Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH065 **Laboratory: LL**

EDD Filename: PH065_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 8270D SIM
Matrix: SO

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
P7LCLCSQ260839 (SL-570-SA8-SB-0.0-0.5 SL-570-SA8-SB-4.0-5.0 SL-574-SA8-SB-0.0-0.5 SL-574-SA8-SB-14.0-15.0 SL-574-SA8-SB-4.0-5.0 SL-574-SA8-SB-9.0-10.0 SL-874-SA8-SB-14.0-15.0)	Diethylphthalate	128	-	68.00-125.00	-	Diethylphthalate	J (all detects)

Method: 8260B
Matrix: SO

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
LCSB54Q212231A **LCSB55Q212253A** **LCSB55Y212316A** (SL-574-SA8-SB-14.0-15.0 SL-874-SA8-SB-14.0-15.0)	4-METHYL-2-PENTANONE (MIB VINYL ACETATE	129 135	- 127	52.00-125.00 29.00-111.00	- -	4-METHYL-2-PENTANONE (MI VINYL ACETATE	J(all detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: PH065 **Laboratory: LL**

EDD Filename: PH065_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 160.3M
Matrix: SO

Analyte	Concentration (%)		Sample RPD	eQAPP RPD	Flag
	SL-574-SA8-SB-14.0-15.0	SL-874-SA8-SB-14.0-15.0			
MOISTURE	9.6	6.8	34		No Qualifiers Applied

Method: 6010C
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-574-SA8-SB-14.0-15.0 (TOT)	SL-874-SA8-SB-14.0-15.0 (TOT)			
ALUMINUM	18200	13600	29	50.00	
ARSENIC	6.86	5.89	15	50.00	
BARIUM	89.1	65.5	31	50.00	
BERYLLIUM	0.681	0.493	32	50.00	
BORON	5.22	4.00	26	50.00	
CADMIUM	0.508	0.447	13	50.00	
CHROMIUM	31.9	19.4	49	50.00	
COBALT	9.05	6.20	37	50.00	
COPPER	16.8	11.0	42	50.00	
IRON	27600	21200	26	50.00	
LEAD	6.13	4.56	29	50.00	
LITHIUM	26.1	19.6	28	50.00	No Qualifiers Applied
MAGNESIUM	6550	4510	37	50.00	
MANGANESE	328	267	21	50.00	
NICKEL	16.5	10.2	47	50.00	
PHOSPHORUS	683	417	48	50.00	
POTASSIUM	2720	2590	5	50.00	
SODIUM	448	300	40	50.00	
TIN	3.20	2.73	16	50.00	
TITANIUM	1670	1390	18	50.00	
VANADIUM	54.4	41.4	27	50.00	
ZINC	75.1	52.6	35	50.00	
CALCIUM	9730	5690	52	50.00	J(all detects)
Zirconium	5.48 U	1.50	200	50.00	UJ(all non-detects)

Method: 6020A
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-574-SA8-SB-14.0-15.0 (TOT)	SL-874-SA8-SB-14.0-15.0 (TOT)			
STRONTIUM	38.7	24.5	45	50.00	No Qualifiers Applied
THALLIUM	0.408	0.303	30	50.00	

Method: 9045M
Matrix: SO

Analyte	Concentration (pH unit)		Sample RPD	eQAPP RPD	Flag
	SL-574-SA8-SB-14.0-15.0	SL-874-SA8-SB-14.0-15.0			
PH	8.10	7.96	2	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: PH065 **Laboratory: LL**

EDD Filename: PH065_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-570-SA8-SB-0.0-0.5	1,2,3,4,7,8,9-HPCDF	JB	0.542	5.45	PQL	ng/Kg	J (all detects)
	1,2,3,4,7,8-HxCDD	JBQ	0.431	5.45	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.763	5.45	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	2.08	5.45	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.464	5.45	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.861	5.45	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.271	5.45	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JB	0.241	5.45	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.292	5.45	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.660	5.45	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	1.08	5.45	PQL	ng/Kg	
	2,3,7,8-TCDD	JBQ	0.0427	1.09	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.201	1.09	PQL	ng/Kg	
	OCDF	JB	9.42	10.9	PQL	ng/Kg	
SL-570-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JB	1.20	5.60	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JBQ	0.265	5.60	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.0594	5.60	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.0374	5.60	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.0553	5.60	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.0606	5.60	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0420	5.60	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.0480	5.60	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.0497	5.60	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.0308	5.60	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.0599	5.60	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0476	5.60	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0318	5.60	PQL	ng/Kg	
	2,3,7,8-TCDD	JB	0.0237	1.12	PQL	ng/Kg	
	OCDD	JB	9.62	11.2	PQL	ng/Kg	
	OCDF	JBQ	0.419	11.2	PQL	ng/Kg	
SL-574-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDF	JB	1.47	5.76	PQL	ng/Kg	J (all detects)
	1,2,3,4,7,8,9-HPCDF	JB	0.122	5.76	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.136	5.76	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.171	5.76	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.893	5.76	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.178	5.76	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.533	5.76	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.265	5.76	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JB	0.174	5.76	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.298	5.76	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.262	5.76	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.476	5.76	PQL	ng/Kg	
	2,3,7,8-TCDD	JBQ	0.105	1.15	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.192	1.15	PQL	ng/Kg	
	OCDF	JB	2.47	11.5	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH065 **Laboratory: LL**

EDD Filename: PH065_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-574-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JB	1.17	5.19	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JBQ	0.143	5.19	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0518	5.19	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0465	5.19	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.0884	5.19	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.157	5.19	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.108	5.19	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.186	5.19	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.195	5.19	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.102	5.19	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.196	5.19	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.0606	5.19	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.109	5.19	PQL	ng/Kg	
	2,3,7,8-TCDD	JBQ	0.0333	1.04	PQL	ng/Kg	
	OCDD	JB	5.70	10.4	PQL	ng/Kg	
	OCDF	JB	0.217	10.4	PQL	ng/Kg	

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-570-SA8-SB-0.0-0.5	ANTIMONY	J	1.18	4.25	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.140	1.06	PQL	mg/Kg	
	BORON	J	9.64	10.6	PQL	mg/Kg	
	CADMIUM	J	0.548	1.06	PQL	mg/Kg	
	TIN	J	2.06	10.6	PQL	mg/Kg	
SL-570-SA8-SB-4.0-5.0	BERYLLIUM	J	0.714	1.13	PQL	mg/Kg	J (all detects)
	BORON	J	8.50	11.3	PQL	mg/Kg	
	CADMIUM	J	0.497	1.13	PQL	mg/Kg	
	TIN	J	3.01	11.3	PQL	mg/Kg	
	Zirconium	J	2.90	5.66	PQL	mg/Kg	
SL-574-SA8-SB-0.0-0.5	BERYLLIUM	J	0.368	1.13	PQL	mg/Kg	J (all detects)
	BORON	J	9.30	11.3	PQL	mg/Kg	
	CADMIUM	J	0.764	1.13	PQL	mg/Kg	
	TIN	J	2.25	11.3	PQL	mg/Kg	
	Zirconium	J	4.46	5.64	PQL	mg/Kg	
SL-574-SA8-SB-14.0-15.0	BERYLLIUM	J	0.681	1.10	PQL	mg/Kg	J (all detects)
	BORON	J	5.22	11.0	PQL	mg/Kg	
	CADMIUM	J	0.508	1.10	PQL	mg/Kg	
	TIN	J	3.20	11.0	PQL	mg/Kg	
SL-574-SA8-SB-4.0-5.0	BERYLLIUM	J	0.854	1.03	PQL	mg/Kg	J (all detects)
	CADMIUM	J	0.439	1.03	PQL	mg/Kg	
	TIN	J	2.58	10.3	PQL	mg/Kg	
	Zirconium	J	4.00	5.14	PQL	mg/Kg	
SL-574-SA8-SB-9.0-10.0	BERYLLIUM	J	0.652	1.11	PQL	mg/Kg	J (all detects)
	BORON	J	5.92	11.1	PQL	mg/Kg	
	CADMIUM	J	0.345	1.11	PQL	mg/Kg	
	TIN	J	2.68	11.1	PQL	mg/Kg	
	Zirconium	J	1.89	5.56	PQL	mg/Kg	
SL-874-SA8-SB-14.0-15.0	BERYLLIUM	J	0.493	1.04	PQL	mg/Kg	J (all detects)
	BORON	J	4.00	10.4	PQL	mg/Kg	
	CADMIUM	J	0.447	1.04	PQL	mg/Kg	
	TIN	J	2.73	10.4	PQL	mg/Kg	
	Zirconium	J	1.50	5.21	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH065 **Laboratory: LL**

EDD Filename: PH065_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 6020A
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-570-SA8-SB-0.0-0.5	SELENIUM	J	0.280	0.425	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0560	0.213	PQL	mg/Kg	
	THALLIUM	J	0.110	0.213	PQL	mg/Kg	
SL-570-SA8-SB-4.0-5.0	SILVER	J	0.0354	0.227	PQL	mg/Kg	J (all detects)
SL-574-SA8-SB-0.0-0.5	SILVER	J	0.0390	0.226	PQL	mg/Kg	J (all detects)
	THALLIUM	J	0.155	0.226	PQL	mg/Kg	
SL-574-SA8-SB-4.0-5.0	SILVER	J	0.0400	0.206	PQL	mg/Kg	J (all detects)

Method: 7471B
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-574-SA8-SB-9.0-10.0	MERCURY	J	0.0163	0.0177	PQL	mg/Kg	J (all detects)

Method: 8082A
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-570-SA8-SB-0.0-0.5	Aroclor 5460	J	12	36	PQL	ug/Kg	J (all detects)

Method: 8270D SIM
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-570-SA8-SB-0.0-0.5	BENZO(B)FLUORANTHENE	J	0.99	1.8	PQL	ug/Kg	J (all detects)
	BENZO(G,H,I)PERYLENE	J	0.94	1.8	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	11	20	PQL	ug/Kg	
	CHRYSENE	J	0.59	1.8	PQL	ug/Kg	
	PYRENE	J	0.76	1.8	PQL	ug/Kg	
SL-570-SA8-SB-4.0-5.0	CHRYSENE	J	6.0	19	PQL	ug/Kg	J (all detects)
SL-574-SA8-SB-4.0-5.0	CHRYSENE	J	4.7	17	PQL	ug/Kg	J (all detects)
SL-574-SA8-SB-9.0-10.0	CHRYSENE	J	6.4	19	PQL	ug/Kg	J (all detects)

LDC #: 30210D4
SDG #: PH065
Laboratory: Eurofins Lancaster Laboratories

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 8/29/13
Page: 1 of 1
Reviewer: CL
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: 7/11/13
II.	ICP/MS Tune	—	
III.	Calibration	—	
IV.	Blanks	A	
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)	~~AN~~ SW	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 (PH029) EB = EB1-071013 (PH064)

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-574-SA8-SB-0.0-0.5	11		21		31	
2	SL-574-SA8-SB-4.0-5.0	12		22		32	
3	SL-574-SA8-SB-9.0-10.0	13		23		33	
4	SL-574-SA8-SB-14.0-15.0	14		24		34	
5	SL-874-SA8-SB-14.0-15.0	15		25		35	
6	SL-570-SA8-SB-0.0-0.5	16		26		36	
7	SL-570-SA8-SB-4.0-5.0	17		27		37	
8	SL-574-SA8-SB-14.0-15.0MS	18		28		38	
9	SL-574-SA8-SB-14.0-15.0MSD	19		29		39	
10	SL-574-SA8-SB-14.0-15.0DUP	20		30		40	

Notes: _____

LDC #: 30210D4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: OL
2nd Reviewer: W

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	No Qualifiers									
Cu	0.0036	1.8										
Mo	0.0036	1.8										

Sampling date: 7/10/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All

Analyte	Blank ID	Sample Identification										
	EB1-071013 (SDG: PH064)	Action Limit	No Qualifiers									
Cu	0.0031	1.55										
Mo	0.0035	1.75										

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".

eurofins | Lancaster Laboratories

[redacted] Mn qualified off RPD (515)

QUALITY ASSURANCE SUMMARY
FORM 5A(MS/MSD)
MATRIX SPIKE/MATRIX SPIKE DUPLICATE
SDG No.: PH065
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7125061BKG Matrix Spike Lab Sample ID: 7125062MS Matrix Spike Duplicate Lab Sample ID: 7125063MSD
Batch Id(s): P19737A, P20337C, P19738A

		BKG Sample		MS Sample		MSD Sample		MS Spike	MSD Spike		MS		MSD				Control Limit		
Analyte	Mass	Result	C	Result	C	Result	C	Added	Added	Units	%R	Q	%R	Q	RPD	Q	%R	RPD	M
Aluminum		16452.8287		17661.2270		16833.8270		200.0000	200.0000	MG/KG	604		190		5			20	P
Antimony		0.7327	U	28.4360		27.6340		50.0000	50.0000	MG/KG	57	N	55	N	3		75 - 125	20	P
Arsenic		6.2020		20.1320		20.5150		15.0000	15.0000	MG/KG	93		95		2		75 - 125	20	P
Barium		80.5545		275.8390		251.6190		200.0000	200.0000	MG/KG	98		86		9		75 - 125	20	P
Beryllium		0.6158	B	5.4550		5.3280		5.0000	5.0000	MG/KG	97		94		2		75 - 125	20	P
Boron		4.7168	B	194.5330		189.3040		200.0000	200.0000	MG/KG	95		92		3		75 - 125	20	P
Cadmium		0.4594	B	5.1790		5.0620		5.0000	5.0000	MG/KG	94		92		2		75 - 125	20	P
Calcium		8798.4990		5961.7170		4944.0980		400.0000	400.0000	MG/KG	-709		-964		19			20	P
Chromium		28.8703		47.1680		39.7440		20.0000	20.0000	MG/KG	91		54	N	17		75 - 125	20	P
Cobalt		8.1842		55.3250		52.7760		50.0000	50.0000	MG/KG	94		89		5		75 - 125	20	P
Copper		15.2010		39.1010		35.4280		25.0000	25.0000	MG/KG	96		81		10		75 - 125	20	P
Iron		24921.5476		23316.9757		22399.2816		97.0874	97.0874	MG/KG	-1653		-2598		4			20	P
Lead		5.5416		18.1510		19.1270		15.0000	15.0000	MG/KG	84		91		5		75 - 125	20	P
Lithium		23.6000		121.7930		116.5740		100.0000	100.0000	MG/KG	98		93		4		75 - 125	20	P
Magnesium		5917.5625		5768.8950		4801.9540		200.0000	200.0000	MG/KG	-74		-558		18			20	P
Manganese		296.3139		469.1770		314.5130		50.0000	50.0000	MG/KG	346		36		39	*		20	P
Mercury		0.0094	U	0.1917		0.1879		0.1661	0.1655	MG/KG	115		114		2		65 - 135	20	CV
Molybdenum		0.1683	U	190.1370		186.1480		200.0000	200.0000	MG/KG	95		93		2		75 - 125	20	P
Nickel		14.8772		64.4700		56.7430		50.0000	50.0000	MG/KG	99		84		13		75 - 125	20	P
Phosphorus		617.4337		603.4620		527.0730		100.0000	100.0000	MG/KG	-14		-90		14			20	P
Potassium		2458.2040		3815.3380		3474.3990		1000.0000	1000.0000	MG/KG	136	N	102		9		75 - 125	20	P
Selenium	78	0.0990	U	2.0980		1.8492		2.0000	2.0000	MG/KG	105		92		13		75 - 125	20	MS
Silver	107	0.0257	U	10.6160		10.5340		10.0000	10.0000	MG/KG	106		105		1		75 - 125	20	MS
Sodium		404.6277		1316.2020		1253.0350		1000.0000	1000.0000	MG/KG	91		85		5		75 - 125	20	P
Strontium	88	34.9703		35.0000		36.6600		8.0000	8.0000	MG/KG	0		21		5			20	MS
Thallium	203	0.3689		0.7988		0.6898		0.4000	0.4000	MG/KG	107		80		15		75 - 125	20	MS

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

METHODS:
P = ICP Atomic Emission Spectrometer
CV = Cold Vapor
MS = ICP Mass Spectrometry
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.: PH065
Matrix: SOIL Level (low/med): LOW



Background Lab Sample ID: 7125061BKG Matrix Spike Lab Sample ID: 7125062MS Matrix Spike Duplicate Lab Sample ID: 7125063MSD

Batch Id(s): P19737A, P20337C, P19738A

		BKG Sample		MS Sample		MSD Sample		MS Spike	MSD Spike		MS		MSD				Control Limit		
Analyte	Mass	Result	C	Result	C	Result	C	Added	Added	Units	%R	Q	%R	Q	RPD	Q	%R	RPD	M
Tin		2.8950	B	350.8090		346.5550		400.0000	400.0000	MG/KG	87		86		1		75 - 125	20	P
*Titanium		1505.7337		1799.1200		1581.1720		100.0000	100.0000	MG/KG	293		75		13			20	P
Vanadium		49.2129		96.8260		92.5530		50.0000	50.0000	MG/KG	95		87		5		75 - 125	20	P
Zinc		67.8762		108.1970		96.0920		50.0000	50.0000	MG/KG	81		56	N	12		75 - 125	20	P
Zirconium		0.8317	U	101.3780		99.3320		100.0000	100.0000	MG/KG	101		99		2		75 - 125	20	P

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

METHODS:
P = ICP Atomic Emission Spectrometer CV = Cold Vapor
MS = ICP Mass Spectrometry 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 6
DUPLICATES
SDG No.: PH065
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7125061BKG
Batch ID(s): P19737A, P20337C, P19738A
Concentration Units: MG/KG

Duplicate Lab Sample ID: 7125064DUP

Analyte	Mass	Control Limit	Samples (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum			16452.8287		17448.0120		6		P
Antimony			-1.5089	B	-1.3370	B	-12		P
Arsenic		4.0	6.2020		8.5450		32	*	P
Barium			80.5545		77.5640		4		P
Beryllium			0.6158	B	0.7390	B	18		P
Boron			4.7168	B	4.3340	B	8		P
Cadmium			0.4594	B	0.4840	B	5		P
Calcium			8798.4990		6562.5670		29	*	P
Chromium			28.8703		26.1500		10		P
Cobalt			8.1842		8.3310		2		P
Copper			15.2010		16.3060		7		P
Iron			24921.5476		25118.9080		1		P
Lead		3.0	5.5416		7.1820		26	*	P
Lithium			23.6000		25.0490		6		P
Magnesium			5917.5525		5521.0420		7		P
Manganese			296.3139		334.8200		12		P
Mercury			0.0094	U	0.0100	U			CV
Molybdenum			0.1683	U	0.1700	U			P
Nickel			14.8772		14.1210		5		P
Phosphorus			617.4337		573.4900		7		P
Potassium			2458.2040		2330.8220		5		P
Selenium	78		0.0990	U	0.1000	U			MS
Silver	107		0.0257	U	0.0260	U			MS
Sodium		99.0	404.6277		407.1170		1		P
Strontium	88		34.9703		31.5600		10		MS
Thallium	203	0.2	0.3689		0.3874		5		MS
Tin			2.8950	B	3.1200	B	7		P
Titanium			1505.7337		1386.3700		8		P
Vanadium			49.2129		53.2620		8		P
Zinc			67.8762		62.2810		9		P
Zirconium			0.8317	U	1.3400	B	200		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.: PH065
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7125061BKG Serial Dilution Lab Sample ID: 7125061L
Batch ID(s): P19737A, P20337C
Concentration Units: UG/L

Analyte	Mass	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Diff.	Q	M
Aluminum		166173.5700		171492.2500		3		P
Antimony		7.4000	U	37.0000	U			P
Arsenic		62.6400		92.1000	B	47		P
Barium		813.6000		855.7000		5		P
Beryllium		6.2200	B	6.6500	B	7		P
Boron		47.6400	B	86.1500	B	81		P
Cadmium		4.6400	B	6.8500	B	48		P
Calcium		88864.8400		92560.5500		4		P
Chromium		291.5900		302.9500		4		P
Cobalt		82.6600		87.4500		6		P
Copper		153.5300		162.7500		6		P
Iron		261676.2500		292991.9500		12	E	P
Lead		55.9700		72.0500	B	29		P
Lithium		238.3600		265.5500		11	E	P
Magnesium		59767.2800		62261.1000		4		P
Manganese		2992.7700		3181.6000		6		P
Molybdenum		1.7000	U	8.5000	U			P
Nickel		150.2600		160.6000		7		P
Phosphorus		6236.0800		6339.9000		2		P
Potassium		24827.8600		25556.0000		3		P
Selenium	78	0.5000	U	2.5000	U			MS
Silver	107	0.1300	U	0.6500	U			MS
Sodium		4086.7400		4157.5500	B	2		P
Strontium	88	176.6000		177.4000		0		MS
Thallium	203	1.8630		2.0540	B	10		MS
Tin		29.2400	B	27.6500	B	5		P
Titanium		15207.9100		15760.6500		4		P
Vanadium		497.0500		512.9500		3		P
Zinc		685.5500		683.6500		0		P
Zirconium		8.4000	U	42.0000	U			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.

Justin Gall

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

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

October 8, 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 August 22, 2013. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 30289:

SDG #	Fraction
PH066, PH067 PH068, PH069 PH070, PH071 PH072, PH073	Volatiles, Semivolatiles, Chlorinated Pesticides, Polychlorinated Biphenyls, Metals, Herbicides, Total Petroleum Hydrocarbons as Gasoline, Total Petroleum Hydrocarbons as Extractables, Dioxins/Dibenzofurans, Perchlorate, 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,

Shauna McKellar
Project Manager/Chemist

6,974 pages-CD

Attachment 1

90/10 ADR/IV

LDC #30289 (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)		CLO_4 (6850)		Cr(VI) (7199)											
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
A	PH066	08/22/13	09/20/13	-	-	0	7	0	11	-	-	0	11	0	11	-	-	1	7	0	11	0	11	-	-	-	-										
B	PH067	08/22/13	09/20/13	-	-	-	-	0	12	0	5	0	12	0	12	0	5	1	7	0	12	0	12	-	-	-	-										
C	PH068	08/22/13	09/20/13	1	3	0	6	0	9	-	-	0	9	0	9	-	-	1	4	0	9	0	9	0	6	0	6										
D	PH069	08/22/13	09/20/13	2	1	1	3	2	11	2	3	2	8	2	11	2	3	3	7	2	11	2	10	1	7	2	3										
E	PH070	08/22/13	09/20/13	1	2	0	4	0	11	-	-	0	11	0	11	-	-	1	5	0	11	0	11	0	4	0	4										
F	PH071	08/22/13	09/20/13	-	-	-	-	0	10	-	-	0	10	0	10	-	-	1	4	0	10	0	10	-	-	0	3										
G	PH072	08/22/13	09/20/13	-	-	-	-	0	9	-	-	0	9	0	9	-	-	1	6	0	9	0	6	-	-	-	-										
H	PH073	08/22/13	09/20/13	-	-	-	-	0	8	-	-	0	12	0	8	-	-	1	6	0	8	0	5	-	-	-	-										
Total	T/SM			4	6	1	20	2	81	2	8	2	82	2	81	2	8	10	46	2	81	2	74	1	17	2	16	0	0	0	0	0	0	0	0	0	552

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

30289ST-SA8.wpd

Data Validation Report
Santa Susana Field Laboratory

Subarea 8

SDG: PH066

Prepared for

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

Prepared by

Laboratory Data Consultants, Inc
7750 El Camino Real, Suite 2L
Carlsbad, California 92009

September 24, 2013

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on July 12th, 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 (SVOAs) by EPA SW 846 Method 8270D
SVOAs 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 Hydrocarbon as Gasoline (TPH-G) by EPA SW 846 Method 8015M
Total Petroleum Hydrocarbons as Extractable (TPH-E) by EPA SW 846 Method 8015M
Dioxins/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, trip blanks, equipment blanks, field blanks, and field duplicate samples. 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 the 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.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met QC criteria.

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.

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 SVOAs, TPH-E, and metals. The benzidine result in sample SL-578-SA8-SB-4.0-5.0 was qualified as rejected (R) due to MS/MSD %Rs grossly outside 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 with the exception of two LCS/LCSD pairs for SVOA. Since the percent recoveries were high and the results in the associated samples were non-detect, no data were qualified due to %Rs. The details regarding the qualification of data are provided in Enclosure I.

The lab noted that due to a lab error, 2,6-dichlorophenol was not spiked into the associated QC for samples analyzed for SVOAs by method 8270D. The lab stated that the sample was re-extracted outside the method required holding time and the QC was within acceptable limits; however, all results reported are from the original run. Due to lack of required QC in the original run, all 2,6-dicholorphenol results were qualified as detected estimated (J) or non-detected estimated (UJ) in the associated samples.

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-578-SA8-SB-4.0-5.0	Barium Copper Manganese	11 (≤10) 24 (≤10) 21 (≤10)	All soil samples in SDG PH066	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 PH066	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 SVOAs, PCBs, metals, TPH-G, TPH-E, and dioxins. All RPDs were within QC limits with the exception of several SVOAs, dioxins, and metals. 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-G. No contaminant concentrations were found in the trip blanks.

One equipment blank (from SDG PH064) was collected and analyzed for SVOAs, PCBs, metals, TPH-G, TPH-E, and dioxins. The equipment blanks had detections for several SVOAs, 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 SVOAs, PCBs, metals, TPH-G, TPH-E, and dioxins. The field blank had detections for several semivolatiles, 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

One SVOC result was rejected due to MS/MSD %Rs grossly outside of 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
12-Jul-2013	TB-071213	7126358	TB	5030B	8015M	III
12-Jul-2013	SL-578-SA8-SB-0.0-0.5	7126350	N	3050B	6010C	III
12-Jul-2013	SL-578-SA8-SB-0.0-0.5	7126350	N	3050B	6020A	III
12-Jul-2013	SL-578-SA8-SB-0.0-0.5	7126350	N	3546	8015M	III
12-Jul-2013	SL-578-SA8-SB-0.0-0.5	7126350	N	3546	8082A	III
12-Jul-2013	SL-578-SA8-SB-0.0-0.5	7126350	N	3546	8270D	III
12-Jul-2013	SL-578-SA8-SB-0.0-0.5	7126350	N	3546	8270D SIM	III
12-Jul-2013	SL-578-SA8-SB-0.0-0.5	7126350	N	METHOD	1613B	III
12-Jul-2013	SL-578-SA8-SB-0.0-0.5	7126350	N	METHOD	7471B	III
12-Jul-2013	SL-578-SA8-SB-4.0-5.0	7126351	N	3050B	6010C	III
12-Jul-2013	SL-578-SA8-SB-4.0-5.0	7126351	N	3050B	6020A	III
12-Jul-2013	SL-578-SA8-SB-4.0-5.0	7126351	N	3546	8015M	III
12-Jul-2013	SL-578-SA8-SB-4.0-5.0	7126351	N	3546	8082A	III
12-Jul-2013	SL-578-SA8-SB-4.0-5.0	7126351	N	3546	8270D	III
12-Jul-2013	SL-578-SA8-SB-4.0-5.0	7126351	N	3546	8270D SIM	III
12-Jul-2013	SL-578-SA8-SB-4.0-5.0	7126351	N	5035A	8015M	III
12-Jul-2013	SL-578-SA8-SB-4.0-5.0	7126351	N	METHOD	1613B	III
12-Jul-2013	SL-578-SA8-SB-4.0-5.0	7126351	N	METHOD	7471B	III
12-Jul-2013	SL-578-SA8-SB-4.0-5.0MS	7126352	MS	3050B	6010C	III
12-Jul-2013	SL-578-SA8-SB-4.0-5.0MS	7126352	MS	3050B	6020A	III
12-Jul-2013	SL-578-SA8-SB-4.0-5.0MS	7126352	MS	3546	8015M	III
12-Jul-2013	SL-578-SA8-SB-4.0-5.0MS	7126352	MS	3546	8082A	III
12-Jul-2013	SL-578-SA8-SB-4.0-5.0MS	7126352	MS	3546	8270D	III
12-Jul-2013	SL-578-SA8-SB-4.0-5.0MS	7126352	MS	3546	8270D SIM	III
12-Jul-2013	SL-578-SA8-SB-4.0-5.0MS	7126352	MS	5035A	8015M	III
12-Jul-2013	SL-578-SA8-SB-4.0-5.0MS	7126352	MS	METHOD	1613B	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
12-Jul-2013	SL-578-SA8-SB-4.0-5.0MS	7126352	MS	METHOD	7471B	III
12-Jul-2013	SL-578-SA8-SB-4.0-5.0MSD	7126353	MSD	3050B	6010C	III
12-Jul-2013	SL-578-SA8-SB-4.0-5.0MSD	7126353	MSD	3050B	6020A	III
12-Jul-2013	SL-578-SA8-SB-4.0-5.0MSD	7126353	MSD	3546	8015M	III
12-Jul-2013	SL-578-SA8-SB-4.0-5.0MSD	7126353	MSD	3546	8082A	III
12-Jul-2013	SL-578-SA8-SB-4.0-5.0MSD	7126353	MSD	3546	8270D	III
12-Jul-2013	SL-578-SA8-SB-4.0-5.0MSD	7126353	MSD	3546	8270D SIM	III
12-Jul-2013	SL-578-SA8-SB-4.0-5.0MSD	7126353	MSD	5035A	8015M	III
12-Jul-2013	SL-578-SA8-SB-4.0-5.0MSD	7126353	MSD	METHOD	1613B	III
12-Jul-2013	SL-578-SA8-SB-4.0-5.0MSD	7126353	MSD	METHOD	7471B	III
12-Jul-2013	SL-578-SA8-SB-4.0-5.0DUP	7126354	DUP	3050B	6010C	III
12-Jul-2013	SL-578-SA8-SB-4.0-5.0DUP	7126354	DUP	3050B	6020A	III
12-Jul-2013	SL-578-SA8-SB-4.0-5.0DUP	7126354	DUP	METHOD	7471B	III
12-Jul-2013	SL-878-SA8-SB-4.0-5.0	7126355	N	3050B	6010C	III
12-Jul-2013	SL-878-SA8-SB-4.0-5.0	7126355	N	3050B	6020A	III
12-Jul-2013	SL-878-SA8-SB-4.0-5.0	7126355	N	3546	8015M	III
12-Jul-2013	SL-878-SA8-SB-4.0-5.0	7126355	N	3546	8082A	III
12-Jul-2013	SL-878-SA8-SB-4.0-5.0	7126355	N	3546	8270D	III
12-Jul-2013	SL-878-SA8-SB-4.0-5.0	7126355	N	3546	8270D SIM	III
12-Jul-2013	SL-878-SA8-SB-4.0-5.0	7126355	N	5035A	8015M	III
12-Jul-2013	SL-878-SA8-SB-4.0-5.0	7126355	N	METHOD	1613B	III
12-Jul-2013	SL-878-SA8-SB-4.0-5.0	7126355	N	METHOD	7471B	III
12-Jul-2013	SL-578-SA8-SB-9.0-10.0	7126356	N	3050B	6010C	III
12-Jul-2013	SL-578-SA8-SB-9.0-10.0	7126356	N	3050B	6020A	III
12-Jul-2013	SL-578-SA8-SB-9.0-10.0	7126356	N	3546	8015M	III
12-Jul-2013	SL-578-SA8-SB-9.0-10.0	7126356	N	3546	8082A	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
12-Jul-2013	SL-578-SA8-SB-9.0-10.0	7126356	N	3546	8270D	III
12-Jul-2013	SL-578-SA8-SB-9.0-10.0	7126356	N	3546	8270D SIM	III
12-Jul-2013	SL-578-SA8-SB-9.0-10.0	7126356	N	5035A	8015M	III
12-Jul-2013	SL-578-SA8-SB-9.0-10.0	7126356	N	METHOD	1613B	III
12-Jul-2013	SL-578-SA8-SB-9.0-10.0	7126356	N	METHOD	7471B	III
12-Jul-2013	SL-580-SA8-SB-0.0-0.5	7126357	N	3050B	6010C	III
12-Jul-2013	SL-580-SA8-SB-0.0-0.5	7126357	N	3050B	6020A	III
12-Jul-2013	SL-580-SA8-SB-0.0-0.5	7126357	N	3546	8015M	III
12-Jul-2013	SL-580-SA8-SB-0.0-0.5	7126357	N	3546	8082A	III
12-Jul-2013	SL-580-SA8-SB-0.0-0.5	7126357	N	3546	8270D	III
12-Jul-2013	SL-580-SA8-SB-0.0-0.5	7126357	N	3546	8270D SIM	III
12-Jul-2013	SL-580-SA8-SB-0.0-0.5	7126357	N	METHOD	1613B	III
12-Jul-2013	SL-580-SA8-SB-0.0-0.5	7126357	N	METHOD	7471B	III
12-Jul-2013	SL-580-SA8-SB-4.0-5.0	7126359	N	3050B	6010C	III
12-Jul-2013	SL-580-SA8-SB-4.0-5.0	7126359	N	3050B	6020A	III
12-Jul-2013	SL-580-SA8-SB-4.0-5.0	7126359	N	3546	8015M	III
12-Jul-2013	SL-580-SA8-SB-4.0-5.0	7126359	N	3546	8082A	III
12-Jul-2013	SL-580-SA8-SB-4.0-5.0	7126359	N	3546	8270D	III
12-Jul-2013	SL-580-SA8-SB-4.0-5.0	7126359	N	3546	8270D SIM	III
12-Jul-2013	SL-580-SA8-SB-4.0-5.0	7126359	N	5035A	8015M	III
12-Jul-2013	SL-580-SA8-SB-4.0-5.0	7126359	N	METHOD	1613B	III
12-Jul-2013	SL-580-SA8-SB-4.0-5.0	7126359	N	METHOD	7471B	III
12-Jul-2013	SL-580-SA8-SB-10.5-11.5	7126360	N	3050B	6010C	III
12-Jul-2013	SL-580-SA8-SB-10.5-11.5	7126360	N	3050B	6020A	III
12-Jul-2013	SL-580-SA8-SB-10.5-11.5	7126360	N	3546	8015M	III
12-Jul-2013	SL-580-SA8-SB-10.5-11.5	7126360	N	3546	8082A	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
12-Jul-2013	SL-580-SA8-SB-10.5-11.5	7126360	N	3546	8270D	III
12-Jul-2013	SL-580-SA8-SB-10.5-11.5	7126360	N	3546	8270D SIM	III
12-Jul-2013	SL-580-SA8-SB-10.5-11.5	7126360	N	5035A	8015M	III
12-Jul-2013	SL-580-SA8-SB-10.5-11.5	7126360	N	METHOD	1613B	III
12-Jul-2013	SL-580-SA8-SB-10.5-11.5	7126360	N	METHOD	7471B	III
12-Jul-2013	SL-581-SA8-SB-0.0-0.5	7126361	N	3050B	6010C	III
12-Jul-2013	SL-581-SA8-SB-0.0-0.5	7126361	N	3050B	6020A	III
12-Jul-2013	SL-581-SA8-SB-0.0-0.5	7126361	N	3546	8015M	III
12-Jul-2013	SL-581-SA8-SB-0.0-0.5	7126361	N	3546	8082A	III
12-Jul-2013	SL-581-SA8-SB-0.0-0.5	7126361	N	3546	8270D SIM	III
12-Jul-2013	SL-581-SA8-SB-0.0-0.5	7126361	N	METHOD	1613B	III
12-Jul-2013	SL-581-SA8-SB-0.0-0.5	7126361	N	METHOD	7471B	III
12-Jul-2013	SL-581-SA8-SB-4.5-5.5	7126362	N	3050B	6010C	III
12-Jul-2013	SL-581-SA8-SB-4.5-5.5	7126362	N	3050B	6020A	III
12-Jul-2013	SL-581-SA8-SB-4.5-5.5	7126362	N	3546	8015M	III
12-Jul-2013	SL-581-SA8-SB-4.5-5.5	7126362	N	3546	8082A	III
12-Jul-2013	SL-581-SA8-SB-4.5-5.5	7126362	N	3546	8270D SIM	III
12-Jul-2013	SL-581-SA8-SB-4.5-5.5	7126362	N	5035A	8015M	III
12-Jul-2013	SL-581-SA8-SB-4.5-5.5	7126362	N	METHOD	1613B	III
12-Jul-2013	SL-581-SA8-SB-4.5-5.5	7126362	N	METHOD	7471B	III
12-Jul-2013	SL-587-SA8-SB-0.0-0.5	7126363	N	3050B	6010C	III
12-Jul-2013	SL-587-SA8-SB-0.0-0.5	7126363	N	3050B	6020A	III
12-Jul-2013	SL-587-SA8-SB-0.0-0.5	7126363	N	3546	8015M	III
12-Jul-2013	SL-587-SA8-SB-0.0-0.5	7126363	N	3546	8082A	III
12-Jul-2013	SL-587-SA8-SB-0.0-0.5	7126363	N	3546	8270D SIM	III
12-Jul-2013	SL-587-SA8-SB-0.0-0.5	7126363	N	METHOD	1613B	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
12-Jul-2013	SL-587-SA8-SB-0.0-0.5	7126363	N	METHOD	7471B	III
12-Jul-2013	SL-587-SA8-SB-6.5-7.5	7126364	N	3050B	6010C	III
12-Jul-2013	SL-587-SA8-SB-6.5-7.5	7126364	N	3050B	6020A	III
12-Jul-2013	SL-587-SA8-SB-6.5-7.5	7126364	N	3546	8015M	III
12-Jul-2013	SL-587-SA8-SB-6.5-7.5	7126364	N	3546	8082A	III
12-Jul-2013	SL-587-SA8-SB-6.5-7.5	7126364	N	3546	8270D SIM	III
12-Jul-2013	SL-587-SA8-SB-6.5-7.5	7126364	N	5035A	8015M	III
12-Jul-2013	SL-587-SA8-SB-6.5-7.5	7126364	N	METHOD	1613B	III
12-Jul-2013	SL-587-SA8-SB-6.5-7.5	7126364	N	METHOD	7471B	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH066 **Laboratory: LL**

EDD Filename: PrepPH066_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-578-SA8-SB-0.0-0.5** ***Collected:*** **7/12/2013 8:35:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.25	U	0.787	MDL	4.25	PQL	mg/Kg	UJ	Q, E
BARIUM	118		0.0351	MDL	1.06	PQL	mg/Kg	J	A
BERYLLIUM	0.735	J	0.0712	MDL	1.06	PQL	mg/Kg	J	Z
BORON	1.97	J	0.893	MDL	10.6	PQL	mg/Kg	J	Z
CADMIUM	0.371	J	0.0808	MDL	1.06	PQL	mg/Kg	J	Z
CHROMIUM	29.9		0.170	MDL	3.19	PQL	mg/Kg	J	Q
COPPER	23.4		0.308	MDL	2.13	PQL	mg/Kg	J	A
MANGANESE	534		0.0883	MDL	1.06	PQL	mg/Kg	J	E, A
MOLYBDENUM	0.308	J	0.181	MDL	2.13	PQL	mg/Kg	U	F, F
PHOSPHORUS	365		3.07	MDL	10.6	PQL	mg/Kg	J	Q
TIN	3.15	J	0.234	MDL	10.6	PQL	mg/Kg	U	B
VANADIUM	52.2		0.138	MDL	1.06	PQL	mg/Kg	J	Q

Sample ID: **SL-578-SA8-SB-4.0-5.0** ***Collected:*** **7/12/2013 9:15:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.44	U	0.821	MDL	4.44	PQL	mg/Kg	UJ	Q, E
BARIUM	116		0.0366	MDL	1.11	PQL	mg/Kg	J	A
BERYLLIUM	0.830	J	0.0743	MDL	1.11	PQL	mg/Kg	J	Z
BORON	2.75	J	0.932	MDL	11.1	PQL	mg/Kg	J	Z
CADMIUM	0.533	J	0.0843	MDL	1.11	PQL	mg/Kg	J	Z
CHROMIUM	29.7		0.177	MDL	3.33	PQL	mg/Kg	J	Q
COPPER	16.9		0.322	MDL	2.22	PQL	mg/Kg	J	A
MANGANESE	373		0.0921	MDL	1.11	PQL	mg/Kg	J	E, A
MOLYBDENUM	0.416	J	0.189	MDL	2.22	PQL	mg/Kg	U	F, F
PHOSPHORUS	286		3.21	MDL	11.1	PQL	mg/Kg	J	Q
TIN	3.04	J	0.244	MDL	11.1	PQL	mg/Kg	U	B
VANADIUM	55.0		0.144	MDL	1.11	PQL	mg/Kg	J	Q

Sample ID: **SL-578-SA8-SB-9.0-10.0** ***Collected:*** **7/12/2013 9:45:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.18	U	0.774	MDL	4.18	PQL	mg/Kg	UJ	Q, E
BARIUM	87.1		0.0345	MDL	1.05	PQL	mg/Kg	J	A
BERYLLIUM	0.440	J	0.0700	MDL	1.05	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: PH066 **Laboratory: LL**

EDD Filename: PrepPH066_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix:** SO

Sample ID: SL-578-SA8-SB-9.0-10.0 ***Collected:*** 7/12/2013 9:45:00 ***Analysis Type:*** RES ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CADMIUM	0.351	J	0.0795	MDL	1.05	PQL	mg/Kg	J	Z
CHROMIUM	21.2		0.167	MDL	3.14	PQL	mg/Kg	J	Q
COPPER	7.74		0.303	MDL	2.09	PQL	mg/Kg	J	A
MANGANESE	419		0.0868	MDL	1.05	PQL	mg/Kg	J	E, A
PHOSPHORUS	499		3.02	MDL	10.5	PQL	mg/Kg	J	Q
TIN	3.04	J	0.230	MDL	10.5	PQL	mg/Kg	U	B
VANADIUM	44.2		0.136	MDL	1.05	PQL	mg/Kg	J	Q
Zirconium	3.63	J	0.878	MDL	5.23	PQL	mg/Kg	J	Z

Sample ID: SL-580-SA8-SB-0.0-0.5 ***Collected:*** 7/12/2013 10:30:00 ***Analysis Type:*** RES ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.37	U	0.809	MDL	4.37	PQL	mg/Kg	UJ	Q, E
BARIUM	101		0.0361	MDL	1.09	PQL	mg/Kg	J	A
BERYLLIUM	0.754	J	0.0732	MDL	1.09	PQL	mg/Kg	J	Z
BORON	2.49	J	0.918	MDL	10.9	PQL	mg/Kg	J	Z
CADMIUM	0.303	J	0.0831	MDL	1.09	PQL	mg/Kg	J	Z
CHROMIUM	26.6		0.175	MDL	3.28	PQL	mg/Kg	J	Q
COPPER	11.1		0.317	MDL	2.19	PQL	mg/Kg	J	A
MANGANESE	306		0.0907	MDL	1.09	PQL	mg/Kg	J	E, A
MOLYBDENUM	0.238	J	0.186	MDL	2.19	PQL	mg/Kg	U	F, F
PHOSPHORUS	300		3.16	MDL	10.9	PQL	mg/Kg	J	Q
SODIUM	99.2	J	18.3	MDL	109	PQL	mg/Kg	J	Z
TIN	3.08	J	0.240	MDL	10.9	PQL	mg/Kg	U	B
VANADIUM	49.6		0.142	MDL	1.09	PQL	mg/Kg	J	Q
Zirconium	5.13	J	0.918	MDL	5.46	PQL	mg/Kg	J	Z

Sample ID: SL-580-SA8-SB-10.5-11.5 ***Collected:*** 7/12/2013 11:00:00 ***Analysis Type:*** RES ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.17	U	0.772	MDL	4.17	PQL	mg/Kg	UJ	Q, E
BARIUM	69.8		0.0344	MDL	1.04	PQL	mg/Kg	J	A
BERYLLIUM	0.609	J	0.0699	MDL	1.04	PQL	mg/Kg	J	Z
CADMIUM	0.321	J	0.0792	MDL	1.04	PQL	mg/Kg	J	Z
CHROMIUM	19.8		0.167	MDL	3.13	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: PH066 **Laboratory: LL**

EDD Filename: PrepPH066_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

***Sample ID:*SL-580-SA8-SB-10.5-11.5** ***Collected:* 7/12/2013 11:00:00** ***Analysis Type:* RES** ***Dilution:* 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	9.10		0.302	MDL	2.09	PQL	mg/Kg	J	A
MANGANESE	245		0.0865	MDL	1.04	PQL	mg/Kg	J	E, A
MOLYBDENUM	1.08	J	0.177	MDL	2.09	PQL	mg/Kg	U	F, F
PHOSPHORUS	326		3.01	MDL	10.4	PQL	mg/Kg	J	Q
TIN	2.85	J	0.229	MDL	10.4	PQL	mg/Kg	U	B
VANADIUM	42.4		0.136	MDL	1.04	PQL	mg/Kg	J	Q
Zirconium	4.17	J	0.876	MDL	5.21	PQL	mg/Kg	J	Z

***Sample ID:*SL-580-SA8-SB-4.0-5.0** ***Collected:* 7/12/2013 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	4.21	U	0.778	MDL	4.21	PQL	mg/Kg	UJ	Q, E
BARIUM	125		0.0347	MDL	1.05	PQL	mg/Kg	J	A
BERYLLIUM	0.769	J	0.0705	MDL	1.05	PQL	mg/Kg	J	Z
BORON	4.29	J	0.884	MDL	10.5	PQL	mg/Kg	J	Z
CADMIUM	0.449	J	0.0799	MDL	1.05	PQL	mg/Kg	J	Z
CHROMIUM	26.8		0.168	MDL	3.16	PQL	mg/Kg	J	Q
COPPER	15.3		0.305	MDL	2.10	PQL	mg/Kg	J	A
MANGANESE	435		0.0873	MDL	1.05	PQL	mg/Kg	J	E, A
MOLYBDENUM	0.332	J	0.179	MDL	2.10	PQL	mg/Kg	U	F, F
PHOSPHORUS	306		3.04	MDL	10.5	PQL	mg/Kg	J	Q
TIN	2.94	J	0.231	MDL	10.5	PQL	mg/Kg	U	B
VANADIUM	50.0		0.137	MDL	1.05	PQL	mg/Kg	J	Q

***Sample ID:*SL-581-SA8-SB-0.0-0.5** ***Collected:* 7/12/2013 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
ANTIMONY	4.16	U	0.770	MDL	4.16	PQL	mg/Kg	UJ	Q, E
BARIUM	119		0.0343	MDL	1.04	PQL	mg/Kg	J	A
BERYLLIUM	0.810	J	0.0697	MDL	1.04	PQL	mg/Kg	J	Z
BORON	2.82	J	0.874	MDL	10.4	PQL	mg/Kg	J	Z
CADMIUM	0.496	J	0.0791	MDL	1.04	PQL	mg/Kg	J	Z
CHROMIUM	28.8		0.166	MDL	3.12	PQL	mg/Kg	J	Q
COPPER	16.1		0.302	MDL	2.08	PQL	mg/Kg	J	A
MANGANESE	438		0.0864	MDL	1.04	PQL	mg/Kg	J	E, 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: PH066 **Laboratory: LL**

EDD Filename: PrepPH066_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-581-SA8-SB-0.0-0.5 *Collected:* 7/12/2013 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
MOLYBDENUM	0.314	J	0.177	MDL	2.08	PQL	mg/Kg	U	F, F
PHOSPHORUS	248		3.01	MDL	10.4	PQL	mg/Kg	J	Q
SODIUM	77.6	J	17.4	MDL	104	PQL	mg/Kg	J	Z
TIN	2.85	J	0.229	MDL	10.4	PQL	mg/Kg	U	B
VANADIUM	54.2		0.135	MDL	1.04	PQL	mg/Kg	J	Q

Sample ID: SL-581-SA8-SB-4.5-5.5 *Collected:* 7/12/2013 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
ANTIMONY	3.92	U	0.726	MDL	3.92	PQL	mg/Kg	UJ	Q, E
BARIUM	71.1		0.0324	MDL	0.981	PQL	mg/Kg	J	A
BERYLLIUM	0.418	J	0.0657	MDL	0.981	PQL	mg/Kg	J	Z
CADMIUM	0.294	J	0.0745	MDL	0.981	PQL	mg/Kg	J	Z
CHROMIUM	18.1		0.157	MDL	2.94	PQL	mg/Kg	J	Q
COPPER	7.24		0.284	MDL	1.96	PQL	mg/Kg	J	A
MANGANESE	251		0.0814	MDL	0.981	PQL	mg/Kg	J	E, A
MOLYBDENUM	0.204	J	0.167	MDL	1.96	PQL	mg/Kg	U	F, F
PHOSPHORUS	384		2.83	MDL	9.81	PQL	mg/Kg	J	Q
SODIUM	86.7	J	16.4	MDL	98.1	PQL	mg/Kg	J	Z
TIN	2.97	J	0.216	MDL	9.81	PQL	mg/Kg	U	B
VANADIUM	37.4		0.128	MDL	0.981	PQL	mg/Kg	J	Q
Zirconium	3.05	J	0.824	MDL	4.90	PQL	mg/Kg	J	Z

Sample ID: SL-587-SA8-SB-0.0-0.5 *Collected:* 7/12/2013 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
ANTIMONY	3.88	U	0.717	MDL	3.88	PQL	mg/Kg	UJ	Q, E
ARSENIC	3.51	J	0.678	MDL	3.88	PQL	mg/Kg	J	Z
BARIUM	112		0.0320	MDL	0.969	PQL	mg/Kg	J	A
BERYLLIUM	0.542	J	0.0649	MDL	0.969	PQL	mg/Kg	J	Z
BORON	0.814	J	0.814	MDL	9.69	PQL	mg/Kg	J	Z
CADMIUM	0.360	J	0.0736	MDL	0.969	PQL	mg/Kg	J	Z
CHROMIUM	18.3		0.155	MDL	2.91	PQL	mg/Kg	J	Q
COPPER	9.63		0.281	MDL	1.94	PQL	mg/Kg	J	A
MANGANESE	322		0.0804	MDL	0.969	PQL	mg/Kg	J	E, 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: PH066 **Laboratory: LL**

EDD Filename: PrepPH066_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-587-SA8-SB-0.0-0.5** ***Collected:*** **7/12/2013 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
MOLYBDENUM	0.453	J	0.165	MDL	1.94	PQL	mg/Kg	U	F, F
PHOSPHORUS	574		2.80	MDL	9.69	PQL	mg/Kg	J	Q
SODIUM	67.7	J	16.2	MDL	96.9	PQL	mg/Kg	J	Z
TIN	2.50	J	0.213	MDL	9.69	PQL	mg/Kg	U	B
VANADIUM	31.7		0.126	MDL	0.969	PQL	mg/Kg	J	Q
Zirconium	3.20	J	0.814	MDL	4.84	PQL	mg/Kg	J	Z

Sample ID: **SL-587-SA8-SB-6.5-7.5** ***Collected:*** **7/12/2013 1:40:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	3.98	U	0.736	MDL	3.98	PQL	mg/Kg	UJ	Q, E
ARSENIC	3.25	J	0.696	MDL	3.98	PQL	mg/Kg	J	Z
BARIUM	66.0		0.0328	MDL	0.994	PQL	mg/Kg	J	A
BERYLLIUM	0.483	J	0.0666	MDL	0.994	PQL	mg/Kg	J	Z
CADMIUM	0.203	J	0.0756	MDL	0.994	PQL	mg/Kg	J	Z
CHROMIUM	14.7		0.159	MDL	2.98	PQL	mg/Kg	J	Q
COPPER	5.33		0.288	MDL	1.99	PQL	mg/Kg	J	A
MANGANESE	144		0.0825	MDL	0.994	PQL	mg/Kg	J	E, A
PHOSPHORUS	166		2.87	MDL	9.94	PQL	mg/Kg	J	Q
TIN	2.70	J	0.219	MDL	9.94	PQL	mg/Kg	U	B
VANADIUM	26.9		0.129	MDL	0.994	PQL	mg/Kg	J	Q
Zirconium	2.46	J	0.835	MDL	4.97	PQL	mg/Kg	J	Z

Sample ID: **SL-878-SA8-SB-4.0-5.0** ***Collected:*** **7/12/2013 9:30:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.30	U	0.795	MDL	4.30	PQL	mg/Kg	UJ	Q, E
BARIUM	135		0.0355	MDL	1.07	PQL	mg/Kg	J	A
BERYLLIUM	1.02	J	0.0720	MDL	1.07	PQL	mg/Kg	J	Z
BORON	3.04	J	0.903	MDL	10.7	PQL	mg/Kg	J	Z
CADMIUM	0.408	J	0.0817	MDL	1.07	PQL	mg/Kg	J	Z
CHROMIUM	36.2		0.172	MDL	3.22	PQL	mg/Kg	J	Q
COPPER	17.7		0.312	MDL	2.15	PQL	mg/Kg	J	A
MANGANESE	524		0.0892	MDL	1.07	PQL	mg/Kg	J	E, A
MOLYBDENUM	0.229	J	0.183	MDL	2.15	PQL	mg/Kg	U	F, F

* 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: PH066 **Laboratory: LL**

EDD Filename: PrepPH066_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-878-SA8-SB-4.0-5.0 *Collected:* 7/12/2013 9:30:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PHOSPHORUS	242		3.11	MDL	10.7	PQL	mg/Kg	J	Q
TIN	3.10	J	0.236	MDL	10.7	PQL	mg/Kg	U	B
VANADIUM	66.8		0.140	MDL	1.07	PQL	mg/Kg	J	Q

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-578-SA8-SB-0.0-0.5 *Collected:* 7/12/2013 8:35:00 *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	31.5		0.0723	MDL	0.425	PQL	mg/Kg	J	Q

Sample ID: SL-578-SA8-SB-0.0-0.5 *Collected:* 7/12/2013 8:35:00 *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.425	U	0.106	MDL	0.425	PQL	mg/Kg	UJ	E

Sample ID: SL-578-SA8-SB-0.0-0.5 *Collected:* 7/12/2013 8:35:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0890	J	0.0276	MDL	0.213	PQL	mg/Kg	J	Z, Q
THALLIUM	0.368		0.0319	MDL	0.213	PQL	mg/Kg	J	Q

Sample ID: SL-578-SA8-SB-4.0-5.0 *Collected:* 7/12/2013 9:15:00 *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	33.4		0.0754	MDL	0.444	PQL	mg/Kg	J	Q

Sample ID: SL-578-SA8-SB-4.0-5.0 *Collected:* 7/12/2013 9:15:00 *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.277	J	0.111	MDL	0.444	PQL	mg/Kg	J	Z, 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: PH066 **Laboratory: LL**

EDD Filename: PrepPH066_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-578-SA8-SB-4.0-5.0 *Collected:* 7/12/2013 9:15:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0557	J	0.0288	MDL	0.222	PQL	mg/Kg	J	Z, Q
THALLIUM	0.402		0.0333	MDL	0.222	PQL	mg/Kg	J	Q

Sample ID: SL-578-SA8-SB-9.0-10.0 *Collected:* 7/12/2013 9:45:00 *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	20.8		0.0711	MDL	0.418	PQL	mg/Kg	J	Q

Sample ID: SL-578-SA8-SB-9.0-10.0 *Collected:* 7/12/2013 9:45:00 *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.146	J	0.105	MDL	0.418	PQL	mg/Kg	J	Z, Q, E

Sample ID: SL-578-SA8-SB-9.0-10.0 *Collected:* 7/12/2013 9:45:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
THALLIUM	0.415		0.0314	MDL	0.209	PQL	mg/Kg	J	Q

Sample ID: SL-580-SA8-SB-0.0-0.5 *Collected:* 7/12/2013 10:30:00 *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	29.5		0.0743	MDL	0.437	PQL	mg/Kg	J	Q

Sample ID: SL-580-SA8-SB-0.0-0.5 *Collected:* 7/12/2013 10:30:00 *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.123	J	0.109	MDL	0.437	PQL	mg/Kg	J	Z, Q, E

Sample ID: SL-580-SA8-SB-0.0-0.5 *Collected:* 7/12/2013 10:30:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
THALLIUM	0.364		0.0328	MDL	0.219	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: PH066 **Laboratory: LL**

EDD Filename: PrepPH066_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-580-SA8-SB-10.5-11.5 *Collected:* 7/12/2013 11:00:00 *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	20.4		0.0709	MDL	0.417	PQL	mg/Kg	J	Q

Sample ID: SL-580-SA8-SB-10.5-11.5 *Collected:* 7/12/2013 11:00:00 *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.105	J	0.104	MDL	0.417	PQL	mg/Kg	J	Z, Q, E

Sample ID: SL-580-SA8-SB-10.5-11.5 *Collected:* 7/12/2013 11:00:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
THALLIUM	0.320		0.0313	MDL	0.209	PQL	mg/Kg	J	Q

Sample ID: SL-580-SA8-SB-4.0-5.0 *Collected:* 7/12/2013 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
STRONTIUM	32.9		0.0715	MDL	0.421	PQL	mg/Kg	J	Q

Sample ID: SL-580-SA8-SB-4.0-5.0 *Collected:* 7/12/2013 10:45:00 *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.247	J	0.105	MDL	0.421	PQL	mg/Kg	J	Z, Q, E

Sample ID: SL-580-SA8-SB-4.0-5.0 *Collected:* 7/12/2013 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	0.0404	J	0.0273	MDL	0.210	PQL	mg/Kg	J	Z, Q
THALLIUM	0.441		0.0316	MDL	0.210	PQL	mg/Kg	J	Q

Sample ID: SL-581-SA8-SB-0.0-0.5 *Collected:* 7/12/2013 12:40:00 *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	28.7		0.0708	MDL	0.416	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: PH066 **Laboratory: LL**

EDD Filename: PrepPH066_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-581-SA8-SB-0.0-0.5 *Collected:* 7/12/2013 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	0.207	J	0.104	MDL	0.416	PQL	mg/Kg	J	Z, Q, E

Sample ID: SL-581-SA8-SB-0.0-0.5 *Collected:* 7/12/2013 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	0.0503	J	0.0271	MDL	0.208	PQL	mg/Kg	J	Z, Q
THALLIUM	0.457		0.0312	MDL	0.208	PQL	mg/Kg	J	Q

Sample ID: SL-581-SA8-SB-4.5-5.5 *Collected:* 7/12/2013 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	15.6		0.0667	MDL	0.392	PQL	mg/Kg	J	Q

Sample ID: SL-581-SA8-SB-4.5-5.5 *Collected:* 7/12/2013 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	0.392	U	0.0981	MDL	0.392	PQL	mg/Kg	UJ	E

Sample ID: SL-581-SA8-SB-4.5-5.5 *Collected:* 7/12/2013 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
THALLIUM	0.298		0.0294	MDL	0.196	PQL	mg/Kg	J	Q

Sample ID: SL-587-SA8-SB-0.0-0.5 *Collected:* 7/12/2013 1:30:00 *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	17.8		0.0659	MDL	0.388	PQL	mg/Kg	J	Q

Sample ID: SL-587-SA8-SB-0.0-0.5 *Collected:* 7/12/2013 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
SELENIUM	0.107	J	0.0969	MDL	0.388	PQL	mg/Kg	J	Z, 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: PH066 **Laboratory: LL**

EDD Filename: PrepPH066_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-587-SA8-SB-0.0-0.5 *Collected:* 7/12/2013 1:30:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
THALLIUM	0.285		0.0291	MDL	0.194	PQL	mg/Kg	J	Q

Sample ID: SL-587-SA8-SB-6.5-7.5 *Collected:* 7/12/2013 1:40:00 *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	17.3		0.0676	MDL	0.398	PQL	mg/Kg	J	Q

Sample ID: SL-587-SA8-SB-6.5-7.5 *Collected:* 7/12/2013 1:40:00 *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.398	U	0.0994	MDL	0.398	PQL	mg/Kg	UJ	E

Sample ID: SL-587-SA8-SB-6.5-7.5 *Collected:* 7/12/2013 1:40:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0650	J	0.0259	MDL	0.199	PQL	mg/Kg	J	Z, Q
THALLIUM	0.269		0.0298	MDL	0.199	PQL	mg/Kg	J	Q

Sample ID: SL-878-SA8-SB-4.0-5.0 *Collected:* 7/12/2013 9:30:00 *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	34.1		0.0731	MDL	0.430	PQL	mg/Kg	J	Q

Sample ID: SL-878-SA8-SB-4.0-5.0 *Collected:* 7/12/2013 9:30:00 *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.326	J	0.107	MDL	0.430	PQL	mg/Kg	J	Z, Q, E

Sample ID: SL-878-SA8-SB-4.0-5.0 *Collected:* 7/12/2013 9:30:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0645	J	0.0279	MDL	0.215	PQL	mg/Kg	J	Z, Q
THALLIUM	0.588		0.0322	MDL	0.215	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: PH066 **Laboratory: LL**

EDD Filename: PrepPH066_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix:** SO

Sample ID: SL-578-SA8-SB-0.0-0.5 ***Collected:*** 7/12/2013 8:35:00 ***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	1.41	JB	0.0497	MDL	5.30	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.194	JB	0.0163	MDL	5.30	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0406	JBQ	0.0247	MDL	5.30	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0256	JB	0.0153	MDL	5.30	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0938	JQ	0.0307	MDL	5.30	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0418	JBQ	0.0136	MDL	5.30	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.131	J	0.0329	MDL	5.30	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.168	J	0.0161	MDL	5.30	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.0515	JBQ	0.0204	MDL	5.30	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0272	JBQ	0.0139	MDL	5.30	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0735	JQ	0.0197	MDL	5.30	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.0326	JQ	0.0325	MDL	1.06	PQL	ng/Kg	J	Z
OCDF	0.478	J	0.0359	MDL	10.6	PQL	ng/Kg	J	Z

Sample ID: SL-578-SA8-SB-4.0-5.0 ***Collected:*** 7/12/2013 9:15:00 ***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	1.41	JB	0.0528	MDL	5.49	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.204	JBQ	0.0880	MDL	5.49	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.0838	J	0.0657	MDL	5.49	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.0311	JBQ	0.0296	MDL	5.49	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.520	JQ	0.0699	MDL	5.49	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0590	JBQ	0.0279	MDL	5.49	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.800	J	0.0635	MDL	5.49	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.901	J	0.0334	MDL	5.49	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.127	JBQ	0.0372	MDL	5.49	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0870	JB	0.0273	MDL	5.49	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.131	JQ	0.0331	MDL	5.49	PQL	ng/Kg	J	Z
OCDF	0.414	J	0.0456	MDL	11.0	PQL	ng/Kg	J	Z

Sample ID: SL-578-SA8-SB-9.0-10.0 ***Collected:*** 7/12/2013 9:45:00 ***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	0.163	JBQ	0.0270	MDL	5.05	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0450	JBQ	0.0120	MDL	5.05	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: PH066 **Laboratory: LL**

EDD Filename: PrepPH066_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix:** SO

Sample ID: SL-578-SA8-SB-9.0-10.0 ***Collected:*** 7/12/2013 9:45:00 ***Analysis Type:*** RES ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,7,8,9-HPCDF	0.0234	JBQ	0.0182	MDL	5.05	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0298	JB	0.00993	MDL	5.05	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0353	JQ	0.0206	MDL	5.05	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.0288	JQ	0.0109	MDL	5.05	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.0281	JB	0.0168	MDL	5.05	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0155	JQ	0.0151	MDL	5.05	PQL	ng/Kg	J	Z
OCDD	0.988	JBQ	0.0254	MDL	10.1	PQL	ng/Kg	U	B
OCDF	0.0542	JQ	0.0261	MDL	10.1	PQL	ng/Kg	J	Z

Sample ID: SL-580-SA8-SB-0.0-0.5 ***Collected:*** 7/12/2013 10:30:00 ***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	2.09	JB	0.0439	MDL	5.43	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.123	JBQ	0.0110	MDL	5.43	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.100	JQ	0.0295	MDL	5.43	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0390	JBQ	0.0164	MDL	5.43	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.144	JQ	0.0281	MDL	5.43	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.216	J	0.0191	MDL	5.43	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.0781	JBQ	0.0192	MDL	5.43	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0200	JBQ	0.0162	MDL	5.43	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0531	JQ	0.0178	MDL	5.43	PQL	ng/Kg	J	Z
OCDF	0.300	JQ	0.0360	MDL	10.9	PQL	ng/Kg	J	Z

Sample ID: SL-580-SA8-SB-10.5-11.5 ***Collected:*** 7/12/2013 11:00:00 ***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	0.316	JB	0.0399	MDL	5.00	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.0890	JBQ	0.0130	MDL	5.00	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0340	JBQ	0.0187	MDL	5.00	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0653	JQ	0.0264	MDL	5.00	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.122	JB	0.0141	MDL	5.00	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.115	JQ	0.0283	MDL	5.00	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.111	JBQ	0.0143	MDL	5.00	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0783	JQ	0.0277	MDL	5.00	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.0682	J	0.0161	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: PH066 **Laboratory: LL**

EDD Filename: PrepPH066_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix:** SO

Sample ID: SL-580-SA8-SB-10.5-11.5 ***Collected:*** 7/12/2013 11:00:00 ***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-PECDD	0.198	J	0.0511	MDL	5.00	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.167	JB	0.0230	MDL	5.00	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0612	JBQ	0.0143	MDL	5.00	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.230	JQ	0.0213	MDL	5.00	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.0524	JQ	0.0310	MDL	1.00	PQL	ng/Kg	J	Z
OCDD	2.19	JB	0.0426	MDL	10.0	PQL	ng/Kg	J	Z
OCDF	0.136	JQ	0.0437	MDL	10.0	PQL	ng/Kg	J	Z

Sample ID: SL-580-SA8-SB-4.0-5.0 ***Collected:*** 7/12/2013 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	0.560	JBQ	0.0272	MDL	5.29	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.0549	JBQ	0.0105	MDL	5.29	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0349	JBQ	0.0119	MDL	5.29	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0489	J	0.0257	MDL	5.29	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.0745	JB	0.0137	MDL	5.29	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.332	JQ	0.0269	MDL	5.29	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0749	JBQ	0.0144	MDL	5.29	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.473	J	0.0250	MDL	5.29	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.705	J	0.0146	MDL	5.29	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.0910	JQ	0.0397	MDL	5.29	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.223	JBQ	0.0208	MDL	5.29	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0519	JBQ	0.0135	MDL	5.29	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.137	JQ	0.0180	MDL	5.29	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.0295	JQ	0.0275	MDL	1.06	PQL	ng/Kg	J	Z
OCDD	5.04	JB	0.0222	MDL	10.6	PQL	ng/Kg	J	Z
OCDF	0.195	JQ	0.0216	MDL	10.6	PQL	ng/Kg	J	Z

Sample ID: SL-581-SA8-SB-0.0-0.5 ***Collected:*** 7/12/2013 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	1.63	JB	0.0371	MDL	5.27	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.345	JB	0.0126	MDL	5.27	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0554	JB	0.0254	MDL	5.27	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0682	JQ	0.0309	MDL	5.27	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: PH066 **Laboratory: LL**

EDD Filename: PrepPH066_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix:** SO

Sample ID: SL-581-SA8-SB-0.0-0.5 ***Collected:*** 7/12/2013 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
1,2,3,4,7,8-HXCDF	0.101	JBQ	0.0176	MDL	5.27	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.758	J	0.0335	MDL	5.27	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.120	JBQ	0.0155	MDL	5.27	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	1.02	J	0.0315	MDL	5.27	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	1.36	J	0.0210	MDL	5.27	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.147	JQ	0.0462	MDL	5.27	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.495	JB	0.0191	MDL	5.27	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.102	JBQ	0.0173	MDL	5.27	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.145	JQ	0.0210	MDL	5.27	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.0438	J	0.0259	MDL	1.05	PQL	ng/Kg	J	Z
OCDF	0.720	J	0.0387	MDL	10.5	PQL	ng/Kg	J	Z

Sample ID: SL-581-SA8-SB-4.5-5.5 ***Collected:*** 7/12/2013 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	0.0525	JB	0.0270	MDL	4.91	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0193	JBQ	0.00968	MDL	4.91	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0482	JBQ	0.0196	MDL	4.91	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0516	JBQ	0.0113	MDL	4.91	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0291	JB	0.0103	MDL	4.91	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0290	JQ	0.0219	MDL	4.91	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.0210	JQ	0.0157	MDL	4.91	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.0469	JQ	0.0444	MDL	4.91	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.0203	JBQ	0.0112	MDL	4.91	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0294	JQ	0.0174	MDL	4.91	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.0283	JQ	0.0279	MDL	0.983	PQL	ng/Kg	J	Z
OCDD	0.180	JBQ	0.0314	MDL	9.83	PQL	ng/Kg	U	B
OCDF	0.0513	JQ	0.0384	MDL	9.83	PQL	ng/Kg	J	Z

Sample ID: SL-587-SA8-SB-0.0-0.5 ***Collected:*** 7/12/2013 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-HPCDD	1.88	JB	0.0447	MDL	4.89	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.209	JBQ	0.0123	MDL	4.89	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0386	JBQ	0.0215	MDL	4.89	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: PH066 **Laboratory: LL**

EDD Filename: PrepPH066_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix:** SO

Sample ID: SL-587-SA8-SB-0.0-0.5 ***Collected:*** 7/12/2013 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
1,2,3,4,7,8-HXCDF	0.0163	JBQ	0.0156	MDL	4.89	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.352	JQ	0.0465	MDL	4.89	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0670	JB	0.0149	MDL	4.89	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.556	J	0.0456	MDL	4.89	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.374	JQ	0.0183	MDL	4.89	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.0615	JQ	0.0553	MDL	4.89	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.114	JB	0.0229	MDL	4.89	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0344	JBQ	0.0151	MDL	4.89	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.0401	JQ	0.0389	MDL	0.978	PQL	ng/Kg	J	Z
OCDF	0.372	J	0.0355	MDL	9.78	PQL	ng/Kg	J	Z

Sample ID: SL-587-SA8-SB-6.5-7.5 ***Collected:*** 7/12/2013 1:40:00 ***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	0.0629	JB	0.0277	MDL	4.98	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0255	JBQ	0.00734	MDL	4.98	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0177	JB	0.0147	MDL	4.98	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.00854	JBQ	0.00796	MDL	4.98	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0176	JB	0.00765	MDL	4.98	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0155	JQ	0.0116	MDL	4.98	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.0307	JBQ	0.0146	MDL	4.98	PQL	ng/Kg	U	B
OCDD	0.227	JBQ	0.0241	MDL	9.96	PQL	ng/Kg	U	B
OCDF	0.110	J	0.0365	MDL	9.96	PQL	ng/Kg	J	Z

Sample ID: SL-878-SA8-SB-4.0-5.0 ***Collected:*** 7/12/2013 9:30:00 ***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	0.273	JBQ	0.0362	MDL	5.40	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0814	JBQ	0.0142	MDL	5.40	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0496	JBQ	0.0181	MDL	5.40	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0627	J	0.0405	MDL	5.40	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.0716	JBQ	0.0193	MDL	5.40	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.430	J	0.0413	MDL	5.40	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.114	JBQ	0.0194	MDL	5.40	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.735	J	0.0418	MDL	5.40	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: PH066 **Laboratory: LL**

EDD Filename: PrepPH066_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-878-SA8-SB-4.0-5.0 *Collected:* 7/12/2013 9:30:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,7,8,9-HXCDF	1.06	J	0.0235	MDL	5.40	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.144	JQ	0.0658	MDL	5.40	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.248	JBQ	0.0257	MDL	5.40	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0605	JBQ	0.0193	MDL	5.40	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0415	JQ	0.0249	MDL	5.40	PQL	ng/Kg	J	Z
OCDD	1.52	JB	0.0406	MDL	10.8	PQL	ng/Kg	J	Z
OCDF	0.147	J	0.0349	MDL	10.8	PQL	ng/Kg	J	Z

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: SL-578-SA8-SB-4.0-5.0 *Collected:* 7/12/2013 9:15:00 *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)	5.7		2.2	MDL	5.6	PQL	mg/Kg	J	Q, Q
EFH (C30-C40)	28		4.5	MDL	11	PQL	mg/Kg	J	Q

Sample ID: SL-578-SA8-SB-9.0-10.0 *Collected:* 7/12/2013 9:45:00 *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)	5.0	J	2.1	MDL	5.2	PQL	mg/Kg	J	Z

Sample ID: SL-587-SA8-SB-0.0-0.5 *Collected:* 7/12/2013 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 (C21-C30)	2.8	J	2.0	MDL	5.1	PQL	mg/Kg	J	Z
EFH (C30-C40)	6.6	J	4.1	MDL	10	PQL	mg/Kg	J	Z

Sample ID: SL-587-SA8-SB-6.5-7.5 *Collected:* 7/12/2013 1:40:00 *Analysis Type:* REA *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C30-C40)	4.6	J	4.1	MDL	10	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: PH066 **Laboratory: LL**

EDD Filename: PrepPH066_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 8270D **Matrix: SO**

Sample ID: SL-578-SA8-SB-0.0-0.5 *Collected:* 7/12/2013 8:35:00 *Analysis Type:* RES-ACID *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DICHLOROPHENOL	36	U	18	MDL	36	PQL	ug/Kg	UJ	L

Sample ID: SL-578-SA8-SB-4.0-5.0 *Collected:* 7/12/2013 9:15:00 *Analysis Type:* RES-ACID *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DICHLOROPHENOL	38	U	19	MDL	38	PQL	ug/Kg	UJ	L
BENZIDINE	1900	U	790	MDL	1900	PQL	ug/Kg	R	Q
BENZO(A)ANTHRACENE	8	J	4	MDL	19	PQL	ug/Kg	J	Z
CHRYSENE	9	J	4	MDL	19	PQL	ug/Kg	J	Z
FLUORANTHENE	8	J	4	MDL	19	PQL	ug/Kg	J	Z
PHENANTHRENE	5	J	4	MDL	19	PQL	ug/Kg	J	Z
PYRENE	11	J	4	MDL	19	PQL	ug/Kg	J	Z

Sample ID: SL-578-SA8-SB-9.0-10.0 *Collected:* 7/12/2013 9:45:00 *Analysis Type:* RES-ACID *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DICHLOROPHENOL	35	U	18	MDL	35	PQL	ug/Kg	UJ	L

Sample ID: SL-580-SA8-SB-0.0-0.5 *Collected:* 7/12/2013 10:30:00 *Analysis Type:* RES-ACID *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DICHLOROPHENOL	37	U	18	MDL	37	PQL	ug/Kg	UJ	L

Sample ID: SL-580-SA8-SB-10.5-11.5 *Collected:* 7/12/2013 11:00:00 *Analysis Type:* RES-ACID *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DICHLOROPHENOL	35	U	17	MDL	35	PQL	ug/Kg	UJ	L

Sample ID: SL-580-SA8-SB-4.0-5.0 *Collected:* 7/12/2013 10:45:00 *Analysis Type:* RES-ACID *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DICHLOROPHENOL	36	U	18	MDL	36	PQL	ug/Kg	UJ	L
FLUORANTHENE	7	J	4	MDL	18	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: PH066 **Laboratory: LL**

EDD Filename: PrepPH066_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 8270D **Matrix: SO**

Sample ID: SL-878-SA8-SB-4.0-5.0 *Collected:* 7/12/2013 9:30:00 *Analysis Type:* RES-ACID *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DICHLOROPHENOL	38	U	19	MDL	38	PQL	ug/Kg	UJ	L

Method Category: SVOA

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

Sample ID: SL-578-SA8-SB-0.0-0.5 *Collected:* 7/12/2013 8:35:00 *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	0.79	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	9.3	J	6.5	MDL	20	PQL	ug/Kg	J	Z
CHRYSENE	0.71	J	0.36	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: SL-578-SA8-SB-4.0-5.0 *Collected:* 7/12/2013 9:15:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1-METHYLNAPHTHALENE	0.89	J	0.75	MDL	1.9	PQL	ug/Kg	J	Z
2-METHYLNAPHTHALENE	0.92	J	0.75	MDL	1.9	PQL	ug/Kg	J	Z
ANTHRACENE	0.77	J	0.38	MDL	1.9	PQL	ug/Kg	J	Z
BENZO(E)PYRENE	5.0	J	3.8	MDL	19	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	7.8	J	6.8	MDL	20	PQL	ug/Kg	J	Z
DIBENZO(A,H)ANTHRACENE	1.2	J	0.75	MDL	1.9	PQL	ug/Kg	J	Z
NAPHTHALENE	0.78	J	0.75	MDL	1.9	PQL	ug/Kg	U	F

Sample ID: SL-578-SA8-SB-9.0-10.0 *Collected:* 7/12/2013 9:45:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)ANTHRACENE	1.3	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(A)PYRENE	1.7	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(G,H,I)PERYLENE	0.82	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(K)FLUORANTHENE	1.0	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	9.7	J	6.3	MDL	19	PQL	ug/Kg	J	Z
PHENANTHRENE	1.4	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: PH066 **Laboratory: LL**

EDD Filename: PrepPH066_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

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

Sample ID: SL-580-SA8-SB-0.0-0.5 *Collected:* 7/12/2013 10:30:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(G,H,I)PERYLENE	1.5	J	0.74	MDL	1.8	PQL	ug/Kg	J	Z
Di-n-octylphthalate	14	J	6.6	MDL	20	PQL	ug/Kg	J	Z
INDENO(1,2,3-CD)PYRENE	1.0	J	0.74	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: SL-580-SA8-SB-10.5-11.5 *Collected:* 7/12/2013 11:00:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTHRACENE	0.59	J	0.35	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(E)PYRENE	5.3	J	3.5	MDL	18	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	9.6	J	6.3	MDL	19	PQL	ug/Kg	J	Z
DIBENZO(A,H)ANTHRACENE	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-580-SA8-SB-4.0-5.0 *Collected:* 7/12/2013 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
ANTHRACENE	0.46	J	0.36	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(E)PYRENE	4.7	J	3.6	MDL	18	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	7.8	J	6.5	MDL	20	PQL	ug/Kg	J	Z
DIBENZO(A,H)ANTHRACENE	1.0	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: SL-581-SA8-SB-0.0-0.5 *Collected:* 7/12/2013 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
BENZO(B)FLUORANTHENE	0.84	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(K)FLUORANTHENE	0.96	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	7.3	J	6.4	MDL	19	PQL	ug/Kg	J	Z
CHRYSENE	1.3	J	0.36	MDL	1.8	PQL	ug/Kg	J	Z
Di-n-octylphthalate	13	J	6.4	MDL	19	PQL	ug/Kg	J	Z
FLUORANTHENE	0.85	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: SL-581-SA8-SB-4.5-5.5 *Collected:* 7/12/2013 12:50:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHRYSENE	0.44	J	0.34	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: PH066 **Laboratory: LL**

EDD Filename: PrepPH066_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

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

Sample ID: SL-581-SA8-SB-4.5-5.5 *Collected:* 7/12/2013 12:50:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORANTHENE	0.83	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
PHENANTHRENE	0.80	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
PYRENE	0.78	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: SL-878-SA8-SB-4.0-5.0 *Collected:* 7/12/2013 9:30:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)ANTHRACENE	0.88	J	0.75	MDL	1.9	PQL	ug/Kg	J	Z
BENZO(A)PYRENE	1.1	J	0.75	MDL	1.9	PQL	ug/Kg	J	Z
BENZO(K)FLUORANTHENE	1.1	J	0.75	MDL	1.9	PQL	ug/Kg	J	Z
FLUORANTHENE	1.8	J	0.75	MDL	1.9	PQL	ug/Kg	J	Z
NAPHTHALENE	0.78	J	0.75	MDL	1.9	PQL	ug/Kg	U	F
PHENANTHRENE	1.5	J	0.75	MDL	1.9	PQL	ug/Kg	J	Z
PYRENE	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

Data Qualifier Summary

Lab Reporting Batch ID: PH066 **Laboratory: LL**

EDD Filename: PrepPH066_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Reason Code Legend

Reason Code	*Description*
*#	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	Compound Not Spiked in QC
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
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

Enclosure I

EPA Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control
Outlier Reports

PH066

Method Blank Outlier Report

Lab Reporting Batch ID: PH066 **Laboratory: LL**

EDD Filename: PrepPH066_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: **1613B**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK1980B371635	7/19/2013 4:35:00 PM	1,2,3,4,6,7,8-HPCDD	0.0588 ng/Kg	SL-578-SA8-SB-0.0-0.5
		1,2,3,4,6,7,8-HPCDF	0.0270 ng/Kg	SL-578-SA8-SB-4.0-5.0
		1,2,3,4,7,8,9-HPCDF	0.0381 ng/Kg	SL-578-SA8-SB-9.0-10.0
		1,2,3,4,7,8-HXCDF	0.0344 ng/Kg	SL-580-SA8-SB-0.0-0.5
		1,2,3,6,7,8-HXCDF	0.0260 ng/Kg	SL-580-SA8-SB-10.5-11.5
		1,2,3,7,8-PECDF	0.0697 ng/Kg	SL-580-SA8-SB-4.0-5.0
		2,3,4,6,7,8-HXCDF	0.0292 ng/Kg	SL-581-SA8-SB-0.0-0.5
		OCDD	0.262 ng/Kg	SL-581-SA8-SB-4.5-5.5
				SL-587-SA8-SB-0.0-0.5
				SL-587-SA8-SB-6.5-7.5
				SL-878-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-578-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0406 ng/Kg	0.0406U ng/Kg
SL-578-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.0256 ng/Kg	0.0256U ng/Kg
SL-578-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.0418 ng/Kg	0.0418U ng/Kg
SL-578-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.0515 ng/Kg	0.0515U ng/Kg
SL-578-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0272 ng/Kg	0.0272U ng/Kg
SL-578-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.0311 ng/Kg	0.0311U ng/Kg
SL-578-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.0590 ng/Kg	0.0590U ng/Kg
SL-578-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.127 ng/Kg	0.127U ng/Kg
SL-578-SA8-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0870 ng/Kg	0.0870U ng/Kg
SL-578-SA8-SB-9.0-10.0(RES)	1,2,3,4,6,7,8-HPCDD	0.163 ng/Kg	0.163U ng/Kg
SL-578-SA8-SB-9.0-10.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0450 ng/Kg	0.0450U ng/Kg
SL-578-SA8-SB-9.0-10.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0234 ng/Kg	0.0234U ng/Kg
SL-578-SA8-SB-9.0-10.0(RES)	1,2,3,6,7,8-HXCDF	0.0298 ng/Kg	0.0298U ng/Kg
SL-578-SA8-SB-9.0-10.0(RES)	1,2,3,7,8-PECDF	0.0281 ng/Kg	0.0281U ng/Kg
SL-578-SA8-SB-9.0-10.0(RES)	OCDD	0.988 ng/Kg	0.988U ng/Kg
SL-580-SA8-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDF	0.123 ng/Kg	0.123U ng/Kg
SL-580-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.0390 ng/Kg	0.0390U ng/Kg
SL-580-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.0781 ng/Kg	0.0781U ng/Kg
SL-580-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0200 ng/Kg	0.0200U ng/Kg
SL-580-SA8-SB-10.5-11.5(RES)	1,2,3,4,6,7,8-HPCDF	0.0890 ng/Kg	0.0890U ng/Kg
SL-580-SA8-SB-10.5-11.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0340 ng/Kg	0.0340U ng/Kg
SL-580-SA8-SB-10.5-11.5(RES)	1,2,3,4,7,8-HXCDF	0.122 ng/Kg	0.122U ng/Kg
SL-580-SA8-SB-10.5-11.5(RES)	1,2,3,6,7,8-HXCDF	0.111 ng/Kg	0.111U ng/Kg
SL-580-SA8-SB-10.5-11.5(RES)	1,2,3,7,8-PECDF	0.167 ng/Kg	0.167U ng/Kg
SL-580-SA8-SB-10.5-11.5(RES)	2,3,4,6,7,8-HXCDF	0.0612 ng/Kg	0.0612U ng/Kg
SL-580-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0549 ng/Kg	0.0549U ng/Kg
SL-580-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0349 ng/Kg	0.0349U ng/Kg
SL-580-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.0745 ng/Kg	0.0745U ng/Kg
SL-580-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.0749 ng/Kg	0.0749U ng/Kg
SL-580-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.223 ng/Kg	0.223U ng/Kg
SL-580-SA8-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0519 ng/Kg	0.0519U ng/Kg
SL-581-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0554 ng/Kg	0.0554U ng/Kg

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

Method Blank Outlier Report

Lab Reporting Batch ID: PH066 **Laboratory: LL**

EDD Filename: PrepPH066_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples

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-581-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.101 ng/Kg	0.101U ng/Kg
SL-581-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.120 ng/Kg	0.120U ng/Kg
SL-581-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.102 ng/Kg	0.102U ng/Kg
SL-581-SA8-SB-4.5-5.5(RES)	1,2,3,4,6,7,8-HPCDD	0.0525 ng/Kg	0.0525U ng/Kg
SL-581-SA8-SB-4.5-5.5(RES)	1,2,3,4,6,7,8-HPCDF	0.0193 ng/Kg	0.0193U ng/Kg
SL-581-SA8-SB-4.5-5.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0482 ng/Kg	0.0482U ng/Kg
SL-581-SA8-SB-4.5-5.5(RES)	1,2,3,4,7,8-HXCDF	0.0516 ng/Kg	0.0516U ng/Kg
SL-581-SA8-SB-4.5-5.5(RES)	1,2,3,6,7,8-HXCDF	0.0291 ng/Kg	0.0291U ng/Kg
SL-581-SA8-SB-4.5-5.5(RES)	2,3,4,6,7,8-HXCDF	0.0203 ng/Kg	0.0203U ng/Kg
SL-581-SA8-SB-4.5-5.5(RES)	OCDD	0.180 ng/Kg	0.180U ng/Kg
SL-587-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0386 ng/Kg	0.0386U ng/Kg
SL-587-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.0163 ng/Kg	0.0163U ng/Kg
SL-587-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.0670 ng/Kg	0.0670U ng/Kg
SL-587-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.114 ng/Kg	0.114U ng/Kg
SL-587-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0344 ng/Kg	0.0344U ng/Kg
SL-587-SA8-SB-6.5-7.5(RES)	1,2,3,4,6,7,8-HPCDD	0.0629 ng/Kg	0.0629U ng/Kg
SL-587-SA8-SB-6.5-7.5(RES)	1,2,3,4,6,7,8-HPCDF	0.0255 ng/Kg	0.0255U ng/Kg
SL-587-SA8-SB-6.5-7.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0177 ng/Kg	0.0177U ng/Kg
SL-587-SA8-SB-6.5-7.5(RES)	1,2,3,4,7,8-HXCDF	0.00854 ng/Kg	0.00854U ng/Kg
SL-587-SA8-SB-6.5-7.5(RES)	1,2,3,6,7,8-HXCDF	0.0176 ng/Kg	0.0176U ng/Kg
SL-587-SA8-SB-6.5-7.5(RES)	1,2,3,7,8-PECDF	0.0307 ng/Kg	0.0307U ng/Kg
SL-587-SA8-SB-6.5-7.5(RES)	OCDD	0.227 ng/Kg	0.227U ng/Kg
SL-878-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDD	0.273 ng/Kg	0.273U ng/Kg
SL-878-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0814 ng/Kg	0.0814U ng/Kg
SL-878-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0496 ng/Kg	0.0496U ng/Kg
SL-878-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.0716 ng/Kg	0.0716U ng/Kg
SL-878-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.114 ng/Kg	0.114U ng/Kg
SL-878-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.248 ng/Kg	0.248U ng/Kg
SL-878-SA8-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0605 ng/Kg	0.0605U ng/Kg

Method Blank Outlier Report

Lab Reporting Batch ID: PH066 **Laboratory: LL**

EDD Filename: PrepPH066_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 6010C
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P19937AB221015	7/24/2013 10:15:00 AM	CALCIUM TIN ZINC	6.97 mg/Kg 1.67 mg/Kg 0.455 mg/Kg	SL-578-SA8-SB-0.0-0.5 SL-578-SA8-SB-4.0-5.0 SL-578-SA8-SB-9.0-10.0 SL-580-SA8-SB-0.0-0.5 SL-580-SA8-SB-10.5-11.5 SL-580-SA8-SB-4.0-5.0 SL-581-SA8-SB-0.0-0.5 SL-581-SA8-SB-4.5-5.5 SL-587-SA8-SB-0.0-0.5 SL-587-SA8-SB-6.5-7.5 SL-878-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-578-SA8-SB-0.0-0.5(RES)	TIN	3.15 mg/Kg	3.15U mg/Kg
SL-578-SA8-SB-4.0-5.0(RES)	TIN	3.04 mg/Kg	3.04U mg/Kg
SL-578-SA8-SB-9.0-10.0(RES)	TIN	3.04 mg/Kg	3.04U mg/Kg
SL-580-SA8-SB-0.0-0.5(RES)	TIN	3.08 mg/Kg	3.08U mg/Kg
SL-580-SA8-SB-10.5-11.5(RES)	TIN	2.85 mg/Kg	2.85U mg/Kg
SL-580-SA8-SB-4.0-5.0(RES)	TIN	2.94 mg/Kg	2.94U mg/Kg
SL-581-SA8-SB-0.0-0.5(RES)	TIN	2.85 mg/Kg	2.85U mg/Kg
SL-581-SA8-SB-4.5-5.5(RES)	TIN	2.97 mg/Kg	2.97U mg/Kg
SL-587-SA8-SB-0.0-0.5(RES)	TIN	2.50 mg/Kg	2.50U mg/Kg
SL-587-SA8-SB-6.5-7.5(RES)	TIN	2.70 mg/Kg	2.70U mg/Kg
SL-878-SA8-SB-4.0-5.0(RES)	TIN	3.10 mg/Kg	3.10U mg/Kg

Field Blank Outlier Report

Lab Reporting Batch ID: PH066 **Laboratory: LL**

EDD Filename: PH066_v1. **eQAPP Name: CDM_SSFL_130808_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-578-SA8-SB-0.0-0.5 SL-578-SA8-SB-4.0-5.0 SL-578-SA8-SB-9.0-10.0 SL-580-SA8-SB-0.0-0.5 SL-580-SA8-SB-10.5-11.5 SL-580-SA8-SB-4.0-5.0 SL-581-SA8-SB-0.0-0.5 SL-581-SA8-SB-4.5-5.5 SL-587-SA8-SB-0.0-0.5 SL-587-SA8-SB-6.5-7.5 SL-878-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-578-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.308 mg/Kg	0.308U mg/Kg
SL-578-SA8-SB-4.0-5.0(RES)	MOLYBDENUM	0.416 mg/Kg	0.416U mg/Kg
SL-580-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.238 mg/Kg	0.238U mg/Kg
SL-580-SA8-SB-10.5-11.5(RES)	MOLYBDENUM	1.08 mg/Kg	1.08U mg/Kg
SL-580-SA8-SB-4.0-5.0(RES)	MOLYBDENUM	0.332 mg/Kg	0.332U mg/Kg
SL-581-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.314 mg/Kg	0.314U mg/Kg
SL-581-SA8-SB-4.5-5.5(RES)	MOLYBDENUM	0.204 mg/Kg	0.204U mg/Kg
SL-587-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.453 mg/Kg	0.453U mg/Kg
SL-878-SA8-SB-4.0-5.0(RES)	MOLYBDENUM	0.229 mg/Kg	0.229U 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-578-SA8-SB-0.0-0.5 SL-578-SA8-SB-4.0-5.0 SL-578-SA8-SB-9.0-10.0 SL-580-SA8-SB-0.0-0.5 SL-580-SA8-SB-10.5-11.5 SL-580-SA8-SB-4.0-5.0 SL-581-SA8-SB-0.0-0.5 SL-581-SA8-SB-4.5-5.5 SL-587-SA8-SB-0.0-0.5 SL-587-SA8-SB-6.5-7.5 SL-878-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-578-SA8-SB-4.0-5.0(RES)	NAPHTHALENE	0.78 ug/Kg	1.9U ug/Kg
SL-878-SA8-SB-4.0-5.0(RES)	NAPHTHALENE	0.78 ug/Kg	1.9U ug/Kg

Equipment Rinsate Blank Outlier Report

Lab Reporting Batch ID: PH066 **Laboratory: LL**

EDD Filename: PH066_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: **6010C**
Matrix: **SO**

Equipment Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
EB1-071013(REA2)	7/10/2013 3:00:00 PM	COPPER MOLYBDENUM	0.0031 mg/L 0.0035 mg/L	SL-578-SA8-SB-0.0-0.5 SL-578-SA8-SB-4.0-5.0 SL-578-SA8-SB-9.0-10.0 SL-580-SA8-SB-0.0-0.5 SL-580-SA8-SB-10.5-11.5 SL-580-SA8-SB-4.0-5.0 SL-581-SA8-SB-0.0-0.5 SL-581-SA8-SB-4.5-5.5 SL-587-SA8-SB-0.0-0.5 SL-587-SA8-SB-6.5-7.5 SL-878-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-578-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.308 mg/Kg	0.308U mg/Kg
SL-578-SA8-SB-4.0-5.0(RES)	MOLYBDENUM	0.416 mg/Kg	0.416U mg/Kg
SL-580-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.238 mg/Kg	0.238U mg/Kg
SL-580-SA8-SB-10.5-11.5(RES)	MOLYBDENUM	1.08 mg/Kg	1.08U mg/Kg
SL-580-SA8-SB-4.0-5.0(RES)	MOLYBDENUM	0.332 mg/Kg	0.332U mg/Kg
SL-581-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.314 mg/Kg	0.314U mg/Kg
SL-581-SA8-SB-4.5-5.5(RES)	MOLYBDENUM	0.204 mg/Kg	0.204U mg/Kg
SL-587-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.453 mg/Kg	0.453U mg/Kg
SL-878-SA8-SB-4.0-5.0(RES)	MOLYBDENUM	0.229 mg/Kg	0.229U mg/Kg

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH066 **Laboratory: LL**

EDD Filename: PH066_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 8015M
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-578-SA8-SB-4.0-5.0MS SL-578-SA8-SB-4.0-5.0MSD (SL-578-SA8-SB-4.0-5.0)	EFH (C15-C20) EFH (C21-C30)	154 273	125 -	49.00-123.00 49.00-123.00	21 (20.00) 52 (20.00)	EFH (C15-C20) EFH (C21-C30)	J (all detects)
SL-578-SA8-SB-4.0-5.0MS SL-578-SA8-SB-4.0-5.0MSD (SL-578-SA8-SB-4.0-5.0)	EFH (C30-C40)	364	26	49.00-123.00	49 (20.00)	EFH (C30-C40)	J(all detects) No Qual %R, >4X

Method: 8270D SIM
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-578-SA8-SB-4.0-5.0MS SL-578-SA8-SB-4.0-5.0MSD (SL-578-SA8-SB-4.0-5.0)	Diethylphthalate Di-n-octylphthalate FLUORANTHENE PYRENE	- 172 - -	135 178 - -	76.00-127.00 52.00-162.00 47.00-135.00 26.00-143.00	- - 33 (30.00) 33 (30.00)	Diethylphthalate Di-n-octylphthalate FLUORANTHENE PYRENE	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-578-SA8-SB-4.0-5.0MS SL-578-SA8-SB-4.0-5.0MSD (SL-578-SA8-SB-4.0-5.0)	BENZIDINE	0	0	35.00-141.00	-	BENZIDINE	J(all detects) R(all non-detects)

Method: 6010C
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-578-SA8-SB-4.0-5.0MS	ALUMINUM	4971	6312	75.00-125.00	-	ALUMINUM	
(TOT)	CALCIUM	162	200	75.00-125.00	-	CALCIUM	
SL-578-SA8-SB-4.0-5.0MSD	CHROMIUM	135	145	75.00-125.00	-	CHROMIUM	
(TOT)	IRON	3655	5430	75.00-125.00	-	IRON	
(SL-578-SA8-SB-0.0-0.5	MAGNESIUM	556	709	75.00-125.00	-	MAGNESIUM	
SL -578-SA8-SB-4.0-5.0	MANGANESE	126	196	75.00-125.00	-	MANGANESE	J(all detects)
SL -578-SA8-SB-9.0-10.0	POTASSIUM	151	-	75.00-125.00	-	POTASSIUM	
SL -580-SA8-SB-0.0-0.5	TITANIUM	502	480	75.00-125.00	-	TITANIUM	Al, Ca, Fe, Mg, Mn, K, Ti
SL -580-SA8-SB-10.5-11.5	VANADIUM	128	136	75.00-125.00	-	VANADIUM	No Qual, >4X
SL -580-SA8-SB-4.0-5.0							
SL -581-SA8-SB-0.0-0.5							
SL -581-SA8-SB-4.5-5.5							
SL -587-SA8-SB-0.0-0.5							
SL -587-SA8-SB-6.5-7.5							
SL -878-SA8-SB-4.0-5.0)							

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH066 **Laboratory: LL**

EDD Filename: PH066_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 6010C
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-578-SA8-SB-4.0-5.0MS (TOT) **SL-578-SA8-SB-4.0-5.0MSD (TOT)** (SL-578-SA8-SB-0.0-0.5 SL -578-SA8-SB-4.0-5.0 SL -578-SA8-SB-9.0-10.0 SL -580-SA8-SB-0.0-0.5 SL -580-SA8-SB-10.5-11.5 SL -580-SA8-SB-4.0-5.0 SL -581-SA8-SB-0.0-0.5 SL -581-SA8-SB-4.5-5.5 SL -587-SA8-SB-0.0-0.5 SL -587-SA8-SB-6.5-7.5 SL -878-SA8-SB-4.0-5.0)	ANTIMONY	35	29	75.00-125.00	21 (20.00)	ANTIMONY	J(all detects) UJ(all non-detects) PS=102%
SL-578-SA8-SB-4.0-5.0MS (TOT) **SL-578-SA8-SB-4.0-5.0MSD (TOT)** (SL-578-SA8-SB-0.0-0.5 SL -578-SA8-SB-4.0-5.0 SL -578-SA8-SB-9.0-10.0 SL -580-SA8-SB-0.0-0.5 SL -580-SA8-SB-10.5-11.5 SL -580-SA8-SB-4.0-5.0 SL -581-SA8-SB-0.0-0.5 SL -581-SA8-SB-4.5-5.5 SL -587-SA8-SB-0.0-0.5 SL -587-SA8-SB-6.5-7.5 SL -878-SA8-SB-4.0-5.0)	PHOSPHORUS	67	49	75.00-125.00	-	PHOSPHORUS	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-578-SA8-SB-4.0-5.0MS (TOT) **SL-578-SA8-SB-4.0-5.0MSD (TOT)** (SL-578-SA8-SB-0.0-0.5 SL -578-SA8-SB-4.0-5.0 SL -578-SA8-SB-9.0-10.0 SL -580-SA8-SB-0.0-0.5 SL -580-SA8-SB-10.5-11.5 SL -580-SA8-SB-4.0-5.0 SL -581-SA8-SB-0.0-0.5 SL -581-SA8-SB-4.5-5.5 SL -587-SA8-SB-0.0-0.5 SL -587-SA8-SB-6.5-7.5 SL -878-SA8-SB-4.0-5.0)	SILVER STRONTIUM THALLIUM	129 - 145	137 132 170	75.00-125.00 75.00-125.00 75.00-125.00	- - -	SILVER STRONTIUM THALLIUM	J(all detects)

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH066 **Laboratory: LL**

EDD Filename: PH066_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: **6020A**
Matrix: **SO**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
SL-578-SA8-SB-4.0-5.0MSD (TOT) (SL-578-SA8-SB-0.0-0.5 SL -578-SA8-SB-4.0-5.0 SL -578-SA8-SB-9.0-10.0 SL -580-SA8-SB-0.0-0.5 SL -580-SA8-SB-10.5-11.5 SL -580-SA8-SB-4.0-5.0 SL -581-SA8-SB-0.0-0.5 SL -581-SA8-SB-4.5-5.5 SL -587-SA8-SB-0.0-0.5 SL -587-SA8-SB-6.5-7.5 SL -878-SA8-SB-4.0-5.0)	SELENIUM	-	138	75.00-125.00	21 (20.00)	SELENIUM	J(all detects) UJ(all non-detects)

Lab Duplicate Outlier Report

Lab Reporting Batch ID: PH066 **Laboratory: LL**

EDD Filename: PH066_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 6010C
Matrix: SO

QC Sample ID (Associated Sample ID)	Analyte	Sample RPD	eQAPP RPD	Flag
SL-578-SA8-SB-4.0-5.0DUP (TOT) (SL-578-SA8-SB-0.0-0.5 SL -578-SA8-SB-4.0-5.0 SL -578-SA8-SB-9.0-10.0 SL -580-SA8-SB-0.0-0.5 SL -580-SA8-SB-10.5-11.5 SL -580-SA8-SB-4.0-5.0 SL -581-SA8-SB-0.0-0.5 SL -581-SA8-SB-4.5-5.5 SL -587-SA8-SB-0.0-0.5 SL -587-SA8-SB-6.5-7.5 SL -878-SA8-SB-4.0-5.0)	MANGANESE MOLYBDENUM	40 31	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-578-SA8-SB-4.0-5.0DUP (TOT) (SL-578-SA8-SB-0.0-0.5 SL -578-SA8-SB-4.0-5.0 SL -578-SA8-SB-9.0-10.0 SL -580-SA8-SB-0.0-0.5 SL -580-SA8-SB-10.5-11.5 SL -580-SA8-SB-4.0-5.0 SL -581-SA8-SB-0.0-0.5 SL -581-SA8-SB-4.5-5.5 SL -587-SA8-SB-0.0-0.5 SL -587-SA8-SB-6.5-7.5 SL -878-SA8-SB-4.0-5.0)	SILVER	38	20.00	No Qual, OK by difference

