCDD)	10	10.550	10.55	105	105
			1,2,3,6,7,8-HxCDD (¹³ C-1,2,3,6,7,8-HxCDD)	50	55.280	55.27	111	111
			1,2,3,4,6,7,8-HpCDD (¹³ C-1,2,4,6,7,8,-HpCDD)	50	53.610	53.62	107	107
			OCDF (¹³ C-OCDF)	100	102.100	102.10	102	102
3	CS3CC02	8-28-13	2,3,7,8-TCDF (¹³ C-2,3,7,8-TCDF)	10	9.920	9.92	99	99
			2,3,7,8-TCDD (¹³ C-2,3,7,8-TCDD)	10	10.110	10.10	101	101
			1,2,3,6,7,8-HxCDD (¹³ C-1,2,3,6,7,8-HxCDD)	50	51.890	51.88	104	104
			1,2,3,4,6,7,8-HpCDD (¹³ C-1,2,4,6,7,8,-HpCDD)	50	51.610	51.62	103	103
			OCDF (¹³ C-OCDF)	100	100.790	100.79	101	101

Comments: Refer to Routine Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA Method 1613B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SSR - SR)/SA

Where: SSR = Spiked sample result, SR = Sample result
 SA = Spike added

RPD = |MSR - MSDR| * 2 / (MSR + MSDR)

MSR = Matrix spike percent recovery MSDR = Matrix spike duplicate percent recovery

MS/MSD samples: 8/9

Compound	Spike Added (ng/Kg)		Sample Concentration (ng/Kg)	Spiked Sample Concentration (ng/Kg)		Matrix Spike		Matrix Spike Duplicate		Reported	Recalculated
	MS	MSD		MS	MSD	Percent Recovery		Percent Recovery		RPD	RPD
						Reported	Recalc	Reported	Recalc		
2,3,7,8-TCDD	21.9	22.3	ND	21.6	23.1	99	99	104	104	7	7
1,2,3,7,8-PeCDD	109	111	ND	126	130	115	116	117	117	3	3
1,2,3,4,7,8-HxCDD	109	111	ND	128	129	117	117	116	116	1	1
1,2,3,4,7,8,9-HpCDF	109	111	ND	112	114	102	103	103	103	2	2
OCDF	219	223	0.265	218	228	100	99	102	102	4	4

Comments: Refer to Matrix Spike/Matrix Spike Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

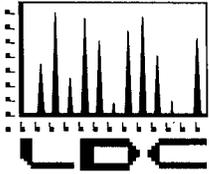
XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

Samples SL-543-SA8-SB-4.0-5.0 and SL-843-SA8-SB-4.0-5.0 were identified as field duplicates. No polychlorinated dioxins/dibenzofurans were detected in any of the samples with the following exceptions:

Compound	Concentration (ng/Kg)		RPD (Limits)	Flag	A or P
	SL-543-SA8-SB-4.0-5.0	SL-843-SA8-SB-4.0-5.0			
1,2,3,7,8-PeCDD	5.54U	0.194	200 (≤50)	J (all detects) UJ (all non-detects)	A
1,2,3,4,7,8-HxCDD	5.54U	0.0875	200 (≤50)	J (all detects) UJ (all non-detects)	A
1,2,3,6,7,8-HxCDD	0.245	0.220	11 (≤50)	-	-
1,2,3,7,8,9-HxCDD	0.380	0.386	2 (≤50)	-	-
1,2,3,4,6,7,8-HpCDD	0.436	0.690	45 (≤50)	-	-
OCDD	2.26	5.06	77 (≤50)	J (all detects)	A
1,2,3,7,8-PeCDF	0.181	0.219	19 (≤50)	-	-
2,3,4,7,8-PeCDF	5.54U	0.0563	200 (≤50)	J (all detects) UJ (all non-detects)	A
1,2,3,4,7,8-HxCDF	0.0429	0.105	84 (≤50)	J (all detects)	A
1,2,3,6,7,8-HxCDF	0.0787	0.126	46 (≤50)	-	-
2,3,4,6,7,8-HxCDF	5.54U	0.112	200 (≤50)	J (all detects) UJ (all non-detects)	A
1,2,3,7,8,9-HxCDF	0.359	0.607	51 (≤50)	J (all detects)	A
1,2,3,4,6,7,8-HpCDF	0.0899	0.195	74 (≤50)	J (all detects)	A
1,2,3,4,7,8,9-HpCDF	5.54U	0.0842	200 (≤50)	J (all detects) UJ (all non-detects)	A
OCDF	0.265	0.422	46 (≤50)	-	-



LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

CDM
555 17th Street, Suite 1100
Denver, CO 80202
ATTN: Mrs. Cherie Zakowski

November 19, 2013

SUBJECT: Santa Susana Field Laboratory, Subarea 8 Data Validation

Dear Mrs. Zakowski,

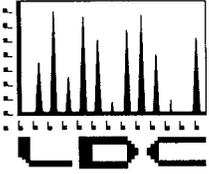
Enclosed are the final validation reports for the fractions listed below. These SDGs were received on October 28, 2013. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 30674:

<u>SDG #</u>	<u>Fraction</u>
PH091, PH092 PH094, PH096 PH097	Semivolatiles, Chlorinated Pesticides, Polychlorinated Biphenyls, Metals, Herbicides, Total Petroleum Hydrocarbons as Gasoline, Total Petroleum Hydrocarbons as Extractables, Dioxins/Dibenzofurans, Wet Chemistry

The data validation was performed under Level III & IV guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan for Santa Susana Field Laboratory, RCRA Facility Investigation, Surficial Media Operable Unit, March 2009, Revision 4
- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- Polychlorinated Dioxins/Dibenzofurans Data Review, September 2005
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007



Please feel free to contact us if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read 'S. McKellar', written in a cursive style.

Shauna McKellar
Project Manager/Chemist

**Data Validation Report
Santa Susana Field Laboratory**

Subarea 8

SDG: PH091

Prepared for

CDM Smith
555 17th Street, Suite 1100
Denver, CO 80202

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, California 92010

November 15, 2013

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on August 14, 2013. Data validation was performed in accordance with the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008), Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005), and for Inorganic Data Review (January 2010). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Semivolatiles (SVOCs) by EPA SW 846 Method 8270D utilizing Selective Ion Monitoring (SIM)
Pesticides by EPA SW 846 Method 8081B
Polychlorinated Biphenyls (PCBs) by EPA SW 846 Method 8082A
Metals by EPA SW 846 Method 6010C, 6020A, 7470A and 7471B
Herbicides by EPA SW 846 Method 8151A
Total Petroleum Hydrocarbons (TPH) as Gasoline by EPA SW 846 Method 8015M
TPH as Extractables by EPA SW 846 Method 8015M
Dioxins and Dibenzofurans by EPA Method 1613B

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment II. Level III Automated Data Review outliers are presented in Enclosure I.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibration blanks (ICB/CCBs), surrogates, internal standards (dioxins only), matrix spike/matrix spike duplicates (MS/MSD), laboratory duplicates (DUP), laboratory control sample/laboratory control sample duplicates (LCS/LCSD), ICP serial dilutions, method blanks, equipment blanks, field blanks and trip blanks. No samples in this SDG were subjected to Level IV evaluation.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of ICB/CCBs and ICP serial dilutions, which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

II. Initial Calibration

Initial Calibration data were not reviewed for level III.

III. Continuing Calibration

Continuing calibration data were not reviewed for level III.

IV. Blanks

Method blanks were performed at the required frequencies. No contaminant concentrations were detected in the method or preparation blanks with the exception of several blanks for SVOCs, metals, TPH as extractables and dioxins. The associated sample results were qualified as non-detected (U) due to method blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the associated blanks were not qualified. The details regarding the qualification of data are provided in Enclosure I.

No contaminant concentrations were detected in the initial or continuing calibration blanks.

V. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. ICP Interference Check Sample (ICS) Analysis

ICP interference check data were not reviewed for level III.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed at the required frequency. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of one MS/MSD pair for metals. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosure I.

VIII. Laboratory Duplicates Sample

Laboratory duplicates (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

IX. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

X. Internal Standards

Internal standards were reviewed for dioxins. Percent recoveries (%R) were within QC limits.

XI. ICP Serial Dilution

ICP serial dilution analysis was performed by the laboratory. The analysis criteria were met with the following exceptions:

Diluted Sample	Analyte	%D (Limits)	Associated Samples	Flag	A or P
SL-602-SA8-SB-0.0-0.5	Copper	15 (≤10)	SL-600-SA8-SB-0.0-0.5 SL-600-SA8-SB-4.0-5.0 SL-602-SA8-SB-0.0-0.5 SL-602-SA8-SB-4.0-5.0 SL-613-SA8-SB-0.0-0.5 SL-613-SA8-SB-4.0-5.0	J(all detects) UJ(all non-detects)	A

The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable.

XII. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the RL as detected were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH091	All compounds reported as detected below the RL.	J (all detects)	A

XIII. Field Duplicate Samples

No field duplicates were identified in this SDG.

XIV. Field Blank Samples

One trip blank was collected and analyzed for TPH as gasoline. No contaminants were found in the trip blank.

One equipment blank was collected and analyzed for SVOCs, pesticides, PCBs, metals, herbicides, TPH as gasoline, TPH as extractables and dioxins. The equipment blank had several detections for SVOCs, metals and dioxins. The associated sample results were not detected or were significantly greater than the concentrations found in the equipment blanks; therefore, no data were qualified.