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH066 **Laboratory: LL**

EDD Filename: PrepPH066_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 8270D SIM
Matrix: SO

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
P8LBLCSQ260943 (SL-578-SA8-SB-0.0-0.5 SL -578-SA8-SB-4.0-5.0 SL -578-SA8-SB-9.0-10.0 SL -580-SA8-SB-0.0-0.5 SL -580-SA8-SB-10.5-11.5 SL -580-SA8-SB-4.0-5.0 SL -581-SA8-SB-0.0-0.5 SL -581-SA8-SB-4.5-5.5 SL -587-SA8-SB-0.0-0.5 SL -587-SA8-SB-6.5-7.5 SL -878-SA8-SB-4.0-5.0)	Diethylphthalate	130	-	68.00-125.00	-	Diethylphthalate	J (all detects)

Method: 8270D
Matrix: SO

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
P8LDLCSQ260031 (SL-578-SA8-SB-0.0-0.5 SL -578-SA8-SB-4.0-5.0 SL -578-SA8-SB-9.0-10.0 SL -580-SA8-SB-0.0-0.5 SL -580-SA8-SB-10.5-11.5 SL -580-SA8-SB-4.0-5.0 SL -878-SA8-SB-4.0-5.0)	1,2,4-TRICHLOROBENZENE	110	-	73.00-108.00	-	1,2,4-TRICHLOROBENZENE	J(all detects)
	1,2-Diphenylhydrazine/Azobenzene	118	-	77.00-111.00	-	1,2-Diphenylhydrazine/Azobenzene	

Field Duplicate RPD Report

Lab Reporting Batch ID: PH066 **Laboratory: LL**

EDD Filename: PH066_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 160.3M
Matrix: SO

Analyte	Concentration (%)		Sample RPD	eQAPP RPD	Flag
	SL-578-SA8-SB-4.0-5.0	SL-878-SA8-SB-4.0-5.0			
MOISTURE	11.6	11.4	2		No Qualifiers Applied

Method: 1613B
Matrix: SO

Analyte	Concentration (ng/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-578-SA8-SB-4.0-5.0	SL-878-SA8-SB-4.0-5.0			
1,2,3,4,7,8-HxCDD	0.0838	0.0627	29	50.00	
1,2,3,6,7,8-HXCDD	0.520	0.430	19	50.00	
1,2,3,7,8,9-HXCDD	0.800	0.735	8	50.00	
1,2,3,7,8,9-HXCDF	0.901	1.06	16	50.00	No Qualifiers Applied
2,3,4,6,7,8-HXCDF	0.0870	0.0605	36	50.00	
1,2,3,4,6,7,8-HPCDD	1.41	0.273	135	50.00	
1,2,3,4,6,7,8-HPCDF	0.204	0.0814	86	50.00	
1,2,3,4,7,8,9-HPCDF	5.49 U	0.0496	200	50.00	
1,2,3,4,7,8-HXCDF	0.0311	0.0716	79	50.00	
1,2,3,6,7,8-HXCDF	0.0590	0.114	64	50.00	J(all detects)
1,2,3,7,8-PECDD	5.49 U	0.144	200	50.00	UJ(all non-detects)
1,2,3,7,8-PECDF	0.127	0.248	65	50.00	
2,3,4,7,8-PECDF	0.131	0.0415	104	50.00	
OCDD	13.2	1.52	159	50.00	
OCDF	0.414	0.147	95	50.00	

Method: 6010C
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-578-SA8-SB-4.0-5.0 (TOT)	SL-878-SA8-SB-4.0-5.0 (TOT)			
ALUMINUM	25300	31500	22	50.00	
ARSENIC	5.71	6.49	13	50.00	
BARIUM	116	135	15	50.00	
BERYLLIUM	0.830	1.02	21	50.00	
BORON	2.75	3.04	10	50.00	
CADMIUM	0.533	0.408	27	50.00	
CALCIUM	5110	5050	1	50.00	
CHROMIUM	29.7	36.2	20	50.00	
COBALT	8.52	10.1	17	50.00	
COPPER	16.9	17.7	5	50.00	
IRON	27500	32600	17	50.00	
LEAD	8.58	8.91	4	50.00	
LITHIUM	20.5	24.3	17	50.00	No Qualifiers Applied
MAGNESIUM	5560	6350	13	50.00	
MANGANESE	373	524	34	50.00	
NICKEL	17.9	20.8	15	50.00	
PHOSPHORUS	286	242	17	50.00	
POTASSIUM	5200	5300	2	50.00	
SODIUM	214	207	3	50.00	
TIN	3.04	3.10	2	50.00	
TITANIUM	1210	1340	10	50.00	
VANADIUM	55.0	66.8	19	50.00	
ZINC	65.4	70.2	7	50.00	
Zirconium	7.25	7.25	0	50.00	
MOLYBDENUM	0.416	0.229	58	50.00	J(all detects)

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

Field Duplicate RPD Report

Lab Reporting Batch ID: PH066 **Laboratory: LL**

EDD Filename: PH066_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 6020A
Matrix: SO

Analyte	Concentration (mg/Kg) SL-578-SA8-SB-4.0-5.0 (TOT)	Concentration (mg/Kg) SL-878-SA8-SB-4.0-5.0 (TOT)	Sample RPD	eQAPP RPD	Flag
SELENIUM	0.277	0.326	16	50.00	No Qualifiers Applied
SILVER	0.0557	0.0645	15	50.00	
STRONTIUM	33.4	34.1	2	50.00	
THALLIUM	0.402	0.588	38	50.00	

Method: 8015M
Matrix: SO

Analyte	Concentration (mg/Kg) SL-578-SA8-SB-4.0-5.0	Concentration (mg/Kg) SL-878-SA8-SB-4.0-5.0	Sample RPD	eQAPP RPD	Flag
EFH (C21-C30)	5.7	5.6	2	50.00	No Qualifiers Applied
EFH (C30-C40)	28	18	43	50.00	

Method: 8270D SIM
Matrix: SO

Analyte	Concentration (ug/Kg) SL-578-SA8-SB-4.0-5.0	Concentration (ug/Kg) SL-878-SA8-SB-4.0-5.0	Sample RPD	eQAPP RPD	Flag
NAPHTHALENE	0.78	0.78	0	50.00	No Qualifiers Applied
1-METHYLNAPHTHALENE	0.89	1.9 U	200	50.00	J(all detects) UJ(all non-detects)
2-METHYLNAPHTHALENE	0.92	1.9 U	200	50.00	
ANTHRACENE	0.77	1.9 U	200	50.00	
BENZO(A)PYRENE	6.3	1.1	141	50.00	
BENZO(B)FLUORANTHENE	9.9	2.4	122	50.00	
BENZO(E)PYRENE	5.0	19 U	200	50.00	
BENZO(G,H,I)PERYLENE	3.1	1.9 U	200	50.00	
BENZO(K)FLUORANTHENE	4.6	1.1	123	50.00	
BIS(2-ETHYLHEXYL)PHTHALATE	7.8	20 U	200	50.00	
DIBENZO(A,H)ANTHRACENE	1.2	1.9 U	200	50.00	
INDENO(1,2,3-CD)PYRENE	2.2	1.9 U	200	50.00	

Method: 9045M
Matrix: SO

Analyte	Concentration (pH unit) SL-578-SA8-SB-4.0-5.0	Concentration (pH unit) SL-878-SA8-SB-4.0-5.0	Sample RPD	eQAPP RPD	Flag
PH	6.12	5.91	3	50.00	No Qualifiers Applied

Reporting Limit Outliers

Lab Reporting Batch ID: PH066 **Laboratory: LL**

EDD Filename: PH066_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-578-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	1.41	5.30	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.194	5.30	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0406	5.30	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.0256	5.30	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JQ	0.0938	5.30	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0418	5.30	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	J	0.131	5.30	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	J	0.168	5.30	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.0515	5.30	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0272	5.30	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.0735	5.30	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0326	1.06	PQL	ng/Kg	
	OCDF	J	0.478	10.6	PQL	ng/Kg	
SL-578-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JB	1.41	5.49	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.204	5.49	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	J	0.0838	5.49	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0311	5.49	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JQ	0.520	5.49	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0590	5.49	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDD	J	0.800	5.49	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	J	0.901	5.49	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.127	5.49	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.0870	5.49	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.131	5.49	PQL	ng/Kg	
	OCDF	J	0.414	11.0	PQL	ng/Kg	
SL-578-SA8-SB-9.0-10.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.163	5.05	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0450	5.05	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0234	5.05	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.0298	5.05	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JQ	0.0353	5.05	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JQ	0.0288	5.05	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.0281	5.05	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.0155	5.05	PQL	ng/Kg	
	OCDD	JBQ	0.988	10.1	PQL	ng/Kg	
	OCDF	JQ	0.0542	10.1	PQL	ng/Kg	
SL-580-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	2.09	5.43	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.123	5.43	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JQ	0.100	5.43	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0390	5.43	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JQ	0.144	5.43	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	J	0.216	5.43	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.0781	5.43	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0200	5.43	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.0531	5.43	PQL	ng/Kg	
	OCDF	JQ	0.300	10.9	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH066 **Laboratory: LL**

EDD Filename: PH066_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-580-SA8-SB-10.5-11.5	1,2,3,4,6,7,8-HPCDD	JB	0.316	5.00	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0890	5.00	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0340	5.00	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.0653	5.00	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.122	5.00	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JQ	0.115	5.00	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.111	5.00	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JQ	0.0783	5.00	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	J	0.0682	5.00	PQL	ng/Kg	
	1,2,3,7,8-PECDD	J	0.198	5.00	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.167	5.00	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0612	5.00	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.230	5.00	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.0524	1.00	PQL	ng/Kg	
	OCDD	JB	2.19	10.0	PQL	ng/Kg	
	OCDF	JQ	0.136	10.0	PQL	ng/Kg	
SL-580-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.560	5.29	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0549	5.29	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0349	5.29	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	J	0.0489	5.29	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.0745	5.29	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JQ	0.332	5.29	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0749	5.29	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	J	0.473	5.29	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	J	0.705	5.29	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.0910	5.29	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.223	5.29	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0519	5.29	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.137	5.29	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.0295	1.06	PQL	ng/Kg	
	OCDD	JB	5.04	10.6	PQL	ng/Kg	
	OCDF	JQ	0.195	10.6	PQL	ng/Kg	
SL-581-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	1.63	5.27	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JB	0.345	5.27	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.0554	5.27	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.0682	5.27	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.101	5.27	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	J	0.758	5.27	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.120	5.27	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	J	1.02	5.27	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	J	1.36	5.27	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.147	5.27	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.495	5.27	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.102	5.27	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.145	5.27	PQL	ng/Kg	
	2,3,7,8-TCDD	J	0.0438	1.05	PQL	ng/Kg	
	OCDF	J	0.720	10.5	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH066 **Laboratory: LL**

EDD Filename: PH066_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-581-SA8-SB-4.5-5.5	1,2,3,4,6,7,8-HPCDD	JB	0.0525	4.91	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0193	4.91	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0482	4.91	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0516	4.91	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.0291	4.91	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JQ	0.0290	4.91	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JQ	0.0210	4.91	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JQ	0.0469	4.91	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0203	4.91	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.0294	4.91	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0283	0.983	PQL	ng/Kg	
	OCDD	JBQ	0.180	9.83	PQL	ng/Kg	
	OCDF	JQ	0.0513	9.83	PQL	ng/Kg	
SL-587-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	1.88	4.89	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.209	4.89	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0386	4.89	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0163	4.89	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JQ	0.352	4.89	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.0670	4.89	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	J	0.556	4.89	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JQ	0.374	4.89	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.0615	4.89	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.114	4.89	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0344	4.89	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0401	0.978	PQL	ng/Kg	
	OCDF	J	0.372	9.78	PQL	ng/Kg	
SL-587-SA8-SB-6.5-7.5	1,2,3,4,6,7,8-HPCDD	JB	0.0629	4.98	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0255	4.98	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.0177	4.98	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.00854	4.98	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.0176	4.98	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JQ	0.0155	4.98	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.0307	4.98	PQL	ng/Kg	
	OCDD	JBQ	0.227	9.96	PQL	ng/Kg	
	OCDF	J	0.110	9.96	PQL	ng/Kg	
SL-878-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.273	5.40	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0814	5.40	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0496	5.40	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	J	0.0627	5.40	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0716	5.40	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	J	0.430	5.40	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.114	5.40	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	J	0.735	5.40	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	J	1.06	5.40	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.144	5.40	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.248	5.40	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0605	5.40	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.0415	5.40	PQL	ng/Kg	
	OCDD	JB	1.52	10.8	PQL	ng/Kg	
	OCDF	J	0.147	10.8	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH066 **Laboratory: LL**

EDD Filename: PH066_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-578-SA8-SB-0.0-0.5	BERYLLIUM	J	0.735	1.06	PQL	mg/Kg	
	BORON	J	1.97	10.6	PQL	mg/Kg	
	CADMIUM	J	0.371	1.06	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.308	2.13	PQL	mg/Kg	
	TIN	J	3.15	10.6	PQL	mg/Kg	
SL-578-SA8-SB-4.0-5.0	BERYLLIUM	J	0.830	1.11	PQL	mg/Kg	
	BORON	J	2.75	11.1	PQL	mg/Kg	
	CADMIUM	J	0.533	1.11	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.416	2.22	PQL	mg/Kg	
	TIN	J	3.04	11.1	PQL	mg/Kg	
SL-578-SA8-SB-9.0-10.0	BERYLLIUM	J	0.440	1.05	PQL	mg/Kg	
	CADMIUM	J	0.351	1.05	PQL	mg/Kg	J (all detects)
	TIN	J	3.04	10.5	PQL	mg/Kg	
	Zirconium	J	3.63	5.23	PQL	mg/Kg	
SL-580-SA8-SB-0.0-0.5	BERYLLIUM	J	0.754	1.09	PQL	mg/Kg	
	BORON	J	2.49	10.9	PQL	mg/Kg	
	CADMIUM	J	0.303	1.09	PQL	mg/Kg	
	MOLYBDENUM	J	0.238	2.19	PQL	mg/Kg	J (all detects)
	SODIUM	J	99.2	109	PQL	mg/Kg	
	TIN	J	3.08	10.9	PQL	mg/Kg	
	Zirconium	J	5.13	5.46	PQL	mg/Kg	
SL-580-SA8-SB-10.5-11.5	BERYLLIUM	J	0.609	1.04	PQL	mg/Kg	
	CADMIUM	J	0.321	1.04	PQL	mg/Kg	
	MOLYBDENUM	J	1.08	2.09	PQL	mg/Kg	J (all detects)
	TIN	J	2.85	10.4	PQL	mg/Kg	
	Zirconium	J	4.17	5.21	PQL	mg/Kg	
SL-580-SA8-SB-4.0-5.0	BERYLLIUM	J	0.769	1.05	PQL	mg/Kg	
	BORON	J	4.29	10.5	PQL	mg/Kg	
	CADMIUM	J	0.449	1.05	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.332	2.10	PQL	mg/Kg	
	TIN	J	2.94	10.5	PQL	mg/Kg	
SL-581-SA8-SB-0.0-0.5	BERYLLIUM	J	0.810	1.04	PQL	mg/Kg	
	BORON	J	2.82	10.4	PQL	mg/Kg	
	CADMIUM	J	0.496	1.04	PQL	mg/Kg	
	MOLYBDENUM	J	0.314	2.08	PQL	mg/Kg	J (all detects)
	SODIUM	J	77.6	104	PQL	mg/Kg	
	TIN	J	2.85	10.4	PQL	mg/Kg	
SL-581-SA8-SB-4.5-5.5	BERYLLIUM	J	0.418	0.981	PQL	mg/Kg	
	CADMIUM	J	0.294	0.981	PQL	mg/Kg	
	MOLYBDENUM	J	0.204	1.96	PQL	mg/Kg	
	SODIUM	J	86.7	98.1	PQL	mg/Kg	J (all detects)
	TIN	J	2.97	9.81	PQL	mg/Kg	
	Zirconium	J	3.05	4.90	PQL	mg/Kg	
SL-587-SA8-SB-0.0-0.5	ARSENIC	J	3.51	3.88	PQL	mg/Kg	
	BERYLLIUM	J	0.542	0.969	PQL	mg/Kg	
	BORON	J	0.814	9.69	PQL	mg/Kg	
	CADMIUM	J	0.360	0.969	PQL	mg/Kg	
	MOLYBDENUM	J	0.453	1.94	PQL	mg/Kg	J (all detects)
	SODIUM	J	67.7	96.9	PQL	mg/Kg	
	TIN	J	2.50	9.69	PQL	mg/Kg	
	Zirconium	J	3.20	4.84	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH066 **Laboratory: LL**

EDD Filename: PH066_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 6010C
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-587-SA8-SB-6.5-7.5	ARSENIC	J	3.25	3.98	PQL	mg/Kg	
	BERYLLIUM	J	0.483	0.994	PQL	mg/Kg	
	CADMIUM	J	0.203	0.994	PQL	mg/Kg	J (all detects)
	TIN	J	2.70	9.94	PQL	mg/Kg	
	Zirconium	J	2.46	4.97	PQL	mg/Kg	
SL-878-SA8-SB-4.0-5.0	BERYLLIUM	J	1.02	1.07	PQL	mg/Kg	
	BORON	J	3.04	10.7	PQL	mg/Kg	
	CADMIUM	J	0.408	1.07	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.229	2.15	PQL	mg/Kg	
	TIN	J	3.10	10.7	PQL	mg/Kg	

Method: 6020A
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-578-SA8-SB-0.0-0.5	SILVER	J	0.0890	0.213	PQL	mg/Kg	J (all detects)
SL-578-SA8-SB-4.0-5.0	SELENIUM	J	0.277	0.444	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0557	0.222	PQL	mg/Kg	
SL-578-SA8-SB-9.0-10.0	SELENIUM	J	0.146	0.418	PQL	mg/Kg	J (all detects)
SL-580-SA8-SB-0.0-0.5	SELENIUM	J	0.123	0.437	PQL	mg/Kg	J (all detects)
SL-580-SA8-SB-10.5-11.5	SELENIUM	J	0.105	0.417	PQL	mg/Kg	J (all detects)
SL-580-SA8-SB-4.0-5.0	SELENIUM	J	0.247	0.421	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0404	0.210	PQL	mg/Kg	
SL-581-SA8-SB-0.0-0.5	SELENIUM	J	0.207	0.416	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0503	0.208	PQL	mg/Kg	
SL-587-SA8-SB-0.0-0.5	SELENIUM	J	0.107	0.388	PQL	mg/Kg	J (all detects)
SL-587-SA8-SB-6.5-7.5	SILVER	J	0.0650	0.199	PQL	mg/Kg	J (all detects)
SL-878-SA8-SB-4.0-5.0	SELENIUM	J	0.326	0.430	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0645	0.215	PQL	mg/Kg	

Method: 8015M
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-578-SA8-SB-9.0-10.0	EFH (C21-C30)	J	5.0	5.2	PQL	mg/Kg	J (all detects)
SL-587-SA8-SB-0.0-0.5	EFH (C21-C30)	J	2.8	5.1	PQL	mg/Kg	J (all detects)
	EFH (C30-C40)	J	6.6	10	PQL	mg/Kg	
SL-587-SA8-SB-6.5-7.5	EFH (C30-C40)	J	4.6	10	PQL	mg/Kg	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH066 **Laboratory: LL**

EDD Filename: PH066_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 8270D
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-578-SA8-SB-4.0-5.0	BENZO(A)ANTHRACENE	J	8	19	PQL	ug/Kg	J (all detects)
	CHRYSENE	J	9	19	PQL	ug/Kg	
	FLUORANTHENE	J	8	19	PQL	ug/Kg	
	PHENANTHRENE	J	5	19	PQL	ug/Kg	
	PYRENE	J	11	19	PQL	ug/Kg	
SL-580-SA8-SB-4.0-5.0	FLUORANTHENE	J	7	18	PQL	ug/Kg	J (all detects)

Method: 8270D SIM
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-578-SA8-SB-0.0-0.5	BENZO(B)FLUORANTHENE	J	0.79	1.8	PQL	ug/Kg	J (all detects)
	BIS(2-ETHYLHEXYL)PHTHALATE	J	9.3	20	PQL	ug/Kg	
	CHRYSENE	J	0.71	1.8	PQL	ug/Kg	
SL-578-SA8-SB-4.0-5.0	1-METHYLNAPHTHALENE	J	0.89	1.9	PQL	ug/Kg	J (all detects)
	2-METHYLNAPHTHALENE	J	0.92	1.9	PQL	ug/Kg	
	ANTHRACENE	J	0.77	1.9	PQL	ug/Kg	
	BENZO(E)PYRENE	J	5.0	19	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	7.8	20	PQL	ug/Kg	
	DIBENZO(A,H)ANTHRACENE	J	1.2	1.9	PQL	ug/Kg	
	NAPHTHALENE	J	0.78	1.9	PQL	ug/Kg	
SL-578-SA8-SB-9.0-10.0	BENZO(A)ANTHRACENE	J	1.3	1.8	PQL	ug/Kg	J (all detects)
	BENZO(A)PYRENE	J	1.7	1.8	PQL	ug/Kg	
	BENZO(G,H,I)PERYLENE	J	0.82	1.8	PQL	ug/Kg	
	BENZO(K)FLUORANTHENE	J	1.0	1.8	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	9.7	19	PQL	ug/Kg	
	PHENANTHRENE	J	1.4	1.8	PQL	ug/Kg	
SL-580-SA8-SB-0.0-0.5	BENZO(G,H,I)PERYLENE	J	1.5	1.8	PQL	ug/Kg	J (all detects)
	Di-n-octylphthalate	J	14	20	PQL	ug/Kg	
	INDENO(1,2,3-CD)PYRENE	J	1.0	1.8	PQL	ug/Kg	
SL-580-SA8-SB-10.5-11.5	ANTHRACENE	J	0.59	1.7	PQL	ug/Kg	J (all detects)
	BENZO(E)PYRENE	J	5.3	18	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	9.6	19	PQL	ug/Kg	
	DIBENZO(A,H)ANTHRACENE	J	1.1	1.7	PQL	ug/Kg	
	PHENANTHRENE	J	1.5	1.7	PQL	ug/Kg	
SL-580-SA8-SB-4.0-5.0	ANTHRACENE	J	0.46	1.8	PQL	ug/Kg	J (all detects)
	BENZO(E)PYRENE	J	4.7	18	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	7.8	20	PQL	ug/Kg	
	DIBENZO(A,H)ANTHRACENE	J	1.0	1.8	PQL	ug/Kg	
SL-581-SA8-SB-0.0-0.5	BENZO(B)FLUORANTHENE	J	0.84	1.8	PQL	ug/Kg	J (all detects)
	BENZO(K)FLUORANTHENE	J	0.96	1.8	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	7.3	19	PQL	ug/Kg	
	CHRYSENE	J	1.3	1.8	PQL	ug/Kg	
	Di-n-octylphthalate	J	13	19	PQL	ug/Kg	
	FLUORANTHENE	J	0.85	1.8	PQL	ug/Kg	
SL-581-SA8-SB-4.5-5.5	CHRYSENE	J	0.44	1.7	PQL	ug/Kg	J (all detects)
	FLUORANTHENE	J	0.83	1.7	PQL	ug/Kg	
	PHENANTHRENE	J	0.80	1.7	PQL	ug/Kg	
	PYRENE	J	0.78	1.7	PQL	ug/Kg	

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

Reporting Limit Outliers

Lab Reporting Batch ID: PH066 **Laboratory: LL**

EDD Filename: PH066_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 8270D SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-878-SA8-SB-4.0-5.0	BENZO(A)ANTHRACENE	J	0.88	1.9	PQL	ug/Kg	
	BENZO(A)PYRENE	J	1.1	1.9	PQL	ug/Kg	
	BENZO(K)FLUORANTHENE	J	1.1	1.9	PQL	ug/Kg	
	FLUORANTHENE	J	1.8	1.9	PQL	ug/Kg	J (all detects)
	NAPHTHALENE	J	0.78	1.9	PQL	ug/Kg	
	PHENANTHRENE	J	1.5	1.9	PQL	ug/Kg	
	PYRENE	J	1.6	1.9	PQL	ug/Kg	

LDC #: 30289A4
SDG #: PH066
Laboratory: Eurofins Lancaster Laboratories

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 9/4/13
Page: 1 of 1
Reviewer: AR
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: 7/12/13
II.	ICP/MS Tune	—	
III.	Calibration	—	
IV.	Blanks	A	
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	—	(2,3)
XV	Field Blanks	SW	EB= EB1-071013 (PH064) FB=FB-041113 (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-578-SA8-SB-0.0-0.5	11	SL-587-SA8-SB-6.5-7.5	21		31	
2	SL-578-SA8-SB-4.0-5.0	12	SL-578-SA8-SB-4.0-5.0MS	22		32	
3	SL-878-SA8-SB-4.0-5.0	13	SL-578-SA8-SB-4.0-5.0MSD	23		33	
4	SL-578-SA8-SB-9.0-10.0	14	SL-578-SA8-SB-4.0-5.0DUP	24		34	
5	SL-580-SA8-SB-0.0-0.5	15		25		35	
6	SL-580-SA8-SB-4.0-5.0	16		26		36	
7	SL-580-SA8-SB-10.5-11.5	17		27		37	
8	SL-581-SA8-SB-0.0-0.5	18		28		38	
9	SL-581-SA8-SB-4.5-5.5	19		29		39	
10	SL-587-SA8-SB-0.0-0.5	20		30		40	

Notes: _____

LDC #: 30289A4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: CR
2nd Reviewer: LA

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: Soil

Analyte	Blank ID	Sample Identification										
	FB-041113 (SDG: PH029)	Action Limit	1	2	3	5	6	7	8	9	10	
Cu	0.0036	1.8										
Mo	0.0036	1.8	0.31	0.42	0.23	0.24	0.33	1.1	0.31	0.20	0.45	

Sampling date: 7/10/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: Soil

Analyte	Blank ID	Sample Identification										
	EB1-071013 (SDG: PH064)	Action Limit	See FB									
Cu	0.0031	1.55										
Mo	0.0035	1.75										

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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PS=102% (J/UJ/A)

Zn not equal based on %R

QUALITY ASSURANCE SUMMARY
FORM 5A(MS/MSD)
MATRIX SPIKE/MATRIX SPIKE DUPLICATE
SDG No.: PH066
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7126351BKG Matrix Spike Lab Sample ID: 7126352MS Matrix Spike Duplicate Lab Sample ID: 7126353MSD
Batch Id(s): P19937A, P20338A

Analyte	Mass	BKG Sample Result	C	MS Sample Result	C	MSD Sample Result	C	MS Spike Added	MSD Spike Added	Units	MS %R	Q	MSD %R	Q	RPD	Q	Control Limit %R	Control Limit RPD	M
Aluminum		22338.0059		32279.6970		34836.1218		200.0000	198.0198	MG/KG	4971		6312		8			20	P
Antimony		0.7255	U	17.6230		14.2238		50.0000	49.5050	MG/KG	35	N	29	N	21	*	75 - 125	20	P
Arsenic		5.0451		20.3780		20.4663		15.0000	14.8515	MG/KG	102		104		0		75 - 125	20	P
Barium		102.4892		325.1630		308.0812		200.0000	198.0198	MG/KG	111		104		5		75 - 125	20	P
Beryllium		0.7333	B	5.9440		5.9584		5.0000	4.9505	MG/KG	104		106		0		75 - 125	20	P
Boron		2.4324	B	194.7070		192.7089		200.0000	198.0198	MG/KG	96		96		1		75 - 125	20	P
Cadmium		0.4716	B	5.0390		4.9396		5.0000	4.9505	MG/KG	91		90		2		75 - 125	20	P
Calcium		4514.8951		5164.8580		5307.4876		400.0000	396.0396	MG/KG	162		200		3			20	P
Chromium		26.2716		53.2480		54.9436		20.0000	19.8020	MG/KG	135	N	145	N	3		75 - 125	20	P
Cobalt		7.5324		54.3460		53.6950		50.0000	49.5050	MG/KG	94		93		1		75 - 125	20	P
Copper		14.9814		40.6750		39.4020		25.0000	24.7525	MG/KG	103		99		3		75 - 125	20	P
Iron		24293.8755		27948.8520		29669.9723		100.0000	99.0099	MG/KG	3655		5430		6			20	P
Lead		7.5814		22.1480		21.5525		15.0000	14.8515	MG/KG	97		94		3		75 - 125	20	P
Lithium		18.1314		122.1080		122.4208		100.0000	99.0099	MG/KG	104		105		0		75 - 125	20	P
Magnesium		4918.2892		6030.9930		6323.1901		200.0000	198.0198	MG/KG	556		709		5			20	P
Manganese		330.0039		392.9510		426.8941		50.0000	49.5050	MG/KG	126		196		8			20	P
Mercury		0.0095	U	0.1863		0.1850		0.1609	0.1567	MG/KG	116		118		1		65 - 135	20	CV
Molybdenum		0.3676	B	183.9710		177.0139		200.0000	198.0198	MG/KG	92		89		4		75 - 125	20	P
Nickel		15.7833		64.4710		64.4307		50.0000	49.5050	MG/KG	97		98		0		75 - 125	20	P
Phosphorus		252.6676		319.9870		301.5416		100.0000	99.0099	MG/KG	67	N	49	N	6		75 - 125	20	P
Potassium		4596.2324		6110.8490		5619.6911		1000.0000	990.0990	MG/KG	151		103		8			20	P
Selenium	78	0.2451	B	2.4060		2.9842		2.0000	1.9802	MG/KG	108		138	N	21	*	75 - 125	20	MS
Silver	107	0.0492	B	12.9880		13.6594		10.0000	9.9010	MG/KG	129	N	137	N	5		75 - 125	20	MS
Sodium		188.8618		1130.6120		1132.9554		1000.0000	990.0990	MG/KG	94		95		0		75 - 125	20	P
Strontium	88	29.5490		39.3800		40.0198		8.0000	7.9208	MG/KG	123		132	N	2		75 - 125	20	MS
Thallium	203	0.3551		0.9366		1.0297		0.4000	0.3960	MG/KG	145	N	170	N	9		75 - 125	20	MS
Tin		2.6853	B	352.8890		340.0842		400.0000	396.0396	MG/KG	88		85		4		75 - 125	20	P
Titanium		1066.2647		1567.8130		1541.6911		100.0000	99.0099	MG/KG	502		480		2			20	P
Vanadium		48.6137		112.4480		116.0386		50.0000	49.5050	MG/KG	128	N	136	N	3		75 - 125	20	P
Zinc		57.8284		112.6700		112.0010		50.0000	49.5050	MG/KG	110		109		1		75 - 125	20	P
Zirconium		6.4069		103.5870		99.7673		100.0000	99.0099	MG/KG	97		94		4		75 - 125	20	P

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

METHODS:
P = ICP Atomic Emission Spectrometer
CV = Cold Vapor
MS = ICP Mass Spectrometry
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 6
DUPLICATES
SDG No.: PH066
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7126351BKG
Duplicate Lab Sample ID: 7126354DUP
Batch ID(s): P19937A, P20338A
Concentration Units: MG/KG

Analyte	Mass	Control Limit	Samples (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum			22338.0059		26275.4370		16		P
Antimony			-1.3814	B	-1.8020	B	-26		P
Arsenic		3.9	5.0451		5.6130		11		P
Barium			102.4892		124.9910		20		P
Beryllium			0.7333	B	0.8620	B	16		P
Boron			2.4324	B	2.6440	B	8		P
Cadmium			0.4716	B	0.4420	B	6		P
Calcium			4514.8951		4808.4500		6		P
Chromium			26.2716		30.9410		16		P
Cobalt			7.5324		9.0150		18		P
Copper			14.9814		15.9390		6		P
Iron			24293.8755		27804.0160		13		P
Lead		2.9	7.5814		7.8350		3		P
Lithium		3.9	18.1314		21.0910		15		P
Magnesium			4918.2892		5526.7920		12		P
Manganese			330.0039		496.5370		40	*	P
Mercury			0.0095	U	0.0096	U			CV
Molybdenum			0.3676	B	0.2680	B	31		P
Nickel			15.7833		18.6740		17		P
Phosphorus			252.6676		224.3600		12		P
Potassium			4596.2324		4491.3120		2		P
Selenium	78		0.2451	B	0.2450	B	0		MS
Silver	107		0.0492	B	0.0723	B	38		MS
Sodium		98.0	188.8618		196.3800		4		P
Strontium	88		29.5490		34.3400		15		MS
Thallium	203	0.2	0.3551		0.3626		2		MS
Tin			2.6853	B	2.8280	B	5		P
Titanium			1066.2647		1151.3980		8		P
Vanadium			48.6137		57.8000		17		P
Zinc			57.8284		62.5160		8		P
Zirconium		4.9	6.4069		7.4830		15		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

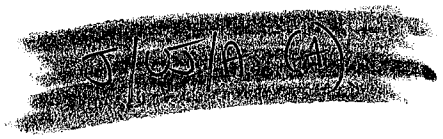
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QUALITY ASSURANCE SUMMARY
FORM 9
SERIAL DILUTIONS
SDG No.: PH066
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7126351BKG Serial Dilution Lab Sample ID: 7126351L
Batch ID(s): P19937A
Concentration Units: UG/L

Analyte	Mass	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Diff.	Q	M
Aluminum		227847.6600		240455.5000		6		P
Antimony		7.4000	U	37.0000	U			P
Arsenic		51.4600		35.0000	U	100		P
Barium		1045.3900		1156.6000		11	E	P
Beryllium		7.4800	B	8.1500	B	9		P
Boron		24.8100	B	66.8000	B	169		P
Cadmium		4.8100	B	5.4500	B	13		P
Calcium		46051.9300		48618.6000		6		P
Chromium		267.9700		295.5000		10		P
Cobalt		76.8300		82.3000		7		P
Copper		152.8100		189.6000		24	E	P
Iron		247797.5300		242794.2000		2		P
Lead		77.3300		83.9000	B	8		P
Lithium		184.9400		199.3000	B	8		P
Magnesium		50166.5500		52707.3000		5		P
Manganese		3366.0400		3736.4500		11	E	P
Molybdenum		3.7500	B	11.4500	B	205		P
Nickel		160.9900		174.9500		9		P
Phosphorus		2577.2100		2541.9500		1		P
Potassium		46881.5700		49311.8000		5		P
Selenium	78	1.2500	B	2.5000	U	100		MS
Silver	107	0.2511	B	0.6500	U	100		MS
Sodium		1926.3900		1946.4500	B	1		P
Strontium	88	150.7000		153.8000		2		MS
Thallium	203	1.8110		1.6135	B	11		MS
Tin		27.3900	B	32.6500	B	19		P
Titanium		10875.9000		11653.3500		7		P
Vanadium		495.8600		535.5500		8		P
Zinc		589.8500		605.1500		3		P
Zirconium		65.3500		94.7500	B	45		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 Serial Dilution or Spiked Dilution

Data Validation Report
Santa Susana Field Laboratory

Subarea 8

SDG: PH067

Prepared for

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September 24, 2013

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on July 15th, 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 (SVOAs) 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 846 Method 8151A
Total Petroleum Hydrocarbon as Gasoline (TPH-G) by EPA SW 846 Method 8015M
Total Petroleum Hydrocarbons as Extractable (TPH-E) by EPA SW 846 Method 8015M
Dioxins/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, trip blanks, equipment blanks, field blanks, and field duplicate samples. 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 the 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.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met QC criteria.

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.

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 SVOAs, Herbicides, TPH-E, dioxins, and metals. The 2,4,5-T, 2,4,5-TP (Silvex), 2,4-D, and 2,4-DB results in sample SL-501-SA8-SB-0.0-0.5 were qualified as rejected (R) due to MS/MSD %Rs grossly outside QC limits (i.e., ≤ 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 with the exception of one LCS/LCSD pair for herbicides. Since the percent recoveries were out high and the results in the associated samples were non-detect, no data were qualified due to high %Rs. The details regarding LCS/LCSD outliers 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 with the following exceptions:

Diluted Sample	Analyte	%D (Limits)	Associated Samples	Flag	A or P
SL-501-SA8-SB-0.0-0.5	Cobalt Lead Lithium	12 (≤10) 14 (≤10) 13 (≤10)	All soil samples in SDG PH067	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 PH067	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 SVOAs, Pesticides, PCBs, metals, herbicides, TPH-E, and dioxins. All RPDs were within QC limits with the exception of several SVOAs, pesticides, dioxins, and metals. 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-G. No contaminant concentrations were found in the trip blank.

Two equipment blanks (from SDG PH069) were collected and analyzed for SVOAs, Pesticides, PCBs, herbicides, metals, TPH-G, TPH-E, and dioxins. The equipment blanks had detections for several SVOAs, metals, and dioxins. All associated sample results were not detected or were significantly greater than the concentrations found in the equipment blanks and were not qualified.

One field blank (from SDG PH029) was collected and analyzed for SVOAs, Pesticides, PCBs, herbicides, metals, TPH-G, TPH-E, and dioxins. The field blank had detections for several semivolatiles, 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

Four herbicide results were rejected due to MS/MSD %Rs grossly outside of 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
15-Jul-2013	TB-071513	7128155	TB	5030B	8015M	III
15-Jul-2013	SL-502-SA8-SB-0.0-0.5	7128152	N	3050B	6010C	III
15-Jul-2013	SL-502-SA8-SB-0.0-0.5	7128152	N	3050B	6020A	III
15-Jul-2013	SL-502-SA8-SB-0.0-0.5	7128152	N	3546	8015M	III
15-Jul-2013	SL-502-SA8-SB-0.0-0.5	7128152	N	3546	8082A	III
15-Jul-2013	SL-502-SA8-SB-0.0-0.5	7128152	N	3546	8270D SIM	III
15-Jul-2013	SL-502-SA8-SB-0.0-0.5	7128152	N	METHOD	1613B	III
15-Jul-2013	SL-502-SA8-SB-0.0-0.5	7128152	N	METHOD	7471B	III
15-Jul-2013	SL-502-SA8-SB-4.0-5.0	7128153	N	3050B	6010C	III
15-Jul-2013	SL-502-SA8-SB-4.0-5.0	7128153	N	3050B	6020A	III
15-Jul-2013	SL-502-SA8-SB-4.0-5.0	7128153	N	3546	8015M	III
15-Jul-2013	SL-502-SA8-SB-4.0-5.0	7128153	N	3546	8082A	III
15-Jul-2013	SL-502-SA8-SB-4.0-5.0	7128153	N	3546	8270D SIM	III
15-Jul-2013	SL-502-SA8-SB-4.0-5.0	7128153	N	5035A	8015M	III
15-Jul-2013	SL-502-SA8-SB-4.0-5.0	7128153	N	METHOD	1613B	III
15-Jul-2013	SL-502-SA8-SB-4.0-5.0	7128153	N	METHOD	7471B	III
15-Jul-2013	SL-502-SA8-SB-7.5-8.5	7128154	N	3050B	6010C	III
15-Jul-2013	SL-502-SA8-SB-7.5-8.5	7128154	N	3050B	6020A	III
15-Jul-2013	SL-502-SA8-SB-7.5-8.5	7128154	N	3546	8015M	III
15-Jul-2013	SL-502-SA8-SB-7.5-8.5	7128154	N	3546	8082A	III
15-Jul-2013	SL-502-SA8-SB-7.5-8.5	7128154	N	3546	8270D SIM	III
15-Jul-2013	SL-502-SA8-SB-7.5-8.5	7128154	N	5035A	8015M	III
15-Jul-2013	SL-502-SA8-SB-7.5-8.5	7128154	N	METHOD	1613B	III
15-Jul-2013	SL-502-SA8-SB-7.5-8.5	7128154	N	METHOD	7471B	III
15-Jul-2013	SL-501-SA8-SB-0.0-0.5	7128144	N	3050B	6010C	III
15-Jul-2013	SL-501-SA8-SB-0.0-0.5	7128144	N	3050B	6020A	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
15-Jul-2013	SL-501-SA8-SB-0.0-0.5	7128144	N	3546	8015M	III
15-Jul-2013	SL-501-SA8-SB-0.0-0.5	7128144	N	3546	8081B	III
15-Jul-2013	SL-501-SA8-SB-0.0-0.5	7128144	N	3546	8082A	III
15-Jul-2013	SL-501-SA8-SB-0.0-0.5	7128144	N	3546	8270D SIM	III
15-Jul-2013	SL-501-SA8-SB-0.0-0.5	7128144	N	3550B	8151A	III
15-Jul-2013	SL-501-SA8-SB-0.0-0.5	7128144	N	METHOD	1613B	III
15-Jul-2013	SL-501-SA8-SB-0.0-0.5	7128144	N	METHOD	7471B	III
15-Jul-2013	SL-501-SA8-SB-0.0-0.5MS	7128145	MS	3050B	6010C	III
15-Jul-2013	SL-501-SA8-SB-0.0-0.5MS	7128145	MS	3050B	6020A	III
15-Jul-2013	SL-501-SA8-SB-0.0-0.5MS	7128145	MS	3546	8015M	III
15-Jul-2013	SL-501-SA8-SB-0.0-0.5MS	7128145	MS	3546	8081B	III
15-Jul-2013	SL-501-SA8-SB-0.0-0.5MS	7128145	MS	3546	8082A	III
15-Jul-2013	SL-501-SA8-SB-0.0-0.5MS	7128145	MS	3546	8270D SIM	III
15-Jul-2013	SL-501-SA8-SB-0.0-0.5MS	7128145	MS	3550B	8151A	III
15-Jul-2013	SL-501-SA8-SB-0.0-0.5MS	7128145	MS	METHOD	1613B	III
15-Jul-2013	SL-501-SA8-SB-0.0-0.5MS	7128145	MS	METHOD	7471B	III
15-Jul-2013	SL-501-SA8-SB-0.0-0.5MSD	7128146	MSD	3050B	6010C	III
15-Jul-2013	SL-501-SA8-SB-0.0-0.5MSD	7128146	MSD	3050B	6020A	III
15-Jul-2013	SL-501-SA8-SB-0.0-0.5MSD	7128146	MSD	3546	8015M	III
15-Jul-2013	SL-501-SA8-SB-0.0-0.5MSD	7128146	MSD	3546	8081B	III
15-Jul-2013	SL-501-SA8-SB-0.0-0.5MSD	7128146	MSD	3546	8082A	III
15-Jul-2013	SL-501-SA8-SB-0.0-0.5MSD	7128146	MSD	3546	8270D SIM	III
15-Jul-2013	SL-501-SA8-SB-0.0-0.5MSD	7128146	MSD	3550B	8151A	III
15-Jul-2013	SL-501-SA8-SB-0.0-0.5MSD	7128146	MSD	METHOD	1613B	III
15-Jul-2013	SL-501-SA8-SB-0.0-0.5MSD	7128146	MSD	METHOD	7471B	III
15-Jul-2013	SL-501-SA8-SB-0.0-0.5DUP	7128147	DUP	3050B	6010C	III

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IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
15-Jul-2013	SL-501-SA8-SB-0.0-0.5DUP	7128147	DUP	3050B	6020A	III
15-Jul-2013	SL-501-SA8-SB-0.0-0.5DUP	7128147	DUP	METHOD	7471B	III
15-Jul-2013	SL-801-SA8-SB-0.0-0.5	7128148	FD	3050B	6010C	III
15-Jul-2013	SL-801-SA8-SB-0.0-0.5	7128148	FD	3050B	6020A	III
15-Jul-2013	SL-801-SA8-SB-0.0-0.5	7128148	FD	3546	8015M	III
15-Jul-2013	SL-801-SA8-SB-0.0-0.5	7128148	FD	3546	8081B	III
15-Jul-2013	SL-801-SA8-SB-0.0-0.5	7128148	FD	3546	8082A	III
15-Jul-2013	SL-801-SA8-SB-0.0-0.5	7128148	FD	3546	8270D SIM	III
15-Jul-2013	SL-801-SA8-SB-0.0-0.5	7128148	FD	3550B	8151A	III
15-Jul-2013	SL-801-SA8-SB-0.0-0.5	7128148	FD	METHOD	1613B	III
15-Jul-2013	SL-801-SA8-SB-0.0-0.5	7128148	FD	METHOD	7471B	III
15-Jul-2013	SL-501-SA8-SB-4.0-5.0	7128149	N	3050B	6010C	III
15-Jul-2013	SL-501-SA8-SB-4.0-5.0	7128149	N	3050B	6020A	III
15-Jul-2013	SL-501-SA8-SB-4.0-5.0	7128149	N	3546	8015M	III
15-Jul-2013	SL-501-SA8-SB-4.0-5.0	7128149	N	3546	8081B	III
15-Jul-2013	SL-501-SA8-SB-4.0-5.0	7128149	N	3546	8082A	III
15-Jul-2013	SL-501-SA8-SB-4.0-5.0	7128149	N	3546	8270D SIM	III
15-Jul-2013	SL-501-SA8-SB-4.0-5.0	7128149	N	3550B	8151A	III
15-Jul-2013	SL-501-SA8-SB-4.0-5.0	7128149	N	5035A	8015M	III
15-Jul-2013	SL-501-SA8-SB-4.0-5.0	7128149	N	METHOD	1613B	III
15-Jul-2013	SL-501-SA8-SB-4.0-5.0	7128149	N	METHOD	7471B	III
15-Jul-2013	SL-501-SA8-SB-9.0-10.0	7128150	N	3050B	6010C	III
15-Jul-2013	SL-501-SA8-SB-9.0-10.0	7128150	N	3050B	6020A	III
15-Jul-2013	SL-501-SA8-SB-9.0-10.0	7128150	N	3546	8015M	III
15-Jul-2013	SL-501-SA8-SB-9.0-10.0	7128150	N	3546	8081B	III
15-Jul-2013	SL-501-SA8-SB-9.0-10.0	7128150	N	3546	8082A	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
15-Jul-2013	SL-501-SA8-SB-9.0-10.0	7128150	N	3546	8270D SIM	III
15-Jul-2013	SL-501-SA8-SB-9.0-10.0	7128150	N	3550B	8151A	III
15-Jul-2013	SL-501-SA8-SB-9.0-10.0	7128150	N	5035A	8015M	III
15-Jul-2013	SL-501-SA8-SB-9.0-10.0	7128150	N	METHOD	1613B	III
15-Jul-2013	SL-501-SA8-SB-9.0-10.0	7128150	N	METHOD	7471B	III
15-Jul-2013	SL-501-SA8-SB-12.0-13.0	7128151	N	3050B	6010C	III
15-Jul-2013	SL-501-SA8-SB-12.0-13.0	7128151	N	3050B	6020A	III
15-Jul-2013	SL-501-SA8-SB-12.0-13.0	7128151	N	3546	8015M	III
15-Jul-2013	SL-501-SA8-SB-12.0-13.0	7128151	N	3546	8081B	III
15-Jul-2013	SL-501-SA8-SB-12.0-13.0	7128151	N	3546	8082A	III
15-Jul-2013	SL-501-SA8-SB-12.0-13.0	7128151	N	3546	8270D SIM	III
15-Jul-2013	SL-501-SA8-SB-12.0-13.0	7128151	N	3550B	8151A	III
15-Jul-2013	SL-501-SA8-SB-12.0-13.0	7128151	N	5035A	8015M	III
15-Jul-2013	SL-501-SA8-SB-12.0-13.0	7128151	N	METHOD	1613B	III
15-Jul-2013	SL-501-SA8-SB-12.0-13.0	7128151	N	METHOD	7471B	III
15-Jul-2013	SL-511-SA8-SB-0.0-0.5	7128158	N	3050B	6010C	III
15-Jul-2013	SL-511-SA8-SB-0.0-0.5	7128158	N	3050B	6020A	III
15-Jul-2013	SL-511-SA8-SB-0.0-0.5	7128158	N	3546	8015M	III
15-Jul-2013	SL-511-SA8-SB-0.0-0.5	7128158	N	3546	8082A	III
15-Jul-2013	SL-511-SA8-SB-0.0-0.5	7128158	N	3546	8270D SIM	III
15-Jul-2013	SL-511-SA8-SB-0.0-0.5	7128158	N	METHOD	1613B	III
15-Jul-2013	SL-511-SA8-SB-0.0-0.5	7128158	N	METHOD	7471B	III
15-Jul-2013	SL-511-SA8-SB-6.0-7.0	7128159	N	3050B	6010C	III
15-Jul-2013	SL-511-SA8-SB-6.0-7.0	7128159	N	3050B	6020A	III
15-Jul-2013	SL-511-SA8-SB-6.0-7.0	7128159	N	3546	8015M	III
15-Jul-2013	SL-511-SA8-SB-6.0-7.0	7128159	N	3546	8082A	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
15-Jul-2013	SL-511-SA8-SB-6.0-7.0	7128159	N	3546	8270D SIM	III
15-Jul-2013	SL-511-SA8-SB-6.0-7.0	7128159	N	5035A	8015M	III
15-Jul-2013	SL-511-SA8-SB-6.0-7.0	7128159	N	METHOD	1613B	III
15-Jul-2013	SL-511-SA8-SB-6.0-7.0	7128159	N	METHOD	7471B	III
15-Jul-2013	SL-503-SA8-SB-0.0-0.5	7128156	N	3050B	6010C	III
15-Jul-2013	SL-503-SA8-SB-0.0-0.5	7128156	N	3050B	6020A	III
15-Jul-2013	SL-503-SA8-SB-0.0-0.5	7128156	N	3546	8015M	III
15-Jul-2013	SL-503-SA8-SB-0.0-0.5	7128156	N	3546	8082A	III
15-Jul-2013	SL-503-SA8-SB-0.0-0.5	7128156	N	3546	8270D SIM	III
15-Jul-2013	SL-503-SA8-SB-0.0-0.5	7128156	N	METHOD	1613B	III
15-Jul-2013	SL-503-SA8-SB-0.0-0.5	7128156	N	METHOD	7471B	III
15-Jul-2013	SL-503-SA8-SB-3.0-4.0	7128157	N	3050B	6010C	III
15-Jul-2013	SL-503-SA8-SB-3.0-4.0	7128157	N	3050B	6020A	III
15-Jul-2013	SL-503-SA8-SB-3.0-4.0	7128157	N	3546	8015M	III
15-Jul-2013	SL-503-SA8-SB-3.0-4.0	7128157	N	3546	8082A	III
15-Jul-2013	SL-503-SA8-SB-3.0-4.0	7128157	N	3546	8270D SIM	III
15-Jul-2013	SL-503-SA8-SB-3.0-4.0	7128157	N	5035A	8015M	III
15-Jul-2013	SL-503-SA8-SB-3.0-4.0	7128157	N	METHOD	1613B	III
15-Jul-2013	SL-503-SA8-SB-3.0-4.0	7128157	N	METHOD	7471B	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Attachment 2

Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH067 **Laboratory: LL**

EDD Filename: PrepPH067_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix:** SO

Sample ID: **SL-501-SA8-SB-0.0-0.5** ***Collected:*** **7/15/2013 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	4.11	U	0.760	MDL	4.11	PQL	mg/Kg	UJ	Q
ARSENIC	3.89	J	0.719	MDL	4.11	PQL	mg/Kg	J	Z
BERYLLIUM	0.605	J	0.0689	MDL	1.03	PQL	mg/Kg	J	Z
BORON	6.11	J	0.863	MDL	10.3	PQL	mg/Kg	UJ	B, FD
CADMIUM	0.352	J	0.0781	MDL	1.03	PQL	mg/Kg	J	Z
CALCIUM	3910		3.43	MDL	20.6	PQL	mg/Kg	J	E
COBALT	5.94		0.102	MDL	1.03	PQL	mg/Kg	J	A
LEAD	35.3		0.514	MDL	3.08	PQL	mg/Kg	J	E, Q, FD, A
LITHIUM	21.5		0.35	MDL	4.1	PQL	mg/Kg	J	A
MOLYBDENUM	0.441	J	0.175	MDL	2.06	PQL	mg/Kg	UJ	FD, F
SODIUM	77.0	J	17.2	MDL	103	PQL	mg/Kg	J	Z
TIN	2.77	J	0.226	MDL	10.3	PQL	mg/Kg	U	B
Zirconium	1.14	J	0.863	MDL	5.14	PQL	mg/Kg	J	Z

Sample ID: **SL-501-SA8-SB-12.0-13.0** ***Collected:*** **7/15/2013 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
ANTIMONY	4.14	U	0.765	MDL	4.14	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.767	J	0.0693	MDL	1.03	PQL	mg/Kg	J	Z
BORON	5.26	J	0.869	MDL	10.3	PQL	mg/Kg	U	B
CADMIUM	0.0910	J	0.0786	MDL	1.03	PQL	mg/Kg	J	Z
CALCIUM	3410		3.45	MDL	20.7	PQL	mg/Kg	J	E
COBALT	5.85		0.102	MDL	1.03	PQL	mg/Kg	J	A
LEAD	5.75		0.517	MDL	3.10	PQL	mg/Kg	J	E, Q, A
LITHIUM	32.5		0.35	MDL	4.1	PQL	mg/Kg	J	A
TIN	2.89	J	0.227	MDL	10.3	PQL	mg/Kg	U	B
Zirconium	2.62	J	0.869	MDL	5.17	PQL	mg/Kg	J	Z

Sample ID: **SL-501-SA8-SB-4.0-5.0** ***Collected:*** **7/15/2013 11:30:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.15	U	0.768	MDL	4.15	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.833	J	0.0695	MDL	1.04	PQL	mg/Kg	J	Z
BORON	5.00	J	0.871	MDL	10.4	PQL	mg/Kg	U	B
CADMIUM	0.111	J	0.0788	MDL	1.04	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: PH067 **Laboratory: LL**

EDD Filename: PrepPH067_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix:** SO

Sample ID: SL-501-SA8-SB-4.0-5.0 **Collected:** 7/15/2013 11:30:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CALCIUM	3080		3.46	MDL	20.7	PQL	mg/Kg	J	E
COBALT	6.02		0.103	MDL	1.04	PQL	mg/Kg	J	A
LEAD	6.77		0.519	MDL	3.11	PQL	mg/Kg	J	E, Q, A
LITHIUM	23.9		0.35	MDL	4.1	PQL	mg/Kg	J	A
MOLYBDENUM	0.417	J	0.176	MDL	2.07	PQL	mg/Kg	U	F
TIN	3.04	J	0.228	MDL	10.4	PQL	mg/Kg	U	B
Zirconium	1.89	J	0.871	MDL	5.19	PQL	mg/Kg	J	Z

Sample ID: SL-501-SA8-SB-9.0-10.0 **Collected:** 7/15/2013 11:45:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.33	U	0.801	MDL	4.33	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.863	J	0.0725	MDL	1.08	PQL	mg/Kg	J	Z
BORON	6.30	J	0.909	MDL	10.8	PQL	mg/Kg	U	B
CADMIUM	0.110	J	0.0823	MDL	1.08	PQL	mg/Kg	J	Z
CALCIUM	3440		3.61	MDL	21.6	PQL	mg/Kg	J	E
COBALT	6.98		0.107	MDL	1.08	PQL	mg/Kg	J	A
LEAD	6.16		0.541	MDL	3.25	PQL	mg/Kg	J	E, Q, A
LITHIUM	29.7		0.37	MDL	4.3	PQL	mg/Kg	J	A
TIN	3.12	J	0.238	MDL	10.8	PQL	mg/Kg	U	B
Zirconium	2.66	J	0.909	MDL	5.41	PQL	mg/Kg	J	Z

Sample ID: SL-502-SA8-SB-0.0-0.5 **Collected:** 7/15/2013 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
ANTIMONY	4.21	U	0.778	MDL	4.21	PQL	mg/Kg	UJ	Q
ARSENIC	4.11	J	0.736	MDL	4.21	PQL	mg/Kg	J	Z
BERYLLIUM	0.562	J	0.0705	MDL	1.05	PQL	mg/Kg	J	Z
BORON	7.28	J	0.883	MDL	10.5	PQL	mg/Kg	U	B
CADMIUM	0.787	J	0.0799	MDL	1.05	PQL	mg/Kg	J	Z
CALCIUM	5170		3.51	MDL	21.0	PQL	mg/Kg	J	E
COBALT	5.81		0.104	MDL	1.05	PQL	mg/Kg	J	A
LEAD	30.3		0.526	MDL	3.15	PQL	mg/Kg	J	E, Q, A
LITHIUM	20.3		0.36	MDL	4.2	PQL	mg/Kg	J	A
SODIUM	82.3	J	17.6	MDL	105	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: PH067 **Laboratory: LL**

EDD Filename: PrepPH067_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-502-SA8-SB-0.0-0.5** ***Collected:*** **7/15/2013 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
TIN	2.89	J	0.231	MDL	10.5	PQL	mg/Kg	U	B
Zirconium	2.27	J	0.883	MDL	5.26	PQL	mg/Kg	J	Z

Sample ID: **SL-502-SA8-SB-4.0-5.0** ***Collected:*** **7/15/2013 9:30:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.15	U	0.768	MDL	4.15	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.753	J	0.0696	MDL	1.04	PQL	mg/Kg	J	Z
BORON	4.78	J	0.872	MDL	10.4	PQL	mg/Kg	U	B
CADMIUM	0.221	J	0.0789	MDL	1.04	PQL	mg/Kg	J	Z
CALCIUM	4150		3.47	MDL	20.8	PQL	mg/Kg	J	E
COBALT	6.39		0.103	MDL	1.04	PQL	mg/Kg	J	A
LEAD	20.5		0.519	MDL	3.12	PQL	mg/Kg	J	E, Q, A
LITHIUM	26.8		0.35	MDL	4.2	PQL	mg/Kg	J	A
MOLYBDENUM	0.278	J	0.177	MDL	2.08	PQL	mg/Kg	U	F
TIN	3.08	J	0.228	MDL	10.4	PQL	mg/Kg	U	B
Zirconium	2.50	J	0.872	MDL	5.19	PQL	mg/Kg	J	Z

Sample ID: **SL-502-SA8-SB-7.5-8.5** ***Collected:*** **7/15/2013 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
ANTIMONY	4.26	U	0.789	MDL	4.26	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.602	J	0.0714	MDL	1.07	PQL	mg/Kg	J	Z
BORON	1.86	J	0.895	MDL	10.7	PQL	mg/Kg	U	B
CADMIUM	0.220	J	0.0810	MDL	1.07	PQL	mg/Kg	J	Z
CALCIUM	3610		3.56	MDL	21.3	PQL	mg/Kg	J	E
COBALT	6.32		0.106	MDL	1.07	PQL	mg/Kg	J	A
LEAD	7.93		0.533	MDL	3.20	PQL	mg/Kg	J	E, Q, A
LITHIUM	29.9		0.36	MDL	4.3	PQL	mg/Kg	J	A
TIN	2.95	J	0.234	MDL	10.7	PQL	mg/Kg	U	B
Zirconium	2.80	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

Data Qualifier Summary

Lab Reporting Batch ID: PH067 **Laboratory: LL**

EDD Filename: PrepPH067_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-503-SA8-SB-0.0-0.5** ***Collected:*** **7/15/2013 2:55:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.14	U	0.765	MDL	4.14	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.614	J	0.0693	MDL	1.03	PQL	mg/Kg	J	Z
BORON	5.29	J	0.868	MDL	10.3	PQL	mg/Kg	U	B
CADMIUM	0.375	J	0.0786	MDL	1.03	PQL	mg/Kg	J	Z
CALCIUM	11700		3.45	MDL	20.7	PQL	mg/Kg	J	E
COBALT	6.76		0.102	MDL	1.03	PQL	mg/Kg	J	A
LEAD	9.56		0.517	MDL	3.10	PQL	mg/Kg	J	E, Q, A
LITHIUM	21.9		0.35	MDL	4.1	PQL	mg/Kg	J	A
MOLYBDENUM	0.191	J	0.176	MDL	2.07	PQL	mg/Kg	U	F
TIN	2.88	J	0.227	MDL	10.3	PQL	mg/Kg	U	B
Zirconium	2.26	J	0.868	MDL	5.17	PQL	mg/Kg	J	Z

Sample ID: **SL-503-SA8-SB-3.0-4.0** ***Collected:*** **7/15/2013 3:05:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.19	U	0.774	MDL	4.19	PQL	mg/Kg	UJ	Q
ARSENIC	2.66	J	0.732	MDL	4.19	PQL	mg/Kg	J	Z
BERYLLIUM	0.400	J	0.0701	MDL	1.05	PQL	mg/Kg	J	Z
BORON	2.99	J	0.879	MDL	10.5	PQL	mg/Kg	U	B
CADMIUM	0.243	J	0.0795	MDL	1.05	PQL	mg/Kg	J	Z
CALCIUM	5060		3.49	MDL	20.9	PQL	mg/Kg	J	E
COBALT	4.88		0.104	MDL	1.05	PQL	mg/Kg	J	A
LEAD	3.71		0.523	MDL	3.14	PQL	mg/Kg	J	E, Q, A
LITHIUM	23.2		0.36	MDL	4.2	PQL	mg/Kg	J	A
TIN	2.71	J	0.230	MDL	10.5	PQL	mg/Kg	U	B
Zirconium	1.71	J	0.879	MDL	5.23	PQL	mg/Kg	J	Z

Sample ID: **SL-511-SA8-SB-0.0-0.5** ***Collected:*** **7/15/2013 2:15:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.09	U	0.757	MDL	4.09	PQL	mg/Kg	UJ	Q
ARSENIC	3.19	J	0.716	MDL	4.09	PQL	mg/Kg	J	Z
BERYLLIUM	0.578	J	0.0685	MDL	1.02	PQL	mg/Kg	J	Z
BORON	3.23	J	0.859	MDL	10.2	PQL	mg/Kg	U	B
CADMIUM	0.269	J	0.0777	MDL	1.02	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: PH067 **Laboratory: LL**

EDD Filename: PrepPH067_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: **METALS**

Method: **6010C** ***Matrix:*** **SO**

Sample ID: **SL-511-SA8-SB-0.0-0.5** ***Collected:*** **7/15/2013 2:15:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CALCIUM	2630		3.42	MDL	20.5	PQL	mg/Kg	J	E
COBALT	6.06		0.101	MDL	1.02	PQL	mg/Kg	J	A
LEAD	4.63		0.511	MDL	3.07	PQL	mg/Kg	J	E, Q, A
LITHIUM	23.2		0.35	MDL	4.1	PQL	mg/Kg	J	A
MOLYBDENUM	0.217	J	0.174	MDL	2.05	PQL	mg/Kg	U	F
SODIUM	75.7	J	17.1	MDL	102	PQL	mg/Kg	J	Z
TIN	2.71	J	0.225	MDL	10.2	PQL	mg/Kg	U	B
Zirconium	1.47	J	0.859	MDL	5.11	PQL	mg/Kg	J	Z

Sample ID: **SL-511-SA8-SB-6.0-7.0** ***Collected:*** **7/15/2013 2:30:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.54	U	0.839	MDL	4.54	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.595	J	0.0760	MDL	1.13	PQL	mg/Kg	J	Z
BORON	1.56	J	0.953	MDL	11.3	PQL	mg/Kg	U	B
CADMIUM	0.128	J	0.0862	MDL	1.13	PQL	mg/Kg	J	Z
CALCIUM	3090		3.79	MDL	22.7	PQL	mg/Kg	J	E
COBALT	5.33		0.112	MDL	1.13	PQL	mg/Kg	J	A
LEAD	4.95		0.567	MDL	3.40	PQL	mg/Kg	J	E, Q, A
LITHIUM	27.2		0.39	MDL	4.5	PQL	mg/Kg	J	A
TIN	3.54	J	0.250	MDL	11.3	PQL	mg/Kg	U	B
Zirconium	1.99	J	0.953	MDL	5.67	PQL	mg/Kg	J	Z

Sample ID: **SL-801-SA8-SB-0.0-0.5** ***Collected:*** **7/15/2013 11:15:00** ***Analysis Type:*** **REA** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COBALT	5.67		0.101	MDL	1.02	PQL	mg/Kg	J	A

Sample ID: **SL-801-SA8-SB-0.0-0.5** ***Collected:*** **7/15/2013 11:15:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.06	U	0.752	MDL	4.06	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.842	J	0.0680	MDL	1.02	PQL	mg/Kg	J	Z
BORON	16.1		0.853	MDL	10.2	PQL	mg/Kg	J	FD
CADMIUM	0.374	J	0.0772	MDL	1.02	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: PH067 **Laboratory: LL**

EDD Filename: PrepPH067_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-801-SA8-SB-0.0-0.5** ***Collected:*** **7/15/2013 11:15:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CALCIUM	5920		3.39	MDL	20.3	PQL	mg/Kg	J	E
LEAD	18.4		0.508	MDL	3.05	PQL	mg/Kg	J	E, Q, FD, A
LITHIUM	21.7		0.35	MDL	4.1	PQL	mg/Kg	J	A
MOLYBDENUM	2.03	U	0.173	MDL	2.03	PQL	mg/Kg	UJ	FD
SODIUM	85.6	J	17.0	MDL	102	PQL	mg/Kg	J	Z
TIN	2.68	J	0.223	MDL	10.2	PQL	mg/Kg	U	B
Zirconium	0.923	J	0.853	MDL	5.08	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: **SL-501-SA8-SB-0.0-0.5** ***Collected:*** **7/15/2013 11:10:00** ***Analysis Type:*** **REA2** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.245	J	0.103	MDL	0.411	PQL	mg/Kg	J	Z

Sample ID: **SL-501-SA8-SB-0.0-0.5** ***Collected:*** **7/15/2013 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
SILVER	0.0421	J	0.0267	MDL	0.206	PQL	mg/Kg	J	Z

Sample ID: **SL-501-SA8-SB-12.0-13.0** ***Collected:*** **7/15/2013 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	0.0697	J	0.0269	MDL	0.207	PQL	mg/Kg	J	Z

Sample ID: **SL-501-SA8-SB-4.0-5.0** ***Collected:*** **7/15/2013 11:30:00** ***Analysis Type:*** **REA2** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.283	J	0.104	MDL	0.415	PQL	mg/Kg	J	Z

Sample ID: **SL-501-SA8-SB-4.0-5.0** ***Collected:*** **7/15/2013 11:30:00** ***Analysis Type:*** **RES** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0344	J	0.0270	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: PH067 **Laboratory: LL**

EDD Filename: PrepPH067_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: **SL-501-SA8-SB-9.0-10.0** ***Collected:*** **7/15/2013 11:45:00** ***Analysis Type:*** **RES** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0487	J	0.0281	MDL	0.216	PQL	mg/Kg	J	Z

Sample ID: **SL-502-SA8-SB-0.0-0.5** ***Collected:*** **7/15/2013 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
SELENIUM	0.255	J	0.105	MDL	0.421	PQL	mg/Kg	J	Z

Sample ID: **SL-502-SA8-SB-0.0-0.5** ***Collected:*** **7/15/2013 8:40:00** ***Analysis Type:*** **RES** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0425	J	0.0273	MDL	0.210	PQL	mg/Kg	J	Z

Sample ID: **SL-502-SA8-SB-4.0-5.0** ***Collected:*** **7/15/2013 9:30:00** ***Analysis Type:*** **REA2** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.189	J	0.104	MDL	0.415	PQL	mg/Kg	J	Z

Sample ID: **SL-502-SA8-SB-4.0-5.0** ***Collected:*** **7/15/2013 9:30:00** ***Analysis Type:*** **RES** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0428	J	0.0270	MDL	0.208	PQL	mg/Kg	J	Z

Sample ID: **SL-502-SA8-SB-7.5-8.5** ***Collected:*** **7/15/2013 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
SELENIUM	0.158	J	0.107	MDL	0.426	PQL	mg/Kg	J	Z

Sample ID: **SL-502-SA8-SB-7.5-8.5** ***Collected:*** **7/15/2013 10:15:00** ***Analysis Type:*** **RES** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0505	J	0.0277	MDL	0.213	PQL	mg/Kg	J	Z

Sample ID: **SL-503-SA8-SB-0.0-0.5** ***Collected:*** **7/15/2013 2:55:00** ***Analysis Type:*** **REA2** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.225	J	0.103	MDL	0.414	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: PH067 **Laboratory: LL**

EDD Filename: PrepPH067_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-503-SA8-SB-0.0-0.5 **Collected: 7/15/2013 2:55:00** **Analysis Type: RES** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0964	J	0.0269	MDL	0.207	PQL	mg/Kg	J	Z

Sample ID: SL-511-SA8-SB-0.0-0.5 **Collected: 7/15/2013 2:15:00** **Analysis Type: REA2** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.204	J	0.102	MDL	0.409	PQL	mg/Kg	J	Z

Sample ID: SL-511-SA8-SB-0.0-0.5 **Collected: 7/15/2013 2:15:00** **Analysis Type: RES** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0411	J	0.0266	MDL	0.205	PQL	mg/Kg	J	Z

Sample ID: SL-511-SA8-SB-6.0-7.0 **Collected: 7/15/2013 2:30:00** **Analysis Type: REA2** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.142	J	0.113	MDL	0.454	PQL	mg/Kg	J	Z

Sample ID: SL-511-SA8-SB-6.0-7.0 **Collected: 7/15/2013 2:30:00** **Analysis Type: RES** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.104	J	0.0295	MDL	0.227	PQL	mg/Kg	J	Z

Sample ID: SL-801-SA8-SB-0.0-0.5 **Collected: 7/15/2013 11:15:00** **Analysis Type: REA2** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.246	J	0.102	MDL	0.406	PQL	mg/Kg	J	Z

Sample ID: SL-801-SA8-SB-0.0-0.5 **Collected: 7/15/2013 11:15:00** **Analysis Type: RES** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0479	J	0.0264	MDL	0.203	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: PH067 **Laboratory: LL**

EDD Filename: PrepPH067_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: SL-501-SA8-SB-0.0-0.5 **Collected: 7/15/2013 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
MERCURY	0.0276		0.0102	MDL	0.0171	PQL	mg/Kg	J	FD

Sample ID: SL-501-SA8-SB-4.0-5.0 **Collected: 7/15/2013 11:30:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0107	J	0.0107	MDL	0.0178	PQL	mg/Kg	J	Z

Sample ID: SL-502-SA8-SB-4.0-5.0 **Collected: 7/15/2013 9:30:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0164	J	0.0106	MDL	0.0176	PQL	mg/Kg	J	Z

Sample ID: SL-502-SA8-SB-7.5-8.5 **Collected: 7/15/2013 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
MERCURY	0.0118	J	0.0103	MDL	0.0172	PQL	mg/Kg	J	Z

Sample ID: SL-801-SA8-SB-0.0-0.5 **Collected: 7/15/2013 11:15:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0493		0.010	MDL	0.0166	PQL	mg/Kg	J	FD

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-501-SA8-SB-0.0-0.5 **Collected: 7/15/2013 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
1,2,3,4,6,7,8-HPCDF	3.22	JB	0.0327	MDL	5.05	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.317	JQ	0.0567	MDL	5.05	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.303	JQ	0.0729	MDL	5.05	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.312	JBQ	0.0405	MDL	5.05	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	1.14	J	0.0805	MDL	5.05	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.379	JBQ	0.0411	MDL	5.05	PQL	ng/Kg	J	Z, FD
1,2,3,7,8,9-HXCDD	0.996	JB	0.0819	MDL	5.05	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: PH067 **Laboratory: LL**

EDD Filename: PrepPH067_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix:** SO

Sample ID: **SL-501-SA8-SB-0.0-0.5** ***Collected:*** **7/15/2013 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
1,2,3,7,8,9-HXCDF	0.415	J	0.0454	MDL	5.05	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.263	JQ	0.0829	MDL	5.05	PQL	ng/Kg	J	Z, FD
1,2,3,7,8-PECDF	1.09	JB	0.0476	MDL	5.05	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.262	JB	0.0407	MDL	5.05	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.653	JQ	0.0470	MDL	5.05	PQL	ng/Kg	J	Z, FD
2,3,7,8-TCDD	0.0816	JQ	0.0656	MDL	1.01	PQL	ng/Kg	J	Z, FD
2,3,7,8-TCDF	0.540	J	0.0809	MDL	1.01	PQL	ng/Kg	J	Z
OCDD	240	B	0.0610	MDL	10.1	PQL	ng/Kg	J	Q, Q, FD
OCDF	5.69	JB	0.0547	MDL	10.1	PQL	ng/Kg	J	Z

Sample ID: **SL-501-SA8-SB-12.0-13.0** ***Collected:*** **7/15/2013 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	0.252	JBQ	0.0397	MDL	5.26	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0569	JBQ	0.0122	MDL	5.26	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0304	J	0.0292	MDL	5.26	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.0331	JBQ	0.0153	MDL	5.26	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0301	JBQ	0.0157	MDL	5.26	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0562	JBQ	0.0315	MDL	5.26	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0198	JQ	0.0181	MDL	5.26	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.0530	JB	0.0271	MDL	5.26	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0238	JBQ	0.0155	MDL	5.26	PQL	ng/Kg	U	B
OCDD	2.26	JB	0.0289	MDL	10.5	PQL	ng/Kg	J	Z
OCDF	0.183	JB	0.0439	MDL	10.5	PQL	ng/Kg	U	B

Sample ID: **SL-501-SA8-SB-4.0-5.0** ***Collected:*** **7/15/2013 11:30:00** ***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	1.33	JBQ	0.0818	MDL	5.30	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.243	JB	0.0184	MDL	5.30	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.0621	JQ	0.0560	MDL	5.30	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.0457	JBQ	0.0272	MDL	5.30	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.301	JQ	0.0609	MDL	5.30	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0985	JB	0.0295	MDL	5.30	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.471	JBQ	0.0603	MDL	5.30	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: PH067 **Laboratory: LL**

EDD Filename: PrepPH067_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix:** SO

Sample ID: **SL-501-SA8-SB-4.0-5.0** ***Collected:*** **7/15/2013 11:30:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,7,8,9-HXCDF	0.123	JQ	0.0362	MDL	5.30	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.0925	JQ	0.0694	MDL	5.30	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.132	JBQ	0.0454	MDL	5.30	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0570	JBQ	0.0274	MDL	5.30	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0585	JQ	0.0399	MDL	5.30	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.105	J	0.0638	MDL	1.06	PQL	ng/Kg	J	Z
OCDF	0.543	JB	0.0591	MDL	10.6	PQL	ng/Kg	J	Z

Sample ID: **SL-501-SA8-SB-9.0-10.0** ***Collected:*** **7/15/2013 11:45:00** ***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	0.138	JB	0.0455	MDL	5.33	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0422	JBQ	0.0117	MDL	5.33	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0295	J	0.0162	MDL	5.33	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.0259	JBQ	0.0189	MDL	5.33	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0503	JBQ	0.0472	MDL	5.33	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0522	JQ	0.0211	MDL	5.33	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.0265	JBQ	0.0174	MDL	5.33	PQL	ng/Kg	U	B
OCDD	1.06	JBQ	0.0333	MDL	10.7	PQL	ng/Kg	U	B
OCDF	0.198	JB	0.0508	MDL	10.7	PQL	ng/Kg	U	B

Sample ID: **SL-502-SA8-SB-0.0-0.5** ***Collected:*** **7/15/2013 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
1,2,3,4,7,8-HXCDF	4.75	JB	0.107	MDL	5.10	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	3.19	JB	0.112	MDL	5.10	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	4.56	JB	0.104	MDL	5.10	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	2.77	JB	0.100	MDL	5.10	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	1.46	JQ	0.107	MDL	5.10	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.571	J	0.193	MDL	1.02	PQL	ng/Kg	J	Z

Sample ID: **SL-502-SA8-SB-4.0-5.0** ***Collected:*** **7/15/2013 9:30:00** ***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	4.77	JB	0.0373	MDL	5.38	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: PH067 **Laboratory: LL**

EDD Filename: PrepPH067_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix:** SO

Sample ID: **SL-502-SA8-SB-4.0-5.0** ***Collected:*** **7/15/2013 9:30:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,7,8,9-HPCDF	0.577	JQ	0.0554	MDL	5.38	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	1.75	J	0.111	MDL	5.38	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.715	JB	0.0533	MDL	5.38	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	2.30	J	0.116	MDL	5.38	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.566	JBQ	0.0511	MDL	5.38	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	2.14	JB	0.118	MDL	5.38	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.513	J	0.0599	MDL	5.38	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.906	JQ	0.145	MDL	5.38	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	1.75	JB	0.0532	MDL	5.38	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.396	JB	0.0474	MDL	5.38	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.440	J	0.0482	MDL	5.38	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.149	JQ	0.0830	MDL	1.08	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.205	J	0.0906	MDL	1.08	PQL	ng/Kg	J	Z
OCDF	8.63	JB	0.0499	MDL	10.8	PQL	ng/Kg	J	Z

Sample ID: **SL-502-SA8-SB-7.5-8.5** ***Collected:*** **7/15/2013 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	1.83	JBQ	0.0257	MDL	5.24	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.230	JQ	0.0395	MDL	5.24	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.665	J	0.0848	MDL	5.24	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.309	JB	0.0313	MDL	5.24	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.871	JQ	0.0870	MDL	5.24	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.228	JBQ	0.0315	MDL	5.24	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.638	JB	0.0884	MDL	5.24	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.324	JQ	0.0394	MDL	5.24	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.268	JQ	0.0834	MDL	5.24	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.541	JB	0.0336	MDL	5.24	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.227	JBQ	0.0325	MDL	5.24	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.206	JQ	0.0311	MDL	5.24	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.0961	JQ	0.0579	MDL	1.05	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.0929	JQ	0.0541	MDL	1.05	PQL	ng/Kg	J	Z
OCDF	3.40	JB	0.0419	MDL	10.5	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: PH067 **Laboratory: LL**

EDD Filename: PrepPH067_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix:** SO

Sample ID: SL-503-SA8-SB-0.0-0.5 **Collected:** 7/15/2013 2:55:00 **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	2.16	JB	0.0445	MDL	5.19	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.209	JQ	0.0690	MDL	5.19	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.270	JQ	0.0794	MDL	5.19	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.303	JB	0.0389	MDL	5.19	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.868	J	0.0852	MDL	5.19	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.441	JB	0.0396	MDL	5.19	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.815	JB	0.0831	MDL	5.19	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.471	J	0.0453	MDL	5.19	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.148	JQ	0.0922	MDL	5.19	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	2.52	JB	0.0504	MDL	5.19	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.213	JBQ	0.0392	MDL	5.19	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.210	JQ	0.0522	MDL	5.19	PQL	ng/Kg	J	Z
OCDF	3.21	JB	0.0604	MDL	10.4	PQL	ng/Kg	J	Z

Sample ID: SL-503-SA8-SB-3.0-4.0 **Collected:** 7/15/2013 3:05:00 **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-HPCDD	0.403	JBQ	0.0435	MDL	5.17	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.0653	JBQ	0.0131	MDL	5.17	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0431	J	0.0174	MDL	5.17	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.0484	JBQ	0.0121	MDL	5.17	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.140	JQ	0.0375	MDL	5.17	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0283	JBQ	0.0150	MDL	5.17	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.222	JBQ	0.0372	MDL	5.17	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.436	J	0.0204	MDL	5.17	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.0679	JQ	0.0479	MDL	5.17	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.118	JBQ	0.0253	MDL	5.17	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0300	JQ	0.0233	MDL	5.17	PQL	ng/Kg	J	Z
OCDD	2.77	JB	0.0266	MDL	10.3	PQL	ng/Kg	J	Z
OCDF	0.162	JB	0.0393	MDL	10.3	PQL	ng/Kg	U	B

Sample ID: SL-511-SA8-SB-0.0-0.5 **Collected:** 7/15/2013 2:15:00 **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	0.0766	JBQ	0.0352	MDL	5.01	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: PH067 **Laboratory: LL**

EDD Filename: PrepPH067_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-511-SA8-SB-0.0-0.5** ***Collected:*** **7/15/2013 2:15:00** ***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	0.0266	JBQ	0.0121	MDL	5.01	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0230	JQ	0.0196	MDL	5.01	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.0339	JQ	0.0253	MDL	5.01	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.0362	JBQ	0.0138	MDL	5.01	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0499	JBQ	0.0273	MDL	5.01	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0613	JQ	0.0158	MDL	5.01	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.0157	JB	0.0135	MDL	5.01	PQL	ng/Kg	U	B
OCDD	0.345	JBQ	0.0267	MDL	10.0	PQL	ng/Kg	U	B
OCDF	0.0970	JBQ	0.0380	MDL	10.0	PQL	ng/Kg	U	B

Sample ID: **SL-511-SA8-SB-6.0-7.0** ***Collected:*** **7/15/2013 2:30:00** ***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	0.112	JBQ	0.0530	MDL	5.77	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0397	JBQ	0.0176	MDL	5.77	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0478	JQ	0.0264	MDL	5.77	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.0353	JBQ	0.0223	MDL	5.77	PQL	ng/Kg	U	B
OCDD	0.347	JBQ	0.0505	MDL	11.5	PQL	ng/Kg	U	B

Sample ID: **SL-801-SA8-SB-0.0-0.5** ***Collected:*** **7/15/2013 11:15:00** ***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	2.24	JB	0.0371	MDL	5.10	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.224	JQ	0.0616	MDL	5.10	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.265	J	0.0643	MDL	5.10	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.228	JBQ	0.0373	MDL	5.10	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.803	J	0.0691	MDL	5.10	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.132	JBQ	0.0376	MDL	5.10	PQL	ng/Kg	UJ	B, FD
1,2,3,7,8,9-HXCDD	0.808	JB	0.0701	MDL	5.10	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.431	J	0.0416	MDL	5.10	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.149	JQ	0.0809	MDL	5.10	PQL	ng/Kg	J	Z, FD
1,2,3,7,8-PECDF	1.18	JB	0.0427	MDL	5.10	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.208	JBQ	0.0358	MDL	5.10	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.208	JQ	0.0396	MDL	5.10	PQL	ng/Kg	J	Z, FD
2,3,7,8-TCDD	1.02	U	0.0473	MDL	1.02	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: PH067 **Laboratory: LL**

EDD Filename: PrepPH067_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-801-SA8-SB-0.0-0.5 **Collected: 7/15/2013 11:15:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,3,7,8-TCDF	0.685	J	0.0794	MDL	1.02	PQL	ng/Kg	J	Z
OCDD	137	B	0.0573	MDL	10.2	PQL	ng/Kg	J	FD
OCDF	4.72	JB	0.0482	MDL	10.2	PQL	ng/Kg	J	Z

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: SL-501-SA8-SB-0.0-0.5 **Collected: 7/15/2013 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
EFH (C15-C20)	2.6	J	2.1	MDL	5.2	PQL	mg/Kg	J	Z

Sample ID: SL-502-SA8-SB-0.0-0.5 **Collected: 7/15/2013 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
EFH (C15-C20)	2.9	J	2.1	MDL	5.2	PQL	mg/Kg	J	Z

Sample ID: SL-801-SA8-SB-0.0-0.5 **Collected: 7/15/2013 11:15:00** **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)	2.4	J	2.1	MDL	5.2	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 8081B **Matrix: SO**

Sample ID: SL-501-SA8-SB-0.0-0.5 **Collected: 7/15/2013 11:10:00** **Analysis Type: RES-BASE/NEUTRAL** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDE	2.7		0.34	MDL	1.8	PQL	ug/Kg	J	FD

Sample ID: SL-801-SA8-SB-0.0-0.5 **Collected: 7/15/2013 11:15:00** **Analysis Type: RES-BASE/NEUTRAL** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDE	1.3	J	0.34	MDL	1.8	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: PH067 **Laboratory: LL**

EDD Filename: PrepPH067_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 8082A **Matrix: SO**

Sample ID: SL-501-SA8-SB-0.0-0.5 **Collected: 7/15/2013 11:10:00** **Analysis Type: RES-BASE/NEUTRAL** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1254	8.1	J	4.6	MDL	18	PQL	ug/Kg	J	Z

Sample ID: SL-502-SA8-SB-4.0-5.0 **Collected: 7/15/2013 9:30:00** **Analysis Type: RES-BASE/NEUTRAL** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1254	6.8	J	4.8	MDL	18	PQL	ug/Kg	J	Z

Sample ID: SL-502-SA8-SB-7.5-8.5 **Collected: 7/15/2013 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
Aroclor 5460	17	J	11	MDL	36	PQL	ug/Kg	J	Z

Sample ID: SL-801-SA8-SB-0.0-0.5 **Collected: 7/15/2013 11:15:00** **Analysis Type: RES-BASE/NEUTRAL** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1254	13	J	4.6	MDL	18	PQL	ug/Kg	J	Z

Method Category: SVOA

Method: 8151A **Matrix: SO**

Sample ID: SL-501-SA8-SB-0.0-0.5 **Collected: 7/15/2013 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
2,4,5-T	1.8	U	0.85	MDL	1.8	PQL	ug/Kg	R	Q
2,4,5-TP (Silvex)	1.8	U	0.78	MDL	1.8	PQL	ug/Kg	R	Q
2,4-D	37	U	12	MDL	37	PQL	ug/Kg	R	Q
2,4-DB	18	U	6.4	MDL	18	PQL	ug/Kg	R	Q

Method Category: SVOA

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

Sample ID: SL-501-SA8-SB-0.0-0.5 **Collected: 7/15/2013 11:10:00** **Analysis Type: RES-BASE/NEUTRAL** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1-METHYLNAPHTHALENE	1.7	U	0.70	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: PH067 **Laboratory: LL**

EDD Filename: PrepPH067_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

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

Sample ID: **SL-501-SA8-SB-0.0-0.5** ***Collected:*** **7/15/2013 11:10:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-METHYLNAPHTHALENE	1.3	J	0.70	MDL	1.7	PQL	ug/Kg	J	Z
ANTHRACENE	0.49	J	0.35	MDL	1.7	PQL	ug/Kg	J	Z, FD
BENZO(A)ANTHRACENE	3.3		0.70	MDL	1.7	PQL	ug/Kg	J	FD
BENZO(A)PYRENE	5.2		0.70	MDL	1.7	PQL	ug/Kg	J	FD
BENZO(B)FLUORANTHENE	6.9		0.70	MDL	1.7	PQL	ug/Kg	J	FD
BENZO(E)PYRENE	4.4	J	3.5	MDL	18	PQL	ug/Kg	J	Z, FD
BENZO(G,H,I)PERYLENE	3.7		0.70	MDL	1.7	PQL	ug/Kg	J	FD
BIS(2-ETHYLHEXYL)PHTHALATE	13	J	6.3	MDL	19	PQL	ug/Kg	J	Z
CHRYSENE	8.0		0.35	MDL	1.7	PQL	ug/Kg	J	FD
DIBENZO(A,H)ANTHRACENE	1.2	J	0.70	MDL	1.7	PQL	ug/Kg	J	Z, FD
Di-n-octylphthalate	19	U	6.3	MDL	19	PQL	ug/Kg	UJ	FD
FLUORANTHENE	6.5		0.70	MDL	1.7	PQL	ug/Kg	J	FD
INDENO(1,2,3-CD)PYRENE	3.4		0.70	MDL	1.7	PQL	ug/Kg	J	FD
PHENANTHRENE	3.2		0.70	MDL	1.7	PQL	ug/Kg	J	FD
PYRENE	6.9		0.70	MDL	1.7	PQL	ug/Kg	J	FD

Sample ID: **SL-501-SA8-SB-4.0-5.0** ***Collected:*** **7/15/2013 11:30:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(K)FLUORANTHENE	1.2	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z
CHRYSENE	0.65	J	0.36	MDL	1.8	PQL	ug/Kg	J	Z
NAPHTHALENE	1.5	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: **SL-502-SA8-SB-0.0-0.5** ***Collected:*** **7/15/2013 8:40:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BIS(2-ETHYLHEXYL)PHTHALATE	13	J	6.3	MDL	19	PQL	ug/Kg	J	Z
Di-n-butylphthalate	8.2	J	6.3	MDL	19	PQL	ug/Kg	J	Z

Sample ID: **SL-502-SA8-SB-4.0-5.0** ***Collected:*** **7/15/2013 9:30:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-METHYLNAPHTHALENE	1.2	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z
ANTHRACENE	0.67	J	0.36	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(A)ANTHRACENE	0.82	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: PH067 **Laboratory: LL**

EDD Filename: PrepPH067_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

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

Sample ID: SL-502-SA8-SB-4.0-5.0 **Collected: 7/15/2013 9:30:00** **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	11	J	6.5	MDL	19	PQL	ug/Kg	J	Z

Sample ID: SL-502-SA8-SB-7.5-8.5 **Collected: 7/15/2013 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	0.43	J	0.36	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(B)FLUORANTHENE	0.88	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	15	J	6.5	MDL	19	PQL	ug/Kg	J	Z
CHRYSENE	1.4	J	0.36	MDL	1.8	PQL	ug/Kg	J	Z
FLUORANTHENE	1.5	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z
NAPHTHALENE	1.7	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z
PHENANTHRENE	1.1	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z
PYRENE	1.4	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: SL-503-SA8-SB-0.0-0.5 **Collected: 7/15/2013 2:55:00** **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	0.84	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(B)FLUORANTHENE	1.4	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	11	J	6.5	MDL	19	PQL	ug/Kg	J	Z
FLUORANTHENE	1.4	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z
PHENANTHRENE	1.0	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z
PYRENE	1.2	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: SL-511-SA8-SB-0.0-0.5 **Collected: 7/15/2013 2:15:00** **Analysis Type: RES-BASE/NEUTRAL** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(K)FLUORANTHENE	1.5	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
CHRYSENE	0.58	J	0.34	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: SL-801-SA8-SB-0.0-0.5 **Collected: 7/15/2013 11:15:00** **Analysis Type: RES-BASE/NEUTRAL** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1-METHYLNAPHTHALENE	0.72	J	0.70	MDL	1.7	PQL	ug/Kg	J	Z, FD
2-METHYLNAPHTHALENE	1.0	J	0.70	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: PH067 **Laboratory: LL**

EDD Filename: PrepPH067_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: **SVOA**

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

Sample ID: **SL-801-SA8-SB-0.0-0.5** ***Collected:*** **7/15/2013 11:15:00** ***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	1.7	U	0.35	MDL	1.7	PQL	ug/Kg	UJ	FD
BENZO(A)ANTHRACENE	0.77	J	0.70	MDL	1.7	PQL	ug/Kg	J	Z, FD
BENZO(A)PYRENE	0.94	J	0.70	MDL	1.7	PQL	ug/Kg	J	Z, FD
BENZO(B)FLUORANTHENE	2.2		0.70	MDL	1.7	PQL	ug/Kg	J	FD
BENZO(E)PYRENE	18	U	3.5	MDL	18	PQL	ug/Kg	UJ	FD
BENZO(G,H,I)PERYLENE	0.94	J	0.70	MDL	1.7	PQL	ug/Kg	J	Z, FD
BIS(2-ETHYLHEXYL)PHTHALATE	10	J	6.3	MDL	19	PQL	ug/Kg	J	Z
CHRYSENE	3.9		0.35	MDL	1.7	PQL	ug/Kg	J	FD
DIBENZO(A,H)ANTHRACENE	1.7	U	0.70	MDL	1.7	PQL	ug/Kg	UJ	FD
Di-n-octylphthalate	10	J	6.3	MDL	19	PQL	ug/Kg	J	Z, FD
FLUORANTHENE	1.7	J	0.70	MDL	1.7	PQL	ug/Kg	J	FD
INDENO(1,2,3-CD)PYRENE	0.70	J	0.70	MDL	1.7	PQL	ug/Kg	J	Z, FD
PHENANTHRENE	1.4	J	0.70	MDL	1.7	PQL	ug/Kg	J	Z, FD
PYRENE	2.1		0.70	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: PH067 **Laboratory: LL**

EDD Filename: PrepPH067_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Reason Code Legend

Reason Code	*Description*
*#	Professional Judgment
A	ICP Serial Dilution
B	Method Blank Contamination
E	Laboratory Duplicate Precision
E	Matrix Spike Precision
F	Field Blank Contamination
FD	Field Duplicate Precision
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
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

Enclosure I

EPA Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control
Outlier Reports

PH067

Method Blank Outlier Report

Lab Reporting Batch ID: PH067 **Laboratory: LL**

EDD Filename: PrepPH067_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2040B371956	7/24/2013 7:56:00 PM	1,2,3,4,6,7,8-HPCDD	0.0781 ng/Kg	SL-501-SA8-SB-0.0-0.5
		1,2,3,4,6,7,8-HPCDF	0.0390 ng/Kg	SL-501-SA8-SB-12.0-13.0
		1,2,3,4,7,8-HXCDF	0.0595 ng/Kg	SL-501-SA8-SB-4.0-5.0
		1,2,3,6,7,8-HXCDF	0.0378 ng/Kg	SL-501-SA8-SB-9.0-10.0
		1,2,3,7,8,9-HXCDD	0.0383 ng/Kg	SL-502-SA8-SB-0.0-0.5
		1,2,3,7,8-PECDF	0.0603 ng/Kg	SL-502-SA8-SB-4.0-5.0
		2,3,4,6,7,8-HXCDF	0.0469 ng/Kg	SL-502-SA8-SB-7.5-8.5
		OCDD	0.316 ng/Kg	SL-503-SA8-SB-0.0-0.5
		OCDF	0.0824 ng/Kg	SL-503-SA8-SB-3.0-4.0
				SL-511-SA8-SB-0.0-0.5
				SL-511-SA8-SB-6.0-7.0
				SL-801-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-501-SA8-SB-12.0-13.0(RES)	1,2,3,4,6,7,8-HPCDD	0.252 ng/Kg	0.252U ng/Kg
SL-501-SA8-SB-12.0-13.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0569 ng/Kg	0.0569U ng/Kg
SL-501-SA8-SB-12.0-13.0(RES)	1,2,3,4,7,8-HXCDF	0.0331 ng/Kg	0.0331U ng/Kg
SL-501-SA8-SB-12.0-13.0(RES)	1,2,3,6,7,8-HXCDF	0.0301 ng/Kg	0.0301U ng/Kg
SL-501-SA8-SB-12.0-13.0(RES)	1,2,3,7,8,9-HXCDD	0.0562 ng/Kg	0.0562U ng/Kg
SL-501-SA8-SB-12.0-13.0(RES)	1,2,3,7,8-PECDF	0.0530 ng/Kg	0.0530U ng/Kg
SL-501-SA8-SB-12.0-13.0(RES)	2,3,4,6,7,8-HXCDF	0.0238 ng/Kg	0.0238U ng/Kg
SL-501-SA8-SB-12.0-13.0(RES)	OCDF	0.183 ng/Kg	0.183U ng/Kg
SL-501-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.0457 ng/Kg	0.0457U ng/Kg
SL-501-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.0985 ng/Kg	0.0985U ng/Kg
SL-501-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.132 ng/Kg	0.132U ng/Kg
SL-501-SA8-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0570 ng/Kg	0.0570U ng/Kg
SL-501-SA8-SB-9.0-10.0(RES)	1,2,3,4,6,7,8-HPCDD	0.138 ng/Kg	0.138U ng/Kg
SL-501-SA8-SB-9.0-10.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0422 ng/Kg	0.0422U ng/Kg
SL-501-SA8-SB-9.0-10.0(RES)	1,2,3,4,7,8-HXCDF	0.0259 ng/Kg	0.0259U ng/Kg
SL-501-SA8-SB-9.0-10.0(RES)	1,2,3,7,8,9-HXCDD	0.0503 ng/Kg	0.0503U ng/Kg
SL-501-SA8-SB-9.0-10.0(RES)	2,3,4,6,7,8-HXCDF	0.0265 ng/Kg	0.0265U ng/Kg
SL-501-SA8-SB-9.0-10.0(RES)	OCDD	1.06 ng/Kg	1.06U ng/Kg
SL-501-SA8-SB-9.0-10.0(RES)	OCDF	0.198 ng/Kg	0.198U ng/Kg
SL-502-SA8-SB-7.5-8.5(RES)	2,3,4,6,7,8-HXCDF	0.227 ng/Kg	0.227U ng/Kg
SL-503-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.213 ng/Kg	0.213U ng/Kg
SL-503-SA8-SB-3.0-4.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0653 ng/Kg	0.0653U ng/Kg
SL-503-SA8-SB-3.0-4.0(RES)	1,2,3,4,7,8-HXCDF	0.0484 ng/Kg	0.0484U ng/Kg
SL-503-SA8-SB-3.0-4.0(RES)	1,2,3,6,7,8-HXCDF	0.0283 ng/Kg	0.0283U ng/Kg
SL-503-SA8-SB-3.0-4.0(RES)	1,2,3,7,8-PECDF	0.118 ng/Kg	0.118U ng/Kg
SL-503-SA8-SB-3.0-4.0(RES)	OCDF	0.162 ng/Kg	0.162U ng/Kg
SL-511-SA8-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDD	0.0766 ng/Kg	0.0766U ng/Kg
SL-511-SA8-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDF	0.0266 ng/Kg	0.0266U ng/Kg
SL-511-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.0362 ng/Kg	0.0362U ng/Kg
SL-511-SA8-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDD	0.0499 ng/Kg	0.0499U ng/Kg
SL-511-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0157 ng/Kg	0.0157U ng/Kg
SL-511-SA8-SB-0.0-0.5(RES)	OCDD	0.345 ng/Kg	0.345U ng/Kg

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

Method Blank Outlier Report

Lab Reporting Batch ID: PH067 **Laboratory: LL**

EDD Filename: PrepPH067_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples

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-511-SA8-SB-0.0-0.5(RES)	OCDF	0.0970 ng/Kg	0.0970U ng/Kg
SL-511-SA8-SB-6.0-7.0(RES)	1,2,3,4,6,7,8-HPCDD	0.112 ng/Kg	0.112U ng/Kg
SL-511-SA8-SB-6.0-7.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0397 ng/Kg	0.0397U ng/Kg
SL-511-SA8-SB-6.0-7.0(RES)	1,2,3,4,7,8-HXCDF	0.0353 ng/Kg	0.0353U ng/Kg
SL-511-SA8-SB-6.0-7.0(RES)	OCDD	0.347 ng/Kg	0.347U ng/Kg
SL-801-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.228 ng/Kg	0.228U ng/Kg
SL-801-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.132 ng/Kg	0.132U ng/Kg
SL-801-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.208 ng/Kg	0.208U ng/Kg

Method: 6010C
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P19937BB221020	7/21/2013 10:20:00 AM	ALUMINUM BORON CALCIUM TIN ZINC	9.23 mg/Kg 2.24 mg/Kg 24.4 mg/Kg 1.60 mg/Kg 0.513 mg/Kg	SL-501-SA8-SB-0.0-0.5 SL-501-SA8-SB-12.0-13.0 SL-501-SA8-SB-4.0-5.0 SL-501-SA8-SB-9.0-10.0 SL-502-SA8-SB-0.0-0.5 SL-502-SA8-SB-4.0-5.0 SL-502-SA8-SB-7.5-8.5 SL-503-SA8-SB-0.0-0.5 SL-503-SA8-SB-3.0-4.0 SL-511-SA8-SB-0.0-0.5 SL-511-SA8-SB-6.0-7.0 SL-801-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-501-SA8-SB-0.0-0.5(RES)	BORON	6.11 mg/Kg	6.11U mg/Kg
SL-501-SA8-SB-0.0-0.5(RES)	TIN	2.77 mg/Kg	2.77U mg/Kg
SL-501-SA8-SB-12.0-13.0(RES)	BORON	5.26 mg/Kg	5.26U mg/Kg
SL-501-SA8-SB-12.0-13.0(RES)	TIN	2.89 mg/Kg	2.89U mg/Kg
SL-501-SA8-SB-4.0-5.0(RES)	BORON	5.00 mg/Kg	5.00U mg/Kg
SL-501-SA8-SB-4.0-5.0(RES)	TIN	3.04 mg/Kg	3.04U mg/Kg
SL-501-SA8-SB-9.0-10.0(RES)	BORON	6.30 mg/Kg	6.30U mg/Kg
SL-501-SA8-SB-9.0-10.0(RES)	TIN	3.12 mg/Kg	3.12U mg/Kg
SL-502-SA8-SB-0.0-0.5(RES)	BORON	7.28 mg/Kg	7.28U mg/Kg
SL-502-SA8-SB-0.0-0.5(RES)	TIN	2.89 mg/Kg	2.89U mg/Kg
SL-502-SA8-SB-4.0-5.0(RES)	BORON	4.78 mg/Kg	4.78U mg/Kg
SL-502-SA8-SB-4.0-5.0(RES)	TIN	3.08 mg/Kg	3.08U mg/Kg
SL-502-SA8-SB-7.5-8.5(RES)	BORON	1.86 mg/Kg	1.86U mg/Kg
SL-502-SA8-SB-7.5-8.5(RES)	TIN	2.95 mg/Kg	2.95U mg/Kg
SL-503-SA8-SB-0.0-0.5(RES)	BORON	5.29 mg/Kg	5.29U mg/Kg

Method Blank Outlier Report

Lab Reporting Batch ID: PH067 **Laboratory: LL**

EDD Filename: PrepPH067_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 6010C
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples

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-503-SA8-SB-0.0-0.5(RES)	TIN	2.88 mg/Kg	2.88U mg/Kg
SL-503-SA8-SB-3.0-4.0(RES)	BORON	2.99 mg/Kg	2.99U mg/Kg
SL-503-SA8-SB-3.0-4.0(RES)	TIN	2.71 mg/Kg	2.71U mg/Kg
SL-511-SA8-SB-0.0-0.5(RES)	BORON	3.23 mg/Kg	3.23U mg/Kg
SL-511-SA8-SB-0.0-0.5(RES)	TIN	2.71 mg/Kg	2.71U mg/Kg
SL-511-SA8-SB-6.0-7.0(RES)	BORON	1.56 mg/Kg	1.56U mg/Kg
SL-511-SA8-SB-6.0-7.0(RES)	TIN	3.54 mg/Kg	3.54U mg/Kg
SL-801-SA8-SB-0.0-0.5(RES)	TIN	2.68 mg/Kg	2.68U mg/Kg