One field blank (from SDG PH029) was collected and analyzed for SVOCs, pesticides, PCBs, metals, TPH as gasoline, TPH as extractables and dioxins. The field blank had detections for

several SVOCs, metals and dioxins. The associated sample results were qualified as non-detected (U) due to field blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the field blank were not qualified. The field blank outlier reports are presented in Enclosure I.

XV. Overall Assessment of Data

No data associated with this sampling event were rejected. The overall assessment of QA/QC data review by automated and manual validation of this sampling event met project requirements and analytical completeness levels with the exceptions noted in the above sections. All data are deemed useable for the intended use.

Data flags are summarized and are presented as Attachment 2.

Attachment 1
Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
14-Aug-2013	TB-081413	7162022	TB	5030B	8015M	III
14-Aug-2013	SL-600-SA8-SB-0.0-0.5	7162023	N	3050B	6010C	III
14-Aug-2013	SL-600-SA8-SB-0.0-0.5	7162023	N	3050B	6020A	III
14-Aug-2013	SL-600-SA8-SB-0.0-0.5	7162023	N	3546	8015M	III
14-Aug-2013	SL-600-SA8-SB-0.0-0.5	7162023	N	3546	8082A	III
14-Aug-2013	SL-600-SA8-SB-0.0-0.5	7162023	N	3546	8270D SIM	III
14-Aug-2013	SL-600-SA8-SB-0.0-0.5	7162023	N	METHOD	1613B	III
14-Aug-2013	SL-600-SA8-SB-0.0-0.5	7162023	N	METHOD	7471B	III
14-Aug-2013	SL-600-SA8-SB-4.0-5.0	7162024	N	3050B	6010C	III
14-Aug-2013	SL-600-SA8-SB-4.0-5.0	7162024	N	3050B	6020A	III
14-Aug-2013	SL-600-SA8-SB-4.0-5.0	7162024	N	3546	8015M	III
14-Aug-2013	SL-600-SA8-SB-4.0-5.0	7162024	N	3546	8082A	III
14-Aug-2013	SL-600-SA8-SB-4.0-5.0	7162024	N	3546	8270D SIM	III
14-Aug-2013	SL-600-SA8-SB-4.0-5.0	7162024	N	5035A	8015M	III
14-Aug-2013	SL-600-SA8-SB-4.0-5.0	7162024	N	METHOD	1613B	III
14-Aug-2013	SL-600-SA8-SB-4.0-5.0	7162024	N	METHOD	7471B	III
14-Aug-2013	SL-602-SA8-SB-0.0-0.5	7162025	N	3050B	6010C	III
14-Aug-2013	SL-602-SA8-SB-0.0-0.5	7162025	N	3050B	6020A	III
14-Aug-2013	SL-602-SA8-SB-0.0-0.5	7162025	N	3546	8015M	III
14-Aug-2013	SL-602-SA8-SB-0.0-0.5	7162025	N	3546	8082A	III
14-Aug-2013	SL-602-SA8-SB-0.0-0.5	7162025	N	3546	8270D SIM	III
14-Aug-2013	SL-602-SA8-SB-0.0-0.5	7162025	N	METHOD	1613B	III
14-Aug-2013	SL-602-SA8-SB-0.0-0.5	7162025	N	METHOD	7471B	III
14-Aug-2013	SL-602-SA8-SB-0.0-0.5DUP	P162025D220944	DUP	3050B	6010C	III
14-Aug-2013	SL-602-SA8-SB-0.0-0.5DUP	P162025D222252A	DUP	3050B	6020A	III
14-Aug-2013	SL-602-SA8-SB-0.0-0.5DUP	P162025D222349B	DUP	3050B	6020A	III

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
14-Aug-2013	SL-602-SA8-SB-0.0-0.5MSD	P162025M220952	MSD	3050B	6010C	III
14-Aug-2013	SL-602-SA8-SB-0.0-0.5MSD	P162025M222256A	MSD	3050B	6020A	III
14-Aug-2013	SL-602-SA8-SB-0.0-0.5MSD	P162025M222353B	MSD	3050B	6020A	III
14-Aug-2013	SL-602-SA8-SB-0.0-0.5MS	P162025R220948	MS	3050B	6010C	III
14-Aug-2013	SL-602-SA8-SB-0.0-0.5MS	P162025R222254A	MS	3050B	6020A	III
14-Aug-2013	SL-602-SA8-SB-0.0-0.5MS	P162025R222351B	MS	3050B	6020A	III
14-Aug-2013	SL-602-SA8-SB-4.0-5.0	7162026	N	3050B	6010C	III
14-Aug-2013	SL-602-SA8-SB-4.0-5.0	7162026	N	3050B	6020A	III
14-Aug-2013	SL-602-SA8-SB-4.0-5.0	7162026	N	3546	8015M	III
14-Aug-2013	SL-602-SA8-SB-4.0-5.0	7162026	N	3546	8082A	III
14-Aug-2013	SL-602-SA8-SB-4.0-5.0	7162026	N	3546	8270D SIM	III
14-Aug-2013	SL-602-SA8-SB-4.0-5.0	7162026	N	5035A	8015M	III
14-Aug-2013	SL-602-SA8-SB-4.0-5.0	7162026	N	METHOD	1613B	III
14-Aug-2013	SL-602-SA8-SB-4.0-5.0	7162026	N	METHOD	7471B	III
14-Aug-2013	SL-613-SA8-SB-0.0-0.5	7162027	N	3050B	6010C	III
14-Aug-2013	SL-613-SA8-SB-0.0-0.5	7162027	N	3050B	6020A	III
14-Aug-2013	SL-613-SA8-SB-0.0-0.5	7162027	N	3546	8015M	III
14-Aug-2013	SL-613-SA8-SB-0.0-0.5	7162027	N	3546	8082A	III
14-Aug-2013	SL-613-SA8-SB-0.0-0.5	7162027	N	3546	8270D SIM	III
14-Aug-2013	SL-613-SA8-SB-0.0-0.5	7162027	N	METHOD	1613B	III
14-Aug-2013	SL-613-SA8-SB-0.0-0.5	7162027	N	METHOD	7471B	III
14-Aug-2013	SL-613-SA8-SB-4.0-5.0	7162028	N	3050B	6010C	III
14-Aug-2013	SL-613-SA8-SB-4.0-5.0	7162028	N	3050B	6020A	III
14-Aug-2013	SL-613-SA8-SB-4.0-5.0	7162028	N	3546	8015M	III
14-Aug-2013	SL-613-SA8-SB-4.0-5.0	7162028	N	3546	8082A	III
14-Aug-2013	SL-613-SA8-SB-4.0-5.0	7162028	N	3546	8270D SIM	III

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
14-Aug-2013	SL-613-SA8-SB-4.0-5.0	7162028	N	5035A	8015M	III
14-Aug-2013	SL-613-SA8-SB-4.0-5.0	7162028	N	METHOD	1613B	III
14-Aug-2013	SL-613-SA8-SB-4.0-5.0	7162028	N	METHOD	7471B	III
14-Aug-2013	EB-081413	7162021	EB	3005A	6010C	III
14-Aug-2013	EB-081413	7162021	EB	3510C	8015M	III
14-Aug-2013	EB-081413	7162021	EB	3510C	8081B	III
14-Aug-2013	EB-081413	7162021	EB	3510C	8082A	III
14-Aug-2013	EB-081413	7162021	EB	3510C	8270D SIM	III
14-Aug-2013	EB-081413	7162021	EB	5030B	8015M	III
14-Aug-2013	EB-081413	7162021	EB	M3010A	6020A	III
14-Aug-2013	EB-081413	7162021	EB	METHOD	1613B	III
14-Aug-2013	EB-081413	7162021	EB	METHOD	7470A	III
14-Aug-2013	EB-081413	7162021	EB	METHOD	8151A	III

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH091

Laboratory: LL

EDD Filename: PH091_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: METALS

Method: 6010C

Matrix: AQ

Sample ID: EB-081413

Collected: 8/14/2013 3:00:00

Analysis Type: RES

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	0.0106	J	0.0084	MDL	0.100	PQL	mg/L	J	Z
CALCIUM	0.0798	J	0.0334	MDL	0.400	PQL	mg/L	U	B

Method Category: METALS

Method: 6010C

Matrix: SO

Sample ID: SL-600-SA8-SB-0.0-0.5

Collected: 8/14/2013 8:25:00

Analysis Type: REA

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	3.99	U	0.738	MDL	3.99	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.692	J	0.0668	MDL	0.997	PQL	mg/Kg	J	Z
CADMIUM	0.647	J	0.0758	MDL	0.997	PQL	mg/Kg	J	Z
CHROMIUM	29.9		0.159	MDL	2.99	PQL	mg/Kg	J	Q
COPPER	19.1		0.289	MDL	1.99	PQL	mg/Kg	J	A
MOLYBDENUM	0.355	J	0.169	MDL	1.99	PQL	mg/Kg	U	F
SODIUM	93.3	J	16.6	MDL	99.7	PQL	mg/Kg	J	Z
TIN	3.27	J	0.219	MDL	9.97	PQL	mg/Kg	U	B
VANADIUM	49.1		0.130	MDL	0.997	PQL	mg/Kg	J	Q
Zirconium	3.86	J	0.837	MDL	4.98	PQL	mg/Kg	J	Z