Method: 6020A
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P19937BB222059A	7/25/2013 8:59:00 PM	STRONTIUM	0.161 mg/Kg	SL-501-SA8-SB-0.0-0.5 SL-501-SA8-SB-12.0-13.0 SL-501-SA8-SB-4.0-5.0 SL-501-SA8-SB-9.0-10.0 SL-502-SA8-SB-0.0-0.5 SL-502-SA8-SB-4.0-5.0 SL-502-SA8-SB-7.5-8.5 SL-503-SA8-SB-0.0-0.5 SL-503-SA8-SB-3.0-4.0 SL-511-SA8-SB-0.0-0.5 SL-511-SA8-SB-6.0-7.0 SL-801-SA8-SB-0.0-0.5

Field Blank Outlier Report

Lab Reporting Batch ID: PH067 **Laboratory: LL**

EDD Filename: PH067_v1. **eQAPP Name: CDM_SSFL_130808_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-501-SA8-SB-0.0-0.5 SL-501-SA8-SB-12.0-13.0 SL-501-SA8-SB-4.0-5.0 SL-501-SA8-SB-9.0-10.0 SL-502-SA8-SB-0.0-0.5 SL-502-SA8-SB-4.0-5.0 SL-502-SA8-SB-7.5-8.5 SL-503-SA8-SB-0.0-0.5 SL-503-SA8-SB-3.0-4.0 SL-511-SA8-SB-0.0-0.5 SL-511-SA8-SB-6.0-7.0 SL-801-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-501-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.441 mg/Kg	0.441U mg/Kg
SL-501-SA8-SB-4.0-5.0(RES)	MOLYBDENUM	0.417 mg/Kg	0.417U mg/Kg
SL-502-SA8-SB-4.0-5.0(RES)	MOLYBDENUM	0.278 mg/Kg	0.278U mg/Kg
SL-503-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.191 mg/Kg	0.191U mg/Kg
SL-511-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.217 mg/Kg	0.217U mg/Kg

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH067 **Laboratory: LL**

EDD Filename: PH067_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 8151A
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-501-SA8-SB-0.0-0.5MSD (SL-501-SA8-SB-0.0-0.5)	DINOSEB	-	-	10.00-46.00	62 (35.00)	DINOSEB	J (all detects)
SL-501-SA8-SB-0.0-0.5MS SL-501-SA8-SB-0.0-0.5MSD (SL-501-SA8-SB-0.0-0.5)	2,4,5-T 2,4,5-TP (Silvex) 2,4-D 2,4-DB	0 0 0 0	0 0 0 0	10.00-156.00 24.00-141.00 17.00-180.00 10.00-201.00	- - - -	2,4,5-T 2,4,5-TP (Silvex) 2,4-D 2,4-DB	J(all detects) R(all non-detects)

Method: 8015M
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-501-SA8-SB-0.0-0.5MS SL-501-SA8-SB-0.0-0.5MSD (SL-501-SA8-SB-0.0-0.5)	EFH (C21-C30) EFH (C30-C40)	-182 -286	-241 -356	49.00-123.00 49.00-123.00	- -	EFH (C21-C30) EFH (C30-C40)	No Qual, >4X

Method: 1613B
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-501-SA8-SB-0.0-0.5MS SL-501-SA8-SB-0.0-0.5MSD (SL-501-SA8-SB-0.0-0.5)	OCDD	11	-3	40.00-135.00	-	OCDD	J(all detects) R(all non-detects)

Method: 6010C
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-501-SA8-SB-0.0-0.5MS (TOT) SL-501-SA8-SB-0.0-0.5MSD (TOT) (SL-501-SA8-SB-0.0-0.5 SL -501-SA8-SB-12.0-13.0 SL -501-SA8-SB-4.0-5.0 SL -501-SA8-SB-9.0-10.0 SL -502-SA8-SB-0.0-0.5 SL -502-SA8-SB-4.0-5.0 SL -502-SA8-SB-7.5-8.5 SL -503-SA8-SB-0.0-0.5 SL -503-SA8-SB-3.0-4.0 SL -511-SA8-SB-0.0-0.5 SL -511-SA8-SB-6.0-7.0 SL -801-SA8-SB-0.0-0.5)	ALUMINUM MAGNESIUM TITANIUM	1766 140 334	2388 269 450	75.00-125.00 75.00-125.00 75.00-125.00	- - -	ALUMINUM MAGNESIUM TITANIUM	No Qual, >4X

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

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH067 **Laboratory: LL**

EDD Filename: PH067_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 6010C
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-501-SA8-SB-0.0-0.5MS (TOT) **SL-501-SA8-SB-0.0-0.5MSD (TOT)** (SL-501-SA8-SB-0.0-0.5 SL -501-SA8-SB-12.0-13.0 SL -501-SA8-SB-4.0-5.0 SL -501-SA8-SB-9.0-10.0 SL -502-SA8-SB-0.0-0.5 SL -502-SA8-SB-4.0-5.0 SL -502-SA8-SB-7.5-8.5 SL -503-SA8-SB-0.0-0.5 SL -503-SA8-SB-3.0-4.0 SL -511-SA8-SB-0.0-0.5 SL -511-SA8-SB-6.0-7.0 SL -801-SA8-SB-0.0-0.5)	CALCIUM IRON LEAD MANGANESE PHOSPHORUS	-71 -25 -80 -17 24	-21 1180 -84 -35 33	75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00	- - - - -	CALCIUM IRON LEAD MANGANESE PHOSPHORUS	J(all detects) UJ(all non-detects) Pb, PS=124% Ca, Fe, Mn, P No Qual, >4X
SL-501-SA8-SB-0.0-0.5MS (TOT) **SL-501-SA8-SB-0.0-0.5MSD (TOT)** (SL-501-SA8-SB-0.0-0.5 SL -501-SA8-SB-12.0-13.0 SL -501-SA8-SB-4.0-5.0 SL -501-SA8-SB-9.0-10.0 SL -502-SA8-SB-0.0-0.5 SL -502-SA8-SB-4.0-5.0 SL -502-SA8-SB-7.5-8.5 SL -503-SA8-SB-0.0-0.5 SL -503-SA8-SB-3.0-4.0 SL -511-SA8-SB-0.0-0.5 SL -511-SA8-SB-6.0-7.0 SL -801-SA8-SB-0.0-0.5)	ANTIMONY	48	45	75.00-125.00	-	ANTIMONY	J(all detects) UJ(all non-detects)

Method: 8270D SIM
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-501-SA8-SB-0.0-0.5MS (SL-501-SA8-SB-0.0-0.5)	Diethylphthalate	128	-	76.00-127.00	-	Diethylphthalate	J(all detects)

Lab Duplicate Outlier Report

Lab Reporting Batch ID: PH067 **Laboratory: LL**

EDD Filename: PH067_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 6010C
Matrix: SO

QC Sample ID (Associated Sample ID)	Analyte	Sample RPD	eQAPP RPD	Flag
SL-501-SA8-SB-0.0-0.5DUP (TOT) (SL-501-SA8-SB-0.0-0.5 SL -501-SA8-SB-12.0-13.0 SL -501-SA8-SB-4.0-5.0 SL -501-SA8-SB-9.0-10.0 SL -502-SA8-SB-0.0-0.5 SL -502-SA8-SB-4.0-5.0 SL -502-SA8-SB-7.5-8.5 SL -503-SA8-SB-0.0-0.5 SL -503-SA8-SB-3.0-4.0 SL -511-SA8-SB-0.0-0.5 SL -511-SA8-SB-6.0-7.0 SL -801-SA8-SB-0.0-0.5)	CADMIUM CALCIUM LEAD	27 32 25.6042mg/kg	20.00 20.00 ≤6.16	J (all detects) UJ (all non-detects) Cd, No Qual, Ok by difference

Method: 6020A
Matrix: SO

QC Sample ID (Associated Sample ID)	Analyte	Sample RPD	eQAPP RPD	Flag
SL-501-SA8-SB-0.0-0.5DUP (TOT) (SL-501-SA8-SB-0.0-0.5 SL -501-SA8-SB-12.0-13.0 SL -501-SA8-SB-4.0-5.0 SL -501-SA8-SB-9.0-10.0 SL -502-SA8-SB-0.0-0.5 SL -502-SA8-SB-4.0-5.0 SL -502-SA8-SB-7.5-8.5 SL -503-SA8-SB-0.0-0.5 SL -503-SA8-SB-3.0-4.0 SL -511-SA8-SB-0.0-0.5 SL -511-SA8-SB-6.0-7.0 SL -801-SA8-SB-0.0-0.5)	SILVER	37	20.00	No Qual, Ok by difference

Method: 7471B
Matrix: SO

QC Sample ID (Associated Sample ID)	Analyte	Sample RPD	eQAPP RPD	Flag
SL-501-SA8-SB-0.0-0.5DUP (TOT) (SL-501-SA8-SB-0.0-0.5 SL -501-SA8-SB-12.0-13.0 SL -501-SA8-SB-4.0-5.0 SL -501-SA8-SB-9.0-10.0 SL -502-SA8-SB-0.0-0.5 SL -502-SA8-SB-4.0-5.0 SL -502-SA8-SB-7.5-8.5 SL -503-SA8-SB-0.0-0.5 SL -503-SA8-SB-3.0-4.0 SL -511-SA8-SB-0.0-0.5 SL -511-SA8-SB-6.0-7.0 SL -801-SA8-SB-0.0-0.5)	MERCURY	78	20.00	No Qual, Ok by difference

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

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH067 **Laboratory: LL**

EDD Filename: PrepPH067_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 8151A
Matrix: SO

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
P31988AQ241603A (SL-501-SA8-SB-0.0-0.5 SL -501-SA8-SB-12.0-13.0 SL -501-SA8-SB-4.0-5.0 SL -501-SA8-SB-9.0-10.0 SL -801-SA8-SB-0.0-0.5)	2,4-D DICHLOROPROP	153 172	- -	59.00-122.00 65.00-158.00	- -	2,4-D DICHLOROPROP	J (all detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: PH067 **Laboratory: LL**

EDD Filename: PH067_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 160.3M
Matrix: SO

Analyte	Concentration (%)		Sample RPD	eQAPP RPD	Flag
	SL-501-SA8-SB-0.0-0.5	SL-801-SA8-SB-0.0-0.5			
MOISTURE	4.6	4.4	4		No Qualifiers Applied

Method: 1613B
Matrix: SO

Analyte	Concentration (ng/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-501-SA8-SB-0.0-0.5	SL-801-SA8-SB-0.0-0.5			
1,2,3,4,6,7,8-HPCDD	19.1	11.7	48	50.00	
1,2,3,4,6,7,8-HPCDF	3.22	2.24	36	50.00	
1,2,3,4,7,8,9-HPCDF	0.317	0.224	34	50.00	
1,2,3,4,7,8-HxCDD	0.303	0.265	13	50.00	
1,2,3,4,7,8-HXCDF	0.312	0.228	31	50.00	
1,2,3,6,7,8-HXCDD	1.14	0.803	35	50.00	
1,2,3,7,8,9-HXCDD	0.996	0.808	21	50.00	No Qualifiers Applied
1,2,3,7,8,9-HXCDF	0.415	0.431	4	50.00	
1,2,3,7,8-PECDF	1.09	1.18	8	50.00	
2,3,4,6,7,8-HXCDF	0.262	0.208	23	50.00	
2,3,7,8-TCDF	0.540	0.685	24	50.00	
OCDF	5.69	4.72	19	50.00	
1,2,3,6,7,8-HXCDF	0.379	0.132	97	50.00	
1,2,3,7,8-PECDD	0.263	0.149	55	50.00	
2,3,4,7,8-PECDF	0.653	0.208	103	50.00	J(all detects)
2,3,7,8-TCDD	0.0816	1.02 U	200	50.00	UJ(all non-detects)
OCDD	240	137	55	50.00	

Method: 6010C
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-501-SA8-SB-0.0-0.5 (TOT)	SL-801-SA8-SB-0.0-0.5 (TOT)			
ALUMINUM	17500	18400	5	50.00	
ARSENIC	3.89	4.41	13	50.00	
BARIUM	103	104	1	50.00	
BERYLLIUM	0.605	0.842	33	50.00	
CADMIUM	0.352	0.374	6	50.00	
CALCIUM	3910	5920	41	50.00	
CHROMIUM	20.7	21.4	3	50.00	
COBALT	5.94	5.67	5	50.00	
COPPER	12.2	11.2	9	50.00	
IRON	20900	21900	5	50.00	
LITHIUM	21.5	21.7	1	50.00	
MAGNESIUM	4540	4900	8	50.00	No Qualifiers Applied
MANGANESE	393	410	4	50.00	
NICKEL	12.4	12.6	2	50.00	
PHOSPHORUS	434	466	7	50.00	
POTASSIUM	3510	3740	6	50.00	
SODIUM	77.0	85.6	11	50.00	
TIN	2.77	2.68	3	50.00	
TITANIUM	1050	1150	9	50.00	
VANADIUM	37.3	40.9	9	50.00	
ZINC	62.7	65.3	4	50.00	
Zirconium	1.14	0.923	21	50.00	
BORON	6.11	16.1	90	50.00	
LEAD	35.3	18.4	63	50.00	J(all detects)
MOLYBDENUM	0.441	2.03 U	200	50.00	UJ(all non-detects)

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

Field Duplicate RPD Report

Lab Reporting Batch ID: PH067 **Laboratory: LL**

EDD Filename: PH067_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 6020A
Matrix: SO

Analyte	Concentration (mg/Kg) SL-501-SA8-SB-0.0-0.5 (TOT)	Concentration (mg/Kg) SL-801-SA8-SB-0.0-0.5 (TOT)	Sample RPD	eQAPP RPD	Flag
SELENIUM	0.245	0.246	0	50.00	No Qualifiers Applied
SILVER	0.0421	0.0479	13	50.00	
STRONTIUM	20.9	26.0	22	50.00	
THALLIUM	0.284	0.289	2	50.00	

Method: 7471B
Matrix: SO

Analyte	Concentration (mg/Kg) SL-501-SA8-SB-0.0-0.5 (TOT)	Concentration (mg/Kg) SL-801-SA8-SB-0.0-0.5 (TOT)	Sample RPD	eQAPP RPD	Flag
MERCURY	0.0276	0.0493	56	50.00	J(all detects)

Method: 8015M
Matrix: SO

Analyte	Concentration (mg/Kg) SL-501-SA8-SB-0.0-0.5	Concentration (mg/Kg) SL-801-SA8-SB-0.0-0.5	Sample RPD	eQAPP RPD	Flag
EFH (C15-C20)	2.6	2.4	8	50.00	No Qualifiers Applied
EFH (C21-C30)	24	20	18	50.00	
EFH (C30-C40)	51	41	22	50.00	

Method: 8081B
Matrix: SO

Analyte	Concentration (ug/Kg) SL-501-SA8-SB-0.0-0.5	Concentration (ug/Kg) SL-801-SA8-SB-0.0-0.5	Sample RPD	eQAPP RPD	Flag
4,4'-DDT	2.0	1.8	11	50.00	No Qualifiers Applied
4,4'-DDE	2.7	1.3	70	50.00	J(all detects)

Method: 8082A
Matrix: SO

Analyte	Concentration (ug/Kg) SL-501-SA8-SB-0.0-0.5	Concentration (ug/Kg) SL-801-SA8-SB-0.0-0.5	Sample RPD	eQAPP RPD	Flag
AROCLOR 1254	8.1	13	46	50.00	No Qualifiers Applied

Method: 8270D SIM
Matrix: SO

Analyte	Concentration (ug/Kg) SL-501-SA8-SB-0.0-0.5	Concentration (ug/Kg) SL-801-SA8-SB-0.0-0.5	Sample RPD	eQAPP RPD	Flag
2-METHYLNAPHTHALENE	1.3	1.0	26	50.00	No Qualifiers Applied
BENZO(K)FLUORANTHENE	7.5	9.3	21	50.00	
BIS(2-ETHYLHEXYL)PHTHALATE	13	10	26	50.00	
NAPHTHALENE	2.3	2.4	4	50.00	

Field Duplicate RPD Report

Lab Reporting Batch ID: PH067 **Laboratory: LL**

EDD Filename: PH067_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 8270D SIM *Matrix: SO*					
1-METHYLNAPHTHALENE	1.7 U	0.72	200	50.00	
ANTHRACENE	0.49	1.7 U	200	50.00	
BENZO(A)ANTHRACENE	3.3	0.77	124	50.00	
BENZO(A)PYRENE	5.2	0.94	139	50.00	
BENZO(B)FLUORANTHENE	6.9	2.2	103	50.00	
BENZO(E)PYRENE	4.4	18 U	200	50.00	
BENZO(G,H,I)PERYLENE	3.7	0.94	119	50.00	J(all detects)
CHRYSENE	8.0	3.9	69	50.00	UJ(all non-detects)
DIBENZO(A,H)ANTHRACENE	1.2	1.7 U	200	50.00	
Di-n-octylphthalate	19 U	10	200	50.00	
FLUORANTHENE	6.5	1.7	117	50.00	
INDENO(1,2,3-CD)PYRENE	3.4	0.70	132	50.00	
PHENANTHRENE	3.2	1.4	78	50.00	
PYRENE	6.9	2.1	107	50.00	

Method: 9045M
Matrix: SO

Analyte	*Concentration (pH unit)* SL-501-SA8-SB-0.0-0.5	SL-801-SA8-SB-0.0-0.5	*Sample RPD*	*eQAPP RPD*	*Flag*
PH	6.26	7.77	22	50.00	No Qualifiers Applied

Reporting Limit Outliers

Lab Reporting Batch ID: PH067 **Laboratory: LL**

EDD Filename: PH067_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-501-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDF	JB	3.22	5.05	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JQ	0.317	5.05	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.303	5.05	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.312	5.05	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	J	1.14	5.05	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.379	5.05	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.996	5.05	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	J	0.415	5.05	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JQ	0.263	5.05	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	1.09	5.05	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.262	5.05	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.653	5.05	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.0816	1.01	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.540	1.01	PQL	ng/Kg	
	OCDF	JB	5.69	10.1	PQL	ng/Kg	
SL-501-SA8-SB-12.0-13.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.252	5.26	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0569	5.26	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	J	0.0304	5.26	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0331	5.26	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0301	5.26	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.0562	5.26	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JQ	0.0198	5.26	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.0530	5.26	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0238	5.26	PQL	ng/Kg	
	OCDD	JB	2.26	10.5	PQL	ng/Kg	
	OCDF	JB	0.183	10.5	PQL	ng/Kg	
SL-501-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JBQ	1.33	5.30	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.243	5.30	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.0621	5.30	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0457	5.30	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JQ	0.301	5.30	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.0985	5.30	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.471	5.30	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JQ	0.123	5.30	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.0925	5.30	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.132	5.30	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0570	5.30	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.0585	5.30	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.105	1.06	PQL	ng/Kg	
	OCDF	JB	0.543	10.6	PQL	ng/Kg	
SL-501-SA8-SB-9.0-10.0	1,2,3,4,6,7,8-HPCDD	JB	0.138	5.33	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0422	5.33	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	J	0.0295	5.33	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0259	5.33	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.0503	5.33	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JQ	0.0522	5.33	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0265	5.33	PQL	ng/Kg	
	OCDD	JBQ	1.06	10.7	PQL	ng/Kg	
	OCDF	JB	0.198	10.7	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH067 **Laboratory: LL**

EDD Filename: PH067_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-502-SA8-SB-0.0-0.5	1,2,3,4,7,8-HXCDF	JB	4.75	5.10	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	3.19	5.10	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	4.56	5.10	PQL	ng/Kg	J (all detects)
	2,3,4,6,7,8-HXCDF	JB	2.77	5.10	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	1.46	5.10	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.571	1.02	PQL	ng/Kg	
SL-502-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDF	JB	4.77	5.38	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JQ	0.577	5.38	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	J	1.75	5.38	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.715	5.38	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	J	2.30	5.38	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.566	5.38	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	2.14	5.38	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	J	0.513	5.38	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JQ	0.906	5.38	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	1.75	5.38	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.396	5.38	PQL	ng/Kg	
	2,3,4,7,8-PECDF	J	0.440	5.38	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.149	1.08	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.205	1.08	PQL	ng/Kg	
	OCDF	JB	8.63	10.8	PQL	ng/Kg	
SL-502-SA8-SB-7.5-8.5	1,2,3,4,6,7,8-HPCDF	JBQ	1.83	5.24	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JQ	0.230	5.24	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	J	0.665	5.24	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.309	5.24	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JQ	0.871	5.24	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.228	5.24	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.638	5.24	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JQ	0.324	5.24	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JQ	0.268	5.24	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.541	5.24	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.227	5.24	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.206	5.24	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.0961	1.05	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0929	1.05	PQL	ng/Kg	
	OCDF	JB	3.40	10.5	PQL	ng/Kg	
SL-503-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDF	JB	2.16	5.19	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JQ	0.209	5.19	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.270	5.19	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.303	5.19	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	J	0.868	5.19	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.441	5.19	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.815	5.19	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	J	0.471	5.19	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.148	5.19	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	2.52	5.19	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.213	5.19	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.210	5.19	PQL	ng/Kg	
	OCDF	JB	3.21	10.4	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH067 **Laboratory: LL**

EDD Filename: PH067_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-503-SA8-SB-3.0-4.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.403	5.17	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0653	5.17	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	J	0.0431	5.17	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0484	5.17	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JQ	0.140	5.17	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0283	5.17	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.222	5.17	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	J	0.436	5.17	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.0679	5.17	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.118	5.17	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.0300	5.17	PQL	ng/Kg	
	OCDD	JB	2.77	10.3	PQL	ng/Kg	
	OCDF	JB	0.162	10.3	PQL	ng/Kg	
SL-511-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JBQ	0.0766	5.01	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0266	5.01	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JQ	0.0230	5.01	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.0339	5.01	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0362	5.01	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.0499	5.01	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JQ	0.0613	5.01	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.0157	5.01	PQL	ng/Kg	
	OCDD	JBQ	0.345	10.0	PQL	ng/Kg	
	OCDF	JBQ	0.0970	10.0	PQL	ng/Kg	
SL-511-SA8-SB-6.0-7.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.112	5.77	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0397	5.77	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JQ	0.0478	5.77	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0353	5.77	PQL	ng/Kg	
	OCDD	JBQ	0.347	11.5	PQL	ng/Kg	
SL-801-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDF	JB	2.24	5.10	PQL	ng/Kg	J (all detects)
	1,2,3,4,7,8,9-HPCDF	JQ	0.224	5.10	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	J	0.265	5.10	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.228	5.10	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	J	0.803	5.10	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.132	5.10	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.808	5.10	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	J	0.431	5.10	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.149	5.10	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	1.18	5.10	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.208	5.10	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.208	5.10	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.685	1.02	PQL	ng/Kg	
	OCDF	JB	4.72	10.2	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH067 **Laboratory: LL**

EDD Filename: PH067_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-501-SA8-SB-0.0-0.5	ARSENIC	J	3.89	4.11	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.605	1.03	PQL	mg/Kg	
	BORON	J	6.11	10.3	PQL	mg/Kg	
	CADMIUM	J	0.352	1.03	PQL	mg/Kg	
	MOLYBDENUM	J	0.441	2.06	PQL	mg/Kg	
	SODIUM	J	77.0	103	PQL	mg/Kg	
	TIN	J	2.77	10.3	PQL	mg/Kg	
	Zirconium	J	1.14	5.14	PQL	mg/Kg	
SL-501-SA8-SB-12.0-13.0	BERYLLIUM	J	0.767	1.03	PQL	mg/Kg	J (all detects)
	BORON	J	5.26	10.3	PQL	mg/Kg	
	CADMIUM	J	0.0910	1.03	PQL	mg/Kg	
	TIN	J	2.89	10.3	PQL	mg/Kg	
	Zirconium	J	2.62	5.17	PQL	mg/Kg	
SL-501-SA8-SB-4.0-5.0	BERYLLIUM	J	0.833	1.04	PQL	mg/Kg	J (all detects)
	BORON	J	5.00	10.4	PQL	mg/Kg	
	CADMIUM	J	0.111	1.04	PQL	mg/Kg	
	MOLYBDENUM	J	0.417	2.07	PQL	mg/Kg	
	TIN	J	3.04	10.4	PQL	mg/Kg	
	Zirconium	J	1.89	5.19	PQL	mg/Kg	
SL-501-SA8-SB-9.0-10.0	BERYLLIUM	J	0.863	1.08	PQL	mg/Kg	J (all detects)
	BORON	J	6.30	10.8	PQL	mg/Kg	
	CADMIUM	J	0.110	1.08	PQL	mg/Kg	
	TIN	J	3.12	10.8	PQL	mg/Kg	
	Zirconium	J	2.66	5.41	PQL	mg/Kg	
SL-502-SA8-SB-0.0-0.5	ARSENIC	J	4.11	4.21	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.562	1.05	PQL	mg/Kg	
	BORON	J	7.28	10.5	PQL	mg/Kg	
	CADMIUM	J	0.787	1.05	PQL	mg/Kg	
	SODIUM	J	82.3	105	PQL	mg/Kg	
	TIN	J	2.89	10.5	PQL	mg/Kg	
	Zirconium	J	2.27	5.26	PQL	mg/Kg	
SL-502-SA8-SB-4.0-5.0	BERYLLIUM	J	0.753	1.04	PQL	mg/Kg	J (all detects)
	BORON	J	4.78	10.4	PQL	mg/Kg	
	CADMIUM	J	0.221	1.04	PQL	mg/Kg	
	MOLYBDENUM	J	0.278	2.08	PQL	mg/Kg	
	TIN	J	3.08	10.4	PQL	mg/Kg	
	Zirconium	J	2.50	5.19	PQL	mg/Kg	
SL-502-SA8-SB-7.5-8.5	BERYLLIUM	J	0.602	1.07	PQL	mg/Kg	J (all detects)
	BORON	J	1.86	10.7	PQL	mg/Kg	
	CADMIUM	J	0.220	1.07	PQL	mg/Kg	
	TIN	J	2.95	10.7	PQL	mg/Kg	
	Zirconium	J	2.80	5.33	PQL	mg/Kg	
SL-503-SA8-SB-0.0-0.5	BERYLLIUM	J	0.614	1.03	PQL	mg/Kg	J (all detects)
	BORON	J	5.29	10.3	PQL	mg/Kg	
	CADMIUM	J	0.375	1.03	PQL	mg/Kg	
	MOLYBDENUM	J	0.191	2.07	PQL	mg/Kg	
	TIN	J	2.88	10.3	PQL	mg/Kg	
	Zirconium	J	2.26	5.17	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH067 **Laboratory: LL**

EDD Filename: PH067_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-503-SA8-SB-3.0-4.0	ARSENIC	J	2.66	4.19	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.400	1.05	PQL	mg/Kg	
	BORON	J	2.99	10.5	PQL	mg/Kg	
	CADMIUM	J	0.243	1.05	PQL	mg/Kg	
	TIN	J	2.71	10.5	PQL	mg/Kg	
	Zirconium	J	1.71	5.23	PQL	mg/Kg	
SL-511-SA8-SB-0.0-0.5	ARSENIC	J	3.19	4.09	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.578	1.02	PQL	mg/Kg	
	BORON	J	3.23	10.2	PQL	mg/Kg	
	CADMIUM	J	0.269	1.02	PQL	mg/Kg	
	MOLYBDENUM	J	0.217	2.05	PQL	mg/Kg	
	SODIUM	J	75.7	102	PQL	mg/Kg	
	TIN	J	2.71	10.2	PQL	mg/Kg	
	Zirconium	J	1.47	5.11	PQL	mg/Kg	
SL-511-SA8-SB-6.0-7.0	BERYLLIUM	J	0.595	1.13	PQL	mg/Kg	J (all detects)
	BORON	J	1.56	11.3	PQL	mg/Kg	
	CADMIUM	J	0.128	1.13	PQL	mg/Kg	
	TIN	J	3.54	11.3	PQL	mg/Kg	
	Zirconium	J	1.99	5.67	PQL	mg/Kg	
SL-801-SA8-SB-0.0-0.5	BERYLLIUM	J	0.842	1.02	PQL	mg/Kg	J (all detects)
	CADMIUM	J	0.374	1.02	PQL	mg/Kg	
	SODIUM	J	85.6	102	PQL	mg/Kg	
	TIN	J	2.68	10.2	PQL	mg/Kg	
	Zirconium	J	0.923	5.08	PQL	mg/Kg	

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-501-SA8-SB-0.0-0.5	SELENIUM	J	0.245	0.411	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0421	0.206	PQL	mg/Kg	
SL-501-SA8-SB-12.0-13.0	SILVER	J	0.0697	0.207	PQL	mg/Kg	J (all detects)
SL-501-SA8-SB-4.0-5.0	SELENIUM	J	0.283	0.415	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0344	0.207	PQL	mg/Kg	
SL-501-SA8-SB-9.0-10.0	SILVER	J	0.0487	0.216	PQL	mg/Kg	J (all detects)
SL-502-SA8-SB-0.0-0.5	SELENIUM	J	0.255	0.421	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0425	0.210	PQL	mg/Kg	
SL-502-SA8-SB-4.0-5.0	SELENIUM	J	0.189	0.415	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0428	0.208	PQL	mg/Kg	
SL-502-SA8-SB-7.5-8.5	SELENIUM	J	0.158	0.426	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0505	0.213	PQL	mg/Kg	
SL-503-SA8-SB-0.0-0.5	SELENIUM	J	0.225	0.414	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0964	0.207	PQL	mg/Kg	
SL-511-SA8-SB-0.0-0.5	SELENIUM	J	0.204	0.409	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0411	0.205	PQL	mg/Kg	
SL-511-SA8-SB-6.0-7.0	SELENIUM	J	0.142	0.454	PQL	mg/Kg	J (all detects)
	SILVER	J	0.104	0.227	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH067 **Laboratory: LL**

EDD Filename: PH067_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 6020A
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-801-SA8-SB-0.0-0.5	SELENIUM	J	0.246	0.406	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0479	0.203	PQL	mg/Kg	

Method: 7471B
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-501-SA8-SB-4.0-5.0	MERCURY	J	0.0107	0.0178	PQL	mg/Kg	J (all detects)
SL-502-SA8-SB-4.0-5.0	MERCURY	J	0.0164	0.0176	PQL	mg/Kg	J (all detects)
SL-502-SA8-SB-7.5-8.5	MERCURY	J	0.0118	0.0172	PQL	mg/Kg	J (all detects)

Method: 8015M
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-501-SA8-SB-0.0-0.5	EFH (C15-C20)	J	2.6	5.2	PQL	mg/Kg	J (all detects)
SL-502-SA8-SB-0.0-0.5	EFH (C15-C20)	J	2.9	5.2	PQL	mg/Kg	J (all detects)
SL-801-SA8-SB-0.0-0.5	EFH (C15-C20)	J	2.4	5.2	PQL	mg/Kg	J (all detects)

Method: 8081B
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-801-SA8-SB-0.0-0.5	4,4'-DDE	J	1.3	1.8	PQL	ug/Kg	J (all detects)

Method: 8082A
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-501-SA8-SB-0.0-0.5	AROCLOR 1254	J	8.1	18	PQL	ug/Kg	J (all detects)
SL-502-SA8-SB-4.0-5.0	AROCLOR 1254	J	6.8	18	PQL	ug/Kg	J (all detects)
SL-502-SA8-SB-7.5-8.5	Aroclor 5460	J	17	36	PQL	ug/Kg	J (all detects)
SL-801-SA8-SB-0.0-0.5	AROCLOR 1254	J	13	18	PQL	ug/Kg	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH067 **Laboratory: LL**

EDD Filename: PH067_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 8270D SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-501-SA8-SB-0.0-0.5	2-METHYLNAPHTHALENE	J	1.3	1.7	PQL	ug/Kg	J (all detects)
	ANTHRACENE	J	0.49	1.7	PQL	ug/Kg	
	BENZO(E)PYRENE	J	4.4	18	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	13	19	PQL	ug/Kg	
	DIBENZO(A,H)ANTHRACENE	J	1.2	1.7	PQL	ug/Kg	
SL-501-SA8-SB-4.0-5.0	BENZO(K)FLUORANTHENE	J	1.2	1.8	PQL	ug/Kg	J (all detects)
	CHRYSENE	J	0.65	1.8	PQL	ug/Kg	
	NAPHTHALENE	J	1.5	1.8	PQL	ug/Kg	
SL-502-SA8-SB-0.0-0.5	BIS(2-ETHYLHEXYL)PHTHALATE	J	13	19	PQL	ug/Kg	J (all detects)
	Di-n-butylphthalate	J	8.2	19	PQL	ug/Kg	
SL-502-SA8-SB-4.0-5.0	2-METHYLNAPHTHALENE	J	1.2	1.8	PQL	ug/Kg	J (all detects)
	ANTHRACENE	J	0.67	1.8	PQL	ug/Kg	
	BENZO(A)ANTHRACENE	J	0.82	1.8	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	11	19	PQL	ug/Kg	
SL-502-SA8-SB-7.5-8.5	ANTHRACENE	J	0.43	1.8	PQL	ug/Kg	J (all detects)
	BENZO(B)FLUORANTHENE	J	0.88	1.8	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	15	19	PQL	ug/Kg	
	CHRYSENE	J	1.4	1.8	PQL	ug/Kg	
	FLUORANTHENE	J	1.5	1.8	PQL	ug/Kg	
	NAPHTHALENE	J	1.7	1.8	PQL	ug/Kg	
	PHENANTHRENE	J	1.1	1.8	PQL	ug/Kg	
	PYRENE	J	1.4	1.8	PQL	ug/Kg	
SL-503-SA8-SB-0.0-0.5	2-METHYLNAPHTHALENE	J	0.84	1.8	PQL	ug/Kg	J (all detects)
	BENZO(B)FLUORANTHENE	J	1.4	1.8	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	11	19	PQL	ug/Kg	
	FLUORANTHENE	J	1.4	1.8	PQL	ug/Kg	
	PHENANTHRENE	J	1.0	1.8	PQL	ug/Kg	
	PYRENE	J	1.2	1.8	PQL	ug/Kg	
SL-511-SA8-SB-0.0-0.5	BENZO(K)FLUORANTHENE	J	1.5	1.7	PQL	ug/Kg	J (all detects)
	CHRYSENE	J	0.58	1.7	PQL	ug/Kg	
SL-801-SA8-SB-0.0-0.5	1-METHYLNAPHTHALENE	J	0.72	1.7	PQL	ug/Kg	J (all detects)
	2-METHYLNAPHTHALENE	J	1.0	1.7	PQL	ug/Kg	
	BENZO(A)ANTHRACENE	J	0.77	1.7	PQL	ug/Kg	
	BENZO(A)PYRENE	J	0.94	1.7	PQL	ug/Kg	
	BENZO(G,H,I)PERYLENE	J	0.94	1.7	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	10	19	PQL	ug/Kg	
	Di-n-octylphthalate	J	10	19	PQL	ug/Kg	
	INDENO(1,2,3-CD)PYRENE	J	0.70	1.7	PQL	ug/Kg	
	PHENANTHRENE	J	1.4	1.7	PQL	ug/Kg	

LDC #: 30289B4
SDG #: PH067
Laboratory: Eurofins Lancaster Laboratories

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 9/4/13
Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

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: 7/15/13
II.	ICP/MS Tune	—	
III.	Calibration	—	
IV.	Blanks	A	
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	—	(1,2)
XV	Field Blanks	SW	EB= EB1-071713 | PH069 FB= FB-041113 =EB2-071713 (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-501-SA8-SB-0.0-0.5	11	SL-511-SA8-SB-0.0-0.5	21		31	
2	SL-801-SA8-SB-0.0-0.5	12	SL-511-SA8-SB-6.0-7.0	22		32	
3	SL-501-SA8-SB-4.0-5.0	13	SL-501-SA8-SB-0.0-0.5MS	23		33	
4	SL-501-SA8-SB-9.0-10.0	14	SL-501-SA8-SB-0.0-0.5MSD	24		34	
5	SL-501-SA8-SB-12.0-13.0	15	SL-501-SA8-SB-0.0-0.5DUP	25		35	
6	SL-502-SA8-SB-0.0-0.5	16		26		36	
7	SL-502-SA8-SB-4.0-5.0	17		27		37	
8	SL-502-SA8-SB-7.5-8.5	18		28		38	
9	SL-503-SA8-SB-0.0-0.5	19		29		39	
10	SL-503-SA8-SB-3.0-4.0	20		30		40	

Notes:

LDC #: 30289B4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: CL
2nd Reviewer: L

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	7	9	11					
Cu	0.0036	1.8										
Mo	0.0036	1.8	0.44	0.42	0.28	0.19	0.22					

Sampling date: 7/17/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: 1-5, 9-12

Analyte	Blank ID	Sample Identification										
	EB1-071713 (SDG: PH069)	Action Limit	No Qualifiers									
Sb	0.0069	3.45										

Sampling date: 7/17/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: 6-8

Analyte	Blank ID	Sample Identification										
	EB2-071713 (SDG: PH069)	Action Limit	No Qualifiers									
Sb	0.0054	2.7										

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.: PH067
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7128144BKG Matrix Spike Lab Sample ID: 7128145MS Matrix Spike Duplicate Lab Sample ID: 7128146MSD
Batch Id(s): P19937B, P19938B

Analyte	Mass	BKG Sample Result	C	MS Sample Result	C	MSD Sample Result	C	MS Spike Added	MSD Spike Added	Units	MS %R	Q	MSD %R	Q	RPD	Q	Control Limit %R	Control Limit RPD	M
Aluminum		16668.3235		20097.2223		21350.3755		194.1748	196.0784	MG/KG	1766	*	2388	*	6			20	P
Antimony		0.7255	U	23.4816		22.2569		48.5437	49.0196	MG/KG	48	N	45	N	5		75 - 125	20	P
Arsenic		3.7137	B	17.0650		18.0255		14.5631	14.7059	MG/KG	92		97		5		75 - 125	20	P
Barium		98.1598		287.4534		296.9206		194.1748	196.0784	MG/KG	97		101		3		75 - 125	20	P
Beryllium		0.5775	B	5.5184		5.6098		4.8544	4.9020	MG/KG	102		103		2		75 - 125	20	P
Boron		5.8324	B	196.0505		198.0912		194.1748	196.0784	MG/KG	98		98		1		75 - 125	20	P
Cadmium		0.3363	B	4.9320		4.9608		4.8544	4.9020	MG/KG	95		94		1		75 - 125	20	P
Calcium		3729.5059		3453.8631		3648.5059		388.3495	392.1569	MG/KG	-71	*	-21	*	5			20	P
Chromium		19.7284		39.3893		40.7157		19.4175	19.6078	MG/KG	101		107		3		75 - 125	20	P
Cobalt		5.6647		51.7214		52.1118		48.5437	49.0196	MG/KG	95		95		1		75 - 125	20	P
Copper		11.6784		36.6650		37.4882		24.2718	24.5098	MG/KG	103		105		2		75 - 125	20	P
Iron		19928.7529		19904.9058		21085.4520		97.0874	98.0392	MG/KG	-25	*	1180	*	6			20	P
Lead		33.6775		22.0049		21.2569		14.5631	14.7059	MG/KG	-80	N	-84	N	3		75 - 125	20	P
Lithium		20.5216		116.5981		117.7167		97.0874	98.0392	MG/KG	99		99		1		75 - 125	20	P
Magnesium		4334.6922		4606.9660		4861.2500		194.1748	196.0784	MG/KG	140	*	269	*	5			20	P
Manganese		375.1471		366.8592		357.7461		48.5437	49.0196	MG/KG	-17	*	-35	*	3			20	P
Mercury		0.0263		0.1916		0.1849		0.1584	0.1542	MG/KG	104		103		4		65 - 135	20	CV
Molybdenum		0.4206	B	180.1320		180.7863		194.1748	196.0784	MG/KG	93		92		0		75 - 125	20	P
Nickel		11.8471		57.5641		58.3990		48.5437	49.0196	MG/KG	94		95		1		75 - 125	20	P
Phosphorus		414.4588		437.5893		447.2961		97.0874	98.0392	MG/KG	24	*	38	*	2			20	P
Potassium		3347.0755		4413.7845		4551.2029		970.8738	980.3922	MG/KG	110		123		3		75 - 125	20	P
Selenium	78	0.2337	B	2.1447		2.1180		1.9417	1.9608	MG/KG	98		96		1		75 - 125	20	MS
Silver	107	0.0402	B	10.4315		10.5716		9.7087	9.8039	MG/KG	107		107		1		75 - 125	20	MS
Sodium		73.4725	B	1041.5971		1043.9069		970.8738	980.3922	MG/KG	100		99		0		75 - 125	20	P
Strontium	88	19.9035		28.8581		27.5971		7.7670	7.8431	MG/KG	115		98		4		75 - 125	20	MS
Thallium	203	0.2710		0.6833		0.6675		0.3883	0.3922	MG/KG	106		101		2		75 - 125	20	MS

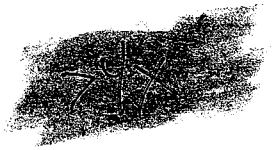
MS = 124 %
(J/UJ/A)

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

METHODS:
P = ICP Atomic Emission Spectrometer
CV = Cold Vapor
MS = ICP Mass Spectrometry
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.: PH067
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7128144BKG Matrix Spike Lab Sample ID: 7128145MS Matrix Spike Duplicate Lab Sample ID: 7128146MSD
Batch Id(s): P19937B, P19938B

Analyte	Mass	BKG Sample Result	C	MS Sample Result	C	MSD Sample Result	C	MS Spike Added	MSD Spike Added	Units	MS %R	Q	MSD %R	Q	RPD	Q	Control Limit %R	Control Limit RPD	M
Tin		2.6392	B	335.2583		335.0451		388.3495	392.1569	MG/KG	86		85		0		75 - 125	20	P
Titanium		998.5137		1328.1573		1439.5784		97.0874	98.0392	MG/KG	334	*	450	*	8			20	P
Vanadium		35.5667		86.1340		89.6196		48.5437	49.0196	MG/KG	104		110		4		75 - 125	20	P
Zinc		59.8510		100.6777		103.1010		48.5437	49.0196	MG/KG	84		88		2		75 - 125	20	P
Zirconium		1.0922	B	82.2029		81.4716		97.0874	98.0392	MG/KG	84		82		1		75 - 125	20	P

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

METHODS:
P = ICP Atomic Emission Spectrometer CV = Cold Vapor
MS = ICP Mass Spectrometry 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 6
DUPLICATES
SDG No.: PH067
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7128144BKG
Batch ID(s): P19937B, P19938B
Concentration Units: MG/KG

Duplicate Lab Sample ID: 7128147DUP

Analyte	Mass	Control Limit	Samples (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum			16668.3235		16490.7733		1		P
Antimony			-1.2284	B	-0.8911	B	-32	*	P
Arsenic		3.9	3.7137	B	4.2119		13		P
Barium			98.1598		94.3050		4		P
Beryllium			0.5775	B	0.5931	B	3		P
Boron			5.8324	B	5.4723	B	6		P
Cadmium			0.3363	B	0.2554	B	27		P
Calcium			3729.5059		2698.5911		32	*	P
Chromium			19.7284		19.5139		1		P
Cobalt			5.6647		5.6158		1		P
Copper			11.6784		10.8525		7		P
Iron			19928.7529		19582.4980		2		P
Lead		2.9	33.6775		8.0733		123	*	P
Lithium		3.9	20.5216		19.1287		7		P
Magnesium			4334.6922		4227.9119		2		P
Manganese			375.1471		306.2782		20		P
Mercury		0.0	0.0263		0.0115	B	78		CV
Molybdenum			0.4206	B	0.4307	B	2		P
Nickel			11.8471		11.2366		5		P
Phosphorus			414.4588		368.2822		12		P
Potassium			3347.0755		2987.7941		11		P
Selenium	78		0.2337	B	0.2410	B	3		MS
Silver	107		0.0402	B	0.0277	B	37		MS
Sodium			73.4725	B	72.0960	B	2		P
Strontium	88		19.9035		20.5851		3		MS
Thallium	203	0.2	0.2710		0.2990		10		MS
Tin			2.6392	B	2.5465	B	4		P
Titanium			998.5137		1012.5406		1		P
Vanadium			35.5667		35.8624		1		P
Zinc			59.8510		51.8733		14		P
Zirconium			1.0922	B	0.9465	B	14		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.

pb: out by difference
25.6042 mg/kg (≤ 6.16)
J/UJ/A

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

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

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QUALITY ASSURANCE SUMMARY
FORM 9
SERIAL DILUTIONS
SDG No.: PH067
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7128144BKG Serial Dilution Lab Sample ID: 7128144L
Batch ID(s): P19937B
Concentration Units: UG/L

Analyte	Mass	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Diff.	Q	M
Aluminum		170016.9000		179629.4500		6		P
Antimony		7.4000	U	37.0000	U			P
Arsenic		37.8800	B	35.0000	U	100		P
Barium		1001.2300		1060.6500		6		P
Beryllium		5.8900	B	6.1500	B	4		P
Boron		59.4900	B	85.7000	B	44		P
Cadmium		3.4300	B	3.9500	B	15		P
Calcium		38040.9600		40342.2000		6		P
Chromium		201.2300		210.0000		4		P
Cobalt		57.7800		64.7000		12	E	P
Copper		119.1200		126.4000		6		P
Iron		203273.2800		209386.8000		3		P
Lead		343.5100		390.8000		14	E	P
Lithium		209.3200		235.9000		13	E	P
Magnesium		44213.8600		47144.4000		7		P
Manganese		3826.5000		4060.8000		6		P
Molybdenum		4.2900	B	15.4500	B	260		P
Nickel		120.8400		125.2500		4		P
Phosphorus		4227.4800		4347.9500		3		P
Potassium		34140.1700		35250.8000		3		P
Selenium	78	1.1920	B	2.5000	U	100		MS
Silver	107	0.2050	B	0.6500	U	100		MS
Sodium		749.4200	B	835.0000	U	100		P
Strontium	88	101.5080		99.7700		2		MS
Thallium	203	1.3820		1.5500	B	12		MS
Tin		26.9200	B	32.2000	B	20		P
Titanium		10184.8400		10504.0500		3		P
Vanadium		362.7800		373.2000		3		P
Zinc		610.4800		630.4000		3		P
Zirconium		11.1400	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.

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

Data Validation Report
Santa Susana Field Laboratory

Subarea 8

SDG: PH068

Prepared for

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Carlsbad, California 92009

October 3, 2013

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on July 16th, 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 (VOAs) by EPA SW 846 Method 8260B
Semivolatiles (SVOAs) by EPA SW 846 Method 8270D
(SVOAs) 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 Hydrocarbon as Gasoline (TPH-G) by EPA SW 846 Method 8015M
Total Petroleum Hydrocarbons as Extractable (TPH-E) by EPA SW 846 Method 8015M
Dioxins/Dibenzofurans by EPA Method 1613B
Perchlorate by EPA method 6850
Hexavalent Chromium by EPA method 7199

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, trip blanks, equipment blanks, field blanks, and field duplicate samples. 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 the 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.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met QC criteria.

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.

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 VOAs, SVOAs, 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 and hexavalent chromium. 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 with the exception of two LCS/LCSD pairs for VOAs. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding LCS/LCSD outliers 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 with the following exceptions:

Diluted Sample	Analyte	%D (Limits)	Associated Samples	Flag	A or P
SL-504-SA8-SB-2.5-3.5	Lithium	18 (≤10)	All soil samples in SDG PH068	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 PH068	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 VOAs, SVOAs, PCBs, metals, perchlorate, TPH-G, TPH-E, hexavalent chromium, and dioxins. All RPDs were within QC limits with the exception of several dioxins, metals, and hexavalent chromium. 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 VOAs and TPH-G. No contaminant concentrations were found in the trip blank.

Two equipment blanks (from SDG PH069) were collected and analyzed for VOAs, SVOAs, PCBs, metals, perchlorate, TPH-G, TPH-E, hexavalent chromium, and dioxins. The equipment

blanks had detections for several VOAs, SVOAs, metals, and dioxins. All associated sample results were not detected or were significantly greater than the concentrations found in the equipment blanks and were not qualified.

One field blank (from SDG PH029) was collected and analyzed for VOAs, SVOAs, PCBs, metals, perchlorate, TPH-G, TPH-E, hexavalent chromium, and dioxins. The field blank had detections for several VOAs, SVOAs, 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. 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
16-Jul-2013	TB-071613	7129592	TB	5030B	8015M	III
16-Jul-2013	TB-071613	7129592	TB	5030B	8260B	III
16-Jul-2013	SL-510-SA8-SB-0.0-0.5	7129591	N	3050B	6010C	III
16-Jul-2013	SL-510-SA8-SB-0.0-0.5	7129591	N	3050B	6020A	III
16-Jul-2013	SL-510-SA8-SB-0.0-0.5	7129591	N	3546	8015M	III
16-Jul-2013	SL-510-SA8-SB-0.0-0.5	7129591	N	3546	8082A	III
16-Jul-2013	SL-510-SA8-SB-0.0-0.5	7129591	N	3546	8270D SIM	III
16-Jul-2013	SL-510-SA8-SB-0.0-0.5	7129591	N	METHOD	1613B	III
16-Jul-2013	SL-510-SA8-SB-0.0-0.5	7129591	N	METHOD	7471B	III
16-Jul-2013	SL-505-SA8-SB-0.0-0.5	7129593	N	3050B	6010C	III
16-Jul-2013	SL-505-SA8-SB-0.0-0.5	7129593	N	3050B	6020A	III
16-Jul-2013	SL-505-SA8-SB-0.0-0.5	7129593	N	3546	8015M	III
16-Jul-2013	SL-505-SA8-SB-0.0-0.5	7129593	N	3546	8082A	III
16-Jul-2013	SL-505-SA8-SB-0.0-0.5	7129593	N	3546	8270D SIM	III
16-Jul-2013	SL-505-SA8-SB-0.0-0.5	7129593	N	METHOD	1613B	III
16-Jul-2013	SL-505-SA8-SB-0.0-0.5	7129593	N	METHOD	7471B	III
16-Jul-2013	SL-505-SA8-SB-0.0-0.5MSD	P129593M260649	MSD	3546	8270D SIM	III
16-Jul-2013	SL-505-SA8-SB-0.0-0.5MS	P129593R260618	MS	3546	8270D SIM	III
16-Jul-2013	SL-505-SA8-SB-4.0-5.0	7129594	N	3050B	6010C	III
16-Jul-2013	SL-505-SA8-SB-4.0-5.0	7129594	N	3050B	6020A	III
16-Jul-2013	SL-505-SA8-SB-4.0-5.0	7129594	N	3546	8015M	III
16-Jul-2013	SL-505-SA8-SB-4.0-5.0	7129594	N	3546	8082A	III
16-Jul-2013	SL-505-SA8-SB-4.0-5.0	7129594	N	3546	8270D SIM	III
16-Jul-2013	SL-505-SA8-SB-4.0-5.0	7129594	N	5035A	8015M	III
16-Jul-2013	SL-505-SA8-SB-4.0-5.0	7129594	N	METHOD	1613B	III
16-Jul-2013	SL-505-SA8-SB-4.0-5.0	7129594	N	METHOD	7471B	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
16-Jul-2013	SL-504-SA8-SB-0.0-0.5	7129595	N	3050B	6010C	III
16-Jul-2013	SL-504-SA8-SB-0.0-0.5	7129595	N	3050B	6020A	III
16-Jul-2013	SL-504-SA8-SB-0.0-0.5	7129595	N	3060A	7199	III
16-Jul-2013	SL-504-SA8-SB-0.0-0.5	7129595	N	3546	8015M	III
16-Jul-2013	SL-504-SA8-SB-0.0-0.5	7129595	N	3546	8082A	III
16-Jul-2013	SL-504-SA8-SB-0.0-0.5	7129595	N	3546	8270D	III
16-Jul-2013	SL-504-SA8-SB-0.0-0.5	7129595	N	3546	8270D SIM	III
16-Jul-2013	SL-504-SA8-SB-0.0-0.5	7129595	N	METHOD	1613B	III
16-Jul-2013	SL-504-SA8-SB-0.0-0.5	7129595	N	METHOD	6850	III
16-Jul-2013	SL-504-SA8-SB-0.0-0.5	7129595	N	METHOD	7471B	III
16-Jul-2013	SL-504-SA8-SB-2.5-3.5	7129596	N	3050B	6010C	III
16-Jul-2013	SL-504-SA8-SB-2.5-3.5	7129596	N	3050B	6020A	III
16-Jul-2013	SL-504-SA8-SB-2.5-3.5	7129596	N	3060A	7199	III
16-Jul-2013	SL-504-SA8-SB-2.5-3.5	7129596	N	3546	8015M	III
16-Jul-2013	SL-504-SA8-SB-2.5-3.5	7129596	N	3546	8082A	III
16-Jul-2013	SL-504-SA8-SB-2.5-3.5	7129596	N	3546	8270D	III
16-Jul-2013	SL-504-SA8-SB-2.5-3.5	7129596	N	3546	8270D SIM	III
16-Jul-2013	SL-504-SA8-SB-2.5-3.5	7129596	N	5035A	8015M	III
16-Jul-2013	SL-504-SA8-SB-2.5-3.5	7129596	N	5035A	8260B	III
16-Jul-2013	SL-504-SA8-SB-2.5-3.5	7129596	N	METHOD	1613B	III
16-Jul-2013	SL-504-SA8-SB-2.5-3.5	7129596	N	METHOD	6850	III
16-Jul-2013	SL-504-SA8-SB-2.5-3.5	7129596	N	METHOD	7471B	III
16-Jul-2013	SL-504-SA8-SB-2.5-3.5MS	7129597	MS	3050B	6010C	III
16-Jul-2013	SL-504-SA8-SB-2.5-3.5MS	7129597	MS	3050B	6020A	III
16-Jul-2013	SL-504-SA8-SB-2.5-3.5MS	7129597	MS	3546	8015M	III
16-Jul-2013	SL-504-SA8-SB-2.5-3.5MS	7129597	MS	3546	8082A	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
16-Jul-2013	SL-504-SA8-SB-2.5-3.5MS	7129597	MS	3546	8270D	III
16-Jul-2013	SL-504-SA8-SB-2.5-3.5MS	7129597	MS	3546	8270D SIM	III
16-Jul-2013	SL-504-SA8-SB-2.5-3.5MS	7129597	MS	5035A	8015M	III
16-Jul-2013	SL-504-SA8-SB-2.5-3.5MS	7129597	MS	5035A	8260B	III
16-Jul-2013	SL-504-SA8-SB-2.5-3.5MS	7129597	MS	METHOD	1613B	III
16-Jul-2013	SL-504-SA8-SB-2.5-3.5MS	7129597	MS	METHOD	6850	III
16-Jul-2013	SL-504-SA8-SB-2.5-3.5MS	7129597	MS	METHOD	7471B	III
16-Jul-2013	SL-504-SA8-SB-2.5-3.5MSD	7129598	MSD	3050B	6010C	III
16-Jul-2013	SL-504-SA8-SB-2.5-3.5MSD	7129598	MSD	3050B	6020A	III
16-Jul-2013	SL-504-SA8-SB-2.5-3.5MSD	7129598	MSD	3546	8015M	III
16-Jul-2013	SL-504-SA8-SB-2.5-3.5MSD	7129598	MSD	3546	8082A	III
16-Jul-2013	SL-504-SA8-SB-2.5-3.5MSD	7129598	MSD	3546	8270D	III
16-Jul-2013	SL-504-SA8-SB-2.5-3.5MSD	7129598	MSD	3546	8270D SIM	III
16-Jul-2013	SL-504-SA8-SB-2.5-3.5MSD	7129598	MSD	5035A	8015M	III
16-Jul-2013	SL-504-SA8-SB-2.5-3.5MSD	7129598	MSD	5035A	8260B	III
16-Jul-2013	SL-504-SA8-SB-2.5-3.5MSD	7129598	MSD	METHOD	1613B	III
16-Jul-2013	SL-504-SA8-SB-2.5-3.5MSD	7129598	MSD	METHOD	6850	III
16-Jul-2013	SL-504-SA8-SB-2.5-3.5MSD	7129598	MSD	METHOD	7471B	III
16-Jul-2013	SL-504-SA8-SB-2.5-3.5MS	7129599	MS	3060A	7199	III
16-Jul-2013	SL-504-SA8-SB-2.5-3.5MS	7129600	MS	3060A	7199	III
16-Jul-2013	SL-504-SA8-SB-2.5-3.5DUP	7129602	DUP	3050B	6010C	III
16-Jul-2013	SL-504-SA8-SB-2.5-3.5DUP	7129602	DUP	3050B	6020A	III
16-Jul-2013	SL-504-SA8-SB-2.5-3.5DUP	7129602	DUP	3060A	7199	III
16-Jul-2013	SL-504-SA8-SB-2.5-3.5DUP	7129602	DUP	METHOD	7471B	III
16-Jul-2013	SL-804-SA8-SB-2.5-3.5	7129603	FD	3050B	6010C	III
16-Jul-2013	SL-804-SA8-SB-2.5-3.5	7129603	FD	3050B	6020A	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
16-Jul-2013	SL-804-SA8-SB-2.5-3.5	7129603	FD	3060A	7199	III
16-Jul-2013	SL-804-SA8-SB-2.5-3.5	7129603	FD	3546	8015M	III
16-Jul-2013	SL-804-SA8-SB-2.5-3.5	7129603	FD	3546	8082A	III
16-Jul-2013	SL-804-SA8-SB-2.5-3.5	7129603	FD	3546	8270D	III
16-Jul-2013	SL-804-SA8-SB-2.5-3.5	7129603	FD	3546	8270D SIM	III
16-Jul-2013	SL-804-SA8-SB-2.5-3.5	7129603	FD	5035A	8015M	III
16-Jul-2013	SL-804-SA8-SB-2.5-3.5	7129603	FD	5035A	8260B	III
16-Jul-2013	SL-804-SA8-SB-2.5-3.5	7129603	FD	METHOD	1613B	III
16-Jul-2013	SL-804-SA8-SB-2.5-3.5	7129603	FD	METHOD	6850	III
16-Jul-2013	SL-804-SA8-SB-2.5-3.5	7129603	FD	METHOD	7471B	III
16-Jul-2013	SL-507-SA8-SB-0.0-0.5	7129604	N	3050B	6010C	III
16-Jul-2013	SL-507-SA8-SB-0.0-0.5	7129604	N	3050B	6020A	III
16-Jul-2013	SL-507-SA8-SB-0.0-0.5	7129604	N	3060A	7199	III
16-Jul-2013	SL-507-SA8-SB-0.0-0.5	7129604	N	3546	8015M	III
16-Jul-2013	SL-507-SA8-SB-0.0-0.5	7129604	N	3546	8082A	III
16-Jul-2013	SL-507-SA8-SB-0.0-0.5	7129604	N	3546	8270D	III
16-Jul-2013	SL-507-SA8-SB-0.0-0.5	7129604	N	3546	8270D SIM	III
16-Jul-2013	SL-507-SA8-SB-0.0-0.5	7129604	N	METHOD	1613B	III
16-Jul-2013	SL-507-SA8-SB-0.0-0.5	7129604	N	METHOD	6850	III
16-Jul-2013	SL-507-SA8-SB-0.0-0.5	7129604	N	METHOD	7471B	III
16-Jul-2013	SL-507-SA8-SB-3.0-4.0	7129605	N	3050B	6010C	III
16-Jul-2013	SL-507-SA8-SB-3.0-4.0	7129605	N	3050B	6020A	III
16-Jul-2013	SL-507-SA8-SB-3.0-4.0	7129605	N	3060A	7199	III
16-Jul-2013	SL-507-SA8-SB-3.0-4.0	7129605	N	3546	8015M	III
16-Jul-2013	SL-507-SA8-SB-3.0-4.0	7129605	N	3546	8082A	III
16-Jul-2013	SL-507-SA8-SB-3.0-4.0	7129605	N	3546	8270D	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
16-Jul-2013	SL-507-SA8-SB-3.0-4.0	7129605	N	3546	8270D SIM	III
16-Jul-2013	SL-507-SA8-SB-3.0-4.0	7129605	N	5035A	8015M	III
16-Jul-2013	SL-507-SA8-SB-3.0-4.0	7129605	N	5035A	8260B	III
16-Jul-2013	SL-507-SA8-SB-3.0-4.0	7129605	N	METHOD	1613B	III
16-Jul-2013	SL-507-SA8-SB-3.0-4.0	7129605	N	METHOD	6850	III
16-Jul-2013	SL-507-SA8-SB-3.0-4.0	7129605	N	METHOD	7471B	III
16-Jul-2013	SL-508-SA8-SB-0.0-0.5	7129606	N	3050B	6010C	III
16-Jul-2013	SL-508-SA8-SB-0.0-0.5	7129606	N	3050B	6020A	III
16-Jul-2013	SL-508-SA8-SB-0.0-0.5	7129606	N	3060A	7199	III
16-Jul-2013	SL-508-SA8-SB-0.0-0.5	7129606	N	3546	8015M	III
16-Jul-2013	SL-508-SA8-SB-0.0-0.5	7129606	N	3546	8082A	III
16-Jul-2013	SL-508-SA8-SB-0.0-0.5	7129606	N	3546	8270D	III
16-Jul-2013	SL-508-SA8-SB-0.0-0.5	7129606	N	3546	8270D SIM	III
16-Jul-2013	SL-508-SA8-SB-0.0-0.5	7129606	N	METHOD	1613B	III
16-Jul-2013	SL-508-SA8-SB-0.0-0.5	7129606	N	METHOD	6850	III
16-Jul-2013	SL-508-SA8-SB-0.0-0.5	7129606	N	METHOD	7471B	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation
N = Normal Sample
FD = Field Duplicate
TB = Trip Blank
FB = Field Blank
MS = Matrix Spike
MSD = Matrix Spike Duplicate

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH068 **Laboratory: LL**

EDD Filename: PH068_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-504-SA8-SB-0.0-0.5** ***Collected:*** **7/16/2013 11:45:00** ***Analysis Type:*** **REA2** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
LITHIUM	30.1		0.35	MDL	4.1	PQL	mg/Kg	J	A

Sample ID: **SL-504-SA8-SB-0.0-0.5** ***Collected:*** **7/16/2013 11:45:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.06	U	0.752	MDL	4.06	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.641	J	0.0680	MDL	1.02	PQL	mg/Kg	J	Z
CADMIUM	0.513	J	0.0772	MDL	1.02	PQL	mg/Kg	J	Z
CHROMIUM	34.9		0.162	MDL	3.05	PQL	mg/Kg	J	Q
MOLYBDENUM	0.518	J	0.173	MDL	2.03	PQL	mg/Kg	U	F
POTASSIUM	6080		8.47	MDL	102	PQL	mg/Kg	J	Q
TIN	3.11	J	0.223	MDL	10.2	PQL	mg/Kg	U	B
Zirconium	2.16	J	0.853	MDL	5.08	PQL	mg/Kg	J	Z

Sample ID: **SL-504-SA8-SB-2.5-3.5** ***Collected:*** **7/16/2013 12:00:00** ***Analysis Type:*** **REA** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
LITHIUM	29.8		0.35	MDL	4.1	PQL	mg/Kg	J	A

Sample ID: **SL-504-SA8-SB-2.5-3.5** ***Collected:*** **7/16/2013 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
ANTIMONY	4.08	U	0.755	MDL	4.08	PQL	mg/Kg	UJ	Q
ARSENIC	3.88	J	0.714	MDL	4.08	PQL	mg/Kg	J	Z
BERYLLIUM	0.394	J	0.0684	MDL	1.02	PQL	mg/Kg	J	Z
CADMIUM	0.370	J	0.0775	MDL	1.02	PQL	mg/Kg	J	Z
CHROMIUM	21.8		0.163	MDL	3.06	PQL	mg/Kg	J	Q
MOLYBDENUM	0.373	J	0.173	MDL	2.04	PQL	mg/Kg	UJ	FD, F
POTASSIUM	2220		8.51	MDL	102	PQL	mg/Kg	J	Q
TIN	2.86	J	0.224	MDL	10.2	PQL	mg/Kg	U	B
Zirconium	3.17	J	0.857	MDL	5.10	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: PH068 **Laboratory: LL**

EDD Filename: PH068_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-505-SA8-SB-0.0-0.5 **Collected: 7/16/2013 8:55:00** **Analysis Type: REA2** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
LITHIUM	33.0		0.35	MDL	4.2	PQL	mg/Kg	J	A

Sample ID: SL-505-SA8-SB-0.0-0.5 **Collected: 7/16/2013 8:55:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.16	U	0.770	MDL	4.16	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.692	J	0.0697	MDL	1.04	PQL	mg/Kg	J	Z
CADMIUM	0.543	J	0.0791	MDL	1.04	PQL	mg/Kg	J	Z
CHROMIUM	34.5		0.167	MDL	3.12	PQL	mg/Kg	J	Q
MOLYBDENUM	0.627	J	0.177	MDL	2.08	PQL	mg/Kg	U	F
POTASSIUM	6120		8.68	MDL	104	PQL	mg/Kg	J	Q
TIN	3.19	J	0.229	MDL	10.4	PQL	mg/Kg	U	B
Zirconium	1.60	J	0.874	MDL	5.20	PQL	mg/Kg	J	Z

Sample ID: SL-505-SA8-SB-4.0-5.0 **Collected: 7/16/2013 9:30:00** **Analysis Type: REA** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
LITHIUM	29.0		0.37	MDL	4.4	PQL	mg/Kg	J	A

Sample ID: SL-505-SA8-SB-4.0-5.0 **Collected: 7/16/2013 9:30:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.39	U	0.811	MDL	4.39	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.689	J	0.0735	MDL	1.10	PQL	mg/Kg	J	Z
CADMIUM	0.357	J	0.0833	MDL	1.10	PQL	mg/Kg	J	Z
CHROMIUM	26.9		0.175	MDL	3.29	PQL	mg/Kg	J	Q
POTASSIUM	2270		9.14	MDL	110	PQL	mg/Kg	J	Q
TIN	3.18	J	0.241	MDL	11.0	PQL	mg/Kg	U	B
Zirconium	3.50	J	0.921	MDL	5.48	PQL	mg/Kg	J	Z

Sample ID: SL-507-SA8-SB-0.0-0.5 **Collected: 7/16/2013 12:55:00** **Analysis Type: REA** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
LITHIUM	25.7		0.34	MDL	4.0	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: PH068 **Laboratory: LL**

EDD Filename: PH068_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-507-SA8-SB-0.0-0.5 **Collected: 7/16/2013 12:55:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	3.97	U	0.734	MDL	3.97	PQL	mg/Kg	UJ	Q
ARSENIC	3.27	J	0.694	MDL	3.97	PQL	mg/Kg	J	Z
BERYLLIUM	0.403	J	0.0664	MDL	0.992	PQL	mg/Kg	J	Z
CADMIUM	0.322	J	0.0754	MDL	0.992	PQL	mg/Kg	J	Z
CHROMIUM	18.7		0.159	MDL	2.98	PQL	mg/Kg	J	Q
MOLYBDENUM	0.343	J	0.169	MDL	1.98	PQL	mg/Kg	U	F
POTASSIUM	3440		8.27	MDL	99.2	PQL	mg/Kg	J	Q
TIN	2.89	J	0.218	MDL	9.92	PQL	mg/Kg	U	B
Zirconium	2.37	J	0.833	MDL	4.96	PQL	mg/Kg	J	Z

Sample ID: SL-507-SA8-SB-3.0-4.0 **Collected: 7/16/2013 1:10:00** **Analysis Type: REA** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
LITHIUM	22.2		0.35	MDL	4.1	PQL	mg/Kg	J	A

Sample ID: SL-507-SA8-SB-3.0-4.0 **Collected: 7/16/2013 1:10:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.10	U	0.759	MDL	4.10	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.381	J	0.0687	MDL	1.03	PQL	mg/Kg	J	Z
CADMIUM	0.232	J	0.0780	MDL	1.03	PQL	mg/Kg	J	Z
CHROMIUM	13.6		0.164	MDL	3.08	PQL	mg/Kg	J	Q
POTASSIUM	1840		8.56	MDL	103	PQL	mg/Kg	J	Q
TIN	2.96	J	0.226	MDL	10.3	PQL	mg/Kg	U	B
Zirconium	3.17	J	0.862	MDL	5.13	PQL	mg/Kg	J	Z

Sample ID: SL-508-SA8-SB-0.0-0.5 **Collected: 7/16/2013 1:30:00** **Analysis Type: REA2** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
LITHIUM	27.2		0.35	MDL	4.1	PQL	mg/Kg	J	A

Sample ID: SL-508-SA8-SB-0.0-0.5 **Collected: 7/16/2013 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
ANTIMONY	4.11	U	0.759	MDL	4.11	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: PH068 **Laboratory: LL**

EDD Filename: PH068_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-508-SA8-SB-0.0-0.5** *Collected:* **7/16/2013 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
BERYLLIUM	0.582	J	0.0688	MDL	1.03	PQL	mg/Kg	J	Z
CADMIUM	0.251	J	0.0780	MDL	1.03	PQL	mg/Kg	J	Z
CHROMIUM	30.4		0.164	MDL	3.08	PQL	mg/Kg	J	Q
MOLYBDENUM	0.574	J	0.174	MDL	2.05	PQL	mg/Kg	U	F
POTASSIUM	5690		8.56	MDL	103	PQL	mg/Kg	J	Q
TIN	2.77	J	0.226	MDL	10.3	PQL	mg/Kg	U	B
Zirconium	2.38	J	0.862	MDL	5.13	PQL	mg/Kg	J	Z

Sample ID: **SL-510-SA8-SB-0.0-0.5** *Collected:* **7/16/2013 8:30:00** *Analysis Type:* **REA** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
LITHIUM	24.0		0.34	MDL	4.0	PQL	mg/Kg	J	A

Sample ID: **SL-510-SA8-SB-0.0-0.5** *Collected:* **7/16/2013 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	3.97	U	0.735	MDL	3.97	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.462	J	0.0666	MDL	0.993	PQL	mg/Kg	J	Z
CADMIUM	0.393	J	0.0755	MDL	0.993	PQL	mg/Kg	J	Z
CHROMIUM	16.5		0.159	MDL	2.98	PQL	mg/Kg	J	Q
MOLYBDENUM	0.373	J	0.169	MDL	1.99	PQL	mg/Kg	U	F
POTASSIUM	3330		8.28	MDL	99.3	PQL	mg/Kg	J	Q
SODIUM	82.4	J	16.6	MDL	99.3	PQL	mg/Kg	J	Z
TIN	2.85	J	0.219	MDL	9.93	PQL	mg/Kg	U	B
Zirconium	1.57	J	0.834	MDL	4.97	PQL	mg/Kg	J	Z

Sample ID: **SL-804-SA8-SB-2.5-3.5** *Collected:* **7/16/2013 12:10:00** *Analysis Type:* **REA** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
LITHIUM	29.5		0.34	MDL	4.0	PQL	mg/Kg	J	A

Sample ID: **SL-804-SA8-SB-2.5-3.5** *Collected:* **7/16/2013 12:10:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.05	U	0.748	MDL	4.05	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: PH068 **Laboratory: LL**

EDD Filename: PH068_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-804-SA8-SB-2.5-3.5** *Collected:* **7/16/2013 12:10:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	3.68	J	0.708	MDL	4.05	PQL	mg/Kg	J	Z
BERYLLIUM	0.449	J	0.0678	MDL	1.01	PQL	mg/Kg	J	Z
CADMIUM	0.330	J	0.0769	MDL	1.01	PQL	mg/Kg	J	Z
CHROMIUM	22.0		0.162	MDL	3.03	PQL	mg/Kg	J	Q
MOLYBDENUM	2.02	U	0.172	MDL	2.02	PQL	mg/Kg	UJ	FD
POTASSIUM	2240		8.43	MDL	101	PQL	mg/Kg	J	Q
TIN	2.99	J	0.222	MDL	10.1	PQL	mg/Kg	U	B
Zirconium	2.85	J	0.850	MDL	5.06	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: **SL-504-SA8-SB-0.0-0.5** *Collected:* **7/16/2013 11:45:00** *Analysis Type:* **REA** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.251	J	0.102	MDL	0.406	PQL	mg/Kg	J	Z

Sample ID: **SL-504-SA8-SB-0.0-0.5** *Collected:* **7/16/2013 11:45:00** *Analysis Type:* **RES** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0343	J	0.0264	MDL	0.203	PQL	mg/Kg	J	Z

Sample ID: **SL-505-SA8-SB-0.0-0.5** *Collected:* **7/16/2013 8:55:00** *Analysis Type:* **REA** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.329	J	0.104	MDL	0.416	PQL	mg/Kg	J	Z

Sample ID: **SL-505-SA8-SB-0.0-0.5** *Collected:* **7/16/2013 8:55:00** *Analysis Type:* **RES** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0558	J	0.0271	MDL	0.208	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: PH068 **Laboratory: LL**

EDD Filename: PH068_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: **SL-505-SA8-SB-4.0-5.0** *Collected:* **7/16/2013 9:30:00** *Analysis Type:* **REA** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.132	J	0.110	MDL	0.439	PQL	mg/Kg	J	Z

Sample ID: **SL-505-SA8-SB-4.0-5.0** *Collected:* **7/16/2013 9:30:00** *Analysis Type:* **RES** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0328	J	0.0285	MDL	0.219	PQL	mg/Kg	J	Z

Sample ID: **SL-507-SA8-SB-0.0-0.5** *Collected:* **7/16/2013 12:55:00** *Analysis Type:* **REA** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.186	J	0.0992	MDL	0.397	PQL	mg/Kg	J	Z

Sample ID: **SL-507-SA8-SB-3.0-4.0** *Collected:* **7/16/2013 1:10:00** *Analysis Type:* **RES** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
THALLIUM	0.192	J	0.0308	MDL	0.205	PQL	mg/Kg	J	Z

Sample ID: **SL-508-SA8-SB-0.0-0.5** *Collected:* **7/16/2013 1:30:00** *Analysis Type:* **REA** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.286	J	0.103	MDL	0.411	PQL	mg/Kg	J	Z

Sample ID: **SL-508-SA8-SB-0.0-0.5** *Collected:* **7/16/2013 1:30:00** *Analysis Type:* **RES** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0409	J	0.0267	MDL	0.205	PQL	mg/Kg	J	Z

Sample ID: **SL-510-SA8-SB-0.0-0.5** *Collected:* **7/16/2013 8:30:00** *Analysis Type:* **REA** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.133	J	0.0993	MDL	0.397	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: PH068 **Laboratory: LL**

EDD Filename: PH068_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 7199 **Matrix: SO**

Sample ID: **SL-504-SA8-SB-0.0-0.5** *Collected:* **7/16/2013 11:45:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
HEXAVALENT CHROMIUM	0.52		0.15	MDL	0.43	PQL	mg/Kg	J	E

Sample ID: **SL-504-SA8-SB-2.5-3.5** *Collected:* **7/16/2013 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
HEXAVALENT CHROMIUM	1.4		0.15	MDL	0.41	PQL	mg/Kg	J	E, FD

Sample ID: **SL-507-SA8-SB-0.0-0.5** *Collected:* **7/16/2013 12:55:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
HEXAVALENT CHROMIUM	0.35	J	0.14	MDL	0.40	PQL	mg/Kg	J	Z, E

Sample ID: **SL-507-SA8-SB-3.0-4.0** *Collected:* **7/16/2013 1:10:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
HEXAVALENT CHROMIUM	0.40	U	0.14	MDL	0.40	PQL	mg/Kg	UJ	E

Sample ID: **SL-508-SA8-SB-0.0-0.5** *Collected:* **7/16/2013 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
HEXAVALENT CHROMIUM	0.30	J	0.15	MDL	0.44	PQL	mg/Kg	J	Z, E

Sample ID: **SL-804-SA8-SB-2.5-3.5** *Collected:* **7/16/2013 12:10:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
HEXAVALENT CHROMIUM	0.43	U	0.15	MDL	0.43	PQL	mg/Kg	UJ	E, FD

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: **SL-505-SA8-SB-0.0-0.5** *Collected:* **7/16/2013 8:55:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0128	J	0.0105	MDL	0.0176	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: PH068 **Laboratory: LL**

EDD Filename: PH068_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: **SL-505-SA8-SB-4.0-5.0** *Collected:* **7/16/2013 9:30:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0140	J	0.0105	MDL	0.0174	PQL	mg/Kg	J	Z

Sample ID: **SL-510-SA8-SB-0.0-0.5** *Collected:* **7/16/2013 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
MERCURY	0.0144	J	0.0099	MDL	0.0165	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-504-SA8-SB-0.0-0.5** *Collected:* **7/16/2013 11:45:00** *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-HPCDF	2.93	JB	0.0253	MDL	5.18	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.408	JQ	0.0527	MDL	5.18	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.280	JBQ	0.0576	MDL	5.18	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.225	JB	0.0342	MDL	5.18	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.891	J	0.0624	MDL	5.18	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.102	JBQ	0.0319	MDL	5.18	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.497	JB	0.0649	MDL	5.18	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.106	JB	0.0432	MDL	5.18	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.188	JQ	0.0586	MDL	5.18	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.752	JB	0.0360	MDL	5.18	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.213	JB	0.0350	MDL	5.18	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.0795	JQ	0.0370	MDL	5.18	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.0670	JQ	0.0616	MDL	1.04	PQL	ng/Kg	J	Z
OCDF	8.29	JB	0.0632	MDL	10.4	PQL	ng/Kg	J	Z

Sample ID: **SL-504-SA8-SB-2.5-3.5** *Collected:* **7/16/2013 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	0.219	JB	0.0419	MDL	5.08	PQL	ng/Kg	UJ	B, FD
1,2,3,4,6,7,8-HPCDF	0.0823	JBQ	0.0111	MDL	5.08	PQL	ng/Kg	UJ	B, FD
1,2,3,4,7,8,9-HPCDF	0.0343	JQ	0.0229	MDL	5.08	PQL	ng/Kg	J	Z, FD
1,2,3,4,7,8-HxCDD	0.0400	JBQ	0.0313	MDL	5.08	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: PH068 **Laboratory: LL**

EDD Filename: PH068_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-504-SA8-SB-2.5-3.5** *Collected:* **7/16/2013 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	0.0695	JBQ	0.0154	MDL	5.08	PQL	ng/Kg	UJ	B, FD
1,2,3,6,7,8-HXCDD	0.0391	JQ	0.0342	MDL	5.08	PQL	ng/Kg	J	Z, FD
1,2,3,6,7,8-HXCDF	0.0354	JB	0.0148	MDL	5.08	PQL	ng/Kg	UJ	B, FD
1,2,3,7,8,9-HXCDD	5.08	U	0.0324	MDL	5.08	PQL	ng/Kg	UJ	FD
1,2,3,7,8,9-HXCDF	5.08	U	0.0230	MDL	5.08	PQL	ng/Kg	UJ	FD
1,2,3,7,8-PECDD	5.08	U	0.0496	MDL	5.08	PQL	ng/Kg	UJ	FD
1,2,3,7,8-PECDF	0.203	JB	0.0235	MDL	5.08	PQL	ng/Kg	J	Z, FD
2,3,4,6,7,8-HXCDF	0.0365	JB	0.0170	MDL	5.08	PQL	ng/Kg	UJ	B, FD
2,3,4,7,8-PECDF	0.0347	JQ	0.0261	MDL	5.08	PQL	ng/Kg	J	Z, FD
OCDD	1.89	JB	0.0427	MDL	10.2	PQL	ng/Kg	J	Z, FD
OCDF	0.188	JBQ	0.0529	MDL	10.2	PQL	ng/Kg	UJ	B, FD

Sample ID: **SL-505-SA8-SB-0.0-0.5** *Collected:* **7/16/2013 8:55:00** *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	0.565	JB	0.0256	MDL	5.22	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.162	JQ	0.0465	MDL	5.22	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.0906	JBQ	0.0307	MDL	5.22	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.195	JQ	0.0614	MDL	5.22	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0869	JB	0.0286	MDL	5.22	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.210	JB	0.0596	MDL	5.22	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.0867	JBQ	0.0358	MDL	5.22	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.141	JQ	0.0755	MDL	5.22	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	1.21	JB	0.0445	MDL	5.22	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.0814	JBQ	0.0272	MDL	5.22	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.128	JQ	0.0464	MDL	5.22	PQL	ng/Kg	J	Z
OCDF	1.60	JB	0.0759	MDL	10.4	PQL	ng/Kg	J	Z

Sample ID: **SL-505-SA8-SB-4.0-5.0** *Collected:* **7/16/2013 9:30:00** *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	0.392	JBQ	0.0579	MDL	5.41	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.0982	JBQ	0.0154	MDL	5.41	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0433	JBQ	0.0217	MDL	5.41	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0425	JQ	0.0412	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: PH068 **Laboratory: LL**

EDD Filename: PH068_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-505-SA8-SB-4.0-5.0** ***Collected:*** **7/16/2013 9:30:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,6,7,8-HXCDF	0.0333	JBQ	0.0212	MDL	5.41	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0400	JBQ	0.0394	MDL	5.41	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0357	JBQ	0.0296	MDL	5.41	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0674	JBQ	0.0220	MDL	5.41	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0459	JQ	0.0377	MDL	5.41	PQL	ng/Kg	J	Z
OCDD	3.36	JB	0.0466	MDL	10.8	PQL	ng/Kg	J	Z
OCDF	0.226	JBQ	0.0699	MDL	10.8	PQL	ng/Kg	U	B

Sample ID: **SL-507-SA8-SB-0.0-0.5** ***Collected:*** **7/16/2013 12:55:00** ***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	2.30	JB	0.0250	MDL	4.93	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.427	J	0.0470	MDL	4.93	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.603	JB	0.0838	MDL	4.93	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.702	JB	0.0554	MDL	4.93	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	1.35	J	0.0902	MDL	4.93	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.698	JB	0.0466	MDL	4.93	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.960	JB	0.0883	MDL	4.93	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.408	JBQ	0.0802	MDL	4.93	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.493	J	0.0794	MDL	4.93	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.562	JB	0.0541	MDL	4.93	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	1.05	J	0.0694	MDL	4.93	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.132	J	0.0621	MDL	0.986	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.722	J	0.116	MDL	0.986	PQL	ng/Kg	J	Z
OCDF	3.70	JB	0.0720	MDL	9.86	PQL	ng/Kg	J	Z

Sample ID: **SL-507-SA8-SB-3.0-4.0** ***Collected:*** **7/16/2013 1:10:00** ***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	0.0934	JB	0.0325	MDL	5.10	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.109	JB	0.00953	MDL	5.10	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0662	JQ	0.0210	MDL	5.10	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.165	JB	0.0258	MDL	5.10	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.207	JB	0.0192	MDL	5.10	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.110	JQ	0.0275	MDL	5.10	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: PH068 **Laboratory: LL**

EDD Filename: PH068_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-507-SA8-SB-3.0-4.0** *Collected:* **7/16/2013 1:10:00** *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	0.152	JBQ	0.0172	MDL	5.10	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.150	JBQ	0.0263	MDL	5.10	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.166	JBQ	0.0209	MDL	5.10	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.322	J	0.0413	MDL	5.10	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.402	JB	0.0216	MDL	5.10	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.111	JB	0.0175	MDL	5.10	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.324	J	0.0231	MDL	5.10	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.0702	JQ	0.0363	MDL	1.02	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.0858	J	0.0319	MDL	1.02	PQL	ng/Kg	J	Z
OCDD	0.390	JB	0.0296	MDL	10.2	PQL	ng/Kg	U	B
OCDF	0.144	JB	0.0454	MDL	10.2	PQL	ng/Kg	U	B

Sample ID: **SL-508-SA8-SB-0.0-0.5** *Collected:* **7/16/2013 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-HPCDD	1.98	JB	0.0772	MDL	5.23	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	2.91	JB	0.0252	MDL	5.23	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.192	JQ	0.0563	MDL	5.23	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.0951	JBQ	0.0462	MDL	5.23	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.598	JB	0.0408	MDL	5.23	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.179	J	0.0494	MDL	5.23	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.746	JB	0.0352	MDL	5.23	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.231	JBQ	0.0505	MDL	5.23	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.263	JB	0.0550	MDL	5.23	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.216	JQ	0.0857	MDL	5.23	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.205	JB	0.0386	MDL	5.23	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.579	J	0.0636	MDL	5.23	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.0654	JQ	0.0543	MDL	1.05	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.370	JQ	0.101	MDL	1.05	PQL	ng/Kg	J	Z
OCDF	7.54	JB	0.0869	MDL	10.5	PQL	ng/Kg	J	Z

Sample ID: **SL-510-SA8-SB-0.0-0.5** *Collected:* **7/16/2013 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-HPCDF	1.98	JB	0.0286	MDL	4.95	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: PH068 **Laboratory: LL**

EDD Filename: PH068_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-510-SA8-SB-0.0-0.5** ***Collected:*** **7/16/2013 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
1,2,3,4,7,8,9-HPCDF	0.226	JQ	0.0478	MDL	4.95	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.279	JB	0.0724	MDL	4.95	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.372	JBQ	0.0400	MDL	4.95	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.874	J	0.0789	MDL	4.95	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.339	JB	0.0397	MDL	4.95	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.790	JB	0.0779	MDL	4.95	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.187	JB	0.0463	MDL	4.95	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.142	JQ	0.0588	MDL	4.95	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.728	JB	0.0394	MDL	4.95	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.364	JBQ	0.0385	MDL	4.95	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.146	J	0.0424	MDL	4.95	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.151	JQ	0.0680	MDL	0.989	PQL	ng/Kg	J	Z
OCDF	2.98	JB	0.0522	MDL	9.89	PQL	ng/Kg	J	Z

Sample ID: **SL-804-SA8-SB-2.5-3.5** ***Collected:*** **7/16/2013 12:10:00** ***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	2.15	JB	0.0848	MDL	5.19	PQL	ng/Kg	J	Z, FD
1,2,3,4,6,7,8-HPCDF	0.440	JB	0.0246	MDL	5.19	PQL	ng/Kg	J	Z, FD
1,2,3,4,7,8,9-HPCDF	0.130	JQ	0.0458	MDL	5.19	PQL	ng/Kg	J	Z, FD
1,2,3,4,7,8-HxCDD	0.169	JB	0.0503	MDL	5.19	PQL	ng/Kg	UJ	B, FD
1,2,3,4,7,8-HXCDF	0.158	JB	0.0329	MDL	5.19	PQL	ng/Kg	J	Z, FD
1,2,3,6,7,8-HXCDD	0.253	JQ	0.0566	MDL	5.19	PQL	ng/Kg	J	Z, FD
1,2,3,6,7,8-HXCDF	0.197	JB	0.0302	MDL	5.19	PQL	ng/Kg	J	Z, FD
1,2,3,7,8,9-HXCDD	0.181	JBQ	0.0575	MDL	5.19	PQL	ng/Kg	J	Z, FD
1,2,3,7,8,9-HXCDF	0.136	JBQ	0.0419	MDL	5.19	PQL	ng/Kg	UJ	B, FD
1,2,3,7,8-PECDD	0.168	JQ	0.0781	MDL	5.19	PQL	ng/Kg	J	Z, FD
1,2,3,7,8-PECDF	1.07	JB	0.0424	MDL	5.19	PQL	ng/Kg	J	Z, FD
2,3,4,6,7,8-HXCDF	0.0926	JBQ	0.0300	MDL	5.19	PQL	ng/Kg	UJ	B, FD
2,3,4,7,8-PECDF	0.203	JQ	0.0432	MDL	5.19	PQL	ng/Kg	J	Z, FD
OCDD	18.8	B	0.0517	MDL	10.4	PQL	ng/Kg	J	FD
OCDF	0.988	JBQ	0.0777	MDL	10.4	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: PH068 **Laboratory: LL**

EDD Filename: PH068_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: SL-504-SA8-SB-0.0-0.5 *Collected:* 7/16/2013 11:45:00 *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)	4.9	J	2.1	MDL	5.2	PQL	mg/Kg	J	Z

Sample ID: SL-507-SA8-SB-0.0-0.5 *Collected:* 7/16/2013 12:55:00 *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)	4.6	J	2.0	MDL	5.1	PQL	mg/Kg	J	Z

Sample ID: SL-508-SA8-SB-0.0-0.5 *Collected:* 7/16/2013 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 (C21-C30)	4.7	J	2.1	MDL	5.3	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 8082A **Matrix: SO**

Sample ID: SL-504-SA8-SB-0.0-0.5 *Collected:* 7/16/2013 11:45:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1254	9.6	J	4.5	MDL	18	PQL	ug/Kg	J	Z

Sample ID: SL-505-SA8-SB-0.0-0.5 *Collected:* 7/16/2013 8:55:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1254	16	J	4.7	MDL	18	PQL	ug/Kg	J	Z

Method Category: SVOA

Method: 8270D **Matrix: SO**

Sample ID: SL-504-SA8-SB-2.5-3.5 *Collected:* 7/16/2013 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
BENZIDINE	1700	U	730	MDL	1700	PQL	ug/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: PH068 **Laboratory: LL**

EDD Filename: PH068_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

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

Sample ID: **SL-504-SA8-SB-0.0-0.5** ***Collected:*** **7/16/2013 11:45:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(B)FLUORANTHENE	0.87	J	0.70	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(K)FLUORANTHENE	1.1	J	0.70	MDL	1.7	PQL	ug/Kg	J	Z
CHRYSENE	0.90	J	0.35	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: **SL-505-SA8-SB-0.0-0.5** ***Collected:*** **7/16/2013 8:55:00** ***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	0.73	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(K)FLUORANTHENE	1.0	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z
CHRYSENE	1.1	J	0.35	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: **SL-505-SA8-SB-4.0-5.0** ***Collected:*** **7/16/2013 9:30:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACENAPHTHYLENE	0.50	J	0.36	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: **SL-507-SA8-SB-0.0-0.5** ***Collected:*** **7/16/2013 12:55:00** ***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	1.1	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	7.2	J	6.1	MDL	18	PQL	ug/Kg	J	Z
PHENANTHRENE	1.1	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
PYRENE	1.3	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: **SL-508-SA8-SB-0.0-0.5** ***Collected:*** **7/16/2013 1:30:00** ***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	11	J	6.3	MDL	19	PQL	ug/Kg	J	Z
CHRYSENE	0.82	J	0.35	MDL	1.7	PQL	ug/Kg	J	Z
PHENANTHRENE	0.86	J	0.70	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: **SL-510-SA8-SB-0.0-0.5** ***Collected:*** **7/16/2013 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
BENZO(B)FLUORANTHENE	0.71	J	0.66	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: PH068 **Laboratory: LL**

EDD Filename: PH068_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

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

Sample ID: **SL-510-SA8-SB-0.0-0.5** *Collected:* **7/16/2013 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
BENZO(K)FLUORANTHENE	1.2	J	0.66	MDL	1.7	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	14	J	6.0	MDL	18	PQL	ug/Kg	J	Z
CHRYSENE	1.1	J	0.33	MDL	1.7	PQL	ug/Kg	J	Z
FLUORANTHENE	0.93	J	0.66	MDL	1.7	PQL	ug/Kg	J	Z
PHENANTHRENE	0.70	J	0.66	MDL	1.7	PQL	ug/Kg	J	Z
PYRENE	0.84	J	0.66	MDL	1.7	PQL	ug/Kg	J	Z

Method Category: VOA

Method: 8260B **Matrix: AQ**

Sample ID: **TB-071613** *Collected:* **7/16/2013 8:00:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorotrifluoroethylene	5	U	2	MDL	5	PQL	ug/L	UJ	L

* 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: PH068 **Laboratory: LL**

EDD Filename: PH068_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Reason Code Legend

Reason Code	*Description*
*#	Professional Judgment
A	ICP Serial Dilution
B	Method Blank Contamination
E	Laboratory Duplicate Precision
E	Matrix Spike Precision
F	Field Blank Contamination
FD	Field Duplicate Precision
L	Laboratory Control Spike Lower Estimation
L	Laboratory Control Spike Upper Estimation
Q	Laboratory Duplicate Precision
Q	Matrix Spike Lower Estimation
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

Enclosure I

EPA Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control Outlier Reports

PH068

Method Blank Outlier Report

Lab Reporting Batch ID: PH068 **Laboratory: LL**

EDD Filename: PH068_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: **1613B**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2060B372237	7/26/2013 10:37:00 PM	1,2,3,4,6,7,8-HPCDD	0.0714 ng/Kg	SL-504-SA8-SB-0.0-0.5
		1,2,3,4,6,7,8-HPCDF	0.0256 ng/Kg	SL-504-SA8-SB-2.5-3.5
		1,2,3,4,7,8-HxCDD	0.0432 ng/Kg	SL-505-SA8-SB-0.0-0.5
		1,2,3,4,7,8-HXCDF	0.0229 ng/Kg	SL-505-SA8-SB-4.0-5.0
		1,2,3,6,7,8-HXCDF	0.0231 ng/Kg	SL-507-SA8-SB-0.0-0.5
		1,2,3,7,8,9-HXCDD	0.0358 ng/Kg	SL-507-SA8-SB-3.0-4.0
		1,2,3,7,8,9-HXCDF	0.0413 ng/Kg	SL-508-SA8-SB-0.0-0.5
		1,2,3,7,8-PECDF	0.0307 ng/Kg	SL-510-SA8-SB-0.0-0.5
		2,3,4,6,7,8-HXCDF	0.0401 ng/Kg	SL-804-SA8-SB-2.5-3.5
		OCDD	0.230 ng/Kg	
		OCDF	0.159 ng/Kg	

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-504-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.102 ng/Kg	0.102U ng/Kg
SL-504-SA8-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.106 ng/Kg	0.106U ng/Kg
SL-504-SA8-SB-2.5-3.5(RES)	1,2,3,4,6,7,8-HPCDD	0.219 ng/Kg	0.219U ng/Kg
SL-504-SA8-SB-2.5-3.5(RES)	1,2,3,4,6,7,8-HPCDF	0.0823 ng/Kg	0.0823U ng/Kg
SL-504-SA8-SB-2.5-3.5(RES)	1,2,3,4,7,8-HxCDD	0.0400 ng/Kg	0.0400U ng/Kg
SL-504-SA8-SB-2.5-3.5(RES)	1,2,3,4,7,8-HXCDF	0.0695 ng/Kg	0.0695U ng/Kg
SL-504-SA8-SB-2.5-3.5(RES)	1,2,3,6,7,8-HXCDF	0.0354 ng/Kg	0.0354U ng/Kg
SL-504-SA8-SB-2.5-3.5(RES)	2,3,4,6,7,8-HXCDF	0.0365 ng/Kg	0.0365U ng/Kg
SL-504-SA8-SB-2.5-3.5(RES)	OCDF	0.188 ng/Kg	0.188U ng/Kg
SL-505-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.0906 ng/Kg	0.0906U ng/Kg
SL-505-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.0869 ng/Kg	0.0869U ng/Kg
SL-505-SA8-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.0867 ng/Kg	0.0867U ng/Kg
SL-505-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0814 ng/Kg	0.0814U ng/Kg
SL-505-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0982 ng/Kg	0.0982U ng/Kg
SL-505-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.0433 ng/Kg	0.0433U ng/Kg
SL-505-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.0333 ng/Kg	0.0333U ng/Kg
SL-505-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDD	0.0400 ng/Kg	0.0400U ng/Kg
SL-505-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDF	0.0357 ng/Kg	0.0357U ng/Kg
SL-505-SA8-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0674 ng/Kg	0.0674U ng/Kg
SL-505-SA8-SB-4.0-5.0(RES)	OCDF	0.226 ng/Kg	0.226U ng/Kg
SL-507-SA8-SB-3.0-4.0(RES)	1,2,3,4,6,7,8-HPCDD	0.0934 ng/Kg	0.0934U ng/Kg
SL-507-SA8-SB-3.0-4.0(RES)	1,2,3,4,6,7,8-HPCDF	0.109 ng/Kg	0.109U ng/Kg
SL-507-SA8-SB-3.0-4.0(RES)	1,2,3,4,7,8-HxCDD	0.165 ng/Kg	0.165U ng/Kg
SL-507-SA8-SB-3.0-4.0(RES)	1,2,3,7,8,9-HXCDD	0.150 ng/Kg	0.150U ng/Kg
SL-507-SA8-SB-3.0-4.0(RES)	1,2,3,7,8,9-HXCDF	0.166 ng/Kg	0.166U ng/Kg
SL-507-SA8-SB-3.0-4.0(RES)	2,3,4,6,7,8-HXCDF	0.111 ng/Kg	0.111U ng/Kg
SL-507-SA8-SB-3.0-4.0(RES)	OCDD	0.390 ng/Kg	0.390U ng/Kg
SL-507-SA8-SB-3.0-4.0(RES)	OCDF	0.144 ng/Kg	0.144U ng/Kg
SL-508-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.0951 ng/Kg	0.0951U ng/Kg
SL-510-SA8-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.187 ng/Kg	0.187U ng/Kg
SL-804-SA8-SB-2.5-3.5(RES)	1,2,3,4,7,8-HxCDD	0.169 ng/Kg	0.169U ng/Kg
SL-804-SA8-SB-2.5-3.5(RES)	1,2,3,7,8,9-HXCDF	0.136 ng/Kg	0.136U ng/Kg

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

Method Blank Outlier Report

Lab Reporting Batch ID: PH068 **Laboratory: LL**

EDD Filename: PH068_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: **1613B**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples

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-804-SA8-SB-2.5-3.5(RES)	2,3,4,6,7,8-HXCDF	0.0926 ng/Kg	0.0926U ng/Kg

Method: **6010C**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P19837AB221510	7/24/2013 3:10:00 PM	TIN ZINC	1.34 mg/Kg 0.343 mg/Kg	SL-504-SA8-SB-0.0-0.5 SL-504-SA8-SB-2.5-3.5 SL-505-SA8-SB-0.0-0.5 SL-505-SA8-SB-4.0-5.0 SL-507-SA8-SB-0.0-0.5 SL-507-SA8-SB-3.0-4.0 SL-508-SA8-SB-0.0-0.5 SL-510-SA8-SB-0.0-0.5 SL-804-SA8-SB-2.5-3.5
P19837AB222016	7/25/2013 8:16:00 PM	COPPER	0.441 mg/Kg	SL-504-SA8-SB-0.0-0.5 SL-504-SA8-SB-2.5-3.5 SL-505-SA8-SB-0.0-0.5 SL-505-SA8-SB-4.0-5.0 SL-507-SA8-SB-0.0-0.5 SL-507-SA8-SB-3.0-4.0 SL-508-SA8-SB-0.0-0.5 SL-510-SA8-SB-0.0-0.5 SL-804-SA8-SB-2.5-3.5

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-504-SA8-SB-0.0-0.5(RES)	TIN	3.11 mg/Kg	3.11U mg/Kg
SL-504-SA8-SB-2.5-3.5(RES)	TIN	2.86 mg/Kg	2.86U mg/Kg
SL-505-SA8-SB-0.0-0.5(RES)	TIN	3.19 mg/Kg	3.19U mg/Kg
SL-505-SA8-SB-4.0-5.0(RES)	TIN	3.18 mg/Kg	3.18U mg/Kg
SL-507-SA8-SB-0.0-0.5(RES)	TIN	2.89 mg/Kg	2.89U mg/Kg
SL-507-SA8-SB-3.0-4.0(RES)	TIN	2.96 mg/Kg	2.96U mg/Kg
SL-508-SA8-SB-0.0-0.5(RES)	TIN	2.77 mg/Kg	2.77U mg/Kg
SL-510-SA8-SB-0.0-0.5(RES)	TIN	2.85 mg/Kg	2.85U mg/Kg
SL-804-SA8-SB-2.5-3.5(RES)	TIN	2.99 mg/Kg	2.99U mg/Kg

Field Blank Outlier Report

Lab Reporting Batch ID: PH068 **Laboratory: LL**

EDD Filename: PH068_v2 **eQAPP Name: CDM_SSFL_130808_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-504-SA8-SB-0.0-0.5 SL-504-SA8-SB-2.5-3.5 SL-505-SA8-SB-0.0-0.5 SL-505-SA8-SB-4.0-5.0 SL-507-SA8-SB-0.0-0.5 SL-507-SA8-SB-3.0-4.0 SL-508-SA8-SB-0.0-0.5 SL-510-SA8-SB-0.0-0.5 SL-804-SA8-SB-2.5-3.5

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-504-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.518 mg/Kg	0.518U mg/Kg
SL-504-SA8-SB-2.5-3.5(RES)	MOLYBDENUM	0.373 mg/Kg	0.373U mg/Kg
SL-505-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.627 mg/Kg	0.627U mg/Kg
SL-507-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.343 mg/Kg	0.343U mg/Kg
SL-508-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.574 mg/Kg	0.574U mg/Kg
SL-510-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.373 mg/Kg	0.373U mg/Kg