Sample ID: SL-600-SA8-SB-4.0-5.0

Collected: 8/14/2013 8:40:00

Analysis Type: REA

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.26	U	0.789	MDL	4.26	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.756	J	0.0714	MDL	1.07	PQL	mg/Kg	J	Z
CADMIUM	0.633	J	0.0810	MDL	1.07	PQL	mg/Kg	J	Z
CHROMIUM	33.0		0.171	MDL	3.20	PQL	mg/Kg	J	Q
COPPER	19.0		0.309	MDL	2.13	PQL	mg/Kg	J	A
MOLYBDENUM	0.355	J	0.181	MDL	2.13	PQL	mg/Kg	U	F
SODIUM	99.9	J	17.8	MDL	107	PQL	mg/Kg	J	Z
TIN	3.39	J	0.234	MDL	10.7	PQL	mg/Kg	U	B
VANADIUM	55.5		0.139	MDL	1.07	PQL	mg/Kg	J	Q
Zirconium	4.65	J	0.895	MDL	5.33	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

11/7/2013 8:07:35 AM

ADR version 1.7.0.207

Page 1 of 11

Data Qualifier Summary

Lab Reporting Batch ID: PH091

Laboratory: LL

EDD Filename: PH091_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method Category:	METALS	
Method:	6010C	Matrix: SO

Sample ID: SL-602-SA8-SB-0.0-0.5 Collected: 8/14/2013 10:15:00 Analysis Type: REA Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.811	J	0.764	MDL	4.13	PQL	mg/Kg	J	Z, Q
BERYLLIUM	0.638	J	0.0692	MDL	1.03	PQL	mg/Kg	J	Z
CADMIUM	0.697	J	0.0785	MDL	1.03	PQL	mg/Kg	J	Z
CHROMIUM	27.4		0.165	MDL	3.10	PQL	mg/Kg	J	Q
COPPER	20.1		0.300	MDL	2.07	PQL	mg/Kg	J	A
MOLYBDENUM	0.386	J	0.176	MDL	2.07	PQL	mg/Kg	U	F
SODIUM	101	J	17.3	MDL	103	PQL	mg/Kg	J	Z
TIN	3.05	J	0.227	MDL	10.3	PQL	mg/Kg	U	B
VANADIUM	45.9		0.134	MDL	1.03	PQL	mg/Kg	J	Q
Zirconium	4.34	J	0.868	MDL	5.17	PQL	mg/Kg	J	Z

Sample ID: SL-602-SA8-SB-4.0-5.0 Collected: 8/14/2013 10:40:00 Analysis Type: REA Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.24	U	0.785	MDL	4.24	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.643	J	0.0711	MDL	1.06	PQL	mg/Kg	J	Z
CADMIUM	0.625	J	0.0806	MDL	1.06	PQL	mg/Kg	J	Z
CHROMIUM	29.1		0.170	MDL	3.18	PQL	mg/Kg	J	Q
COPPER	19.7		0.308	MDL	2.12	PQL	mg/Kg	J	A
MOLYBDENUM	0.248	J	0.180	MDL	2.12	PQL	mg/Kg	U	F
TIN	3.15	J	0.233	MDL	10.6	PQL	mg/Kg	U	B
VANADIUM	50.2		0.138	MDL	1.06	PQL	mg/Kg	J	Q
Zirconium	5.12	J	0.891	MDL	5.31	PQL	mg/Kg	J	Z

Sample ID: SL-613-SA8-SB-0.0-0.5 Collected: 8/14/2013 1:30:00 Analysis Type: REA Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.10	U	0.758	MDL	4.10	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.652	J	0.0687	MDL	1.02	PQL	mg/Kg	J	Z
CADMIUM	0.723	J	0.0779	MDL	1.02	PQL	mg/Kg	J	Z
CHROMIUM	30.7		0.164	MDL	3.07	PQL	mg/Kg	J	Q
COPPER	18.4		0.297	MDL	2.05	PQL	mg/Kg	J	A
MOLYBDENUM	0.256	J	0.174	MDL	2.05	PQL	mg/Kg	U	F
TIN	3.28	J	0.225	MDL	10.2	PQL	mg/Kg	U	B
VANADIUM	56.5		0.133	MDL	1.02	PQL	mg/Kg	J	Q

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH091

Laboratory: LL

EDD Filename: PH091_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method Category:	METALS	
Method:	6010C	Matrix: SO

Sample ID: SL-613-SA8-SB-4.0-5.0 Collected: 8/14/2013 1:50:00 Analysis Type: REA Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.46	U	0.825	MDL	4.46	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.657	J	0.0747	MDL	1.11	PQL	mg/Kg	J	Z
CADMIUM	0.635	J	0.0847	MDL	1.11	PQL	mg/Kg	J	Z
CHROMIUM	32.8		0.178	MDL	3.34	PQL	mg/Kg	J	Q
COPPER	17.6		0.323	MDL	2.23	PQL	mg/Kg	J	A
MOLYBDENUM	0.190	J	0.190	MDL	2.23	PQL	mg/Kg	U	F
TIN	3.37	J	0.245	MDL	11.1	PQL	mg/Kg	U	B
VANADIUM	59.5		0.145	MDL	1.11	PQL	mg/Kg	J	Q
Zirconium	5.52	J	0.936	MDL	5.57	PQL	mg/Kg	J	Z

Method Category:	METALS	
Method:	6020A	Matrix: SO

Sample ID: SL-600-SA8-SB-0.0-0.5 Collected: 8/14/2013 8:25:00 Analysis Type: REA2 Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0273	J	0.0259	MDL	0.199	PQL	mg/Kg	J	Z

Sample ID: SL-600-SA8-SB-4.0-5.0 Collected: 8/14/2013 8:40:00 Analysis Type: REA2 Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0339	J	0.0277	MDL	0.213	PQL	mg/Kg	J	Z

Sample ID: SL-600-SA8-SB-4.0-5.0 Collected: 8/14/2013 8:40:00 Analysis Type: REA4 Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.225	J	0.107	MDL	0.426	PQL	mg/Kg	J	Z

Sample ID: SL-602-SA8-SB-0.0-0.5 Collected: 8/14/2013 10:15:00 Analysis Type: REA2 Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0351	J	0.0269	MDL	0.207	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH091

Laboratory: LL

EDD Filename: PH091_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: METALS
Method: 6020A **Matrix:** SO

Sample ID: SL-602-SA8-SB-0.0-0.5 Collected: 8/14/2013 10:15:00 Analysis Type: REA4 Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.301	J	0.103	MDL	0.413	PQL	mg/Kg	J	Z

Sample ID: SL-602-SA8-SB-4.0-5.0 Collected: 8/14/2013 10:40:00 Analysis Type: REA4 Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.300	J	0.106	MDL	0.424	PQL	mg/Kg	J	Z

Sample ID: SL-613-SA8-SB-0.0-0.5 Collected: 8/14/2013 1:30:00 Analysis Type: REA2 Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0355	J	0.0266	MDL	0.205	PQL	mg/Kg	J	Z

Sample ID: SL-613-SA8-SB-0.0-0.5 Collected: 8/14/2013 1:30:00 Analysis Type: REA4 Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.360	J	0.102	MDL	0.410	PQL	mg/Kg	J	Z

Sample ID: SL-613-SA8-SB-4.0-5.0 Collected: 8/14/2013 1:50:00 Analysis Type: REA4 Dilution: 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.241	J	0.111	MDL	0.446	PQL	mg/Kg	J	Z

Method Category: SVOA
Method: 1613B **Matrix:** AQ

Sample ID: EB-081413 Collected: 8/14/2013 3:00:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	1.09	JBQ	0.258	MDL	9.79	PQL	pg/L	U	B
1,2,3,4,6,7,8-HPCDF	0.776	JB	0.0814	MDL	9.79	PQL	pg/L	U	B
1,2,3,4,7,8,9-HPCDF	0.597	JBQ	0.0898	MDL	9.79	PQL	pg/L	U	B
1,2,3,4,7,8-HxCDD	0.594	JBQ	0.207	MDL	9.79	PQL	pg/L	U	B
1,2,3,4,7,8-HxCDF	0.495	JBQ	0.112	MDL	9.79	PQL	pg/L	U	B
1,2,3,6,7,8-HxCDD	0.708	JB	0.211	MDL	9.79	PQL	pg/L	U	B
1,2,3,6,7,8-HxCDF	0.528	JBQ	0.115	MDL	9.79	PQL	pg/L	U	B

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH091

Laboratory: LL

EDD Filename: PH091_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method Category:	SVOA	
Method:	1613B	Matrix: AQ

Sample ID: EB-081413 Collected: 8/14/2013 3:00:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,7,8,9-HXCDD	0.501	JBQ	0.203	MDL	9.79	PQL	pg/L	U	B
1,2,3,7,8,9-HXCDF	0.826	JBQ	0.127	MDL	9.79	PQL	pg/L	U	B
1,2,3,7,8-PECDD	0.617	JBQ	0.359	MDL	9.79	PQL	pg/L	U	B
1,2,3,7,8-PECDF	0.985	JBQ	0.200	MDL	9.79	PQL	pg/L	U	B
2,3,4,6,7,8-HXCDF	0.129	JBQ	0.107	MDL	9.79	PQL	pg/L	U	B
2,3,4,7,8-PECDF	0.744	JBQ	0.182	MDL	9.79	PQL	pg/L	U	B
2,3,7,8-TCDD	0.406	JBQ	0.270	MDL	1.96	PQL	pg/L	U	B
2,3,7,8-TCDF	0.235	JB	0.218	MDL	1.96	PQL	pg/L	U	B
OCDD	1.96	JBQ	0.390	MDL	19.6	PQL	pg/L	U	B
OCDF	1.52	JB	0.312	MDL	19.6	PQL	pg/L	U	B