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH068 **Laboratory: LL**

EDD Filename: PH068_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 6010C
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-504-SA8-SB-2.5-3.5MS (TOT) SL-504-SA8-SB-2.5-3.5MSD (TOT) (SL-504-SA8-SB-0.0-0.5 SL -504-SA8-SB-2.5-3.5 SL -505-SA8-SB-0.0-0.5 SL -505-SA8-SB-4.0-5.0 SL -507-SA8-SB-0.0-0.5 SL -507-SA8-SB-3.0-4.0 SL -508-SA8-SB-0.0-0.5 SL -510-SA8-SB-0.0-0.5 SL -804-SA8-SB-2.5-3.5)	ALUMINUM CALCIUM CHROMIUM IRON MAGNESIUM MANGANESE PHOSPHORUS POTASSIUM TITANIUM	1060 202 134 358 562 133 133 128 342	1082 167 - 211 223 - - 135 330	75.00-125.00 75.00-125.00 75.00-125.00 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 CHROMIUM IRON MAGNESIUM MANGANESE PHOSPHORUS POTASSIUM TITANIUM	J (all detects) Al, Ca, Fe, Mg, Mn, P, Ti, No Qual, >4x
SL-504-SA8-SB-2.5-3.5MS (TOT) SL-504-SA8-SB-2.5-3.5MSD (TOT) (SL-504-SA8-SB-0.0-0.5 SL -504-SA8-SB-2.5-3.5 SL -505-SA8-SB-0.0-0.5 SL -505-SA8-SB-4.0-5.0 SL -507-SA8-SB-0.0-0.5 SL -507-SA8-SB-3.0-4.0 SL -508-SA8-SB-0.0-0.5 SL -510-SA8-SB-0.0-0.5 SL -804-SA8-SB-2.5-3.5)	ANTIMONY	72	70	75.00-125.00	-	ANTIMONY	J(all detects) UJ(all non-detects)

Method: 8270D
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-504-SA8-SB-2.5-3.5MSD (SL-504-SA8-SB-2.5-3.5)	2,4-DIMETHYLPHENOL 4-CHLOROANILINE	- -	- -	39.00-147.00 11.00-114.00	31 (30.00) 47 (30.00)	2,4-DIMETHYLPHENOL 4-CHLOROANILINE	J(all detects)
SL-504-SA8-SB-2.5-3.5MS SL-504-SA8-SB-2.5-3.5MSD (SL-504-SA8-SB-2.5-3.5)	BENZIDINE	13	10	35.00-141.00	-	BENZIDINE	J(all detects) UJ(all non-detects)

Method: 8260B
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-504-SA8-SB-2.5-3.5MS SL-504-SA8-SB-2.5-3.5MSD (SL-504-SA8-SB-2.5-3.5)	ACROLEIN Tertiary butyl alcohol	169 218	239 294	10.00-165.00 47.00-153.00	36 (30.00) 32 (30.00)	ACROLEIN Tertiary butyl alcohol	J(all detects)

Lab Duplicate Outlier Report

Lab Reporting Batch ID: PH068 **Laboratory: LL**

EDD Filename: PH068_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 6010C
Matrix: SO

QC Sample ID (Associated Sample ID)	*Analyte*	*Sample RPD*	*eQAPP RPD*	*Flag*
SL-504-SA8-SB-2.5-3.5DUP (TOT) (SL-504-SA8-SB-0.0-0.5 SL-504-SA8-SB-2.5-3.5 SL-505-SA8-SB-0.0-0.5 SL-505-SA8-SB-4.0-5.0 SL-507-SA8-SB-0.0-0.5 SL-507-SA8-SB-3.0-4.0 SL-508-SA8-SB-0.0-0.5 SL-510-SA8-SB-0.0-0.5 SL-804-SA8-SB-2.5-3.5)	MOLYBDENUM Zirconium	42 24	20.00 20.00	J (all detects) UJ (all non-detects)

Method: 7199
Matrix: SO

QC Sample ID (Associated Sample ID)	*Analyte*	*Sample RPD*	*eQAPP RPD*	*Flag*
SL-504-SA8-SB-2.5-3.5DUP (TOT) (SL-504-SA8-SB-0.0-0.5 SL-504-SA8-SB-2.5-3.5 SL-507-SA8-SB-0.0-0.5 SL-507-SA8-SB-3.0-4.0 SL-508-SA8-SB-0.0-0.5 SL-804-SA8-SB-2.5-3.5)	HEXAVALENT CHROMIUM	1.24	≤ 0.82	J(all detects) UJ(all non-detects)

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH068 **Laboratory: LL**

EDD Filename: PH068_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 8260B
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
LCSY77Q211110A LCSY77Y211131A (TB-071613)	Chlorotrifluoroethylene	44	43	47.00-120.00	-	Chlorotrifluoroethylene	J(all detects) UJ(all non-detects)

Method: 8260B
Matrix: SO

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
P9LELCSQ261256 (SL-504-SA8-SB-2.5-3.5 SL -507-SA8-SB-3.0-4.0 SL -804-SA8-SB-2.5-3.5	VINYL ACETATE	135	125	29.00-111.00	-	VINYL ACETATE	J (all detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: PH068 **Laboratory: LL**

EDD Filename: PH068_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 160.3M
Matrix: SO

Analyte	Concentration (%)		Sample RPD	eQAPP RPD	Flag
	SL-504-SA8-SB-2.5-3.5	SL-804-SA8-SB-2.5-3.5			
MOISTURE	3.9	4.0	3		No Qualifiers Applied

Method: 1613B
Matrix: SO

Analyte	Concentration (ng/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-504-SA8-SB-2.5-3.5	SL-804-SA8-SB-2.5-3.5			
TEQ WHO 2005 - EDLx0.0	0.0160	0.116	152		No Qualifiers Applied
1,2,3,4,6,7,8-HPCDD	0.219	2.15	163	50.00	J(all detects) UJ(all non-detects)
1,2,3,4,6,7,8-HPCDF	0.0823	0.440	137	50.00	
1,2,3,4,7,8,9-HPCDF	0.0343	0.130	116	50.00	
1,2,3,4,7,8-HxCDD	0.0400	0.169	123	50.00	
1,2,3,4,7,8-HXCDF	0.0695	0.158	78	50.00	
1,2,3,6,7,8-HXCDD	0.0391	0.253	146	50.00	
1,2,3,6,7,8-HXCDF	0.0354	0.197	139	50.00	
1,2,3,7,8,9-HXCDD	5.08 U	0.181	200	50.00	
1,2,3,7,8,9-HXCDF	5.08 U	0.136	200	50.00	
1,2,3,7,8-PECDD	5.08 U	0.168	200	50.00	
1,2,3,7,8-PECDF	0.203	1.07	136	50.00	
2,3,4,6,7,8-HXCDF	0.0365	0.0926	87	50.00	
2,3,4,7,8-PECDF	0.0347	0.203	142	50.00	
OCDD	1.89	18.8	163	50.00	
OCDF	0.188	0.988	136	50.00	

Method: 6010C
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-504-SA8-SB-2.5-3.5 (TOT)	SL-804-SA8-SB-2.5-3.5 (TOT)			
ALUMINUM	11800	12100	3	50.00	No Qualifiers Applied
ARSENIC	3.88	3.68	5	50.00	
BARIUM	84.4	88.4	5	50.00	
BERYLLIUM	0.394	0.449	13	50.00	
BORON	18.1	16.0	12	50.00	
CADMIUM	0.370	0.330	11	50.00	
CALCIUM	3670	3610	2	50.00	
CHROMIUM	21.8	22.0	1	50.00	
COBALT	4.81	5.16	7	50.00	
COPPER	10.6	10.9	3	50.00	
IRON	22900	23200	1	50.00	
LEAD	4.43	4.49	1	50.00	
LITHIUM	29.8	29.5	1	50.00	
MAGNESIUM	6080	6410	5	50.00	
MANGANESE	422	313	30	50.00	
NICKEL	12.6	13.0	3	50.00	
PHOSPHORUS	423	424	0	50.00	
POTASSIUM	2220	2240	1	50.00	
SODIUM	177	197	11	50.00	
TIN	2.86	2.99	4	50.00	
TITANIUM	1460	1480	1	50.00	
VANADIUM	43.8	43.2	1	50.00	
ZINC	53.6	58.6	9	50.00	
Zirconium	3.17	2.85	11	50.00	
MOLYBDENUM	0.373	2.02 U	200	50.00	J(all detects) UJ(all non-detects)

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

Field Duplicate RPD Report

Lab Reporting Batch ID: PH068 **Laboratory: LL**

EDD Filename: PH068_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 6020A
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-504-SA8-SB-2.5-3.5 (TOT)	SL-804-SA8-SB-2.5-3.5 (TOT)			
STRONTIUM	14.9	14.9	0	50.00	No Qualifiers Applied
THALLIUM	0.238	0.212	12	50.00	

Method: 7199
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-504-SA8-SB-2.5-3.5 (TOT)	SL-804-SA8-SB-2.5-3.5 (TOT)			
HEXAVALENT CHROMIUM	1.4	0.43 U	200	50.00	J(all detects) UJ(all non-detects)

Method: 9045M
Matrix: SO

Analyte	Concentration (pH unit)		Sample RPD	eQAPP RPD	Flag
	SL-504-SA8-SB-2.5-3.5	SL-804-SA8-SB-2.5-3.5			
PH	8.56	8.55	0	50.00	No Qualifiers Applied

Reporting Limit Outliers

Lab Reporting Batch ID: PH068 **Laboratory: LL**

EDD Filename: PH068_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-504-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDF	JB	2.93	5.18	PQL	ng/Kg	J (all detects)
	1,2,3,4,7,8,9-HPCDF	JQ	0.408	5.18	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.280	5.18	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.225	5.18	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	J	0.891	5.18	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.102	5.18	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.497	5.18	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.106	5.18	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.188	5.18	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.752	5.18	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.213	5.18	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.0795	5.18	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0670	1.04	PQL	ng/Kg	
	OCDF	JB	8.29	10.4	PQL	ng/Kg	
SL-504-SA8-SB-2.5-3.5	1,2,3,4,6,7,8-HPCDD	JB	0.219	5.08	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0823	5.08	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JQ	0.0343	5.08	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0400	5.08	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0695	5.08	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JQ	0.0391	5.08	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.0354	5.08	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.203	5.08	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.0365	5.08	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.0347	5.08	PQL	ng/Kg	
	OCDD	JB	1.89	10.2	PQL	ng/Kg	
	OCDF	JBQ	0.188	10.2	PQL	ng/Kg	
SL-505-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDF	JB	0.565	5.22	PQL	ng/Kg	J (all detects)
	1,2,3,4,7,8,9-HPCDF	JQ	0.162	5.22	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0906	5.22	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JQ	0.195	5.22	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.0869	5.22	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.210	5.22	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.0867	5.22	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.141	5.22	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	1.21	5.22	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0814	5.22	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.128	5.22	PQL	ng/Kg	
	OCDF	JB	1.60	10.4	PQL	ng/Kg	
SL-505-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.392	5.41	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0982	5.41	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0433	5.41	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JQ	0.0425	5.41	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0333	5.41	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.0400	5.41	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.0357	5.41	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0674	5.41	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.0459	5.41	PQL	ng/Kg	
	OCDD	JB	3.36	10.8	PQL	ng/Kg	
	OCDF	JBQ	0.226	10.8	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH068 **Laboratory: LL**

EDD Filename: PH068_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: **1613B**

Matrix: **SO**

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-507-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDF	JB	2.30	4.93	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	J	0.427	4.93	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.603	4.93	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.702	4.93	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	J	1.35	4.93	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.698	4.93	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.960	4.93	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.408	4.93	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	J	0.493	4.93	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.562	4.93	PQL	ng/Kg	
	2,3,4,7,8-PECDF	J	1.05	4.93	PQL	ng/Kg	
	2,3,7,8-TCDD	J	0.132	0.986	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.722	0.986	PQL	ng/Kg	
	OCDF	JB	3.70	9.86	PQL	ng/Kg	
SL-507-SA8-SB-3.0-4.0	1,2,3,4,6,7,8-HPCDD	JB	0.0934	5.10	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.109	5.10	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JQ	0.0662	5.10	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.165	5.10	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.207	5.10	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JQ	0.110	5.10	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.152	5.10	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.150	5.10	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.166	5.10	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	J	0.322	5.10	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.402	5.10	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.111	5.10	PQL	ng/Kg	
	2,3,4,7,8-PECDF	J	0.324	5.10	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.0702	1.02	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.0858	1.02	PQL	ng/Kg	
	OCDD	JB	0.390	10.2	PQL	ng/Kg	
	OCDF	JB	0.144	10.2	PQL	ng/Kg	
SL-508-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	1.98	5.23	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	2.91	5.23	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JQ	0.192	5.23	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0951	5.23	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.598	5.23	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	J	0.179	5.23	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.746	5.23	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.231	5.23	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	0.263	5.23	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.216	5.23	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.205	5.23	PQL	ng/Kg	
	2,3,4,7,8-PECDF	J	0.579	5.23	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.0654	1.05	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.370	1.05	PQL	ng/Kg	
	OCDF	JB	7.54	10.5	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH068 **Laboratory: LL**

EDD Filename: PH068_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-510-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDF	JB	1.98	4.95	PQL	ng/Kg	J (all detects)
	1,2,3,4,7,8,9-HPCDF	JQ	0.226	4.95	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.279	4.95	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.372	4.95	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	J	0.874	4.95	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.339	4.95	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.790	4.95	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.187	4.95	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.142	4.95	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.728	4.95	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.364	4.95	PQL	ng/Kg	
	2,3,4,7,8-PECDF	J	0.146	4.95	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.151	0.989	PQL	ng/Kg	
	OCDF	JB	2.98	9.89	PQL	ng/Kg	
SL-804-SA8-SB-2.5-3.5	1,2,3,4,6,7,8-HPCDD	JB	2.15	5.19	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JB	0.440	5.19	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JQ	0.130	5.19	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.169	5.19	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.158	5.19	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JQ	0.253	5.19	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.197	5.19	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.181	5.19	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.136	5.19	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.168	5.19	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	1.07	5.19	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0926	5.19	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.203	5.19	PQL	ng/Kg	
	OCDF	JBQ	0.988	10.4	PQL	ng/Kg	

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-504-SA8-SB-0.0-0.5	BERYLLIUM	J	0.641	1.02	PQL	mg/Kg	J (all detects)
	CADMIUM	J	0.513	1.02	PQL	mg/Kg	
	MOLYBDENUM	J	0.518	2.03	PQL	mg/Kg	
	TIN	J	3.11	10.2	PQL	mg/Kg	
	Zirconium	J	2.16	5.08	PQL	mg/Kg	
SL-504-SA8-SB-2.5-3.5	ARSENIC	J	3.88	4.08	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.394	1.02	PQL	mg/Kg	
	CADMIUM	J	0.370	1.02	PQL	mg/Kg	
	MOLYBDENUM	J	0.373	2.04	PQL	mg/Kg	
	TIN	J	2.86	10.2	PQL	mg/Kg	
	Zirconium	J	3.17	5.10	PQL	mg/Kg	
SL-505-SA8-SB-0.0-0.5	BERYLLIUM	J	0.692	1.04	PQL	mg/Kg	J (all detects)
	CADMIUM	J	0.543	1.04	PQL	mg/Kg	
	MOLYBDENUM	J	0.627	2.08	PQL	mg/Kg	
	TIN	J	3.19	10.4	PQL	mg/Kg	
	Zirconium	J	1.60	5.20	PQL	mg/Kg	
SL-505-SA8-SB-4.0-5.0	BERYLLIUM	J	0.689	1.10	PQL	mg/Kg	J (all detects)
	CADMIUM	J	0.357	1.10	PQL	mg/Kg	
	TIN	J	3.18	11.0	PQL	mg/Kg	
	Zirconium	J	3.50	5.48	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH068 **Laboratory: LL**

EDD Filename: PH068_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 6010C
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-507-SA8-SB-0.0-0.5	ARSENIC	J	3.27	3.97	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.403	0.992	PQL	mg/Kg	
	CADMIUM	J	0.322	0.992	PQL	mg/Kg	
	MOLYBDENUM	J	0.343	1.98	PQL	mg/Kg	
	TIN	J	2.89	9.92	PQL	mg/Kg	
	Zirconium	J	2.37	4.96	PQL	mg/Kg	
SL-507-SA8-SB-3.0-4.0	BERYLLIUM	J	0.381	1.03	PQL	mg/Kg	J (all detects)
	CADMIUM	J	0.232	1.03	PQL	mg/Kg	
	TIN	J	2.96	10.3	PQL	mg/Kg	
	Zirconium	J	3.17	5.13	PQL	mg/Kg	
SL-508-SA8-SB-0.0-0.5	BERYLLIUM	J	0.582	1.03	PQL	mg/Kg	J (all detects)
	CADMIUM	J	0.251	1.03	PQL	mg/Kg	
	MOLYBDENUM	J	0.574	2.05	PQL	mg/Kg	
	TIN	J	2.77	10.3	PQL	mg/Kg	
	Zirconium	J	2.38	5.13	PQL	mg/Kg	
SL-510-SA8-SB-0.0-0.5	BERYLLIUM	J	0.462	0.993	PQL	mg/Kg	J (all detects)
	CADMIUM	J	0.393	0.993	PQL	mg/Kg	
	MOLYBDENUM	J	0.373	1.99	PQL	mg/Kg	
	SODIUM	J	82.4	99.3	PQL	mg/Kg	
	TIN	J	2.85	9.93	PQL	mg/Kg	
	Zirconium	J	1.57	4.97	PQL	mg/Kg	
SL-804-SA8-SB-2.5-3.5	ARSENIC	J	3.68	4.05	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.449	1.01	PQL	mg/Kg	
	CADMIUM	J	0.330	1.01	PQL	mg/Kg	
	TIN	J	2.99	10.1	PQL	mg/Kg	
	Zirconium	J	2.85	5.06	PQL	mg/Kg	

Method: 6020A
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-504-SA8-SB-0.0-0.5	SELENIUM	J	0.251	0.406	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0343	0.203	PQL	mg/Kg	
SL-505-SA8-SB-0.0-0.5	SELENIUM	J	0.329	0.416	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0558	0.208	PQL	mg/Kg	
SL-505-SA8-SB-4.0-5.0	SELENIUM	J	0.132	0.439	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0328	0.219	PQL	mg/Kg	
SL-507-SA8-SB-0.0-0.5	SELENIUM	J	0.186	0.397	PQL	mg/Kg	J (all detects)
SL-507-SA8-SB-3.0-4.0	THALLIUM	J	0.192	0.205	PQL	mg/Kg	J (all detects)
SL-508-SA8-SB-0.0-0.5	SELENIUM	J	0.286	0.411	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0409	0.205	PQL	mg/Kg	
SL-510-SA8-SB-0.0-0.5	SELENIUM	J	0.133	0.397	PQL	mg/Kg	J (all detects)

Method: 7199
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-507-SA8-SB-0.0-0.5	HEXAVALENT CHROMIUM	J	0.35	0.40	PQL	mg/Kg	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH068 **Laboratory: LL**

EDD Filename: PH068_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 7199
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-508-SA8-SB-0.0-0.5	HEXAVALENT CHROMIUM	J	0.30	0.44	PQL	mg/Kg	J (all detects)

Method: 7471B
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-505-SA8-SB-0.0-0.5	MERCURY	J	0.0128	0.0176	PQL	mg/Kg	J (all detects)
SL-505-SA8-SB-4.0-5.0	MERCURY	J	0.0140	0.0174	PQL	mg/Kg	J (all detects)
SL-510-SA8-SB-0.0-0.5	MERCURY	J	0.0144	0.0165	PQL	mg/Kg	J (all detects)

Method: 8015M
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-504-SA8-SB-0.0-0.5	EFH (C21-C30)	J	4.9	5.2	PQL	mg/Kg	J (all detects)
SL-507-SA8-SB-0.0-0.5	EFH (C21-C30)	J	4.6	5.1	PQL	mg/Kg	J (all detects)
SL-508-SA8-SB-0.0-0.5	EFH (C21-C30)	J	4.7	5.3	PQL	mg/Kg	J (all detects)

Method: 8082A
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-504-SA8-SB-0.0-0.5	AROCLOR 1254	J	9.6	18	PQL	ug/Kg	J (all detects)
SL-505-SA8-SB-0.0-0.5	AROCLOR 1254	J	16	18	PQL	ug/Kg	J (all detects)

Method: 8270D SIM
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-504-SA8-SB-0.0-0.5	BENZO(B)FLUORANTHENE	J	0.87	1.7	PQL	ug/Kg	J (all detects)
	BENZO(K)FLUORANTHENE	J	1.1	1.7	PQL	ug/Kg	
	CHRYSENE	J	0.90	1.7	PQL	ug/Kg	
SL-505-SA8-SB-0.0-0.5	BENZO(B)FLUORANTHENE	J	0.73	1.8	PQL	ug/Kg	J (all detects)
	BENZO(K)FLUORANTHENE	J	1.0	1.8	PQL	ug/Kg	
	CHRYSENE	J	1.1	1.8	PQL	ug/Kg	
SL-505-SA8-SB-4.0-5.0	ACENAPHTHYLENE	J	0.50	1.8	PQL	ug/Kg	J (all detects)
SL-507-SA8-SB-0.0-0.5	BENZO(B)FLUORANTHENE	J	1.1	1.7	PQL	ug/Kg	J (all detects)
	BIS(2-ETHYLHEXYL)PHTHALATE	J	7.2	18	PQL	ug/Kg	
	PHENANTHRENE	J	1.1	1.7	PQL	ug/Kg	
	PYRENE	J	1.3	1.7	PQL	ug/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH068 **Laboratory: LL**

EDD Filename: PH068_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: **8270D SIM**

Matrix: **SO**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
SL-508-SA8-SB-0.0-0.5	BIS(2-ETHYLHEXYL)PHTHALATE	J	11	19	PQL	ug/Kg	
	CHRYSENE	J	0.82	1.7	PQL	ug/Kg	J (all detects)
	PHENANTHRENE	J	0.86	1.7	PQL	ug/Kg	
SL-510-SA8-SB-0.0-0.5	BENZO(B)FLUORANTHENE	J	0.71	1.7	PQL	ug/Kg	
	BENZO(K)FLUORANTHENE	J	1.2	1.7	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	14	18	PQL	ug/Kg	
	CHRYSENE	J	1.1	1.7	PQL	ug/Kg	J (all detects)
	FLUORANTHENE	J	0.93	1.7	PQL	ug/Kg	
	PHENANTHRENE	J	0.70	1.7	PQL	ug/Kg	
	PYRENE	J	0.84	1.7	PQL	ug/Kg	

LDC #: 30289C4
SDG #: PH068
Laboratory: Eurofins Lancaster Laboratories

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 9/4/13
Page: 1of 1
Reviewer: AR
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: 7/16/13
II.	ICP/MS Tune	—	
III.	Calibration	—	
IV.	Blanks	A	
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	—	(5,6)
XV	Field Blanks	SW	EB= EB1-071713 / EB2-071713 PH069 FB=FB-041113 (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-510-SA8-SB-0.0-0.5	11	SL-504-SA8-SB-2.5-3.5MSD	21		31	
2	SL-505-SA8-SB-0.0-0.5	12	SL-504-SA8-SB-2.5-3.5DUP	22		32	
3	SL-505-SA8-SB-4.0-5.0	13		23		33	
4	SL-504-SA8-SB-0.0-0.5	14		24		34	
5	SL-504-SA8-SB-2.5-3.5	15		25		35	
6	SL-804-SA8-SB-2.5-3.5	16		26		36	
7	SL-507-SA8-SB-0.0-0.5	17		27		37	
8	SL-507-SA8-SB-3.0-4.0	18		28		38	
9	SL-508-SA8-SB-0.0-0.5	19		29		39	
10	SL-504-SA8-SB-2.5-3.5MS	20		30		40	

Notes:

LDC #: 30289C4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: CR
2nd Reviewer: W

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	7	9				
Cu	0.0036	1.8										
Mo	0.0036	1.8	0.37	0.63	0.52	0.37	0.34	0.57				

Sampling date: 7/17/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: 2-9

Analyte	Blank ID	Sample Identification										
	EB1-071713 (SDG: PH069)	Action Limit	No Qualifiers									
Sb	0.0069	3.45										

Sampling date: 7/17/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: 1

Analyte	Blank ID	Sample Identification										
	EB2-071713 (SDG: PH069)	Action Limit	No Qualifiers									
Sb	0.0054	2.7										

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.: PH068
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7129596BKG Matrix Spike Lab Sample ID: 7129597MS Matrix Spike Duplicate Lab Sample ID: 7129598MSD
Batch Id(s): P19837A, P19838A

Analyte	Mass	BKG Sample Result	C	MS Sample Result	C	MSD Sample Result	C	MS Spike Added	MSD Spike Added	Units	MS %R	Q	MSD %R	Q	RPD	Q	Control Limit %R	Control Limit RPD	M
Aluminum		11327.6627		13385.3184		13428.4718		194.1748	194.1748	MG/KG	1060		1082	*	0			20	P
Antimony		0.7255	U	34.9291		33.8476		48.5437	48.5437	MG/KG	72	N	70	N	3		75 - 125	20	P
Arsenic		3.7275	B	18.0049		18.1631		14.5631	14.5631	MG/KG	98		99		1		75 - 125	20	P
Barium		81.0618		307.7767		273.9204		194.1748	194.1748	MG/KG	117		99		12		75 - 125	20	P
Beryllium		0.3784	B	5.2631		5.2864		4.8544	4.8544	MG/KG	101		101		0		75 - 125	20	P
Boron		17.3794		199.4437		198.6350		194.1748	194.1748	MG/KG	94		93		0		75 - 125	20	P
Cadmium		0.3559	B	5.0592		5.1650		4.8544	4.8544	MG/KG	97		99		2		75 - 125	20	P
Calcium		3523.8088		4307.0825		4170.4408		388.3495	388.3495	MG/KG	202		167		3			20	P
Chromium		20.9186		46.9544		41.4087		19.4175	19.4175	MG/KG	134	N	106		13		75 - 125	20	P
Cobalt		4.6186		50.3835		50.6864		48.5437	48.5437	MG/KG	94		95		1		75 - 125	20	P
Copper		10.2118		37.2107		37.1495		24.2718	24.2718	MG/KG	111		111		0		75 - 125	20	P
Iron		21975.0941		22322.6282		22179.5563		97.0874	97.0874	MG/KG	358		211		1			20	P
Lead		4.2559		18.0942		18.4777		14.5631	14.5631	MG/KG	95		98		2		75 - 125	20	P
Lithium		28.6725		119.7583		120.4107		97.0874	97.0874	MG/KG	94		94		1		75 - 125	20	P
Magnesium		5846.4451		6937.3311		6279.2155		194.1748	194.1748	MG/KG	562		223		10			20	P
Manganese		405.2775		469.9534		449.7078		48.5437	48.5437	MG/KG	133		92		4			20	P
Mercury		0.0097	U	0.1890		0.1826		0.1599	0.1603	MG/KG	118		114		3		65 - 135	20	CV
Molybdenum		0.3588	B	186.4670		187.1864		194.1748	194.1748	MG/KG	96		96		0		75 - 125	20	P
Nickel		12.1176		64.9097		59.6282		48.5437	48.5437	MG/KG	109		98		8		75 - 125	20	P
Phosphorus		406.5922		535.7379		494.3117		97.0874	97.0874	MG/KG	133		90		8			20	P
Potassium		2129.3402		3367.6641		3436.6699		970.8738	970.8738	MG/KG	128	N	135	N	2		75 - 125	20	P
Selenium	78	0.0980	U	2.0058		2.2485		1.9417	1.9417	MG/KG	103		116		11		75 - 125	20	MS
Silver	107	0.0255	U	10.0893		9.7282		9.7087	9.7087	MG/KG	104		100		4		75 - 125	20	MS
Sodium		170.4441		1156.7019		1154.8262		970.8738	970.8738	MG/KG	102		101		0		75 - 125	20	P
Strontium	88	14.3431		22.0388		22.2330		7.7670	7.7670	MG/KG	99		102		1		75 - 125	20	MS
Thallium	203	0.2286		0.6208		0.6159		0.3883	0.3883	MG/KG	101		100		1		75 - 125	20	MS
Tin		2.7510	B	355.3340		353.8466		388.3495	388.3495	MG/KG	91		90		0		75 - 125	20	P
Titanium		1403.0598		1735.5447		1723.4524		97.0874	97.0874	MG/KG	342		330		1			20	P
Vanadium		42.0873		91.8524		90.2825		48.5437	48.5437	MG/KG	103		99		2		75 - 125	20	P
Zinc		51.5088		101.0981		101.8146		48.5437	48.5437	MG/KG	102		104		1		75 - 125	20	P
Zirconium		3.0451	B	99.2233		99.3951		97.0874	97.0874	MG/KG	99		99		0		75 - 125	20	P

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

METHODS:
P = ICP Atomic Emission Spectrometer CV = Cold Vapor
MS = ICP Mass Spectrometry AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below MDL, B= Below LOQ
FLAGS:
N = Matrix Spike OOS, * = Duplicate OOS

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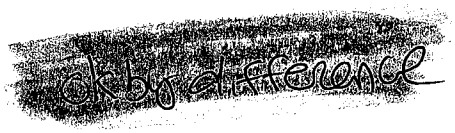
QUALITY ASSURANCE SUMMARY
FORM 6
DUPLICATES
SDG No.: PH068
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7129596BKG
Batch ID(s): P19837A, P19838A
Concentration Units: MG/KG

Duplicate Lab Sample ID: 7129602DUP

Analyte	Mass	Control Limit	Samples (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum			11327.6627		11207.6235		1		P
Antimony			-0.7412	B	0.7255	U	=200		P
Arsenic			3.7275	B	3.2853	B	13		P
Barium			81.0618		80.5412		1		P
Beryllium			0.3784	B	0.3824	B	1		P
Boron		9.8	17.3794		16.3549		6		P
Cadmium			0.3559	B	0.3363	B	6		P
Calcium			3523.0088		3411.9392		3		P
Chromium			20.9186		20.5784		2		P
Cobalt		1.0	4.6186		4.4471		4		P
Copper			10.2118		10.4049		2		P
Iron			21975.0941		22008.4010		0		P
Lead		2.9	4.2559		3.8814		9		P
Lithium			28.6725		27.3255		5		P
Magnesium			5846.4451		5923.3647		1		P
Manganese			405.2775		406.3461		0		P
Mercury			0.0097	U	0.0097	U			CV
Molybdenum			0.3588	B	0.2383	B	42		P
Nickel			12.1176		12.1069		0		P
Phosphorus			406.5922		403.1422		1		P
Potassium			2129.3402		2166.8676		2		P
Selenium	78		0.0980	U	0.0980	U			MS
Silver	107		0.0255	U	0.0255	U			MS
Sodium		98.0	170.4441		168.4804		1		P
Strontium	88		14.3431		13.7255		4		MS
Thallium	203	0.2	0.2286		0.2006		13		MS
Tin			2.7510	B	2.5853	B	6		P
Titanium			1403.0598		1357.2049		3		P
Vanadium			42.0873		40.8549		3		P
Zinc			51.5088		51.3980		0		P
Zirconium			3.0451	B	3.8922	B	24		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.: PH068
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7129596BKG Serial Dilution Lab Sample ID: 7129596L
Batch ID(s): P19837A
Concentration Units: UG/L

Analyte	Mass	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Diff.	Q	M
Aluminum		115542.1600		108978.8500		6		P
Antimony		7.4000	U	37.0000	U			P
Arsenic		38.0200	B	37.1500	B	2		P
Barium		826.8300		785.5500		5		P
Beryllium		3.8600	B	3.3500	U	100		P
Boron		177.2700		191.3000	B	8		P
Cadmium		3.6300	B	3.8000	U	100		P
Calcium		35934.6900		34214.4000		5		P
Chromium		213.3700		192.8500		10		P
Cobalt		47.1100		48.1000	B	2		P
Copper		104.1600		99.4500	B	5		P
Iron		224145.9600		210061.5000		6		P
Lead		43.4100		29.7000	B	32		P
Lithium		292.4600		240.4000		18	E	P
Magnesium		59633.7400		56247.8500		6		P
Manganese		4133.8300		3956.6000		4		P
Molybdenum		3.6600	B	11.2000	B	206		P
Nickel		123.6000		118.9000		4		P
Phosphorus		4147.2400		3893.5500		6		P
Potassium		21719.2700		20985.6000		3		P
Selenium	78	0.5000	U	2.5000	U			MS
Silver	107	0.1300	U	0.6500	U			MS
Sodium		1738.5300		1473.9500	B	15		P
Strontium	88	73.1500		75.1500		3		MS
Thallium	203	1.1660		0.7500	U	100		MS
Tin		28.0600	B	25.3500	B	10		P
Titanium		14311.2100		13194.8500		8		P
Vanadium		429.2900		390.7000		9		P
Zinc		525.3900		486.6000		7		P
Zirconium		31.0600	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.

[redacted]

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

Data Validation Report
Santa Susana Field Laboratory

Subarea 8

SDG: PH069

Prepared for

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Prepared by

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September 24, 2013

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on July 17th, 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 (VOAs) by EPA SW 846 Method 8260B
Semivolatiles (SVOAs) by EPA 846 Method 8270D
SVOAs 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/Dibenzofurans by EPA Method 1613B
Perchlorate by EPA Method 6850
Hevavalent Chromium by EPA Method 7199

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. DVRs for samples on which EPA Level IV validation was performed 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 (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), method blanks, trip blanks, equipment blanks, field blanks, and review of the QC summary forms as well as 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 the calibrations, internal standard, and 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

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 with the exception of several VOAs, SVOAs, and Herbicides. 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 Enclosures I and II.

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 four blanks for SVOAs, 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 Enclosures I and II.

No contaminant concentrations were detected in the initial or continuing calibration blanks with the exception of several metals. The associated sample results were qualified as non-detected (U) due to initial or continuing calibration 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 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 herbicides, TPH-E, 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 Enclosures I and II.

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 with the exception of several LCS/LCSD pairs for VOAs, SVOAs, pesticides, and herbicides. 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 Enclosures I and II.

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 with the exception of Lithium. The details regarding the qualification of data are provided in Enclosure II.

XII. Compound Quantitation

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

The 2nd column 2,3,7,8-TCDF confirmation for dioxin analysis was not performed for several samples. No data were qualified based on lack of 2,3,7,8-TCDF confirmation analysis. Details are provided in Enclosure II.

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

Sample	Finding	Flag	A or P
All samples in SDG PH069	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 VOAs and TPH-G. No contaminant concentrations were found in the trip blank.

Two equipment blanks were collected and analyzed for VOAs, SVOAs, pesticides, PCBs, metals, herbicides, perchlorate, TPH-G, TPH-E, hexavalent chromium, 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 blank were not qualified. The equipment blank outlier reports are presented in Enclosures I and II.

One field blank (from SDG PH029) was collected and analyzed for VOAs, SVOAs, pesticides, PCBs, metals, herbicides, perchlorate, TPH-G, TPH-E, hexavalent chromium, and dioxins. The field blank had detections for several VOAs, SVOAs, 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 Enclosures I and II.

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
17-Jul-2013	SL-512-SA8-SB-0.0-0.5	7130897	N	3050B	6010C	IV
17-Jul-2013	SL-512-SA8-SB-0.0-0.5	7130897	N	3050B	6020A	IV
17-Jul-2013	SL-512-SA8-SB-0.0-0.5	7130897	N	3546	8015M	IV
17-Jul-2013	SL-512-SA8-SB-0.0-0.5	7130897	N	3546	8082A	IV
17-Jul-2013	SL-512-SA8-SB-0.0-0.5	7130897	N	3546	8270D SIM	IV
17-Jul-2013	SL-512-SA8-SB-0.0-0.5	7130897	N	METHOD	1613B	IV
17-Jul-2013	SL-512-SA8-SB-0.0-0.5	7130897	N	METHOD	7471B	IV
17-Jul-2013	TB-071713	7130905	TB	5030B	8015M	IV
17-Jul-2013	TB-071713	7130905	TB	5030B	8260B	IV
17-Jul-2013	SL-512-SA8-SB-0.0-0.5DUP	P130897D220947	DUP	METHOD	7471B	IV
17-Jul-2013	SL-512-SA8-SB-0.0-0.5MSD	P130897M220951	MSD	METHOD	7471B	IV
17-Jul-2013	SL-512-SA8-SB-0.0-0.5MS	P130897R220949	MS	METHOD	7471B	IV
17-Jul-2013	SL-514-SA8-SB-0.0-0.5	7130898	N	3050B	6010C	IV
17-Jul-2013	SL-514-SA8-SB-0.0-0.5	7130898	N	3050B	6020A	IV
17-Jul-2013	SL-514-SA8-SB-0.0-0.5	7130898	N	3546	8015M	IV
17-Jul-2013	SL-514-SA8-SB-0.0-0.5	7130898	N	3546	8081B	IV
17-Jul-2013	SL-514-SA8-SB-0.0-0.5	7130898	N	3546	8270D SIM	IV
17-Jul-2013	SL-514-SA8-SB-0.0-0.5	7130898	N	3550B	8151A	IV
17-Jul-2013	SL-514-SA8-SB-0.0-0.5	7130898	N	METHOD	1613B	IV
17-Jul-2013	SL-514-SA8-SB-0.0-0.5	7130898	N	METHOD	7471B	IV
17-Jul-2013	SL-514-SA8-SB-0.0-0.5MSD	P130898M240418A	MSD	3550B	8151A	IV
17-Jul-2013	SL-514-SA8-SB-0.0-0.5MS	P130898R240351A	MS	3550B	8151A	IV
17-Jul-2013	SL-514-SA8-SB-4.0-5.0	7130899	N	3050B	6010C	IV
17-Jul-2013	SL-514-SA8-SB-4.0-5.0	7130899	N	3050B	6020A	IV
17-Jul-2013	SL-514-SA8-SB-4.0-5.0	7130899	N	3546	8015M	IV
17-Jul-2013	SL-514-SA8-SB-4.0-5.0	7130899	N	3546	8081B	IV

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
17-Jul-2013	SL-514-SA8-SB-4.0-5.0	7130899	N	3546	8270D SIM	IV
17-Jul-2013	SL-514-SA8-SB-4.0-5.0	7130899	N	3550B	8151A	IV
17-Jul-2013	SL-514-SA8-SB-4.0-5.0	7130899	N	5035A	8015M	IV
17-Jul-2013	SL-514-SA8-SB-4.0-5.0	7130899	N	METHOD	1613B	IV
17-Jul-2013	SL-514-SA8-SB-4.0-5.0	7130899	N	METHOD	7471B	IV
17-Jul-2013	SL-514-SA8-SB-7.5-8.5	7130900	N	3050B	6010C	IV
17-Jul-2013	SL-514-SA8-SB-7.5-8.5	7130900	N	3050B	6020A	IV
17-Jul-2013	SL-514-SA8-SB-7.5-8.5	7130900	N	3546	8015M	IV
17-Jul-2013	SL-514-SA8-SB-7.5-8.5	7130900	N	3546	8081B	IV
17-Jul-2013	SL-514-SA8-SB-7.5-8.5	7130900	N	3546	8270D SIM	IV
17-Jul-2013	SL-514-SA8-SB-7.5-8.5	7130900	N	3550B	8151A	IV
17-Jul-2013	SL-514-SA8-SB-7.5-8.5	7130900	N	5035A	8015M	IV
17-Jul-2013	SL-514-SA8-SB-7.5-8.5	7130900	N	METHOD	7471B	IV
17-Jul-2013	SL-514-SA8-SB-7.5-8.5DUP	P130900D220901	DUP	3050B	6010C	IV
17-Jul-2013	SL-514-SA8-SB-7.5-8.5DUP	P130900D221804A	DUP	3050B	6020A	IV
17-Jul-2013	SL-514-SA8-SB-7.5-8.5DUP	P130900D221912B	DUP	3050B	6020A	IV
17-Jul-2013	SL-514-SA8-SB-7.5-8.5MSD	P130900M220909	MSD	3050B	6010C	IV
17-Jul-2013	SL-514-SA8-SB-7.5-8.5MSD	P130900M221808A	MSD	3050B	6020A	IV
17-Jul-2013	SL-514-SA8-SB-7.5-8.5MSD	P130900M221917B	MSD	3050B	6020A	IV
17-Jul-2013	SL-514-SA8-SB-7.5-8.5MSD	P130900M321931A	MSD	3546	8015M	IV
17-Jul-2013	SL-514-SA8-SB-7.5-8.5MS	P130900R220905	MS	3050B	6010C	IV
17-Jul-2013	SL-514-SA8-SB-7.5-8.5MS	P130900R221806A	MS	3050B	6020A	IV
17-Jul-2013	SL-514-SA8-SB-7.5-8.5MS	P130900R221914B	MS	3050B	6020A	IV
17-Jul-2013	SL-514-SA8-SB-7.5-8.5MS	P130900R321909A	MS	3546	8015M	IV
17-Jul-2013	SL-515-SA8-SB-0.0-0.5	7130901	N	3050B	6010C	IV
17-Jul-2013	SL-515-SA8-SB-0.0-0.5	7130901	N	3050B	6020A	IV

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
17-Jul-2013	SL-515-SA8-SB-0.0-0.5	7130901	N	3546	8015M	IV
17-Jul-2013	SL-515-SA8-SB-0.0-0.5	7130901	N	3546	8082A	IV
17-Jul-2013	SL-515-SA8-SB-0.0-0.5	7130901	N	3546	8270D SIM	IV
17-Jul-2013	SL-515-SA8-SB-0.0-0.5	7130901	N	METHOD	1613B	IV
17-Jul-2013	SL-515-SA8-SB-0.0-0.5	7130901	N	METHOD	6850	IV
17-Jul-2013	SL-515-SA8-SB-0.0-0.5	7130901	N	METHOD	7471B	IV
17-Jul-2013	SL-515-SA8-SB-4.0-5.0	7130902	N	3050B	6010C	IV
17-Jul-2013	SL-515-SA8-SB-4.0-5.0	7130902	N	3050B	6020A	IV
17-Jul-2013	SL-515-SA8-SB-4.0-5.0	7130902	N	3546	8015M	IV
17-Jul-2013	SL-515-SA8-SB-4.0-5.0	7130902	N	3546	8082A	IV
17-Jul-2013	SL-515-SA8-SB-4.0-5.0	7130902	N	3546	8270D SIM	IV
17-Jul-2013	SL-515-SA8-SB-4.0-5.0	7130902	N	5035A	8015M	IV
17-Jul-2013	SL-515-SA8-SB-4.0-5.0	7130902	N	METHOD	1613B	IV
17-Jul-2013	SL-515-SA8-SB-4.0-5.0	7130902	N	METHOD	6850	IV
17-Jul-2013	SL-515-SA8-SB-4.0-5.0	7130902	N	METHOD	7471B	IV
17-Jul-2013	SL-515-SA8-SB-9.0-10.0	7130903	N	3050B	6010C	IV
17-Jul-2013	SL-515-SA8-SB-9.0-10.0	7130903	N	3050B	6020A	IV
17-Jul-2013	SL-515-SA8-SB-9.0-10.0	7130903	N	3546	8015M	IV
17-Jul-2013	SL-515-SA8-SB-9.0-10.0	7130903	N	3546	8082A	IV
17-Jul-2013	SL-515-SA8-SB-9.0-10.0	7130903	N	3546	8270D SIM	IV
17-Jul-2013	SL-515-SA8-SB-9.0-10.0	7130903	N	5035A	8015M	IV
17-Jul-2013	SL-515-SA8-SB-9.0-10.0	7130903	N	METHOD	1613B	IV
17-Jul-2013	SL-515-SA8-SB-9.0-10.0	7130903	N	METHOD	6850	IV
17-Jul-2013	SL-515-SA8-SB-9.0-10.0	7130903	N	METHOD	7471B	IV
17-Jul-2013	SL-515-SA8-SB-14.0-15.0	7130904	N	3050B	6010C	IV
17-Jul-2013	SL-515-SA8-SB-14.0-15.0	7130904	N	3050B	6020A	IV

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation
N = Normal Sample
FD = Field Duplicate
TB = Trip Blank
FB = Field Blank
MS = Matrix Spike
MSD = Matrix Spike Duplicate

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
17-Jul-2013	SL-515-SA8-SB-14.0-15.0	7130904	N	3546	8015M	IV
17-Jul-2013	SL-515-SA8-SB-14.0-15.0	7130904	N	3546	8082A	IV
17-Jul-2013	SL-515-SA8-SB-14.0-15.0	7130904	N	3546	8270D SIM	IV
17-Jul-2013	SL-515-SA8-SB-14.0-15.0	7130904	N	5035A	8015M	IV
17-Jul-2013	SL-515-SA8-SB-14.0-15.0	7130904	N	METHOD	1613B	IV
17-Jul-2013	SL-515-SA8-SB-14.0-15.0	7130904	N	METHOD	6850	IV
17-Jul-2013	SL-515-SA8-SB-14.0-15.0	7130904	N	METHOD	7471B	IV
17-Jul-2013	SL-513-SA8-SB-0.0-0.5	7130906	N	3050B	6010C	IV
17-Jul-2013	SL-513-SA8-SB-0.0-0.5	7130906	N	3050B	6020A	IV
17-Jul-2013	SL-513-SA8-SB-0.0-0.5	7130906	N	3060A	7199	IV
17-Jul-2013	SL-513-SA8-SB-0.0-0.5	7130906	N	3546	8015M	IV
17-Jul-2013	SL-513-SA8-SB-0.0-0.5	7130906	N	3546	8082A	IV
17-Jul-2013	SL-513-SA8-SB-0.0-0.5	7130906	N	3546	8270D	IV
17-Jul-2013	SL-513-SA8-SB-0.0-0.5	7130906	N	3546	8270D SIM	IV
17-Jul-2013	SL-513-SA8-SB-0.0-0.5	7130906	N	METHOD	1613B	IV
17-Jul-2013	SL-513-SA8-SB-0.0-0.5	7130906	N	METHOD	6850	IV
17-Jul-2013	SL-513-SA8-SB-0.0-0.5	7130906	N	METHOD	7471B	IV
17-Jul-2013	SL-513-SA8-SB-4.0-5.0	7130907	N	3050B	6010C	IV
17-Jul-2013	SL-513-SA8-SB-4.0-5.0	7130907	N	3050B	6020A	IV
17-Jul-2013	SL-513-SA8-SB-4.0-5.0	7130907	N	3060A	7199	IV
17-Jul-2013	SL-513-SA8-SB-4.0-5.0	7130907	N	3546	8015M	IV
17-Jul-2013	SL-513-SA8-SB-4.0-5.0	7130907	N	3546	8082A	IV
17-Jul-2013	SL-513-SA8-SB-4.0-5.0	7130907	N	3546	8270D	IV
17-Jul-2013	SL-513-SA8-SB-4.0-5.0	7130907	N	3546	8270D SIM	IV
17-Jul-2013	SL-513-SA8-SB-4.0-5.0	7130907	N	5035A	8015M	IV
17-Jul-2013	SL-513-SA8-SB-4.0-5.0	7130907	N	METHOD	1613B	IV

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
17-Jul-2013	SL-513-SA8-SB-4.0-5.0	7130907	N	METHOD	6850	IV
17-Jul-2013	SL-513-SA8-SB-4.0-5.0	7130907	N	METHOD	7471B	IV
17-Jul-2013	SL-513-SA8-SB-8.0-9.0	7130908	N	3050B	6010C	IV
17-Jul-2013	SL-513-SA8-SB-8.0-9.0	7130908	N	3050B	6020A	IV
17-Jul-2013	SL-513-SA8-SB-8.0-9.0	7130908	N	3060A	7199	IV
17-Jul-2013	SL-513-SA8-SB-8.0-9.0	7130908	N	3546	8015M	IV
17-Jul-2013	SL-513-SA8-SB-8.0-9.0	7130908	N	3546	8082A	IV
17-Jul-2013	SL-513-SA8-SB-8.0-9.0	7130908	N	3546	8270D	IV
17-Jul-2013	SL-513-SA8-SB-8.0-9.0	7130908	N	3546	8270D SIM	IV
17-Jul-2013	SL-513-SA8-SB-8.0-9.0	7130908	N	5035A	8015M	IV
17-Jul-2013	SL-513-SA8-SB-8.0-9.0	7130908	N	5035A	8260B	IV
17-Jul-2013	SL-513-SA8-SB-8.0-9.0	7130908	N	METHOD	1613B	IV
17-Jul-2013	SL-513-SA8-SB-8.0-9.0	7130908	N	METHOD	6850	IV
17-Jul-2013	SL-513-SA8-SB-8.0-9.0	7130908	N	METHOD	7471B	IV
17-Jul-2013	EB1-071713	7130895	EB	3005A	6010C	IV
17-Jul-2013	EB1-071713	7130895	EB	3510C	8015M	IV
17-Jul-2013	EB1-071713	7130895	EB	3510C	8081B	IV
17-Jul-2013	EB1-071713	7130895	EB	3510C	8082A	IV
17-Jul-2013	EB1-071713	7130895	EB	3510C	8270D	IV
17-Jul-2013	EB1-071713	7130895	EB	3510C	8270D SIM	IV
17-Jul-2013	EB1-071713	7130895	EB	5030B	8015M	IV
17-Jul-2013	EB1-071713	7130895	EB	5030B	8260B	IV
17-Jul-2013	EB1-071713	7130895	EB	Gen Prep	6850	IV
17-Jul-2013	EB1-071713	7130895	EB	Gen Prep	7199	IV
17-Jul-2013	EB1-071713	7130895	EB	M3010A	6020A	IV
17-Jul-2013	EB1-071713	7130895	EB	METHOD	1613B	IV

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
17-Jul-2013	EB1-071713	7130895	EB	METHOD	7470A	IV
17-Jul-2013	EB1-071713	7130895	EB	METHOD	8151A	IV
17-Jul-2013	EB1-071713MSD	P130895M241736A	MSD	Gen Prep	6850	IV
17-Jul-2013	EB1-071713MS	P130895R241723A	MS	Gen Prep	6850	IV
17-Jul-2013	EB2-071713	7130896	EB	3005A	6010C	IV
17-Jul-2013	EB2-071713	7130896	EB	3510C	8015M	IV
17-Jul-2013	EB2-071713	7130896	EB	3510C	8081B	IV
17-Jul-2013	EB2-071713	7130896	EB	3510C	8082A	IV
17-Jul-2013	EB2-071713	7130896	EB	3510C	8270D SIM	IV
17-Jul-2013	EB2-071713	7130896	EB	5030B	8015M	IV
17-Jul-2013	EB2-071713	7130896	EB	Gen Prep	7199	IV
17-Jul-2013	EB2-071713	7130896	EB	M3010A	6020A	IV
17-Jul-2013	EB2-071713	7130896	EB	METHOD	1613B	IV
17-Jul-2013	EB2-071713	7130896	EB	METHOD	7470A	IV
17-Jul-2013	EB2-071713	7130896	EB	METHOD	8151A	IV

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH069 **Laboratory: LL**

EDD Filename: PrepPH069_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix: AQ**

Sample ID: EB1-071713 **Collected: 7/17/2013 3:00:00** **Analysis Type: REA3** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.0069	J	0.0053	MDL	0.0400	PQL	mg/L	U	B

Sample ID: EB2-071713 **Collected: 7/17/2013 3:30:00** **Analysis Type: REA3** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.0054	J	0.0053	MDL	0.0400	PQL	mg/L	U	B

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-512-SA8-SB-0.0-0.5 **Collected: 7/17/2013 8:00:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	3.90	U	0.722	MDL	3.90	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.593	J	0.0654	MDL	0.976	PQL	mg/Kg	J	Z
CADMIUM	0.235	J	0.0742	MDL	0.976	PQL	mg/Kg	J	Z
LITHIUM	22.8		0.33	MDL	3.9	PQL	mg/Kg	J	A
MOLYBDENUM	0.340	J	0.166	MDL	1.95	PQL	mg/Kg	U	F
POTASSIUM	3090		8.14	MDL	97.6	PQL	mg/Kg	J	Q
SODIUM	77.2	J	16.3	MDL	97.6	PQL	mg/Kg	J	Z
TIN	2.98	J	0.215	MDL	9.76	PQL	mg/Kg	U	B

Sample ID: SL-513-SA8-SB-0.0-0.5 **Collected: 7/17/2013 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	1.20	J	0.792	MDL	4.28	PQL	mg/Kg	UJ	Q, B, F
BERYLLIUM	0.659	J	0.0717	MDL	1.07	PQL	mg/Kg	J	Z
BORON	2.19	J	0.899	MDL	10.7	PQL	mg/Kg	J	Z
CADMIUM	0.104	J	0.0813	MDL	1.07	PQL	mg/Kg	J	Z
LITHIUM	25.9		0.36	MDL	4.3	PQL	mg/Kg	J	A
MOLYBDENUM	0.861	J	0.182	MDL	2.14	PQL	mg/Kg	U	F
POTASSIUM	5480		8.93	MDL	107	PQL	mg/Kg	J	Q
TIN	3.28	J	0.235	MDL	10.7	PQL	mg/Kg	U	B
Zirconium	2.54	J	0.899	MDL	5.35	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: PH069 **Laboratory: LL**

EDD Filename: PrepPH069_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix:** SO

Sample ID: **SL-513-SA8-SB-4.0-5.0** ***Collected:*** **7/17/2013 2:00:00** ***Analysis Type:*** **REA2** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.40	U	0.814	MDL	4.40	PQL	mg/Kg	UJ	Q
BORON	10.2	J	0.924	MDL	11.0	PQL	mg/Kg	J	Z
CADMIUM	0.178	J	0.0836	MDL	1.10	PQL	mg/Kg	J	Z
LITHIUM	22.3		0.37	MDL	4.4	PQL	mg/Kg	J	A

Sample ID: **SL-513-SA8-SB-4.0-5.0** ***Collected:*** **7/17/2013 2:00:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	0.202	J	0.0737	MDL	1.10	PQL	mg/Kg	J	Z
POTASSIUM	2320		9.17	MDL	110	PQL	mg/Kg	J	Q
TIN	2.78	J	0.242	MDL	11.0	PQL	mg/Kg	U	B
Zirconium	2.87	J	0.924	MDL	5.50	PQL	mg/Kg	J	Z

Sample ID: **SL-513-SA8-SB-8.0-9.0** ***Collected:*** **7/17/2013 2:15:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	3.94	U	0.730	MDL	3.94	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.408	J	0.0661	MDL	0.986	PQL	mg/Kg	J	Z
CADMIUM	0.218	J	0.0750	MDL	0.986	PQL	mg/Kg	J	Z
LITHIUM	21.9		0.34	MDL	3.9	PQL	mg/Kg	J	A
POTASSIUM	1830		8.22	MDL	98.6	PQL	mg/Kg	J	Q
TIN	3.13	J	0.217	MDL	9.86	PQL	mg/Kg	U	B
Zirconium	1.91	J	0.828	MDL	4.93	PQL	mg/Kg	J	Z

Sample ID: **SL-514-SA8-SB-0.0-0.5** ***Collected:*** **7/17/2013 8:55:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.22	U	0.781	MDL	4.22	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.845	J	0.0707	MDL	1.06	PQL	mg/Kg	J	Z
LITHIUM	23.2		0.36	MDL	4.2	PQL	mg/Kg	J	A
POTASSIUM	5440		8.81	MDL	106	PQL	mg/Kg	J	Q
TIN	3.33	J	0.232	MDL	10.6	PQL	mg/Kg	U	B
Zirconium	3.38	J	0.887	MDL	5.28	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: PH069 **Laboratory: LL**

EDD Filename: PrepPH069_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix:** SO

Sample ID: **SL-514-SA8-SB-4.0-5.0** ***Collected:*** **7/17/2013 9:55:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	7.33		0.868	MDL	4.69	PQL	mg/Kg	J	Q
BERYLLIUM	0.378	J	0.0786	MDL	1.17	PQL	mg/Kg	J	Z
BORON	2.51	J	0.985	MDL	11.7	PQL	mg/Kg	J	Z
CADMIUM	0.223	J	0.0892	MDL	1.17	PQL	mg/Kg	J	Z
LITHIUM	21.4		0.40	MDL	4.7	PQL	mg/Kg	J	A
POTASSIUM	2590		9.78	MDL	117	PQL	mg/Kg	J	Q
TIN	3.05	J	0.258	MDL	11.7	PQL	mg/Kg	U	B
Zirconium	3.34	J	0.985	MDL	5.87	PQL	mg/Kg	J	Z

Sample ID: **SL-514-SA8-SB-7.5-8.5** ***Collected:*** **7/17/2013 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
ANTIMONY	5.55		0.863	MDL	4.66	PQL	mg/Kg	J	Q
BERYLLIUM	0.409	J	0.0781	MDL	1.17	PQL	mg/Kg	J	Z
BORON	1.24	J	0.979	MDL	11.7	PQL	mg/Kg	J	Z
CADMIUM	0.117	J	0.0886	MDL	1.17	PQL	mg/Kg	J	Z
LITHIUM	21.0		0.40	MDL	4.7	PQL	mg/Kg	J	A
MOLYBDENUM	2.30	J	0.198	MDL	2.33	PQL	mg/Kg	J	Z
POTASSIUM	2690		9.72	MDL	117	PQL	mg/Kg	J	Q
TIN	3.00	J	0.256	MDL	11.7	PQL	mg/Kg	U	B
Zirconium	3.38	J	0.979	MDL	5.83	PQL	mg/Kg	J	Z

Sample ID: **SL-515-SA8-SB-0.0-0.5** ***Collected:*** **7/17/2013 10:50:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.42	U	0.817	MDL	4.42	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.890	J	0.0740	MDL	1.10	PQL	mg/Kg	J	Z
CADMIUM	0.116	J	0.0839	MDL	1.10	PQL	mg/Kg	J	Z
LITHIUM	23.0		0.38	MDL	4.4	PQL	mg/Kg	J	A
POTASSIUM	6010		9.21	MDL	110	PQL	mg/Kg	J	Q
TIN	3.43	J	0.243	MDL	11.0	PQL	mg/Kg	U	B
Zirconium	3.76	J	0.928	MDL	5.52	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: PH069 **Laboratory: LL**

EDD Filename: PrepPH069_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-515-SA8-SB-14.0-15.0** ***Collected:*** **7/17/2013 11:35:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.48	U	0.830	MDL	4.48	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.869	J	0.0751	MDL	1.12	PQL	mg/Kg	J	Z
LITHIUM	19.0		0.38	MDL	4.5	PQL	mg/Kg	J	A
POTASSIUM	2480		9.35	MDL	112	PQL	mg/Kg	J	Q
TIN	3.34	J	0.247	MDL	11.2	PQL	mg/Kg	U	B
Zirconium	2.60	J	0.942	MDL	5.61	PQL	mg/Kg	J	Z

Sample ID: **SL-515-SA8-SB-4.0-5.0** ***Collected:*** **7/17/2013 11:05:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.42	U	0.817	MDL	4.42	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.984	J	0.0740	MDL	1.10	PQL	mg/Kg	J	Z
LITHIUM	26.5		0.38	MDL	4.4	PQL	mg/Kg	J	A
POTASSIUM	3110		9.21	MDL	110	PQL	mg/Kg	J	Q
TIN	3.38	J	0.243	MDL	11.0	PQL	mg/Kg	U	B
Zirconium	3.04	J	0.928	MDL	5.52	PQL	mg/Kg	J	Z

Sample ID: **SL-515-SA8-SB-9.0-10.0** ***Collected:*** **7/17/2013 11:20:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.71	U	0.872	MDL	4.71	PQL	mg/Kg	UJ	Q
BERYLLIUM	1.13	J	0.0789	MDL	1.18	PQL	mg/Kg	J	Z
LITHIUM	27.4		0.40	MDL	4.7	PQL	mg/Kg	J	A
POTASSIUM	2930		9.83	MDL	118	PQL	mg/Kg	J	Q
TIN	3.76	J	0.259	MDL	11.8	PQL	mg/Kg	U	B
Zirconium	4.44	J	0.990	MDL	5.89	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: **SL-512-SA8-SB-0.0-0.5** ***Collected:*** **7/17/2013 8:00:00** ***Analysis Type:*** **REA2** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.204	J	0.0976	MDL	0.390	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: PH069 **Laboratory: LL**

EDD Filename: PrepPH069_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: **SL-512-SA8-SB-0.0-0.5** ***Collected:*** **7/17/2013 8:00:00** ***Analysis Type:*** **RES** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0426	J	0.0254	MDL	0.195	PQL	mg/Kg	J	Z

Sample ID: **SL-513-SA8-SB-0.0-0.5** ***Collected:*** **7/17/2013 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	0.270	J	0.107	MDL	0.428	PQL	mg/Kg	J	Z

Sample ID: **SL-513-SA8-SB-0.0-0.5** ***Collected:*** **7/17/2013 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	0.0396	J	0.0278	MDL	0.214	PQL	mg/Kg	J	Z

Sample ID: **SL-513-SA8-SB-4.0-5.0** ***Collected:*** **7/17/2013 2:00:00** ***Analysis Type:*** **REA2** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.119	J	0.110	MDL	0.440	PQL	mg/Kg	J	Z

Sample ID: **SL-513-SA8-SB-4.0-5.0** ***Collected:*** **7/17/2013 2:00:00** ***Analysis Type:*** **RES** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0473	J	0.0286	MDL	0.220	PQL	mg/Kg	J	Z
THALLIUM	0.215	J	0.0330	MDL	0.220	PQL	mg/Kg	J	Z

Sample ID: **SL-514-SA8-SB-0.0-0.5** ***Collected:*** **7/17/2013 8:55:00** ***Analysis Type:*** **REA2** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.256	J	0.106	MDL	0.422	PQL	mg/Kg	J	Z

Sample ID: **SL-514-SA8-SB-0.0-0.5** ***Collected:*** **7/17/2013 8:55:00** ***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	0.0275	MDL	0.211	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: PH069 **Laboratory: LL**

EDD Filename: PrepPH069_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-514-SA8-SB-4.0-5.0 **Collected: 7/17/2013 9:55:00** **Analysis Type: RES** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0467	J	0.0305	MDL	0.235	PQL	mg/Kg	J	Z

Sample ID: SL-514-SA8-SB-7.5-8.5 **Collected: 7/17/2013 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
SELENIUM	0.171	J	0.117	MDL	0.466	PQL	mg/Kg	J	Z

Sample ID: SL-515-SA8-SB-0.0-0.5 **Collected: 7/17/2013 10:50:00** **Analysis Type: REA2** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.258	J	0.110	MDL	0.442	PQL	mg/Kg	J	Z

Sample ID: SL-515-SA8-SB-0.0-0.5 **Collected: 7/17/2013 10:50:00** **Analysis Type: RES** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0440	J	0.0287	MDL	0.221	PQL	mg/Kg	J	Z

Sample ID: SL-515-SA8-SB-4.0-5.0 **Collected: 7/17/2013 11:05:00** **Analysis Type: RES** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0353	J	0.0287	MDL	0.221	PQL	mg/Kg	J	Z

Sample ID: SL-515-SA8-SB-9.0-10.0 **Collected: 7/17/2013 11:20:00** **Analysis Type: REA2** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.137	J	0.118	MDL	0.471	PQL	mg/Kg	J	Z

Sample ID: SL-515-SA8-SB-9.0-10.0 **Collected: 7/17/2013 11:20:00** **Analysis Type: RES** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0431	J	0.0306	MDL	0.236	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: PH069 **Laboratory: LL**

EDD Filename: PrepPH069_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 7199 **Matrix: SO**

Sample ID: SL-513-SA8-SB-4.0-5.0 **Collected: 7/17/2013 2:00:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
HEXAVALENT CHROMIUM	0.18	J	0.16	MDL	0.44	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: SL-515-SA8-SB-0.0-0.5 **Collected: 7/17/2013 10:50:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0136	J	0.0110	MDL	0.0184	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 1613B **Matrix: AQ**

Sample ID: EB1-071713 **Collected: 7/17/2013 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	0.413	JBQ	0.170	MDL	9.98	PQL	pg/L	U	B
1,2,3,4,6,7,8-HPCDF	0.238	JB	0.0620	MDL	9.98	PQL	pg/L	U	B
1,2,3,4,7,8,9-HPCDF	0.191	JBQ	0.0696	MDL	9.98	PQL	pg/L	U	B
1,2,3,4,7,8-HxCDD	0.161	JBQ	0.148	MDL	9.98	PQL	pg/L	U	B
1,2,3,4,7,8-HXCDF	0.222	JBQ	0.0723	MDL	9.98	PQL	pg/L	U	B
1,2,3,6,7,8-HXCDF	0.191	JBQ	0.0753	MDL	9.98	PQL	pg/L	U	B
1,2,3,7,8,9-HXCDF	0.186	JB	0.0815	MDL	9.98	PQL	pg/L	U	B
1,2,3,7,8-PECDF	0.406	JB	0.142	MDL	9.98	PQL	pg/L	U	B
2,3,4,6,7,8-HXCDF	0.224	JB	0.0716	MDL	9.98	PQL	pg/L	U	B
2,3,4,7,8-PECDF	0.132	JBQ	0.131	MDL	9.98	PQL	pg/L	U	B
OCDD	0.814	JBQ	0.169	MDL	20.0	PQL	pg/L	U	B
OCDF	0.512	JBQ	0.212	MDL	20.0	PQL	pg/L	U	B

Sample ID: EB2-071713 **Collected: 7/17/2013 3:30:00** **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	0.352	JBQ	0.277	MDL	9.97	PQL	pg/L	U	B
1,2,3,4,6,7,8-HPCDF	0.174	JBQ	0.110	MDL	9.97	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: PH069 **Laboratory: LL**

EDD Filename: PrepPH069_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix:** AQ

Sample ID: EB2-071713 **Collected:** 7/17/2013 3:30:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,7,8,9-HPCDF	0.519	JBQ	0.127	MDL	9.97	PQL	pg/L	U	B
1,2,3,4,7,8-HxCDD	0.373	JBQ	0.221	MDL	9.97	PQL	pg/L	U	B
1,2,3,6,7,8-HXCDF	0.396	JBQ	0.146	MDL	9.97	PQL	pg/L	U	B
1,2,3,7,8,9-HXCDF	0.283	JBQ	0.170	MDL	9.97	PQL	pg/L	U	B
1,2,3,7,8-PECDD	0.542	JQ	0.387	MDL	9.97	PQL	pg/L	J	Z
1,2,3,7,8-PECDF	0.532	JB	0.249	MDL	9.97	PQL	pg/L	U	B
2,3,4,6,7,8-HXCDF	0.359	JBQ	0.140	MDL	9.97	PQL	pg/L	U	B
2,3,4,7,8-PECDF	0.245	JB	0.217	MDL	9.97	PQL	pg/L	U	B
OCDD	0.797	JBQ	0.229	MDL	19.9	PQL	pg/L	U	B
OCDF	0.733	JBQ	0.346	MDL	19.9	PQL	pg/L	U	B

Method Category: SVOA

Method: 1613B **Matrix:** SO

Sample ID: SL-512-SA8-SB-0.0-0.5 **Collected:** 7/17/2013 8:00:00 **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	4.39	JB	0.0564	MDL	4.90	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.827	JBQ	0.0208	MDL	4.90	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.111	J	0.0447	MDL	4.90	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.156	JBQ	0.0592	MDL	4.90	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.193	JBQ	0.0364	MDL	4.90	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.473	J	0.0591	MDL	4.90	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.235	JBQ	0.0305	MDL	4.90	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.587	JB	0.0595	MDL	4.90	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.328	JBQ	0.0408	MDL	4.90	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.243	JQ	0.0480	MDL	4.90	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.930	JB	0.0348	MDL	4.90	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.184	JBQ	0.0327	MDL	4.90	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.384	J	0.0392	MDL	4.90	PQL	ng/Kg	J	Z
OCDF	1.57	JB	0.0641	MDL	9.80	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: PH069 **Laboratory: LL**

EDD Filename: PrepPH069_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix:** SO

Sample ID: **SL-513-SA8-SB-0.0-0.5** ***Collected:*** **7/17/2013 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-HPCDF	3.96	JB	0.0318	MDL	5.36	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.472	J	0.0367	MDL	5.36	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.714	JBQ	0.0920	MDL	5.36	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.658	JBQ	0.0386	MDL	5.36	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	1.57	J	0.104	MDL	5.36	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.443	JBQ	0.0442	MDL	5.36	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	1.06	JBQ	0.0986	MDL	5.36	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.423	JB	0.0459	MDL	5.36	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.296	J	0.0762	MDL	5.36	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	3.88	JB	0.0559	MDL	5.36	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.318	JB	0.0439	MDL	5.36	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.599	J	0.0488	MDL	5.36	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.365	J	0.0936	MDL	1.07	PQL	ng/Kg	J	Z
OCDF	6.36	JB	0.0322	MDL	10.7	PQL	ng/Kg	J	Z

Sample ID: **SL-513-SA8-SB-4.0-5.0** ***Collected:*** **7/17/2013 2:00:00** ***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	0.995	JB	0.0432	MDL	5.38	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.539	JB	0.0197	MDL	5.38	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0465	J	0.0201	MDL	5.38	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.0567	JBQ	0.0289	MDL	5.38	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0433	JBQ	0.0139	MDL	5.38	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0702	JQ	0.0311	MDL	5.38	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0453	JBQ	0.0150	MDL	5.38	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0790	JB	0.0304	MDL	5.38	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0828	JB	0.0163	MDL	5.38	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0586	JQ	0.0383	MDL	5.38	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.151	JB	0.0273	MDL	5.38	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0507	JBQ	0.0164	MDL	5.38	PQL	ng/Kg	U	B
2,3,7,8-TCDD	0.0431	JQ	0.0388	MDL	1.08	PQL	ng/Kg	J	Z
OCDF	3.42	JB	0.0364	MDL	10.8	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: PH069 **Laboratory: LL**

EDD Filename: PrepPH069_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix:** SO

Sample ID: SL-513-SA8-SB-8.0-9.0 **Collected:** 7/17/2013 2:15:00 **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	0.0671	JBQ	0.0363	MDL	4.94	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0293	JBQ	0.0122	MDL	4.94	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0564	J	0.0201	MDL	4.94	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.0311	JBQ	0.0124	MDL	4.94	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0177	JBQ	0.0130	MDL	4.94	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0460	JB	0.0256	MDL	4.94	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0393	JBQ	0.0207	MDL	4.94	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0189	JBQ	0.0149	MDL	4.94	PQL	ng/Kg	U	B
OCDD	0.192	JBQ	0.0331	MDL	9.87	PQL	ng/Kg	U	B
OCDF	0.126	JB	0.0419	MDL	9.87	PQL	ng/Kg	U	B

Sample ID: SL-514-SA8-SB-0.0-0.5 **Collected:** 7/17/2013 8:55:00 **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	2.65	JB	0.0224	MDL	5.21	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.196	JQ	0.0437	MDL	5.21	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.164	JB	0.0494	MDL	5.21	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.198	JB	0.0286	MDL	5.21	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.515	JQ	0.0523	MDL	5.21	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.159	JB	0.0273	MDL	5.21	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.557	JB	0.0505	MDL	5.21	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.272	JB	0.0362	MDL	5.21	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.0902	JQ	0.0547	MDL	5.21	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	1.28	JB	0.0415	MDL	5.21	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.141	JB	0.0291	MDL	5.21	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.171	JQ	0.0450	MDL	5.21	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.0488	JQ	0.0420	MDL	1.04	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.678	J	0.0684	MDL	1.04	PQL	ng/Kg	J	Z
OCDF	9.21	JB	0.0668	MDL	10.4	PQL	ng/Kg	J	Z

Sample ID: SL-514-SA8-SB-4.0-5.0 **Collected:** 7/17/2013 9:55:00 **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	0.133	JBQ	0.0391	MDL	5.67	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0499	JBQ	0.0147	MDL	5.67	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: PH069 **Laboratory: LL**

EDD Filename: PrepPH069_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-514-SA8-SB-4.0-5.0** ***Collected:*** **7/17/2013 9:55:00** ***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	0.0270	JBQ	0.0204	MDL	5.67	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0534	JQ	0.0368	MDL	5.67	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.0729	JB	0.0353	MDL	5.67	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0427	JBQ	0.0282	MDL	5.67	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0833	JQ	0.0572	MDL	5.67	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.0234	JB	0.0200	MDL	5.67	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0591	JQ	0.0313	MDL	5.67	PQL	ng/Kg	J	Z
OCDD	0.864	JB	0.0364	MDL	11.3	PQL	ng/Kg	U	B
OCDF	0.0864	JBQ	0.0566	MDL	11.3	PQL	ng/Kg	U	B

Sample ID: **SL-515-SA8-SB-0.0-0.5** ***Collected:*** **7/17/2013 10:50:00** ***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-HPCDF	1.64	JB	0.0271	MDL	5.54	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.185	J	0.0307	MDL	5.54	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.142	JB	0.0620	MDL	5.54	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0707	JB	0.0314	MDL	5.54	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.698	J	0.0651	MDL	5.54	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.143	JBQ	0.0303	MDL	5.54	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.637	JB	0.0606	MDL	5.54	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.724	JB	0.0322	MDL	5.54	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.191	JQ	0.0702	MDL	5.54	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.476	JB	0.0464	MDL	5.54	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.169	JBQ	0.0324	MDL	5.54	PQL	ng/Kg	U	B
2,3,7,8-TCDD	0.0615	JQ	0.0512	MDL	1.11	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.0827	JQ	0.0711	MDL	1.11	PQL	ng/Kg	J	Z
OCDF	3.24	JB	0.0346	MDL	11.1	PQL	ng/Kg	J	Z

Sample ID: **SL-515-SA8-SB-14.0-15.0** ***Collected:*** **7/17/2013 11:35:00** ***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	0.106	JBQ	0.0470	MDL	5.71	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0865	JB	0.0177	MDL	5.71	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.136	JQ	0.0286	MDL	5.71	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.194	JBQ	0.0409	MDL	5.71	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: PH069 **Laboratory: LL**

EDD Filename: PrepPH069_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-515-SA8-SB-14.0-15.0** ***Collected:*** **7/17/2013 11:35:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,7,8-HXCDF	0.165	JBQ	0.0236	MDL	5.71	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.121	JQ	0.0448	MDL	5.71	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.164	JB	0.0245	MDL	5.71	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.121	JB	0.0442	MDL	5.71	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.134	JBQ	0.0353	MDL	5.71	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.333	JBQ	0.0375	MDL	5.71	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.151	JQ	0.0353	MDL	5.71	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.0811	JQ	0.0546	MDL	1.14	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.0687	JQ	0.0505	MDL	1.14	PQL	ng/Kg	J	Z
OCDD	0.675	JB	0.0417	MDL	11.4	PQL	ng/Kg	U	B
OCDF	0.116	JBQ	0.0535	MDL	11.4	PQL	ng/Kg	U	B

Sample ID: **SL-515-SA8-SB-4.0-5.0** ***Collected:*** **7/17/2013 11:05:00** ***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-HPCDD	0.0770	JBQ	0.0402	MDL	5.59	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0819	JBQ	0.0117	MDL	5.59	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0563	JQ	0.0225	MDL	5.59	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.0544	JBQ	0.0280	MDL	5.59	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0599	JBQ	0.0167	MDL	5.59	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0382	J	0.0279	MDL	5.59	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0461	JB	0.0151	MDL	5.59	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.115	JBQ	0.0279	MDL	5.59	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0755	JBQ	0.0207	MDL	5.59	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.125	JBQ	0.0225	MDL	5.59	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0345	JBQ	0.0164	MDL	5.59	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0722	JQ	0.0246	MDL	5.59	PQL	ng/Kg	J	Z
OCDD	0.658	JB	0.0392	MDL	11.2	PQL	ng/Kg	U	B
OCDF	0.135	JBQ	0.0563	MDL	11.2	PQL	ng/Kg	U	B

Sample ID: **SL-515-SA8-SB-9.0-10.0** ***Collected:*** **7/17/2013 11:20:00** ***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	0.121	JBQ	0.0522	MDL	5.82	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0679	JB	0.0183	MDL	5.82	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: PH069 **Laboratory: LL**

EDD Filename: PrepPH069_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-515-SA8-SB-9.0-10.0 **Collected: 7/17/2013 11:20:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,7,8,9-HPCDF	0.0377	JQ	0.0306	MDL	5.82	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.0603	JBQ	0.0369	MDL	5.82	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.118	JB	0.0224	MDL	5.82	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.105	JQ	0.0373	MDL	5.82	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.118	JBQ	0.0198	MDL	5.82	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.120	JB	0.0400	MDL	5.82	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.145	JBQ	0.0308	MDL	5.82	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.101	JQ	0.0674	MDL	5.82	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.152	JB	0.0418	MDL	5.82	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0653	JBQ	0.0204	MDL	5.82	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.146	J	0.0389	MDL	5.82	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.0765	JQ	0.0536	MDL	1.16	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.0766	JQ	0.0567	MDL	1.16	PQL	ng/Kg	J	Z
OCDD	0.562	JBQ	0.0464	MDL	11.6	PQL	ng/Kg	U	B
OCDF	0.129	JBQ	0.0603	MDL	11.6	PQL	ng/Kg	U	B

Method Category: SVOA

Method: 6850 **Matrix: SO**

Sample ID: SL-513-SA8-SB-0.0-0.5 **Collected: 7/17/2013 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
PERCHLORATE	3.2	J	2.3	MDL	5.5	PQL	ug/Kg	J	Z

Sample ID: SL-513-SA8-SB-4.0-5.0 **Collected: 7/17/2013 2:00:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	3.6	J	2.3	MDL	5.6	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: PH069 **Laboratory: LL**

EDD Filename: PrepPH069_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: SL-512-SA8-SB-0.0-0.5 **Collected: 7/17/2013 8:00:00** **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)	3.0	J	2.0	MDL	5.1	PQL	mg/Kg	J	Z

Sample ID: SL-514-SA8-SB-0.0-0.5 **Collected: 7/17/2013 8:55:00** **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)	2.9	J	2.1	MDL	5.3	PQL	mg/Kg	J	Z

Sample ID: SL-514-SA8-SB-4.0-5.0 **Collected: 7/17/2013 9:55:00** **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)	5.0	J	2.4	MDL	5.9	PQL	mg/Kg	J	Z

Sample ID: SL-514-SA8-SB-7.5-8.5 **Collected: 7/17/2013 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
EFH (C21-C30)	3.6	J	2.4	MDL	5.9	PQL	mg/Kg	J	Z, Q, Q
EFH (C30-C40)	12		4.8	MDL	12	PQL	mg/Kg	J	Q

Sample ID: SL-515-SA8-SB-14.0-15.0 **Collected: 7/17/2013 11:35:00** **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)	2.7	J	2.3	MDL	5.8	PQL	mg/Kg	J	Z
EFH (C30-C40)	10	J	4.6	MDL	12	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 8081B **Matrix: AQ**

Sample ID: EB1-071713 **Collected: 7/17/2013 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
ENDRIN	0.017	U	0.0068	MDL	0.017	PQL	ug/L	UJ	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: PH069 **Laboratory: LL**

EDD Filename: PrepPH069_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 8081B **Matrix: AQ**

Sample ID: EB2-071713 ***Collected:*** 7/17/2013 3:30:00 ***Analysis Type:*** RES-BASE/NEUTRAL ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ENDRIN	0.017	U	0.0067	MDL	0.017	PQL	ug/L	UJ	E

Method Category: SVOA

Method: 8081B **Matrix: SO**

Sample ID: SL-514-SA8-SB-0.0-0.5 ***Collected:*** 7/17/2013 8:55:00 ***Analysis Type:*** RES-BASE/NEUTRAL ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDT	1.6	J	0.37	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: SL-514-SA8-SB-4.0-5.0 ***Collected:*** 7/17/2013 9:55:00 ***Analysis Type:*** RES-BASE/NEUTRAL ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDT	0.76	J	0.41	MDL	2.0	PQL	ug/Kg	J	Z

Method Category: SVOA

Method: 8082A **Matrix: SO**

Sample ID: SL-512-SA8-SB-0.0-0.5 ***Collected:*** 7/17/2013 8:00:00 ***Analysis Type:*** RES-BASE/NEUTRAL ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1254	8.2	J	4.5	MDL	17	PQL	ug/Kg	J	Z, *XIII

Method Category: SVOA

Method: 8151A **Matrix: AQ**

Sample ID: EB1-071713 ***Collected:*** 7/17/2013 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
DALAPON	1.2	U	0.24	MDL	1.2	PQL	ug/L	UJ	C
DINOSEB	0.48	U	0.12	MDL	0.48	PQL	ug/L	UJ	C

* 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: PH069 **Laboratory: LL**

EDD Filename: PrepPH069_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 8151A **Matrix: AQ**

Sample ID: EB2-071713 **Collected:** 7/17/2013 3:30:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
DALAPON	1.2	U	0.24	MDL	1.2	PQL	ug/L	UJ	C
DINOSEB	0.48	U	0.12	MDL	0.48	PQL	ug/L	UJ	C

Method Category: SVOA

Method: 8151A **Matrix: SO**

Sample ID: SL-514-SA8-SB-0.0-0.5 **Collected:** 7/17/2013 8:55:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,5-T	1.8	U	0.86	MDL	1.8	PQL	ug/Kg	UJ	C
2,4-D	38	U	13	MDL	38	PQL	ug/Kg	UJ	C
2,4-DB	18	U	6.5	MDL	18	PQL	ug/Kg	UJ	C
DALAPON	94	U	46	MDL	94	PQL	ug/Kg	UJ	C
MCPA	2600	U	800	MDL	2600	PQL	ug/Kg	UJ	C
MCPP	2600	U	790	MDL	2600	PQL	ug/Kg	UJ	C

Sample ID: SL-514-SA8-SB-4.0-5.0 **Collected:** 7/17/2013 9:55:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,5-T	2.0	U	0.97	MDL	2.0	PQL	ug/Kg	UJ	C
2,4-D	43	U	14	MDL	43	PQL	ug/Kg	UJ	C
2,4-DB	20	U	7.3	MDL	20	PQL	ug/Kg	UJ	C
DALAPON	110	U	52	MDL	110	PQL	ug/Kg	UJ	C
MCPA	3000	U	900	MDL	3000	PQL	ug/Kg	UJ	C
MCPP	3000	U	890	MDL	3000	PQL	ug/Kg	UJ	C

Sample ID: SL-514-SA8-SB-7.5-8.5 **Collected:** 7/17/2013 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
2,4,5-T	2.0	U	0.97	MDL	2.0	PQL	ug/Kg	UJ	C
2,4-D	43	U	14	MDL	43	PQL	ug/Kg	UJ	C
2,4-DB	20	U	7.3	MDL	20	PQL	ug/Kg	UJ	C
DALAPON	110	U	52	MDL	110	PQL	ug/Kg	UJ	C
MCPA	3000	U	900	MDL	3000	PQL	ug/Kg	UJ	C
MCPP	3000	U	890	MDL	3000	PQL	ug/Kg	UJ	C

* 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: PH069 **Laboratory: LL**

EDD Filename: PrepPH069_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

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

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

Sample ID: **EB1-071713** ***Collected:*** **7/17/2013 3:00:00** ***Analysis Type:*** **RES-ACID** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZOIC ACID	17	U	7	MDL	17	PQL	ug/L	UJ	E
HEXACHLOROCYCLOPENTADIENE	17	U	6	MDL	17	PQL	ug/L	UJ	C

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

Sample ID: **SL-513-SA8-SB-0.0-0.5** ***Collected:*** **7/17/2013 1:45:00** ***Analysis Type:*** **RES-ACID** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4-DINITROPHENOL	1100	U	320	MDL	1100	PQL	ug/Kg	UJ	C
BENZO(A)ANTHRACENE	5	J	4	MDL	18	PQL	ug/Kg	J	Z
BENZO(A)PYRENE	9	J	4	MDL	18	PQL	ug/Kg	J	Z
BENZO(G,H,I)PERYLENE	8	J	4	MDL	18	PQL	ug/Kg	J	Z
BENZO(K)FLUORANTHENE	5	J	4	MDL	18	PQL	ug/Kg	J	Z
BIPHENYL	25	J	18	MDL	36	PQL	ug/Kg	J	Z
HEXACHLOROCYCLOPENTADIENE	540	U	180	MDL	540	PQL	ug/Kg	UJ	C
NAPHTHALENE	4	J	4	MDL	18	PQL	ug/Kg	J	Z
PHENANTHRENE	15	J	4	MDL	18	PQL	ug/Kg	J	Z

Sample ID: **SL-513-SA8-SB-4.0-5.0** ***Collected:*** **7/17/2013 2:00:00** ***Analysis Type:*** **RES-ACID** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4-DICHLOROPHENOL	37	U	18	MDL	37	PQL	ug/Kg	UJ	C
BENZO(B)FLUORANTHENE	7	J	4	MDL	19	PQL	ug/Kg	J	Z
HEXACHLOROCYCLOPENTADIENE	550	U	180	MDL	550	PQL	ug/Kg	UJ	C
PYRENE	4	J	4	MDL	19	PQL	ug/Kg	J	Z

Sample ID: **SL-513-SA8-SB-8.0-9.0** ***Collected:*** **7/17/2013 2:15:00** ***Analysis Type:*** **RES-ACID** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4-DICHLOROPHENOL	34	U	17	MDL	34	PQL	ug/Kg	UJ	C

* 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: PH069 **Laboratory: LL**

EDD Filename: PrepPH069_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 8270D **Matrix: SO**

Sample ID: **SL-513-SA8-SB-8.0-9.0** ***Collected:*** **7/17/2013 2:15:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
HEXACHLOROCYCLOPENTADIENE	510	U	170	MDL	510	PQL	ug/Kg	UJ	C

Method Category: SVOA

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

Sample ID: **EB1-071713** ***Collected:*** **7/17/2013 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	0.014	J	0.011	MDL	0.055	PQL	ug/L	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	0.19	J	0.055	MDL	1.1	PQL	ug/L	U	B
Diethylphthalate	0.24	J	0.055	MDL	1.1	PQL	ug/L	J	Z
Di-n-butylphthalate	0.24	J	0.055	MDL	1.1	PQL	ug/L	J	Z
NAPHTHALENE	0.046	J	0.033	MDL	0.055	PQL	ug/L	J	Z

Sample ID: **EB2-071713** ***Collected:*** **7/17/2013 3:30:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-METHYLNAPHTHALENE	0.014	J	0.010	MDL	0.051	PQL	ug/L	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	0.14	J	0.051	MDL	1.0	PQL	ug/L	U	B
Diethylphthalate	0.22	J	0.051	MDL	1.0	PQL	ug/L	J	Z
Di-n-butylphthalate	0.14	J	0.051	MDL	1.0	PQL	ug/L	J	Z
NAPHTHALENE	0.045	J	0.031	MDL	0.051	PQL	ug/L	J	Z

Method Category: SVOA

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

Sample ID: **SL-512-SA8-SB-0.0-0.5** ***Collected:*** **7/17/2013 8:00:00** ***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	1.1	J	0.67	MDL	1.7	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	11	J	6.0	MDL	18	PQL	ug/Kg	J	Z
Di-n-butylphthalate	6.9	J	6.0	MDL	18	PQL	ug/Kg	J	Z
FLUORANTHENE	1.4	J	0.67	MDL	1.7	PQL	ug/Kg	J	Z
NAPHTHALENE	0.78	J	0.67	MDL	1.7	PQL	ug/Kg	U	F

* 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: PH069 **Laboratory: LL**

EDD Filename: PrepPH069_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

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

Sample ID: SL-512-SA8-SB-0.0-0.5 **Collected:** 7/17/2013 8:00:00 **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PHENANTHRENE	0.82	J	0.67	MDL	1.7	PQL	ug/Kg	J	Z
PYRENE	1.1	J	0.67	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: SL-513-SA8-SB-0.0-0.5 **Collected:** 7/17/2013 1:45:00 **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(B)FLUORANTHENE	13	J	7.2	MDL	18	PQL	ug/Kg	J	Z

Sample ID: SL-513-SA8-SB-4.0-5.0 **Collected:** 7/17/2013 2:00:00 **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	11	J	3.7	MDL	18	PQL	ug/Kg	J	Z

Sample ID: SL-514-SA8-SB-0.0-0.5 **Collected:** 7/17/2013 8:55:00 **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	0.90	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(A)PYRENE	0.92	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(G,H,I)PERYLENE	0.92	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	11	J	6.2	MDL	19	PQL	ug/Kg	J	Z
NAPHTHALENE	0.72	J	0.69	MDL	1.7	PQL	ug/Kg	U	F
PHENANTHRENE	1.5	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: SL-514-SA8-SB-7.5-8.5 **Collected:** 7/17/2013 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
NAPHTHALENE	0.91	J	0.78	MDL	1.9	PQL	ug/Kg	J	Z

Sample ID: SL-515-SA8-SB-0.0-0.5 **Collected:** 7/17/2013 10:50:00 **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	5.1	J	3.7	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: PH069 **Laboratory: LL**

EDD Filename: PrepPH069_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: VOA

Method: 8260B **Matrix: AQ**

Sample ID: **EB1-071713** ***Collected:*** **7/17/2013 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
ACETONE	7	J	6	MDL	20	PQL	ug/L	J	Z
Chlorotrifluoroethylene	5	U	2	MDL	5	PQL	ug/L	UJ	L

Sample ID: **TB-071713** ***Collected:*** **7/17/2013 8:00:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorotrifluoroethylene	5	U	2	MDL	5	PQL	ug/L	UJ	L

Method Category: VOA

Method: 8260B **Matrix: SO**

Sample ID: **SL-513-SA8-SB-8.0-9.0** ***Collected:*** **7/17/2013 2:15:00** ***Analysis Type:*** **RES** ***Dilution:*** **0.97**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
VINYL ACETATE	10	U	2	MDL	10	PQL	ug/Kg	UJ	C

* 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: PH069 **Laboratory: LL**

EDD Filename: PrepPH069_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Reason Code Legend

Reason Code	*Description*
*XII	RPD Between Columns
A	ICP Serial Dilution
B	Calibration Blank Contamination
B	Method Blank Contamination
C	Continuing Calibration Verification Percent Difference Lower Estimation
C	Initial Calibration Verification Percent Difference Lower Estimation
E	Laboratory Control Precision
E	Laboratory Duplicate Precision
E	Matrix Spike Precision
F	Equipment Blank Contamination
F	Field Blank Contamination
L	Laboratory Control Precision
L	Laboratory Control Spike Lower Estimation
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

Enclosure I

EPA Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control Outlier Reports

PH069

Method Blank Outlier Report

Lab Reporting Batch ID: PH069 **Laboratory: LL**

EDD Filename: PrepPH069_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: **1613B**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2000B372114	7/19/2013 9:14:00 PM	1,2,3,4,6,7,8-HPCDD	0.373 pg/L	EB1-071713
		1,2,3,4,6,7,8-HPCDF	0.413 pg/L	EB2-071713
		1,2,3,4,7,8,9-HPCDF	0.325 pg/L	
		1,2,3,4,7,8-HxCDD	0.368 pg/L	
		1,2,3,4,7,8-HXCDF	0.527 pg/L	
		1,2,3,6,7,8-HXCDD	0.364 pg/L	
		1,2,3,6,7,8-HXCDF	0.476 pg/L	
		1,2,3,7,8,9-HXCDD	0.327 pg/L	
		1,2,3,7,8,9-HXCDF	0.586 pg/L	
		1,2,3,7,8-PECDF	0.465 pg/L	
		2,3,4,6,7,8-HXCDF	0.238 pg/L	
		2,3,4,7,8-PECDF	0.511 pg/L	
		OCDD	1.18 pg/L	
		OCDF	0.838 pg/L	

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
EB1-071713(RES)	1,2,3,4,6,7,8-HPCDD	0.413 pg/L	0.413U pg/L
EB1-071713(RES)	1,2,3,4,6,7,8-HPCDF	0.238 pg/L	0.238U pg/L
EB1-071713(RES)	1,2,3,4,7,8,9-HPCDF	0.191 pg/L	0.191U pg/L
EB1-071713(RES)	1,2,3,4,7,8-HxCDD	0.161 pg/L	0.161U pg/L
EB1-071713(RES)	1,2,3,4,7,8-HXCDF	0.222 pg/L	0.222U pg/L
EB1-071713(RES)	1,2,3,6,7,8-HXCDF	0.191 pg/L	0.191U pg/L
EB1-071713(RES)	1,2,3,7,8,9-HXCDF	0.186 pg/L	0.186U pg/L
EB1-071713(RES)	1,2,3,7,8-PECDF	0.406 pg/L	0.406U pg/L
EB1-071713(RES)	2,3,4,6,7,8-HXCDF	0.224 pg/L	0.224U pg/L
EB1-071713(RES)	2,3,4,7,8-PECDF	0.132 pg/L	0.132U pg/L
EB1-071713(RES)	OCDD	0.814 pg/L	0.814U pg/L
EB1-071713(RES)	OCDF	0.512 pg/L	0.512U pg/L
EB2-071713(RES)	1,2,3,4,6,7,8-HPCDD	0.352 pg/L	0.352U pg/L
EB2-071713(RES)	1,2,3,4,6,7,8-HPCDF	0.174 pg/L	0.174U pg/L
EB2-071713(RES)	1,2,3,4,7,8,9-HPCDF	0.519 pg/L	0.519U pg/L
EB2-071713(RES)	1,2,3,4,7,8-HxCDD	0.373 pg/L	0.373U pg/L
EB2-071713(RES)	1,2,3,6,7,8-HXCDF	0.396 pg/L	0.396U pg/L
EB2-071713(RES)	1,2,3,7,8,9-HXCDF	0.283 pg/L	0.283U pg/L
EB2-071713(RES)	1,2,3,7,8-PECDF	0.532 pg/L	0.532U pg/L
EB2-071713(RES)	2,3,4,6,7,8-HXCDF	0.359 pg/L	0.359U pg/L
EB2-071713(RES)	2,3,4,7,8-PECDF	0.245 pg/L	0.245U pg/L
EB2-071713(RES)	OCDD	0.797 pg/L	0.797U pg/L
EB2-071713(RES)	OCDF	0.733 pg/L	0.733U pg/L

Method Blank Outlier Report

Lab Reporting Batch ID: PH069 **Laboratory: LL**

EDD Filename: PrepPH069_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2060B372237	7/26/2013 10:37:00 PM	1,2,3,4,6,7,8-HPCDD	0.0714 ng/Kg	SL-512-SA8-SB-0.0-0.5
		1,2,3,4,6,7,8-HPCDF	0.0256 ng/Kg	SL-513-SA8-SB-0.0-0.5
		1,2,3,4,7,8-HxCDD	0.0432 ng/Kg	SL-513-SA8-SB-4.0-5.0
		1,2,3,4,7,8-HXCDF	0.0229 ng/Kg	SL-513-SA8-SB-8.0-9.0
		1,2,3,6,7,8-HXCDF	0.0231 ng/Kg	SL-514-SA8-SB-0.0-0.5
		1,2,3,7,8,9-HXCDD	0.0358 ng/Kg	SL-514-SA8-SB-4.0-5.0
		1,2,3,7,8,9-HXCDF	0.0413 ng/Kg	SL-515-SA8-SB-0.0-0.5
		1,2,3,7,8-PECDF	0.0307 ng/Kg	SL-515-SA8-SB-14.0-15.0
		2,3,4,6,7,8-HXCDF	0.0401 ng/Kg	SL-515-SA8-SB-4.0-5.0
		OCDD	0.230 ng/Kg	SL-515-SA8-SB-9.0-10.0
		OCDF	0.159 ng/Kg	

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-512-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.156 ng/Kg	0.156U ng/Kg
SL-512-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.184 ng/Kg	0.184U ng/Kg
SL-513-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HxCDD	0.0567 ng/Kg	0.0567U ng/Kg
SL-513-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.0433 ng/Kg	0.0433U ng/Kg
SL-513-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.0453 ng/Kg	0.0453U ng/Kg
SL-513-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDD	0.0790 ng/Kg	0.0790U ng/Kg
SL-513-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDF	0.0828 ng/Kg	0.0828U ng/Kg
SL-513-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.151 ng/Kg	0.151U ng/Kg
SL-513-SA8-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0507 ng/Kg	0.0507U ng/Kg
SL-513-SA8-SB-8.0-9.0(RES)	1,2,3,4,6,7,8-HPCDD	0.0671 ng/Kg	0.0671U ng/Kg
SL-513-SA8-SB-8.0-9.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0293 ng/Kg	0.0293U ng/Kg
SL-513-SA8-SB-8.0-9.0(RES)	1,2,3,4,7,8-HXCDF	0.0311 ng/Kg	0.0311U ng/Kg
SL-513-SA8-SB-8.0-9.0(RES)	1,2,3,6,7,8-HXCDF	0.0177 ng/Kg	0.0177U ng/Kg
SL-513-SA8-SB-8.0-9.0(RES)	1,2,3,7,8,9-HXCDD	0.0460 ng/Kg	0.0460U ng/Kg
SL-513-SA8-SB-8.0-9.0(RES)	1,2,3,7,8,9-HXCDF	0.0393 ng/Kg	0.0393U ng/Kg
SL-513-SA8-SB-8.0-9.0(RES)	2,3,4,6,7,8-HXCDF	0.0189 ng/Kg	0.0189U ng/Kg
SL-513-SA8-SB-8.0-9.0(RES)	OCDD	0.192 ng/Kg	0.192U ng/Kg
SL-513-SA8-SB-8.0-9.0(RES)	OCDF	0.126 ng/Kg	0.126U ng/Kg
SL-514-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.164 ng/Kg	0.164U ng/Kg
SL-514-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.141 ng/Kg	0.141U ng/Kg
SL-514-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDD	0.133 ng/Kg	0.133U ng/Kg
SL-514-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0499 ng/Kg	0.0499U ng/Kg
SL-514-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.0270 ng/Kg	0.0270U ng/Kg
SL-514-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDD	0.0729 ng/Kg	0.0729U ng/Kg
SL-514-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDF	0.0427 ng/Kg	0.0427U ng/Kg
SL-514-SA8-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0234 ng/Kg	0.0234U ng/Kg
SL-514-SA8-SB-4.0-5.0(RES)	OCDD	0.864 ng/Kg	0.864U ng/Kg
SL-514-SA8-SB-4.0-5.0(RES)	OCDF	0.0864 ng/Kg	0.0864U ng/Kg
SL-515-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.142 ng/Kg	0.142U ng/Kg
SL-515-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.0707 ng/Kg	0.0707U ng/Kg
SL-515-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.169 ng/Kg	0.169U ng/Kg
SL-515-SA8-SB-14.0-15.0(RES)	1,2,3,4,6,7,8-HPCDD	0.106 ng/Kg	0.106U ng/Kg

Method Blank Outlier Report

Lab Reporting Batch ID: PH069 **Laboratory: LL**

EDD Filename: PrepPH069_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples

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-515-SA8-SB-14.0-15.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0865 ng/Kg	0.0865U ng/Kg
SL-515-SA8-SB-14.0-15.0(RES)	1,2,3,4,7,8-HxCDD	0.194 ng/Kg	0.194U ng/Kg
SL-515-SA8-SB-14.0-15.0(RES)	1,2,3,7,8,9-HXCDD	0.121 ng/Kg	0.121U ng/Kg
SL-515-SA8-SB-14.0-15.0(RES)	1,2,3,7,8,9-HXCDF	0.134 ng/Kg	0.134U ng/Kg
SL-515-SA8-SB-14.0-15.0(RES)	OCDD	0.675 ng/Kg	0.675U ng/Kg
SL-515-SA8-SB-14.0-15.0(RES)	OCDF	0.116 ng/Kg	0.116U ng/Kg
SL-515-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDD	0.0770 ng/Kg	0.0770U ng/Kg
SL-515-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0819 ng/Kg	0.0819U ng/Kg
SL-515-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HxCDD	0.0544 ng/Kg	0.0544U ng/Kg
SL-515-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.0599 ng/Kg	0.0599U ng/Kg
SL-515-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.0461 ng/Kg	0.0461U ng/Kg
SL-515-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDD	0.115 ng/Kg	0.115U ng/Kg
SL-515-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDF	0.0755 ng/Kg	0.0755U ng/Kg
SL-515-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.125 ng/Kg	0.125U ng/Kg
SL-515-SA8-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0345 ng/Kg	0.0345U ng/Kg
SL-515-SA8-SB-4.0-5.0(RES)	OCDD	0.658 ng/Kg	0.658U ng/Kg
SL-515-SA8-SB-4.0-5.0(RES)	OCDF	0.135 ng/Kg	0.135U ng/Kg
SL-515-SA8-SB-9.0-10.0(RES)	1,2,3,4,6,7,8-HPCDD	0.121 ng/Kg	0.121U ng/Kg
SL-515-SA8-SB-9.0-10.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0679 ng/Kg	0.0679U ng/Kg
SL-515-SA8-SB-9.0-10.0(RES)	1,2,3,4,7,8-HxCDD	0.0603 ng/Kg	0.0603U ng/Kg
SL-515-SA8-SB-9.0-10.0(RES)	1,2,3,7,8,9-HXCDD	0.120 ng/Kg	0.120U ng/Kg
SL-515-SA8-SB-9.0-10.0(RES)	1,2,3,7,8,9-HXCDF	0.145 ng/Kg	0.145U ng/Kg
SL-515-SA8-SB-9.0-10.0(RES)	1,2,3,7,8-PECDF	0.152 ng/Kg	0.152U ng/Kg
SL-515-SA8-SB-9.0-10.0(RES)	2,3,4,6,7,8-HXCDF	0.0653 ng/Kg	0.0653U ng/Kg
SL-515-SA8-SB-9.0-10.0(RES)	OCDD	0.562 ng/Kg	0.562U ng/Kg
SL-515-SA8-SB-9.0-10.0(RES)	OCDF	0.129 ng/Kg	0.129U ng/Kg