Method Category:	SVOA	
Method:	1613B	Matrix: SO

Sample ID: SL-600-SA8-SB-0.0-0.5 Collected: 8/14/2013 8:25:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	2.12	JB	0.0496	MDL	4.93	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.447	JB	0.0224	MDL	4.93	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.137	JBQ	0.0482	MDL	4.93	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0772	JQ	0.0448	MDL	4.93	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.196	JBQ	0.0372	MDL	4.93	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.163	JQ	0.0500	MDL	4.93	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.155	JBQ	0.0318	MDL	4.93	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.169	JQ	0.0469	MDL	4.93	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.0570	JQ	0.0419	MDL	4.93	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.213	JBQ	0.0576	MDL	4.93	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.356	J	0.0419	MDL	4.93	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.208	J	0.0334	MDL	4.93	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.325	JB	0.0443	MDL	4.93	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.109	JQ	0.0701	MDL	0.986	PQL	ng/Kg	J	Z
OCDF	0.780	JB	0.0543	MDL	9.86	PQL	ng/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH091

Laboratory: LL

EDD Filename: PH091_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: SVOA
Method: 1613B **Matrix:** SO

Sample ID: SL-600-SA8-SB-4.0-5.0 Collected: 8/14/2013 8:40:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.319	JBQ	0.0333	MDL	5.26	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.0667	JB	0.0113	MDL	5.26	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0420	JBQ	0.0273	MDL	5.26	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0774	JQ	0.0291	MDL	5.26	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.105	JB	0.0262	MDL	5.26	PQL	ng/Kg	U	B
1,2,3,6,7,8-HxCDD	0.0531	JQ	0.0313	MDL	5.26	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0536	JB	0.0212	MDL	5.26	PQL	ng/Kg	U	B
1,2,3,7,8,9-HxCDD	0.0629	J	0.0327	MDL	5.26	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.0774	JQ	0.0303	MDL	5.26	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.105	J	0.0325	MDL	5.26	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.0537	JQ	0.0238	MDL	5.26	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.0800	JBQ	0.0341	MDL	5.26	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.0724	J	0.0604	MDL	1.05	PQL	ng/Kg	J	Z
OCDD	2.35	JB	0.0281	MDL	10.5	PQL	ng/Kg	J	Z
OCDF	0.390	JB	0.0562	MDL	10.5	PQL	ng/Kg	U	B

Sample ID: SL-602-SA8-SB-0.0-0.5 Collected: 8/14/2013 10:15:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDF	2.21	JB	0.0364	MDL	5.01	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.273	JB	0.0948	MDL	5.01	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.112	JQ	0.0457	MDL	5.01	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.200	JBQ	0.0541	MDL	5.01	PQL	ng/Kg	U	B
1,2,3,6,7,8-HxCDD	0.295	JQ	0.0527	MDL	5.01	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.195	JB	0.0450	MDL	5.01	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HxCDD	0.161	JQ	0.0528	MDL	5.01	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.511	J	0.0518	MDL	5.01	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.297	JQ	0.0505	MDL	5.01	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.226	JB	0.0579	MDL	5.01	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.357	J	0.115	MDL	1.00	PQL	ng/Kg	J	Z
OCDF	7.14	JB	0.0720	MDL	10.0	PQL	ng/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH091

Laboratory: LL

EDD Filename: PH091_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method Category: SVOA
Method: 1613B **Matrix:** SO

Sample ID: SL-602-SA8-SB-4.0-5.0 **Collected:** 8/14/2013 10:40:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.485	JBQ	0.0393	MDL	5.26	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.117	JB	0.0154	MDL	5.26	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0697	JBQ	0.0241	MDL	5.26	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0522	JQ	0.0367	MDL	5.26	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0352	JBQ	0.0213	MDL	5.26	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0370	JQ	0.0282	MDL	5.26	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.0716	JBQ	0.0681	MDL	5.26	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.231	J	0.0345	MDL	5.26	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.0319	JQ	0.0232	MDL	5.26	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.0518	JBQ	0.0400	MDL	5.26	PQL	ng/Kg	U	B
OCDD	3.37	JB	0.0361	MDL	10.5	PQL	ng/Kg	J	Z
OCDF	0.183	JBQ	0.0695	MDL	10.5	PQL	ng/Kg	U	B

Sample ID: SL-613-SA8-SB-0.0-0.5 **Collected:** 8/14/2013 1:30:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDF	1.23	JB	0.0286	MDL	4.93	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.135	JQ	0.0530	MDL	4.93	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.145	JB	0.0550	MDL	4.93	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.195	JQ	0.0591	MDL	4.93	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.253	J	0.0613	MDL	4.93	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.617	J	0.0589	MDL	4.93	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.231	J	0.0497	MDL	4.93	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.258	JB	0.0580	MDL	4.93	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.287	J	0.118	MDL	0.987	PQL	ng/Kg	J	Z
OCDF	2.66	JB	0.0686	MDL	9.87	PQL	ng/Kg	J	Z

Sample ID: SL-613-SA8-SB-4.0-5.0 **Collected:** 8/14/2013 1:50:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.112	JBQ	0.0477	MDL	5.41	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0635	JBQ	0.0169	MDL	5.41	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0711	JBQ	0.0321	MDL	5.41	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0446	JQ	0.0424	MDL	5.41	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0362	JBQ	0.0266	MDL	5.41	PQL	ng/Kg	U	B

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH091

Laboratory: LL

EDD Filename: PH091_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method Category:	SVOA	
Method:	1613B	Matrix: SO

Sample ID: SL-613-SA8-SB-4.0-5.0 Collected: 8/14/2013 1:50:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,3,7,8-TCDF	0.114	JQ	0.0910	MDL	1.08	PQL	ng/Kg	J	Z
OCDD	0.593	JBQ	0.0485	MDL	10.8	PQL	ng/Kg	U	B
OCDF	0.175	JBQ	0.104	MDL	10.8	PQL	ng/Kg	U	B

Method Category:	SVOA	
Method:	8015M	Matrix: SO

Sample ID: SL-602-SA8-SB-0.0-0.5 Collected: 8/14/2013 10:15:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C15-C20)	3.6	J	2.1	MDL	5.2	PQL	mg/Kg	J	Z

Sample ID: SL-602-SA8-SB-4.0-5.0 Collected: 8/14/2013 10:40:00 Analysis Type: REA Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C15-C20)	2.5	J	2.2	MDL	5.4	PQL	mg/Kg	J	Z

Sample ID: SL-613-SA8-SB-0.0-0.5 Collected: 8/14/2013 1:30:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C15-C20)	3.7	J	2.1	MDL	5.2	PQL	mg/Kg	J	Z

Sample ID: SL-613-SA8-SB-4.0-5.0 Collected: 8/14/2013 1:50:00 Analysis Type: REA Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C8-C11)	3.1	J	2.2	MDL	5.6	PQL	mg/Kg	J	Z

Method Category:	SVOA	
Method:	8270D SIM	Matrix: AQ

Sample ID: EB-081413 Collected: 8/14/2013 3:00:00 Analysis Type: RES-BASE/NEUTRAL Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-METHYLNAPHTHALENE	0.012	J	0.011	MDL	0.053	PQL	ug/L	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	0.30	J	0.053	MDL	1.1	PQL	ug/L	U	B

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH091

Laboratory: LL

EDD Filename: PH091_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method Category:	SVOA	
Method:	8270D SIM	Matrix: AQ

Sample ID: EB-081413 Collected: 8/14/2013 3:00:00 Analysis Type: RES-BASE/NEUTRAL Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Diethylphthalate	0.31	J	0.053	MDL	1.1	PQL	ug/L	J	Z
Di-n-butylphthalate	0.20	J	0.053	MDL	1.1	PQL	ug/L	J	Z

Method Category:	SVOA	
Method:	8270D SIM	Matrix: SO

Sample ID: SL-600-SA8-SB-0.0-0.5 Collected: 8/14/2013 8:25:00 Analysis Type: RES-BASE/NEUTRAL Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(B)FLUORANTHENE	1.3	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	6.5	J	6.2	MDL	18	PQL	ug/Kg	J	Z
CHRYSENE	1.0	J	0.34	MDL	1.7	PQL	ug/Kg	J	Z
FLUORANTHENE	0.94	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
NAPHTHALENE	1.1	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
PYRENE	0.93	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: SL-600-SA8-SB-4.0-5.0 Collected: 8/14/2013 8:40:00 Analysis Type: RES Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1-METHYLNAPHTHALENE	0.89	J	0.73	MDL	1.8	PQL	ug/Kg	J	Z
2-METHYLNAPHTHALENE	0.83	J	0.73	MDL	1.8	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	7.3	J	6.6	MDL	20	PQL	ug/Kg	J	Z
CHRYSENE	0.44	J	0.37	MDL	1.8	PQL	ug/Kg	J	Z
NAPHTHALENE	1.7	J	0.73	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: SL-602-SA8-SB-0.0-0.5 Collected: 8/14/2013 10:15:00 Analysis Type: RES-BASE/NEUTRAL Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTHRACENE	0.42	J	0.34	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(G,H,I)PERYLENE	1.3	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(K)FLUORANTHENE	1.3	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	9.2	J	6.2	MDL	19	PQL	ug/Kg	J	Z
Butylbenzylphthalate	16	J	6.2	MDL	19	PQL	ug/Kg	J	Z
INDENO(1,2,3-CD)PYRENE	1.2	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3