Method: 6010C
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P20337AB220845	7/26/2013 8:45:00 AM	TIN	1.73 mg/Kg	SL-512-SA8-SB-0.0-0.5 SL-513-SA8-SB-0.0-0.5 SL-513-SA8-SB-4.0-5.0 SL-513-SA8-SB-8.0-9.0 SL-514-SA8-SB-0.0-0.5 SL-514-SA8-SB-4.0-5.0 SL-514-SA8-SB-7.5-8.5 SL-515-SA8-SB-0.0-0.5 SL-515-SA8-SB-14.0-15.0 SL-515-SA8-SB-4.0-5.0 SL-515-SA8-SB-9.0-10.0

Method Blank Outlier Report

Lab Reporting Batch ID: PH069 **Laboratory: LL**

EDD Filename: PrepPH069_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: **6010C**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples

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-512-SA8-SB-0.0-0.5(RES)	TIN	2.98 mg/Kg	2.98U mg/Kg
SL-513-SA8-SB-0.0-0.5(RES)	TIN	3.28 mg/Kg	3.28U mg/Kg
SL-513-SA8-SB-4.0-5.0(RES)	TIN	2.78 mg/Kg	2.78U mg/Kg
SL-513-SA8-SB-8.0-9.0(RES)	TIN	3.13 mg/Kg	3.13U mg/Kg
SL-514-SA8-SB-0.0-0.5(RES)	TIN	3.33 mg/Kg	3.33U mg/Kg
SL-514-SA8-SB-4.0-5.0(RES)	TIN	3.05 mg/Kg	3.05U mg/Kg
SL-514-SA8-SB-7.5-8.5(RES)	TIN	3.00 mg/Kg	3.00U mg/Kg
SL-515-SA8-SB-0.0-0.5(RES)	TIN	3.43 mg/Kg	3.43U mg/Kg
SL-515-SA8-SB-14.0-15.0(RES)	TIN	3.34 mg/Kg	3.34U mg/Kg
SL-515-SA8-SB-4.0-5.0(RES)	TIN	3.38 mg/Kg	3.38U mg/Kg
SL-515-SA8-SB-9.0-10.0(RES)	TIN	3.76 mg/Kg	3.76U mg/Kg

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
PLKWB20B262058	7/29/2013 8:58:00 PM	BIS(2-ETHYLHEXYL)PHTHALATE	0.051 ug/L	EB1-071713 EB2-071713

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
EB1-071713(RES)	BIS(2-ETHYLHEXYL)PHTHALATE	0.19 ug/L	1.1U ug/L
EB2-071713(RES)	BIS(2-ETHYLHEXYL)PHTHALATE	0.14 ug/L	1.0U ug/L

Field Blank Outlier Report

Lab Reporting Batch ID: PH069 **Laboratory: LL**

EDD Filename: PrepPH069_v1 **eQAPP Name: CDM_SSFL_130808_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	0.0036 mg/L	SL-512-SA8-SB-0.0-0.5
		MOLYBDENUM	0.0036 mg/L	SL-513-SA8-SB-0.0-0.5
				SL-513-SA8-SB-4.0-5.0
				SL-513-SA8-SB-8.0-9.0
				SL-514-SA8-SB-0.0-0.5
				SL-514-SA8-SB-4.0-5.0
				SL-514-SA8-SB-7.5-8.5
				SL-515-SA8-SB-0.0-0.5
				SL-515-SA8-SB-14.0-15.0
				SL-515-SA8-SB-4.0-5.0
				SL-515-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-512-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.340 mg/Kg	0.340U mg/Kg
SL-513-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.861 mg/Kg	0.861U 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	0.019 ug/L	SL-512-SA8-SB-0.0-0.5
		2-METHYLNAPHTHALENE	0.024 ug/L	SL-513-SA8-SB-0.0-0.5
		BIS(2-ETHYLHEXYL)PHTHALATE	0.082 ug/L	SL-513-SA8-SB-4.0-5.0
		Diethylphthalate	0.18 ug/L	SL-513-SA8-SB-8.0-9.0
		Di-n-butylphthalate	0.17 ug/L	SL-514-SA8-SB-0.0-0.5
		NAPHTHALENE	0.17 ug/L	SL-514-SA8-SB-4.0-5.0
				SL-514-SA8-SB-7.5-8.5
				SL-515-SA8-SB-0.0-0.5
				SL-515-SA8-SB-14.0-15.0
				SL-515-SA8-SB-4.0-5.0
				SL-515-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-512-SA8-SB-0.0-0.5(RES)	NAPHTHALENE	0.78 ug/Kg	1.7U ug/Kg
SL-514-SA8-SB-0.0-0.5(RES)	NAPHTHALENE	0.72 ug/Kg	1.7U ug/Kg

Equipment Rinsate Blank Outlier Report

Lab Reporting Batch ID: PH069 **Laboratory: LL**

EDD Filename: PH069_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: **6010C**
Matrix: **SO**

Equipment Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
EB1-071713(REA3)	7/17/2013 3:00:00 PM	ANTIMONY	0.0069 mg/L	SL-513-SA8-SB-0.0-0.5 SL-513-SA8-SB-4.0-5.0 SL-513-SA8-SB-8.0-9.0 SL-515-SA8-SB-0.0-0.5 SL-515-SA8-SB-14.0-15.0 SL-515-SA8-SB-4.0-5.0 SL-515-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-513-SA8-SB-0.0-0.5(RES)	ANTIMONY	1.20 mg/Kg	1.20U mg/Kg

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH069 **Laboratory: LL**

EDD Filename: PH069_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 8015M
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-514-SA8-SB-7.5-8.5MS	EFH (C15-C20)	162	138	49.00-123.00	-	EFH (C15-C20)	J (all detects)
SL-514-SA8-SB-7.5-8.5MSD	EFH (C21-C30)	172	-	49.00-123.00	28 (20.00)	EFH (C21-C30)	
(SL-514-SA8-SB-7.5-8.5)	EFH (C30-C40)	131	-	49.00-123.00	-	EFH (C30-C40)	

Method: 8151A
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-514-SA8-SB-0.0-0.5MSD	DALAPON	-	-	10.00-125.00	65 (50.00)	DALAPON	J(all detects)
(SL-514-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-514-SA8-SB-7.5-8.5MS	ALUMINUM	3157	2639	75.00-125.00	-	ALUMINUM	
(TOT)	IRON	1337	667	75.00-125.00	-	IRON	
SL-514-SA8-SB-7.5-8.5MSD	MAGNESIUM	341	251	75.00-125.00	-	MAGNESIUM	
(TOT)	MANGANESE	266	360	75.00-125.00	-	MANGANESE	
(SL-512-SA8-SB-0.0-0.5	PHOSPHORUS	161	-	75.00-125.00	-	PHOSPHORUS	
SL -513-SA8-SB-0.0-0.5	POTASSIUM	177	162	75.00-125.00	-	POTASSIUM	J(all detects)
SL -513-SA8-SB-4.0-5.0	TITANIUM	405	367	75.00-125.00	-	TITANIUM	
SL -513-SA8-SB-8.0-9.0							Al, Fe, Mn, Mg, P, and Ti No Qual, >4X
SL -514-SA8-SB-0.0-0.5							
SL -514-SA8-SB-4.0-5.0							
SL -514-SA8-SB-7.5-8.5							
SL -515-SA8-SB-0.0-0.5							
SL -515-SA8-SB-14.0-15.0							
SL -515-SA8-SB-4.0-5.0							
SL -515-SA8-SB-9.0-10.0)							
SL-514-SA8-SB-7.5-8.5MS	CALCIUM	54	-325	75.00-125.00	-	CALCIUM	
(TOT)							
SL-514-SA8-SB-7.5-8.5MSD							
(TOT)							
(SL-512-SA8-SB-0.0-0.5							
SL -513-SA8-SB-0.0-0.5							
SL -513-SA8-SB-4.0-5.0							
SL -513-SA8-SB-8.0-9.0							No Qual, >4X
SL -514-SA8-SB-0.0-0.5							
SL -514-SA8-SB-4.0-5.0							
SL -514-SA8-SB-7.5-8.5							
SL -515-SA8-SB-0.0-0.5							
SL -515-SA8-SB-14.0-15.0							
SL -515-SA8-SB-4.0-5.0							
SL -515-SA8-SB-9.0-10.0)							

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

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH069 **Laboratory: LL**

EDD Filename: PH069_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 6010C
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-514-SA8-SB-7.5-8.5MS (TOT) **SL-514-SA8-SB-7.5-8.5MSD (TOT)** (SL-512-SA8-SB-0.0-0.5 SL -513-SA8-SB-0.0-0.5 SL -513-SA8-SB-4.0-5.0 SL -513-SA8-SB-8.0-9.0 SL -514-SA8-SB-0.0-0.5 SL -514-SA8-SB-4.0-5.0 SL -514-SA8-SB-7.5-8.5 SL -515-SA8-SB-0.0-0.5 SL -515-SA8-SB-14.0-15.0 SL -515-SA8-SB-4.0-5.0 SL -515-SA8-SB-9.0-10.0)	ANTIMONY	74	73	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-514-SA8-SB-7.5-8.5MS (TOT) **SL-514-SA8-SB-7.5-8.5MSD (TOT)** (SL-512-SA8-SB-0.0-0.5 SL -513-SA8-SB-0.0-0.5 SL -513-SA8-SB-4.0-5.0 SL -513-SA8-SB-8.0-9.0 SL -514-SA8-SB-0.0-0.5 SL -514-SA8-SB-4.0-5.0 SL -514-SA8-SB-7.5-8.5 SL -515-SA8-SB-0.0-0.5 SL -515-SA8-SB-14.0-15.0 SL -515-SA8-SB-4.0-5.0 SL -515-SA8-SB-9.0-10.0)	STRONTIUM	19	-174	75.00-125.00	-	STRONTIUM	No Qual, >4X

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH069 **Laboratory: LL**

EDD Filename: PH069_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 8081B
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
P32004AY241931A (EB1-071713 EB2-071713)	ENDRIN	-	-	43.00-139.00	35 (30.00)	ENDRIN	J (all detects) UJ (all non-detects)

Method: 8151A
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
P32039AY241147A (EB1-071713 EB2-071713)	DINOSEB	-	184	16.00-163.00	-	DINOSEB	J(all detects)

Method: 8270D
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
P5WCLCSQ260439 P5WCLCSY260506 (EB1-071713)	4-NITROPHENOL	75	80	13.00-71.00	-	4-NITROPHENOL	J(all detects)
P5WCLCSY260506 (EB1-071713)	BENZOIC ACID	-	-	10.00-69.00	54 (30.00)	BENZOIC ACID	J(all detects) UJ(all non-detects)

Method: 8260B
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
LCSY77Q211110A LCSY77Y211131A (EB1-071713 TB-071713)	Chlorotrifluoroethylene	44	43	47.00-120.00	-	Chlorotrifluoroethylene	J(all detects) UJ(all non-detects)

Method: 8260B
Matrix: SO

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
LCSB68Q212141A LCSB68Y212203A (SL-513-SA8-SB-8.0-9.0)	VINYL ACETATE	135	125	29.00-111.00	-	VINYL ACETATE	J(all detects)

Lab Duplicate Outlier Report

Lab Reporting Batch ID: PH069 **Laboratory: LL**

EDD Filename: PrepPH069_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 6010C
Matrix: SO

QC Sample ID (Associated Sample ID)	*Analyte*	*Sample RPD*	*eQAPP RPD*	*Flag*
SL-514-SA8-SB-7.5-8.5DUP (TOT) (SL-512-SA8-SB-0.0-0.5 SL -513-SA8-SB-0.0-0.5 SL -513-SA8-SB-4.0-5.0 SL -513-SA8-SB-8.0-9.0 SL -514-SA8-SB-0.0-0.5 SL -514-SA8-SB-4.0-5.0 SL -514-SA8-SB-7.5-8.5 SL -515-SA8-SB-0.0-0.5 SL -515-SA8-SB-14.0-15.0 SL -515-SA8-SB-4.0-5.0 SL -515-SA8-SB-9.0-10.0)	MOLYBDENUM	28	20.00	No Qual, OK by Difference

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

Reporting Limit Outliers

Lab Reporting Batch ID: PH069 **Laboratory: LL**

EDD Filename: PH069_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB1-071713	1,2,3,4,6,7,8-HPCDD	JBQ	0.413	9.98	PQL	pg/L	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JB	0.238	9.98	PQL	pg/L	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.191	9.98	PQL	pg/L	
	1,2,3,4,7,8-HxCDD	JBQ	0.161	9.98	PQL	pg/L	
	1,2,3,4,7,8-HXCDF	JBQ	0.222	9.98	PQL	pg/L	
	1,2,3,6,7,8-HXCDF	JBQ	0.191	9.98	PQL	pg/L	
	1,2,3,7,8,9-HXCDF	JB	0.186	9.98	PQL	pg/L	
	1,2,3,7,8-PECDF	JB	0.406	9.98	PQL	pg/L	
	2,3,4,6,7,8-HXCDF	JB	0.224	9.98	PQL	pg/L	
	2,3,4,7,8-PECDF	JBQ	0.132	9.98	PQL	pg/L	
	OCDD	JBQ	0.814	20.0	PQL	pg/L	
	OCDF	JBQ	0.512	20.0	PQL	pg/L	
EB2-071713	1,2,3,4,6,7,8-HPCDD	JBQ	0.352	9.97	PQL	pg/L	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JBQ	0.174	9.97	PQL	pg/L	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.519	9.97	PQL	pg/L	
	1,2,3,4,7,8-HxCDD	JBQ	0.373	9.97	PQL	pg/L	
	1,2,3,6,7,8-HXCDF	JBQ	0.396	9.97	PQL	pg/L	
	1,2,3,7,8,9-HXCDF	JBQ	0.283	9.97	PQL	pg/L	
	1,2,3,7,8-PECDD	JQ	0.542	9.97	PQL	pg/L	
	1,2,3,7,8-PECDF	JB	0.532	9.97	PQL	pg/L	
	2,3,4,6,7,8-HXCDF	JBQ	0.359	9.97	PQL	pg/L	
	2,3,4,7,8-PECDF	JB	0.245	9.97	PQL	pg/L	
	OCDD	JBQ	0.797	19.9	PQL	pg/L	
	OCDF	JBQ	0.733	19.9	PQL	pg/L	

Method: 6010C
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB1-071713	ANTIMONY	J	0.0069	0.0400	PQL	mg/L	J (all detects)
EB2-071713	ANTIMONY	J	0.0054	0.0400	PQL	mg/L	J (all detects)

Method: 8260B
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB1-071713	ACETONE	J	7	20	PQL	ug/L	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH069 **Laboratory: LL**

EDD Filename: PH069_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 8270D SIM

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB1-071713	2-METHYLNAPHTHALENE	J	0.014	0.055	PQL	ug/L	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	0.19	1.1	PQL	ug/L	
	Diethylphthalate	J	0.24	1.1	PQL	ug/L	J (all detects)
	Di-n-butylphthalate	J	0.24	1.1	PQL	ug/L	
	NAPHTHALENE	J	0.046	0.055	PQL	ug/L	
EB2-071713	2-METHYLNAPHTHALENE	J	0.014	0.051	PQL	ug/L	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	0.14	1.0	PQL	ug/L	
	Diethylphthalate	J	0.22	1.0	PQL	ug/L	J (all detects)
	Di-n-butylphthalate	J	0.14	1.0	PQL	ug/L	
	NAPHTHALENE	J	0.045	0.051	PQL	ug/L	

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-512-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	4.39	4.90	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.827	4.90	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	J	0.111	4.90	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.156	4.90	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.193	4.90	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	J	0.473	4.90	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.235	4.90	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDD	JB	0.587	4.90	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.328	4.90	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.243	4.90	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.930	4.90	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.184	4.90	PQL	ng/Kg	
	2,3,4,7,8-PECDF	J	0.384	4.90	PQL	ng/Kg	
	OCDF	JB	1.57	9.80	PQL	ng/Kg	
SL-513-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDF	JB	3.96	5.36	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	J	0.472	5.36	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.714	5.36	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.658	5.36	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	J	1.57	5.36	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.443	5.36	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	1.06	5.36	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.423	5.36	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	J	0.296	5.36	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	3.88	5.36	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.318	5.36	PQL	ng/Kg	
	2,3,4,7,8-PECDF	J	0.599	5.36	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.365	1.07	PQL	ng/Kg	
	OCDF	JB	6.36	10.7	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH069 **Laboratory: LL**

EDD Filename: PH069_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-513-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JB	0.995	5.38	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JB	0.539	5.38	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	J	0.0465	5.38	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0567	5.38	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0433	5.38	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JQ	0.0702	5.38	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0453	5.38	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.0790	5.38	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.0828	5.38	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.0586	5.38	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.151	5.38	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0507	5.38	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.0431	1.08	PQL	ng/Kg	
	OCDF	JB	3.42	10.8	PQL	ng/Kg	
SL-513-SA8-SB-8.0-9.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.0671	4.94	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0293	4.94	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	J	0.0564	4.94	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0311	4.94	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0177	4.94	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.0460	4.94	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.0393	4.94	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0189	4.94	PQL	ng/Kg	
	OCDD	JBQ	0.192	9.87	PQL	ng/Kg	
	OCDF	JB	0.126	9.87	PQL	ng/Kg	
SL-514-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDF	JB	2.65	5.21	PQL	ng/Kg	J (all detects)
	1,2,3,4,7,8,9-HPCDF	JQ	0.196	5.21	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.164	5.21	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.198	5.21	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JQ	0.515	5.21	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.159	5.21	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.557	5.21	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.272	5.21	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.0902	5.21	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	1.28	5.21	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.141	5.21	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.171	5.21	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.0488	1.04	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.678	1.04	PQL	ng/Kg	
	OCDF	JB	9.21	10.4	PQL	ng/Kg	
SL-514-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.133	5.67	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0499	5.67	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0270	5.67	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JQ	0.0534	5.67	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.0729	5.67	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.0427	5.67	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.0833	5.67	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.0234	5.67	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.0591	5.67	PQL	ng/Kg	
	OCDD	JB	0.864	11.3	PQL	ng/Kg	
	OCDF	JBQ	0.0864	11.3	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH069 **Laboratory: LL**

EDD Filename: PH069_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-515-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDF	JB	1.64	5.54	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	J	0.185	5.54	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.142	5.54	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.0707	5.54	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	J	0.698	5.54	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.143	5.54	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.637	5.54	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	0.724	5.54	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.191	5.54	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.476	5.54	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.169	5.54	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.0615	1.11	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0827	1.11	PQL	ng/Kg	
	OCDF	JB	3.24	11.1	PQL	ng/Kg	
SL-515-SA8-SB-14.0-15.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.106	5.71	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.0865	5.71	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JQ	0.136	5.71	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.194	5.71	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.165	5.71	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JQ	0.121	5.71	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.164	5.71	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.121	5.71	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JBQ	0.134	5.71	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.333	5.71	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.151	5.71	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.0811	1.14	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0687	1.14	PQL	ng/Kg	
	OCDD	JB	0.675	11.4	PQL	ng/Kg	
	OCDF	JBQ	0.116	11.4	PQL	ng/Kg	
SL-515-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.0770	5.59	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0819	5.59	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JQ	0.0563	5.59	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0544	5.59	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0599	5.59	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	J	0.0382	5.59	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.0461	5.59	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDD	JBQ	0.115	5.59	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.0755	5.59	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.125	5.59	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0345	5.59	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.0722	5.59	PQL	ng/Kg	
	OCDD	JB	0.658	11.2	PQL	ng/Kg	
	OCDF	JBQ	0.135	11.2	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH069 **Laboratory: LL**

EDD Filename: PH069_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-515-SA8-SB-9.0-10.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.121	5.82	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.0679	5.82	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JQ	0.0377	5.82	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0603	5.82	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.118	5.82	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JQ	0.105	5.82	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.118	5.82	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.120	5.82	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.145	5.82	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JQ	0.101	5.82	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.152	5.82	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0653	5.82	PQL	ng/Kg	
	2,3,4,7,8-PECDF	J	0.146	5.82	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.0765	1.16	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0766	1.16	PQL	ng/Kg	
	OCDD	JBQ	0.562	11.6	PQL	ng/Kg	
	OCDF	JBQ	0.129	11.6	PQL	ng/Kg	

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-512-SA8-SB-0.0-0.5	BERYLLIUM	J	0.593	0.976	PQL	mg/Kg	
	CADMIUM	J	0.235	0.976	PQL	mg/Kg	
	MOLYBDENUM	J	0.340	1.95	PQL	mg/Kg	J (all detects)
	SODIUM	J	77.2	97.6	PQL	mg/Kg	
	TIN	J	2.98	9.76	PQL	mg/Kg	
SL-513-SA8-SB-0.0-0.5	ANTIMONY	J	1.20	4.28	PQL	mg/Kg	
	BERYLLIUM	J	0.659	1.07	PQL	mg/Kg	
	BORON	J	2.19	10.7	PQL	mg/Kg	
	CADMIUM	J	0.104	1.07	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.861	2.14	PQL	mg/Kg	
	TIN	J	3.28	10.7	PQL	mg/Kg	
	Zirconium	J	2.54	5.35	PQL	mg/Kg	
SL-513-SA8-SB-4.0-5.0	BERYLLIUM	J	0.202	1.10	PQL	mg/Kg	
	BORON	J	10.2	11.0	PQL	mg/Kg	
	CADMIUM	J	0.178	1.10	PQL	mg/Kg	J (all detects)
	TIN	J	2.78	11.0	PQL	mg/Kg	
	Zirconium	J	2.87	5.50	PQL	mg/Kg	
SL-513-SA8-SB-8.0-9.0	BERYLLIUM	J	0.408	0.986	PQL	mg/Kg	
	CADMIUM	J	0.218	0.986	PQL	mg/Kg	J (all detects)
	TIN	J	3.13	9.86	PQL	mg/Kg	
	Zirconium	J	1.91	4.93	PQL	mg/Kg	
SL-514-SA8-SB-0.0-0.5	BERYLLIUM	J	0.845	1.06	PQL	mg/Kg	
	TIN	J	3.33	10.6	PQL	mg/Kg	J (all detects)
	Zirconium	J	3.38	5.28	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH069 **Laboratory: LL**

EDD Filename: PH069_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 6010C
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-514-SA8-SB-4.0-5.0	BERYLLIUM	J	0.378	1.17	PQL	mg/Kg	J (all detects)
	BORON	J	2.51	11.7	PQL	mg/Kg	
	CADMIUM	J	0.223	1.17	PQL	mg/Kg	
	TIN	J	3.05	11.7	PQL	mg/Kg	
	Zirconium	J	3.34	5.87	PQL	mg/Kg	
SL-514-SA8-SB-7.5-8.5	BERYLLIUM	J	0.409	1.17	PQL	mg/Kg	J (all detects)
	BORON	J	1.24	11.7	PQL	mg/Kg	
	CADMIUM	J	0.117	1.17	PQL	mg/Kg	
	MOLYBDENUM	J	2.30	2.33	PQL	mg/Kg	
	TIN	J	3.00	11.7	PQL	mg/Kg	
	Zirconium	J	3.38	5.83	PQL	mg/Kg	
SL-515-SA8-SB-0.0-0.5	BERYLLIUM	J	0.890	1.10	PQL	mg/Kg	J (all detects)
	CADMIUM	J	0.116	1.10	PQL	mg/Kg	
	TIN	J	3.43	11.0	PQL	mg/Kg	
	Zirconium	J	3.76	5.52	PQL	mg/Kg	
SL-515-SA8-SB-14.0-15.0	BERYLLIUM	J	0.869	1.12	PQL	mg/Kg	J (all detects)
	TIN	J	3.34	11.2	PQL	mg/Kg	
	Zirconium	J	2.60	5.61	PQL	mg/Kg	
SL-515-SA8-SB-4.0-5.0	BERYLLIUM	J	0.984	1.10	PQL	mg/Kg	J (all detects)
	TIN	J	3.38	11.0	PQL	mg/Kg	
	Zirconium	J	3.04	5.52	PQL	mg/Kg	
SL-515-SA8-SB-9.0-10.0	BERYLLIUM	J	1.13	1.18	PQL	mg/Kg	J (all detects)
	TIN	J	3.76	11.8	PQL	mg/Kg	
	Zirconium	J	4.44	5.89	PQL	mg/Kg	

Method: 6020A
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-512-SA8-SB-0.0-0.5	SELENIUM	J	0.204	0.390	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0426	0.195	PQL	mg/Kg	
SL-513-SA8-SB-0.0-0.5	SELENIUM	J	0.270	0.428	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0396	0.214	PQL	mg/Kg	
SL-513-SA8-SB-4.0-5.0	SELENIUM	J	0.119	0.440	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0473	0.220	PQL	mg/Kg	
	THALLIUM	J	0.215	0.220	PQL	mg/Kg	
SL-514-SA8-SB-0.0-0.5	SELENIUM	J	0.256	0.422	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0469	0.211	PQL	mg/Kg	
SL-514-SA8-SB-4.0-5.0	SILVER	J	0.0467	0.235	PQL	mg/Kg	J (all detects)
SL-514-SA8-SB-7.5-8.5	SELENIUM	J	0.171	0.466	PQL	mg/Kg	J (all detects)
SL-515-SA8-SB-0.0-0.5	SELENIUM	J	0.258	0.442	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0440	0.221	PQL	mg/Kg	
SL-515-SA8-SB-4.0-5.0	SILVER	J	0.0353	0.221	PQL	mg/Kg	J (all detects)
SL-515-SA8-SB-9.0-10.0	SELENIUM	J	0.137	0.471	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0431	0.236	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH069 **Laboratory: LL**

EDD Filename: PH069_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 6850
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-513-SA8-SB-0.0-0.5	PERCHLORATE	J	3.2	5.5	PQL	ug/Kg	J (all detects)
SL-513-SA8-SB-4.0-5.0	PERCHLORATE	J	3.6	5.6	PQL	ug/Kg	J (all detects)

Method: 7199
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-513-SA8-SB-4.0-5.0	HEXAVALENT CHROMIUM	J	0.18	0.44	PQL	mg/Kg	J (all detects)

Method: 7471B
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-515-SA8-SB-0.0-0.5	MERCURY	J	0.0136	0.0184	PQL	mg/Kg	J (all detects)

Method: 8015M
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-512-SA8-SB-0.0-0.5	EFH (C15-C20)	J	3.0	5.1	PQL	mg/Kg	J (all detects)
SL-514-SA8-SB-0.0-0.5	EFH (C15-C20)	J	2.9	5.3	PQL	mg/Kg	J (all detects)
SL-514-SA8-SB-4.0-5.0	EFH (C21-C30)	J	5.0	5.9	PQL	mg/Kg	J (all detects)
SL-514-SA8-SB-7.5-8.5	EFH (C21-C30)	J	3.6	5.9	PQL	mg/Kg	J (all detects)
SL-515-SA8-SB-14.0-15.0	EFH (C21-C30) EFH (C30-C40)	J J	2.7 10	5.8 12	PQL PQL	mg/Kg mg/Kg	J (all detects)

Method: 8081B
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-514-SA8-SB-0.0-0.5	4,4'-DDT	J	1.6	1.8	PQL	ug/Kg	J (all detects)
SL-514-SA8-SB-4.0-5.0	4,4'-DDT	J	0.76	2.0	PQL	ug/Kg	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH069 **Laboratory: LL**

EDD Filename: PH069_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 8082A
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-512-SA8-SB-0.0-0.5	AROCLOR 1254	J	8.2	17	PQL	ug/Kg	J (all detects)

Method: 8270D
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-513-SA8-SB-0.0-0.5	BENZO(A)ANTHRACENE	J	5	18	PQL	ug/Kg	
	BENZO(A)PYRENE	J	9	18	PQL	ug/Kg	
	BENZO(G,H,I)PERYLENE	J	8	18	PQL	ug/Kg	
	BENZO(K)FLUORANTHENE	J	5	18	PQL	ug/Kg	J (all detects)
	BIPHENYL	J	25	36	PQL	ug/Kg	
	NAPHTHALENE	J	4	18	PQL	ug/Kg	
	PHENANTHRENE	J	15	18	PQL	ug/Kg	
SL-513-SA8-SB-4.0-5.0	BENZO(B)FLUORANTHENE	J	7	19	PQL	ug/Kg	J (all detects)
	PYRENE	J	4	19	PQL	ug/Kg	

Method: 8270D SIM
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-512-SA8-SB-0.0-0.5	BENZO(B)FLUORANTHENE	J	1.1	1.7	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	11	18	PQL	ug/Kg	
	Di-n-butylphthalate	J	6.9	18	PQL	ug/Kg	
	FLUORANTHENE	J	1.4	1.7	PQL	ug/Kg	J (all detects)
	NAPHTHALENE	J	0.78	1.7	PQL	ug/Kg	
	PHENANTHRENE	J	0.82	1.7	PQL	ug/Kg	
	PYRENE	J	1.1	1.7	PQL	ug/Kg	
SL-513-SA8-SB-0.0-0.5	BENZO(B)FLUORANTHENE	J	13	18	PQL	ug/Kg	J (all detects)
SL-513-SA8-SB-4.0-5.0	CHRYSENE	J	11	18	PQL	ug/Kg	J (all detects)
SL-514-SA8-SB-0.0-0.5	BENZO(A)ANTHRACENE	J	0.90	1.7	PQL	ug/Kg	
	BENZO(A)PYRENE	J	0.92	1.7	PQL	ug/Kg	
	BENZO(G,H,I)PERYLENE	J	0.92	1.7	PQL	ug/Kg	J (all detects)
	BIS(2-ETHYLHEXYL)PHTHALATE	J	11	19	PQL	ug/Kg	
	NAPHTHALENE	J	0.72	1.7	PQL	ug/Kg	
	PHENANTHRENE	J	1.5	1.7	PQL	ug/Kg	
SL-514-SA8-SB-7.5-8.5	NAPHTHALENE	J	0.91	1.9	PQL	ug/Kg	J (all detects)
SL-515-SA8-SB-0.0-0.5	CHRYSENE	J	5.1	19	PQL	ug/Kg	J (all detects)

Enclosure II

EPA Level IV Data Validation Reports

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Santa Susana Field Laboratory

Collection Date: July 17, 2013

LDC Report Date: September 23, 2013

Matrix: Soil/Water

Parameters: Volatiles

Validation Level: Level IV

Laboratory: Eurofins Lancaster Laboratories

Sample Delivery Group (SDG): PH069

Sample Identification

EB1-071713
TB-071713
SL-513-SA8-SB-8.0-9.0

Introduction

This data review covers one soil sample and 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

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 concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990 .

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 with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
7/11/13	Vinyl acetate	44	All soil samples in SDG PH069	J (all detects) UJ (all non-detects)	A

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 volatile contaminants were found in the method blanks.

Sample TB-071713 was identified as a trip blank. No volatile contaminants were found.

Sample EB1-071713 was identified as an equipment blank. No volatile contaminants were found with the following exceptions:

Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB1-071713	7/17/13	Acetone	7 ug/L	All soil samples in SDG PH069

Sample FB-041113 (from SDG PH029) was identified as a field blank. No volatile contaminants were found with the following exceptions:

Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB-041113	4/11/13	Methylene chloride	2 ug/L	All soil samples in SDG PH069

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other 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

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. 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 following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
LCSB68 (All soil samples in SDG PH069)	Vinyl acetate	135 (29-111)	125 (29-111)	-	J (all detects)	P
LCS/D Y77 (All water samples in SDG PH069)	Chlorotrifluoroethene	44 (47-120)	43 (47-120)	-	J (all detects) UJ (all non-detects)	P

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 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 PH069	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

No field duplicates were identified in this SDG.

Santa Susana Field Laboratory
Volatiles - Data Qualification Summary - SDG PH069

SDG	Sample	Compound	Flag	A or P	Reason (Code)
PH069	SL-513-SA8-SB-8.0-9.0	Vinyl acetate	J (all detects) UJ (all non-detects)	A	Continuing calibration (ICV %D) (C)
PH069	SL-513-SA8-SB-8.0-9.0	Vinyl acetate	J (all detects)	P	Laboratory control samples (%R) (L)
PH069	EB1-071713 TB-071713	Chlorotrifluoroethene	J (all detects) UJ (all non-detects)	P	Laboratory control samples (%R) (L)
PH069	EB1-071713 TB-071713 SL-513-SA8-SB-8.0-9.0	All compounds reported below the RL.	J (all detects)	A	Compound quantitation (Z)

Santa Susana Field Laboratory
Volatiles - Laboratory Blank Data Qualification Summary - SDG PH069

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Volatiles - Field Blank Data Qualification Summary - SDG PH069

No Sample Data Qualified in this SDG

LDC #: 30289D1a **VALIDATION COMPLETENESS WORKSHEET** Date: 9/3/13
SDG #: PH069 Level IV Page: 1 of 1
Laboratory: Eurofins Lancaster Laboratories Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

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: 7/17/13
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤30, r^2
IV.	Continuing calibration/ICV	SW	ICV/CCV ≤25
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	client specified
VIII.	Laboratory control samples	SW	LCS ID
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	N	
XVII.	Field blanks	SW	EB=1 *TB=2 FB: FB-041113 (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:

1	EB1-071713 W	11	VBLKY76	21		31	
2	TB-071713 W	12	VBLKB67	22		32	
3	SL-513-SA8-SB-8.0-9.0 S	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

LDC #: 30289p1a

VALIDATION FINDINGS CHECKLIST

Reviewer: FT
2nd Reviewer:

Method: Volatiles (EPA SW 846 Method 8260C)

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 BFB 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) ≤ ~~20%~~ 30 and relative response factors (RRF) within the method criteria?	✓			
Was a curve fit used for evaluation?	✓			
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) ≤ ~~20%~~ 25 and relative response factors (RRF) within the method criteria?		✓		
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed at least once every 12 hours 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 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?			✓	
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?	✓			
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?		✓		

LDC #: 30289012

VALIDATION FINDINGS CHECKLIST

Reviewer: FT
2nd Reviewer:

Validation Area	Yes	No	NA	Findings/Comments
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XI. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XII. Compound quantitation/RLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?			✓	
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XVII. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.	✓			

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene	BB. 1,1,2,2-Tetrachloroethane	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane	CC. Toluene	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform	EE. Ethylbenzene	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN. Iodomethane
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.1,1-Difluoroethane
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP. Chlorotrifluoroethene
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

LDC #: 30289012

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Reviewer: FT
2nd Reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

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

Y (N) N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?

Y (N) N/A Were percent differences (%D) ~~≤20%~~ 25 and relative response factors (RRF) within the method criteria?

code = C

#	Date	Standard ID	Compound	Finding %D (Limit: ~~≤20.0%~~ 25) FT	Finding RRF (Limit)	Associated Samples	Qualifications
	7/11/13	ICV	HH	44		All soil	J/UJ/A

LDC #: 30289O1k

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer: F2
2nd Reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

Y N /N/A Were field blanks identified in this SDG?
Y N N/A Were target compounds detected in the field blanks?

Blank units: ug/L **Associated sample units:** ug/kg
Field blank type: (circle one) Field Blank / Rinsate / Trip Blank / Other: EB Associated Samples: All soil (ND)

Compound	Blank ID 1	Blank ID	Sample Identification							
Sampling Date	7/17/13									
F	7									

Blank units: ug/L **Associated sample units:** ug/kg
Field blank type: (circle one) ~~Field Blank~~ / Rinsate / Trip Blank / Other: Associated Samples: All Soil (ND)

Compound	Blank ID	Blank ID	Sample Identification							
Sampling Date	FB-041113									
E	2									

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Common contaminants such as Methylene chloride, Acetone, 2-Butanone and Carbon disulfide 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".

LDC #: 30289012

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Page: 1 of 1
Reviewer: FT
2nd Reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

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

Y N N/A Was a LCS required?
Y N N/A Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

#	Date	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		LCSB68	HH	135 (29-111)	125 (29-111)	( )	All soils	J/Pdet (L)
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		J/UJ/P
		LCS/D Y77 PM	PPPP	44 (47-120)	43 (47-120)	( )	All water	↓ (L)
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )	

LDC #: 30289D/a

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: FT
2nd Reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

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
X = Mean of the RRFs

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Reported RRF	Recalculated RRF	Reported Average RRF (initial)	Recalculated Average RRF (initial)	Reported %RSD	Recalculated %RSD
1	ICAL b	7/16/13	ZZZ (1st internal standard)	1.3094	1.3094	1.2195	1.2195	9	9
			C (2nd internal standard)	0.3413	0.3413	0.3579	0.3579	3	3
			CC (3rd internal standard)	0.9940	0.9940	0.9976	0.9976	1	1
			BB (4th internal standard)	0.7132	0.7132	0.7169	0.7169	5	5
2	ICAL	7/11/13	(1st internal standard)	(20)	(20)				
			Freon 133a (2nd internal standard)	0.6560	0.6560	0.6807	0.6807	4	4
			(3rd internal standard)						
			(4th internal standard)	(50)	(50)				
3	ICAL Y	7/12/13	ZZZ (1st internal standard)	1.2475	1.2475	1.3105	1.3105	4	4
			C (2nd internal standard)	0.3813	0.3813	0.3694	0.3694	8	8
			CC (3rd internal standard)	1.0359	1.0359	0.9983	0.9983	5	5
			BB (4th internal standard)	1.1915	1.1915	1.1616	1.1616	4	4
4	ICAL	7/02/13	(1st internal standard)	(50)	(50)				
			Freon 133a (2nd internal standard)	0.7640	0.7640	0.7987	0.7987	5	5
			(3rd internal standard)						
			(4th internal standard)						

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 #: 30289D1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: FT
2nd Reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260C
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, A_{is} = Area of associated internal standard
C_x = Concentration of compound, C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference internal Standard)	Average RRF (initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported %D	Recalculated %D
1	CCV 20.03	7/24/13	ZZZ (1st internal standard)	1.2195	1.2373	1.2373	1	1
			C (2nd internal standard)	0.3579	0.3917	0.3917	9	9
			CC (3rd internal standard)	0.9976	0.9965	0.9965	0	0.11
			BB (4th internal standard)	0.7169	0.7215	0.7215	1	1
2	CCV 20.20	7/24/13	(1st internal standard)					
			Fluor 133a (2nd internal standard)	0.6807	0.7448	0.7448	9	9
			(3rd internal standard)					
			(4th internal standard)					
3	CCV 09:23	7/23/13	ZZZ (1st internal standard)	1.3105	1.4363	1.4363	10	10
			C (2nd internal standard)	0.3694	0.3466	0.3466	6	6
			CC (3rd internal standard)	0.9983	0.9752	0.9752	2	2
			BB (4th internal standard)	1.1616	1.1116	1.1116	4	4
4	CCV 09:44	7/23/13	(1st internal standard)					
			Fluor 133a (2nd internal standard)	0.7987	0.7813	0.7813	2	2
			(3rd internal standard)					
			(4th 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.

LDC #: 30289 01a

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: FT
2nd reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

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: 3

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	50.0	50.334	101	101	0
1,2-Dichloroethane-d4	↓	53.589	107	107	↓
Toluene-d8		48.575	97	97	
Bromofluorobenzene	↓	47.881	96	96	↓

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 30289D1a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Page: 1 of 1
Reviewer: FT
2nd Reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration; SA = Spike added

RPD = I LCSC - LCSDC I * 2/(LCSC + LCSDC) LCSC = Laboraotry control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS ID: LCSB67

Compound	Spike Added (ug/kg)		Spiked Sample Concentration (ug/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
1,1-Dichloroethene	20	NA	19.87	NA	99	99				
Trichloroethene	↓		19.81		99	99				
Benzene		↓	19.68	↓	98	98				
Toluene			19.33		97	97				
Chlorobenzene	↓	↓	19.31	↓	97	97	NA			

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

LDC #: 30289Ok

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: FT
2nd reviewer: A

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. #1 , F :

Conc. = (7926)(50)( )( )
(1046037)(0.053)( )( )

=

7.13 ug/L

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Santa Susana Field Laboratory

Collection Date: July 17, 2013

LDC Report Date: September 17, 2013

Matrix: Soil/Water

Parameters: Semivolatiles

Validation Level: Level IV

Laboratory: Eurofins Lancaster Laboratories

Sample Delivery Group (SDG): PH069

Sample Identification

EB1-071713
SL-513-SA8-SB-0.0-0.5
SL-513-SA8-SB-4.0-5.0
SL-513-SA8-SB-8.0-9.0

Introduction

This data review covers 3 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 8270D 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 concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds all coefficients of determination (r^2) were greater than or equal to 0.990 .

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 with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
7/25/13	Hexachlorocyclopentadiene	31	All water samples in SDG PH069	J (all detects) UJ (all non-detects)	A
7/22/13	Hexachlorocyclopentadiene 2,4-Dinitrophenol	29 32	All soil samples in SDG PH069	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A

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 blanks.

Sample EB1-071713 was identified as an equipment blank. No semivolatile contaminants were found.

Sample FB-041113 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	Naphthalene	0.2 ug/L	SL-513-SA8-SB-0.0-0.5 SL-513-SA8-SB-4.0-5.0 SL-513-SA8-SB-8.0-9.0

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other 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

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. 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 following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
205WCLCS/D (All water samples in SDG PH069)	Benzoic acid	-	-	54 (≤30)	J (all detects) UJ (all non-detects)	P

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
205WCLCS/D (All water samples in SDG PH069)	4-Nitrophenol	75 (13-71)	80 (13-71)	-	J (all detects)	P

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 PH069	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

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Santa Susana Field Laboratory
Semivolatiles - Data Qualification Summary - SDG PH069

SDG	Sample	Compound	Flag	A or P	Reason (Code)
PH069	EB1-071713	Hexachlorocyclopentadiene	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D) (C)
PH069	SL-513-SA8-SB-0.0-0.5 SL-513-SA8-SB-4.0-5.0 SL-513-SA8-SB-8.0-9.0	Hexachlorocyclopentadiene 2,4-Dinitrophenol	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Continuing calibration (%D) (C)
PH069	EB1-071713	Benzoic acid	J (all detects) UJ (all non-detects)	P	Laboratory control samples (RPD) (E)
PH069	EB1-071713	4-Nitrophenol	J (all detects)	P	Laboratory control samples (%R) (L)
PH069	EB1-071713 SL-513-SA8-SB-0.0-0.5 SL-513-SA8-SB-4.0-5.0 SL-513-SA8-SB-8.0-9.0	All compounds reported below the RL.	J (all detects)	A	Compound quantitation (Z)

Santa Susana Field Laboratory
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG PH069

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Semivolatiles - Field Blank Data Qualification Summary - SDG PH069

No Sample Data Qualified in this SDG

LDC #: 30289D2a **VALIDATION COMPLETENESS WORKSHEET** Date: 9/13/13
SDG #: PH069 Level IV Page: 1 of 1
Laboratory: Eurofins Lancaster Laboratories Reviewer: SK
2nd Reviewer: A

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270~~C~~D)

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: 7/17/13
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	RSD≤30%, r²≥0.99
IV.	Continuing calibration/ICV	SW	CCV/ICV ≤ 25%
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	SW	LCS/D
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	SW	
XVI.	Field duplicates	N	
XVII.	Field blanks	SW	EB = 1 FB = ~~TB041113~~ (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:

1	EB1-071713 W	11	SBLKWC205	21		31	
2	SL-513-SA8-SB-0.0-0.5 S	12	SBLKLE199	22		32	
3	SL-513-SA8-SB-4.0-5.0	13		23		33	
4	SL-513-SA8-SB-8.0-9.0	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

LDC #: 30289D2a

VALIDATION FINDINGS CHECKLIST

Reviewer: R
2nd Reviewer: A

Method: Semivolatiles (EPA SW 846 Method 8270)

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 $\geq$ 0.990?	✓			
Were all percent relative standard deviations (%RSD) $\leq$ 30%/15% and relative response factors (RRF) $\geq$ 0.05?	✓			
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) $\leq$ 25% and relative response factors (RRF) $\geq$ 0.05?		✓		
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?	✓			

LDC #: 30289D29

VALIDATION FINDINGS CHECKLIST

Reviewer: SC
2nd Reviewer: A

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?		✓		
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds from the associated calibration standard?	✓			
XI. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XII. 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?	✓			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?			✓	
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XVII. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.		✓		

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.

LDC #: 30289D2A

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Reviewer: SK
2nd Reviewer:

METHOD: GC/MS BNA (EPA SW 846 Method 8270D)

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

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?

Y N N/A Were percent differences (%D) ≤20% and relative response factors (RRF) within the method criteria?

#	Date	Standard ID	Compound	Finding %D (Limit: <20.0%)	Finding RRF (Limit)	Associated Samples	Qualifications
	7/25/13	dg0521 (1cv)	X	31		All W	J/UJ/A
	7/22/13	eg0711 (1cv)	X HH	29 32		All soil	

LDC #: 30289D2a

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer: SM
2nd Reviewer: A

METHOD: GC/MS BNA (EPA SW 846 Method 8270D)

Y N N/A Were field blanks identified in this SDG?

Y N N/A Were target compounds detected in the field blanks?

Blank units: ug/L **Associated sample units:** ug/Kg

Sampling date: 04/11/13

Field blank type: (circle one) Field Blank / Rinsate / Other:_____ Associated Samples: 2-4

Compound	Blank ID	Sample Identification								
	FB-041113	action limit								
Naphthalene	0.2	1.0	Nd	Qual						

Blank units:_____ **Associated sample units:**_____

Sampling date:_____

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

Compound	Blank ID	Sample Identification								

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".

LDC #: 30289D2a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270D)

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

Y N N/A Was a LCS required?

Y (N) N/A Were the LCS/LCSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	Date	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	205	WC LCS/D	PPP	( )	( )	54 (≤30)	All W	J MJ/P
			11	75 (13-71)	80 (13-71)	( )		J MJ/P
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
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LDC #: 30287D29

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Reviewer: R
2nd Reviewer: 2

METHOD: GC/MS BNA (EPA SW 846 Method 8270D)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

(Y) N N/A Was the overall quality and usability of the data acceptable?

#	Date	Compound	Finding	Associated Samples	Qualifications
		Lab indicated that extract spiked after boiling, since surr %Rs w/in limits. No qual		4	

Comments: _____

LDC #: 30289D2a

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

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, A_{is} = Area of associated internal standard
C_x = Concentration of compound, C_{is} = Concentration of internal standard
S = Standard deviation of the RRFs, X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Reported RRF (7.5 std)	Recalculated RRF (7.5 std)	Reported Average RRF (initial)	Recalculated Average RRF (initial)	Reported %RSD	Recalculated %RSD
1	ICAL	7/24/13	Phenol (1st internal standard)	2.907	2.907	2.81	2.81	4	4
			Naphthalene (2nd internal standard)	1.090	1.090	1.054	1.054	3	3
			Fluorene (3rd internal standard)	1.290	1.290	1.257	1.257	5	5
			Pentachlorophenol (4th internal standard)	0.143	0.143	0.132	0.132	16	16
			Bis(2-ethylhexyl)phthalate (5th internal standard)	0.685	0.685	0.639	0.639	10	10
			Benzo(a)pyrene (6th internal standard)	1.130	1.130	0.991	0.991	17	17
2	ICAL	7/22/13	Phenol (1st internal standard) (30 pt)	2.749	2.749	2.696	2.696	9	9
			Naphthalene (2nd internal standard)	1.003	1.003	1.003	1.003	5	5
			Fluorene (3rd internal standard)	1.326	1.326	1.332	1.332	4	4
			Pentachlorophenol (4th internal standard)	0.098	0.098	0.094	0.094	19	19
			Bis(2-ethylhexyl)phthalate (5th internal standard)	0.660	0.660	0.660	0.660	5	5
			Benzo(a)pyrene (6th internal standard)	1.210	1.210	1.123	1.123	10	10
3			Phenol (1st internal standard)						
			Naphthalene (2nd internal standard)						
			Fluorene (3rd internal standard)						
			Pentachlorophenol (4th internal standard)						
			Bis(2-ethylhexyl)phthalate (5th internal standard)						
			Benzo(a)pyrene (6th internal standard)						

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 #: 32289D2a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

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, A_{is} = Area of associated internal standard
C_x = Concentration of compound, C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Average RRF (initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported %D	Recalculated %D
1	dg0581	7/25/13	Phenol (1st internal standard)	2.811	2.733	2.733	3	3
			Naphthalene (2nd internal standard)	1.054	1.027	1.027	3	3
			Fluorene (3rd internal standard)	1.257	1.260	1.260	0	0
			Pentachlorophenol (4th internal standard)	0.132	0.140	0.140	6	6
			Bis(2-ethylhexyl)phthalate (5th internal standard)	0.639	0.658	0.658	3	3
			Benzo(a)pyrene (6th internal standard)	0.991	1.099	1.099	11	11
2	eg0901	7/28/13	Phenol (1st internal standard)	2.696	2.440	2.440	10	10
			Naphthalene (2nd internal standard)	1.003	1.000	1.0006[R]	0	0
			Fluorene (3rd internal standard)	1.332	1.355	1.355	2	2
			Pentachlorophenol (4th internal standard)	0.094	0.099	0.099	5	5
			Bis(2-ethylhexyl)phthalate (5th internal standard)	0.660	0.654	0.654	1	1
			Benzo(a)pyrene (6th internal standard)	1.123	1.141	1.141	2	2
3	eg0941	7/29/13	Phenol (1st internal standard)	2.696	2.533	2.533	6	6
			Naphthalene (2nd internal standard)	1.003	1.001	1.001	0	0
			Fluorene (3rd internal standard)	1.332	1.332	1.333	0	0
			Pentachlorophenol (4th internal standard)	0.094	0.099	0.099	6	6
			Bis(2-ethylhexyl)phthalate (5th internal standard)	0.660	0.679	0.679	3	3
			Benzo(a)pyrene (6th internal standard)	1.123	1.183	1.183	5	5

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.

LDC #: 30289D29

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: SC
2nd reviewer: A

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270)

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: 2

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5	100	83.689	84	84	0
2-Fluorobiphenyl	↓	90.234	90	90	↓
Terphenyl-d14	↓	90.577	91	91	↓
Phenol-d6	200	154.817	77	77	↓
2-Fluorophenol	↓	170.592	85	85	↓
2,4,6-Tribromophenol	↓	162.438	81	81	↓
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					

LDC #: 30289D20

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

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 = I LCSC - LCSDC I * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: 199LELCS

Compound	Spike Added (ug/kg)		Spike Concentration (ug/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
Phenol	1666.67		1610.49		97	97				
N-Nitroso-di-n-propylamine	"		1512.06		91	91				
4-Chloro-3-methylphenol	"		1728.87		104	104				
Acenaphthene	-									
Pentachlorophenol	1666.67		1755.68		105	105				
Pyrene	"		1620.79		97	97				

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.

LCSCLC 2S

LDC #: 30289D29

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: K
2nd reviewer: C

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(V_t)(DF)(2.0)}{(A_{is})(RRF)(V_o)(V_i)(\%S)}$

A_x	=	Area of the characteristic ion (EICP) for the compound to be measured
A_{is}	=	Area of the characteristic ion (EICP) for the specific internal standard
I_s	=	Amount of internal standard added in nanograms (ng)
V_o	=	Volume or weight of sample extract in milliliters (ml) or grams (g).
V_i	=	Volume of extract injected in microliters (ul)
V_t	=	Volume of the concentrated extract in microliters (ul)
Df	=	Dilution Factor.
%S	=	Percent solids, applicable to soil and solid matrices only.
2.0	=	Factor of 2 to account for GPC cleanup

Example:

Sample I.D. 2 , S :

Conc. = $\frac{(3373)(20)(1000)(\quad)(\quad)}{(594265)(1.003)(30.3)(0.92)(\quad)}$

= 4 ug/kg

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Santa Susana Field Laboratory

Collection Date: July 17, 2013

LDC Report Date: September 23, 2013

Matrix: Soil/Water

Parameters: Semivolatiles

Validation Level: Level IV

Laboratory: Eurofins Lancaster Laboratories

Sample Delivery Group (SDG): PH069

Sample Identification

EB1-071713
EB2-071713
SL-512-SA8-SB-0.0-0.5
SL-514-SA8-SB-0.0-0.5
SL-514-SA8-SB-4.0-5.0
SL-514-SA8-SB-7.5-8.5
SL-515-SA8-SB-0.0-0.5
SL-515-SA8-SB-4.0-5.0
SL-515-SA8-SB-9.0-10.0
SL-515-SA8-SB-14.0-15.0
SL-513-SA8-SB-0.0-0.5
SL-513-SA8-SB-4.0-5.0
SL-513-SA8-SB-8.0-9.0

Introduction

This data review covers 11 soil samples and 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C 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 with the following exceptions:

Method Blank ID	Analysis Date	Compound	Concentration	Associated Samples
SBLKWB205	7/29/13	Bis(2-ethylhexyl)phthalate	0.051 ug/L	All water samples in SDG PH069

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
EB1-071713	Bis(2-ethylhexyl)phthalate	0.19 ug/L	1.1U ug/L
EB2-071713	Bis(2-ethylhexyl)phthalate	0.14 ug/L	1.0U ug/L

Samples EB1-071713 and EB2-071713 were identified as equipment blanks. No semivolatile contaminants were found with the following exceptions:

Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB1-071713	7/17/13	Di-n-butylphthalate Diethylphthalate Bis(2-ethylhexyl)phthalate 2-Methylnaphthalene Naphthalene	0.24 ug/L 0.24 ug/L 0.19 ug/L 0.014 ug/L 0.046 ug/L	SL-515-SA8-SB-0.0-0.5 SL-515-SA8-SB-4.0-5.0 SL-515-SA8-SB-9.0-10.0 SL-515-SA8-SB-14.0-15.0 SL-513-SA8-SB-0.0-0.5 SL-513-SA8-SB-4.0-5.0 SL-513-SA8-SB-8.0-9.0
EB2-071713	7/17/13	Di-n-butylphthalate Diethylphthalate Bis(2-ethylhexyl)phthalate 2-Methylnaphthalene Naphthalene	0.14 ug/L 0.22 ug/L 0.14 ug/L 0.014 ug/L 0.045 ug/L	SL-512-SA8-SB-0.0-0.5 SL-514-SA8-SB-0.0-0.5 SL-514-SA8-SB-4.0-5.0 SL-514-SA8-SB-7.5-8.5

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	SL-512-SA8-SB-0.0-0.5 SL-514-SA8-SB-0.0-0.5 SL-514-SA8-SB-4.0-5.0 SL-514-SA8-SB-7.5-8.5 SL-515-SA8-SB-0.0-0.5 SL-515-SA8-SB-4.0-5.0 SL-515-SA8-SB-9.0-10.0 SL-515-SA8-SB-14.0-15.0 SL-513-SA8-SB-0.0-0.5 SL-513-SA8-SB-4.0-5.0 SL-513-SA8-SB-8.0-9.0

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	Compound	Reported Concentration	Modified Final Concentration
SL-512-SA8-SB-0.0-0.5	Naphthalene	0.78 ug/Kg	1.7U ug/Kg
SL-514-SA8-SB-0.0-0.5	Naphthalene	0.72 ug/Kg	1.7U ug/Kg

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

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. 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.

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 PH069	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

No field duplicates were identified in this SDG.

Santa Susana Field Laboratory
Semivolatiles - Data Qualification Summary - SDG PH069

SDG	Sample	Compound	Flag	A or P	Reason (Code)
PH069	EB1-071713 EB2-071713 SL-512-SA8-SB-0.0-0.5 SL-514-SA8-SB-0.0-0.5 SL-514-SA8-SB-4.0-5.0 SL-514-SA8-SB-7.5-8.5 SL-515-SA8-SB-0.0-0.5 SL-515-SA8-SB-4.0-5.0 SL-515-SA8-SB-9.0-10.0 SL-515-SA8-SB-14.0-15.0 SL-513-SA8-SB-0.0-0.5 SL-513-SA8-SB-4.0-5.0 SL-513-SA8-SB-8.0-9.0	All compounds reported below the RL.	J (all detects)	A	Compound quantitation (Z)

Santa Susana Field Laboratory
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG PH069

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
PH069	EB1-071713	Bis(2-ethylhexyl)phthalate	1.1U ug/L	A	B
PH069	EB2-071713	Bis(2-ethylhexyl)phthalate	1.0U ug/L	A	B

Santa Susana Field Laboratory
Semivolatiles - Field Blank Data Qualification Summary - SDG PH069

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
PH069	SL-512-SA8-SB-0.0-0.5	Naphthalene	1.7U ug/Kg	A	F
PH069	SL-514-SA8-SB-0.0-0.5	Naphthalene	1.7U ug/Kg	A	F

LDC #: 30289D2b **VALIDATION COMPLETENESS WORKSHEET** Date: 8/29/13

SDG #: PH069 Level IV Page: 1 of 1

Laboratory: Eurofins Lancaster Laboratories Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: GC/MS ~~Polynuclear Aromatic Hydrocarbons~~ SVOA PAH (EPA SW 846 Method 8270C-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: 7/17/13
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	%RSD ≤ 30
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 25
V.	Blanks	SW	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	client specified
VIII.	Laboratory control samples	A	LCS/D
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	N	
XVII.	Field blanks	SW	EB = 1, 2 *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 & water

1 3	EB1-071713 W	11	SL-513-SA8-SB-0.0-0.5	21	SBLKLF199	31	
2 3	EB2-071713 ↓	12	SL-513-SA8-SB-4.0-5.0	22 2	SBLKLA201 -	32	
3 2	SL-512-SA8-SB-0.0-0.5	13 4	SL-513-SA8-SB-8.0-9.0	23 3	SBLKWB205 -	33	
4 2	SL-514-SA8-SB-0.0-0.5	14		24 4	SBLKLA207 -	34	
5 2	SL-514-SA8-SB-4.0-5.0	15		25		35	
6 2	SL-514-SA8-SB-7.5-8.5	16		26		36	
7 2	SL-515-SA8-SB-0.0-0.5	17		27		37	
8 2	SL-515-SA8-SB-4.0-5.0	18		28		38	
9 2	SL-515-SA8-SB-9.0-10.0	19		29		39	
10 2	SL-515-SA8-SB-14.0-15.0	20		30		40	

LDC #: 30289 p2b

VALIDATION FINDINGS CHECKLIST

Reviewer: FT
2nd Reviewer: [illegible]

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) ≤ 30%/15% and relative response factors (RRF) ≥ 0.05?	✓			
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) ≤ ~~20%~~ 25 and relative response factors (RRF) ≥ 0.05? FT	✓			
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?	✓			

LDC #: 30289026

VALIDATION FINDINGS CHECKLIST

Reviewer: FT
2nd Reviewer:

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds from the associated calibration standard?	✓			
XI. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XII. 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?	✓			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?			✓	
XIV. System performance				
System performance was found to be acceptable.		✓		
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XVII. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.	✓			

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.

LDC #: 30289025

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer: FT
2nd Reviewer:

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a method blank analyzed for each matrix?
Y N N/A Was a method blank analyzed for each concentration preparation level?
Y N N/A Was a method blank associated with every sample?
Y N N/A Was the blank contaminated? If yes, please see qualification below.

(B)

Blank extraction date: _____ **Blank analysis date:** 7/29/13
Conc. units: ug/L Associated Samples: All water

Compound	Blank ID	Sample Identification								
	SBLKWB205		1	2						
EEE	0.051		0.19/1.11	0.14/1.04						

Blank extraction date: _____ **Blank analysis date:** _____
Conc. units: _____ Associated Samples: _____

Compound	Blank ID	Sample Identification								

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 method blank concentration were qualified as not detected, "U". Other contaminants within five times the method blank concentration were also qualified as not detected, "U".

LDC #: 30287D2b

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: FT
2nd Reviewer:

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)
Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target compounds detected in the field blanks?
Blank units: ug/L **Associated sample units:** ug/L
Sampling date: 7/17/13
Field blank type: (circle one) Field Blank / Rinsate / Other: EB Associated Samples: FT ~~None~~ 7 → 13 (ND

Compound	Blank ID	Sample Identification									
	1	5x/10x									
XX	0.24	2.4									
LL	0.24	2.4									
EEE	0.19	1.9									
W	0.014	0.070									
S	0.046	0.230									

Blank units: ug/L **Associated sample units:** ug/L
Sampling date: 7/17/13
Field blank type: (circle one) Field Blank / Rinsate / Other: EB Associated Samples: 3 → 6 (ND + 5x, 10x)

Compound	Blank ID	Sample Identification									
	2	5x/10x									
XX	0.14	1.4									
LL	0.22	2.2									
EEE	0.14	1.4									
W	0.014	0.070									
S	0.045	0.225									

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".

LDC #: 30289D26

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer: FT
2nd Reviewer:

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

FB = FB-041113
SDG # PH029

Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target compounds detected in the field blanks?

Blank units: ug/L **Associated sample units:** ug/Kg
Sampling date: 4/11/13
Field blank type: (circle one) Field Blank / Rinsate / Other: FB Associated Samples: 3 → 13 Code = F

Compound	Blank ID	Sample Identification									
	FB	5x/10x	3	4							
XX	0.17	1.7									
LL	0.18	1.8									
EEE	0.082	0.82									
TTT	0.019	0.095									
VV	0.024	0.12									
S	0.17	0.85	0.78 J/1.7U	0.72 J/1.7U							

Blank units: _____ **Associated sample units:** _____
Sampling date: _____
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: _____

Compound	Blank ID	Sample Identification									

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".

LDC #: 30287D2b

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: FT
2nd Reviewer:

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

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 RRF (0.5 std)	Recalculated RRF (0.5 std)	Reported Average RRF (initial)	Recalculated Average RRF (initial)	Reported %RSD	Recalculated %RSD
1	ICAL	7/29/13	NDMA (1st internal standard)	0.918	0.918	0.877	0.877	8	8
			Naphthalene (2nd internal standard)	1.059	1.059	1.078	1.078	4	4
			Fluorene (3rd internal standard)	1.349	1.349	1.356	1.356	3	3
			Anthracene (4th internal standard)	1.180	1.180	1.186	1.186	4	4
			Pyrene (5th internal standard)	1.459	1.459	1.478	1.478	2	2
			Benzo(a) pyrene (6th internal standard)	1.215 (0.5)	1.215 (0.5)	1.178	1.178	2	2
2	ICAL	6/24/13		0.829	0.829	0.839	0.839	3	3
				1.050	1.050	1.046	1.046	3	3
				1.419	1.419	1.396	1.396	3	3
				1.255	1.255	1.239	1.239	4	4
				1.695	1.695	1.665	1.665	3	3
				1.192	1.192	1.167	1.167	3	3
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 #: 30289D2 6

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Page: 1 of 1
Reviewer: FT
2nd Reviewer:

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

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, A_{is} = Area of associated internal standard
C_x = Concentration of compound, C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Average RRF (initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported %D	Recalculated %D
1	CCV 3:48	7/23/13	NDMA (1st internal standard)	0.839	0.722	0.722	14	14
			Naphthalene (2nd internal standard)	1.046	1.051	1.051	0	0
			Fluorene (3rd internal standard)	1.396	1.394	1.394	0	0
			Anthracene (4th internal standard)	1.239	1.252	1.252	1	1
			Pyrene (5th internal standard)	1.665	1.812	1.812	9	9
			Benzo(a)pyrene (6th internal standard)	1.167	1.234	1.234	6	6
2	CCV 04:09	7/24/13	(1st internal standard)		0.684	0.684	18	18
			(2nd internal standard)		1.051	1.051	1	1
			(3rd internal standard)		1.383	1.383	1	1
			(4th internal standard)		1.253	1.253	1	1
			(5th internal standard)		1.796	1.796	8	8
			(6th internal standard)		1.251	1.251	7	7
3	CCV 3:14	7/25/13	1st		0.705	0.705	16	16
			(2nd internal standard)		1.021	1.021	2	2
			(3rd internal standard)		1.393	1.393	0	0
			(4th internal standard)		1.226	1.226	1	1
			(5th internal standard)		1.799	1.799	8	8
			(6th internal standard)		1.218	1.218	4	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.

LDC #: 30289D2b

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: FT
2nd Reviewer:

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

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, A_{is} = Area of associated internal standard
C_x = Concentration of compound, C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Average RRF (initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported %D	Recalculated %D
1	ccv04:18	7/27/13	NDMA (1st internal standard)	0.839	0.696	0.696	17	17
			Naphthalene (2nd internal standard)	1.046	1.040	1.040	1	1
			Fluorene (3rd internal standard)	1.396	1.388	1.388	1	1
			Anthracene (4th internal standard)	1.239	1.247	1.247	1	1
			Pyrene (5th internal standard)	1.665	1.758	1.758	6	6
			Benz(a)pyrene (6th internal standard)	1.167	1.221	1.221	5	5
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.

LDC #: 30287P25

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Page: 1 of 1
Reviewer: FT
2nd reviewer: C

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270C)

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: #3

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
~~Nitrobenzene-d5~~ Fluoranthene d10	1.0	0.703	70	70	0
2-Fluorobiphenyl Benzo(a) pyrene -d12	↓	0.718	72	72	↓
Terphenyl-d14 1-Methylnaphthalene	↓	0.858	86	86	↓
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					

LDC #: 30289D26

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

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: 205WBLCS/LCSD

Compound	Spike Added (ug/L)		Spike Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
Phenol										
N-Nitroso-di-n-propylamine										
4-Chloro-3-methylphenol										
Acenaphthene	1	1	1.0	1.01	100	100	101	101	0	0
Pentachlorophenol										
Pyrene	1	1	1.01	1.01	101	100	101	101	1	1

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.

LDC #: 30288202b

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: FT
2nd reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(V_t)(DF)(2.0)}{(A_{is})(RRF)(V_o)(V_i)(\%S)}$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

V_o = Volume or weight of sample extract in milliliters (ml) or grams (g).

V_i = Volume of extract injected in microliters (ul)

V_t = Volume of the concentrated extract in microliters (ul)

Df = Dilution Factor.

%S = Percent solids, applicable to soil and solid matrices only.

2.0 = Factor of 2 to account for GPC cleanup

Example:

Sample I.D. #1 , 9 :

Conc. = (11603)(0.25)(1000)( )( )( )
(25.024)(1.059)( )( )( )

= 0.046585 ug/L

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Santa Susana Field Laboratory

Collection Date: July 17, 2013

LDC Report Date: September 23, 2013

Matrix: Soil/Water

Parameters: Chlorinated Pesticides

Validation Level: Level IV

Laboratory: Eurofins Lancaster Laboratories

Sample Delivery Group (SDG): PH069

Sample Identification

EB1-071713
EB2-071713
SL-514-SA8-SB-0.0-0.5
SL-514-SA8-SB-4.0-5.0
SL-514-SA8-SB-7.5-8.5

Introduction

This data review covers 3 soil samples and 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8081A for Chlorinated Pesticides.

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 single compounds was performed for the primary (quantitation) column and confirmation column as required by this method.

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 differences (%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.

The individual 4,4'-DDT and Endrin breakdowns (%BD) were less than or equal to 15.0%.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No chlorinated pesticide contaminants were found in the method blanks.

Samples EB1-071713 and EB2-071713 were identified as equipment blanks. No chlorinated pesticide contaminants were found.

Sample FB-041113 (from SDG PH029) were identified a field blank. No chlorinated pesticide 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

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. 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 following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
LCS14200 (All water samples in SDG PH069)	Endrin	-	-	35 (≤30)	J (all detects) UJ (all non-detects)	P

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 PH069	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

No field duplicates were identified in this SDG.

Santa Susana Field Laboratory
Chlorinated Pesticides - Data Qualification Summary - SDG PH069

SDG	Sample	Compound	Flag	A or P	Reason (Code)
PH069	EB1-071713 EB2-071713	Endrin	J (all detects) UJ (all non-detects)	P	Laboratory control sample (RPD) (E)
PH069	EB1-071713 EB2-071713 SL-514-SA8-SB-0.0-0.5 SL-514-SA8-SB-4.0-5.0 SL-514-SA8-SB-7.5-8.5	All compounds reported below the RL.	J (all detects)	A	Compound quantitation (Z)

Santa Susana Field Laboratory
Chlorinated Pesticides - Laboratory Blank Data Qualification Summary - SDG PH069

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Chlorinated Pesticides - Field Blank Data Qualification Summary - SDG PH069

No Sample Data Qualified in this SDG

LDC #: 30289D3a

VALIDATION COMPLETENESS WORKSHEET

Level IV

Date: 9/2/13

SDG #: PH069

Page: 1 of 1

Laboratory: Eurofins Lancaster Laboratories

Reviewer:

2nd Reviewer:

METHOD: GC Chlorinated Pesticides (EPA SW846 Method 8081A)

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: 7/17/13
II.	GC/ECD Instrument Performance Check	A	
III.	Initial calibration	A	%D RSD ≤ 20
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 20
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	client specified
VIII.	Laboratory control samples	SW	LCS ID
IX.	Regional quality assurance and quality control	N	
X.	Florisil cartridge check	N	
XI.	GPC Calibration	N	
XII.	Target compound identification	A	
XIII.	Compound quantitation/RL/LOQ/LODs	A	
XIV.	Overall assessment of data	A	
XV.	Field duplicates	A	
XVI.	Field blanks	ND	EB = 1, 2 FB = FB-041113

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

SDG # PH029

Validated Samples:

Soil + water

1	EB1-071713 W	11	PBLK11201	21		31	
2	EB2-071713 W	12	PBLK14200	22		32	
3	SL-514-SA8-SB-0.0-0.5	13		23		33	
4	SL-514-SA8-SB-4.0-5.0	14		24		34	
5	SL-514-SA8-SB-7.5-8.5	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 30289D3a

VALIDATION FINDINGS CHECKLIST

Reviewer: FT
2nd Reviewer: A

Method: Pesticides/PCBs (EPA SW 846 Method 8081A/8082)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/ECD Instrument performance check				
Was the instrument performance found to be acceptable?	✓			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Was a linear fit used for evaluation? If yes, were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation? If Yes, what was the acceptance criteria used?		✓		
Did the initial calibration meet the curve fit acceptance criteria?			✓	
Were the RT windows properly established?	✓			
Were the required standard concentrations analyzed in the initial calibration?	✓			
IV. Continuing calibration				
What type of continuing calibration calculation was performed? ____%D or ____%R	✓			
Were Evaluation mix standards analyzed prior to the initial calibration and sample analysis?	✓			
Were endrin and 4,4'-DDT breakdowns ≤ 15% for individual breakdown in the Evaluation mix standards?	✓			
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20%?	✓			
Were all the retention times within the acceptance windows?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Were extract cleanup blanks analyzed with every batch requiring clean-up?		✓		
Was there contamination in the method blanks or clean-up blanks? If yes, please see the Blanks validation completeness worksheet.	✓			
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?	✓			
If the percent recovery (%R) of one or more surrogates was 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?			✓	

LDC #: 30289D3a

VALIDATION FINDINGS CHECKLIST

Reviewer: FT
2nd Reviewer: A

Validation Area	Yes	No	NA	Findings/Comments
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?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
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, dry weight factors, and clean-up activities 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: Pesticide/PCBs (EPASW 846 Method 8081/8082)

A. alpha-BHC	I. Dieldrin	Q. Endrin ketone	Y. Aroclor-1242	GG.
B. beta-BHC	J. 4,4'-DDE	R. Endrin aldehyde	Z. Aroclor-1248	HH.
C. delta-BHC	K. Endrin	S. alpha-Chlordane	AA. Aroclor-1254	II.
D. gamma-BHC	L. Endosulfan II	T. gamma-Chlordane	BB. Aroclor-1260	JJ.
E. Heptachlor	M. 4,4'-DDD	U. Toxaphene	CC. DB 608	KK.
F. Aldrin	N. Endosulfan sulfate	V. Aroclor-1016	DD. DB 1701	LL.
G. Heptachlor epoxide	O. 4,4'-DDT	W. Aroclor-1221	EE.	MM.
H. Endosulfan I	P. Methoxychlor	X. Aroclor-1232	FF.	NN.

Notes:_____

LDC #: 30289D3a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Page: 1 of 1
Reviewer: FT
2nd Reviewer:

METHOD: ✓ GC __ HPLC

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

Y N N/A Were a laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) analyzed for each matrix in this SDG?

Y N N/A Were the LCS percent recoveries (%R) and relative percent differences (RPD) within the QC limits?

Level IV/D Only

Y N N/A Was an LCS analyzed every 20 samples for each matrix or whenever a sample extraction was performed?

#	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	LCS14200	K	( )	( )	35 (30)	All water	J/UJ/P (E)
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
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			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		

LDC #: 30289P3c

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: FT
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 CF (10/100 std)	Recalculated CF (10/100 std)	Reported CF (initial)	Recalculated CF (intial)	Reported %RSD	Recalculated %RSD
1	ICAL	7/15/13	endosulfan I	2.65×10^5	2.65×10^5	2.87×10^5	2.87×10^5	18	18
	RTX CLP		Methoxychlor	1.04×10^5	1.04×10^5	1.05×10^5	1.05×10^5	9	9
2	RTX CLP II		↓	6.63×10^4	6.63×10^4	6.73×10^4	6.73×10^4	5	5
				3.51×10^4	3.51×10^4	3.50×10^4	3.50×10^4	5	5
3	ICAL	7/25/13	↓	2.71×10^5	2.71×10^5	2.84×10^5	2.84×10^5	14	14
	RTX CLP			1.03×10^5	1.03×10^5	1.06×10^5	1.06×10^5	11	11
4	RTX CLP II		↓	7.18×10^4	7.18×10^4	7.33×10^4	7.33×10^4	4	4
				3.49×10^4	3.49×10^4	3.50×10^4	3.50×10^4	5	5

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 #: 30289D3

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: FT
2nd Reviewer:

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 CF/ Conc. CCV	Recalculated CF/ Conc. CCV	Reported %D	Recalculated %D
1	CCV 13:16	7/23/13	endosulfan I	10.00	9.96	9.96	0	0
	RTX CLP		methoxychlor	100.00	104.41	104.41	4	4
2	RTX CLP2		↓	10.00	10.54	10.54	5	5
				100.00	104.83	104.83	5	5
3	CCV 18:14	7/23/13	↓	↓	9.52	9.52	5	5
	RTX CLP				98.33	98.33	2	2
4			↓	↓	9.74	9.74	3	3
					100.50	100.50	1	1

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.

LDC #: 30289 D3a

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Page: 1 of 1
Reviewer: FT
2nd reviewer:

METHOD: GC Pesticides (EPA SW 846 Method 8081)

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: 3

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
TCMX	RTX CLP2	10	8.717306	87	87	0
DCB	↓	↓	10.136194	100	100	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	

LDC #: 30289D3s

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Page: 1 of 1
Reviewer: FT
2nd Reviewer:

METHOD: GC Pesticides (EPA SW 846 method 8081)

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, SA = Spike added, SC = Sample concentration

RPD =(({SSCLCS - SSCLCSD} * 2) / (SSCLCS + SSCLCSD))*100 LCS = Laboratory Control Sample, LCSD = Laboratory Control Sample duplicate

LCS/LCSD samples: LCS 14200

Compound	Spike Added (ug/L)		Sample Conc. (ug/L)	Spike Sample Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	---	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gamma-BHC	0.1	0.1	ND	0.096656	0.097779	95	95	96	96	1	1
4,4'-DDT											

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 #: 30289P3<

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: F7
2nd Reviewer: [illegible]

METHOD: **GC** Pesticides (EPA SW 846 Method 8081)

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration= $\frac{(A)(Fv)(Df)}{(RF)(Vs \text{ or } Ws)(\%S/100)}$

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

Example:

Sample ID. 3 Compound Name Beta BHC

Concentration = $\frac{(1022988)(10)}{(1.77\times10^5)(30.1)(0.947)}$

2.027 ug/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: July 17, 2013

LDC Report Date: September 23, 2013

Matrix: Soil/Water

Parameters: Polychlorinated Biphenyls

Validation Level: Level IV

Laboratory: Eurofins Lancaster Laboratories

Sample Delivery Group (SDG): PH069

Sample Identification

EB1-071713
EB2-071713
SL-512-SA8-SB-0.0-0.5
SL-515-SA8-SB-0.0-0.5
SL-515-SA8-SB-4.0-5.0
SL-515-SA8-SB-9.0-10.0
SL-515-SA8-SB-14.0-15.0
SL-513-SA8-SB-0.0-0.5
SL-513-SA8-SB-4.0-5.0
SL-513-SA8-SB-8.0-9.0

Introduction

This data review covers 8 soil samples and 2 water 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.

Samples EB1-071713 and EB2-071713 were identified as equipment blanks. 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

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. 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.

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.

The sample results for detected compounds from the two columns were within 40% relative percent difference (RPD) with the following exceptions:

Sample	Compound	RPD	Flag	A or P
SL-512-SA8-SB-0.0-0.5	Aroclor-1254	51	J (all detects)	A

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH069	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

No field duplicates were identified in this SDG.

Santa Susana Field Laboratory
Polychlorinated Biphenyls - Data Qualification Summary - SDG PH069

SDG	Sample	Compound	Flag	A or P	Reason (Code)
PH069	SL-512-SA8-SB-0.0-0.5	Aroclor-1254	J (all detects)	A	Compound quantitation (RPD between columns) (*XIII)
PH069	EB1-071713 EB2-071713 SL-512-SA8-SB-0.0-0.5 SL-515-SA8-SB-0.0-0.5 SL-515-SA8-SB-4.0-5.0 SL-515-SA8-SB-9.0-10.0 SL-515-SA8-SB-14.0-15.0 SL-513-SA8-SB-0.0-0.5 SL-513-SA8-SB-4.0-5.0 SL-513-SA8-SB-8.0-9.0	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 PH069

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG PH069

No Sample Data Qualified in this SDG

LDC #: 30289D3b **VALIDATION COMPLETENESS WORKSHEET** Date: 9/3/13
SDG #: PH069 Level IV Page: 1 of 1
Laboratory: Eurofins Lancaster Laboratories Reviewer: M
2nd Reviewer: A

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	A	Sampling dates: 7/17/13
II.	GC/ECD Instrument Performance Check	NA	
III.	Initial calibration	A	% RSD ≤ 20
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 20
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	client specified
VIII.	Laboratory control samples	A	LCS/D
IX.	Regional quality assurance and quality control	N	
X.	Florisil cartridge check	N	
XI.	GPC Calibration	N	
XII.	Target compound identification	A	
XIII.	Compound quantitation/RL/LOQ/LODs	SW	
XIV.	Overall assessment of data	A	
XV.	Field duplicates	N	
XVI.	Field blanks	ND	EB = 1, 2 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 + water

1 2	EB1-071713 W	11	PBLK12201	21		31	
2 2	EB2-071713 W	12	PBLK13200	22		32	
3	SL-512-SA8-SB-0.0-0.5	13		23		33	
4	SL-515-SA8-SB-0.0-0.5	14		24		34	
5	SL-515-SA8-SB-4.0-5.0	15		25		35	
6	SL-515-SA8-SB-9.0-10.0	16		26		36	
7	SL-515-SA8-SB-14.0-15.0	17		27		37	
8	SL-513-SA8-SB-0.0-0.5	18		28		38	
9	SL-513-SA8-SB-4.0-5.0	19		29		39	
10	SL-513-SA8-SB-8.0-9.0	20		30		40	

Notes:

LDC #: 30289 D3b

VALIDATION FINDINGS CHECKLIST

Reviewer: FT
2nd Reviewer: A

Method: ✓ GC _____ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation?		✓		
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?			✓	
Were the RT windows properly established?	✓			
IV. Continuing calibration				
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20%.0 or percent recoveries 80-120%?	✓			
Were all the retention times within the acceptance windows?	✓			
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 the QC limits?	✓			
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?			✓	
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?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	

VALIDATION FINDINGS CHECKLIST

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.		—		

VALIDATION FINDINGS WORKSHEET

METHOD: Pesticide/PCBs (EPASW 846 Method 8081/8082)

A. alpha-BHC	I. Dieldrin	Q. Endrin ketone	Y. Aroclor-1242	GG.
B. beta-BHC	J. 4,4'-DDE	R. Endrin aldehyde	Z. Aroclor-1248	HH.
C. delta-BHC	K. Endrin	S. alpha-Chlordane	AA. Aroclor-1254	II.
D. gamma-BHC	L. Endosulfan II	T. gamma-Chlordane	BB. Aroclor-1260	JJ.
E. Heptachlor	M. 4,4'-DDD	U. Toxaphene	CC. DB 608	KK.
F. Aldrin	N. Endosulfan sulfate	V. Aroclor-1016	DD. DB 1701	LL.
G. Heptachlor epoxide	O. 4,4'-DDT	W. Aroclor-1221	EE.	MM.
H. Endosulfan I	P. Methoxychlor	X. Aroclor-1232	FF.	NN.

Notes: _____

LDC #: 30289D36

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and Reported CRQLs

Reviewer: FT
2nd Reviewer:

METHOD: ✓ GC ___ HPLC

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

Level IV/D Only

Y N N/A Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

Y N N/A Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

#	Compound Name	% RPD But 2 Finding col ≤ 40	Associated Samples	Qualifications
	AA	51	3	J/Adt * XIII

Comments: See sample calculation verification worksheet for recalculations

LDC #: 30289D3b

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: FT
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 CF (200 std)	Recalculated CF (200 std)	Reported Ave CF (initial)	Recalculated Ave CF (intial)	Reported %RSD	Recalculated %RSD
1	ICAL	7/9/13	Aroclor 1260-1	18234	18234	18917	18917	11	11
	ZB Multi R1	(IT20190)							
	ZB Multi R2	7/9/13	↓	41696	41696	41997	41997	7	7
2									
3	ICAL	7/24/13	↓	19814	19814	20206	20206	9	9
	- R1	IT20205							
	R2		↓	60265	60265	62522	62522	7	7
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 #: 30289D3b

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: FT
2nd Reviewer: A

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 CF/ Conc. CCV	Recalculated CF/ Conc. CCV	Reported %D	Recalculated %D
1	ccv 23:50	7/21/13	Aroclor 1260	200.0	189.70	189.70	5	5
	ZBmulti R1							
	R2		↓	200.0	188.38	188.38	6	6
2	ccv 0:16	7/25/13	↓	200.0	189.55	189.55	5	5
	ZBmulti R1							
	R2		↓	200.0	193.55	193.55	3	3
3	ccv 7:39	7/25/13	↓	200.0	189.24	189.24	5	5
	R1							
	R2		↓	200.0	201.83	201.83	1	1
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.

LDC #: 30289D3b

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: FT
2nd reviewer: A

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: 3

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
TCMX	ZB-R2	10	11.209	112	112	0
DCB	ZB-R1	10	9.785	97	98	1

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	

LDC #: 30289036

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: FT

2nd Reviewer: A

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; SA = Spike added; SC = Sample concentration

RPD =({SSCLCS - SSCLCSD} * 2) / (SSCLCS + SSCLCSD))*100

LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample duplicate

LCS/LCSD samples: LCS13200

Compound	Spike Added (ug/L)		Sample Conc. (ug/L)	Spike Sample Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	---	LCS	LCSD	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	5	5	ND	4.11	5.09	82	82	102	102	21	21

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 #: 30289P3b

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [signature]

METHOD: ✓ GC __ HPLC

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration= $\frac{(A)(Fv)(Df)}{(RF)(Vs \text{ or } Ws)(\%S/100)}$

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

Example:

Sample ID. #3 Compound Name 1254

Concentration = $\frac{8.06144}{0.985}$

= 8.2 ug/kg

#	Sample ID	Compound	Reported Concentrations ( )	Recalculated Results Concentrations ( )	Qualifications
	1254-2 = $\frac{476}{44398}$ x 1.1562 (10) (30.1) = 3.5637			1254-2 = 3.5637	
				3 = 4.215194	
				4 = 11.947963	
				5 = 4.629203	
				6 = 15.951103	
				Avg = 8.06143	

Comments: _____

SAMPCALew.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Santa Susana Field Laboratory

Collection Date: July 17, 2013

LDC Report Date: September 23, 2013

Matrix: Soil/Water

Parameters: Metals

Validation Level: Level IV

Laboratory: Eurofins Lancaster Laboratories

Sample Delivery Group (SDG): PG069

Sample Identification

EB1-071713
EB2-071713
SL-512-SA8-SB-0.0-0.5
SL-514-SA8-SB-0.0-0.5
SL-514-SA8-SB-4.0-5.0
SL-514-SA8-SB-7.5-8.5
SL-515-SA8-SB-0.0-0.5
SL-515-SA8-SB-4.0-5.0
SL-515-SA8-SB-9.0-10.0
SL-515-SA8-SB-14.0-15.0
SL-513-SA8-SB-0.0-0.5
SL-513-SA8-SB-4.0-5.0
SL-513-SA8-SB-8.0-9.0
SL-512-SA8-SB-0.0-0.5MS
SL-512-SA8-SB-0.0-0.5MSD
SL-512-SA8-SB-0.0-0.5DUP
SL-514-SA8-SB-7.5-8.5MS
SL-514-SA8-SB-7.5-8.5MSD
SL-514-SA8-SB-7.5-8.5DUP

Introduction

This data review covers 17 soil samples and 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010C, 6020A, 7470A, 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
ICB/CCB	Antimony Lithium Magnesium Phosphorus	5.6 ug/L 2.7 ug/L 38.1 ug/L 2.3 ug/L	All water samples in SDG PH069
PB (prep blank)	Tin	1.732 mg/Kg	All soil samples in SDG PH069
ICB/CCB	Copper Phosphorus	3.2 ug/L 4.0 ug/L	All soil samples in SDG PH069
ICB/CCB	Antimony	4.5 ug/L	SL-512-SA8-SB-0.0-0.5 SL-514-SA8-SB-0.0-0.5 SL-514-SA8-SB-4.0-5.0 SL-514-SA8-SB-7.5-8.5 SL-515-SA8-SB-0.0-0.5 SL-515-SA8-SB-4.0-5.0 SL-515-SA8-SB-9.0-10.0 SL-515-SA8-SB-14.0-15.0 SL-513-SA8-SB-0.0-0.5 SL-513-SA8-SB-8.0-9.0
ICB/CCB	Antimony	4.2 ug/L	SL-513-SA8-SB-4.0-5.0
ICB/CCB	Calcium	33.5 ug/L	SL-514-SA8-SB-4.0-5.0 SL-514-SA8-SB-7.5-8.5

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
ICB/CCB	Calcium	39.2 ug/L	SL-513-SA8-SB-0.0-0.5
ICB/CCB	Iron	41.8 ug/L	SL-514-SA8-SB-0.0-0.5 SL-514-SA8-SB-7.5-8.5 SL-515-SA8-SB-0.0-0.5
ICB/CCB	Iron	43.0 ug/L	SL-515-SA8-SB-4.0-5.0 SL-515-SA8-SB-9.0-10.0 SL-515-SA8-SB-14.0-15.0 SL-513-SA8-SB-0.0-0.5

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
EB1-071713	Antimony	6.9 ug/L	6.9U ug/L
EB2-071713	Antimony	5.4 ug/L	5.4U ug/L
SL-512-SA8-SB-0.0-0.5	Tin	3.0 mg/Kg	3.0U mg/Kg
SL-514-SA8-SB-0.0-0.5	Tin	3.3 mg/Kg	3.3U mg/Kg
SL-514-SA8-SB-4.0-5.0	Tin	3.1 mg/Kg	3.1U mg/Kg
SL-514-SA8-SB-7.5-8.5	Tin	3.0 mg/Kg	3.0U mg/Kg
SL-515-SA8-SB-0.0-0.5	Tin	3.4 mg/Kg	3.4U mg/Kg
SL-515-SA8-SB-4.0-5.0	Tin	3.4 mg/Kg	3.4U mg/Kg
SL-515-SA8-SB-9.0-10.0	Tin	3.8 mg/Kg	3.8U mg/Kg
SL-515-SA8-SB-14.0-15.0	Tin	3.3 mg/Kg	3.3U mg/Kg
SL-513-SA8-SB-0.0-0.5	Antimony Tin	1.2 mg/Kg 3.3 mg/Kg	1.2U mg/Kg 3.3U mg/Kg
SL-513-SA8-SB-4.0-5.0	Tin	2.8 mg/Kg	2.8U mg/Kg
SL-513-SA8-SB-8.0-9.0	Tin	3.1 mg/Kg	3.1U mg/Kg

Samples EB1-071713 and EB2-071713 were identified as equipment blanks. No metal contaminants were found with the following exceptions:

Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
EB1-071713	7/17/13	Antimony	0.0069 mg/L	SL-515-SA8-SB-0.0-0.5 SL-515-SA8-SB-4.0-5.0 SL-515-SA8-SB-9.0-10.0 SL-515-SA8-SB-14.0-15.0 SL-513-SA8-SB-0.0-0.5 SL-513-SA8-SB-4.0-5.0 SL-513-SA8-SB-8.0-9.0
EB2-071713	7/17/13	Antimony	0.0054 mg/L	SL-512-SA8-SB-0.0-0.5 SL-514-SA8-SB-0.0-0.5 SL-514-SA8-SB-4.0-5.0 SL-514-SA8-SB-7.5-8.5

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 soil samples in SDG PG069

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-512-SA8-SB-0.0-0.5	Molybdenum	0.34 mg/Kg	0.34U mg/Kg
SL-513-SA8-SB-0.0-0.5	Antimony Molybdenum	1.2 mg/Kg 0.86 mg/Kg	1.2U mg/Kg 0.86U 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-514-SA8-SB-7.5-8.5MS/MSD (All soil samples in SDG PH069)	Antimony	74 (75-125)	73 (75-125)	-	J (all detects) UJ (all non-detects)	A
SL-514-SA8-SB-7.5-8.5MS/MSD (All soil samples in SDG PH069)	Potassium	177 (75-125)	162 (75-125)	-	J (all detects)	A

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. 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.

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 with the following exceptions:

Diluted Sample	Analyte	%D (Limits)	Associated Samples	Flag	A or P
SL-514-SA8-SB-7.5-8.5	Lithium	14 (≤10)	All soil samples in SDG PH069	J (all detects) UJ (all non-detects)	A

XII. Sample Result Verification

All sample result verifications were acceptable.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

Santa Susana Field Laboratory
Metals - Data Qualification Summary - SDG PG069

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
PH069	SL-512-SA8-SB-0.0-0.5 SL-514-SA8-SB-0.0-0.5 SL-514-SA8-SB-4.0-5.0 SL-514-SA8-SB-7.5-8.5 SL-515-SA8-SB-0.0-0.5 SL-515-SA8-SB-4.0-5.0 SL-515-SA8-SB-9.0-10.0 SL-515-SA8-SB-14.0-15.0 SL-513-SA8-SB-0.0-0.5 SL-513-SA8-SB-4.0-5.0 SL-513-SA8-SB-8.0-9.0	Antimony	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (%R) (Q)
PH069	SL-512-SA8-SB-0.0-0.5 SL-514-SA8-SB-0.0-0.5 SL-514-SA8-SB-4.0-5.0 SL-514-SA8-SB-7.5-8.5 SL-515-SA8-SB-0.0-0.5 SL-515-SA8-SB-4.0-5.0 SL-515-SA8-SB-9.0-10.0 SL-515-SA8-SB-14.0-15.0 SL-513-SA8-SB-0.0-0.5 SL-513-SA8-SB-4.0-5.0 SL-513-SA8-SB-8.0-9.0	Potassium	J (all detects)	A	Matrix spike/Matrix spike duplicate (%R) (Q)
PH069	SL-512-SA8-SB-0.0-0.5 SL-514-SA8-SB-0.0-0.5 SL-514-SA8-SB-4.0-5.0 SL-514-SA8-SB-7.5-8.5 SL-515-SA8-SB-0.0-0.5 SL-515-SA8-SB-4.0-5.0 SL-515-SA8-SB-9.0-10.0 SL-515-SA8-SB-14.0-15.0 SL-513-SA8-SB-0.0-0.5 SL-513-SA8-SB-4.0-5.0 SL-513-SA8-SB-8.0-9.0	Lithium	J (all detects) UJ (all non-detects)	A	ICP serial dilution (%D) (A)

Santa Susana Field Laboratory
Metals - Laboratory Blank Data Qualification Summary - SDG PG069

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
PH069	EB1-071713	Antimony	6.9U ug/L	A	B
PH069	EB2-071713	Antimony	5.4U ug/L	A	B
PH069	SL-512-SA8-SB-0.0-0.5	Tin	3.0U mg/Kg	A	B
PH069	SL-514-SA8-SB-0.0-0.5	Tin	3.3U mg/Kg	A	B
PH069	SL-514-SA8-SB-4.0-5.0	Tin	3.1U mg/Kg	A	B

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
PH069	SL-514-SA8-SB-7.5-8.5	Tin	3.0U mg/Kg	A	B
PH069	SL-515-SA8-SB-0.0-0.5	Tin	3.4U mg/Kg	A	B
PH069	SL-515-SA8-SB-4.0-5.0	Tin	3.4U mg/Kg	A	B
PH069	SL-515-SA8-SB-9.0-10.0	Tin	3.8U mg/Kg	A	B
PH069	SL-515-SA8-SB-14.0-15.0	Tin	3.3U mg/Kg	A	B
PH069	SL-513-SA8-SB-0.0-0.5	Antimony Tin	1.2U mg/Kg 3.3U mg/Kg	A	B
PH069	SL-513-SA8-SB-4.0-5.0	Tin	2.8U mg/Kg	A	B
PH069	SL-513-SA8-SB-8.0-9.0	Tin	3.1U mg/Kg	A	B

Santa Susana Field Laboratory
Metals - Field Blank Data Qualification Summary - SDG PG069

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
PH069	SL-512-SA8-SB-0.0-0.5	Molybdenum	0.34U mg/Kg	A	F
PH069	SL-513-SA8-SB-0.0-0.5	Antimony Molybdenum	1.2U mg/Kg 0.86U mg/Kg	A	F

LDC #: 30289D4
SDG #: PH069
Laboratory: Eurofins Lancaster Laboratories

VALIDATION COMPLETENESS WORKSHEET

Level IV

7470A / 7471B

Date: 9/4/13
Page: 1 of 1
Reviewer: AR
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: 7/17/13
II.	ICP/MS Tune	A	
III.	Calibration	A	
IV.	Blanks	SW A	
V.	ICP Interference Check Sample (ICS) Analysis		
VI.	Matrix Spike Analysis	SW	MS/D
VII.	Duplicate Sample Analysis	A	DUP
VIII.	Laboratory Control Samples (LCS)	A	LCS/D
IX.	Internal Standard (ICP-MS)	A	
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	SW	
XII.	Sample Result Verification	A	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	N	
XV	Field Blanks	SW	EB = 1, 2 FB = FB-041113 (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/water

1	EB1-071713 W	11	SL-513-SA8-SB-0.0-0.5	21		31	
2	EB2-071713 ↓	12	SL-513-SA8-SB-4.0-5.0	22		32	
3	SL-512-SA8-SB-0.0-0.5	13	SL-513-SA8-SB-8.0-9.0	23		33	
4	SL-514-SA8-SB-0.0-0.5	14	(X 3) MS	24		34	
5	SL-514-SA8-SB-4.0-5.0	15	↓ MSD	25		35	
6	SL-514-SA8-SB-7.5-8.5	16	↓ DUP	26		36	
7	SL-515-SA8-SB-0.0-0.5	17	(X 6) MS	27		37	
8	SL-515-SA8-SB-4.0-5.0	18	↓ MSD	28		38	
9	SL-515-SA8-SB-9.0-10.0	19	↓ DUP	29		39	
10	SL-515-SA8-SB-14.0-15.0	20		30		40	

Notes: _____

LDC #: 30289D7

VALIDATION FINDINGS CHECKLIST

Reviewer: AR
2nd Reviewer: [illegible]

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 ≤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) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of +/- RL(+/-2X RL for soil) was used for samples that were ≤ 5X the RL, including when only one of the duplicate sample values were ≤ 5X the RL.	✓			
VII. Laboratory control samples				
Was an LCS anaylzed 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 analysies 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.	✓			

LDC #: 30289D 4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: CR
2nd reviewer:

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-13		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
QC:1416		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
17-19		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr

Comments: Mercury by CVAA if performed

LDC #: 30289D4

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: ug/L Associated Samples: All Water

Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Action Level	Sample Identification 1	2									
Sb			5.6	28	6.9	5.4									
Li			2.7	13.5											
Mg			38.1	190.5											
P			2.3	11.5											

Sample Concentration units, unless otherwise noted: mg/Kg 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 3	4	5	6	7	8	9	10	11	12	13
Cu			3.2	1.6											
P			4.0	2											
Sn	1.732			8.66	3.0	3.3	3.1	3.0	3.4	3.4	3.8	3.3	3.3	2.8	3.1

Sample Concentration units, unless otherwise noted: mg/Kg Associated Samples: 3-11, 13

Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Action Level	Sample Identification 11										
Sb			4.5	2.25	1.2										

Sample Concentration units, unless otherwise noted: mg/Kg Associated Samples: 12

Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Action Level	Sample Identification No Qualifiers										
Sb			4.2	2.1											

Sample Concentration units, unless otherwise noted: mg/Kg Associated Samples: 5, 6

Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Action Level	Sample Identification No Qualifiers										
Ca			33.5	16.75											

LDC #: 30289D4

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer:
2nd Reviewer:

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: 11

					Sample Identification										
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/l)	Maximum ICB/CCB[a] (ug/l)	Action Level	No Qualifiers										
Ca			39.2	19.6											

Sample Concentration units, unless otherwise noted: mg/Kg Associated Samples: 4, 6, 7

					Sample Identification										
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/l)	Maximum ICB/CCB[a] (ug/l)	Action Level	No Qualifiers										
Fe			41.8	20.9											

Sample Concentration units, unless otherwise noted: mg/Kg Associated Samples: 8-11

					Sample Identification										
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/l)	Maximum ICB/CCB[a] (ug/l)	Action Level	No Qualifiers										
Fe			43.0	21.5											

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.

LDC #: 30289D4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: AL
2nd Reviewer: [illegible]

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	3	11								
Cu	0.0036	1.8										
Mo	0.0036	1.8	0.34	0.86								

Sampling date: 7/17/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: 7-13

Analyte	Blank ID	Sample Identification										
	1	Action Limit	11									
Sb	0.0069	3.45	1.2									

Sampling date: 7/17/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: 3-6

Analyte	Blank ID	Sample Identification										
	2	Action Limit	No Qualifiers									
Sb	0.0054	2.7										

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 #: 30289D4

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: SR
2nd Reviewer:

METHOD: Trace metals (EPA SW 846 Method 6010B/6020A/7000)

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

(Y) N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y (N) N/A Were matrix spike percent recoveries (%R) within the control limits of 75-125? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

(Y) N N/A Were all duplicate sample relative percent differences (RPD) ≤ 20% for water samples and ≤35% for soil samples?

LEVEL IV ONLY:

(Y) N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	MS/MSD ID	Matrix	Analyte	MS %Recovery	MSD %Recovery	RPD (Limits)	Associated Samples	Qualifications
	17/18	S	Sb	74	73		All Soil	J/UJ/A (Q)
			Ir	177	162		↓	Jdet/A ↓

Comments: 17/18: Al, Ca, Fe, Mg, Mn, P, Sr, Ti 74/X

LDC #: 30758Q1

VALIDATION FINDINGS WORKSHEET
ICP Serial Dilution

Reviewer: QR
2nd Reviewer: [illegible]

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 If analyte concentrations were > 50X the MDL (ICP) ,or >100X the MDL (ICP/MS), was a serial dilution analyzed?
Y N N/A Were ICP serial dilution percent differences (%D) ≤10%?
Y N N/A Is there evidence of negative interference? If yes, professional judgement will be used to qualify the data.

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Diluted Sample ID	Matrix	Analyte	%D (Limits)	Associated Samples	Qualifications
	6	S	Li	14	All Soil	J/UJ/A (A)

Comments:

LDC #: 30289O4

VALIDATION FINDINGS WORKSHEET
Initial and Continuing Calibration Calculation Verification

Reviewer: 9R
2nd Reviewer: [illegible]

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 = Found x 100 / True

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 %R	Reported %R	Acceptable (Y/N)
ICV	ICP (Initial calibration)	Cu	628.56	600	104.8	104.8	Y
ICV	ICP/MS (Initial calibration)	Se	52.06	50	104.1	104.1	Y
ICV	CVAA (Initial calibration)	Hg	2.46	2.5	98.4	98.4	Y
CCV	ICP (Continuing calibration)	V	504.94	500	101.0	101.0	Y
CCV	ICP/MS (Continuing calibration)	Tl	26.19	25	104.8	104.8	Y
CCV	CVAA (Continuing calibration)	Hg	1.06	1.0	106.0	106.0	Y
	GFAA (Initial calibration)						
	GFAA (Continuing calibation)						

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 #: 30289C4

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Reviewer: 9R
2nd Reviewer: [illegible]

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:

$\%R = \frac{Found}{True} \times 100$ 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 %R / RPD / %D	Reported %R / RPD / %D	Acceptable (Y/N)
ICSAB	ICP interference check	Cu	547.9	500	109.6	109.6	Y
LCS	Laboratory control sample	Fe	101749	100008	102	102	↓
17	Matrix spike	Ag	(SSR-SR) 9.9627	9.8039	102	102	↓
19	Duplicate	Mn	382.333	319.2794	18	18	↓
6	ICP serial dilution	P	4140.59	4017.3	3	3	↓

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.

LDC #: 30289D4

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 3
Reviewer: OL
2nd reviewer:

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 Be were recalculated and verified using the following equation:

Concentration = $\frac{(RD)(FV)(Dil)}{(In.\ Vol.)}$

RD = Raw data concentration
FV = Final volume (ml)
In. Vol. = Initial volume (ml) or weight (G)
Dil = Dilution factor

Recalculation:

$$\frac{100mL(0.00607mg/L)}{0.985(1.04g)} = 0.593mg/kg$$

#	Sample ID	Analyte	Reported Concentration (mg/Kg)	Calculated Concentration (mg/Kg)	Acceptable (Y/N)
	3	Aluminum	16900	16900	Y
		Arsenic	4.6	4.6	
		Barium	86.5	86.5	
		Beryllium	0.59	0.59	
		Cadmium	0.24	0.24	
		Calcium	2690	2690	
		Chromium	19.5	19.5	
		Cobalt	5.3	5.3	
		Copper	14.6	14.6	
		Iron	22400	22400	
		Lead	11.1	11.1	
		Lithium	22.8	22.8	
		Magnesium	4590	4590	
		Manganese	323	323	
		Mercury	0.021	0.021	
		Molybdenum	0.34	0.34	
		Nickel	11.1	11.1	
		Phosphorus	493	493	
		Potassium	3090	3090	
		Selenium	0.20	0.20	
		Silver	0.043	0.043	

LDC #: 30289D4

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 2 of 3
Reviewer: CR
2nd reviewer: [signature]

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 Li were recalculated and verified using the following equation:

Concentration = (RD)(FV)(Dil) / (In. Vol.)

RD = Raw data concentration
FV = Final volume (ml)
In. Vol. = Initial volume (ml) or weight (G)
Dil = Dilution factor

Recalculation:

$$\frac{100\text{mL}\ (0.21995\text{mg/L})}{0.947\text{(g)}} = 23.23\text{mg/kg}$$

#	Sample ID	Analyte	Reported Concentration (mg/Kg)	Calculated Concentration (mg/Kg)	Acceptable (Y/N)
	3	Sodium	77.2	77.2	Y
		Strontium	18.4	18.4	
		Thallium	0.25	0.25	
		Tin	3.0	3.0	
		Titanium	1230	1230	
		Vanadium	37.8	37.8	
		Zinc	57.9	57.9	
	4	Aluminum	29400	29400	
		Arsenic	5.8	5.8	
		Barium	167	167	
		Beryllium	0.84	0.84	
		Calcium	9780	9780	
		Chromium	33.2	33.2	
		Cobalt	9.1	9.1	
		Copper	24.1	24.1	
		Iron	31900	31900	
		Lead	10.5	10.5	
		Lithium	23.2	23.2	
		Magnesium	6730	6730	
		Manganese	419	419	
		Mercury	0.030	0.030	

LDC #: 30289D4

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: QL
2nd reviewer: [illegible]

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 = $\frac{(RD)(FV)(Dil)}{(In.\ Vol.)}$

RD = Raw data concentration
FV = Final volume (ml)
In. Vol. = Initial volume (ml) or weight (G)
Dil = Dilution factor

Recalculation:

See previous page

#	Sample ID	Analyte	Reported Concentration (mg/Kg)	Calculated Concentration (mg/Kg)	Acceptable (Y/N)
	4	Nickel	18.1	18.1	Y
		Phosphorus	1350	1350	
		Potassium	5440	5440	
		Selenium	0.26	0.26	
		Silver	0.047	0.047	
		Sodium	196	196	
		Strontium	41.3	41.3	
		Thallium	0.33	0.33	
		Tin	3.3	3.3	
		Titanium	1570	1570	
		Vanadium	63.2	63.2	
		Zinc	88.4	88.4	
		Zirconium	3.4	3.4	

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Santa Susana Field Laboratory

Collection Date: July 17, 2013

LDC Report Date: September 23, 2013

Matrix: Soil/Water

Parameters: Herbicides

Validation Level: Level IV

Laboratory: Eurofins Lancaster Laboratories

Sample Delivery Group (SDG): PH069

Sample Identification

EB1-071713
EB2-071713
SL-514-SA8-SB-0.0-0.5
SL-514-SA8-SB-4.0-5.0
SL-514-SA8-SB-7.5-8.5
SL-514-SA8-SB-0.0-0.5MS
SL-514-SA8-SB-0.0-0.5MSD

Introduction

This data review covers 5 soil samples and 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8151A for Herbicides.

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 for the primary (quantitation) column and confirmation column as required by this method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0%.

Retention time windows were evaluated and considered technically acceptable.

III. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all compounds with the following exceptions:

Date	Standard	Column	Compound	%D	Associated Samples	Flag	A or P
7/24/13	CCV-056	ZBXLB	Dalapon Dinoseb	40 31	All water samples in SDG PH069	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A
7/24/13	CCV-056	ZB35	Dalapon Dinoseb	40 60	All water samples in SDG PH069	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A
7/26/13	CCV-037	ZBXLB	Dalapon 2,4-D 2,4,5-T 2,4-DB	28 28 48 56	All soil samples in SDG PH069	J (all detects) UJ (all non-detects)	A
7/26/13	CCV-037	ZB35	MCPP MCPA	61 29	All soil samples in SDG PH069	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A

The percent differences (%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.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No herbicide contaminants were found in the method blanks.

Samples EB1-071713 and EB2-071713 were identified as equipment blanks. No herbicide contaminants were found.

Sample FB-041113 (from SDG PH029) was identified as a field blank. No herbicide 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 Duplicate

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-514-SA8-SB-0.0-0.5MS/MSD (SL-514-SA8-SB-0.0-0.5)	Dalapon	-	-	65 (≤50)	J (all detects)	A

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 with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
LCS/D 19203 (All water samples in SDG PH069)	Dinoseb	-	184 (16-163)	-	J (all detects)	P

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 PH069	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

No field duplicates were identified in this SDG.

Santa Susana Field Laboratory
Herbicides - Data Qualification Summary - SDG PH069

SDG	Sample	Compound	Flag	A or P	Reason (Code)
PH069	EB1-071713 EB2-071713	Dalapon Dinoseb	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Continuing calibration (%D) (C)
PH069	SL-514-SA8-SB-0.0-0.5 SL-514-SA8-SB-4.0-5.0 SL-514-SA8-SB-7.5-8.5	Dalapon 2,4-D 2,4,5-T 2,4-DB MCPP MCPA	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D) (C)
PH069	SL-514-SA8-SB-0.0-0.5	Dalapon	J (all detects)	A	Matrix spike/Matrix spike duplicate (RPD) (Q)
PH069	EB1-071713 EB2-071713	Dinoseb	J (all detects)	P	Laboratory control samples (%R) (L)
PH069	EB1-071713 EB2-071713 SL-514-SA8-SB-0.0-0.5 SL-514-SA8-SB-4.0-5.0 SL-514-SA8-SB-7.5-8.5	All compounds reported below the RL.	J (all detects)	A	Compound quantitation (Z)

Santa Susana Field Laboratory
Herbicides - Laboratory Blank Data Qualification Summary - SDG PH069

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Herbicides - Field Blank Data Qualification Summary - SDG PH069

No Sample Data Qualified in this SDG

LDC #: 30289D5 **VALIDATION COMPLETENESS WORKSHEET** Date: 9/2/13
SDG #: PH069 Level IV Page: 1 of 1
Laboratory: Eurofins Lancaster Laboratories Reviewer: D
2nd Reviewer: A

METHOD: GC Herbicides (EPA SW 846 Method 8151A)

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: 7/17/13
II	Initial calibration	A	% RSD ≤ 20
III.	Calibration verification/ICV	SW	ICV/CCV ≤ 20
IV.	Blanks	A	
V	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	SW	
VII.	Laboratory control samples	SW	
VIII.	Target compound identification	A	
IX.	Compound quantitation/RL/LOQ/LODs	A	
X.	System Performance	A	
XI.	Overall assessment of data	A	Acceptable IS
XII.	Field duplicates	N	
XIII.	Field blanks	ND	EB = 1, 2 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 + water

1 2	EB1-071713 W	11 1	PBLK25205	21		31	
2 2	EB2-071713 W	12 2	PBLK19203	22		32	
3 1	SL-514-SA8-SB-0.0-0.5	13		23		33	
4 1	SL-514-SA8-SB-4.0-5.0	14		24		34	
5 1	SL-514-SA8-SB-7.5-8.5	15		25		35	
6	#3 MS	16		26		36	
7	#3 MSD	17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 30289D5

VALIDATION FINDINGS CHECKLIST

Reviewer: FT
2nd Reviewer: [illegible]

Method: ✓ GC _____ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation?		✓		
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?			✓	
Were the RT windows properly established?	✓			
IV. Continuing calibration				
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20%.0 or percent recoveries 80-120%?	✓			
Were all the retention times within the acceptance windows?	✓			
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 the QC limits?	✓			
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?			✓	
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?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?		✓		
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	

VALIDATION FINDINGS CHECKLIST

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.		✓		

VALIDATION FINDINGS WORKSHEET

METHOD: ____GC ____HPLC

8310	8330	8151	8141	8141 (Con't)	8021B
A. Acenaphthene	A. HMX	A. 2,4-D	A. Dichlorvos	V. Fensulfothion	V. Benzene
B. Acenaphthylene	B. RDX	B. 2,4-DB	B. Mevinphos	W. Bolstar	CC. Toluene
C. Anthracene	C. 1,3,5-Trinitrobenzene	C. 2,4,5-T	C. Demeton-O	X. EPN	EE. Ethyl Benzene
D. Benzo(a)anthracene	D. 1,3-Dinitrobenzene	D. 2,4,5-TP	D. Demeton-S	Y. Azinphos-methyl	SSS. O-Xylene
E. Benzo(a)pyrene	E. Tetryl	E. Dinoseb	E. Ethoprop	Z. Coumaphos	RRR. MP-Xylene
F. Benzo(b)fluoranthene	F. Nitrobenzene	F. Dichlorprop	F. Naled	AA. Parathion	GG. Total Xylene
G. Benzo(g,h,i)perylene	G. 2.4.6-Trinitrotoluene	G. Dicamba	G. Sulfotep	BB. Trichloronate	
H. Benzo(k)fluoranthene	H. 4-Amino-2,6-dinitrotoluene	H. Dalapon	H. Phorate	CC. Trichlorinate	
I. Chrysene	I. 2-Amino-4,6-dinitrotoluene	I. MCPP	I. Dimethoate	DD. Trifluralin	
J. Dibenz(a,h)anthracene	J. 2,4-Dinitrotolune	J. MCPA	J. Diazinon	EE. Def	
K. Fluoranthene	K. 2,6-Dinitrotoluene	K. Pentachlorophenol	K. Disulfoton	FF. Prowl	
L. Fluorene	L. 2-Nitrotoluene	L.. 2,4,5-TP (silvex)	L. Parathion-methyl	GG. Ethion	
M. Indeno(1,2,3-cd)pyrene	M. 3-Nitrotoluene	M. Silvex	M. Ronnel		
N. Naphthalene	N. 4-Nitrotoluene		N. Malathion		
O. Phenanthrene	O.		O. Chlorpyrifos		
P. Pyrene	P.		P. Fenthion		
Q.	Q		Q. Parathion-ethyl		
R.			R. Trichlornate		
S.			S. Merphos		
			T. Stirofos		
			U. Tokuthion		

Notes: _____

LDC #: 30289D5

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: FT

METHOD: ✓ GC __ HPLC

2nd Reviewer:

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
What type of continuing calibration calculation was performed? ___%D or ___RPD

Y N N/A Were continuing calibration standards analyzed at the required frequencies?
Y N N/A Did the continuing calibration standards meet the %D / RPD validation criteria of ≤20.0%?
Level IV Only
Y N N/A Were the retention times for all calibrated compounds within their respective acceptance windows?

#	Date	Standard ID	Detector/ Column	Compound	%D / RPD (Limit ≤ 20.0)	RT (limit)	Associated Samples	Qualifications
	7/24/13	CCV-056	ZB XLB	H	40	( )	All water	J/UJ/A (CC)
	10:00			E	31	( )	↓	↓
			ZB 35	H	40	( )		↓ (CC)
				E	60	( )	↓	↓
						( )		
						( )		
	7/26/13	CCV-037	ZB XLB	H	28	( )	All soil	J/UJ/A (C)
	1:37			A	28	( )	↓	↓
				C	48	( )		
				B	56	( )		
			ZB 35	I	61	( )		
				J	29	( )	↓	↓
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		

LDC #: 30289D5

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Page: 1 of 1
Reviewer: FT
2nd Reviewer:

METHOD: ____ GC ____ HPLC

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

Y N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD)analyzed for each matrix in this SDG?
Y N N/A Were an MS/MSD) analyzed for every 20 samples for each matrix or whenever a sample extraction was performed?
Y N N/A Were the MS/MSD percent recoveries (%R) and relative percent differences (RPD) within QC limits?

#	Date	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		6+7	H	( )	( )	65 (50)	3	J/A det (9)
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )			
				( )	( )	( )		
				( )	( )	( )		
				( )	( )			
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )			
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )			
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		

LDC #: 36289D5

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Page: 1 of 1
Reviewer: FT
2nd Reviewer:

METHOD: ✓ **GC** __ **HPLC**

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

Y N N/A Were a laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) analyzed for each matrix in this SDG?

Y N N/A Were the LCS percent recoveries (%R) and relative percent differences (RPD) within the QC limits?

Level IV/D Only

Y N N/A Was an LCS analyzed every 20 samples for each matrix or whenever a sample extraction was performed?

#	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	lcs/d 19203	E	( )	184 (16-163	( )	All water	J/Pdet (L)
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
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			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		

LDC #: 30289D5

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: F7
2nd Reviewer: [illegible]

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 CF (802 std)	Recalculated CF (802 std)	Reported Ave CF (initial)	Recalculated Ave CF (intial)	Reported %RSD	Recalculated %RSD
1	ICAL	7/23/13	Dalapon (ZB3S)	5.01×10^{-4}	5.01×10^{-4}	4.89×10^{-4}	4.89×10^{-4}	7	7
			Dinoseb	3.59×10^{-4}	3.59×10^{-4}	3.68×10^{-4}	3.68×10^{-4}	6	6
			(ZBXLB)	7.20×10^{-4}	7.20×10^{-4}	6.82×10^{-4}	6.82×10^{-4}	8	8
			↓	6.62×10^{-4}	6.62×10^{-4}	6.27×10^{-4}	6.27×10^{-4}	6	6
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 #: 30289D5

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Page: 1 of 1
Reviewer: FJ
2nd Reviewer:

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 CF/ Conc. CCV	Recalculated CF/ Conc. CCV	Reported %D	Recalculated %D
1	ccv 10:00	7/24/13	Dalapon ZB XLB	401.00	559.77	559.77	40	40
			Dinoseb ↓	100.70	132.26	132.26	31	31
			ZB 35	401.00	563.07	563.07	40	40
2			↓ ↓	100.70	160.85	160.85	60	60
3	ccv 1:37	7/26/13			287.21	287.21	28	28
					106.98	106.98	6	6
					334.68	334.68	17	17
4					108.56	108.56	8	8

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.

LDC #: 3028905

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: EJ
2nd reviewer:

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: #3

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
2,4-DCAA	ZB35	66.52	51.226299	77	77	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	

LDC #: 302895

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Page: 1 of 1
Reviewer: EJ
2nd Reviewer:

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 SA = Spike added SC = Sample concentration

RPD =(({SSCMS - SSCMSD} * 2) / (SSCMS + SSCMSD))*100 MS = Matrix spike MSD = Matrix spike duplicate

MS/MSD samples: 6 + 7

Compound	Spike Added (ug/kg)		Sample Conc. (ug/kg)	Spike Sample Concentration (ug/kg)		Matrix spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	---	MS	MSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)											
Diesel (8015)											
Benzene (8021B)											
Methane (RSK-175)											
2,4-D (8151)	82.3	82.3	ND	80.92	76.88	98	98	93	93	5	5
Dinoseb (8151)	139	139	ND	27.77	28.98	20	20	21	21	4	4
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.

LDC #: 30 28905

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Page: 1 of 1
Reviewer: FJ
2nd Reviewer:

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; SA = Spike added; SC = Sample concentration

RPD =(({SSCLCS - SSCLCSD} * 2) / (SSCLCS + SSCLCSD))*100

LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample duplicate

LCS/LCSD samples: LCS 19203
LCSD

Compound	Spike Added (ug/L)		Sample Conc. (ug/L)	Spike Sample Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	---	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)											
Diesel (8015)											
Benzene (8021B)											
Methane (RSK-175)											
2,4-D (8151)	2.51	2.51	ND	2.86	2.93	114	114	117	117	2	2
Dinoseb (8151)	4.25	4.25	ND	6.45	7.8	152	152	184	184	19	19
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.

LDC #: 30289P5

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: FT
2nd Reviewer:

METHOD: ✓ GC __ HPLC

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration= $\frac{(A)(Fv)(Df)}{(RF)(Vs \text{ or } Ws)(\%S/100)}$

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

Example:

Sample ID. LCS19203 Compound Name Dinoseb

Concentration = $\frac{(3646164)(1)(10)}{(153388228)(3.68 \times 10^{-4})(1000)}$

$= 6.45597$ ug/L

#	Sample ID	Compound	Reported Concentrations ( )	Recalculated Results Concentrations ( )	Qualifications

Comments:

SAMPCALew.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Santa Susana Field Laboratory

Collection Date: July 17, 2013

LDC Report Date: September 23, 2013

Matrix: Soil/Water

Parameters: Hexavalent Chromium

Validation Level: Level IV

Laboratory: Eurofins Lancaster Laboratories

Sample Delivery Group (SDG): PH069

Sample Identification

EB1-071713
EB2-071713
SL-513-SA8-SB-0.0-0.5
SL-513-SA8-SB-4.0-5.0
SL-513-SA8-SB-8.0-9.0

Introduction

This data review covers 3 soil samples and 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 7199 for Hexavalent Chromium.

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 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

All criteria for the initial calibration were met.

III. Calibration Verification

Continuing calibration frequency and analysis criteria were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No hexavalent chromium was found in the initial, continuing and preparation blanks.

Samples EB1-071713 and EB2-071713 were identified as equipment blanks. No hexavalent chromium was found.

Sample FB-041113 (from SDG PH029) was identified as a field blank. No hexavalent chromium was found.

V. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VI. Duplicates

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

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. Sample Result Verification

All sample result verifications were acceptable.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

Santa Susana Field Laboratory
Hexavalent Chromium - Data Qualification Summary - SDG PH069

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Hexavalent Chromium – Laboratory Blank Data Qualification Summary - SDG PH069

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Hexavalent Chromium - Field Blank Data Qualification Summary - SDG PH069

No Sample Data Qualified in this SDG

LDC #: 30289D6

SDG #: PH069

Laboratory: Eurofins Lancaster Laboratories

VALIDATION COMPLETENESS WORKSHEET

Level IV

Date: 9/4/13

Page: 1 of 1

Reviewer:

2nd Reviewer:

METHOD: (Analyte) Hexavalent Chromium (EPA SW846 Method 7199)

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: 7/17/13
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	A	
IV	Matrix Spike/Matrix Spike Duplicates	N	CS
V	Duplicates	N	↓
VI.	Laboratory control samples	A	LCS/D
VII.	Sample result verification	A	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	N	
X	Field blanks	ND	EB=1,2 FB= FB-041113 (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/water

1	EB1-071713 W	11		21		31		
2	EB2-071713 W	12		22		32		
3	SL-513-SA8-SB-0.0-0.5 S	13		23		33		
4	SL-513-SA8-SB-4.0-5.0 ↓	14		24		34		
5	SL-513-SA8-SB-8.0-9.0 ↓	15		25		35		
6		16		26		36		
7		17		27		37		
8		18		28		38		
9		19		29		39		
10		20		30		40		

Notes:

LDC #: 30285D6

VALIDATION FINDINGS CHECKLIST

Reviewer: CR
2nd Reviewer: [illegible]

Method: Inorganics (EPA Method Secoer)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Calibration				
Were all instruments calibrated daily, each set-up time?	✓			
Were the proper number of standards used?	✓			
Were all initial calibration correlation coefficients ≥ 0.995?	✓			
Were all initial and continuing calibration verification %Rs within the 90-110% QC limits?	✓			
Were titrant checks performed as required? (Level IV only)			✓	
Were balance checks performed as required? (Level IV only)			✓	
III. 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.		✓		
IV. Matrix spike/Matrix spike duplicates and 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) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of ≤ CRDL(≤ 2X CRDL for soil) was used for samples that were ≤ 5X the CRDL, including when only one of the duplicate sample values were ≤ 5X the CRDL.			✓	
V. Laboratory control samples				
Was an LCS anaylzed 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% (85-115% for Method 300.0) QC limits?	✓			
VI. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓	✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	

Validation Area	Yes	No	NA	Findings/Comments
VII. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
Were detection limits < RL?	✓			
VIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
IX. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target analytes were detected in the field duplicates.				✓
X. Field blanks				
Field blanks were identified in this SDG.	✓			
Target analytes were detected in the field blanks.		✓		

LDC #: 30289D6

Validation Findings Worksheet
Initial and Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: CL
2nd Reviewer: [illegible]

Method: Inorganics, Method See Cover

The correlation coefficient (r) for the calibration of Cr6+ was recalculated. Calibration date: 7/23/13

An initial or continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

$$\%R = \frac{\text{Found} \times 100}{\text{True}}$$

Where, Found = concentration of each analyte measured in the analysis of the ICV or CCV solution
True = concentration of each analyte in the ICV or CCV source

Type of analysis	Analyte	Standard	Conc. (mg/L)	Area	Recalculated r or r^2	Reported r or r^2	Acceptable (Y/N)
Initial calibration	Cr6+	s1	10	0.115518	*0.9997*	0.9997	Y
		s2	50	0.58082			
		s3	100	1.108824			
		s4	200	2.158982			
		s5	300	3.299498			
Calibration verification		CCV	200	201.6928	101	101	
Calibration verification		↓	↓	210583	105	105	↓
Calibration verification							

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 #: 30289B

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Page: 1 of 1
Reviewer: QR
2nd Reviewer: [illegible]

METHOD: Inorganics, Method Sercover

Percent recoveries (%R) for a laboratory control sample and a matrix spike sample were recalculated using the following formula:

%R = Found x 100 / True 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 = |S-D| x 100 / (S+D)/2 Where, S = Original sample concentration
D = Duplicate sample concentration

Sample ID	Type of Analysis	Element	Found / S (units)	True / D (units)	Recalculated %R / RPD	Reported %R / RPD	Acceptable (Y/N)
LCS	Laboratory control sample	Cr6+	5.07	5	101	101	Y
N	Matrix spike sample		(SSR-SR)				
N	Duplicate sample						

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.

LDC #: 30289D6

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: AR
2nd reviewer: [signature]

METHOD: Inorganics, Method see cover

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?
Y N N/A Are all detection limits below the CRQL?

Compound (analyte) results for Cr6+ reported with a positive detect were recalculated and verified using the following equation:

Concentration = Area(91.84) − 1.415

Recalculation: $\frac{0.1422(91.84) - 1.415}{0.916(26)} = 0.488$ mg/kg

#	Sample ID	Analyte	Reported Concentration (mg/kg)	Calculated Concentration (mg/kg)	Acceptable (Y/N)
	3	Cr6+	0.49	0.49	Y

Note:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Santa Susana Field Laboratory

Collection Date: July 17, 2013

LDC Report Date: September 23, 2013

Matrix: Soil/Water

Parameters: Total Petroleum Hydrocarbons as Gasoline

Validation Level: Level IV

Laboratory: Eurofins Lancaster Laboratories

Sample Delivery Group (SDG): PH069

Sample Identification

EB1-071713
EB2-071713
SL-514-SA8-SB-4.0-5.0
SL-514-SA8-SB-7.5-8.5
SL-515-SA8-SB-4.0-5.0
SL-515-SA8-SB-9.0-10.0
SL-515-SA8-SB-14.0-15.0
TB-071713
SL-513-SA8-SB-4.0-5.0
SL-513-SA8-SB-8.0-9.0

Introduction

This data review covers 7 soil samples and 3 water 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 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-071713 was identified as a trip blank. No total petroleum hydrocarbons as gasoline contaminants were found.

Samples EB1-071713 and EB2-071713 were identified as equipment blanks. 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.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

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 PH069	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

No field duplicates were identified in this SDG.

Santa Susana Field Laboratory
Total Petroleum Hydrocarbons as Gasoline - Data Qualification Summary - SDG PH069

SDG	Sample	Compound	Flag	A or P	Reason (Code)
PH069	EB1-071713 EB2-071713 SL-514-SA8-SB-4.0-5.0 SL-514-SA8-SB-7.5-8.5 SL-515-SA8-SB-4.0-5.0 SL-515-SA8-SB-9.0-10.0 SL-515-SA8-SB-14.0-15.0 TB-071713 SL-513-SA8-SB-4.0-5.0 SL-513-SA8-SB-8.0-9.0	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 PH069

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Total Petroleum Hydrocarbons as Gasoline - Field Blank Data Qualification Summary - SDG PH069

No Sample Data Qualified in this SDG

LDC #: 30289D7 **VALIDATION COMPLETENESS WORKSHEET** Date: 8/30/13

SDG #: PH069 Level IV Page: 1 of 1

Laboratory: Eurofins Lancaster Laboratories Reviewer: FT

2nd Reviewer: A

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: 7/17/13
II	Initial calibration	A	%RSD ≤ 20
III.	Calibration verification/ICV	A	ICV/CCV ≤ 20
IV.	Blanks	A	
V	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	N	client specified
VII.	Laboratory control samples	A	LCS/D
VIII.	Target compound identification	A	
IX.	Compound quantitation/RL/LOQ/LODs	A	
X.	System Performance	A	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	ND	EB = 1,2 TB = 8 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, water

1 2	EB1-071713 W	11 1	BLKLC	21		31	
2 2	EB2-071713 W	12 2	BLKLJ	22		32	
3 1	SL-514-SA8-SB-4.0-5.0	13		23		33	
4 1	SL-514-SA8-SB-7.5-8.5	14		24		34	
5 1	SL-515-SA8-SB-4.0-5.0	15		25		35	
6 1	SL-515-SA8-SB-9.0-10.0	16		26		36	
7 1	SL-515-SA8-SB-14.0-15.0	17		27		37	
8 2	TB-071713 W	18		28		38	
9 1	SL-513-SA8-SB-4.0-5.0	19		29		39	
10 1	SL-513-SA8-SB-8.0-9.0	20		30		40	

Notes:

LDC #: 30289D7

VALIDATION FINDINGS CHECKLIST

Reviewer: FT
2nd Reviewer: A

Method: ✓ GC _____ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation?		✓		
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?			✓	
Were the RT windows properly established?	✓			
IV. Continuing calibration				
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20%.0 or percent recoveries 80-120%?	✓			
Were all the retention times within the acceptance windows?	✓			
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 the QC limits?	✓			
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?			✓	
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?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	

LDC #: 3028907

VALIDATION FINDINGS CHECKLIST

Reviewer: FT
2nd Reviewer: [signature]

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 #: 302890D7

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: F7
2nd Reviewer: [illegible]

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 CF (550 std)	Recalculated CF (550 std)	Reported Ave CF (initial)	Recalculated Ave CF (intial)	Reported %RSD	Recalculated %RSD
1	ICAL	1/12/12	GRO	6717	6717	6269	6269	9.2	9.2
				(220)	(220)				
2	ICAL	5/23/13	GRO	60597	60597	61516	61516	3	3
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 #: 3028207

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Page: 1 of 1
Reviewer: FJ
2nd Reviewer: [illegible]

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 CF/ Conc. CCV	Recalculated CF/ Conc. CCV	Reported %D	Recalculated %D
1	CCV 19:24	7/23/13	GRO	550.00	535.71	535.71	3	3
	CCV 17:38	7/22/13	↓	220.0	215.47	215.47	2	2
2								
	CCV 3:08	7/23/13	↓	220.0	206.39	206.39	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.

LDC #: 30289D7

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: FT
2nd reviewer:

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

spk Added 750 (0.9728)

Sample ID: #3

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
TFT	NS	729.60	451.5625	62	62	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	

LDC #: 30289D7

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Page: 1 of 1
Reviewer: FD
2nd Reviewer: [illegible]

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: LCS49 / LCSD07

Compound	Spike Added (ug/L)		Sample Conc. (ug/L)	Spike Sample Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	---	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)	1100	1100	ND	1141.09	1085.47	104	104	99	99	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 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 #: 30289P7

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: F7
2nd Reviewer: <

METHOD: (GC) __ HPLC

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration= (A)(Fv)(Df) / (RF)(Vs or Ws)(%S/100)

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

Example:

Sample ID. # LCS44 Compound Name GRO

Concentration = $\frac{(22351810 - 3001740)(25)}{(61516)(1000)}$

= 7.9 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: July 17, 2013

LDC Report Date: September 23, 2013

Matrix: Soil/Water

Parameters: Total Petroleum Hydrocarbons as Extractables

Validation Level: Level IV

Laboratory: Eurofins Lancaster Laboratories

Sample Delivery Group (SDG): PH069

Sample Identification

EB1-071713
EB2-071713
SL-512-SA8-SB-0.0-0.5
SL-514-SA8-SB-0.0-0.5
SL-514-SA8-SB-4.0-5.0
SL-514-SA8-SB-7.5-8.5
SL-515-SA8-SB-0.0-0.5
SL-515-SA8-SB-4.0-5.0
SL-515-SA8-SB-9.0-10.0
SL-515-SA8-SB-14.0-15.0
SL-513-SA8-SB-0.0-0.5
SL-513-SA8-SB-4.0-5.0
SL-513-SA8-SB-8.0-9.0
SL-514-SA8-SB-7.5-8.5MS
SL-514-SA8-SB-7.5-8.5MSD

Introduction

This data review covers 13 soil samples and 2 water 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.

Samples EB1-071713 and EB2-071713 were identified as equipment blanks. 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-514-SA8-SB-7.5-8.5MS/MSD (SL-514-SA8-SB-7.5-8.5)	Extractable fuel hydrocarbons (C15-C20) Extractable fuel hydrocarbons (C21-C30) Extractable fuel hydrocarbons (C30-C40)	162 (49-123) 172 (49-123) 131 (49-123)	138 (49-123) - -	- 28 (≤20) -	J (all detects) J (all detects) J (all detects)	A

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 PH069	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

No field duplicates were identified in this SDG.

Santa Susana Field Laboratory
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG PH069

SDG	Sample	Compound	Flag	A or P	Reason (Code)
PH069	SL-514-SA8-SB-7.5-8.5	Extractable fuel hydrocarbons (C15-C20) Extractable fuel hydrocarbons (C30-C40)	J (all detects) J (all detects)	A	Matrix spike/Matrix spike duplicate (%R) (Q)
PH069	SL-514-SA8-SB-7.5-8.5	Extractable fuel hydrocarbons (C21-C30)	J (all detects)	A	Matrix spike/Matrix spike duplicate (%R)(RPD) (Q)
PH069	EB1-071713 EB2-071713 SL-512-SA8-SB-0.0-0.5 SL-514-SA8-SB-0.0-0.5 SL-514-SA8-SB-4.0-5.0 SL-514-SA8-SB-7.5-8.5 SL-515-SA8-SB-0.0-0.5 SL-515-SA8-SB-4.0-5.0 SL-515-SA8-SB-9.0-10.0 SL-515-SA8-SB-14.0-15.0 SL-513-SA8-SB-0.0-0.5 SL-513-SA8-SB-4.0-5.0 SL-513-SA8-SB-8.0-9.0	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 PH069

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG PH069

No Sample Data Qualified in this SDG

LDC #: 30289D8 **VALIDATION COMPLETENESS WORKSHEET** Date: 9/2/13
SDG #: PH069 Level IV Page: 1 of 1
Laboratory: Eurofins Lancaster Laboratories Reviewer: [illegible]
2nd Reviewer: [illegible]

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	A	Sampling dates: 7/17/13
II	Initial calibration	A	%D RSD ≤20
III.	Calibration verification/ICV	A	ICV/CCV ≤20
IV.	Blanks	A	
V	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	SW	
VII.	Laboratory control samples	A	LCS/LD
VIII.	Target compound identification	A	
IX.	Compound quantitation/RL/LOQ/LODs	A	
X.	System Performance	A	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	ND	EB = 1 EB = 2

* FB= FB-041113

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
SDG PH029

Validated Samples:
soil & water

1 2	EB1-071713 W	11	SL-513-SA8-SB-0.0-0.5	21	PBLK15204	31	
2 2	EB2-071713 W	12	SL-513-SA8-SB-4.0-5.0	22	PBLK10201	32	
3	SL-512-SA8-SB-0.0-0.5	13	SL-513-SA8-SB-8.0-9.0	23		33	
4	SL-514-SA8-SB-0.0-0.5	14	#6 MS	24		34	
5	SL-514-SA8-SB-4.0-5.0	15	#6 MSD	25		35	
6	SL-514-SA8-SB-7.5-8.5	16		26		36	
7	SL-515-SA8-SB-0.0-0.5	17		27		37	
8	SL-515-SA8-SB-4.0-5.0	18		28		38	
9	SL-515-SA8-SB-9.0-10.0	19		29		39	
10	SL-515-SA8-SB-14.0-15.0	20		30		40	

Notes:

LDC #: 30289D8

VALIDATION FINDINGS CHECKLIST

Reviewer: FT
2nd Reviewer: A

Method: ✓ GC _____ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation?		✓		
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?			✓	
Were the RT windows properly established?	✓			
IV. Continuing calibration				
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20%.0 or percent recoveries 80-120%?	✓			
Were all the retention times within the acceptance windows?	✓			
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 the QC limits?	✓			
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?			✓	
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?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	

LDC #: 30289V8

VALIDATION FINDINGS CHECKLIST

Reviewer: FT
2nd Reviewer: A

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 #: 30289D8

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Page: 1 of 1
Reviewer: FT
2nd Reviewer:

METHOD: ____ GC ____ HPLC

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

Y N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD)analyzed for each matrix in this SDG?
Y N N/A Were an MS/MSD) analyzed for every 20 samples for each matrix or whenever a sample extraction was performed?
Y N N/A Were the MS/MSD percent recoveries (%R) and relative percent differences (RPD) within QC limits?

#	Date	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		14+15	EFH (C15-C20)	162 (49-123)	138 (49-123)	( )	6	J/Adet (Q)
				( )	( )	( )		
			EFH (C21-C30)	172 (49-123)	( )	28 (20)		
				( )	( )	( )		
			EFH (C30-C40)	131 (49-123)	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )			
				( )	( )	( )		
				( )	( )	( )		
				( )	( )			
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )			
				( )	( )	( )		
				( )	( )	( )		
				( )	( )			
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )			
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		

LDC #: 30289P8

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 CF (288 std)	Recalculated CF (288 std)	Reported Ave CF (initial)	Recalculated Ave CF (intial)	Reported %RSD	Recalculated %RSD
1	ICAL	6/28/13	TPH Aw	23751.09	23751.09	25786.45	25786.45	8.235	8.235
	~~FL3179A~~	(A)							
	TPH J179A								
2	ICAL	6/28/13	↓	23620	23620	24187	24187	2	2
	TPH K179A	(B)							
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 #: 30289D8

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Page: 1 of 1
Reviewer: FD
2nd Reviewer: A

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 CF/ Conc. CCV	Recalculated CF/ Conc. CCV	Reported %D	Recalculated %D
1	ccv 20:34	7/22/13	C_8-C_{40}	239.97	259.14	259.14	8	8
2	ccv 16:18	7/24/13	↓	288.01	283.92	283.92	1	1
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.

LDC #: 30289D8

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: EJ
2nd reviewer:

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: #13

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
chlorobenzene	ZB5	2.0	2.0408	102	102	0
orthoterphenyl	↓	2.0	2.129554	106	106	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	

LDC #: 30289D8

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Page: 1 of 1
Reviewer: EJ
2nd Reviewer: A

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
RPD =(({SSCMS - SSCMSD} * 2) / (SSCMS + SSCMSD))*100 MS = Matrix spike MSD = Matrix spike duplicate

MS/MSD samples: 14 & 15

Compound	Spike Added (mg/kg)		Sample Conc. (mg/kg)	Spike Sample Concentration (mg/kg)		Matrix spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	---	MS	MSD	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)											
TPH (C8-C11)	1.68	1.68	ND	1.71	1.63	102	102	97	97	5	5

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 #: 30289D8

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: FD

2nd Reviewer: [illegible]

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; SA = Spike added; SC = Sample concentration

RPD =(({SSCLCS - SSCLCSD} * 2) / (SSCLCS + SSCLCSD))*100 LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample duplicate

LCS/LCSD samples: LCS15204

Compound	Spike Added (mg/kg)		Sample Conc. (mg/kg)	Spike Sample Concentration (mg/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	---	LCS	LCSD	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 (C8-C11)	1.68	~~1.68~~ NA	ND	1.41	NA	84	84	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 #: 30289P8

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: FT
2nd Reviewer:

METHOD: ✓ **GC** ___ **HPLC**

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration= $\frac{(A)(Fv)(Df)}{(RF)(Vs \text{ or } Ws)(\%S/100)}$

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

Example:

Sample ID. #3 Compound Name $C_{30}-C_{40}$

Concentration = $\frac{(36268247)(1)}{(24187)(0.985)(30)}$

51 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: July 17, 2013

LDC Report Date: September 23, 2013

Matrix: Soil/Water

Parameters: Dioxins/Dibenzofurans

Validation Level: Level IV

Laboratory: Eurofins Lancaster Laboratories

Sample Delivery Group (SDG): PH069

Sample Identification

EB1-071713
EB2-071713
SL-512-SA8-SB-0.0-0.5
SL-514-SA8-SB-0.0-0.5
SL-514-SA8-SB-4.0-5.0
SL-515-SA8-SB-0.0-0.5
SL-515-SA8-SB-4.0-5.0
SL-515-SA8-SB-9.0-10.0
SL-515-SA8-SB-14.0-15.0
SL-513-SA8-SB-0.0-0.5
SL-513-SA8-SB-4.0-5.0
SL-513-SA8-SB-8.0-9.0

Introduction

This data review covers 10 soil samples and 2 water 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
BLK200001	7/19/13	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 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	0.368 pg/L 0.364 pg/L 0.327 pg/L 0.373 pg/L 1.18 pg/L 0.465 pg/L 0.511 pg/L 0.527 pg/L 0.476 pg/L 0.238 pg/L 0.586 pg/L 0.413 pg/L 0.325 pg/L 0.838 pg/L	EB1-071713 EB2-071713
BLK206001	7/26/13	1,2,3,4,7,8-HxCDD 1,2,3,7,8,9-HxCDD 1,2,3,4,6,7,8-HpCDD OCDD 1,2,3,7,8-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 OCDF	0.0432 ng/Kg 0.0358 ng/Kg 0.0714 ng/Kg 0.230 ng/Kg 0.0307 ng/Kg 0.0229 ng/Kg 0.0231 ng/Kg 0.0401 ng/Kg 0.0413 ng/Kg 0.0256 ng/Kg 0.159 ng/Kg	SL-512-SA8-SB-0.0-0.5 SL-514-SA8-SB-0.0-0.5 SL-514-SA8-SB-4.0-5.0 SL-515-SA8-SB-0.0-0.5 SL-515-SA8-SB-4.0-5.0 SL-515-SA8-SB-9.0-10.0 SL-515-SA8-SB-14.0-15.0 SL-513-SA8-SB-0.0-0.5 SL-513-SA8-SB-4.0-5.0 SL-513-SA8-SB-8.0-9.0

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
EB1-071713	1,2,3,4,7,8-HxCDD 1,2,3,4,6,7,8-HpCDD OCDD 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	0.161 pg/L 0.413 pg/L 0.814 pg/L 0.406 pg/L 0.132 pg/L 0.222 pg/L 0.191 pg/L 0.224 pg/L 0.186 pg/L 0.238 pg/L 0.191 pg/L 0.512 pg/L	0.161U pg/L 0.413U pg/L 0.814U pg/L 0.406U pg/L 0.132U pg/L 0.222U pg/L 0.191U pg/L 0.224U pg/L 0.186U pg/L 0.238U pg/L 0.191U pg/L 0.512U pg/L
EB2-071713	1,2,3,4,7,8-HxCDD 1,2,3,4,6,7,8-HpCDD OCDD 1,2,3,7,8-PeCDF 2,3,4,7,8-PeCDF 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	0.373 pg/L 0.352 pg/L 0.797 pg/L 0.532 pg/L 0.245 pg/L 0.396 pg/L 0.359 pg/L 0.283 pg/L 0.174 pg/L 0.519 pg/L 0.733 pg/L	0.373U pg/L 0.352U pg/L 0.797U pg/L 0.532U pg/L 0.245U pg/L 0.396U pg/L 0.359U pg/L 0.283U pg/L 0.174U pg/L 0.519U pg/L 0.733U pg/L

Sample	Compound	Reported Concentration	Modified Final Concentration
SL-512-SA8-SB-0.0-0.5	1,2,3,4,7,8-HxCDD 2,3,4,6,7,8-HxCDF	0.156 ng/Kg 0.184 ng/Kg	0.156U ng/Kg 0.184U ng/Kg
SL-514-SA8-SB-0.0-0.5	1,2,3,4,7,8-HxCDD 2,3,4,6,7,8-HxCDF	0.164 ng/Kg 0.141 ng/Kg	0.164U ng/Kg 0.141U ng/Kg
SL-514-SA8-SB-4.0-5.0	1,2,3,7,8,9-HxCDD 1,2,3,4,6,7,8-HpCDD OCDD 1,2,3,4,7,8-HxCDF 2,3,4,6,7,8-HxCDF 1,2,3,7,8,9-HxCDF 1,2,3,4,6,7,8-HpCDF OCDF	0.0729 ng/Kg 0.133 ng/Kg 0.864 ng/Kg 0.0270 ng/Kg 0.0234 ng/Kg 0.0427 ng/Kg 0.0499 ng/Kg 0.0864 ng/Kg	0.0729U ng/Kg 0.133U ng/Kg 0.864U ng/Kg 0.0270U ng/Kg 0.0234U ng/Kg 0.0427U ng/Kg 0.0499U ng/Kg 0.0864U ng/Kg
SL-515-SA8-SB-0.0-0.5	1,2,3,4,7,8-HxCDD 1,2,3,4,7,8-HxCDF 2,3,4,6,7,8-HxCDF	0.142 ng/Kg 0.0707 ng/Kg 0.169 ng/Kg	0.142U ng/Kg 0.0707U ng/Kg 0.169 ng/Kg
SL-515-SA8-SB-4.0-5.0	1,2,3,4,7,8-HxCDD 1,2,3,4,6,7,8-HpCDD OCDD 1,2,3,7,8-PeCDF 2,3,4,7,8-PeCDF 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	0.0544 ng/Kg 0.115 ng/Kg 0.0770 ng/Kg 0.658 ng/Kg 0.125 ng/Kg 0.0599 ng/Kg 0.0461 ng/Kg 0.0345 ng/Kg 0.0755 ng/Kg 0.0819 ng/Kg 0.135 ng/Kg	0.0544U ng/Kg 0.115U ng/Kg 0.0770U ng/Kg 0.658U ng/Kg 0.125U ng/Kg 0.0599U ng/Kg 0.0461U ng/Kg 0.0345U ng/Kg 0.0755U ng/Kg 0.0819U ng/Kg 0.135U ng/Kg
SL-515-SA8-SB-9.0-10.0	1,2,3,4,7,8-HxCDD 1,2,3,7,8,9-HxCDD 1,2,3,4,6,7,8-HpCDD OCDD 1,2,3,7,8-PeCDF 2,3,4,6,7,8-HxCDF 1,2,3,7,8,9-HxCDF 1,2,3,4,6,7,8-HpCDF OCDF	0.0603 ng/Kg 0.120 ng/Kg 0.121 ng/Kg 0.562 ng/Kg 0.152 ng/Kg 0.0653 ng/Kg 0.145 ng/Kg 0.0679 ng/Kg 0.129 ng/Kg	0.0603U ng/Kg 0.120U ng/Kg 0.121U ng/Kg 0.562U ng/Kg 0.152U ng/Kg 0.0653U ng/Kg 0.145U ng/Kg 0.0679U ng/Kg 0.129U ng/Kg
SL-515-SA8-SB-14.0-15.0	1,2,3,4,7,8-HxCDD 1,2,3,7,8,9-HxCDD 1,2,3,4,6,7,8-HpCDD OCDD 1,2,3,7,8,9-HxCDF 1,2,3,4,6,7,8-HpCDF OCDF	0.194 ng/Kg 0.121 ng/Kg 0.106 ng/Kg 0.675 ng/Kg 0.134 ng/Kg 0.0865 ng/Kg 0.116 ng/Kg	0.194U ng/Kg 0.121U ng/Kg 0.106U ng/Kg 0.675U ng/Kg 0.134U ng/Kg 0.0865U ng/Kg 0.116U ng/Kg
SL-513-SA8-SB-4.0-5.0	1,2,3,4,7,8-HxCDD 1,2,3,7,8,9-HxCDD 1,2,3,7,8-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	0.0567 ng/Kg 0.0790 ng/Kg 0.151 ng/Kg 0.0433 ng/Kg 0.0453 ng/Kg 0.0507 ng/Kg 0.0828 ng/Kg	0.0567U ng/Kg 0.0790U ng/Kg 0.151U ng/Kg 0.0433U ng/Kg 0.0453U ng/Kg 0.0507U ng/Kg 0.0828U ng/Kg

Sample	Compound	Reported Concentration	Modified Final Concentration
SL-513-SA8-SB-8.0-9.0	1,2,3,7,8,9-HxCDD	0.0460 ng/Kg	0.0460U ng/Kg
	1,2,3,4,6,7,8-HpCDD	0.0671 ng/Kg	0.0671U ng/Kg
	OCDD	0.192 ng/Kg	0.192U ng/Kg
	1,2,3,4,7,8-HxCDF	0.0311 ng/Kg	0.0311U ng/Kg
	1,2,3,6,7,8-HxCDF	0.0177 ng/Kg	0.0177U ng/Kg
	2,3,4,6,7,8-HxCDF	0.0189 ng/Kg	0.0189U ng/Kg
	1,2,3,7,8,9-HxCDF	0.0393 ng/Kg	0.0393U ng/Kg
	1,2,3,4,6,7,8-HpCDF	0.0293 ng/Kg	0.0293U ng/Kg
	OCDF	0.126 ng/Kg	0.126U ng/Kg

Samples EB1-071713 and EB2-071713 were identified as equipment blanks. No polychlorinated dioxin/dibenzofuran contaminants were found with the following exceptions:

Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB1-071713	7/17/13	1,2,3,4,7,8-HxCDD	0.161 pg/L	SL-515-SA8-SB-0.0-0.5
		1,2,3,4,6,7,8-HpCDD	0.413 pg/L	SL-515-SA8-SB-4.0-5.0
		OCDD	0.814 pg/L	SL-515-SA8-SB-9.0-10.0
		1,2,3,7,8-PeCDF	0.406 pg/L	SL-515-SA8-SB-14.0-15.0
		2,3,4,7,8-PeCDF	0.132 pg/L	SL-513-SA8-SB-0.0-0.5
		1,2,3,4,7,8-HxCDF	0.222 pg/L	SL-513-SA8-SB-4.0-5.0
		1,2,3,6,7,8-HxCDF	0.191 pg/L	SL-513-SA8-SB-8.0-9.0
		2,3,4,6,7,8-HxCDF	0.224 pg/L	
		1,2,3,7,8,9-HxCDF	0.186 pg/L	
		1,2,3,4,6,7,8-HpCDF	0.238 pg/L	
		1,2,3,4,7,8,9-HpCDF	0.191 pg/L	
		OCDF	0.512 pg/L	
EB2-071713	7/17/13	1,2,3,7,8-PeCDD	0.542 pg/L	SL-512-SA8-SB-0.0-0.5
		1,2,3,4,7,8-HxCDD	0.373 pg/L	SL-514-SA8-SB-0.0-0.5
		1,2,3,4,6,7,8-HpCDD	0.352 pg/L	SL-514-SA8-SB-4.0-5.0
		OCDD	0.797 pg/L	
		1,2,3,7,8-PeCDF	0.532 pg/L	
		2,3,4,7,8-PeCDF	0.245 pg/L	
		1,2,3,6,7,8-HxCDF	0.396 pg/L	
		2,3,4,6,7,8-HxCDF	0.359 pg/L	
		1,2,3,7,8,9-HxCDF	0.283 pg/L	
		1,2,3,4,6,7,8-HpCDF	0.174 pg/L	
		1,2,3,4,7,8,9-HpCDF	0.519 pg/L	
		OCDF	0.733 pg/L	

Sample FB-041113 (from SDG 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	0.125 pg/L	SL-512-SA8-SB-0.0-0.5
		1,2,3,7,8,9-HxCDD	0.134 pg/L	SL-514-SA8-SB-0.0-0.5
		1,2,3,4,6,7,8-HpCDD	0.402 pg/L	SL-514-SA8-SB-4.0-5.0
		1,2,3,7,8-PeCDF	0.398 pg/L	SL-515-SA8-SB-0.0-0.5
		2,3,4,7,8-PeCDF	0.316 pg/L	SL-515-SA8-SB-4.0-5.0
		1,2,3,4,7,8-HxCDF	0.324 pg/L	SL-515-SA8-SB-9.0-10.0
		1,2,3,6,7,8-HxCDF	0.221 pg/L	SL-515-SA8-SB-14.0-15.0
		1,2,3,7,8,9-HxCDF	0.211 pg/L	SL-513-SA8-SB-0.0-0.5
		2,3,4,6,7,8-HxCDF	0.149 pg/L	SL-513-SA8-SB-4.0-5.0
		1,2,3,4,6,7,8-HpCDF	0.254 pg/L	SL-513-SA8-SB-8.0-9.0
		OCDF	0.840 pg/L	

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

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

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-514-SA8-SB-0.0-0.5 SL-515-SA8-SB-0.0-0.5 SL-515-SA8-SB-9.0-10.0 SL-515-SA8-SB-14.0-15.0 SL-513-SA8-SB-0.0-0.5	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 SDG PH069	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

No field duplicates were identified in this SDG.

Santa Susana Field Laboratory
Dioxins/Dibenzofurans - Data Qualification Summary - SDG PH069

SDG	Sample	Compound	Flag	A or P	Reason (Code)
PH069	SL-514-SA8-SB-0.0-0.5 SL-515-SA8-SB-0.0-0.5 SL-515-SA8-SB-9.0-10.0 SL-515-SA8-SB-14.0-15.0 SL-513-SA8-SB-0.0-0.5	2,3,7,8-TCDF	None	P	Compound quantitation (no confirmation analysis)
PH069	EB1-071713 EB2-071713 SL-512-SA8-SB-0.0-0.5 SL-514-SA8-SB-0.0-0.5 SL-514-SA8-SB-4.0-5.0 SL-515-SA8-SB-0.0-0.5 SL-515-SA8-SB-4.0-5.0 SL-515-SA8-SB-9.0-10.0 SL-515-SA8-SB-14.0-15.0 SL-513-SA8-SB-0.0-0.5 SL-513-SA8-SB-4.0-5.0 SL-513-SA8-SB-8.0-9.0	All compounds reported below the RL.	J (all detects)	A	Compound quantitation (Z)

Santa Susana Field Laboratory
Dioxins/Dibenzofurans - Laboratory Blank Data Qualification Summary - SDG PH069

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
PH069	EB1-071713	1,2,3,4,7,8-HxCDD 1,2,3,4,6,7,8-HpCDD OCDD 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	0.161U pg/L 0.413U pg/L 0.814U pg/L 0.406U pg/L 0.132U pg/L 0.222U pg/L 0.191U pg/L 0.224U pg/L 0.186U pg/L 0.238U pg/L 0.191U pg/L 0.512U pg/L	A	B
PH069	EB2-071713	1,2,3,4,7,8-HxCDD 1,2,3,4,6,7,8-HpCDD OCDD 1,2,3,7,8-PeCDF 2,3,4,7,8-PeCDF 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	0.373U pg/L 0.352U pg/L 0.797U pg/L 0.532U pg/L 0.245U pg/L 0.396U pg/L 0.359U pg/L 0.283U pg/L 0.174U pg/L 0.519U pg/L 0.733U pg/L	A	B
PH069	SL-512-SA8-SB-0.0-0.5	1,2,3,4,7,8-HxCDD 2,3,4,6,7,8-HxCDF	0.156U ng/Kg 0.184U ng/Kg	A	B

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
PH069	SL-514-SA8-SB-0.0-0.5	1,2,3,4,7,8-HxCDD 2,3,4,6,7,8-HxCDF	0.164U ng/Kg 0.141U ng/Kg	A	B
PH069	SL-514-SA8-SB-4.0-5.0	1,2,3,7,8,9-HxCDD 1,2,3,4,6,7,8-HpCDD OCDD 1,2,3,4,7,8-HxCDF 2,3,4,6,7,8-HxCDF 1,2,3,7,8,9-HxCDF 1,2,3,4,6,7,8-HpCDF OCDF	0.0729U ng/Kg 0.133U ng/Kg 0.864U ng/Kg 0.0270U ng/Kg 0.0234U ng/Kg 0.0427U ng/Kg 0.0499U ng/Kg 0.0864U ng/Kg	A	B
PH069	SL-515-SA8-SB-0.0-0.5	1,2,3,4,7,8-HxCDD 1,2,3,4,7,8-HxCDF 2,3,4,6,7,8-HxCDF	0.142U ng/Kg 0.0707U ng/Kg 0.169U ng/Kg	A	B
PH069	SL-515-SA8-SB-4.0-5.0	1,2,3,4,7,8-HxCDD 1,2,3,4,6,7,8-HpCDD OCDD 1,2,3,7,8-PeCDF 2,3,4,7,8-PeCDF 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	0.0544U ng/Kg 0.115U ng/Kg 0.0770U ng/Kg 0.658U ng/Kg 0.125U ng/Kg 0.0599U ng/Kg 0.0461U ng/Kg 0.0345U ng/Kg 0.0755U ng/Kg 0.0819U ng/Kg 0.135U ng/Kg	A	B
PH069	SL-515-SA8-SB-9.0-10.0	1,2,3,4,7,8-HxCDD 1,2,3,7,8,9-HxCDD 1,2,3,4,6,7,8-HpCDD OCDD 1,2,3,7,8-PeCDF 2,3,4,6,7,8-HxCDF 1,2,3,7,8,9-HxCDF 1,2,3,4,6,7,8-HpCDF OCDF	0.0603U ng/Kg 0.120U ng/Kg 0.121U ng/Kg 0.562U ng/Kg 0.152U ng/Kg 0.0653U ng/Kg 0.145U ng/Kg 0.0679U ng/Kg 0.129U ng/Kg	A	B
PH069	SL-515-SA8-SB-14.0-15.0	1,2,3,4,7,8-HxCDD 1,2,3,7,8,9-HxCDD 1,2,3,4,6,7,8-HpCDD OCDD 1,2,3,7,8,9-HxCDF 1,2,3,4,6,7,8-HpCDF OCDF	0.194U ng/Kg 0.121U ng/Kg 0.106U ng/Kg 0.675U ng/Kg 0.134U ng/Kg 0.0865U ng/Kg 0.116U ng/Kg	A	B
PH069	SL-513-SA8-SB-4.0-5.0	1,2,3,4,7,8-HxCDD 1,2,3,7,8,9-HxCDD 1,2,3,7,8-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	0.0567U ng/Kg 0.0790U ng/Kg 0.151U ng/Kg 0.0433U ng/Kg 0.0453U ng/Kg 0.0507U ng/Kg 0.0828U ng/Kg	A	B

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
PH069	SL-513-SA8-SB-8.0-9.0	1,2,3,7,8,9-HxCDD 1,2,3,4,6,7,8-HpCDD OCDD 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 OCDF	0.0460U ng/Kg 0.0671U ng/Kg 0.192U ng/Kg 0.0311U ng/Kg 0.0177U ng/Kg 0.0189U ng/Kg 0.0393U ng/Kg 0.0293U ng/Kg 0.126U ng/Kg	A	B

Santa Susana Field Laboratory
Dioxins/Dibenzofurans - Field Blank Data Qualification Summary - SDG PH069

No Sample Data Qualified in this SDG

LDC #: 30289D21
SDG #: PH069
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Level IV

Date: 9-3-13
Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

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: 7/17/13
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	N	client
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	N	
XV.	Field blanks	SW	EB=1,2; FB=FB-041113(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: 2 water / 10 Soil

1	EB1-071713	11	SL-513-SA8-SB-4.0-5.0	21		31	
2	EB2-071713	12	SL-513-SA8-SB-8.0-9.0	22		32	
3	SL-512-SA8-SB-0.0-0.5	13		23		33	
4	SL-514-SA8-SB-0.0-0.5	14		24		34	
5	SL-514-SA8-SB-4.0-5.0	15		25		35	
6	SL-515-SA8-SB-0.0-0.5	16		26		36	
7	SL-515-SA8-SB-4.0-5.0	17		27		37	
8	SL-515-SA8-SB-9.0-10.0	18		28		38	
9	SL-515-SA8-SB-14.0-15.0	19		29	BLK200001	39	
10	SL-513-SA8-SB-0.0-0.5	20		30	BLK206001	40	

Notes: _____

LDC #: 30289D21

VALIDATION FINDINGS CHECKLIST

Reviewer: 9m
2nd Reviewer: C

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 ≤ 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) ≤ 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?	✓			

LDC #: 30289D21

VALIDATION FINDINGS CHECKLIST

Reviewer: GM
2nd Reviewer: A

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 ≥ 2.5, at ± seconds RT) detected in the corresponding PCDPE 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:_____

LDC #: 30289D21

VALIDATION FINDINGS WORKSHEET
Blanks

Reviewer: TM
2nd Reviewer:

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: 07/19/13 **Blank analysis date:** 07/19/13 **Associated samples:** 1-2 Qual U (B)

Conc. units: pg/L

Compound	Blank ID	Sample Identification								
	BLK200001	5X	1	2						
C	0.368*	1.84	0.161*	0.373*						
D	0.364*	1.82								
E	0.327*	1.64								
F	0.373*	1.87	0.413*	0.352*						
G	1.18	5.90	0.814*	0.797*						
I	0.465	2.33	0.406	0.532						
J	0.511*	2.56	0.132*	0.245						
K	0.527*	2.64	0.222*							
L	0.476*	2.38	0.191*	0.396*						
M	0.238*	1.19	0.224	0.359*						
N	0.586*	2.93	0.186	0.283*						
O	0.413	2.07	0.238	0.174*						
P	0.325*	1.63	0.191*	0.519*						
Q	0.838*	4.19	0.512*	0.733*						

*EMPC

All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC #: 30289D21

VALIDATION FINDINGS WORKSHEET
Blanks

Reviewer: 1m
2nd Reviewer:

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: 07/26/13 **Blank analysis date:** 07/26/13 **Associated samples:** 3-12 Qual U (B)

Conc. units: ~~pg/L~~ ng/kg

Compound	Blank ID	Sample Identification									
	BLK206001	5X	3	4	5	6	7	8	9	11	12
C	0.0432*	0.216	0.156*	0.164		0.142	0.0544*	0.0603*	0.194*	0.0567*	
E	0.0358*	0.179			0.0729		0.115*	0.120	0.121	0.0790	0.0460
F	0.0714*	0.357			0.133*		0.0770*	0.121*	0.106*		0.0671*
G	0.230	1.150			0.864		0.658	0.562*	0.675		0.192*
I	0.0307*	0.154					0.125*	0.152		0.151	
K	0.0229	0.115			0.0270*	0.0707	0.0599*			0.0433*	0.0311*
L	0.0231*	0.116					0.0461			0.0453*	0.0177*
M	0.0401*	0.201	0.184*	0.141	0.0234	0.169*	0.0345*	0.0653*		0.0507*	0.0189*
N	0.0413*	0.207			0.0427*		0.0755*	0.145*	0.134*	0.0828	0.0393*
O	0.0256*	0.128			0.0499*		0.0819*	0.0679	0.0865		0.0293*
Q	0.159	0.795			0.0864*		0.135*	0.129*	0.116*		0.126

*EMPC

All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC #: 30289D21

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: [illegible]
2nd Reviewer: [illegible]

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: 3-12 >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	1.105								
N	0.211*	1.055								
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".

V:\Field Blanks\30289D21_FB-041113.wpd

LDC #: 30289D21

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: AM
2nd Reviewer:

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

Blank units: pg/L **Associated sample units:** ng/kg
Sampling date: 07/17/13
Field blank type: (circle one) Field Blank / Rinsate / Other: EB Associated Samples: 6-12 >5x

Compound	Blank ID	Sample Identification								
	EB1-071713	5X								
C	0.161*	0.805								
F	0.413*	2.07								
G	0.814*	4.07								
I	0.406	2.03								
J	0.132*	0.660								
K	0.222*	1.11								
L	0.191*	0.955								
M	0.224	1.12								
N	0.186	0.930								
O	0.238	1.19								
P	0.191*	0.955								
Q	0.512*	2.56								

* EMPC

EB1-071713 (PH069)

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".

V:\Field Blanks\30289D21_EB1-071713.wpd

LDC #: 30289D21

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: JM
2nd Reviewer:

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

Blank units: pg/L **Associated sample units:** ng/kg
Sampling date: 07/17/13
Field blank type: (circle one) Field Blank / Rinsate / Other: EB Associated Samples: 3-5 >5x

Compound	Blank ID	Sample Identification								
	EB2-071713	5X								
B	0.542*	2.71								
C	0.373*	1.87								
F	0.352*	1.76								
G	0.797*	3.99								
I	0.532	2.66								
J	0.245	1.23								
L	0.396*	1.98								
M	0.359*	1.80								
N	0.283*	1.42								
O	0.174*	0.870								
P	0.519*	2.60								
Q	0.733*	3.67								

* EMPC

EB2-071713 (PH069)

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".

V:\Field Blanks\30289D21_EB2-071713.wpd

LDC #: 30289D2/

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and Reported RLs

Reviewer: CM
2nd Reviewer: A

METHOD: GC/MS Dioxins/Dibenzofurans (EPA Method 1613B)

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

N N/A Were the correct internal standard (IS), quantitation ions and relative response factors (RRF) used to quantitate the compound?
N N/A Compound quantitation and RLs were adjusted to reflect all sample dilutions and dry weight factors (if necessary).

#	Date	Compund	Finding	Associated Samples	Qualifications
		H	No 2,3,7,8-TCDF confirmation analysis	4, 6, 8-10	None/P

Comments: See sample calculation verification worksheet for recalculations

LDC #: 30289D2

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer:
2nd Reviewer:

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 Average RRF (initial)	Recalculated Average RRF (initial)	Reported RRF (CS3 std)	Recalculated RRF (CS3 std)	Reported %RSD	Recalculated %RSD
1	ICAL (DB5MS)	03/22/2013	2,3,7,8-TCDF (^{13}C-2,3,7,8-TCDF)	1.043	1.043	1.025	1.024	5.23	5.24
			2,3,7,8-TCDD (^{13}C-2,3,7,8-TCDD)	1.207	1.207	1.182	1.182	9.04	9.04
			1,2,3,6,7,8-HxCDD (^{13}C-1,2,3,6,7,8-HxCDD)	0.957	0.9575	0.947	0.947	2.62	2.62
			1,2,3,4,6,7,8-HpCDD (^{13}C-1,2,4,6,7,8,-HpCDD)	1.048	1.048	1.028	1.028	3.46	3.47
			OCDF (^{13}C-OCDF)	0.933	0.933	0.920	0.920	5.76	5.76
2	ICAL (SP2331)	3-23-13	2,3,7,8-TCDF (^{13}C-2,3,7,8-TCDF)	0.968	0.968	0.993	0.993	3.96	3.94
			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	ICAL (DB5MS)	6-19-13	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

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 #: 30289D2J

VALIDATION FINDINGS WORKSHEET
Routine Calibration Results Verification

Reviewer: YM
2nd Reviewer:

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, A_{is} = Area of associated internal standard
C_x = Concentration of compound, C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Spiked Conc (ng/mL)	Reported Conc (ng/mL)	Recalculated Conc (ng/mL)	Reported %R	Recalculated %R
1	CS3CC02 (DB5MS)	7-19-13	2,3,7,8-TCDF (^{13}C-2,3,7,8-TCDF)	10	9.360	9.360	94	94
			2,3,7,8-TCDD (^{13}C-2,3,7,8-TCDD)	10	9.410	9.411	94	94
			1,2,3,6,7,8-HxCDD (^{13}C-1,2,3,6,7,8-HxCDD)	50	52.040	52.062	104	104
			1,2,3,4,6,7,8-HpCDD (^{13}C-1,2,4,6,7,8,-HpCDD)	50	51.060	51.050	102	102
			OCDF (^{13}C-OCDF)	100	102.120	102.111	102	102
2	CS3CC02 (SP2331)	7-30-13	2,3,7,8-TCDF (^{13}C-2,3,7,8-TCDF)	10	10.970	10.962	110	110
			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				
3	CS3CC02 (DB5MS)	7-26-13	2,3,7,8-TCDF (^{13}C-2,3,7,8-TCDF)	10	10.000	10.000	100	100
			2,3,7,8-TCDD (^{13}C-2,3,7,8-TCDD)	10	10.250	10.243	102	102.5
			1,2,3,6,7,8-HxCDD (^{13}C-1,2,3,6,7,8-HxCDD)	50	51.990	51.982	104	104
			1,2,3,4,6,7,8-HpCDD (^{13}C-1,2,4,6,7,8,-HpCDD)	50	49.590	49.598	99	99
			OCDF (^{13}C-OCDF)	100	99.390	99.387	99	99

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.

LDC #: 30289D21

VALIDATION FINDINGS WORKSHEET
Routine Calibration Results Verification

Reviewer: JM
2nd Reviewer:

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, A_{is} = Area of associated internal standard
C_x = Concentration of compound, C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Spiked Conc (ng/mL)	Reported Conc (ng/mL)	Recalculated Conc (ng/mL)	Reported %R	Recalculated %R
1	CS3CC04 (DB5MS)	7-27-13	2,3,7,8-TCDF (^{13}C-2,3,7,8-TCDF)	10	9.370	9.368	94	94
			2,3,7,8-TCDD (^{13}C-2,3,7,8-TCDD)	10	9.960	9.956	100	100
			1,2,3,6,7,8-HxCDD (^{13}C-1,2,3,6,7,8-HxCDD)	50	48.620	48.610	97	97
			1,2,3,4,6,7,8-HpCDD (^{13}C-1,2,4,6,7,8,-HpCDD)	50	47.850	47.857	96	96
			OCDF (^{13}C-OCDF)	100	92.730	92.731	93	93
2			2,3,7,8-TCDF (^{13}C-2,3,7,8-TCDF)	10				
			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				
3			2,3,7,8-TCDF (^{13}C-2,3,7,8-TCDF)	10				
			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.

LDC #: 30289D21

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Page: 1 of 1
Reviewer: VA
2nd Reviewer:

METHOD: GC/MS Dioxins/Dibenzofurans (EPA Method 1613B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration
SA = Spike added

RPD = | LCS - LCSD | * 2/(LCS + LCSD) LCS = Laboraotry control sample percent recovery LCSD = Laboratory control sample duplicate percent recovery

LCS ID: OPR200001

Compound	Spike Added (pg/L)		Spiked Sample Concentration (pg/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
2,3,7,8-TCDD	200	NA	186	NA	93	93				
1,2,3,7,8-PeCDD	1000		978		98	98				
1,2,3,4,7,8-HxCDD	1000		1010		101	101				
1,2,3,4,7,8,9-HpCDF	1000		980		98	98				
OCDF	2000		1960		98	98				

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

LDC #: 30789D21

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: [illegible]
2nd reviewer: [illegible]

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

(Y) N N/A Were all reported results recalculated and verified for all level IV samples?
(Y) N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

V_o = Volume or weight of sample extract in milliliters (ml) or grams (g).

RRF = Relative Response Factor (average) from the initial calibration

Df = Dilution Factor.

%S = Percent solids, applicable to soil and solid matrices only.

Example:

Sample I.D. 4 , F :

Conc. = $\frac{(16255+16101)(2000)(1)}{(385325+408807)(1.060)(40.14)(0.947)}$

= 8.00 pg/g

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Santa Susana Field Laboratory

Collection Date: July 17, 2013

LDC Report Date: September 23, 2013

Matrix: Soil/Water

Parameters: Perchlorate

Validation Level: Level IV

Laboratory: Eurofins Lancaster Laboratories

Sample Delivery Group (SDG): PH069

Sample Identification

EB1-071713
SL-515-SA8-SB-0.0-0.5
SL-515-SA8-SB-4.0-5.0
SL-515-SA8-SB-9.0-10.0
SL-515-SA8-SB-14.0-15.0
SL-513-SA8-SB-0.0-0.5
SL-513-SA8-SB-4.0-5.0
SL-513-SA8-SB-8.0-9.0
EB1-071713MS
EB1-071713MSD

Introduction

This data review covers 9 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 6850 for Perchlorate.

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. LC/MS Instrument Performance Check

Instrument performance was checked as applicable. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination (r^2) was greater than or equal to 0.990 .

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 less than or equal to 15.0% for unlabeled compounds and less than or equal to 50.0% for labeled compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 15.0% for unlabeled compounds and less than or equal to 50.0% for labeled compounds.

The percent differences (%D) of the limit of detection verification (LODV) calibration standard were less than or equal to 50.0% for perchlorate.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No perchlorate was found in the method blanks.

Sample EB1-071713 was identified as an equipment blank. No perchlorate was found in the equipment blank.

Sample FB-041113 (from SDG PH029) was identified as a field blank. No perchlorate was found in the field blank.

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)

VII. Laboratory Control Samples (LCS)

Laboratory control 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 areas and retention times 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.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH069	All compounds reported below the RL.	J (all detects)	A

XII. System Performance

The system performance was acceptable.

XIII. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

Santa Susana Field Laboratory
Perchlorate - Data Qualification Summary - SDG PH069

SDG	Sample	Compound	Flag	A or P	Reason (Code)
PH069	EB1-071713 SL-515-SA8-SB-0.0-0.5 SL-515-SA8-SB-4.0-5.0 SL-515-SA8-SB-9.0-10.0 SL-515-SA8-SB-14.0-15.0 SL-513-SA8-SB-0.0-0.5 SL-513-SA8-SB-4.0-5.0 SL-513-SA8-SB-8.0-9.0	All compounds reported below the RL.	J (all detects)	A	Compound quantitation (Z)

Santa Susana Field Laboratory
Perchlorate - Laboratory Blank Data Qualification Summary - SDG PH069

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Perchlorate - Field Blank Data Qualification Summary - SDG PH069

No Sample Data Qualified in this SDG

LDC #: 30289D87 **VALIDATION COMPLETENESS WORKSHEET** Date: 8/29/13
SDG #: PH069 Level IV Page: 1 of 1
Laboratory: Eurofins Lancaster Laboratories Reviewer: F
2nd Reviewer: A

METHOD: LC/MS Perchlorate (EPA SW846 Method 6850)

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: ~~7/22/13~~ 7/17/13
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	r^2
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 15/50 LODV ≤ 50
V.	Blanks	A	
VI.	~~Surrogate spikes~~	N	w
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS
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	w
XIV.	System performance	A	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	EB = 1 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 & water

1	EB1-071713 W	11	PBLK14201	21		31	
2	SL-515-SA8-SB-0.0-0.5	12	PBLK03203	22		32	
3	SL-515-SA8-SB-4.0-5.0	13		23		33	
4	SL-515-SA8-SB-9.0-10.0	14		24		34	
5	SL-515-SA8-SB-14.0-15.0	15		25		35	
6	SL-513-SA8-SB-0.0-0.5	16		26		36	
7	SL-513-SA8-SB-4.0-5.0	17		27		37	
8	SL-513-SA8-SB-8.0-9.0	18		28		38	
9	#1 MS	19		29		39	
10	#1 MSD	20		30		40	

LDC #: 30289087

VALIDATION FINDINGS CHECKLIST

Page: 1 of 2
Reviewer: FT
2nd Reviewer: A

Method: ✓ GC ✓ LC/MS

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. LC/MS Instrument performance check				
Were the instrument performance 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) ≤ 20%?			✓	
Was a curve fit used for evaluation?	✓			
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?	✓			
Were the RT windows properly established?	✓			
IV. Continuing calibration				
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 15%?	✓			
Were all the retention times within the acceptance windows?	✓			
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. 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?	✓			
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?	✓			
XIII. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	

LDC #: 30289D87

VALIDATION FINDINGS CHECKLIST

Reviewer: FT
2nd Reviewer: A

Validation Area	Yes	No	NA	Findings/Comments
IX. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds from the associated calibration standard?	✓			
X. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
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.		✓		
~~Target compounds were detected in the field blanks.~~ FT				

LDC#: 30289D87
SDG#: pw cover

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: EV
2nd Reviewer: A

Methdod: LC/MS Perchlorate (EPA SW846 Method 6850)

Calibration Date	System	Compound	Standard	(Y) Response	(X) Concentration
7/22/2013	LCMS	Perchlorate	0	0	0
			1	0.043230776	0.400
			2	0.099295788	1.000
			3	0.208311718	2.000
			4	0.441965729	4.000
			5	1.052918041	10.000
			6	2.722266856	25.000

Regression Output	*Calculated*	*Reported*
Constant	*-0.006176*	
Std Err of Y Est		
R Squared	*0.999799*	*0.999500*
Degrees of Freedom		
X Coefficient(s)	*0.10875521*	
Std Err of Coef.		
Correlation Coefficient	*0.999899*	
Coefficient of Determination (r^2)	*0.999799*	*0.999500*

LDC #: 30289D87

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: EF
2nd Reviewer:

METHOD: LCMS Perchlorate (EPA SW 846 Method 6850)

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 CF/ Conc. CCV	Recalculated CF/ Conc. CCV	Reported %D	Recalculated %D
1	CCV-3021	7/22/13	Perchlorate (LODV)	0.4	0.48	0.48	20	20
	-3032	7/22/13	↓ (CCV)	4.0	3.7	3.7	8	8
2								
	-03043	7/23/13	↓ (LODV)	0.4	0.45	0.45	13	13
~~3~~	~~-3047~~		~~↓ (CCV)~~	~~4~~	~~3.7~~	~~3.7~~	~~8~~	~~8~~ closing ccv
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.

LDC #: 30289D87

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Page: 6 of 7
Reviewer: FJ
2nd Reviewer: [illegible]

METHOD: LC/MS Perchlorate (EPA SW 846 Method 6850/6860)

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 concentation

RPD = I MS - MSD I * 2/(MS + MSD) MS = Matrix spike percent recovery MSD = Matrix spike duplicate percent recovery

MS/MSD samples: 9 + 10

Compound	Spike Added (ug/L)		Sample Concentration (ug/L)	Spiked Sample Concentration (ug/L)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	-----	MS	MSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
Perchlorate	5	5	ND	4.94	4.95	99	99	99	99	0	0

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 #: 30289D87

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Page: 1 of 1
Reviewer: EJ
2nd Reviewer: [illegible]

METHOD: LC/MS Perchlorate (EPA SW 846 Method 6850/6860)

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 = | LCS - LCSD | * 2/(LCS + LCSD) LCS = Laboratory control sample percent recovery LCSD = Laboratory control sample duplicate percent recovery

LCS/LCSD samples: LCS14201

Compound	Spike Added (ug/kg)		Spike Concentration (ug/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalc
Perchlorate	100	NA	104.3	NA	104	104	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.

LDC #: 30289 D87

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: F7
2nd reviewer: C

METHOD: LCMS Perchlorate (EPA SW 846 Method 6850/6860)

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(V_t)(DF)(2.0)}{(A_{is})(RRF)(V_o)(V_i)(\%S)}$

A_x	=	Area of the characteristic ion (EICP) for the compound to be measured
A_{is}	=	Area of the characteristic ion (EICP) for the specific internal standard
I_s	=	Amount of internal standard added in nanograms (ng)
V_o	=	Volume or weight of sample extract in milliliters (ml) or grams (g).
V_i	=	Volume of extract injected in microliters (ul)
V_t	=	Volume of the concentrated extract in microliters (ul)
Df	=	Dilution Factor.
%S	=	Percent solids, applicable to soil and solid matrices only.
2.0	=	Factor of 2 to account for GPC cleanup

Example:

Sample I.D. #7, Perchlorate

Conc. = ( )( )( )( )( ) / ( )( )( )( )( )

=

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification
	1508 / 46870 =	(0.1081)(X) − 0.00299			
	X = 0.324				
	final conc	= $\frac{0.324 \times 10\,ml}{(1g)(0.90)}$	=	3.605 ug/kg	

RECALC.wpd

Data Validation Report
Santa Susana Field Laboratory

Subarea 8

SDG: PH070

Prepared for

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Prepared by

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September 24, 2013

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on July 18th, 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 (VOAs) by EPA SW 846 Method 8260B
Semivolatiles (SVOAs) by EPA SW 846 Method 8270D
(SVOAs) 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 Hydrocarbon as Gasoline (TPH-G) by EPA SW 846 Method 8015M
Total Petroleum Hydrocarbons as Extractable (TPH-E) by EPA SW 846 Method 8015M
Dioxins/Dibenzofurans by EPA Method 1613B
Perchlorate by EPA method 6850
Hexavalent Chromium by EPA method 7199

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, trip blanks, equipment blanks, field blanks, and field duplicate samples. 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 the 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.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met QC criteria.

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 three 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 SVOAs, and TPH-E. The benzidine result in sample SL-506-SA8-SB-0.0-0.5 was qualified as rejected (R) due to MS/MSD %R grossly outside QC limits (i.e., ≤ 0%). The remainder of the associated sample results were qualified as detected estimated (J) 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 with the exception of several LCS/LCSD pairs for VOAs and SVOAs. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding LCS/LCSD outliers 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 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 PH070	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 VOAs and TPH-G. No contaminant concentrations were found in the trip blank.

One equipment blank (from SDG PH069) was collected and analyzed for VOAs, SVOAs, PCBs, metals, perchlorate, TPH-G, TPH-E, hexavalent chromium, and dioxins. The equipment blank had detections for several VOAs, SVOAs, metals, and dioxins. All associated sample results were not detected or were significantly greater than the concentrations found in the equipment blanks and were not qualified.

One field blank (from SDG PH029) was collected and analyzed for VOAs, SVOAs, PCBs, metals, perchlorate, TPH-G, TPH-E, hexavalent chromium, and dioxins. The field blank had detections for several VOAs, SVOAs, 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

One SVOA result was rejected due to MS/MSD %Rs grossly outside of 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
18-Jul-2013	SL-506-SA8-SB-0.0-0.5	7132364	N	3050B	6010C	III
18-Jul-2013	SL-506-SA8-SB-0.0-0.5	7132364	N	3050B	6020A	III
18-Jul-2013	SL-506-SA8-SB-0.0-0.5	7132364	N	3060A	7199	III
18-Jul-2013	SL-506-SA8-SB-0.0-0.5	7132364	N	3546	8015M	III
18-Jul-2013	SL-506-SA8-SB-0.0-0.5	7132364	N	3546	8082A	III
18-Jul-2013	SL-506-SA8-SB-0.0-0.5	7132364	N	3546	8270D	III
18-Jul-2013	SL-506-SA8-SB-0.0-0.5	7132364	N	3546	8270D SIM	III
18-Jul-2013	SL-506-SA8-SB-0.0-0.5	7132364	N	METHOD	1613B	III
18-Jul-2013	SL-506-SA8-SB-0.0-0.5	7132364	N	METHOD	6850	III
18-Jul-2013	SL-506-SA8-SB-0.0-0.5	7132364	N	METHOD	7471B	III
18-Jul-2013	SL-506-SA8-SB-0.0-0.5MSD	P132364M260558	MSD	3546	8270D SIM	III
18-Jul-2013	SL-506-SA8-SB-0.0-0.5MSD	P132364M262337	MSD	3546	8270D	III
18-Jul-2013	SL-506-SA8-SB-0.0-0.5MSD	P132364M322048A	MSD	3546	8015M	III
18-Jul-2013	SL-506-SA8-SB-0.0-0.5MS	P132364R260526	MS	3546	8270D SIM	III
18-Jul-2013	SL-506-SA8-SB-0.0-0.5MS	P132364R262312	MS	3546	8270D	III
18-Jul-2013	SL-506-SA8-SB-0.0-0.5MS	P132364R322027A	MS	3546	8015M	III
18-Jul-2013	SL-506-SA8-SB-4.0-5.0	7132365	N	3050B	6010C	III
18-Jul-2013	SL-506-SA8-SB-4.0-5.0	7132365	N	3050B	6020A	III
18-Jul-2013	SL-506-SA8-SB-4.0-5.0	7132365	N	3060A	7199	III
18-Jul-2013	SL-506-SA8-SB-4.0-5.0	7132365	N	3546	8015M	III
18-Jul-2013	SL-506-SA8-SB-4.0-5.0	7132365	N	3546	8082A	III
18-Jul-2013	SL-506-SA8-SB-4.0-5.0	7132365	N	3546	8270D	III
18-Jul-2013	SL-506-SA8-SB-4.0-5.0	7132365	N	3546	8270D SIM	III
18-Jul-2013	SL-506-SA8-SB-4.0-5.0	7132365	N	5035	8260B	III
18-Jul-2013	SL-506-SA8-SB-4.0-5.0	7132365	N	5035A	8015M	III
18-Jul-2013	SL-506-SA8-SB-4.0-5.0	7132365	N	METHOD	1613B	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
18-Jul-2013	SL-506-SA8-SB-4.0-5.0	7132365	N	METHOD	6850	III
18-Jul-2013	SL-506-SA8-SB-4.0-5.0	7132365	N	METHOD	7471B	III
18-Jul-2013	SL-506-SA8-SB-4.0-5.0MSD	P132365M240232A	MSD	3546	8082A	III
18-Jul-2013	SL-506-SA8-SB-4.0-5.0MS	P132365R240213A	MS	3546	8082A	III
18-Jul-2013	TB-071813	7132370	TB	5030B	8015M	III
18-Jul-2013	TB-071813	7132370	TB	5030B	8260B	III
18-Jul-2013	SL-509-SA8-SB-0.0-0.5	7132366	N	3050B	6010C	III
18-Jul-2013	SL-509-SA8-SB-0.0-0.5	7132366	N	3050B	6020A	III
18-Jul-2013	SL-509-SA8-SB-0.0-0.5	7132366	N	3060A	7199	III
18-Jul-2013	SL-509-SA8-SB-0.0-0.5	7132366	N	3546	8015M	III
18-Jul-2013	SL-509-SA8-SB-0.0-0.5	7132366	N	3546	8082A	III
18-Jul-2013	SL-509-SA8-SB-0.0-0.5	7132366	N	3546	8270D	III
18-Jul-2013	SL-509-SA8-SB-0.0-0.5	7132366	N	3546	8270D SIM	III
18-Jul-2013	SL-509-SA8-SB-0.0-0.5	7132366	N	METHOD	1613B	III
18-Jul-2013	SL-509-SA8-SB-0.0-0.5	7132366	N	METHOD	6850	III
18-Jul-2013	SL-509-SA8-SB-0.0-0.5	7132366	N	METHOD	7471B	III
18-Jul-2013	SL-509-SA8-SB-4.0-5.0	7132367	N	3050B	6010C	III
18-Jul-2013	SL-509-SA8-SB-4.0-5.0	7132367	N	3050B	6020A	III
18-Jul-2013	SL-509-SA8-SB-4.0-5.0	7132367	N	3060A	7199	III
18-Jul-2013	SL-509-SA8-SB-4.0-5.0	7132367	N	3546	8015M	III
18-Jul-2013	SL-509-SA8-SB-4.0-5.0	7132367	N	3546	8082A	III
18-Jul-2013	SL-509-SA8-SB-4.0-5.0	7132367	N	3546	8270D	III
18-Jul-2013	SL-509-SA8-SB-4.0-5.0	7132367	N	3546	8270D SIM	III
18-Jul-2013	SL-509-SA8-SB-4.0-5.0	7132367	N	5035	8260B	III
18-Jul-2013	SL-509-SA8-SB-4.0-5.0	7132367	N	5035A	8015M	III
18-Jul-2013	SL-509-SA8-SB-4.0-5.0	7132367	N	METHOD	1613B	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
18-Jul-2013	SL-509-SA8-SB-4.0-5.0	7132367	N	METHOD	6850	III
18-Jul-2013	SL-509-SA8-SB-4.0-5.0	7132367	N	METHOD	7471B	III
18-Jul-2013	SL-601-SA8-SB-0.0-0.5	7132368	N	3050B	6010C	III
18-Jul-2013	SL-601-SA8-SB-0.0-0.5	7132368	N	3050B	6020A	III
18-Jul-2013	SL-601-SA8-SB-0.0-0.5	7132368	N	3546	8015M	III
18-Jul-2013	SL-601-SA8-SB-0.0-0.5	7132368	N	3546	8082A	III
18-Jul-2013	SL-601-SA8-SB-0.0-0.5	7132368	N	3546	8270D SIM	III
18-Jul-2013	SL-601-SA8-SB-0.0-0.5	7132368	N	METHOD	1613B	III
18-Jul-2013	SL-601-SA8-SB-0.0-0.5	7132368	N	METHOD	7471B	III
18-Jul-2013	SL-601-SA8-SB-4.0-5.0	7132369	N	3050B	6010C	III
18-Jul-2013	SL-601-SA8-SB-4.0-5.0	7132369	N	3050B	6020A	III
18-Jul-2013	SL-601-SA8-SB-4.0-5.0	7132369	N	3546	8015M	III
18-Jul-2013	SL-601-SA8-SB-4.0-5.0	7132369	N	3546	8082A	III
18-Jul-2013	SL-601-SA8-SB-4.0-5.0	7132369	N	3546	8270D SIM	III
18-Jul-2013	SL-601-SA8-SB-4.0-5.0	7132369	N	5035A	8015M	III
18-Jul-2013	SL-601-SA8-SB-4.0-5.0	7132369	N	METHOD	1613B	III
18-Jul-2013	SL-601-SA8-SB-4.0-5.0	7132369	N	METHOD	7471B	III
18-Jul-2013	SL-520-SA8-SB-0.0-0.5	7132373	N	3050B	6010C	III
18-Jul-2013	SL-520-SA8-SB-0.0-0.5	7132373	N	3050B	6020A	III
18-Jul-2013	SL-520-SA8-SB-0.0-0.5	7132373	N	3546	8015M	III
18-Jul-2013	SL-520-SA8-SB-0.0-0.5	7132373	N	3546	8082A	III
18-Jul-2013	SL-520-SA8-SB-0.0-0.5	7132373	N	3546	8270D SIM	III
18-Jul-2013	SL-520-SA8-SB-0.0-0.5	7132373	N	METHOD	1613B	III
18-Jul-2013	SL-520-SA8-SB-0.0-0.5	7132373	N	METHOD	7471B	III
18-Jul-2013	SL-519-SA8-SB-0.0-0.5	7132371	N	3050B	6010C	III
18-Jul-2013	SL-519-SA8-SB-0.0-0.5	7132371	N	3050B	6020A	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
18-Jul-2013	SL-519-SA8-SB-0.0-0.5	7132371	N	3546	8015M	III
18-Jul-2013	SL-519-SA8-SB-0.0-0.5	7132371	N	3546	8082A	III
18-Jul-2013	SL-519-SA8-SB-0.0-0.5	7132371	N	3546	8270D SIM	III
18-Jul-2013	SL-519-SA8-SB-0.0-0.5	7132371	N	METHOD	1613B	III
18-Jul-2013	SL-519-SA8-SB-0.0-0.5	7132371	N	METHOD	7471B	III
18-Jul-2013	SL-519-SA8-SB-3.5-4.5	7132372	N	3050B	6010C	III
18-Jul-2013	SL-519-SA8-SB-3.5-4.5	7132372	N	3050B	6020A	III
18-Jul-2013	SL-519-SA8-SB-3.5-4.5	7132372	N	3546	8015M	III
18-Jul-2013	SL-519-SA8-SB-3.5-4.5	7132372	N	3546	8082A	III
18-Jul-2013	SL-519-SA8-SB-3.5-4.5	7132372	N	3546	8270D SIM	III
18-Jul-2013	SL-519-SA8-SB-3.5-4.5	7132372	N	5035A	8015M	III
18-Jul-2013	SL-519-SA8-SB-3.5-4.5	7132372	N	METHOD	1613B	III
18-Jul-2013	SL-519-SA8-SB-3.5-4.5	7132372	N	METHOD	7471B	III
18-Jul-2013	SL-531-SA8-SB-0.0-0.5	7132374	N	3050B	6010C	III
18-Jul-2013	SL-531-SA8-SB-0.0-0.5	7132374	N	3050B	6020A	III
18-Jul-2013	SL-531-SA8-SB-0.0-0.5	7132374	N	3546	8015M	III
18-Jul-2013	SL-531-SA8-SB-0.0-0.5	7132374	N	3546	8082A	III
18-Jul-2013	SL-531-SA8-SB-0.0-0.5	7132374	N	3546	8270D SIM	III
18-Jul-2013	SL-531-SA8-SB-0.0-0.5	7132374	N	METHOD	1613B	III
18-Jul-2013	SL-531-SA8-SB-0.0-0.5	7132374	N	METHOD	7471B	III
18-Jul-2013	SL-531-SA8-SB-4.0-5.0	7132375	N	3050B	6010C	III
18-Jul-2013	SL-531-SA8-SB-4.0-5.0	7132375	N	3050B	6020A	III
18-Jul-2013	SL-531-SA8-SB-4.0-5.0	7132375	N	3546	8015M	III
18-Jul-2013	SL-531-SA8-SB-4.0-5.0	7132375	N	3546	8082A	III
18-Jul-2013	SL-531-SA8-SB-4.0-5.0	7132375	N	3546	8270D SIM	III
18-Jul-2013	SL-531-SA8-SB-4.0-5.0	7132375	N	5035A	8015M	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
18-Jul-2013	SL-531-SA8-SB-4.0-5.0	7132375	N	METHOD	1613B	III
18-Jul-2013	SL-531-SA8-SB-4.0-5.0	7132375	N	METHOD	7471B	III
18-Jul-2013	SL-531-SA8-SB-4.0-5.0DUP	P132375D220919	DUP	METHOD	7471B	III
18-Jul-2013	SL-531-SA8-SB-4.0-5.0MSD	P132375M220924	MSD	METHOD	7471B	III
18-Jul-2013	SL-531-SA8-SB-4.0-5.0MS	P132375R220922	MS	METHOD	7471B	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation
N = Normal Sample
FD = Field Duplicate
TB = Trip Blank
FB = Field Blank
MS = Matrix Spike
MSD = Matrix Spike Duplicate

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH070 **Laboratory: LL**

EDD Filename: PrepPH070_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-506-SA8-SB-0.0-0.5** ***Collected:*** **7/18/2013 7:35:00** ***Analysis Type:*** **RES** ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	0.704	J	0.0704	MDL	1.05	PQL	mg/Kg	J	Z
BORON	4.93	J	0.883	MDL	10.5	PQL	mg/Kg	J	Z
CADMIUM	0.520	J	0.0799	MDL	1.05	PQL	mg/Kg	J	Z
MOLYBDENUM	0.287	J	0.179	MDL	2.10	PQL	mg/Kg	U	F
TIN	2.83	J	0.231	MDL	10.5	PQL	mg/Kg	U	B
Zirconium	4.67	J	0.883	MDL	5.25	PQL	mg/Kg	J	Z

Sample ID: **SL-506-SA8-SB-4.0-5.0** ***Collected:*** **7/18/2013 7:50:00** ***Analysis Type:*** **RES** ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	0.677	J	0.0679	MDL	1.01	PQL	mg/Kg	J	Z
CADMIUM	0.289	J	0.0770	MDL	1.01	PQL	mg/Kg	J	Z
MOLYBDENUM	0.413	J	0.172	MDL	2.03	PQL	mg/Kg	U	F
TIN	2.86	J	0.223	MDL	10.1	PQL	mg/Kg	U	B
Zirconium	3.92	J	0.851	MDL	5.07	PQL	mg/Kg	J	Z

Sample ID: **SL-509-SA8-SB-0.0-0.5** ***Collected:*** **7/18/2013 8:50:00** ***Analysis Type:*** **RES** ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	0.781	J	0.0735	MDL	1.10	PQL	mg/Kg	J	Z
BORON	9.98	J	0.921	MDL	11.0	PQL	mg/Kg	J	Z
CADMIUM	0.670	J	0.0833	MDL	1.10	PQL	mg/Kg	J	Z
TIN	2.80	J	0.241	MDL	11.0	PQL	mg/Kg	U	B

Sample ID: **SL-509-SA8-SB-4.0-5.0** ***Collected:*** **7/18/2013 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
BERYLLIUM	0.530	J	0.0691	MDL	1.03	PQL	mg/Kg	J	Z
BORON	1.26	J	0.867	MDL	10.3	PQL	mg/Kg	U	B
CADMIUM	0.425	J	0.0784	MDL	1.03	PQL	mg/Kg	J	Z
TIN	2.93	J	0.227	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: PH070 **Laboratory: LL**

EDD Filename: PrepPH070_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-519-SA8-SB-0.0-0.5 ***Collected:*** 7/18/2013 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
BERYLLIUM	0.827	J	0.0712	MDL	1.06	PQL	mg/Kg	J	Z
CADMIUM	0.751	J	0.0807	MDL	1.06	PQL	mg/Kg	J	Z
MOLYBDENUM	0.377	J	0.181	MDL	2.12	PQL	mg/Kg	U	F
SODIUM	103	J	17.7	MDL	106	PQL	mg/Kg	J	Z
TIN	2.69	J	0.234	MDL	10.6	PQL	mg/Kg	U	B

Sample ID: SL-519-SA8-SB-3.5-4.5 ***Collected:*** 7/18/2013 1:40:00 ***Analysis Type:*** RES ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	3.75	J	0.724	MDL	4.14	PQL	mg/Kg	J	Z
BERYLLIUM	0.458	J	0.0693	MDL	1.03	PQL	mg/Kg	J	Z
CADMIUM	0.339	J	0.0786	MDL	1.03	PQL	mg/Kg	J	Z
SODIUM	88.1	J	17.3	MDL	103	PQL	mg/Kg	J	Z
TIN	2.85	J	0.228	MDL	10.3	PQL	mg/Kg	U	B
Zirconium	4.37	J	0.869	MDL	5.17	PQL	mg/Kg	J	Z

Sample ID: SL-520-SA8-SB-0.0-0.5 ***Collected:*** 7/18/2013 1:00:00 ***Analysis Type:*** RES ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	0.785	J	0.0699	MDL	1.04	PQL	mg/Kg	J	Z
BORON	4.36	J	0.876	MDL	10.4	PQL	mg/Kg	U	B
CADMIUM	0.591	J	0.0792	MDL	1.04	PQL	mg/Kg	J	Z
MOLYBDENUM	0.315	J	0.177	MDL	2.09	PQL	mg/Kg	U	F
SODIUM	84.3	J	17.4	MDL	104	PQL	mg/Kg	J	Z
TIN	2.66	J	0.229	MDL	10.4	PQL	mg/Kg	U	B
Zirconium	4.76	J	0.876	MDL	5.21	PQL	mg/Kg	J	Z

Sample ID: SL-531-SA8-SB-0.0-0.5 ***Collected:*** 7/18/2013 2:15:00 ***Analysis Type:*** RES ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	0.882	J	0.0712	MDL	1.06	PQL	mg/Kg	J	Z
BORON	8.08	J	0.893	MDL	10.6	PQL	mg/Kg	J	Z
CADMIUM	0.673	J	0.0808	MDL	1.06	PQL	mg/Kg	J	Z
MOLYBDENUM	0.238	J	0.181	MDL	2.13	PQL	mg/Kg	U	F
SODIUM	94.6	J	17.7	MDL	106	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: PH070 **Laboratory: LL**

EDD Filename: PrepPH070_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-531-SA8-SB-0.0-0.5 **Collected:** 7/18/2013 2:15:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TIN	2.65	J	0.234	MDL	10.6	PQL	mg/Kg	U	B
Zirconium	4.37	J	0.893	MDL	5.31	PQL	mg/Kg	J	Z

Sample ID: SL-531-SA8-SB-4.0-5.0 **Collected:** 7/18/2013 2:30:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	0.944	J	0.0722	MDL	1.08	PQL	mg/Kg	J	Z
BORON	3.58	J	0.905	MDL	10.8	PQL	mg/Kg	U	B
CADMIUM	0.505	J	0.0819	MDL	1.08	PQL	mg/Kg	J	Z
MOLYBDENUM	0.343	J	0.183	MDL	2.15	PQL	mg/Kg	U	F
SODIUM	98.4	J	18.0	MDL	108	PQL	mg/Kg	J	Z
TIN	2.91	J	0.237	MDL	10.8	PQL	mg/Kg	U	B

Sample ID: SL-601-SA8-SB-0.0-0.5 **Collected:** 7/18/2013 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
BERYLLIUM	0.790	J	0.0683	MDL	1.02	PQL	mg/Kg	J	Z
BORON	9.22	J	0.857	MDL	10.2	PQL	mg/Kg	J	Z
CADMIUM	0.599	J	0.0775	MDL	1.02	PQL	mg/Kg	J	Z
MOLYBDENUM	0.452	J	0.173	MDL	2.04	PQL	mg/Kg	U	F
SODIUM	93.6	J	17.0	MDL	102	PQL	mg/Kg	J	Z
TIN	2.63	J	0.224	MDL	10.2	PQL	mg/Kg	U	B
Zirconium	2.94	J	0.857	MDL	5.10	PQL	mg/Kg	J	Z

Sample ID: SL-601-SA8-SB-4.0-5.0 **Collected:** 7/18/2013 10:30:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	0.730	J	0.0682	MDL	1.02	PQL	mg/Kg	J	Z
BORON	4.04	J	0.855	MDL	10.2	PQL	mg/Kg	U	B
CADMIUM	0.412	J	0.0773	MDL	1.02	PQL	mg/Kg	J	Z
MOLYBDENUM	0.351	J	0.173	MDL	2.04	PQL	mg/Kg	U	F
SODIUM	92.7	J	17.0	MDL	102	PQL	mg/Kg	J	Z
TIN	2.88	J	0.224	MDL	10.2	PQL	mg/Kg	U	B
Zirconium	3.65	J	0.855	MDL	5.09	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: PH070 **Laboratory: LL**

EDD Filename: PrepPH070_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-506-SA8-SB-0.0-0.5 *Collected:* 7/18/2013 7:35:00 *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.315	J	0.105	MDL	0.420	PQL	mg/Kg	J	Z

Sample ID: SL-506-SA8-SB-0.0-0.5 *Collected:* 7/18/2013 7:35:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0732	J	0.0273	MDL	0.210	PQL	mg/Kg	J	Z

Sample ID: SL-509-SA8-SB-0.0-0.5 *Collected:* 7/18/2013 8:50:00 *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.281	J	0.110	MDL	0.439	PQL	mg/Kg	J	Z

Sample ID: SL-509-SA8-SB-0.0-0.5 *Collected:* 7/18/2013 8:50:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0321	J	0.0285	MDL	0.219	PQL	mg/Kg	J	Z

Sample ID: SL-519-SA8-SB-0.0-0.5 *Collected:* 7/18/2013 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
SELENIUM	0.209	J	0.106	MDL	0.425	PQL	mg/Kg	J	Z

Sample ID: SL-519-SA8-SB-0.0-0.5 *Collected:* 7/18/2013 1:30:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0699	J	0.0276	MDL	0.212	PQL	mg/Kg	J	Z

Sample ID: SL-520-SA8-SB-0.0-0.5 *Collected:* 7/18/2013 1:00:00 *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.156	J	0.104	MDL	0.417	PQL	mg/Kg	J	Z

Sample ID: SL-520-SA8-SB-0.0-0.5 *Collected:* 7/18/2013 1:00:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0373	J	0.0271	MDL	0.209	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: PH070 **Laboratory: LL**

EDD Filename: PrepPH070_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-531-SA8-SB-0.0-0.5 *Collected:* 7/18/2013 2:15:00 *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.225	J	0.106	MDL	0.425	PQL	mg/Kg	J	Z

Sample ID: SL-531-SA8-SB-0.0-0.5 *Collected:* 7/18/2013 2:15:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0320	J	0.0276	MDL	0.213	PQL	mg/Kg	J	Z

Sample ID: SL-531-SA8-SB-4.0-5.0 *Collected:* 7/18/2013 2:30:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0474	J	0.0280	MDL	0.215	PQL	mg/Kg	J	Z

Sample ID: SL-601-SA8-SB-0.0-0.5 *Collected:* 7/18/2013 10:00:00 *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.248	J	0.102	MDL	0.408	PQL	mg/Kg	J	Z

Sample ID: SL-601-SA8-SB-0.0-0.5 *Collected:* 7/18/2013 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	0.0287	J	0.0265	MDL	0.204	PQL	mg/Kg	J	Z

Sample ID: SL-601-SA8-SB-4.0-5.0 *Collected:* 7/18/2013 10:30:00 *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.123	J	0.102	MDL	0.407	PQL	mg/Kg	J	Z

Sample ID: SL-601-SA8-SB-4.0-5.0 *Collected:* 7/18/2013 10:30:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0299	J	0.0265	MDL	0.204	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: PH070 **Laboratory: LL**

EDD Filename: PrepPH070_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 7199 **Matrix: SO**

Sample ID: SL-506-SA8-SB-0.0-0.5 *Collected:* 7/18/2013 7:35:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
HEXAVALENT CHROMIUM	0.30	J	0.15	MDL	0.43	PQL	mg/Kg	J	Z

Sample ID: SL-509-SA8-SB-0.0-0.5 *Collected:* 7/18/2013 8:50:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
HEXAVALENT CHROMIUM	0.18	J	0.15	MDL	0.44	PQL	mg/Kg	J	Z

Sample ID: SL-509-SA8-SB-4.0-5.0 *Collected:* 7/18/2013 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
HEXAVALENT CHROMIUM	0.18	J	0.15	MDL	0.42	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: SL-531-SA8-SB-4.0-5.0 *Collected:* 7/18/2013 2:30:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0139	J	0.0112	MDL	0.0186	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-506-SA8-SB-0.0-0.5 *Collected:* 7/18/2013 7:35:00 *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-HPCDF	2.50	JB	0.0260	MDL	5.29	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0679	JB	0.0369	MDL	5.29	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0550	JQ	0.0428	MDL	5.29	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.110	JB	0.0277	MDL	5.29	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.345	JB	0.0450	MDL	5.29	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.111	JBQ	0.0275	MDL	5.29	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.394	JBQ	0.0441	MDL	5.29	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.229	JB	0.0292	MDL	5.29	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.678	JB	0.0319	MDL	5.29	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: PH070 **Laboratory: LL**

EDD Filename: PrepPH070_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix:** SO

Sample ID: SL-506-SA8-SB-0.0-0.5 ***Collected:*** 7/18/2013 7:35:00 ***Analysis Type:*** RES ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,3,4,6,7,8-HXCDF	0.131	JB	0.0256	MDL	5.29	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.128	JBQ	0.0298	MDL	5.29	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.102	JQ	0.0484	MDL	1.06	PQL	ng/Kg	J	Z
OCDF	4.13	J	0.0389	MDL	10.6	PQL	ng/Kg	J	Z

Sample ID: SL-506-SA8-SB-4.0-5.0 ***Collected:*** 7/18/2013 7:50:00 ***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	0.101	JBQ	0.0289	MDL	5.26	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0448	JBQ	0.00959	MDL	5.26	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0313	JB	0.0102	MDL	5.26	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0325	JBQ	0.0229	MDL	5.26	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0111	JBQ	0.0104	MDL	5.26	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0464	JB	0.0216	MDL	5.26	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0257	JBQ	0.0103	MDL	5.26	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.0519	JBQ	0.0208	MDL	5.26	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0157	JBQ	0.0101	MDL	5.26	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0273	JBQ	0.0193	MDL	5.26	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.0324	JQ	0.0309	MDL	1.05	PQL	ng/Kg	J	Z
OCDD	1.07	JB	0.0302	MDL	10.5	PQL	ng/Kg	U	B
OCDF	0.150	JQ	0.0339	MDL	10.5	PQL	ng/Kg	J	Z

Sample ID: SL-509-SA8-SB-0.0-0.5 ***Collected:*** 7/18/2013 8:50:00 ***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	1.98	JB	0.0690	MDL	5.28	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.154	JBQ	0.0189	MDL	5.28	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0472	JBQ	0.0265	MDL	5.28	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0416	JQ	0.0386	MDL	5.28	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.0620	JB	0.0196	MDL	5.28	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.120	JBQ	0.0422	MDL	5.28	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.145	JBQ	0.0429	MDL	5.28	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0842	JBQ	0.0214	MDL	5.28	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0696	JQ	0.0532	MDL	5.28	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.656	JBQ	0.0316	MDL	5.28	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: PH070 **Laboratory: LL**

EDD Filename: PrepPH070_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-509-SA8-SB-0.0-0.5 *Collected:* 7/18/2013 8:50:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,3,4,6,7,8-HXCDF	0.0198	JB	0.0192	MDL	5.28	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0517	JBQ	0.0304	MDL	5.28	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.0695	JQ	0.0518	MDL	1.06	PQL	ng/Kg	J	Z
OCDF	0.597	JQ	0.0470	MDL	10.6	PQL	ng/Kg	J	Z

Sample ID: SL-509-SA8-SB-4.0-5.0 *Collected:* 7/18/2013 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	0.133	JB	0.0373	MDL	5.14	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.131	JB	0.0122	MDL	5.14	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0404	JB	0.0333	MDL	5.14	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0652	JBQ	0.0320	MDL	5.14	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0682	JBQ	0.0157	MDL	5.14	PQL	ng/Kg	U	B
OCDD	1.83	JB	0.0449	MDL	10.3	PQL	ng/Kg	J	Z
OCDF	0.750	JQ	0.0431	MDL	10.3	PQL	ng/Kg	J	Z

Sample ID: SL-519-SA8-SB-0.0-0.5 *Collected:* 7/18/2013 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	1.92	JB	0.0231	MDL	5.35	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.161	JBQ	0.0275	MDL	5.35	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.115	JQ	0.0501	MDL	5.35	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.397	JB	0.0364	MDL	5.35	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.481	JB	0.0536	MDL	5.35	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.426	JB	0.0373	MDL	5.35	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.394	JBQ	0.0514	MDL	5.35	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.122	JB	0.0324	MDL	5.35	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.134	JQ	0.0568	MDL	5.35	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	2.90	JB	0.0638	MDL	5.35	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.526	JB	0.0378	MDL	5.35	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	1.17	JBQ	0.0642	MDL	5.35	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.519	J	0.124	MDL	1.07	PQL	ng/Kg	J	Z
OCDF	3.25	J	0.0330	MDL	10.7	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: PH070 **Laboratory: LL**

EDD Filename: PrepPH070_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix:** SO

Sample ID: SL-519-SA8-SB-3.5-4.5 ***Collected:*** 7/18/2013 1:40:00 ***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	0.0612	JBQ	0.0289	MDL	4.98	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0393	JBQ	0.00867	MDL	4.98	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0331	JBQ	0.0131	MDL	4.98	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0264	JBQ	0.0249	MDL	4.98	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0467	JBQ	0.0121	MDL	4.98	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0278	JB	0.0269	MDL	4.98	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0424	JB	0.0134	MDL	4.98	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0944	JQ	0.0406	MDL	4.98	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.0864	JBQ	0.0201	MDL	4.98	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0226	JBQ	0.0126	MDL	4.98	PQL	ng/Kg	U	B
OCDD	0.151	JBQ	0.0446	MDL	9.96	PQL	ng/Kg	U	B
OCDF	0.120	J	0.0424	MDL	9.96	PQL	ng/Kg	J	Z

Sample ID: SL-520-SA8-SB-0.0-0.5 ***Collected:*** 7/18/2013 1:00:00 ***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	0.553	JB	0.0343	MDL	5.01	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.672	JB	0.0129	MDL	5.01	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0642	JBQ	0.0281	MDL	5.01	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0392	JQ	0.0246	MDL	5.01	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.213	JBQ	0.0231	MDL	5.01	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.140	JBQ	0.0272	MDL	5.01	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.480	JBQ	0.0217	MDL	5.01	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.412	JB	0.0255	MDL	5.01	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.223	JBQ	0.0250	MDL	5.01	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.0872	JB	0.0224	MDL	5.01	PQL	ng/Kg	U	B
2,3,7,8-TCDD	0.0360	JQ	0.0281	MDL	1.00	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.274	J	0.0702	MDL	1.00	PQL	ng/Kg	J	Z
OCDD	5.20	JB	0.0771	MDL	10.0	PQL	ng/Kg	J	Z
OCDF	0.920	J	0.0562	MDL	10.0	PQL	ng/Kg	J	Z

Sample ID: SL-531-SA8-SB-0.0-0.5 ***Collected:*** 7/18/2013 2:15:00 ***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	1.15	JB	0.0473	MDL	5.20	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: PH070 **Laboratory: LL**

EDD Filename: PrepPH070_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-531-SA8-SB-0.0-0.5 *Collected:* 7/18/2013 2:15:00 *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	0.486	JB	0.0129	MDL	5.20	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0349	JBQ	0.0305	MDL	5.20	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0742	JBQ	0.0201	MDL	5.20	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.105	JBQ	0.0289	MDL	5.20	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0725	JBQ	0.0190	MDL	5.20	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.200	JB	0.0273	MDL	5.20	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.178	JB	0.0193	MDL	5.20	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.483	JBQ	0.0254	MDL	5.20	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.0588	JBQ	0.0196	MDL	5.20	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0804	JBQ	0.0286	MDL	5.20	PQL	ng/Kg	U	B
2,3,7,8-TCDD	0.0392	J	0.0384	MDL	1.04	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.0875	JQ	0.0453	MDL	1.04	PQL	ng/Kg	J	Z
OCDF	1.44	J	0.0664	MDL	10.4	PQL	ng/Kg	J	Z

Sample ID: SL-531-SA8-SB-4.0-5.0 *Collected:* 7/18/2013 2:30:00 *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	0.0908	JB	0.0296	MDL	5.49	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0321	JBQ	0.00916	MDL	5.49	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0315	JBQ	0.0178	MDL	5.49	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0210	JQ	0.0206	MDL	5.49	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.0348	JBQ	0.0234	MDL	5.49	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0482	JQ	0.0360	MDL	5.49	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.0291	JBQ	0.0106	MDL	5.49	PQL	ng/Kg	U	B
OCDD	0.484	JBQ	0.0458	MDL	11.0	PQL	ng/Kg	U	B
OCDF	0.0502	JQ	0.0465	MDL	11.0	PQL	ng/Kg	J	Z

Sample ID: SL-601-SA8-SB-0.0-0.5 *Collected:* 7/18/2013 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-HPCDD	0.153	JBQ	0.0401	MDL	5.30	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0548	JBQ	0.0142	MDL	5.30	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0367	JQ	0.0330	MDL	5.30	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.0247	JBQ	0.0162	MDL	5.30	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0569	JBQ	0.0373	MDL	5.30	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: PH070 **Laboratory: LL**

EDD Filename: PrepPH070_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-601-SA8-SB-0.0-0.5 *Collected:* 7/18/2013 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
1,2,3,6,7,8-HXCDF	0.0352	JB	0.0160	MDL	5.30	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0378	JB	0.0348	MDL	5.30	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0244	JBQ	0.0173	MDL	5.30	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.0513	JBQ	0.0309	MDL	5.30	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0369	JBQ	0.0156	MDL	5.30	PQL	ng/Kg	U	B
OCDD	1.01	JBQ	0.0400	MDL	10.6	PQL	ng/Kg	U	B
OCDF	0.178	JQ	0.0516	MDL	10.6	PQL	ng/Kg	J	Z

Sample ID: SL-601-SA8-SB-4.0-5.0 *Collected:* 7/18/2013 10:30:00 *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	0.0961	JBQ	0.0292	MDL	5.26	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0294	JBQ	0.00794	MDL	5.26	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0204	JBQ	0.0148	MDL	5.26	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0281	JBQ	0.0132	MDL	5.26	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0226	JB	0.0127	MDL	5.26	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.135	JBQ	0.0275	MDL	5.26	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0890	JB	0.0143	MDL	5.26	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.0707	JB	0.0204	MDL	5.26	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0192	JBQ	0.0127	MDL	5.26	PQL	ng/Kg	U	B
OCDD	0.337	JBQ	0.0333	MDL	10.5	PQL	ng/Kg	U	B
OCDF	0.0885	J	0.0388	MDL	10.5	PQL	ng/Kg	J	Z

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: SL-506-SA8-SB-0.0-0.5 *Collected:* 7/18/2013 7:35:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C21-C30)	8.5		2.1	MDL	5.4	PQL	mg/Kg	J	Q, Q

Sample ID: SL-519-SA8-SB-0.0-0.5 *Collected:* 7/18/2013 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)	2.8	J	2.2	MDL	5.4	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: PH070 **Laboratory: LL**

EDD Filename: PrepPH070_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: SL-520-SA8-SB-0.0-0.5 *Collected:* 7/18/2013 1:00:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C21-C30)	3.9	J	2.1	MDL	5.2	PQL	mg/Kg	J	Z
EFH (C30-C40)	7.9	J	4.2	MDL	10	PQL	mg/Kg	J	Z

Sample ID: SL-531-SA8-SB-0.0-0.5 *Collected:* 7/18/2013 2:15:00 *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)	2.5	J	2.1	MDL	5.3	PQL	mg/Kg	J	Z

Sample ID: SL-601-SA8-SB-4.0-5.0 *Collected:* 7/18/2013 10:30:00 *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)	4.4	J	2.1	MDL	5.3	PQL	mg/Kg	J	Z
EFH (C30-C40)	7.3	J	4.2	MDL	11	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 8082A **Matrix: SO**

Sample ID: SL-506-SA8-SB-0.0-0.5 *Collected:* 7/18/2013 7:35:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1254	5.0	J	4.7	MDL	18	PQL	ug/Kg	J	Z

Sample ID: SL-531-SA8-SB-0.0-0.5 *Collected:* 7/18/2013 2:15:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1254	5.5	J	4.6	MDL	18	PQL	ug/Kg	J	Z

Method Category: SVOA

Method: 8270D **Matrix: SO**

Sample ID: SL-506-SA8-SB-0.0-0.5 *Collected:* 7/18/2013 7:35:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZIDINE	1800	U	750	MDL	1800	PQL	ug/Kg	R	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: PH070 **Laboratory: LL**

EDD Filename: PrepPH070_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

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

Sample ID: SL-506-SA8-SB-0.0-0.5 *Collected:* 7/18/2013 7:35:00 *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(K)FLUORANTHENE	1.7	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
CHRYSENE	1.1	J	0.35	MDL	1.8	PQL	ug/Kg	J	Z
NAPHTHALENE	0.74	J	0.71	MDL	1.8	PQL	ug/Kg	U	F

Sample ID: SL-509-SA8-SB-0.0-0.5 *Collected:* 7/18/2013 8:50:00 *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	0.78	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(K)FLUORANTHENE	1.1	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
NAPHTHALENE	0.85	J	0.72	MDL	1.8	PQL	ug/Kg	U	F

Sample ID: SL-519-SA8-SB-0.0-0.5 *Collected:* 7/18/2013 1:30:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1-METHYLNAPHTHALENE	1.1	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z
ANTHRACENE	0.38	J	0.36	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(A)ANTHRACENE	0.96	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(A)PYRENE	1.4	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(E)PYRENE	4.0	J	3.5	MDL	18	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	8.9	J	6.4	MDL	19	PQL	ug/Kg	J	Z
INDENO(1,2,3-CD)PYRENE	1.7	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: SL-520-SA8-SB-0.0-0.5 *Collected:* 7/18/2013 1:00:00 *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(K)FLUORANTHENE	0.92	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
CHRYSENE	0.43	J	0.35	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: SL-531-SA8-SB-0.0-0.5 *Collected:* 7/18/2013 2:15:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(K)FLUORANTHENE	1.5	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

* 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: PH070 **Laboratory: LL**

EDD Filename: PrepPH070_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

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

Sample ID: SL-531-SA8-SB-0.0-0.5 *Collected:* 7/18/2013 2:15:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NAPHTHALENE	0.82	J	0.71	MDL	1.8	PQL	ug/Kg	U	F

Sample ID: SL-601-SA8-SB-0.0-0.5 *Collected:* 7/18/2013 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
CHRYSENE	0.73	J	0.35	MDL	1.8	PQL	ug/Kg	J	Z
NAPHTHALENE	0.93	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z

Method Category: VOA

Method: 8260B **Matrix: AQ**

Sample ID: TB-071813 *Collected:* 7/18/2013 8:00:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorotrifluoroethylene	5	U	2	MDL	5	PQL	ug/L	UJ	L

* 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: PH070 **Laboratory: LL**

EDD Filename: PrepPH070_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Reason Code Legend

Reason Code	*Description*
B	Method Blank Contamination
E	Laboratory Duplicate Precision
E	Matrix Spike Precision
F	Field Blank Contamination
L	Laboratory Control Spike Lower Estimation
L	Laboratory Control Spike Upper Estimation
Q	Laboratory Duplicate Precision
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

Enclosure I

EPA Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control
Outlier Reports

PH070

Method Blank Outlier Report

Lab Reporting Batch ID: PH070 **Laboratory: LL**

EDD Filename: PrepPH070_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: **1613B**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2070B371809	7/29/2013 6:09:00 PM	1,2,3,4,6,7,8-HPCDD	0.0394 ng/Kg	SL-506-SA8-SB-0.0-0.5
		1,2,3,4,6,7,8-HPCDF	0.0286 ng/Kg	SL-506-SA8-SB-4.0-5.0
		1,2,3,4,7,8,9-HPCDF	0.0272 ng/Kg	SL-509-SA8-SB-0.0-0.5
		1,2,3,4,7,8-HXCDF	0.0219 ng/Kg	SL-509-SA8-SB-4.0-5.0
		1,2,3,6,7,8-HXCDD	0.0352 ng/Kg	SL-519-SA8-SB-0.0-0.5
		1,2,3,6,7,8-HXCDF	0.0208 ng/Kg	SL-519-SA8-SB-3.5-4.5
		1,2,3,7,8,9-HXCDD	0.0341 ng/Kg	SL-520-SA8-SB-0.0-0.5
		1,2,3,7,8,9-HXCDF	0.0358 ng/Kg	SL-531-SA8-SB-0.0-0.5
		1,2,3,7,8-PECDF	0.0485 ng/Kg	SL-531-SA8-SB-4.0-5.0
		2,3,4,6,7,8-HXCDF	0.0291 ng/Kg	SL-601-SA8-SB-0.0-0.5
		2,3,4,7,8-PECDF	0.0474 ng/Kg	SL-601-SA8-SB-4.0-5.0
		OCDD	0.233 ng/Kg	

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-506-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0679 ng/Kg	0.0679U ng/Kg
SL-506-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.110 ng/Kg	0.110U ng/Kg
SL-506-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.131 ng/Kg	0.131U ng/Kg
SL-506-SA8-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.128 ng/Kg	0.128U ng/Kg
SL-506-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDD	0.101 ng/Kg	0.101U ng/Kg
SL-506-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0448 ng/Kg	0.0448U ng/Kg
SL-506-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.0313 ng/Kg	0.0313U ng/Kg
SL-506-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDD	0.0325 ng/Kg	0.0325U ng/Kg
SL-506-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.0111 ng/Kg	0.0111U ng/Kg
SL-506-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDD	0.0464 ng/Kg	0.0464U ng/Kg
SL-506-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDF	0.0257 ng/Kg	0.0257U ng/Kg
SL-506-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.0519 ng/Kg	0.0519U ng/Kg
SL-506-SA8-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0157 ng/Kg	0.0157U ng/Kg
SL-506-SA8-SB-4.0-5.0(RES)	2,3,4,7,8-PECDF	0.0273 ng/Kg	0.0273U ng/Kg
SL-506-SA8-SB-4.0-5.0(RES)	OCDD	1.07 ng/Kg	1.07U ng/Kg
SL-509-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0472 ng/Kg	0.0472U ng/Kg
SL-509-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.0620 ng/Kg	0.0620U ng/Kg
SL-509-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDD	0.120 ng/Kg	0.120U ng/Kg
SL-509-SA8-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDD	0.145 ng/Kg	0.145U ng/Kg
SL-509-SA8-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.0842 ng/Kg	0.0842U ng/Kg
SL-509-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0198 ng/Kg	0.0198U ng/Kg
SL-509-SA8-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.0517 ng/Kg	0.0517U ng/Kg
SL-509-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDD	0.133 ng/Kg	0.133U ng/Kg
SL-509-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.131 ng/Kg	0.131U ng/Kg
SL-509-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDD	0.0404 ng/Kg	0.0404U ng/Kg
SL-509-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDD	0.0652 ng/Kg	0.0652U ng/Kg
SL-509-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDF	0.0682 ng/Kg	0.0682U ng/Kg
SL-519-SA8-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.122 ng/Kg	0.122U ng/Kg
SL-519-SA8-SB-3.5-4.5(RES)	1,2,3,4,6,7,8-HPCDD	0.0612 ng/Kg	0.0612U ng/Kg
SL-519-SA8-SB-3.5-4.5(RES)	1,2,3,4,6,7,8-HPCDF	0.0393 ng/Kg	0.0393U ng/Kg
SL-519-SA8-SB-3.5-4.5(RES)	1,2,3,4,7,8-HXCDF	0.0331 ng/Kg	0.0331U ng/Kg

Method Blank Outlier Report

Lab Reporting Batch ID: PH070 **Laboratory: LL**

EDD Filename: PrepPH070_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: **1613B**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples

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-519-SA8-SB-3.5-4.5(RES)	1,2,3,6,7,8-HXCDD	0.0264 ng/Kg	0.0264U ng/Kg
SL-519-SA8-SB-3.5-4.5(RES)	1,2,3,6,7,8-HXCDF	0.0467 ng/Kg	0.0467U ng/Kg
SL-519-SA8-SB-3.5-4.5(RES)	1,2,3,7,8,9-HXCDD	0.0278 ng/Kg	0.0278U ng/Kg
SL-519-SA8-SB-3.5-4.5(RES)	1,2,3,7,8,9-HXCDF	0.0424 ng/Kg	0.0424U ng/Kg
SL-519-SA8-SB-3.5-4.5(RES)	1,2,3,7,8-PECDF	0.0864 ng/Kg	0.0864U ng/Kg
SL-519-SA8-SB-3.5-4.5(RES)	2,3,4,6,7,8-HXCDF	0.0226 ng/Kg	0.0226U ng/Kg
SL-519-SA8-SB-3.5-4.5(RES)	OCDD	0.151 ng/Kg	0.151U ng/Kg
SL-520-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0642 ng/Kg	0.0642U ng/Kg
SL-520-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDD	0.140 ng/Kg	0.140U ng/Kg
SL-520-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0872 ng/Kg	0.0872U ng/Kg
SL-531-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0349 ng/Kg	0.0349U ng/Kg
SL-531-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.0742 ng/Kg	0.0742U ng/Kg
SL-531-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDD	0.105 ng/Kg	0.105U ng/Kg
SL-531-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.0725 ng/Kg	0.0725U ng/Kg
SL-531-SA8-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.178 ng/Kg	0.178U ng/Kg
SL-531-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0588 ng/Kg	0.0588U ng/Kg
SL-531-SA8-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.0804 ng/Kg	0.0804U ng/Kg
SL-531-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDD	0.0908 ng/Kg	0.0908U ng/Kg
SL-531-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0321 ng/Kg	0.0321U ng/Kg
SL-531-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0315 ng/Kg	0.0315U ng/Kg
SL-531-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDD	0.0348 ng/Kg	0.0348U ng/Kg
SL-531-SA8-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0291 ng/Kg	0.0291U ng/Kg
SL-531-SA8-SB-4.0-5.0(RES)	OCDD	0.484 ng/Kg	0.484U ng/Kg
SL-601-SA8-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDD	0.153 ng/Kg	0.153U ng/Kg
SL-601-SA8-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDF	0.0548 ng/Kg	0.0548U ng/Kg
SL-601-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.0247 ng/Kg	0.0247U ng/Kg
SL-601-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDD	0.0569 ng/Kg	0.0569U ng/Kg
SL-601-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.0352 ng/Kg	0.0352U ng/Kg
SL-601-SA8-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDD	0.0378 ng/Kg	0.0378U ng/Kg
SL-601-SA8-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.0244 ng/Kg	0.0244U ng/Kg
SL-601-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.0513 ng/Kg	0.0513U ng/Kg
SL-601-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0369 ng/Kg	0.0369U ng/Kg
SL-601-SA8-SB-0.0-0.5(RES)	OCDD	1.01 ng/Kg	1.01U ng/Kg
SL-601-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDD	0.0961 ng/Kg	0.0961U ng/Kg
SL-601-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0294 ng/Kg	0.0294U ng/Kg
SL-601-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0204 ng/Kg	0.0204U ng/Kg
SL-601-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.0281 ng/Kg	0.0281U ng/Kg
SL-601-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.0226 ng/Kg	0.0226U ng/Kg
SL-601-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDD	0.135 ng/Kg	0.135U ng/Kg
SL-601-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDF	0.0890 ng/Kg	0.0890U ng/Kg

Method Blank Outlier Report

Lab Reporting Batch ID: PH070 **Laboratory: LL**

EDD Filename: PrepPH070_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples

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-601-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.0707 ng/Kg	0.0707U ng/Kg
SL-601-SA8-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0192 ng/Kg	0.0192U ng/Kg
SL-601-SA8-SB-4.0-5.0(RES)	OCDD	0.337 ng/Kg	0.337U ng/Kg

Method: 6010C
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P20337CB222014	7/23/2013 8:14:00 PM	BORON	0.920 mg/Kg	SL-506-SA8-SB-0.0-0.5
		CALCIUM	12.9 mg/Kg	SL-506-SA8-SB-4.0-5.0
		TIN	1.46 mg/Kg	SL-509-SA8-SB-0.0-0.5
		ZINC	0.353 mg/Kg	SL-509-SA8-SB-4.0-5.0
				SL-519-SA8-SB-0.0-0.5
				SL-519-SA8-SB-3.5-4.5
				SL-520-SA8-SB-0.0-0.5
				SL-531-SA8-SB-0.0-0.5
				SL-531-SA8-SB-4.0-5.0
				SL-601-SA8-SB-0.0-0.5
				SL-601-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-506-SA8-SB-0.0-0.5(RES)	TIN	2.83 mg/Kg	2.83U mg/Kg
SL-506-SA8-SB-4.0-5.0(RES)	TIN	2.86 mg/Kg	2.86U mg/Kg
SL-509-SA8-SB-0.0-0.5(RES)	TIN	2.80 mg/Kg	2.80U mg/Kg
SL-509-SA8-SB-4.0-5.0(RES)	BORON	1.26 mg/Kg	1.26U mg/Kg
SL-509-SA8-SB-4.0-5.0(RES)	TIN	2.93 mg/Kg	2.93U mg/Kg
SL-519-SA8-SB-0.0-0.5(RES)	TIN	2.69 mg/Kg	2.69U mg/Kg
SL-519-SA8-SB-3.5-4.5(RES)	TIN	2.85 mg/Kg	2.85U mg/Kg
SL-520-SA8-SB-0.0-0.5(RES)	BORON	4.36 mg/Kg	4.36U mg/Kg
SL-520-SA8-SB-0.0-0.5(RES)	TIN	2.66 mg/Kg	2.66U mg/Kg
SL-531-SA8-SB-0.0-0.5(RES)	TIN	2.65 mg/Kg	2.65U mg/Kg
SL-531-SA8-SB-4.0-5.0(RES)	BORON	3.58 mg/Kg	3.58U mg/Kg
SL-531-SA8-SB-4.0-5.0(RES)	TIN	2.91 mg/Kg	2.91U mg/Kg
SL-601-SA8-SB-0.0-0.5(RES)	TIN	2.63 mg/Kg	2.63U mg/Kg
SL-601-SA8-SB-4.0-5.0(RES)	BORON	4.04 mg/Kg	4.04U mg/Kg
SL-601-SA8-SB-4.0-5.0(RES)	TIN	2.88 mg/Kg	2.88U mg/Kg

Method Blank Outlier Report

Lab Reporting Batch ID: PH070 **Laboratory: LL**

EDD Filename: PrepPH070_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: **6020A**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P20337CB220738A	7/24/2013 7:38:00 AM	STRONTIUM	0.0744 mg/Kg	SL-506-SA8-SB-0.0-0.5 SL-506-SA8-SB-4.0-5.0 SL-509-SA8-SB-0.0-0.5 SL-509-SA8-SB-4.0-5.0 SL-519-SA8-SB-0.0-0.5 SL-519-SA8-SB-3.5-4.5 SL-520-SA8-SB-0.0-0.5 SL-531-SA8-SB-0.0-0.5 SL-531-SA8-SB-4.0-5.0 SL-601-SA8-SB-0.0-0.5 SL-601-SA8-SB-4.0-5.0

Field Blank Outlier Report

Lab Reporting Batch ID: PH070 **Laboratory: LL**

EDD Filename: PH070_v1. **eQAPP Name: CDM_SSFL_130808_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-506-SA8-SB-0.0-0.5 SL-506-SA8-SB-4.0-5.0 SL-509-SA8-SB-0.0-0.5 SL-509-SA8-SB-4.0-5.0 SL-519-SA8-SB-0.0-0.5 SL-519-SA8-SB-3.5-4.5 SL-520-SA8-SB-0.0-0.5 SL-531-SA8-SB-0.0-0.5 SL-531-SA8-SB-4.0-5.0 SL-601-SA8-SB-0.0-0.5 SL-601-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-506-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.287 mg/Kg	0.287U mg/Kg
SL-506-SA8-SB-4.0-5.0(RES)	MOLYBDENUM	0.413 mg/Kg	0.413U mg/Kg
SL-519-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.377 mg/Kg	0.377U mg/Kg
SL-520-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.315 mg/Kg	0.315U mg/Kg
SL-531-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.238 mg/Kg	0.238U mg/Kg
SL-531-SA8-SB-4.0-5.0(RES)	MOLYBDENUM	0.343 mg/Kg	0.343U mg/Kg
SL-601-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.452 mg/Kg	0.452U mg/Kg
SL-601-SA8-SB-4.0-5.0(RES)	MOLYBDENUM	0.351 mg/Kg	0.351U 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-506-SA8-SB-0.0-0.5 SL-506-SA8-SB-4.0-5.0 SL-509-SA8-SB-0.0-0.5 SL-509-SA8-SB-4.0-5.0 SL-519-SA8-SB-0.0-0.5 SL-519-SA8-SB-3.5-4.5 SL-520-SA8-SB-0.0-0.5 SL-531-SA8-SB-0.0-0.5 SL-531-SA8-SB-4.0-5.0 SL-601-SA8-SB-0.0-0.5 SL-601-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-506-SA8-SB-0.0-0.5(RES)	NAPHTHALENE	0.74 ug/Kg	1.8U ug/Kg
SL-509-SA8-SB-0.0-0.5(RES)	NAPHTHALENE	0.85 ug/Kg	1.8U ug/Kg
SL-531-SA8-SB-0.0-0.5(RES)	NAPHTHALENE	0.82 ug/Kg	1.8U ug/Kg

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH070 **Laboratory: LL**

EDD Filename: PH070_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 8015M
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-506-SA8-SB-0.0-0.5MS	EFH (C15-C20)	154	203	49.00-123.00	28 (20.00)	EFH (C15-C20)	J (all detects)
SL-506-SA8-SB-0.0-0.5MSD	EFH (C21-C30)	135	258	49.00-123.00	32 (20.00)	EFH (C21-C30)	EFH (C30-C40)
(SL-506-SA8-SB-0.0-0.5)	EFH (C30-C40)	182	449	49.00-123.00	36 (20.00)	EFH (C30-C40)	No Qual, >4X

Method: 8270D SIM
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-506-SA8-SB-0.0-0.5MSD	Diethylphthalate	-	128	76.00-127.00	-	Diethylphthalate	J(all detects)
(SL-506-SA8-SB-0.0-0.5)							

Method: 8270D
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-506-SA8-SB-0.0-0.5MS	BENZIDINE	0	0	35.00-141.00	-	BENZIDINE	J(all detects)
SL-506-SA8-SB-0.0-0.5MSD							R(all non-detects)
(SL-506-SA8-SB-0.0-0.5)							

Lab Duplicate Outlier Report

Lab Reporting Batch ID: PH070 **Laboratory: LL**

EDD Filename: PrepPH070_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 7471B
Matrix: SO

QC Sample ID (Associated Sample ID)	*Analyte*	*Sample RPD*	*eQAPP RPD*	*Flag*
SL-531-SA8-SB-4.0-5.0DUP (TOT) (SL-506-SA8-SB-0.0-0.5 SL -506-SA8-SB-4.0-5.0 SL -509-SA8-SB-0.0-0.5 SL -509-SA8-SB-4.0-5.0 SL -519-SA8-SB-0.0-0.5 SL -519-SA8-SB-3.5-4.5 SL -520-SA8-SB-0.0-0.5 SL -531-SA8-SB-0.0-0.5 SL -531-SA8-SB-4.0-5.0 SL -601-SA8-SB-0.0-0.5 SL -601-SA8-SB-4.0-5.0)	MERCURY	200	20.00	No Qual, OK by Difference

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

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH070 **Laboratory: LL**

EDD Filename: PrepPH070_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 8260B
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
LCSY77Q211110A LCSY77Y211131A (TB-071813)	Chlorotrifluoroethylene	44	43	47.00-120.00	-	Chlorotrifluoroethylene	J(all detects) UJ(all non-detects)

Method: 8270D SIM
Matrix: SO

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
P3LDLCSQ260423 (SL-506-SA8-SB-0.0-0.5 SL-506-SA8-SB-4.0-5.0 SL-509-SA8-SB-0.0-0.5 SL-509-SA8-SB-4.0-5.0 SL-519-SA8-SB-0.0-0.5 SL-519-SA8-SB-3.5-4.5 SL-520-SA8-SB-0.0-0.5 SL-531-SA8-SB-0.0-0.5 SL-531-SA8-SB-4.0-5.0 SL-601-SA8-SB-0.0-0.5 SL-601-SA8-SB-4.0-5.0)	Diethylphthalate	128	-	68.00-125.00	-	Diethylphthalate	J (all detects)

Method: 8270D
Matrix: SO

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
P3LELCSQ262136 (SL-506-SA8-SB-0.0-0.5 SL-506-SA8-SB-4.0-5.0 SL-509-SA8-SB-0.0-0.5 SL-509-SA8-SB-4.0-5.0)	1,2-Diphenylhydrazine/Azobenzen	115	-	77.00-111.00	-	1,2-Diphenylhydrazine/Azobenz	J(all detects)

Method: 8260B
Matrix: SO

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
LCSB68Q212141A LCSB68Y212203A (SL-506-SA8-SB-4.0-5.0 SL-509-SA8-SB-4.0-5.0)	VINYL ACETATE	-	-	10.00-160.00	-	VINYL ACETATE	J(all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH070 **Laboratory: LL**

EDD Filename: PH070_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-506-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDF	JB	2.50	5.29	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.0679	5.29	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.0550	5.29	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.110	5.29	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.345	5.29	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.111	5.29	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.394	5.29	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	0.229	5.29	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.678	5.29	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.131	5.29	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.128	5.29	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.102	1.06	PQL	ng/Kg	
	OCDF	J	4.13	10.6	PQL	ng/Kg	
SL-506-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.101	5.26	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0448	5.26	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.0313	5.26	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.0325	5.26	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0111	5.26	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.0464	5.26	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.0257	5.26	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDF	JBQ	0.0519	5.26	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0157	5.26	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0273	5.26	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0324	1.05	PQL	ng/Kg	
	OCDD	JB	1.07	10.5	PQL	ng/Kg	
	OCDF	JQ	0.150	10.5	PQL	ng/Kg	
SL-509-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	1.98	5.28	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.154	5.28	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0472	5.28	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.0416	5.28	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.0620	5.28	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.120	5.28	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.145	5.28	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.0842	5.28	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JQ	0.0696	5.28	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.656	5.28	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.0198	5.28	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0517	5.28	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0695	1.06	PQL	ng/Kg	
	OCDF	JQ	0.597	10.6	PQL	ng/Kg	
SL-509-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JB	0.133	5.14	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.131	5.14	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.0404	5.14	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.0652	5.14	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JBQ	0.0682	5.14	PQL	ng/Kg	
	OCDD	JB	1.83	10.3	PQL	ng/Kg	
	OCDF	JQ	0.750	10.3	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH070 **Laboratory: LL**

EDD Filename: PH070_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-519-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDF	JB	1.92	5.35	PQL	ng/Kg	J (all detects)
	1,2,3,4,7,8,9-HPCDF	JBQ	0.161	5.35	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.115	5.35	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.397	5.35	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.481	5.35	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.426	5.35	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.394	5.35	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.122	5.35	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.134	5.35	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	2.90	5.35	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.526	5.35	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	1.17	5.35	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.519	1.07	PQL	ng/Kg	
	OCDF	J	3.25	10.7	PQL	ng/Kg	
SL-519-SA8-SB-3.5-4.5	1,2,3,4,6,7,8-HPCDD	JBQ	0.0612	4.98	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0393	4.98	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0331	4.98	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.0264	4.98	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0467	4.98	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.0278	4.98	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.0424	4.98	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.0944	4.98	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.0864	4.98	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0226	4.98	PQL	ng/Kg	
	OCDD	JBQ	0.151	9.96	PQL	ng/Kg	
	OCDF	J	0.120	9.96	PQL	ng/Kg	
SL-520-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	0.553	5.01	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JB	0.672	5.01	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0642	5.01	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.0392	5.01	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.213	5.01	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.140	5.01	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.480	5.01	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.412	5.01	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.223	5.01	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.0872	5.01	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.0360	1.00	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.274	1.00	PQL	ng/Kg	
	OCDD	JB	5.20	10.0	PQL	ng/Kg	
	OCDF	J	0.920	10.0	PQL	ng/Kg	
SL-531-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	1.15	5.20	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JB	0.486	5.20	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0349	5.20	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0742	5.20	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.105	5.20	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0725	5.20	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.200	5.20	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.178	5.20	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.483	5.20	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0588	5.20	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0804	5.20	PQL	ng/Kg	
	2,3,7,8-TCDD	J	0.0392	1.04	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0875	1.04	PQL	ng/Kg	
	OCDF	J	1.44	10.4	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH070 **Laboratory: LL**

EDD Filename: PH070_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-531-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JB	0.0908	5.49	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0321	5.49	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0315	5.49	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.0210	5.49	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.0348	5.49	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JQ	0.0482	5.49	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0291	5.49	PQL	ng/Kg	
	OCDD	JBQ	0.484	11.0	PQL	ng/Kg	
	OCDF	JQ	0.0502	11.0	PQL	ng/Kg	
SL-601-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JBQ	0.153	5.30	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0548	5.30	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.0367	5.30	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0247	5.30	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.0569	5.30	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.0352	5.30	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDD	JB	0.0378	5.30	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.0244	5.30	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.0513	5.30	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0369	5.30	PQL	ng/Kg	
	OCDD	JBQ	1.01	10.6	PQL	ng/Kg	
	OCDF	JQ	0.178	10.6	PQL	ng/Kg	
SL-601-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.0961	5.26	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0294	5.26	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0204	5.26	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0281	5.26	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.0226	5.26	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.135	5.26	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	0.0890	5.26	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.0707	5.26	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0192	5.26	PQL	ng/Kg	
	OCDD	JBQ	0.337	10.5	PQL	ng/Kg	
	OCDF	J	0.0885	10.5	PQL	ng/Kg	

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-506-SA8-SB-0.0-0.5	BERYLLIUM	J	0.704	1.05	PQL	mg/Kg	
	BORON	J	4.93	10.5	PQL	mg/Kg	
	CADMIUM	J	0.520	1.05	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.287	2.10	PQL	mg/Kg	
	TIN	J	2.83	10.5	PQL	mg/Kg	
	Zirconium	J	4.67	5.25	PQL	mg/Kg	
SL-506-SA8-SB-4.0-5.0	BERYLLIUM	J	0.677	1.01	PQL	mg/Kg	
	CADMIUM	J	0.289	1.01	PQL	mg/Kg	
	MOLYBDENUM	J	0.413	2.03	PQL	mg/Kg	J (all detects)
	TIN	J	2.86	10.1	PQL	mg/Kg	
	Zirconium	J	3.92	5.07	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH070 **Laboratory: LL**

EDD Filename: PH070_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-509-SA8-SB-0.0-0.5	BERYLLIUM	J	0.781	1.10	PQL	mg/Kg	J (all detects)
	BORON	J	9.98	11.0	PQL	mg/Kg	
	CADMIUM	J	0.670	1.10	PQL	mg/Kg	
	TIN	J	2.80	11.0	PQL	mg/Kg	
SL-509-SA8-SB-4.0-5.0	BERYLLIUM	J	0.530	1.03	PQL	mg/Kg	J (all detects)
	BORON	J	1.26	10.3	PQL	mg/Kg	
	CADMIUM	J	0.425	1.03	PQL	mg/Kg	
	TIN	J	2.93	10.3	PQL	mg/Kg	
SL-519-SA8-SB-0.0-0.5	BERYLLIUM	J	0.827	1.06	PQL	mg/Kg	J (all detects)
	CADMIUM	J	0.751	1.06	PQL	mg/Kg	
	MOLYBDENUM	J	0.377	2.12	PQL	mg/Kg	
	SODIUM	J	103	106	PQL	mg/Kg	
	TIN	J	2.69	10.6	PQL	mg/Kg	
SL-519-SA8-SB-3.5-4.5	ARSENIC	J	3.75	4.14	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.458	1.03	PQL	mg/Kg	
	CADMIUM	J	0.339	1.03	PQL	mg/Kg	
	SODIUM	J	88.1	103	PQL	mg/Kg	
	TIN	J	2.85	10.3	PQL	mg/Kg	
	Zirconium	J	4.37	5.17	PQL	mg/Kg	
SL-520-SA8-SB-0.0-0.5	BERYLLIUM	J	0.785	1.04	PQL	mg/Kg	J (all detects)
	BORON	J	4.36	10.4	PQL	mg/Kg	
	CADMIUM	J	0.591	1.04	PQL	mg/Kg	
	MOLYBDENUM	J	0.315	2.09	PQL	mg/Kg	
	SODIUM	J	84.3	104	PQL	mg/Kg	
	TIN	J	2.66	10.4	PQL	mg/Kg	
	Zirconium	J	4.76	5.21	PQL	mg/Kg	
SL-531-SA8-SB-0.0-0.5	BERYLLIUM	J	0.882	1.06	PQL	mg/Kg	J (all detects)
	BORON	J	8.08	10.6	PQL	mg/Kg	
	CADMIUM	J	0.673	1.06	PQL	mg/Kg	
	MOLYBDENUM	J	0.238	2.13	PQL	mg/Kg	
	SODIUM	J	94.6	106	PQL	mg/Kg	
	TIN	J	2.65	10.6	PQL	mg/Kg	
	Zirconium	J	4.37	5.31	PQL	mg/Kg	
SL-531-SA8-SB-4.0-5.0	BERYLLIUM	J	0.944	1.08	PQL	mg/Kg	J (all detects)
	BORON	J	3.58	10.8	PQL	mg/Kg	
	CADMIUM	J	0.505	1.08	PQL	mg/Kg	
	MOLYBDENUM	J	0.343	2.15	PQL	mg/Kg	
	SODIUM	J	98.4	108	PQL	mg/Kg	
	TIN	J	2.91	10.8	PQL	mg/Kg	
SL-601-SA8-SB-0.0-0.5	BERYLLIUM	J	0.790	1.02	PQL	mg/Kg	J (all detects)
	BORON	J	9.22	10.2	PQL	mg/Kg	
	CADMIUM	J	0.599	1.02	PQL	mg/Kg	
	MOLYBDENUM	J	0.452	2.04	PQL	mg/Kg	
	SODIUM	J	93.6	102	PQL	mg/Kg	
	TIN	J	2.63	10.2	PQL	mg/Kg	
	Zirconium	J	2.94	5.10	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH070 **Laboratory: LL**

EDD Filename: PH070_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-601-SA8-SB-4.0-5.0	BERYLLIUM	J	0.730	1.02	PQL	mg/Kg	J (all detects)
	BORON	J	4.04	10.2	PQL	mg/Kg	
	CADMIUM	J	0.412	1.02	PQL	mg/Kg	
	MOLYBDENUM	J	0.351	2.04	PQL	mg/Kg	
	SODIUM	J	92.7	102	PQL	mg/Kg	
	TIN	J	2.88	10.2	PQL	mg/Kg	
	Zirconium	J	3.65	5.09	PQL	mg/Kg	

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-506-SA8-SB-0.0-0.5	SELENIUM	J	0.315	0.420	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0732	0.210	PQL	mg/Kg	
SL-509-SA8-SB-0.0-0.5	SELENIUM	J	0.281	0.439	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0321	0.219	PQL	mg/Kg	
SL-519-SA8-SB-0.0-0.5	SELENIUM	J	0.209	0.425	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0699	0.212	PQL	mg/Kg	
SL-520-SA8-SB-0.0-0.5	SELENIUM	J	0.156	0.417	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0373	0.209	PQL	mg/Kg	
SL-531-SA8-SB-0.0-0.5	SELENIUM	J	0.225	0.425	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0320	0.213	PQL	mg/Kg	
SL-531-SA8-SB-4.0-5.0	SILVER	J	0.0474	0.215	PQL	mg/Kg	J (all detects)
SL-601-SA8-SB-0.0-0.5	SELENIUM	J	0.248	0.408	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0287	0.204	PQL	mg/Kg	
SL-601-SA8-SB-4.0-5.0	SELENIUM	J	0.123	0.407	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0299	0.204	PQL	mg/Kg	

Method: 7199

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-506-SA8-SB-0.0-0.5	HEXAVALENT CHROMIUM	J	0.30	0.43	PQL	mg/Kg	J (all detects)
SL-509-SA8-SB-0.0-0.5	HEXAVALENT CHROMIUM	J	0.18	0.44	PQL	mg/Kg	J (all detects)
SL-509-SA8-SB-4.0-5.0	HEXAVALENT CHROMIUM	J	0.18	0.42	PQL	mg/Kg	J (all detects)

Method: 7471B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-531-SA8-SB-4.0-5.0	MERCURY	J	0.0139	0.0186	PQL	mg/Kg	J (all detects)

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

Reporting Limit Outliers

Lab Reporting Batch ID: PH070 **Laboratory: LL**

EDD Filename: PH070_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 8015M

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-519-SA8-SB-0.0-0.5	EFH (C15-C20)	J	2.8	5.4	PQL	mg/Kg	J (all detects)
SL-520-SA8-SB-0.0-0.5	EFH (C21-C30) EFH (C30-C40)	J J	3.9 7.9	5.2 10	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-531-SA8-SB-0.0-0.5	EFH (C15-C20)	J	2.5	5.3	PQL	mg/Kg	J (all detects)
SL-601-SA8-SB-4.0-5.0	EFH (C21-C30) EFH (C30-C40)	J J	4.4 7.3	5.3 11	PQL PQL	mg/Kg mg/Kg	J (all detects)

Method: 8082A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-506-SA8-SB-0.0-0.5	AROCLOR 1254	J	5.0	18	PQL	ug/Kg	J (all detects)
SL-531-SA8-SB-0.0-0.5	AROCLOR 1254	J	5.5	18	PQL	ug/Kg	J (all detects)

Method: 8270D SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-506-SA8-SB-0.0-0.5	BENZO(K)FLUORANTHENE BIS(2-ETHYLHEXYL)PHTHALATE CHRYSENE NAPHTHALENE	J J J J	1.7 6.6 1.1 0.74	1.8 19 1.8 1.8	PQL PQL PQL PQL	ug/Kg ug/Kg ug/Kg ug/Kg	J (all detects)
SL-509-SA8-SB-0.0-0.5	BENZO(B)FLUORANTHENE BENZO(K)FLUORANTHENE CHRYSENE NAPHTHALENE	J J J J	0.78 1.1 1.1 0.85	1.8 1.8 1.8 1.8	PQL PQL PQL PQL	ug/Kg ug/Kg ug/Kg ug/Kg	J (all detects)
SL-519-SA8-SB-0.0-0.5	1-METHYLNAPHTHALENE ANTHRACENE BENZO(A)ANTHRACENE BENZO(A)PYRENE BENZO(E)PYRENE BIS(2-ETHYLHEXYL)PHTHALATE INDENO(1,2,3-CD)PYRENE	J J J J J J J	1.1 0.38 0.96 1.4 4.0 8.9 1.7	1.8 1.8 1.8 1.8 18 19 1.8	PQL PQL PQL PQL PQL PQL PQL	ug/Kg ug/Kg ug/Kg ug/Kg ug/Kg ug/Kg ug/Kg	J (all detects)
SL-520-SA8-SB-0.0-0.5	BENZO(K)FLUORANTHENE CHRYSENE	J J	0.92 0.43	1.7 1.7	PQL PQL	ug/Kg ug/Kg	J (all detects)
SL-531-SA8-SB-0.0-0.5	BENZO(K)FLUORANTHENE CHRYSENE NAPHTHALENE	J J J	1.5 1.0 0.82	1.8 1.8 1.8	PQL PQL PQL	ug/Kg ug/Kg ug/Kg	J (all detects)
SL-601-SA8-SB-0.0-0.5	CHRYSENE NAPHTHALENE	J J	0.73 0.93	1.8 1.8	PQL PQL	ug/Kg ug/Kg	J (all detects)

LDC #: 30289E4 **VALIDATION COMPLETENESS WORKSHEET** Date: 9/4/13
SDG #: PH070 ADR Page: 1 of 1
Laboratory: Eurofins Lancaster Laboratories Reviewer: a
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	—	Sampling dates: 7/18/13
II.	ICP/MS Tune	—	
III.	Calibration	—	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	—	
VI.	Matrix Spike Analysis	~~NA~~ A	MS/D (Hg only)
VII.	Duplicate Sample Analysis	SW ~~NA~~ A	DUP ↓ Hg RPD=200 ok by difference
VIII.	Laboratory Control Samples (LCS)	~~NA~~ 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 = EB1-071713 (PH069) FB = FB-041113 (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-506-SA8-SB-0.0-0.5	11	SL-531-SA8-SB-4.0-5.0	21		31	
2	SL-506-SA8-SB-4.0-5.0	12	(XX11) MS (Hg)	22		32	
3	SL-509-SA8-SB-0.0-0.5	13	MSD	23		33	
4	SL-509-SA8-SB-4.0-5.0	14	DUP	24		34	
5	SL-601-SA8-SB-0.0-0.5	15		25		35	
6	SL-601-SA8-SB-4.0-5.0	16		26		36	
7	SL-519-SA8-SB-0.0-0.5	17		27		37	
8	SL-519-SA8-SB-3.5-4.5	18		28		38	
9	SL-520-SA8-SB-0.0-0.5	19		29		39	
10	SL-531-SA8-SB-0.0-0.5	20		30		40	

Notes:

LDC #: 30289E4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: a
2nd Reviewer: h

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	5	6	7	9	10	11		
Cu	0.0036	1.8										
Mo	0.0036	1.8	0.29	0.41	0.45	0.35	0.38	0.31	0.24	0.34		

Sampling date: 7/17/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All

Analyte	Blank ID	Sample Identification										
	EB1-071713 (SDG: PH069)	Action Limit	No Qualifiers									
Sb	0.0069	3.45										

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".

Data Validation Report
Santa Susana Field Laboratory

Subarea 8

SDG: PH071

Prepared for

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Prepared by

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September 24, 2013

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on July 19th, 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 (SVOAs) 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 Hydrocarbon as Gasoline (TPH-G) by EPA SW 846 Method 8015M
Total Petroleum Hydrocarbons as Extractable (TPH-E) by EPA SW 846 Method 8015M
Dioxins/Dibenzofurans by EPA Method 1613B
Hexavalent Chromium by EPA method 7199

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, trip blanks, equipment blanks, field blanks, and field duplicate samples. 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 the 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.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met QC criteria.

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 three 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 TPH-E 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.

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 SVOAs. Since the %R was out high and all associated result values were non-detect, no data were qualified. The details regarding LCS/LCSD outliers 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 with the following exceptions:

Diluted Sample	Analyte	%D (Limits)	Associated Samples	Flag	A or P
SL-516-SA8-SB-0.0-0.5	Iron Lithium	15 (≤10) 15 (≤10)	All soil samples in SDG PH071	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 PH071	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-G. No contaminant concentrations were found in the trip blank.

Two equipment blanks (from SDG PH069) were collected and analyzed for SVOAs, PCBs, metals, TPH-G, TPH-E, hexavalent chromium, and dioxins. The equipment blank had detections for several SVOAs, metals, and dioxins. All associated sample results were not detected or were significantly greater than the concentrations found in the equipment blanks and were not qualified.

One field blank (from SDG PH029) was collected and analyzed for SVOAs, PCBs, metals, TPH-G, TPH-E, hexavalent chromium, and dioxins. The field blank had detections for several SVOAs, 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. 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
19-Jul-2013	SL-521-SA8-SB-0.0-0.5	7133305	N	3050B	6010C	III
19-Jul-2013	SL-521-SA8-SB-0.0-0.5	7133305	N	3050B	6020A	III
19-Jul-2013	SL-521-SA8-SB-0.0-0.5	7133305	N	3546	8015M	III
19-Jul-2013	SL-521-SA8-SB-0.0-0.5	7133305	N	3546	8082A	III
19-Jul-2013	SL-521-SA8-SB-0.0-0.5	7133305	N	3546	8270D SIM	III
19-Jul-2013	SL-521-SA8-SB-0.0-0.5	7133305	N	METHOD	1613B	III
19-Jul-2013	SL-521-SA8-SB-0.0-0.5	7133305	N	METHOD	7471B	III
19-Jul-2013	SL-516-SA8-SB-0.0-0.5	7133304	N	3050B	6010C	III
19-Jul-2013	SL-516-SA8-SB-0.0-0.5	7133304	N	3050B	6020A	III
19-Jul-2013	SL-516-SA8-SB-0.0-0.5	7133304	N	3546	8015M	III
19-Jul-2013	SL-516-SA8-SB-0.0-0.5	7133304	N	3546	8082A	III
19-Jul-2013	SL-516-SA8-SB-0.0-0.5	7133304	N	3546	8270D SIM	III
19-Jul-2013	SL-516-SA8-SB-0.0-0.5	7133304	N	METHOD	1613B	III
19-Jul-2013	SL-516-SA8-SB-0.0-0.5	7133304	N	METHOD	7471B	III
19-Jul-2013	TB-071913	7133312	TB	5030B	8015M	III
19-Jul-2013	SL-516-SA8-SB-0.0-0.5DUP	P133304D220917A	DUP	3050B	6020A	III
19-Jul-2013	SL-516-SA8-SB-0.0-0.5DUP	P133304D220917B	DUP	3050B	6020A	III
19-Jul-2013	SL-516-SA8-SB-0.0-0.5DUP	P133304D221033	DUP	METHOD	7471B	III
19-Jul-2013	SL-516-SA8-SB-0.0-0.5DUP	P133304D221353	DUP	3050B	6010C	III
19-Jul-2013	SL-516-SA8-SB-0.0-0.5MSD	P133304M220922A	MSD	3050B	6020A	III
19-Jul-2013	SL-516-SA8-SB-0.0-0.5MSD	P133304M220922B	MSD	3050B	6020A	III
19-Jul-2013	SL-516-SA8-SB-0.0-0.5MSD	P133304M221041	MSD	METHOD	7471B	III
19-Jul-2013	SL-516-SA8-SB-0.0-0.5MSD	P133304M222000	MSD	3050B	6010C	III
19-Jul-2013	SL-516-SA8-SB-0.0-0.5MSD	P133304M240841A	MSD	3546	8082A	III
19-Jul-2013	SL-516-SA8-SB-0.0-0.5MSD	P133304M260651	MSD	3546	8270D SIM	III
19-Jul-2013	SL-516-SA8-SB-0.0-0.5MSD	P133304M320655A	MSD	3546	8015M	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
19-Jul-2013	SL-516-SA8-SB-0.0-0.5MS	P133304R220920A	MS	3050B	6020A	III
19-Jul-2013	SL-516-SA8-SB-0.0-0.5MS	P133304R220920B	MS	3050B	6020A	III
19-Jul-2013	SL-516-SA8-SB-0.0-0.5MS	P133304R221039	MS	METHOD	7471B	III
19-Jul-2013	SL-516-SA8-SB-0.0-0.5MS	P133304R221357	MS	3050B	6010C	III
19-Jul-2013	SL-516-SA8-SB-0.0-0.5MS	P133304R240823A	MS	3546	8082A	III
19-Jul-2013	SL-516-SA8-SB-0.0-0.5MS	P133304R260619	MS	3546	8270D SIM	III
19-Jul-2013	SL-516-SA8-SB-0.0-0.5MS	P133304R320634A	MS	3546	8015M	III
19-Jul-2013	SL-518-SA8-SB-0.0-0.5	7133308	N	3050B	6010C	III
19-Jul-2013	SL-518-SA8-SB-0.0-0.5	7133308	N	3050B	6020A	III
19-Jul-2013	SL-518-SA8-SB-0.0-0.5	7133308	N	3060A	7199	III
19-Jul-2013	SL-518-SA8-SB-0.0-0.5	7133308	N	3546	8015M	III
19-Jul-2013	SL-518-SA8-SB-0.0-0.5	7133308	N	3546	8082A	III
19-Jul-2013	SL-518-SA8-SB-0.0-0.5	7133308	N	3546	8270D SIM	III
19-Jul-2013	SL-518-SA8-SB-0.0-0.5	7133308	N	METHOD	1613B	III
19-Jul-2013	SL-518-SA8-SB-0.0-0.5	7133308	N	METHOD	7471B	III
19-Jul-2013	SL-518-SA8-SB-4.0-5.0	7133309	N	3050B	6010C	III
19-Jul-2013	SL-518-SA8-SB-4.0-5.0	7133309	N	3050B	6020A	III
19-Jul-2013	SL-518-SA8-SB-4.0-5.0	7133309	N	3060A	7199	III
19-Jul-2013	SL-518-SA8-SB-4.0-5.0	7133309	N	3546	8015M	III
19-Jul-2013	SL-518-SA8-SB-4.0-5.0	7133309	N	3546	8082A	III
19-Jul-2013	SL-518-SA8-SB-4.0-5.0	7133309	N	3546	8270D SIM	III
19-Jul-2013	SL-518-SA8-SB-4.0-5.0	7133309	N	5035A	8015M	III
19-Jul-2013	SL-518-SA8-SB-4.0-5.0	7133309	N	METHOD	1613B	III
19-Jul-2013	SL-518-SA8-SB-4.0-5.0	7133309	N	METHOD	7471B	III
19-Jul-2013	SL-517-SA8-SB-0.0-0.5	7133306	N	3050B	6010C	III
19-Jul-2013	SL-517-SA8-SB-0.0-0.5	7133306	N	3050B	6020A	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
19-Jul-2013	SL-517-SA8-SB-0.0-0.5	7133306	N	3060A	7199	III
19-Jul-2013	SL-517-SA8-SB-0.0-0.5	7133306	N	3546	8015M	III
19-Jul-2013	SL-517-SA8-SB-0.0-0.5	7133306	N	3546	8082A	III
19-Jul-2013	SL-517-SA8-SB-0.0-0.5	7133306	N	3546	8270D SIM	III
19-Jul-2013	SL-517-SA8-SB-0.0-0.5	7133306	N	METHOD	1613B	III
19-Jul-2013	SL-517-SA8-SB-0.0-0.5	7133306	N	METHOD	7471B	III
19-Jul-2013	SL-517-SA8-SB-3.0-4.0	7133307	N	3050B	6010C	III
19-Jul-2013	SL-517-SA8-SB-3.0-4.0	7133307	N	3050B	6020A	III
19-Jul-2013	SL-517-SA8-SB-3.0-4.0	7133307	N	3060A	7199	III
19-Jul-2013	SL-517-SA8-SB-3.0-4.0	7133307	N	3546	8015M	III
19-Jul-2013	SL-517-SA8-SB-3.0-4.0	7133307	N	3546	8082A	III
19-Jul-2013	SL-517-SA8-SB-3.0-4.0	7133307	N	3546	8270D SIM	III
19-Jul-2013	SL-517-SA8-SB-3.0-4.0	7133307	N	5035A	8015M	III
19-Jul-2013	SL-517-SA8-SB-3.0-4.0	7133307	N	METHOD	1613B	III
19-Jul-2013	SL-517-SA8-SB-3.0-4.0	7133307	N	METHOD	7471B	III
19-Jul-2013	SL-532-SA8-SB-0.0-0.5	7133310	N	3050B	6010C	III
19-Jul-2013	SL-532-SA8-SB-0.0-0.5	7133310	N	3050B	6020A	III
19-Jul-2013	SL-532-SA8-SB-0.0-0.5	7133310	N	3546	8015M	III
19-Jul-2013	SL-532-SA8-SB-0.0-0.5	7133310	N	3546	8082A	III
19-Jul-2013	SL-532-SA8-SB-0.0-0.5	7133310	N	3546	8270D SIM	III
19-Jul-2013	SL-532-SA8-SB-0.0-0.5	7133310	N	METHOD	1613B	III
19-Jul-2013	SL-532-SA8-SB-0.0-0.5	7133310	N	METHOD	7471B	III
19-Jul-2013	SL-532-SA8-SB-6.5-7.5	7133311	N	3050B	6010C	III
19-Jul-2013	SL-532-SA8-SB-6.5-7.5	7133311	N	3050B	6020A	III
19-Jul-2013	SL-532-SA8-SB-6.5-7.5	7133311	N	3546	8015M	III
19-Jul-2013	SL-532-SA8-SB-6.5-7.5	7133311	N	3546	8082A	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
19-Jul-2013	SL-532-SA8-SB-6.5-7.5	7133311	N	3546	8270D SIM	III
19-Jul-2013	SL-532-SA8-SB-6.5-7.5	7133311	N	5035A	8015M	III
19-Jul-2013	SL-532-SA8-SB-6.5-7.5	7133311	N	METHOD	1613B	III
19-Jul-2013	SL-532-SA8-SB-6.5-7.5	7133311	N	METHOD	7471B	III
19-Jul-2013	SL-606-SA8-SB-0.0-0.5	7133313	N	3050B	6010C	III
19-Jul-2013	SL-606-SA8-SB-0.0-0.5	7133313	N	3050B	6020A	III
19-Jul-2013	SL-606-SA8-SB-0.0-0.5	7133313	N	3546	8015M	III
19-Jul-2013	SL-606-SA8-SB-0.0-0.5	7133313	N	3546	8082A	III
19-Jul-2013	SL-606-SA8-SB-0.0-0.5	7133313	N	3546	8270D SIM	III
19-Jul-2013	SL-606-SA8-SB-0.0-0.5	7133313	N	METHOD	1613B	III
19-Jul-2013	SL-606-SA8-SB-0.0-0.5	7133313	N	METHOD	7471B	III
19-Jul-2013	SL-606-SA8-SB-4.0-5.0	7133314	N	3050B	6010C	III
19-Jul-2013	SL-606-SA8-SB-4.0-5.0	7133314	N	3050B	6020A	III
19-Jul-2013	SL-606-SA8-SB-4.0-5.0	7133314	N	3546	8015M	III
19-Jul-2013	SL-606-SA8-SB-4.0-5.0	7133314	N	3546	8082A	III
19-Jul-2013	SL-606-SA8-SB-4.0-5.0	7133314	N	3546	8270D SIM	III
19-Jul-2013	SL-606-SA8-SB-4.0-5.0	7133314	N	5035A	8015M	III
19-Jul-2013	SL-606-SA8-SB-4.0-5.0	7133314	N	METHOD	1613B	III
19-Jul-2013	SL-606-SA8-SB-4.0-5.0	7133314	N	METHOD	7471B	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH071 **Laboratory: LL**

EDD Filename: PrepPH071_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-516-SA8-SB-0.0-0.5 **Collected: 7/19/2013 8:00:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	3.94	U	0.730	MDL	3.94	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.575	J	0.0661	MDL	0.986	PQL	mg/Kg	J	Z
CADMIUM	0.131	J	0.0750	MDL	0.986	PQL	mg/Kg	J	Z
IRON	22800		3.57	MDL	39.4	PQL	mg/Kg	J	A
LITHIUM	27.0		0.34	MDL	3.9	PQL	mg/Kg	J	A
MOLYBDENUM	0.479	J	0.168	MDL	1.97	PQL	mg/Kg	U	F
SODIUM	69.9	J	16.5	MDL	98.6	PQL	mg/Kg	J	Z
TIN	3.00	J	0.217	MDL	9.86	PQL	mg/Kg	U	B
Zirconium	1.03	J	0.828	MDL	4.93	PQL	mg/Kg	J	Z

Sample ID: SL-517-SA8-SB-0.0-0.5 **Collected: 7/19/2013 9:30:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.02	U	0.744	MDL	4.02	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.625	J	0.0674	MDL	1.01	PQL	mg/Kg	J	Z
CADMIUM	0.179	J	0.0764	MDL	1.01	PQL	mg/Kg	J	Z
IRON	23200		3.64	MDL	40.2	PQL	mg/Kg	J	A
LITHIUM	21.6		0.34	MDL	4.0	PQL	mg/Kg	J	A
SODIUM	69.3	J	16.8	MDL	101	PQL	mg/Kg	J	Z
TIN	2.77	J	0.221	MDL	10.1	PQL	mg/Kg	U	B
Zirconium	1.18	J	0.845	MDL	5.03	PQL	mg/Kg	J	Z

Sample ID: SL-517-SA8-SB-3.0-4.0 **Collected: 7/19/2013 9:40:00** **Analysis Type: REA2** **Dilution: 5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	27300		18.7	MDL	206	PQL	mg/Kg	J	A

Sample ID: SL-517-SA8-SB-3.0-4.0 **Collected: 7/19/2013 9:40:00** **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	0.763	MDL	4.13	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.640	J	0.0691	MDL	1.03	PQL	mg/Kg	J	Z
LITHIUM	32.1		0.35	MDL	4.1	PQL	mg/Kg	J	A
MOLYBDENUM	0.202	J	0.175	MDL	2.06	PQL	mg/Kg	U	F
SODIUM	102	J	17.2	MDL	103	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: PH071 **Laboratory: LL**

EDD Filename: PrepPH071_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix:** SO

Sample ID: SL-517-SA8-SB-3.0-4.0 **Collected:** 7/19/2013 9:40:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TIN	3.84	J	0.227	MDL	10.3	PQL	mg/Kg	U	B

Sample ID: SL-518-SA8-SB-0.0-0.5 **Collected:** 7/19/2013 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	4.06	U	0.751	MDL	4.06	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.579	J	0.0680	MDL	1.01	PQL	mg/Kg	J	Z
CADMIUM	0.121	J	0.0771	MDL	1.01	PQL	mg/Kg	J	Z
IRON	23200		3.67	MDL	40.6	PQL	mg/Kg	J	A
LITHIUM	23.1		0.34	MDL	4.1	PQL	mg/Kg	J	A
MOLYBDENUM	0.192	J	0.172	MDL	2.03	PQL	mg/Kg	U	F
TIN	2.80	J	0.223	MDL	10.1	PQL	mg/Kg	U	B

Sample ID: SL-518-SA8-SB-4.0-5.0 **Collected:** 7/19/2013 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	4.08	U	0.756	MDL	4.08	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.599	J	0.0684	MDL	1.02	PQL	mg/Kg	J	Z
IRON	24500		3.70	MDL	40.8	PQL	mg/Kg	J	A
LITHIUM	23.7		0.35	MDL	4.1	PQL	mg/Kg	J	A
TIN	3.02	J	0.225	MDL	10.2	PQL	mg/Kg	U	B
Zirconium	1.23	J	0.858	MDL	5.11	PQL	mg/Kg	J	Z

Sample ID: SL-521-SA8-SB-0.0-0.5 **Collected:** 7/19/2013 7:30:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	3.89	U	0.719	MDL	3.89	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.582	J	0.0651	MDL	0.972	PQL	mg/Kg	J	Z
CADMIUM	0.207	J	0.0739	MDL	0.972	PQL	mg/Kg	J	Z
IRON	21900		3.52	MDL	38.9	PQL	mg/Kg	J	A
LITHIUM	25.2		0.33	MDL	3.9	PQL	mg/Kg	J	A
MOLYBDENUM	0.454	J	0.165	MDL	1.94	PQL	mg/Kg	U	F
SODIUM	92.0	J	16.2	MDL	97.2	PQL	mg/Kg	J	Z
TIN	2.90	J	0.214	MDL	9.72	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: PH071 **Laboratory: LL**

EDD Filename: PrepPH071_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-532-SA8-SB-0.0-0.5 **Collected: 7/19/2013 10:30:00** **Analysis Type: REA2** **Dilution: 5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	30600		19.2	MDL	212	PQL	mg/Kg	J	A

Sample ID: SL-532-SA8-SB-0.0-0.5 **Collected: 7/19/2013 10:30:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.25	U	0.786	MDL	4.25	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.991	J	0.0712	MDL	1.06	PQL	mg/Kg	J	Z
LITHIUM	22.5		0.36	MDL	4.2	PQL	mg/Kg	J	A
SODIUM	86.0	J	17.7	MDL	106	PQL	mg/Kg	J	Z
TIN	3.28	J	0.234	MDL	10.6	PQL	mg/Kg	U	B
Zirconium	2.88	J	0.892	MDL	5.31	PQL	mg/Kg	J	Z

Sample ID: SL-532-SA8-SB-6.5-7.5 **Collected: 7/19/2013 10:55:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.46	U	0.826	MDL	4.46	PQL	mg/Kg	UJ	Q
ARSENIC	4.27	J	0.781	MDL	4.46	PQL	mg/Kg	J	Z
BERYLLIUM	0.485	J	0.0748	MDL	1.12	PQL	mg/Kg	J	Z
CADMIUM	0.142	J	0.0848	MDL	1.12	PQL	mg/Kg	J	Z
IRON	25500		4.04	MDL	44.6	PQL	mg/Kg	J	A
LITHIUM	25.3		0.38	MDL	4.5	PQL	mg/Kg	J	A
SODIUM	87.5	J	18.6	MDL	112	PQL	mg/Kg	J	Z
TIN	3.44	J	0.246	MDL	11.2	PQL	mg/Kg	U	B
Zirconium	1.37	J	0.937	MDL	5.58	PQL	mg/Kg	J	Z

Sample ID: SL-606-SA8-SB-0.0-0.5 **Collected: 7/19/2013 1:00:00** **Analysis Type: REA2** **Dilution: 5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	32500		19.4	MDL	214	PQL	mg/Kg	J	A

Sample ID: SL-606-SA8-SB-0.0-0.5 **Collected: 7/19/2013 1:00:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.28	U	0.791	MDL	4.28	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.915	J	0.0716	MDL	1.07	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: PH071 **Laboratory: LL**

EDD Filename: PrepPH071_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-606-SA8-SB-0.0-0.5** ***Collected:*** **7/19/2013 1:00:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
LITHIUM	24.1		0.36	MDL	4.3	PQL	mg/Kg	J	A
SODIUM	77.9	J	17.9	MDL	107	PQL	mg/Kg	J	Z
TIN	3.30	J	0.235	MDL	10.7	PQL	mg/Kg	U	B
Zirconium	3.21	J	0.898	MDL	5.35	PQL	mg/Kg	J	Z

Sample ID: **SL-606-SA8-SB-4.0-5.0** ***Collected:*** **7/19/2013 1:20:00** ***Analysis Type:*** **REA2** ***Dilution:*** **5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	37200		20.2	MDL	223	PQL	mg/Kg	J	A

Sample ID: **SL-606-SA8-SB-4.0-5.0** ***Collected:*** **7/19/2013 1:20:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.46	U	0.825	MDL	4.46	PQL	mg/Kg	UJ	Q
BERYLLIUM	1.03	J	0.0747	MDL	1.11	PQL	mg/Kg	J	Z
LITHIUM	28.8		0.38	MDL	4.5	PQL	mg/Kg	J	A
SODIUM	108	J	18.6	MDL	111	PQL	mg/Kg	J	Z
TIN	3.51	J	0.245	MDL	11.1	PQL	mg/Kg	U	B
Zirconium	4.61	J	0.936	MDL	5.57	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: **SL-516-SA8-SB-0.0-0.5** ***Collected:*** **7/19/2013 8:00:00** ***Analysis Type:*** **RES** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0410	J	0.0256	MDL	0.197	PQL	mg/Kg	J	Z
STRONTIUM	21.1		0.0671	MDL	0.394	PQL	mg/Kg	J	Q
THALLIUM	0.271		0.0296	MDL	0.197	PQL	mg/Kg	J	Q

Sample ID: **SL-517-SA8-SB-0.0-0.5** ***Collected:*** **7/19/2013 9:30:00** ***Analysis Type:*** **REA** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.156	J	0.102	MDL	0.406	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: PH071 **Laboratory: LL**

EDD Filename: PrepPH071_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6020A **Matrix:** SO

Sample ID: SL-517-SA8-SB-0.0-0.5 **Collected:** 7/19/2013 9:30:00 **Analysis Type:** RES **Dilution:** 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0389	J	0.0264	MDL	0.203	PQL	mg/Kg	J	Z
STRONTIUM	27.4		0.0691	MDL	0.406	PQL	mg/Kg	J	Q
THALLIUM	0.339		0.0305	MDL	0.203	PQL	mg/Kg	J	Q

Sample ID: SL-517-SA8-SB-3.0-4.0 **Collected:** 7/19/2013 9:40:00 **Analysis Type:** RES **Dilution:** 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	15.3		0.0701	MDL	0.413	PQL	mg/Kg	J	Q
THALLIUM	0.412		0.0309	MDL	0.206	PQL	mg/Kg	J	Q

Sample ID: SL-518-SA8-SB-0.0-0.5 **Collected:** 7/19/2013 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	0.0561	J	0.0264	MDL	0.203	PQL	mg/Kg	J	Z
STRONTIUM	31.9		0.0690	MDL	0.406	PQL	mg/Kg	J	Q
THALLIUM	0.333		0.0304	MDL	0.203	PQL	mg/Kg	J	Q

Sample ID: SL-518-SA8-SB-4.0-5.0 **Collected:** 7/19/2013 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	0.0347	J	0.0266	MDL	0.204	PQL	mg/Kg	J	Z
STRONTIUM	21.8		0.0694	MDL	0.408	PQL	mg/Kg	J	Q
THALLIUM	0.240		0.0306	MDL	0.204	PQL	mg/Kg	J	Q

Sample ID: SL-521-SA8-SB-0.0-0.5 **Collected:** 7/19/2013 7:30:00 **Analysis Type:** REA **Dilution:** 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.227	J	0.0972	MDL	0.389	PQL	mg/Kg	J	Z

Sample ID: SL-521-SA8-SB-0.0-0.5 **Collected:** 7/19/2013 7:30:00 **Analysis Type:** RES **Dilution:** 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0410	J	0.0253	MDL	0.194	PQL	mg/Kg	J	Z
STRONTIUM	24.0		0.0661	MDL	0.389	PQL	mg/Kg	J	Q
THALLIUM	0.272		0.0292	MDL	0.194	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: PH071 **Laboratory: LL**

EDD Filename: PrepPH071_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-532-SA8-SB-0.0-0.5 **Collected: 7/19/2013 10:30:00** **Analysis Type: REA** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.217	J	0.106	MDL	0.425	PQL	mg/Kg	J	Z

Sample ID: SL-532-SA8-SB-0.0-0.5 **Collected: 7/19/2013 10:30:00** **Analysis Type: RES** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0448	J	0.0276	MDL	0.212	PQL	mg/Kg	J	Z
STRONTIUM	27.6		0.0722	MDL	0.425	PQL	mg/Kg	J	Q
THALLIUM	0.340		0.0319	MDL	0.212	PQL	mg/Kg	J	Q

Sample ID: SL-532-SA8-SB-6.5-7.5 **Collected: 7/19/2013 10:55:00** **Analysis Type: RES** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	22.2		0.0759	MDL	0.446	PQL	mg/Kg	J	Q
THALLIUM	0.306		0.0335	MDL	0.223	PQL	mg/Kg	J	Q

Sample ID: SL-606-SA8-SB-0.0-0.5 **Collected: 7/19/2013 1:00:00** **Analysis Type: REA** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.239	J	0.107	MDL	0.428	PQL	mg/Kg	J	Z

Sample ID: SL-606-SA8-SB-0.0-0.5 **Collected: 7/19/2013 1:00:00** **Analysis Type: RES** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0589	J	0.0278	MDL	0.214	PQL	mg/Kg	J	Z
STRONTIUM	38.4		0.0727	MDL	0.428	PQL	mg/Kg	J	Q
THALLIUM	0.307		0.0321	MDL	0.214	PQL	mg/Kg	J	Q

Sample ID: SL-606-SA8-SB-4.0-5.0 **Collected: 7/19/2013 1:20:00** **Analysis Type: REA** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.236	J	0.111	MDL	0.446	PQL	mg/Kg	J	Z

Sample ID: SL-606-SA8-SB-4.0-5.0 **Collected: 7/19/2013 1:20:00** **Analysis Type: RES** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0341	J	0.0290	MDL	0.223	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: PH071 **Laboratory: LL**

EDD Filename: PrepPH071_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

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

Sample ID: SL-606-SA8-SB-4.0-5.0 **Collected: 7/19/2013 1:20:00** **Analysis Type: RES** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	44.6		0.0758	MDL	0.446	PQL	mg/Kg	J	Q
THALLIUM	0.348		0.0334	MDL	0.223	PQL	mg/Kg	J	Q

Method Category: METALS
Method: 7199 **Matrix: SO**

Sample ID: SL-517-SA8-SB-0.0-0.5 **Collected: 7/19/2013 9:30:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
HEXAVALENT CHROMIUM	0.17	J	0.15	MDL	0.42	PQL	mg/Kg	J	Z

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

Sample ID: SL-516-SA8-SB-0.0-0.5 **Collected: 7/19/2013 8:00:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0141	J	0.0099	MDL	0.0165	PQL	mg/Kg	J	Z

Sample ID: SL-518-SA8-SB-4.0-5.0 **Collected: 7/19/2013 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
MERCURY	0.0117	J	0.0101	MDL	0.0168	PQL	mg/Kg	J	Z

Sample ID: SL-521-SA8-SB-0.0-0.5 **Collected: 7/19/2013 7:30:00** **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	0.010	MDL	0.0166	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: PH071 **Laboratory: LL**

EDD Filename: PrepPH071_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-516-SA8-SB-0.0-0.5 **Collected: 7/19/2013 8:00:00** **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	0.966	JB	0.0563	MDL	4.91	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.241	JB	0.0144	MDL	4.91	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.0588	JB	0.0225	MDL	4.91	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.211	JB	0.0421	MDL	4.91	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0418	JBQ	0.0207	MDL	4.91	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.312	JB	0.0392	MDL	4.91	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.132	JBQ	0.0281	MDL	4.91	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.155	JBQ	0.0282	MDL	4.91	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0492	JBQ	0.0221	MDL	4.91	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0949	JBQ	0.0312	MDL	4.91	PQL	ng/Kg	U	B
OCDD	5.46	JB	0.0325	MDL	9.81	PQL	ng/Kg	J	Z
OCDF	0.462	JQ	0.0482	MDL	9.81	PQL	ng/Kg	J	Z

Sample ID: SL-517-SA8-SB-0.0-0.5 **Collected: 7/19/2013 9:30:00** **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	1.29	JB	0.0537	MDL	5.02	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.628	JB	0.0207	MDL	5.02	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0901	JBQ	0.0398	MDL	5.02	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.179	JBQ	0.0265	MDL	5.02	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.121	JB	0.0353	MDL	5.02	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.234	JB	0.0251	MDL	5.02	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.183	JBQ	0.0346	MDL	5.02	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.0635	JBQ	0.0329	MDL	5.02	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	2.59	JB	0.0455	MDL	5.02	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.167	JB	0.0257	MDL	5.02	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.366	JB	0.0486	MDL	5.02	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.611	JQ	0.0845	MDL	1.00	PQL	ng/Kg	J	Z
OCDD	9.54	JB	0.0424	MDL	10.0	PQL	ng/Kg	J	Z
OCDF	0.559	J	0.0469	MDL	10.0	PQL	ng/Kg	J	Z

Sample ID: SL-517-SA8-SB-3.0-4.0 **Collected: 7/19/2013 9:40:00** **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	0.0278	JBQ	0.0219	MDL	5.08	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: PH071 **Laboratory: LL**

EDD Filename: PrepPH071_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix:** SO

Sample ID: **SL-517-SA8-SB-3.0-4.0** ***Collected:*** **7/19/2013 9:40:00** ***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	0.0253	JBQ	0.00708	MDL	5.08	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0141	JBQ	0.0141	MDL	5.08	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0225	JBQ	0.0100	MDL	5.08	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0155	JBQ	0.0101	MDL	5.08	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0197	JBQ	0.0101	MDL	5.08	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0383	JQ	0.0335	MDL	5.08	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.0319	JBQ	0.0177	MDL	5.08	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0123	JBQ	0.0103	MDL	5.08	PQL	ng/Kg	U	B
OCDD	0.102	JBQ	0.0259	MDL	10.2	PQL	ng/Kg	U	B
OCDF	0.0748	JQ	0.0329	MDL	10.2	PQL	ng/Kg	J	Z

Sample ID: **SL-518-SA8-SB-0.0-0.5** ***Collected:*** **7/19/2013 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	0.0731	JBQ	0.0285	MDL	5.05	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0230	JBQ	0.0100	MDL	5.05	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0226	JB	0.0164	MDL	5.05	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0248	JBQ	0.0123	MDL	5.05	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0157	JBQ	0.0116	MDL	5.05	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0640	JBQ	0.0249	MDL	5.05	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0904	JBQ	0.0129	MDL	5.05	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0222	JBQ	0.0106	MDL	5.05	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0387	JBQ	0.0234	MDL	5.05	PQL	ng/Kg	U	B
OCDD	0.648	JBQ	0.0360	MDL	10.1	PQL	ng/Kg	U	B
OCDF	0.0879	JQ	0.0294	MDL	10.1	PQL	ng/Kg	J	Z

Sample ID: **SL-518-SA8-SB-4.0-5.0** ***Collected:*** **7/19/2013 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	0.137	JB	0.0128	MDL	5.06	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.132	JBQ	0.0315	MDL	5.06	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0632	JBQ	0.0450	MDL	5.06	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0194	JQ	0.0114	MDL	5.06	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.0482	JB	0.00510	MDL	5.06	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0280	JB	0.0118	MDL	5.06	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: PH071 **Laboratory: LL**

EDD Filename: PrepPH071_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-518-SA8-SB-4.0-5.0** ***Collected:*** **7/19/2013 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	0.0334	JB	0.00521	MDL	5.06	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0394	JB	0.0117	MDL	5.06	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0449	JBQ	0.00594	MDL	5.06	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0479	JQ	0.0174	MDL	5.06	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.102	JBQ	0.00740	MDL	5.06	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0362	JBQ	0.00490	MDL	5.06	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0448	JB	0.00688	MDL	5.06	PQL	ng/Kg	U	B
2,3,7,8-TCDD	0.0255	JQ	0.0101	MDL	1.01	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.0204	JQ	0.0100	MDL	1.01	PQL	ng/Kg	J	Z
OCDD	0.848	JB	0.0152	MDL	10.1	PQL	ng/Kg	U	B
OCDF	0.149	J	0.0206	MDL	10.1	PQL	ng/Kg	J	Z

Sample ID: **SL-521-SA8-SB-0.0-0.5** ***Collected:*** **7/19/2013 7:30:00** ***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	1.72	JB	0.0518	MDL	4.82	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.443	JB	0.0216	MDL	4.82	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0580	JBQ	0.0355	MDL	4.82	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0760	JQ	0.0437	MDL	4.82	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.110	JBQ	0.0267	MDL	4.82	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	1.81	JB	0.0464	MDL	4.82	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.162	JBQ	0.0255	MDL	4.82	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	2.71	JB	0.0454	MDL	4.82	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.623	JB	0.0276	MDL	4.82	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.297	J	0.0657	MDL	4.82	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.298	JB	0.0326	MDL	4.82	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.105	JB	0.0261	MDL	4.82	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.109	JB	0.0352	MDL	4.82	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.120	J	0.0536	MDL	0.964	PQL	ng/Kg	J	Z
OCDF	0.879	J	0.0357	MDL	9.64	PQL	ng/Kg	J	Z

Sample ID: **SL-532-SA8-SB-0.0-0.5** ***Collected:*** **7/19/2013 10:30:00** ***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	0.0513	JBQ	0.0267	MDL	5.11	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: PH071 **Laboratory: LL**

EDD Filename: PrepPH071_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix:** SO

Sample ID: **SL-532-SA8-SB-0.0-0.5** ***Collected:*** **7/19/2013 10:30:00** ***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	0.0606	JB	0.00837	MDL	5.11	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0279	JB	0.0135	MDL	5.11	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0422	JBQ	0.0123	MDL	5.11	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0955	JBQ	0.0254	MDL	5.11	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.116	JBQ	0.0254	MDL	5.11	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.107	JBQ	0.0139	MDL	5.11	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0440	JQ	0.0324	MDL	5.11	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.0403	JBQ	0.0218	MDL	5.11	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0184	JBQ	0.0115	MDL	5.11	PQL	ng/Kg	U	B
OCDD	0.558	JBQ	0.0325	MDL	10.2	PQL	ng/Kg	U	B
OCDF	0.0752	JQ	0.0270	MDL	10.2	PQL	ng/Kg	J	Z

Sample ID: **SL-532-SA8-SB-6.5-7.5** ***Collected:*** **7/19/2013 10:55:00** ***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	0.0924	JBQ	0.0120	MDL	5.62	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0334	JB	0.0306	MDL	5.62	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0539	JB	0.0391	MDL	5.62	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0356	JQ	0.0128	MDL	5.62	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.0307	JBQ	0.00609	MDL	5.62	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0185	JB	0.00598	MDL	5.62	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0326	JBQ	0.0134	MDL	5.62	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0354	JBQ	0.00655	MDL	5.62	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.0566	JBQ	0.00943	MDL	5.62	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0161	JBQ	0.00598	MDL	5.62	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0396	JBQ	0.00816	MDL	5.62	PQL	ng/Kg	U	B
2,3,7,8-TCDD	0.0271	JQ	0.0155	MDL	1.12	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.0117	JQ	0.0111	MDL	1.12	PQL	ng/Kg	J	Z
OCDD	0.330	JBQ	0.0183	MDL	11.2	PQL	ng/Kg	U	B
OCDF	0.0891	J	0.0169	MDL	11.2	PQL	ng/Kg	J	Z

Sample ID: **SL-606-SA8-SB-0.0-0.5** ***Collected:*** **7/19/2013 1:00:00** ***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	1.06	JB	0.0252	MDL	5.23	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: PH071 **Laboratory: LL**

EDD Filename: PrepPH071_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix:** SO

Sample ID: SL-606-SA8-SB-0.0-0.5 **Collected:** 7/19/2013 1:00:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,7,8,9-HPCDF	0.141	JBQ	0.0349	MDL	5.23	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.146	J	0.0277	MDL	5.23	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.202	JB	0.0232	MDL	5.23	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.375	JB	0.0302	MDL	5.23	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.287	JB	0.0215	MDL	5.23	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.307	JB	0.0279	MDL	5.23	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.153	JB	0.0260	MDL	5.23	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0779	JQ	0.0220	MDL	5.23	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	1.20	JB	0.0302	MDL	5.23	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.394	JB	0.0216	MDL	5.23	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.695	JB	0.0274	MDL	5.23	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.562	J	0.0576	MDL	1.05	PQL	ng/Kg	J	Z
OCDF	1.53	J	0.0137	MDL	10.5	PQL	ng/Kg	J	Z

Sample ID: SL-606-SA8-SB-4.0-5.0 **Collected:** 7/19/2013 1:20:00 **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	0.165	JBQ	0.0192	MDL	5.51	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0667	JB	0.00613	MDL	5.51	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0447	JBQ	0.00992	MDL	5.51	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0908	JB	0.0148	MDL	5.51	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.132	JB	0.00970	MDL	5.51	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0887	JB	0.0159	MDL	5.51	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.112	JB	0.00892	MDL	5.51	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0757	JBQ	0.0156	MDL	5.51	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.104	JBQ	0.0105	MDL	5.51	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.123	JBQ	0.0232	MDL	5.51	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.210	JB	0.0138	MDL	5.51	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0705	JBQ	0.00881	MDL	5.51	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.161	JBQ	0.0138	MDL	5.51	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.0407	JQ	0.0200	MDL	1.10	PQL	ng/Kg	J	Z
OCDD	0.600	JB	0.0186	MDL	11.0	PQL	ng/Kg	U	B
OCDF	0.120	JB	0.0215	MDL	11.0	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: PH071 **Laboratory: LL**

EDD Filename: PrepPH071_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: **SL-516-SA8-SB-0.0-0.5** ***Collected:*** **7/19/2013 8:00:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C21-C30)	7.0		2.0	MDL	5.0	PQL	mg/Kg	J	Q, Q
EFH (C30-C40)	35		4.0	MDL	10	PQL	mg/Kg	J	Q

Sample ID: **SL-532-SA8-SB-0.0-0.5** ***Collected:*** **7/19/2013 10:30:00** ***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)	2.6	J	2.1	MDL	5.4	PQL	mg/Kg	J	Z

Sample ID: **SL-606-SA8-SB-0.0-0.5** ***Collected:*** **7/19/2013 1:00:00** ***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)	3.9	J	2.2	MDL	5.5	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 8082A **Matrix: SO**

Sample ID: **SL-606-SA8-SB-0.0-0.5** ***Collected:*** **7/19/2013 1:00:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Aroclor 5460	30	J	11	MDL	36	PQL	ug/Kg	J	Z

Method Category: SVOA

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

Sample ID: **SL-516-SA8-SB-0.0-0.5** ***Collected:*** **7/19/2013 8:00:00** ***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(K)FLUORANTHENE	1.5	J	0.67	MDL	1.7	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	10	J	6.0	MDL	18	PQL	ug/Kg	J	Z
CHRYSENE	0.68	J	0.33	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: **SL-517-SA8-SB-0.0-0.5** ***Collected:*** **7/19/2013 9:30:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(B)FLUORANTHENE	0.73	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: PH071 **Laboratory: LL**

EDD Filename: PrepPH071_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

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

Sample ID: SL-517-SA8-SB-0.0-0.5 **Collected:** 7/19/2013 9:30:00 **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	15	J	6.1	MDL	18	PQL	ug/Kg	J	Z
FLUORANTHENE	0.75	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
NAPHTHALENE	0.78	J	0.68	MDL	1.7	PQL	ug/Kg	U	F
PHENANTHRENE	0.88	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
PYRENE	0.89	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: SL-521-SA8-SB-0.0-0.5 **Collected:** 7/19/2013 7:30:00 **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(B)FLUORANTHENE	0.88	J	0.67	MDL	1.7	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	10	J	6.1	MDL	18	PQL	ug/Kg	J	Z
CHRYSENE	1.1	J	0.34	MDL	1.7	PQL	ug/Kg	J	Z
FLUORANTHENE	0.95	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	0.76	J	0.67	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: SL-532-SA8-SB-0.0-0.5 **Collected:** 7/19/2013 10:30:00 **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(K)FLUORANTHENE	0.75	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z
CHRYSENE	0.42	J	0.36	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: SL-606-SA8-SB-0.0-0.5 **Collected:** 7/19/2013 1:00:00 **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1-METHYLNAPHTHALENE	0.93	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(A)ANTHRACENE	1.0	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(A)PYRENE	1.1	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(G,H,I)PERYLENE	1.2	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	12	J	6.5	MDL	20	PQL	ug/Kg	J	Z
DIBENZO(A,H)ANTHRACENE	1.2	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z
INDENO(1,2,3-CD)PYRENE	1.1	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: PH071 **Laboratory: LL**

EDD Filename: PrepPH071_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: **SVOA**

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

Sample ID: **SL-606-SA8-SB-4.0-5.0** ***Collected:*** **7/19/2013 1:20:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
BIS(2-ETHYLHEXYL)PHTHALATE	7.6	J	6.7	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: PH071 **Laboratory: LL**

EDD Filename: PrepPH071_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Reason Code Legend

Reason Code	*Description*
*#	Professional Judgment
A	ICP Serial Dilution
B	Method Blank Contamination
E	Laboratory Duplicate Precision
E	Matrix Spike Precision
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

Enclosure I

EPA Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control Outlier Reports

PH071

Method Blank Outlier Report

Lab Reporting Batch ID: PH071 **Laboratory: LL**

EDD Filename: PrepPH071_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: **1613B**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2070B371809	7/29/2013 6:09:00 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-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-PECDF 2,3,4,6,7,8-HXCDF 2,3,4,7,8-PECDF OCDD	0.0394 ng/Kg 0.0286 ng/Kg 0.0272 ng/Kg 0.0219 ng/Kg 0.0352 ng/Kg 0.0208 ng/Kg 0.0341 ng/Kg 0.0358 ng/Kg 0.0485 ng/Kg 0.0291 ng/Kg 0.0474 ng/Kg 0.233 ng/Kg	SL-516-SA8-SB-0.0-0.5 SL-517-SA8-SB-0.0-0.5 SL-517-SA8-SB-3.0-4.0 SL-518-SA8-SB-0.0-0.5 SL-518-SA8-SB-4.0-5.0 SL-521-SA8-SB-0.0-0.5 SL-532-SA8-SB-0.0-0.5 SL-532-SA8-SB-6.5-7.5 SL-606-SA8-SB-0.0-0.5
BLK2100B372054	7/30/2013 8:54:00 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	0.0567 ng/Kg 0.0332 ng/Kg 0.0325 ng/Kg 0.0355 ng/Kg 0.0517 ng/Kg 0.0248 ng/Kg 0.0377 ng/Kg 0.0327 ng/Kg 0.0544 ng/Kg 0.0311 ng/Kg 0.0578 ng/Kg 0.0342 ng/Kg 0.0367 ng/Kg 0.0257 ng/Kg 0.283 ng/Kg 0.0947 ng/Kg	SL-606-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-516-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.0588 ng/Kg	0.0588U ng/Kg
SL-516-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.0418 ng/Kg	0.0418U ng/Kg
SL-516-SA8-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.132 ng/Kg	0.132U ng/Kg
SL-516-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.155 ng/Kg	0.155U ng/Kg
SL-516-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0492 ng/Kg	0.0492U ng/Kg
SL-516-SA8-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.0949 ng/Kg	0.0949U ng/Kg
SL-517-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0901 ng/Kg	0.0901U ng/Kg
SL-517-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDD	0.121 ng/Kg	0.121U ng/Kg
SL-517-SA8-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.0635 ng/Kg	0.0635U ng/Kg
SL-517-SA8-SB-3.0-4.0(RES)	1,2,3,4,6,7,8-HPCDD	0.0278 ng/Kg	0.0278U ng/Kg
SL-517-SA8-SB-3.0-4.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0253 ng/Kg	0.0253U ng/Kg
SL-517-SA8-SB-3.0-4.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0141 ng/Kg	0.0141U ng/Kg
SL-517-SA8-SB-3.0-4.0(RES)	1,2,3,4,7,8-HXCDF	0.0225 ng/Kg	0.0225U ng/Kg
SL-517-SA8-SB-3.0-4.0(RES)	1,2,3,6,7,8-HXCDF	0.0155 ng/Kg	0.0155U ng/Kg
SL-517-SA8-SB-3.0-4.0(RES)	1,2,3,7,8,9-HXCDF	0.0197 ng/Kg	0.0197U ng/Kg
SL-517-SA8-SB-3.0-4.0(RES)	1,2,3,7,8-PECDF	0.0319 ng/Kg	0.0319U ng/Kg
SL-517-SA8-SB-3.0-4.0(RES)	2,3,4,6,7,8-HXCDF	0.0123 ng/Kg	0.0123U ng/Kg
SL-517-SA8-SB-3.0-4.0(RES)	OCDD	0.102 ng/Kg	0.102U ng/Kg
SL-518-SA8-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDD	0.0731 ng/Kg	0.0731U ng/Kg
SL-518-SA8-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDF	0.0230 ng/Kg	0.0230U ng/Kg

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

Method Blank Outlier Report

Lab Reporting Batch ID: PH071 **Laboratory: LL**

EDD Filename: PrepPH071_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: **1613B**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples

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-518-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0226 ng/Kg	0.0226U ng/Kg
SL-518-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.0248 ng/Kg	0.0248U ng/Kg
SL-518-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.0157 ng/Kg	0.0157U ng/Kg
SL-518-SA8-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDD	0.0640 ng/Kg	0.0640U ng/Kg
SL-518-SA8-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.0904 ng/Kg	0.0904U ng/Kg
SL-518-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0222 ng/Kg	0.0222U ng/Kg
SL-518-SA8-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.0387 ng/Kg	0.0387U ng/Kg
SL-518-SA8-SB-0.0-0.5(RES)	OCDD	0.648 ng/Kg	0.648U ng/Kg
SL-518-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDD	0.137 ng/Kg	0.137U ng/Kg
SL-518-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.132 ng/Kg	0.132U ng/Kg
SL-518-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0632 ng/Kg	0.0632U ng/Kg
SL-518-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.0482 ng/Kg	0.0482U ng/Kg
SL-518-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDD	0.0280 ng/Kg	0.0280U ng/Kg
SL-518-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.0334 ng/Kg	0.0334U ng/Kg
SL-518-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDD	0.0394 ng/Kg	0.0394U ng/Kg
SL-518-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDF	0.0449 ng/Kg	0.0449U ng/Kg
SL-518-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.102 ng/Kg	0.102U ng/Kg
SL-518-SA8-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0362 ng/Kg	0.0362U ng/Kg
SL-518-SA8-SB-4.0-5.0(RES)	2,3,4,7,8-PECDF	0.0448 ng/Kg	0.0448U ng/Kg
SL-518-SA8-SB-4.0-5.0(RES)	OCDD	0.848 ng/Kg	0.848U ng/Kg
SL-521-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0580 ng/Kg	0.0580U ng/Kg
SL-521-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.110 ng/Kg	0.110U ng/Kg
SL-521-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.105 ng/Kg	0.105U ng/Kg
SL-521-SA8-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.109 ng/Kg	0.109U ng/Kg
SL-532-SA8-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDD	0.0513 ng/Kg	0.0513U ng/Kg
SL-532-SA8-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDF	0.0606 ng/Kg	0.0606U ng/Kg
SL-532-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0279 ng/Kg	0.0279U ng/Kg
SL-532-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.0422 ng/Kg	0.0422U ng/Kg
SL-532-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDD	0.0955 ng/Kg	0.0955U ng/Kg
SL-532-SA8-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDD	0.116 ng/Kg	0.116U ng/Kg
SL-532-SA8-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.107 ng/Kg	0.107U ng/Kg
SL-532-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.0403 ng/Kg	0.0403U ng/Kg
SL-532-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0184 ng/Kg	0.0184U ng/Kg
SL-532-SA8-SB-0.0-0.5(RES)	OCDD	0.558 ng/Kg	0.558U ng/Kg
SL-532-SA8-SB-6.5-7.5(RES)	1,2,3,4,6,7,8-HPCDD	0.0924 ng/Kg	0.0924U ng/Kg
SL-532-SA8-SB-6.5-7.5(RES)	1,2,3,4,6,7,8-HPCDF	0.0334 ng/Kg	0.0334U ng/Kg
SL-532-SA8-SB-6.5-7.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0539 ng/Kg	0.0539U ng/Kg
SL-532-SA8-SB-6.5-7.5(RES)	1,2,3,4,7,8-HXCDF	0.0307 ng/Kg	0.0307U ng/Kg
SL-532-SA8-SB-6.5-7.5(RES)	1,2,3,6,7,8-HXCDF	0.0185 ng/Kg	0.0185U ng/Kg
SL-532-SA8-SB-6.5-7.5(RES)	1,2,3,7,8,9-HXCDD	0.0326 ng/Kg	0.0326U ng/Kg

Method Blank Outlier Report

Lab Reporting Batch ID: PH071 **Laboratory: LL**

EDD Filename: PrepPH071_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples

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-532-SA8-SB-6.5-7.5(RES)	1,2,3,7,8,9-HXCDF	0.0354 ng/Kg	0.0354U ng/Kg
SL-532-SA8-SB-6.5-7.5(RES)	1,2,3,7,8-PECDF	0.0566 ng/Kg	0.0566U ng/Kg
SL-532-SA8-SB-6.5-7.5(RES)	2,3,4,6,7,8-HXCDF	0.0161 ng/Kg	0.0161U ng/Kg
SL-532-SA8-SB-6.5-7.5(RES)	2,3,4,7,8-PECDF	0.0396 ng/Kg	0.0396U ng/Kg
SL-532-SA8-SB-6.5-7.5(RES)	OCDD	0.330 ng/Kg	0.330U ng/Kg
SL-606-SA8-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.153 ng/Kg	0.153U ng/Kg
SL-606-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDD	0.165 ng/Kg	0.165U ng/Kg
SL-606-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0667 ng/Kg	0.0667U ng/Kg
SL-606-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0447 ng/Kg	0.0447U ng/Kg
SL-606-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HxCDD	0.0908 ng/Kg	0.0908U ng/Kg
SL-606-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.132 ng/Kg	0.132U ng/Kg
SL-606-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDD	0.0887 ng/Kg	0.0887U ng/Kg
SL-606-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.112 ng/Kg	0.112U ng/Kg
SL-606-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDD	0.0757 ng/Kg	0.0757U ng/Kg
SL-606-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDF	0.104 ng/Kg	0.104U ng/Kg
SL-606-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDD	0.123 ng/Kg	0.123U ng/Kg
SL-606-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.210 ng/Kg	0.210U ng/Kg
SL-606-SA8-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0705 ng/Kg	0.0705U ng/Kg
SL-606-SA8-SB-4.0-5.0(RES)	2,3,4,7,8-PECDF	0.161 ng/Kg	0.161U ng/Kg
SL-606-SA8-SB-4.0-5.0(RES)	OCDD	0.600 ng/Kg	0.600U ng/Kg
SL-606-SA8-SB-4.0-5.0(RES)	OCDF	0.120 ng/Kg	0.120U ng/Kg

Method: 6010C
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P20337BB221338	7/28/2013 1:38:00 PM	NICKEL TIN ZINC	0.143 mg/Kg 1.53 mg/Kg 0.327 mg/Kg	SL-516-SA8-SB-0.0-0.5 SL-517-SA8-SB-0.0-0.5 SL-517-SA8-SB-3.0-4.0 SL-518-SA8-SB-0.0-0.5 SL-518-SA8-SB-4.0-5.0 SL-521-SA8-SB-0.0-0.5 SL-532-SA8-SB-0.0-0.5 SL-532-SA8-SB-6.5-7.5 SL-606-SA8-SB-0.0-0.5 SL-606-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-516-SA8-SB-0.0-0.5(RES)	TIN	3.00 mg/Kg	3.00U mg/Kg
SL-517-SA8-SB-0.0-0.5(RES)	TIN	2.77 mg/Kg	2.77U mg/Kg

Method Blank Outlier Report

Lab Reporting Batch ID: PH071 **Laboratory: LL**

EDD Filename: PrepPH071_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: **6010C**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples

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-517-SA8-SB-3.0-4.0(RES)	TIN	3.84 mg/Kg	3.84U mg/Kg
SL-518-SA8-SB-0.0-0.5(RES)	TIN	2.80 mg/Kg	2.80U mg/Kg
SL-518-SA8-SB-4.0-5.0(RES)	TIN	3.02 mg/Kg	3.02U mg/Kg
SL-521-SA8-SB-0.0-0.5(RES)	TIN	2.90 mg/Kg	2.90U mg/Kg
SL-532-SA8-SB-0.0-0.5(RES)	TIN	3.28 mg/Kg	3.28U mg/Kg
SL-532-SA8-SB-6.5-7.5(RES)	TIN	3.44 mg/Kg	3.44U mg/Kg
SL-606-SA8-SB-0.0-0.5(RES)	TIN	3.30 mg/Kg	3.30U mg/Kg
SL-606-SA8-SB-4.0-5.0(RES)	TIN	3.51 mg/Kg	3.51U mg/Kg

Field Blank Outlier Report

Lab Reporting Batch ID: PH071 **Laboratory: LL**

EDD Filename: PH071_v1. **eQAPP Name: CDM_SSFL_130808_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	0.0036 mg/L	SL-516-SA8-SB-0.0-0.5
		MOLYBDENUM	0.0036 mg/L	SL-517-SA8-SB-0.0-0.5
				SL-517-SA8-SB-3.0-4.0
				SL-518-SA8-SB-0.0-0.5
				SL-518-SA8-SB-4.0-5.0
				SL-521-SA8-SB-0.0-0.5
				SL-532-SA8-SB-0.0-0.5
				SL-532-SA8-SB-6.5-7.5
				SL-606-SA8-SB-0.0-0.5
				SL-606-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-516-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.479 mg/Kg	0.479U mg/Kg
SL-517-SA8-SB-3.0-4.0(RES)	MOLYBDENUM	0.202 mg/Kg	0.202U mg/Kg
SL-518-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.192 mg/Kg	0.192U mg/Kg
SL-521-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.454 mg/Kg	0.454U 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	0.019 ug/L	SL-516-SA8-SB-0.0-0.5
		2-METHYLNAPHTHALENE	0.024 ug/L	SL-517-SA8-SB-0.0-0.5
		BIS(2-ETHYLHEXYL)PHTHALATE	0.082 ug/L	SL-517-SA8-SB-3.0-4.0
		Diethylphthalate	0.18 ug/L	SL-518-SA8-SB-0.0-0.5
		Di-n-butylphthalate	0.17 ug/L	SL-518-SA8-SB-4.0-5.0
		NAPHTHALENE	0.17 ug/L	SL-521-SA8-SB-0.0-0.5
				SL-532-SA8-SB-0.0-0.5
				SL-532-SA8-SB-6.5-7.5
				SL-606-SA8-SB-0.0-0.5
				SL-606-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-517-SA8-SB-0.0-0.5(RES)	NAPHTHALENE	0.78 ug/Kg	1.7U ug/Kg

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH071 **Laboratory: LL**

EDD Filename: PH071_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 8015M
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-516-SA8-SB-0.0-0.5MS SL-516-SA8-SB-0.0-0.5MSD (SL-516-SA8-SB-0.0-0.5)	EFH (C15-C20) EFH (C21-C30)	150 -	147 214	49.00-123.00 49.00-123.00	- 33 (20.00)	EFH (C15-C20) EFH (C21-C30)	J (all detects)
SL-516-SA8-SB-0.0-0.5MS SL-516-SA8-SB-0.0-0.5MSD (SL-516-SA8-SB-0.0-0.5)	EFH (C30-C40)	14	6	49.00-123.00	-	EFH (C30-C40)	No Qual, >4X

Method: 6010C
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-516-SA8-SB-0.0-0.5MS (TOT) SL-516-SA8-SB-0.0-0.5MSD (TOT) (SL-516-SA8-SB-0.0-0.5 SL -517-SA8-SB-0.0-0.5 SL -517-SA8-SB-3.0-4.0 SL -518-SA8-SB-0.0-0.5 SL -518-SA8-SB-4.0-5.0 SL -521-SA8-SB-0.0-0.5 SL -532-SA8-SB-0.0-0.5 SL -532-SA8-SB-6.5-7.5 SL -606-SA8-SB-0.0-0.5 SL -606-SA8-SB-4.0-5.0)	ALUMINUM CALCIUM MAGNESIUM TITANIUM	1435 171 148 334	1396 170 - 356	75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00	- - - -	ALUMINUM CALCIUM MAGNESIUM TITANIUM	No Qual, >4X
SL-516-SA8-SB-0.0-0.5MS (TOT) SL-516-SA8-SB-0.0-0.5MSD (TOT) (SL-516-SA8-SB-0.0-0.5 SL -517-SA8-SB-0.0-0.5 SL -517-SA8-SB-3.0-4.0 SL -518-SA8-SB-0.0-0.5 SL -518-SA8-SB-4.0-5.0 SL -521-SA8-SB-0.0-0.5 SL -532-SA8-SB-0.0-0.5 SL -532-SA8-SB-6.5-7.5 SL -606-SA8-SB-0.0-0.5 SL -606-SA8-SB-4.0-5.0)	IRON	16	-313	75.00-125.00	-	IRON	No Qual, >4X
SL-516-SA8-SB-0.0-0.5MS (TOT) SL-516-SA8-SB-0.0-0.5MSD (TOT) (SL-516-SA8-SB-0.0-0.5 SL -517-SA8-SB-0.0-0.5 SL -517-SA8-SB-3.0-4.0 SL -518-SA8-SB-0.0-0.5 SL -518-SA8-SB-4.0-5.0 SL -521-SA8-SB-0.0-0.5 SL -532-SA8-SB-0.0-0.5 SL -532-SA8-SB-6.5-7.5 SL -606-SA8-SB-0.0-0.5 SL -606-SA8-SB-4.0-5.0)	ANTIMONY PHOSPHORUS	62 71	64 74	75.00-125.00 75.00-125.00	- -	ANTIMONY PHOSPHORUS	J(all detects) UJ(all non-detects) P, No Qual, >4X

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

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH071 **Laboratory: LL**

EDD Filename: PH071_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

***Method:* 6020A**
***Matrix:* SO**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
SL-516-SA8-SB-0.0-0.5MSD (TOT) (SL-516-SA8-SB-0.0-0.5 SL -517-SA8-SB-0.0-0.5 SL -517-SA8-SB-3.0-4.0 SL -518-SA8-SB-0.0-0.5 SL -518-SA8-SB-4.0-5.0 SL -521-SA8-SB-0.0-0.5 SL -532-SA8-SB-0.0-0.5 SL -532-SA8-SB-6.5-7.5 SL -606-SA8-SB-0.0-0.5 SL -606-SA8-SB-4.0-5.0)	STRONTIUM THALLIUM	- -	142 128	75.00-125.00 75.00-125.00	- -	STRONTIUM THALLIUM	J(all detects)

Lab Duplicate Outlier Report

Lab Reporting Batch ID: PH071 **Laboratory: LL**

EDD Filename: PH071_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 6010C
Matrix: SO

QC Sample ID (Associated Sample ID)	Analyte	Sample RPD	eQAPP RPD	Flag
SL-516-SA8-SB-0.0-0.5DUP (TOT) (SL-516-SA8-SB-0.0-0.5 SL -517-SA8-SB-0.0-0.5 SL -517-SA8-SB-3.0-4.0 SL -518-SA8-SB-0.0-0.5 SL -518-SA8-SB-4.0-5.0 SL -521-SA8-SB-0.0-0.5 SL -532-SA8-SB-0.0-0.5 SL -532-SA8-SB-6.5-7.5 SL -606-SA8-SB-0.0-0.5 SL -606-SA8-SB-4.0-5.0)	MOLYBDENUM Zirconium	50 42	20.00 20.00	No Qual, Ok by difference

Method: 6020A
Matrix: SO

QC Sample ID (Associated Sample ID)	Analyte	Sample RPD	eQAPP RPD	Flag
SL-516-SA8-SB-0.0-0.5DUP (TOT) (SL-516-SA8-SB-0.0-0.5 SL -517-SA8-SB-0.0-0.5 SL -517-SA8-SB-3.0-4.0 SL -518-SA8-SB-0.0-0.5 SL -518-SA8-SB-4.0-5.0 SL -521-SA8-SB-0.0-0.5 SL -532-SA8-SB-0.0-0.5 SL -532-SA8-SB-6.5-7.5 SL -606-SA8-SB-0.0-0.5 SL -606-SA8-SB-4.0-5.0)	SELENIUM	200	20.00	No Qual, Ok by difference

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH071 **Laboratory: LL**

EDD Filename: PH071_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

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

QC Sample ID (Associated Samples)	*Compound*	*LCS %R*	*LCSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
P5LDLCSQ260515 (SL-516-SA8-SB-0.0-0.5 SL-517-SA8-SB-0.0-0.5 SL-517-SA8-SB-3.0-4.0 SL-518-SA8-SB-0.0-0.5 SL-518-SA8-SB-4.0-5.0 SL-521-SA8-SB-0.0-0.5 SL-532-SA8-SB-0.0-0.5 SL-532-SA8-SB-6.5-7.5 SL-606-SA8-SB-0.0-0.5 SL-606-SA8-SB-4.0-5.0)	Diethylphthalate	126	-	68.00-125.00	-	Diethylphthalate	J (all detects)

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

Reporting Limit Outliers

Lab Reporting Batch ID: PH071 **Laboratory: LL**

EDD Filename: PH071_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-516-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	0.966	4.91	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.241	4.91	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.0588	4.91	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.211	4.91	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0418	4.91	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.312	4.91	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JBQ	0.132	4.91	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.155	4.91	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0492	4.91	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0949	4.91	PQL	ng/Kg	
	OCDD	JB	5.46	9.81	PQL	ng/Kg	
	OCDF	JQ	0.462	9.81	PQL	ng/Kg	
SL-517-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	1.29	5.02	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.628	5.02	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0901	5.02	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.179	5.02	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.121	5.02	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.234	5.02	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.183	5.02	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JBQ	0.0635	5.02	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	2.59	5.02	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.167	5.02	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.366	5.02	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.611	1.00	PQL	ng/Kg	
	OCDD	JB	9.54	10.0	PQL	ng/Kg	
	OCDF	J	0.559	10.0	PQL	ng/Kg	
SL-517-SA8-SB-3.0-4.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.0278	5.08	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0253	5.08	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0141	5.08	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0225	5.08	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0155	5.08	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.0197	5.08	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JQ	0.0383	5.08	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.0319	5.08	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0123	5.08	PQL	ng/Kg	
	OCDD	JBQ	0.102	10.2	PQL	ng/Kg	
	OCDF	JQ	0.0748	10.2	PQL	ng/Kg	
SL-518-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JBQ	0.0731	5.05	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0230	5.05	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.0226	5.05	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0248	5.05	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0157	5.05	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.0640	5.05	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JBQ	0.0904	5.05	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0222	5.05	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0387	5.05	PQL	ng/Kg	
	OCDD	JBQ	0.648	10.1	PQL	ng/Kg	
	OCDF	JQ	0.0879	10.1	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH071 **Laboratory: LL**

EDD Filename: PH071_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-518-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JB	0.137	5.06	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.132	5.06	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0632	5.06	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.0194	5.06	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.0482	5.06	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.0280	5.06	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.0334	5.06	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.0394	5.06	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.0449	5.06	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JQ	0.0479	5.06	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.102	5.06	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0362	5.06	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.0448	5.06	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.0255	1.01	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0204	1.01	PQL	ng/Kg	
	OCDD	JB	0.848	10.1	PQL	ng/Kg	
	OCDF	J	0.149	10.1	PQL	ng/Kg	
SL-521-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	1.72	4.82	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.443	4.82	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0580	4.82	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.0760	4.82	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.110	4.82	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	1.81	4.82	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.162	4.82	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	2.71	4.82	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	0.623	4.82	PQL	ng/Kg	
	1,2,3,7,8-PECDD	J	0.297	4.82	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.298	4.82	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.105	4.82	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.109	4.82	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.120	0.964	PQL	ng/Kg	
	OCDF	J	0.879	9.64	PQL	ng/Kg	
SL-532-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JBQ	0.0513	5.11	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.0606	5.11	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.0279	5.11	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0422	5.11	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.0955	5.11	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.116	5.11	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JBQ	0.107	5.11	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.0440	5.11	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.0403	5.11	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0184	5.11	PQL	ng/Kg	
	OCDD	JBQ	0.558	10.2	PQL	ng/Kg	
	OCDF	JQ	0.0752	10.2	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH071 **Laboratory: LL**

EDD Filename: PH071_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-532-SA8-SB-6.5-7.5	1,2,3,4,6,7,8-HPCDD	JBQ	0.0924	5.62	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.0334	5.62	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.0539	5.62	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.0356	5.62	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0307	5.62	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.0185	5.62	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.0326	5.62	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.0354	5.62	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDF	JBQ	0.0566	5.62	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0161	5.62	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0396	5.62	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.0271	1.12	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0117	1.12	PQL	ng/Kg	
	OCDD	JBQ	0.330	11.2	PQL	ng/Kg	
	OCDF	J	0.0891	11.2	PQL	ng/Kg	
SL-606-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDF	JB	1.06	5.23	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.141	5.23	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	J	0.146	5.23	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.202	5.23	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.375	5.23	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.287	5.23	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.307	5.23	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.153	5.23	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JQ	0.0779	5.23	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	1.20	5.23	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.394	5.23	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.695	5.23	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.562	1.05	PQL	ng/Kg	
	OCDF	J	1.53	10.5	PQL	ng/Kg	
SL-606-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.165	5.51	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.0667	5.51	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0447	5.51	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.0908	5.51	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.132	5.51	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.0887	5.51	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.112	5.51	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.0757	5.51	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.104	5.51	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JBQ	0.123	5.51	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.210	5.51	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0705	5.51	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.161	5.51	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0407	1.10	PQL	ng/Kg	
	OCDD	JB	0.600	11.0	PQL	ng/Kg	
	OCDF	JB	0.120	11.0	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH071 **Laboratory: LL**

EDD Filename: PH071_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-516-SA8-SB-0.0-0.5	BERYLLIUM	J	0.575	0.986	PQL	mg/Kg	J (all detects)
	CADMIUM	J	0.131	0.986	PQL	mg/Kg	
	MOLYBDENUM	J	0.479	1.97	PQL	mg/Kg	
	SODIUM	J	69.9	98.6	PQL	mg/Kg	
	TIN	J	3.00	9.86	PQL	mg/Kg	
	Zirconium	J	1.03	4.93	PQL	mg/Kg	
SL-517-SA8-SB-0.0-0.5	BERYLLIUM	J	0.625	1.01	PQL	mg/Kg	J (all detects)
	CADMIUM	J	0.179	1.01	PQL	mg/Kg	
	SODIUM	J	69.3	101	PQL	mg/Kg	
	TIN	J	2.77	10.1	PQL	mg/Kg	
	Zirconium	J	1.18	5.03	PQL	mg/Kg	
SL-517-SA8-SB-3.0-4.0	BERYLLIUM	J	0.640	1.03	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.202	2.06	PQL	mg/Kg	
	SODIUM	J	102	103	PQL	mg/Kg	
	TIN	J	3.84	10.3	PQL	mg/Kg	
SL-518-SA8-SB-0.0-0.5	BERYLLIUM	J	0.579	1.01	PQL	mg/Kg	J (all detects)
	CADMIUM	J	0.121	1.01	PQL	mg/Kg	
	MOLYBDENUM	J	0.192	2.03	PQL	mg/Kg	
	TIN	J	2.80	10.1	PQL	mg/Kg	
SL-518-SA8-SB-4.0-5.0	BERYLLIUM	J	0.599	1.02	PQL	mg/Kg	J (all detects)
	TIN	J	3.02	10.2	PQL	mg/Kg	
	Zirconium	J	1.23	5.11	PQL	mg/Kg	
SL-521-SA8-SB-0.0-0.5	BERYLLIUM	J	0.582	0.972	PQL	mg/Kg	J (all detects)
	CADMIUM	J	0.207	0.972	PQL	mg/Kg	
	MOLYBDENUM	J	0.454	1.94	PQL	mg/Kg	
	SODIUM	J	92.0	97.2	PQL	mg/Kg	
	TIN	J	2.90	9.72	PQL	mg/Kg	
SL-532-SA8-SB-0.0-0.5	BERYLLIUM	J	0.991	1.06	PQL	mg/Kg	J (all detects)
	SODIUM	J	86.0	106	PQL	mg/Kg	
	TIN	J	3.28	10.6	PQL	mg/Kg	
	Zirconium	J	2.88	5.31	PQL	mg/Kg	
SL-532-SA8-SB-6.5-7.5	ARSENIC	J	4.27	4.46	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.485	1.12	PQL	mg/Kg	
	CADMIUM	J	0.142	1.12	PQL	mg/Kg	
	SODIUM	J	87.5	112	PQL	mg/Kg	
	TIN	J	3.44	11.2	PQL	mg/Kg	
	Zirconium	J	1.37	5.58	PQL	mg/Kg	
SL-606-SA8-SB-0.0-0.5	BERYLLIUM	J	0.915	1.07	PQL	mg/Kg	J (all detects)
	SODIUM	J	77.9	107	PQL	mg/Kg	
	TIN	J	3.30	10.7	PQL	mg/Kg	
	Zirconium	J	3.21	5.35	PQL	mg/Kg	
SL-606-SA8-SB-4.0-5.0	BERYLLIUM	J	1.03	1.11	PQL	mg/Kg	J (all detects)
	SODIUM	J	108	111	PQL	mg/Kg	
	TIN	J	3.51	11.1	PQL	mg/Kg	
	Zirconium	J	4.61	5.57	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH071 **Laboratory: LL**

EDD Filename: PH071_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-516-SA8-SB-0.0-0.5	SILVER	J	0.0410	0.197	PQL	mg/Kg	J (all detects)
SL-517-SA8-SB-0.0-0.5	SELENIUM SILVER	J J	0.156 0.0389	0.406 0.203	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-518-SA8-SB-0.0-0.5	SILVER	J	0.0561	0.203	PQL	mg/Kg	J (all detects)
SL-518-SA8-SB-4.0-5.0	SILVER	J	0.0347	0.204	PQL	mg/Kg	J (all detects)
SL-521-SA8-SB-0.0-0.5	SELENIUM SILVER	J J	0.227 0.0410	0.389 0.194	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-532-SA8-SB-0.0-0.5	SELENIUM SILVER	J J	0.217 0.0448	0.425 0.212	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-606-SA8-SB-0.0-0.5	SELENIUM SILVER	J J	0.239 0.0589	0.428 0.214	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-606-SA8-SB-4.0-5.0	SELENIUM SILVER	J J	0.236 0.0341	0.446 0.223	PQL PQL	mg/Kg mg/Kg	J (all detects)

Method: 7199

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-517-SA8-SB-0.0-0.5	HEXAVALENT CHROMIUM	J	0.17	0.42	PQL	mg/Kg	J (all detects)

Method: 7471B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-516-SA8-SB-0.0-0.5	MERCURY	J	0.0141	0.0165	PQL	mg/Kg	J (all detects)
SL-518-SA8-SB-4.0-5.0	MERCURY	J	0.0117	0.0168	PQL	mg/Kg	J (all detects)
SL-521-SA8-SB-0.0-0.5	MERCURY	J	0.0152	0.0166	PQL	mg/Kg	J (all detects)

Method: 8015M

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-532-SA8-SB-0.0-0.5	EFH (C15-C20)	J	2.6	5.4	PQL	mg/Kg	J (all detects)
SL-606-SA8-SB-0.0-0.5	EFH (C15-C20)	J	3.9	5.5	PQL	mg/Kg	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH071 **Laboratory: LL**

EDD Filename: PH071_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 8082A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-606-SA8-SB-0.0-0.5	Aroclor 5460	J	30	36	PQL	ug/Kg	J (all detects)

Method: 8270D SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-516-SA8-SB-0.0-0.5	BENZO(K)FLUORANTHENE	J	1.5	1.7	PQL	ug/Kg	J (all detects)
	BIS(2-ETHYLHEXYL)PHTHALATE	J	10	18	PQL	ug/Kg	
	CHRYSENE	J	0.68	1.7	PQL	ug/Kg	
SL-517-SA8-SB-0.0-0.5	BENZO(B)FLUORANTHENE	J	0.73	1.7	PQL	ug/Kg	J (all detects)
	BIS(2-ETHYLHEXYL)PHTHALATE	J	15	18	PQL	ug/Kg	
	FLUORANTHENE	J	0.75	1.7	PQL	ug/Kg	
	NAPHTHALENE	J	0.78	1.7	PQL	ug/Kg	
	PHENANTHRENE	J	0.88	1.7	PQL	ug/Kg	
	PYRENE	J	0.89	1.7	PQL	ug/Kg	
SL-521-SA8-SB-0.0-0.5	BENZO(B)FLUORANTHENE	J	0.88	1.7	PQL	ug/Kg	J (all detects)
	BIS(2-ETHYLHEXYL)PHTHALATE	J	10	18	PQL	ug/Kg	
	CHRYSENE	J	1.1	1.7	PQL	ug/Kg	
	FLUORANTHENE	J	0.95	1.7	PQL	ug/Kg	
	PHENANTHRENE	J	0.78	1.7	PQL	ug/Kg	
	PYRENE	J	0.76	1.7	PQL	ug/Kg	
SL-532-SA8-SB-0.0-0.5	BENZO(K)FLUORANTHENE	J	0.75	1.8	PQL	ug/Kg	J (all detects)
	CHRYSENE	J	0.42	1.8	PQL	ug/Kg	
SL-606-SA8-SB-0.0-0.5	1-METHYLNAPHTHALENE	J	0.93	1.8	PQL	ug/Kg	J (all detects)
	BENZO(A)ANTHRACENE	J	1.0	1.8	PQL	ug/Kg	
	BENZO(A)PYRENE	J	1.1	1.8	PQL	ug/Kg	
	BENZO(G,H,I)PERYLENE	J	1.2	1.8	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	12	20	PQL	ug/Kg	
	DIBENZO(A,H)ANTHRACENE	J	1.2	1.8	PQL	ug/Kg	
	INDENO(1,2,3-CD)PYRENE	J	1.1	1.8	PQL	ug/Kg	
SL-606-SA8-SB-4.0-5.0	BIS(2-ETHYLHEXYL)PHTHALATE	J	7.6	20	PQL	ug/Kg	J (all detects)

LDC #: 30289F4
SDG #: PH071
Laboratory: Eurofins Lancaster Laboratories

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 9/4/13
Page: 1 of 1
Reviewer: AL
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: 7/19/13
II.	ICP/MS Tune	—	
III.	Calibration	—	
IV.	Blanks	A	
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	—	
XV	Field Blanks	SW	EB= EB1-071713 (PH069) = EB2-071713 FB= FB-041113 (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-516-SA8-SB-0.0-0.5	11	(XX1) MS	21		31	
2	SL-521-SA8-SB-0.0-0.5	12	MSD	22		32	
3	SL-517-SA8-SB-0.0-0.5	13	DUP	23		33	
4	SL-517-SA8-SB-3.0-4.0	14		24		34	
5	SL-518-SA8-SB-0.0-0.5	15		25		35	
6	SL-518-SA8-SB-4.0-5.0	16		26		36	
7	SL-532-SA8-SB-0.0-0.5	17		27		37	
8	SL-532-SA8-SB-6.5-7.5	18		28		38	
9	SL-606-SA8-SB-0.0-0.5	19		29		39	
10	SL-606-SA8-SB-4.0-5.0	20		30		40	

Notes: _____

LDC #: 30289F4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: AL
2nd Reviewer: [illegible]

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							
Cu	0.0036	1.8											
Mo	0.0036	1.8	0.48	0.45	0.20	0.19							

Sampling date: 7/17/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: 3-10

Analyte	Blank ID	Sample Identification											
	EB1-071713 (SDG: PH069)	Action Limit	No Qualifiers										
Sb	0.0069	3.45											

Sampling date: 7/17/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: 1, 2

Analyte	Blank ID	Sample Identification											
	EB2-071713 (SDG: PH069)	Action Limit	No Qualifiers										
Sb	0.0054	2.7											

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.: PH071
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7133304BKG Matrix Spike Lab Sample ID: 7133304MS Matrix Spike Duplicate Lab Sample ID: 7133304MSD
Batch Id(s): P20337B, P20338C

Analyte	Mass	BKG Sample Result	C	MS Sample Result	C	MSD Sample Result	C	MS Spike Added	MSD Spike Added	Units	MS %R	Q	MSD %R	Q	RPD	Q	Control Limit %R	Control Limit RPD	M
Aluminum		16562.6539		19377.1843		19300.0216		196.0784	196.0784	MG/KG	1435	*	1396	*	0			20	P
Antimony		0.7255	U	30.4794		31.4186		49.0196	49.0196	MG/KG	62	N	64	N	3		75 - 125	20	P
Arsenic		11.7500		25.4735		24.3627		14.7059	14.7059	MG/KG	93		86		4		75 - 125	20	P
Barium		96.7324		286.6804		283.2000		196.0784	196.0784	MG/KG	97		95		1		75 - 125	20	P
Beryllium		0.5716	B	5.5637		5.4775		4.9020	4.9020	MG/KG	102		100		2		75 - 125	20	P
Boron		0.8235	U	189.6127		187.5716		196.0784	196.0784	MG/KG	97		96		1		75 - 125	20	P
Cadmium		0.1304	B	4.8520		4.7706		4.9020	4.9020	MG/KG	96		95		2		75 - 125	20	P
Calcium		2670.5882		3342.6941		3337.4059		392.1569	392.1569	MG/KG	171	*	170	*	0			20	P
Chromium		17.9402		38.3255		38.1775		19.6078	19.6078	MG/KG	104		103		0		75 - 125	20	P
Cobalt		5.2902		51.5833		50.8216		49.0196	49.0196	MG/KG	94		93		1		75 - 125	20	P
Copper		13.3853		39.9833		39.0873		24.5098	24.5098	MG/KG	109		105		2		75 - 125	20	P
Iron		22664.0471		22680.1471		22356.9922		98.0392	98.0392	MG/KG	16	*	-313	*	1			20	P
Lead		9.9225		24.3510		24.2843		14.7059	14.7059	MG/KG	98		98		0		75 - 125	20	P
Lithium		26.8794		125.1431		123.0971		98.0392	98.0392	MG/KG	100		98		2		75 - 125	20	P
Magnesium		4561.8696		4851.3353		4794.8618		196.0784	196.0784	MG/KG	148	*	119	*	1			20	P
Manganese		325.5265		374.7098		370.1735		49.0196	49.0196	MG/KG	100		91		1			20	P
Mercury		0.0140	B	0.2033		0.1997		0.1608	0.1563	MG/KG	118		119		2		65 - 135	20	CV
Molybdenum		0.4765	B	174.4206		181.5755		196.0784	196.0784	MG/KG	89		92		4		75 - 125	20	P
Nickel		12.2000		59.0167		58.2451		49.0196	49.0196	MG/KG	96		94		1		75 - 125	20	P
Phosphorus		544.4843		614.1951		616.5500		98.0392	98.0392	MG/KG	71	*	74	*	0			20	P
Potassium		3739.8755		4907.1353		4923.7382		980.3922	980.3922	MG/KG	119		121		0		75 - 125	20	P
Selenium	78	0.0980	U	1.9922		2.1667		1.9608	1.9608	MG/KG	102		111		8		75 - 125	20	MS
Silver	107	0.0407	B	10.4706		11.0647		9.8039	9.8039	MG/KG	106		112		6		75 - 125	20	MS
Sodium		69.4765	B	1036.7373		1017.6431		980.3922	980.3922	MG/KG	99		97		2		75 - 125	20	P
Strontium	88	21.0196		28.7059		32.1765		7.8431	7.8431	MG/KG	98		142	N	11		75 - 125	20	MS
Thallium	203	0.2698		0.6688		0.7698		0.3922	0.3922	MG/KG	102		127	N	14		75 - 125	20	MS

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

METHODS:
P = ICP Atomic Emission Spectrometer CV = Cold Vapor
MS = ICP Mass Spectrometry 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.: PH071
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7133304BKG Matrix Spike Lab Sample ID: 7133304MS Matrix Spike Duplicate Lab Sample ID: 7133304MSD
Batch Id(s): P20337B, P20338C

		BKG Sample		MS Sample		MSD Sample		MS Spike	MSD Spike		MS		MSD				Control Limit		
Analyte	Mass	Result	C	Result	C	Result	C	Added	Added	Units	%R	Q	%R	Q	RPD	Q	%R	RPD	M
Tin		2.9814	B	331.1039		343.1765		392.1569	392.1569	MG/KG	84		87		4		75 - 125	20	P
Titanium		1195.5755		1523.0422		1544.8667		98.0392	98.0392	MG/KG	334		356		1			20	P
Vanadium		33.4520		84.7225		84.0127		49.0196	49.0196	MG/KG	105		103		1		75 - 125	20	P
Zinc		55.4118		103.2382		102.0637		49.0196	49.0196	MG/KG	98		95		1		75 - 125	20	P
Zirconium		1.0216	B	85.1686		89.6490		98.0392	98.0392	MG/KG	86		90		5		75 - 125	20	P

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

METHODS:
P = ICP Atomic Emission Spectrometer CV = Cold Vapor
MS = ICP Mass Spectrometry 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 6
DUPLICATES
SDG No.: PH071
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7133304BKG Duplicate Lab Sample ID: 7133304DUP
Batch ID(s): P20337B, P20338C
Concentration Units: MG/KG

Analyte	Mass	Control Limit	Samples (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum			16562.6539		17497.7294		5		P
Antimony			-1.0088	B	0.7255	U	-200	*	P
Arsenic		3.9	11.7500		11.4922		2		P
Barium			96.7324		99.4667		3		P
Beryllium			0.5716	B	0.5961	B	4		P
Boron			-2.0010	B	-2.4118	B	-19		P
Cadmium			0.1304	B	0.1392	B	7		P
Calcium			2670.5882		2799.8814		5		P
Chromium			17.9402		19.2461		7		P
Cobalt			5.2902		5.5971		6		P
Copper			13.3853		13.9245		4		P
Iron			22664.0471		23758.2843		5		P
Lead		2.9	9.9225		10.0804		2		P
Lithium			26.8794		28.0667		4		P
Magnesium			4561.8696		4752.1275		4		P
Manganese			325.5265		345.3922		6		P
Mercury			0.0140	B	0.0141	B	1		CV
Molybdenum			0.4765	B	0.2863	B	50		P
Nickel			12.2000		12.7382		4		P
Phosphorus			544.4843		563.3627		3		P
Potassium			3739.8755		3937.2500		5		P
Selenium	78		0.0980	U	0.1485	B	200		MS
Silver	107		0.0407	B	0.0380	B	7		MS
Sodium			69.4765	B	73.5520	B	6		P
Strontium	88		21.0196		22.3922		6		MS
Thallium	203	0.2	0.2698		0.2904		7		MS
Tin			2.9814	B	3.0804	B	3		P
Titanium			1195.5755		1285.1382		7		P
Vanadium			33.4520		35.3588		6		P
Zinc			55.4118		57.7529		4		P
Zirconium			1.0216	B	1.5706	B	42		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

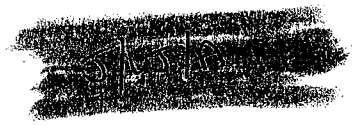
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QUALITY ASSURANCE SUMMARY
FORM 9
SERIAL DILUTIONS
SDG No.: PH071
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7133304BKG Serial Dilution Lab Sample ID: 7133304L
Batch ID(s): P20337B
Concentration Units: UG/L

Analyte	Mass	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Diff.	Q	M
Aluminum		168939.0700		161659.9500		4		P
Antimony		7.4000	U	37.0000	U			P
Arsenic		119.8500		126.8500	B	6		P
Barium		986.6700		964.3000		2		P
Beryllium		5.8300	B	4.8000	B	18		P
Boron		8.4000	U	42.0000	U			P
Cadmium		1.3300	B	3.8000	U	100		P
Calcium		27240.0000		26619.6000		2		P
Chromium		182.9900		181.3500		1		P
Cobalt		53.9600		53.2000		1		P
Copper		136.5300		131.5500		4		P
Iron		231173.2800		195527.9000		15	E	P
Lead		101.2100		100.8500	B	0		P
Lithium		274.1700		234.0000		15	E	P
Magnesium		46531.0700		45615.3000		2		P
Manganese		3320.3700		3278.2500		1		P
Molybdenum		4.8600	B	13.6500	B	181		P
Nickel		124.4400		126.5000		2		P
Phosphorus		5553.7400		5144.4000		7		P
Potassium		38146.7300		37293.7000		2		P
Selenium	78	0.5000	U	2.5000	U			MS
Silver	107	0.2078	B	0.6500	U	100		MS
Sodium		708.6600	B	835.0000	U	100		P
Strontium	88	107.2000		104.1000		3		MS
Thallium	203	1.3760		1.5130	B	10		MS
Tin		30.4100	B	23.4000	B	23		P
Titanium		12194.8700		11564.9000		5		P
Vanadium		341.2100		322.4500		5		P
Zinc		565.2000		530.0000		6		P
Zirconium		10.4200	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.



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

Data Validation Report
Santa Susana Field Laboratory

Subarea 8

SDG: PH072

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September 24, 2013

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on July 22nd, 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 (SVOAs) 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 Hydrocarbon as Gasoline (TPH-G) by EPA SW 846 Method 8015M
Total Petroleum Hydrocarbons as Extractable (TPH-E) by EPA SW 846 Method 8015M
Dioxins/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, trip blanks, equipment blanks, field blanks, and field duplicate samples. 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 the 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.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met QC criteria.

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.

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 performed in SDG PH073. 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 SDG PH073.

VIII. Laboratory Duplicates Sample

Laboratory duplicates (DUP) sample analyses were reviewed for each matrix as applicable. Relative percent differences (RPDs) were within QC limits with the exception of one DUP for metals performed in SDG PH073. 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 SDG PH073.

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 SVOAs. Since the %R was out high and all associated result values were non-detect, no data were qualified. The details regarding LCS/LCSD outliers 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 with the exception of one ICP serial dilution sample in SDG PH073. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ), as applicable. The details regarding the outliers are provided in the DVR for SDG PH073.

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 PH072	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-G. No contaminant concentrations were found in the trip blank.

One equipment blank (from SDG PH075) was collected and analyzed for SVOAs, PCBs, metals, TPH-G, TPH-E, and dioxins. The equipment blank had detections for several SVOAs, metals, and dioxins. All associated sample results were not detected or were significantly greater than the concentrations found in the equipment blanks and were not qualified.

One field blank (from SDG PH029) was collected and analyzed for SVOAs, PCBs, metals, TPH-G, TPH-E, and dioxins. The field blank had detections for several SVOAs, 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. 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
22-Jul-2013	TB-072213	7135369	TB	5030B	8015M	III
22-Jul-2013	SL-550-SA8-SB-0.0-0.5	7135364	N	3050B	6010C	III
22-Jul-2013	SL-550-SA8-SB-0.0-0.5	7135364	N	3050B	6020A	III
22-Jul-2013	SL-550-SA8-SB-0.0-0.5	7135364	N	3546	8015M	III
22-Jul-2013	SL-550-SA8-SB-0.0-0.5	7135364	N	3546	8082A	III
22-Jul-2013	SL-550-SA8-SB-0.0-0.5	7135364	N	3546	8270D SIM	III
22-Jul-2013	SL-550-SA8-SB-0.0-0.5	7135364	N	METHOD	1613B	III
22-Jul-2013	SL-550-SA8-SB-0.0-0.5	7135364	N	METHOD	7471B	III
22-Jul-2013	SL-550-SA8-SB-4.0-5.0	7135365	N	3050B	6010C	III
22-Jul-2013	SL-550-SA8-SB-4.0-5.0	7135365	N	3050B	6020A	III
22-Jul-2013	SL-550-SA8-SB-4.0-5.0	7135365	N	3546	8015M	III
22-Jul-2013	SL-550-SA8-SB-4.0-5.0	7135365	N	3546	8082A	III
22-Jul-2013	SL-550-SA8-SB-4.0-5.0	7135365	N	3546	8270D SIM	III
22-Jul-2013	SL-550-SA8-SB-4.0-5.0	7135365	N	5035A	8015M	III
22-Jul-2013	SL-550-SA8-SB-4.0-5.0	7135365	N	METHOD	1613B	III
22-Jul-2013	SL-550-SA8-SB-4.0-5.0	7135365	N	METHOD	7471B	III
22-Jul-2013	SL-550-SA8-SB-9.0-10.0	7135366	N	3050B	6010C	III
22-Jul-2013	SL-550-SA8-SB-9.0-10.0	7135366	N	3050B	6020A	III
22-Jul-2013	SL-550-SA8-SB-9.0-10.0	7135366	N	3546	8015M	III
22-Jul-2013	SL-550-SA8-SB-9.0-10.0	7135366	N	3546	8082A	III
22-Jul-2013	SL-550-SA8-SB-9.0-10.0	7135366	N	3546	8270D SIM	III
22-Jul-2013	SL-550-SA8-SB-9.0-10.0	7135366	N	5035A	8015M	III
22-Jul-2013	SL-550-SA8-SB-9.0-10.0	7135366	N	METHOD	7471B	III
22-Jul-2013	SL-550-SA8-SB-14.0-15.0	7135367	N	3050B	6010C	III
22-Jul-2013	SL-550-SA8-SB-14.0-15.0	7135367	N	3050B	6020A	III
22-Jul-2013	SL-550-SA8-SB-14.0-15.0	7135367	N	3546	8015M	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
22-Jul-2013	SL-550-SA8-SB-14.0-15.0	7135367	N	3546	8082A	III
22-Jul-2013	SL-550-SA8-SB-14.0-15.0	7135367	N	3546	8270D SIM	III
22-Jul-2013	SL-550-SA8-SB-14.0-15.0	7135367	N	5035A	8015M	III
22-Jul-2013	SL-550-SA8-SB-14.0-15.0	7135367	N	METHOD	7471B	III
22-Jul-2013	SL-550-SA8-SB-17.0-18.0	7135368	N	3050B	6010C	III
22-Jul-2013	SL-550-SA8-SB-17.0-18.0	7135368	N	3050B	6020A	III
22-Jul-2013	SL-550-SA8-SB-17.0-18.0	7135368	N	3546	8015M	III
22-Jul-2013	SL-550-SA8-SB-17.0-18.0	7135368	N	3546	8082A	III
22-Jul-2013	SL-550-SA8-SB-17.0-18.0	7135368	N	3546	8270D SIM	III
22-Jul-2013	SL-550-SA8-SB-17.0-18.0	7135368	N	5035A	8015M	III
22-Jul-2013	SL-550-SA8-SB-17.0-18.0	7135368	N	METHOD	7471B	III
22-Jul-2013	SL-556-SA8-SB-0.0-0.5	7135372	N	3050B	6010C	III
22-Jul-2013	SL-556-SA8-SB-0.0-0.5	7135372	N	3050B	6020A	III
22-Jul-2013	SL-556-SA8-SB-0.0-0.5	7135372	N	3546	8015M	III
22-Jul-2013	SL-556-SA8-SB-0.0-0.5	7135372	N	3546	8082A	III
22-Jul-2013	SL-556-SA8-SB-0.0-0.5	7135372	N	3546	8270D SIM	III
22-Jul-2013	SL-556-SA8-SB-0.0-0.5	7135372	N	METHOD	1613B	III
22-Jul-2013	SL-556-SA8-SB-0.0-0.5	7135372	N	METHOD	7471B	III
22-Jul-2013	SL-556-SA8-SB-4.0-5.0	7135373	N	3050B	6010C	III
22-Jul-2013	SL-556-SA8-SB-4.0-5.0	7135373	N	3050B	6020A	III
22-Jul-2013	SL-556-SA8-SB-4.0-5.0	7135373	N	3546	8015M	III
22-Jul-2013	SL-556-SA8-SB-4.0-5.0	7135373	N	3546	8082A	III
22-Jul-2013	SL-556-SA8-SB-4.0-5.0	7135373	N	3546	8270D SIM	III
22-Jul-2013	SL-556-SA8-SB-4.0-5.0	7135373	N	5035A	8015M	III
22-Jul-2013	SL-556-SA8-SB-4.0-5.0	7135373	N	METHOD	1613B	III
22-Jul-2013	SL-556-SA8-SB-4.0-5.0	7135373	N	METHOD	7471B	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
22-Jul-2013	SL-554-SA8-SB-0.0-0.5	7135370	N	3050B	6010C	III
22-Jul-2013	SL-554-SA8-SB-0.0-0.5	7135370	N	3050B	6020A	III
22-Jul-2013	SL-554-SA8-SB-0.0-0.5	7135370	N	3546	8015M	III
22-Jul-2013	SL-554-SA8-SB-0.0-0.5	7135370	N	3546	8082A	III
22-Jul-2013	SL-554-SA8-SB-0.0-0.5	7135370	N	3546	8270D SIM	III
22-Jul-2013	SL-554-SA8-SB-0.0-0.5	7135370	N	METHOD	1613B	III
22-Jul-2013	SL-554-SA8-SB-0.0-0.5	7135370	N	METHOD	7471B	III
22-Jul-2013	SL-554-SA8-SB-4.0-5.0	7135371	N	3050B	6010C	III
22-Jul-2013	SL-554-SA8-SB-4.0-5.0	7135371	N	3050B	6020A	III
22-Jul-2013	SL-554-SA8-SB-4.0-5.0	7135371	N	3546	8015M	III
22-Jul-2013	SL-554-SA8-SB-4.0-5.0	7135371	N	3546	8082A	III
22-Jul-2013	SL-554-SA8-SB-4.0-5.0	7135371	N	3546	8270D SIM	III
22-Jul-2013	SL-554-SA8-SB-4.0-5.0	7135371	N	5035A	8015M	III
22-Jul-2013	SL-554-SA8-SB-4.0-5.0	7135371	N	METHOD	1613B	III
22-Jul-2013	SL-554-SA8-SB-4.0-5.0	7135371	N	METHOD	7471B	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation
N = Normal Sample
FD = Field Duplicate
TB = Trip Blank
FB = Field Blank
MS = Matrix Spike
MSD = Matrix Spike Duplicate

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH072 **Laboratory: LL**

EDD Filename: PrepPH072_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix:** SO

Sample ID: SL-550-SA8-SB-0.0-0.5 **Collected:** 7/22/2013 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	4.42	U	0.817	MDL	4.42	PQL	mg/Kg	UJ	Q
BERYLLIUM	1.03	J	0.0740	MDL	1.10	PQL	mg/Kg	J	Z
BORON	6.34	J	0.927	MDL	11.0	PQL	mg/Kg	J	Z
CADMIUM	0.382	J	0.0839	MDL	1.10	PQL	mg/Kg	J	Z
CALCIUM	17100		3.69	MDL	22.1	PQL	mg/Kg	J	E
COBALT	10.2		0.109	MDL	1.10	PQL	mg/Kg	J	A, E
COPPER	21.7		0.320	MDL	2.21	PQL	mg/Kg	J	A
MANGANESE	456		0.0916	MDL	1.10	PQL	mg/Kg	J	E
MOLYBDENUM	0.358	J	0.188	MDL	2.21	PQL	mg/Kg	U	F
POTASSIUM	6640		9.21	MDL	110	PQL	mg/Kg	J	Q
TIN	3.34	J	0.243	MDL	11.0	PQL	mg/Kg	U	B

Sample ID: SL-550-SA8-SB-14.0-15.0 **Collected:** 7/22/2013 9:30:00 **Analysis Type:** REA **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CALCIUM	210000		38.4	MDL	230	PQL	mg/Kg	J	E

Sample ID: SL-550-SA8-SB-14.0-15.0 **Collected:** 7/22/2013 9:30:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.60	U	0.850	MDL	4.60	PQL	mg/Kg	UJ	Q
ARSENIC	3.47	J	0.804	MDL	4.60	PQL	mg/Kg	J	Z
BERYLLIUM	0.379	J	0.0770	MDL	1.15	PQL	mg/Kg	J	Z
BORON	2.68	J	0.965	MDL	11.5	PQL	mg/Kg	J	Z
CADMIUM	0.286	J	0.0873	MDL	1.15	PQL	mg/Kg	J	Z
COBALT	2.84		0.114	MDL	1.15	PQL	mg/Kg	J	A, E
COPPER	4.22		0.333	MDL	2.30	PQL	mg/Kg	J	A
MANGANESE	160		0.0953	MDL	1.15	PQL	mg/Kg	J	E
POTASSIUM	1370		9.58	MDL	115	PQL	mg/Kg	J	Q
TIN	2.77	J	0.253	MDL	11.5	PQL	mg/Kg	U	B
Zirconium	3.60	J	0.965	MDL	5.74	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: PH072 **Laboratory: LL**

EDD Filename: PrepPH072_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix:** SO

Sample ID: SL-550-SA8-SB-17.0-18.0 **Collected:** 7/22/2013 9:45:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.15	U	0.768	MDL	4.15	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.456	J	0.0695	MDL	1.04	PQL	mg/Kg	J	Z
CADMIUM	0.220	J	0.0788	MDL	1.04	PQL	mg/Kg	J	Z
CALCIUM	5000		3.47	MDL	20.7	PQL	mg/Kg	J	E
COBALT	5.00		0.103	MDL	1.04	PQL	mg/Kg	J	A, E
COPPER	7.45		0.301	MDL	2.07	PQL	mg/Kg	J	A
MANGANESE	267		0.0861	MDL	1.04	PQL	mg/Kg	J	E
POTASSIUM	2450		8.65	MDL	104	PQL	mg/Kg	J	Q
TIN	3.14	J	0.228	MDL	10.4	PQL	mg/Kg	U	B
Zirconium	4.60	J	0.871	MDL	5.19	PQL	mg/Kg	J	Z

Sample ID: SL-550-SA8-SB-4.0-5.0 **Collected:** 7/22/2013 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	4.37	U	0.808	MDL	4.37	PQL	mg/Kg	UJ	Q
BERYLLIUM	1.08	J	0.0731	MDL	1.09	PQL	mg/Kg	J	Z
BORON	2.05	J	0.917	MDL	10.9	PQL	mg/Kg	J	Z
CADMIUM	0.112	J	0.0829	MDL	1.09	PQL	mg/Kg	J	Z
CALCIUM	15800		3.65	MDL	21.8	PQL	mg/Kg	J	E
COBALT	9.35		0.108	MDL	1.09	PQL	mg/Kg	J	A, E
COPPER	18.1		0.317	MDL	2.18	PQL	mg/Kg	J	A
MANGANESE	365		0.0906	MDL	1.09	PQL	mg/Kg	J	E
MOLYBDENUM	0.222	J	0.186	MDL	2.18	PQL	mg/Kg	U	F
POTASSIUM	3440		9.10	MDL	109	PQL	mg/Kg	J	Q
TIN	3.36	J	0.240	MDL	10.9	PQL	mg/Kg	U	B

Sample ID: SL-550-SA8-SB-9.0-10.0 **Collected:** 7/22/2013 9:15:00 **Analysis Type:** REA **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CALCIUM	209000		36.8	MDL	220	PQL	mg/Kg	J	E

Sample ID: SL-550-SA8-SB-9.0-10.0 **Collected:** 7/22/2013 9:15:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.41	U	0.815	MDL	4.41	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: PH072 **Laboratory: LL**

EDD Filename: PrepPH072_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix:** SO

Sample ID: **SL-550-SA8-SB-9.0-10.0** ***Collected:*** **7/22/2013 9:15:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	0.626	J	0.0738	MDL	1.10	PQL	mg/Kg	J	Z
BORON	3.06	J	0.925	MDL	11.0	PQL	mg/Kg	J	Z
CADMIUM	0.533	J	0.0837	MDL	1.10	PQL	mg/Kg	J	Z
COBALT	4.09		0.109	MDL	1.10	PQL	mg/Kg	J	A, E
COPPER	6.60		0.319	MDL	2.20	PQL	mg/Kg	J	A
MANGANESE	213		0.0914	MDL	1.10	PQL	mg/Kg	J	E
POTASSIUM	1580		9.19	MDL	110	PQL	mg/Kg	J	Q
TIN	2.59	J	0.242	MDL	11.0	PQL	mg/Kg	U	B
Zirconium	4.73	J	0.925	MDL	5.51	PQL	mg/Kg	J	Z

Sample ID: **SL-554-SA8-SB-0.0-0.5** ***Collected:*** **7/22/2013 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
ANTIMONY	4.58	U	0.848	MDL	4.58	PQL	mg/Kg	UJ	Q
BERYLLIUM	1.14	J	0.0767	MDL	1.15	PQL	mg/Kg	J	Z
BORON	5.89	J	0.962	MDL	11.5	PQL	mg/Kg	J	Z
CADMIUM	0.417	J	0.0871	MDL	1.15	PQL	mg/Kg	J	Z
CALCIUM	8780		3.83	MDL	22.9	PQL	mg/Kg	J	E
COBALT	11.3		0.113	MDL	1.15	PQL	mg/Kg	J	A, E
COPPER	21.9		0.332	MDL	2.29	PQL	mg/Kg	J	A
MANGANESE	547		0.0951	MDL	1.15	PQL	mg/Kg	J	E
MOLYBDENUM	0.249	J	0.195	MDL	2.29	PQL	mg/Kg	U	F
POTASSIUM	5070		9.55	MDL	115	PQL	mg/Kg	J	Q
TIN	3.38	J	0.252	MDL	11.5	PQL	mg/Kg	U	B

Sample ID: **SL-554-SA8-SB-4.0-5.0** ***Collected:*** **7/22/2013 2:00:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.45	U	0.823	MDL	4.45	PQL	mg/Kg	UJ	Q
BERYLLIUM	1.06	J	0.0746	MDL	1.11	PQL	mg/Kg	J	Z
BORON	4.27	J	0.935	MDL	11.1	PQL	mg/Kg	J	Z
CADMIUM	0.201	J	0.0846	MDL	1.11	PQL	mg/Kg	J	Z
CALCIUM	22000		3.72	MDL	22.3	PQL	mg/Kg	J	E
COBALT	9.87		0.110	MDL	1.11	PQL	mg/Kg	J	A, E
COPPER	18.1		0.323	MDL	2.23	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: PH072 **Laboratory: LL**

EDD Filename: PrepPH072_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix:** SO

Sample ID: SL-554-SA8-SB-4.0-5.0 **Collected:** 7/22/2013 2:00:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MANGANESE	402		0.0924	MDL	1.11	PQL	mg/Kg	J	E
POTASSIUM	3320		9.28	MDL	111	PQL	mg/Kg	J	Q
TIN	3.36	J	0.245	MDL	11.1	PQL	mg/Kg	U	B

Sample ID: SL-556-SA8-SB-0.0-0.5 **Collected:** 7/22/2013 11:30:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.38	U	0.809	MDL	4.38	PQL	mg/Kg	UJ	Q
BORON	4.09	J	0.919	MDL	10.9	PQL	mg/Kg	J	Z
CADMIUM	0.168	J	0.0831	MDL	1.09	PQL	mg/Kg	J	Z
CALCIUM	17100		3.65	MDL	21.9	PQL	mg/Kg	J	E
COBALT	13.2		0.108	MDL	1.09	PQL	mg/Kg	J	A, E
COPPER	19.7		0.317	MDL	2.19	PQL	mg/Kg	J	A
MANGANESE	506		0.0908	MDL	1.09	PQL	mg/Kg	J	E
MOLYBDENUM	0.242	J	0.186	MDL	2.19	PQL	mg/Kg	U	F
POTASSIUM	4210		9.12	MDL	109	PQL	mg/Kg	J	Q
TIN	3.44	J	0.241	MDL	10.9	PQL	mg/Kg	U	B

Sample ID: SL-556-SA8-SB-4.0-5.0 **Collected:** 7/22/2013 12:00:00 **Analysis Type:** REA **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CALCIUM	276000		17.7	MDL	106	PQL	mg/Kg	J	E
COPPER	3.65	J	1.54	MDL	10.6	PQL	mg/Kg	J	Z, A
LEAD	9.75	J	2.66	MDL	15.9	PQL	mg/Kg	J	Z
LITHIUM	7.7	J	1.8	MDL	21.2	PQL	mg/Kg	J	Z

Sample ID: SL-556-SA8-SB-4.0-5.0 **Collected:** 7/22/2013 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
ANTIMONY	4.25	U	0.786	MDL	4.25	PQL	mg/Kg	UJ	Q
ARSENIC	3.98	J	0.744	MDL	4.25	PQL	mg/Kg	J	Z
BERYLLIUM	0.473	J	0.0712	MDL	1.06	PQL	mg/Kg	J	Z
BORON	3.34	J	0.892	MDL	10.6	PQL	mg/Kg	J	Z
CADMIUM	0.501	J	0.0807	MDL	1.06	PQL	mg/Kg	J	Z
COBALT	2.30		0.105	MDL	1.06	PQL	mg/Kg	J	A, 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: PH072 **Laboratory: LL**

EDD Filename: PrepPH072_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-556-SA8-SB-4.0-5.0 **Collected: 7/22/2013 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
MANGANESE	99.1		0.0882	MDL	1.06	PQL	mg/Kg	J	E
POTASSIUM	1100		8.86	MDL	106	PQL	mg/Kg	J	Q
TIN	2.23	J	0.234	MDL	10.6	PQL	mg/Kg	U	B
Zirconium	4.28	J	0.892	MDL	5.31	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-550-SA8-SB-0.0-0.5 **Collected: 7/22/2013 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	0.315	J	0.110	MDL	0.442	PQL	mg/Kg	J	Z

Sample ID: SL-550-SA8-SB-0.0-0.5 **Collected: 7/22/2013 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	0.0747	J	0.0287	MDL	0.221	PQL	mg/Kg	J	Z
STRONTIUM	47.7		0.0751	MDL	0.442	PQL	mg/Kg	J	E
THALLIUM	0.346		0.0331	MDL	0.221	PQL	mg/Kg	J	Q

Sample ID: SL-550-SA8-SB-14.0-15.0 **Collected: 7/22/2013 9:30:00** **Analysis Type: REA** **Dilution: 5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	151		0.195	MDL	1.15	PQL	mg/Kg	J	E

Sample ID: SL-550-SA8-SB-14.0-15.0 **Collected: 7/22/2013 9:30:00** **Analysis Type: RES** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
THALLIUM	0.164	J	0.0345	MDL	0.230	PQL	mg/Kg	J	Z, Q

Sample ID: SL-550-SA8-SB-17.0-18.0 **Collected: 7/22/2013 9:45:00** **Analysis Type: RES** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	18.8		0.0705	MDL	0.415	PQL	mg/Kg	J	E
THALLIUM	0.268		0.0311	MDL	0.207	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: PH072 **Laboratory: LL**

EDD Filename: PrepPH072_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-550-SA8-SB-4.0-5.0 **Collected: 7/22/2013 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	0.0606	J	0.0284	MDL	0.218	PQL	mg/Kg	J	Z
STRONTIUM	64.6		0.0742	MDL	0.437	PQL	mg/Kg	J	E
THALLIUM	0.358		0.0327	MDL	0.218	PQL	mg/Kg	J	Q

Sample ID: SL-550-SA8-SB-9.0-10.0 **Collected: 7/22/2013 9:15:00** **Analysis Type: REA** **Dilution: 5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	130		0.187	MDL	1.10	PQL	mg/Kg	J	E

Sample ID: SL-550-SA8-SB-9.0-10.0 **Collected: 7/22/2013 9:15:00** **Analysis Type: RES** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
THALLIUM	0.156	J	0.0330	MDL	0.220	PQL	mg/Kg	J	Z, Q

Sample ID: SL-554-SA8-SB-0.0-0.5 **Collected: 7/22/2013 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
SELENIUM	0.299	J	0.115	MDL	0.458	PQL	mg/Kg	J	Z

Sample ID: SL-554-SA8-SB-0.0-0.5 **Collected: 7/22/2013 1:30:00** **Analysis Type: RES** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0542	J	0.0298	MDL	0.229	PQL	mg/Kg	J	Z
STRONTIUM	57.8		0.0779	MDL	0.458	PQL	mg/Kg	J	E
THALLIUM	0.446		0.0344	MDL	0.229	PQL	mg/Kg	J	Q

Sample ID: SL-554-SA8-SB-4.0-5.0 **Collected: 7/22/2013 2:00:00** **Analysis Type: REA2** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.198	J	0.111	MDL	0.445	PQL	mg/Kg	J	Z

Sample ID: SL-554-SA8-SB-4.0-5.0 **Collected: 7/22/2013 2:00:00** **Analysis Type: RES** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0505	J	0.0289	MDL	0.223	PQL	mg/Kg	J	Z
STRONTIUM	75.2		0.0757	MDL	0.445	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: PH072 **Laboratory: LL**

EDD Filename: PrepPH072_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-554-SA8-SB-4.0-5.0 **Collected: 7/22/2013 2:00:00** **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		0.0334	MDL	0.223	PQL	mg/Kg	J	Q

Sample ID: SL-556-SA8-SB-0.0-0.5 **Collected: 7/22/2013 11:30:00** **Analysis Type: REA2** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.225	J	0.109	MDL	0.438	PQL	mg/Kg	J	Z

Sample ID: SL-556-SA8-SB-0.0-0.5 **Collected: 7/22/2013 11:30:00** **Analysis Type: RES** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0593	J	0.0284	MDL	0.219	PQL	mg/Kg	J	Z
STRONTIUM	59.5		0.0744	MDL	0.438	PQL	mg/Kg	J	E
THALLIUM	0.348		0.0328	MDL	0.219	PQL	mg/Kg	J	Q

Sample ID: SL-556-SA8-SB-4.0-5.0 **Collected: 7/22/2013 12:00:00** **Analysis Type: REA** **Dilution: 5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	204		0.181	MDL	1.06	PQL	mg/Kg	J	E

Sample ID: SL-556-SA8-SB-4.0-5.0 **Collected: 7/22/2013 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
THALLIUM	0.114	J	0.0319	MDL	0.212	PQL	mg/Kg	J	Z, Q

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-550-SA8-SB-0.0-0.5 **Collected: 7/22/2013 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	3.65	JB	0.0405	MDL	5.57	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.823	JB	0.0187	MDL	5.57	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0771	JB	0.0284	MDL	5.57	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0657	JB	0.0319	MDL	5.57	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0822	JBQ	0.0194	MDL	5.57	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: PH072 **Laboratory: LL**

EDD Filename: PrepPH072_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-550-SA8-SB-0.0-0.5 **Collected: 7/22/2013 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
1,2,3,6,7,8-HXCDD	0.243	JBQ	0.0337	MDL	5.57	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0458	JBQ	0.0197	MDL	5.57	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.253	JB	0.0355	MDL	5.57	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.222	JBQ	0.0240	MDL	5.57	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0459	JB	0.0321	MDL	5.57	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.108	JBQ	0.0190	MDL	5.57	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0676	JB	0.0198	MDL	5.57	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0394	JBQ	0.0184	MDL	5.57	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.0351	J	0.0318	MDL	1.11	PQL	ng/Kg	J	Z
OCDF	2.04	JB	0.0287	MDL	11.1	PQL	ng/Kg	J	Z

Sample ID: SL-550-SA8-SB-4.0-5.0 **Collected: 7/22/2013 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	0.381	JB	0.0271	MDL	5.54	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.145	JB	0.0107	MDL	5.54	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0580	JBQ	0.0167	MDL	5.54	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0826	JBQ	0.0195	MDL	5.54	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.152	JB	0.0126	MDL	5.54	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.132	JBQ	0.0212	MDL	5.54	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.128	JB	0.0118	MDL	5.54	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.204	JBQ	0.0213	MDL	5.54	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.188	JBQ	0.0151	MDL	5.54	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.168	JB	0.0285	MDL	5.54	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.260	JBQ	0.0162	MDL	5.54	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0781	JBQ	0.0117	MDL	5.54	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.131	JB	0.0146	MDL	5.54	PQL	ng/Kg	U	B
2,3,7,8-TCDD	0.0491	JBQ	0.0241	MDL	1.11	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.0349	JQ	0.0280	MDL	1.11	PQL	ng/Kg	J	Z
OCDD	2.83	JB	0.0199	MDL	11.1	PQL	ng/Kg	J	Z
OCDF	0.236	JB	0.0261	MDL	11.1	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: PH072 **Laboratory: LL**

EDD Filename: PrepPH072_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix:** SO

Sample ID: **SL-554-SA8-SB-0.0-0.5** ***Collected:*** **7/22/2013 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-HPCDD	0.506	JB	0.0229	MDL	5.47	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.200	JB	0.00756	MDL	5.47	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0514	JBQ	0.0119	MDL	5.47	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0943	JB	0.0211	MDL	5.47	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.156	JBQ	0.0144	MDL	5.47	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.171	JB	0.0226	MDL	5.47	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.130	JBQ	0.0132	MDL	5.47	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.227	JB	0.0234	MDL	5.47	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.341	JB	0.0159	MDL	5.47	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.193	JBQ	0.0243	MDL	5.47	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.353	JB	0.0158	MDL	5.47	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.0836	JB	0.0134	MDL	5.47	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.207	JB	0.0158	MDL	5.47	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.0538	JB	0.0205	MDL	1.09	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.0462	JQ	0.0247	MDL	1.09	PQL	ng/Kg	J	Z
OCDD	3.57	JB	0.0184	MDL	10.9	PQL	ng/Kg	J	Z
OCDF	0.380	JBQ	0.0223	MDL	10.9	PQL	ng/Kg	U	B

Sample ID: **SL-554-SA8-SB-4.0-5.0** ***Collected:*** **7/22/2013 2:00:00** ***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	0.124	JBQ	0.0204	MDL	5.64	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0258	JBQ	0.00726	MDL	5.64	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0143	JB	0.0106	MDL	5.64	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0551	JBQ	0.0110	MDL	5.64	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0600	JB	0.0187	MDL	5.64	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0308	JB	0.0103	MDL	5.64	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.148	JB	0.0195	MDL	5.64	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.213	JB	0.0124	MDL	5.64	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0595	JBQ	0.0277	MDL	5.64	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.0720	JBQ	0.0198	MDL	5.64	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0297	JBQ	0.0106	MDL	5.64	PQL	ng/Kg	U	B
OCDD	0.315	JB	0.0204	MDL	11.3	PQL	ng/Kg	U	B
OCDF	0.0875	JBQ	0.0258	MDL	11.3	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: PH072 **Laboratory: LL**

EDD Filename: PrepPH072_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-556-SA8-SB-0.0-0.5 **Collected: 7/22/2013 11:30:00** **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	0.342	JB	0.0228	MDL	5.50	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.103	JB	0.00819	MDL	5.50	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0910	JBQ	0.0126	MDL	5.50	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.103	JBQ	0.0197	MDL	5.50	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.120	JBQ	0.0115	MDL	5.50	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.124	JB	0.0209	MDL	5.50	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0936	JBQ	0.0109	MDL	5.50	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.198	JBQ	0.0215	MDL	5.50	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.184	JB	0.0129	MDL	5.50	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.130	JBQ	0.0234	MDL	5.50	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.193	JBQ	0.0140	MDL	5.50	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0687	JBQ	0.0114	MDL	5.50	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.140	JB	0.0133	MDL	5.50	PQL	ng/Kg	U	B
2,3,7,8-TCDD	0.0761	JB	0.0206	MDL	1.10	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.0754	JQ	0.0215	MDL	1.10	PQL	ng/Kg	J	Z
OCDD	1.46	JBQ	0.0167	MDL	11.0	PQL	ng/Kg	J	Z
OCDF	0.232	JB	0.0201	MDL	11.0	PQL	ng/Kg	U	B

Sample ID: SL-556-SA8-SB-4.0-5.0 **Collected: 7/22/2013 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	0.898	JB	0.0261	MDL	5.38	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.173	JBQ	0.00974	MDL	5.38	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0783	JB	0.0138	MDL	5.38	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.147	JB	0.0193	MDL	5.38	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.175	JB	0.0117	MDL	5.38	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.117	JBQ	0.0204	MDL	5.38	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.162	JB	0.0109	MDL	5.38	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.126	JB	0.0205	MDL	5.38	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.104	JBQ	0.0123	MDL	5.38	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.233	JB	0.0242	MDL	5.38	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.259	JB	0.0142	MDL	5.38	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.111	JB	0.0113	MDL	5.38	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.232	JB	0.0136	MDL	5.38	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: PH072 **Laboratory: LL**

EDD Filename: PrepPH072_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-556-SA8-SB-4.0-5.0** ***Collected:*** **7/22/2013 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
2,3,7,8-TCDD	0.103	JB	0.0212	MDL	1.08	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.0531	J	0.0187	MDL	1.08	PQL	ng/Kg	J	Z
OCDD	7.71	JB	0.0175	MDL	10.8	PQL	ng/Kg	J	Z
OCDF	0.380	JB	0.0207	MDL	10.8	PQL	ng/Kg	U	B

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: **SL-556-SA8-SB-4.0-5.0** ***Collected:*** **7/22/2013 12:00:00** ***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)	3.2	J	2.2	MDL	5.5	PQL	mg/Kg	J	Z
EFH (C30-C40)	9.3	J	4.4	MDL	11	PQL	mg/Kg	J	Z

Method Category: SVOA

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

Sample ID: **SL-550-SA8-SB-0.0-0.5** ***Collected:*** **7/22/2013 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
BENZO(K)FLUORANTHENE	0.87	J	0.74	MDL	1.9	PQL	ug/Kg	J	Z
CHRYSENE	0.53	J	0.37	MDL	1.9	PQL	ug/Kg	J	Z

Sample ID: **SL-550-SA8-SB-14.0-15.0** ***Collected:*** **7/22/2013 9:30:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NAPHTHALENE	0.97	J	0.80	MDL	2.0	PQL	ug/Kg	J	Z

Sample ID: **SL-554-SA8-SB-0.0-0.5** ***Collected:*** **7/22/2013 1:30:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1-METHYLNAPHTHALENE	0.86	J	0.75	MDL	1.9	PQL	ug/Kg	J	Z
2-METHYLNAPHTHALENE	1.1	J	0.75	MDL	1.9	PQL	ug/Kg	J	Z
BENZO(B)FLUORANTHENE	1.1	J	0.75	MDL	1.9	PQL	ug/Kg	J	Z
CHRYSENE	1.5	J	0.38	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

Data Qualifier Summary

Lab Reporting Batch ID: PH072 **Laboratory: LL**

EDD Filename: PrepPH072_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

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

Sample ID: **SL-554-SA8-SB-0.0-0.5** ***Collected:*** **7/22/2013 1:30:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORANTHENE	0.76	J	0.75	MDL	1.9	PQL	ug/Kg	J	Z
NAPHTHALENE	1.2	J	0.75	MDL	1.9	PQL	ug/Kg	J	Z
PHENANTHRENE	0.80	J	0.75	MDL	1.9	PQL	ug/Kg	J	Z

Sample ID: **SL-554-SA8-SB-4.0-5.0** ***Collected:*** **7/22/2013 2:00:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHRYSENE	0.40	J	0.38	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

Data Qualifier Summary

Lab Reporting Batch ID: PH072 **Laboratory: LL**

EDD Filename: PrepPH072_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Reason Code Legend

Reason Code	*Description*
*#	Professional Judgment
A	ICP Serial Dilution
B	Method Blank Contamination
E	Laboratory Duplicate Precision
E	Matrix Spike Precision
F	Field Blank Contamination
L	Laboratory Control Spike Upper Estimation
Q	Laboratory Duplicate Precision
Q	Matrix Spike Lower Estimation
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

Enclosure I

EPA Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control
Outlier Reports

PH072

Method Blank Outlier Report

Lab Reporting Batch ID: PH072 **Laboratory: LL**

EDD Filename: PrepPH072_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: **1613B**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2100B372054	7/30/2013 8:54:00 PM	1,2,3,4,6,7,8-HPCDD	0.0567 ng/Kg	SL-550-SA8-SB-0.0-0.5
		1,2,3,4,6,7,8-HPCDF	0.0332 ng/Kg	SL-550-SA8-SB-4.0-5.0
		1,2,3,4,7,8,9-HPCDF	0.0325 ng/Kg	SL-554-SA8-SB-0.0-0.5
		1,2,3,4,7,8-HxCDD	0.0355 ng/Kg	SL-554-SA8-SB-4.0-5.0
		1,2,3,4,7,8-HXCDF	0.0517 ng/Kg	SL-556-SA8-SB-0.0-0.5
		1,2,3,6,7,8-HXCDD	0.0248 ng/Kg	SL-556-SA8-SB-4.0-5.0
		1,2,3,6,7,8-HXCDF	0.0377 ng/Kg	
		1,2,3,7,8,9-HXCDD	0.0327 ng/Kg	
		1,2,3,7,8,9-HXCDF	0.0544 ng/Kg	
		1,2,3,7,8-PECDD	0.0311 ng/Kg	
		1,2,3,7,8-PECDF	0.0578 ng/Kg	
		2,3,4,6,7,8-HXCDF	0.0342 ng/Kg	
		2,3,4,7,8-PECDF	0.0367 ng/Kg	
		2,3,7,8-TCDD	0.0257 ng/Kg	
		OCDD	0.283 ng/Kg	
		OCDF	0.0947 ng/Kg	

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-550-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0771 ng/Kg	0.0771U ng/Kg
SL-550-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.0657 ng/Kg	0.0657U ng/Kg
SL-550-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.0822 ng/Kg	0.0822U ng/Kg
SL-550-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.0458 ng/Kg	0.0458U ng/Kg
SL-550-SA8-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.222 ng/Kg	0.222U ng/Kg
SL-550-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.0459 ng/Kg	0.0459U ng/Kg
SL-550-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.108 ng/Kg	0.108U ng/Kg
SL-550-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0676 ng/Kg	0.0676U ng/Kg
SL-550-SA8-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.0394 ng/Kg	0.0394U ng/Kg
SL-550-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.145 ng/Kg	0.145U ng/Kg
SL-550-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0580 ng/Kg	0.0580U ng/Kg
SL-550-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HxCDD	0.0826 ng/Kg	0.0826U ng/Kg
SL-550-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.152 ng/Kg	0.152U ng/Kg
SL-550-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.128 ng/Kg	0.128U ng/Kg
SL-550-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDF	0.188 ng/Kg	0.188U ng/Kg
SL-550-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.260 ng/Kg	0.260U ng/Kg
SL-550-SA8-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0781 ng/Kg	0.0781U ng/Kg
SL-550-SA8-SB-4.0-5.0(RES)	2,3,4,7,8-PECDF	0.131 ng/Kg	0.131U ng/Kg
SL-550-SA8-SB-4.0-5.0(RES)	2,3,7,8-TCDD	0.0491 ng/Kg	0.0491U ng/Kg
SL-550-SA8-SB-4.0-5.0(RES)	OCDF	0.236 ng/Kg	0.236U ng/Kg
SL-554-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0514 ng/Kg	0.0514U ng/Kg
SL-554-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.0943 ng/Kg	0.0943U ng/Kg
SL-554-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.156 ng/Kg	0.156U ng/Kg
SL-554-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.130 ng/Kg	0.130U ng/Kg
SL-554-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0836 ng/Kg	0.0836U ng/Kg
SL-554-SA8-SB-0.0-0.5(RES)	2,3,7,8-TCDD	0.0538 ng/Kg	0.0538U ng/Kg
SL-554-SA8-SB-0.0-0.5(RES)	OCDF	0.380 ng/Kg	0.380U ng/Kg
SL-554-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDD	0.124 ng/Kg	0.124U ng/Kg
SL-554-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0258 ng/Kg	0.0258U ng/Kg

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

Method Blank Outlier Report

Lab Reporting Batch ID: PH072 **Laboratory: LL**

EDD Filename: PrepPH072_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: **1613B**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples

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-554-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0143 ng/Kg	0.0143U ng/Kg
SL-554-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.0551 ng/Kg	0.0551U ng/Kg
SL-554-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDD	0.0600 ng/Kg	0.0600U ng/Kg
SL-554-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.0308 ng/Kg	0.0308U ng/Kg
SL-554-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDD	0.148 ng/Kg	0.148U ng/Kg
SL-554-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDF	0.213 ng/Kg	0.213U ng/Kg
SL-554-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDD	0.0595 ng/Kg	0.0595U ng/Kg
SL-554-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.0720 ng/Kg	0.0720U ng/Kg
SL-554-SA8-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0297 ng/Kg	0.0297U ng/Kg
SL-554-SA8-SB-4.0-5.0(RES)	OCDD	0.315 ng/Kg	0.315U ng/Kg
SL-554-SA8-SB-4.0-5.0(RES)	OCDF	0.0875 ng/Kg	0.0875U ng/Kg
SL-556-SA8-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDF	0.103 ng/Kg	0.103U ng/Kg
SL-556-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0910 ng/Kg	0.0910U ng/Kg
SL-556-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.103 ng/Kg	0.103U ng/Kg
SL-556-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.120 ng/Kg	0.120U ng/Kg
SL-556-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDD	0.124 ng/Kg	0.124U ng/Kg
SL-556-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.0936 ng/Kg	0.0936U ng/Kg
SL-556-SA8-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.184 ng/Kg	0.184U ng/Kg
SL-556-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.130 ng/Kg	0.130U ng/Kg
SL-556-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.193 ng/Kg	0.193U ng/Kg
SL-556-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0687 ng/Kg	0.0687U ng/Kg
SL-556-SA8-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.140 ng/Kg	0.140U ng/Kg
SL-556-SA8-SB-0.0-0.5(RES)	2,3,7,8-TCDD	0.0761 ng/Kg	0.0761U ng/Kg
SL-556-SA8-SB-0.0-0.5(RES)	OCDF	0.232 ng/Kg	0.232U ng/Kg
SL-556-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0783 ng/Kg	0.0783U ng/Kg
SL-556-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HxCDD	0.147 ng/Kg	0.147U ng/Kg
SL-556-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.175 ng/Kg	0.175U ng/Kg
SL-556-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDD	0.117 ng/Kg	0.117U ng/Kg
SL-556-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.162 ng/Kg	0.162U ng/Kg
SL-556-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDD	0.126 ng/Kg	0.126U ng/Kg
SL-556-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDF	0.104 ng/Kg	0.104U ng/Kg
SL-556-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.259 ng/Kg	0.259U ng/Kg
SL-556-SA8-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.111 ng/Kg	0.111U ng/Kg
SL-556-SA8-SB-4.0-5.0(RES)	2,3,7,8-TCDD	0.103 ng/Kg	0.103U ng/Kg
SL-556-SA8-SB-4.0-5.0(RES)	OCDF	0.380 ng/Kg	0.380U ng/Kg

Method Blank Outlier Report

Lab Reporting Batch ID: PH072 **Laboratory: LL**

EDD Filename: PrepPH072_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: **6010C**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P20637AB221343	7/29/2013 1:43:00 PM	CALCIUM TIN ZINC	5.04 mg/Kg 1.80 mg/Kg 0.449 mg/Kg	SL-550-SA8-SB-0.0-0.5 SL-550-SA8-SB-14.0-15.0 SL-550-SA8-SB-17.0-18.0 SL-550-SA8-SB-4.0-5.0 SL-550-SA8-SB-9.0-10.0 SL-554-SA8-SB-0.0-0.5 SL-554-SA8-SB-4.0-5.0 SL-556-SA8-SB-0.0-0.5 SL-556-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-550-SA8-SB-0.0-0.5(RES)	TIN	3.34 mg/Kg	3.34U mg/Kg
SL-550-SA8-SB-14.0-15.0(RES)	TIN	2.77 mg/Kg	2.77U mg/Kg
SL-550-SA8-SB-17.0-18.0(RES)	TIN	3.14 mg/Kg	3.14U mg/Kg
SL-550-SA8-SB-4.0-5.0(RES)	TIN	3.36 mg/Kg	3.36U mg/Kg
SL-550-SA8-SB-9.0-10.0(RES)	TIN	2.59 mg/Kg	2.59U mg/Kg
SL-554-SA8-SB-0.0-0.5(RES)	TIN	3.38 mg/Kg	3.38U mg/Kg
SL-554-SA8-SB-4.0-5.0(RES)	TIN	3.36 mg/Kg	3.36U mg/Kg
SL-556-SA8-SB-0.0-0.5(RES)	TIN	3.44 mg/Kg	3.44U mg/Kg
SL-556-SA8-SB-4.0-5.0(RES)	TIN	2.23 mg/Kg	2.23U mg/Kg

Field Blank Outlier Report

Lab Reporting Batch ID: PH072 **Laboratory: LL**

EDD Filename: PH072_v1. **eQAPP Name: CDM_SSFL_130808_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-550-SA8-SB-0.0-0.5 SL-550-SA8-SB-14.0-15.0 SL-550-SA8-SB-17.0-18.0 SL-550-SA8-SB-4.0-5.0 SL-550-SA8-SB-9.0-10.0 SL-554-SA8-SB-0.0-0.5 SL-554-SA8-SB-4.0-5.0 SL-556-SA8-SB-0.0-0.5 SL-556-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-550-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.358 mg/Kg	0.358U mg/Kg
SL-550-SA8-SB-4.0-5.0(RES)	MOLYBDENUM	0.222 mg/Kg	0.222U mg/Kg
SL-554-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.249 mg/Kg	0.249U mg/Kg
SL-556-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.242 mg/Kg	0.242U mg/Kg

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH072 **Laboratory: LL**

EDD Filename: PH072_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

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

QC Sample ID (Associated Samples)	*Compound*	*LCS %R*	*LCSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
P5LDLCSQ260515 (SL-550-SA8-SB-0.0-0.5 SL-550-SA8-SB-14.0-15.0 SL-550-SA8-SB-17.0-18.0 SL-550-SA8-SB-4.0-5.0 SL-550-SA8-SB-9.0-10.0 SL-554-SA8-SB-0.0-0.5 SL-554-SA8-SB-4.0-5.0 SL-556-SA8-SB-0.0-0.5 SL-556-SA8-SB-4.0-5.0)	Diethylphthalate	126	-	68.00-125.00	-	Diethylphthalate	J (all detects)

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

Reporting Limit Outliers

Lab Reporting Batch ID: PH072 **Laboratory: LL**

EDD Filename: PH072_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-550-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	3.65	5.57	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.823	5.57	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.0771	5.57	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.0657	5.57	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0822	5.57	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.243	5.57	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0458	5.57	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.253	5.57	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JBQ	0.222	5.57	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JB	0.0459	5.57	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.108	5.57	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.0676	5.57	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0394	5.57	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.0351	1.11	PQL	ng/Kg	
	OCDF	JB	2.04	11.1	PQL	ng/Kg	
SL-550-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JB	0.381	5.54	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.145	5.54	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0580	5.54	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0826	5.54	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.152	5.54	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.132	5.54	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.128	5.54	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.204	5.54	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.188	5.54	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JB	0.168	5.54	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.260	5.54	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0781	5.54	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.131	5.54	PQL	ng/Kg	
	2,3,7,8-TCDD	JBQ	0.0491	1.11	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0349	1.11	PQL	ng/Kg	
	OCDD	JB	2.83	11.1	PQL	ng/Kg	
	OCDF	JB	0.236	11.1	PQL	ng/Kg	
SL-554-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	0.506	5.47	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.200	5.47	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0514	5.47	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.0943	5.47	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.156	5.47	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.171	5.47	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.130	5.47	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.227	5.47	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.341	5.47	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JBQ	0.193	5.47	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.353	5.47	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.0836	5.47	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.207	5.47	PQL	ng/Kg	
	2,3,7,8-TCDD	JB	0.0538	1.09	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0462	1.09	PQL	ng/Kg	
	OCDD	JB	3.57	10.9	PQL	ng/Kg	
	OCDF	JBQ	0.380	10.9	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH072 **Laboratory: LL**

EDD Filename: PH072_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-554-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.124	5.64	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0258	5.64	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.0143	5.64	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0551	5.64	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.0600	5.64	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.0308	5.64	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.148	5.64	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	0.213	5.64	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.0595	5.64	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.0720	5.64	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0297	5.64	PQL	ng/Kg	
	OCDD	JB	0.315	11.3	PQL	ng/Kg	
	OCDF	JBQ	0.0875	11.3	PQL	ng/Kg	
SL-556-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	0.342	5.50	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.103	5.50	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0910	5.50	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.103	5.50	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.120	5.50	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.124	5.50	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0936	5.50	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.198	5.50	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.184	5.50	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JBQ	0.130	5.50	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.193	5.50	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0687	5.50	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.140	5.50	PQL	ng/Kg	
	2,3,7,8-TCDD	JB	0.0761	1.10	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0754	1.10	PQL	ng/Kg	
	OCDD	JBQ	1.46	11.0	PQL	ng/Kg	
	OCDF	JB	0.232	11.0	PQL	ng/Kg	
SL-556-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JB	0.898	5.38	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.173	5.38	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.0783	5.38	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.147	5.38	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.175	5.38	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.117	5.38	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.162	5.38	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.126	5.38	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.104	5.38	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JB	0.233	5.38	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.259	5.38	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.111	5.38	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.232	5.38	PQL	ng/Kg	
	2,3,7,8-TCDD	JB	0.103	1.08	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.0531	1.08	PQL	ng/Kg	
	OCDD	JB	7.71	10.8	PQL	ng/Kg	
	OCDF	JB	0.380	10.8	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH072 **Laboratory: LL**

EDD Filename: PH072_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-550-SA8-SB-0.0-0.5	BERYLLIUM	J	1.03	1.10	PQL	mg/Kg	
	BORON	J	6.34	11.0	PQL	mg/Kg	
	CADMIUM	J	0.382	1.10	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.358	2.21	PQL	mg/Kg	
	TIN	J	3.34	11.0	PQL	mg/Kg	
SL-550-SA8-SB-14.0-15.0	ARSENIC	J	3.47	4.60	PQL	mg/Kg	
	BERYLLIUM	J	0.379	1.15	PQL	mg/Kg	
	BORON	J	2.68	11.5	PQL	mg/Kg	
	CADMIUM	J	0.286	1.15	PQL	mg/Kg	J (all detects)
	TIN	J	2.77	11.5	PQL	mg/Kg	
	Zirconium	J	3.60	5.74	PQL	mg/Kg	
SL-550-SA8-SB-17.0-18.0	BERYLLIUM	J	0.456	1.04	PQL	mg/Kg	
	CADMIUM	J	0.220	1.04	PQL	mg/Kg	J (all detects)
	TIN	J	3.14	10.4	PQL	mg/Kg	
	Zirconium	J	4.60	5.19	PQL	mg/Kg	
SL-550-SA8-SB-4.0-5.0	BERYLLIUM	J	1.08	1.09	PQL	mg/Kg	
	BORON	J	2.05	10.9	PQL	mg/Kg	
	CADMIUM	J	0.112	1.09	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.222	2.18	PQL	mg/Kg	
	TIN	J	3.36	10.9	PQL	mg/Kg	
SL-550-SA8-SB-9.0-10.0	BERYLLIUM	J	0.626	1.10	PQL	mg/Kg	
	BORON	J	3.06	11.0	PQL	mg/Kg	
	CADMIUM	J	0.533	1.10	PQL	mg/Kg	J (all detects)
	TIN	J	2.59	11.0	PQL	mg/Kg	
	Zirconium	J	4.73	5.51	PQL	mg/Kg	
SL-554-SA8-SB-0.0-0.5	BERYLLIUM	J	1.14	1.15	PQL	mg/Kg	
	BORON	J	5.89	11.5	PQL	mg/Kg	
	CADMIUM	J	0.417	1.15	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.249	2.29	PQL	mg/Kg	
	TIN	J	3.38	11.5	PQL	mg/Kg	
SL-554-SA8-SB-4.0-5.0	BERYLLIUM	J	1.06	1.11	PQL	mg/Kg	
	BORON	J	4.27	11.1	PQL	mg/Kg	J (all detects)
	CADMIUM	J	0.201	1.11	PQL	mg/Kg	
	TIN	J	3.36	11.1	PQL	mg/Kg	
SL-556-SA8-SB-0.0-0.5	BORON	J	4.09	10.9	PQL	mg/Kg	
	CADMIUM	J	0.168	1.09	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.242	2.19	PQL	mg/Kg	
	TIN	J	3.44	10.9	PQL	mg/Kg	
SL-556-SA8-SB-4.0-5.0	ARSENIC	J	3.98	4.25	PQL	mg/Kg	
	BERYLLIUM	J	0.473	1.06	PQL	mg/Kg	
	BORON	J	3.34	10.6	PQL	mg/Kg	
	CADMIUM	J	0.501	1.06	PQL	mg/Kg	
	COPPER	J	3.65	10.6	PQL	mg/Kg	J (all detects)
	LEAD	J	9.75	15.9	PQL	mg/Kg	
	LITHIUM	J	7.7	21.2	PQL	mg/Kg	
	TIN	J	2.23	10.6	PQL	mg/Kg	
	Zirconium	J	4.28	5.31	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH072 **Laboratory: LL**

EDD Filename: PH072_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-550-SA8-SB-0.0-0.5	SELENIUM SILVER	J J	0.315 0.0747	0.442 0.221	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-550-SA8-SB-14.0-15.0	THALLIUM	J	0.164	0.230	PQL	mg/Kg	J (all detects)
SL-550-SA8-SB-4.0-5.0	SILVER	J	0.0606	0.218	PQL	mg/Kg	J (all detects)
SL-550-SA8-SB-9.0-10.0	THALLIUM	J	0.156	0.220	PQL	mg/Kg	J (all detects)
SL-554-SA8-SB-0.0-0.5	SELENIUM SILVER	J J	0.299 0.0542	0.458 0.229	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-554-SA8-SB-4.0-5.0	SELENIUM SILVER	J J	0.198 0.0505	0.445 0.223	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-556-SA8-SB-0.0-0.5	SELENIUM SILVER	J J	0.225 0.0593	0.438 0.219	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-556-SA8-SB-4.0-5.0	THALLIUM	J	0.114	0.212	PQL	mg/Kg	J (all detects)

Method: 8015M

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-556-SA8-SB-4.0-5.0	EFH (C21-C30) EFH (C30-C40)	J J	3.2 9.3	5.5 11	PQL PQL	mg/Kg mg/Kg	J (all detects)

Method: 8270D SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-550-SA8-SB-0.0-0.5	BENZO(K)FLUORANTHENE CHRYSENE	J J	0.87 0.53	1.9 1.9	PQL PQL	ug/Kg ug/Kg	J (all detects)
SL-550-SA8-SB-14.0-15.0	NAPHTHALENE	J	0.97	2.0	PQL	ug/Kg	J (all detects)
SL-554-SA8-SB-0.0-0.5	1-METHYLNAPHTHALENE 2-METHYLNAPHTHALENE BENZO(B)FLUORANTHENE CHRYSENE FLUORANTHENE NAPHTHALENE PHENANTHRENE	J J J J J J J	0.86 1.1 1.1 1.5 0.76 1.2 0.80	1.9 1.9 1.9 1.9 1.9 1.9 1.9	PQL PQL PQL PQL PQL PQL PQL	ug/Kg ug/Kg ug/Kg ug/Kg ug/Kg ug/Kg ug/Kg	J (all detects)
SL-554-SA8-SB-4.0-5.0	CHRYSENE	J	0.40	1.9	PQL	ug/Kg	J (all detects)

LDC #: 30289G4

SDG #: PH072

Laboratory: Eurofins Lancaster Laboratories

VALIDATION COMPLETENESS WORKSHEET

ADR

Date: 9/4/13

Page: 1 of 1

Reviewer: CR

2nd Reviewer: [illegible]

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: 7/22/13
II.	ICP/MS Tune	—	
III.	Calibration	—	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	—	
VI.	Matrix Spike Analysis	N	MS/D (from SDG: PH073)
VII.	Duplicate Sample Analysis	N	Dup ↓
VIII.	Laboratory Control Samples (LCS)	N	
IX.	Internal Standard (ICP-MS)	N	
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	SW	(from SDG: PH073) 6:11,Cu:17: J/UJ/A(A)
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	N	
XIV.	Field Duplicates	N	
XV	Field Blanks	SW	EB= EB1-072513 (PH075) FB= FB-041113 (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-550-SA8-SB-0.0-0.5	11		21		31	
2	SL-550-SA8-SB-4.0-5.0	12		22		32	
3	SL-550-SA8-SB-9.0-10.0	13		23		33	
4	SL-550-SA8-SB-14.0-15.0	14		24		34	
5	SL-550-SA8-SB-17.0-18.0	15		25		35	
6	SL-554-SA8-SB-0.0-0.5	16		26		36	
7	SL-554-SA8-SB-4.0-5.0	17		27		37	
8	SL-556-SA8-SB-0.0-0.5	18		28		38	
9	SL-556-SA8-SB-4.0-5.0	19		29		39	
10		20		30		40	

Notes: _____

LDC #: 30289G4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: CR
2nd Reviewer: LC

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	6	8							
Cu	0.0036	1.8											
Mo	0.0036	1.8	0.36	0.22	0.25	0.24							

Sampling date: 7/25/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All

Analyte	Blank ID	Sample Identification											
	EB1-072513 (SDG: PH075)	Action Limit	No Qualifiers										
Mo	0.0067	3.35											

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: PH073

Prepared for

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Prepared by

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October 3, 2013

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on July 23rd, 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 (SVOAs) 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 Hydrocarbon as Gasoline (TPH-G) by EPA SW 846 Method 8015M
Total Petroleum Hydrocarbons as Extractable (TPH-E) by EPA SW 846 Method 8015M
Dioxins/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, trip blanks, equipment blanks, field blanks, and field duplicate samples. 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 the 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.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met QC criteria.

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.

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 TPH-E 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 with the exception of one LCS/LCSD pair for SVOAs. Since the percent recoveries were high and the results in the associated samples were non-detect, no data were qualified. The details regarding the LCS outliers 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 with the following exceptions:

Diluted Sample	Analyte	%D (Limits)	Associated Samples	Flag	A or P
SL-551-SA8-SB-4.0-5.0	Cobalt Copper	11 (≤10) 17 (≤10)	All soil samples in SDG PH073	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 PH073	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 SVOAs, PCBs, metals, TPH-G, TPH-E, and dioxins. All RPDs were within QC limits with the exception of several SVOAs, dioxins, and metals. 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-G. No contaminant concentrations were found in the trip blanks.

One equipment blank (from SDG PH075) was collected and analyzed for SVOAs, PCBs, metals, TPH-G, TPH-E, and dioxins. The equipment blanks had detections for several SVOAs,

metals, and dioxins. All 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 SVOAs, PCBs, metals, TPH-G, TPH-E, and dioxins. The field blank had detections for several semivolatiles, 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. 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
23-Jul-2013	SL-551-SA8-SB-0.0-0.5	7138010	N	3050B	6010C	III
23-Jul-2013	SL-551-SA8-SB-0.0-0.5	7138010	N	3050B	6020A	III
23-Jul-2013	SL-551-SA8-SB-0.0-0.5	7138010	N	3546	8015M	III
23-Jul-2013	SL-551-SA8-SB-0.0-0.5	7138010	N	3546	8082A	III
23-Jul-2013	SL-551-SA8-SB-0.0-0.5	7138010	N	3546	8270D SIM	III
23-Jul-2013	SL-551-SA8-SB-0.0-0.5	7138010	N	METHOD	1613B	III
23-Jul-2013	SL-551-SA8-SB-0.0-0.5	7138010	N	METHOD	7471B	III
23-Jul-2013	SL-551-SA8-SB-4.0-5.0	7138011	N	3050B	6010C	III
23-Jul-2013	SL-551-SA8-SB-4.0-5.0	7138011	N	3050B	6020A	III
23-Jul-2013	SL-551-SA8-SB-4.0-5.0	7138011	N	3546	8015M	III
23-Jul-2013	SL-551-SA8-SB-4.0-5.0	7138011	N	3546	8082A	III
23-Jul-2013	SL-551-SA8-SB-4.0-5.0	7138011	N	3546	8270D SIM	III
23-Jul-2013	SL-551-SA8-SB-4.0-5.0	7138011	N	5035A	8015M	III
23-Jul-2013	SL-551-SA8-SB-4.0-5.0	7138011	N	METHOD	1613B	III
23-Jul-2013	SL-551-SA8-SB-4.0-5.0	7138011	N	METHOD	7471B	III
23-Jul-2013	SL-551-SA8-SB-4.0-5.0MS	7138012	MS	3050B	6010C	III
23-Jul-2013	SL-551-SA8-SB-4.0-5.0MS	7138012	MS	3050B	6020A	III
23-Jul-2013	SL-551-SA8-SB-4.0-5.0MS	7138012	MS	3546	8015M	III
23-Jul-2013	SL-551-SA8-SB-4.0-5.0MS	7138012	MS	3546	8082A	III
23-Jul-2013	SL-551-SA8-SB-4.0-5.0MS	7138012	MS	3546	8270D SIM	III
23-Jul-2013	SL-551-SA8-SB-4.0-5.0MS	7138012	MS	5035A	8015M	III
23-Jul-2013	SL-551-SA8-SB-4.0-5.0MS	7138012	MS	METHOD	1613B	III
23-Jul-2013	SL-551-SA8-SB-4.0-5.0MS	7138012	MS	METHOD	7471B	III
23-Jul-2013	SL-551-SA8-SB-4.0-5.0MSD	7138013	MSD	3050B	6010C	III
23-Jul-2013	SL-551-SA8-SB-4.0-5.0MSD	7138013	MSD	3050B	6020A	III
23-Jul-2013	SL-551-SA8-SB-4.0-5.0MSD	7138013	MSD	3546	8015M	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
23-Jul-2013	SL-551-SA8-SB-4.0-5.0MSD	7138013	MSD	3546	8082A	III
23-Jul-2013	SL-551-SA8-SB-4.0-5.0MSD	7138013	MSD	3546	8270D SIM	III
23-Jul-2013	SL-551-SA8-SB-4.0-5.0MSD	7138013	MSD	5035A	8015M	III
23-Jul-2013	SL-551-SA8-SB-4.0-5.0MSD	7138013	MSD	METHOD	1613B	III
23-Jul-2013	SL-551-SA8-SB-4.0-5.0MSD	7138013	MSD	METHOD	7471B	III
23-Jul-2013	SL-551-SA8-SB-4.0-5.0DUP	7138014	DUP	3050B	6010C	III
23-Jul-2013	SL-551-SA8-SB-4.0-5.0DUP	7138014	DUP	3050B	6020A	III
23-Jul-2013	SL-551-SA8-SB-4.0-5.0DUP	7138014	DUP	METHOD	7471B	III
23-Jul-2013	TB-072313	7138025	TB	5030B	8015M	III
23-Jul-2013	SL-851-SA8-SB-4.0-5.0	7138015	FD	3050B	6010C	III
23-Jul-2013	SL-851-SA8-SB-4.0-5.0	7138015	FD	3050B	6020A	III
23-Jul-2013	SL-851-SA8-SB-4.0-5.0	7138015	FD	3546	8015M	III
23-Jul-2013	SL-851-SA8-SB-4.0-5.0	7138015	FD	3546	8082A	III
23-Jul-2013	SL-851-SA8-SB-4.0-5.0	7138015	FD	3546	8270D SIM	III
23-Jul-2013	SL-851-SA8-SB-4.0-5.0	7138015	FD	5035A	8015M	III
23-Jul-2013	SL-851-SA8-SB-4.0-5.0	7138015	FD	METHOD	1613B	III
23-Jul-2013	SL-851-SA8-SB-4.0-5.0	7138015	FD	METHOD	7471B	III
23-Jul-2013	SL-551-SA8-SB-9.0-10.0	7138016	N	3050B	6010C	III
23-Jul-2013	SL-551-SA8-SB-9.0-10.0	7138016	N	3050B	6020A	III
23-Jul-2013	SL-551-SA8-SB-9.0-10.0	7138016	N	3546	8015M	III
23-Jul-2013	SL-551-SA8-SB-9.0-10.0	7138016	N	3546	8082A	III
23-Jul-2013	SL-551-SA8-SB-9.0-10.0	7138016	N	3546	8270D SIM	III
23-Jul-2013	SL-551-SA8-SB-9.0-10.0	7138016	N	5035A	8015M	III
23-Jul-2013	SL-551-SA8-SB-9.0-10.0	7138016	N	METHOD	7471B	III
23-Jul-2013	SL-551-SA8-SB-14.0-15.0	7138017	N	3050B	6010C	III
23-Jul-2013	SL-551-SA8-SB-14.0-15.0	7138017	N	3050B	6020A	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
23-Jul-2013	SL-551-SA8-SB-14.0-15.0	7138017	N	3546	8015M	III
23-Jul-2013	SL-551-SA8-SB-14.0-15.0	7138017	N	3546	8082A	III
23-Jul-2013	SL-551-SA8-SB-14.0-15.0	7138017	N	3546	8270D SIM	III
23-Jul-2013	SL-551-SA8-SB-14.0-15.0	7138017	N	5035A	8015M	III
23-Jul-2013	SL-551-SA8-SB-14.0-15.0	7138017	N	METHOD	7471B	III
23-Jul-2013	SL-551-SA8-SB-19.0-20.0	7138018	N	3050B	6010C	III
23-Jul-2013	SL-551-SA8-SB-19.0-20.0	7138018	N	3050B	6020A	III
23-Jul-2013	SL-551-SA8-SB-19.0-20.0	7138018	N	3546	8015M	III
23-Jul-2013	SL-551-SA8-SB-19.0-20.0	7138018	N	3546	8082A	III
23-Jul-2013	SL-551-SA8-SB-19.0-20.0	7138018	N	3546	8270D SIM	III
23-Jul-2013	SL-551-SA8-SB-19.0-20.0	7138018	N	5035A	8015M	III
23-Jul-2013	SL-551-SA8-SB-19.0-20.0	7138018	N	METHOD	7471B	III
23-Jul-2013	SL-555-SA8-SB-0.0-0.5	7138019	N	3050B	6010C	III
23-Jul-2013	SL-555-SA8-SB-0.0-0.5	7138019	N	3050B	6020A	III
23-Jul-2013	SL-555-SA8-SB-0.0-0.5	7138019	N	3546	8015M	III
23-Jul-2013	SL-555-SA8-SB-0.0-0.5	7138019	N	3546	8082A	III
23-Jul-2013	SL-555-SA8-SB-0.0-0.5	7138019	N	3546	8270D SIM	III
23-Jul-2013	SL-555-SA8-SB-0.0-0.5	7138019	N	METHOD	1613B	III
23-Jul-2013	SL-555-SA8-SB-0.0-0.5	7138019	N	METHOD	7471B	III
23-Jul-2013	SL-555-SA8-SB-4.0-5.0	7138020	N	3050B	6010C	III
23-Jul-2013	SL-555-SA8-SB-4.0-5.0	7138020	N	3050B	6020A	III
23-Jul-2013	SL-555-SA8-SB-4.0-5.0	7138020	N	3546	8015M	III
23-Jul-2013	SL-555-SA8-SB-4.0-5.0	7138020	N	3546	8082A	III
23-Jul-2013	SL-555-SA8-SB-4.0-5.0	7138020	N	3546	8270D SIM	III
23-Jul-2013	SL-555-SA8-SB-4.0-5.0	7138020	N	5035A	8015M	III
23-Jul-2013	SL-555-SA8-SB-4.0-5.0	7138020	N	METHOD	1613B	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
23-Jul-2013	SL-555-SA8-SB-4.0-5.0	7138020	N	METHOD	7471B	III
23-Jul-2013	SL-557A-SA8-SB-0.0-0.5	7138021	N	3546	8082A	III
23-Jul-2013	SL-557B-SA8-SB-0.0-0.5	7138022	N	3546	8082A	III
23-Jul-2013	SL-557C-SA8-SB-0.0-0.5	7138023	N	3546	8082A	III
23-Jul-2013	SL-557D-SA8-SB-0.0-0.5	7138024	N	3546	8082A	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH073 **Laboratory: LL**

EDD Filename: PH073_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-551-SA8-SB-0.0-0.5** ***Collected:*** **7/23/2013 7:30:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.44	U	0.822	MDL	4.44	PQL	mg/Kg	UJ	Q
BORON	4.75	J	0.933	MDL	11.1	PQL	mg/Kg	J	Z
CADMIUM	0.122	J	0.0844	MDL	1.11	PQL	mg/Kg	J	Z
CALCIUM	23900		3.71	MDL	22.2	PQL	mg/Kg	J	E
COBALT	11.1		0.110	MDL	1.11	PQL	mg/Kg	J	E, A
COPPER	20.5		0.322	MDL	2.22	PQL	mg/Kg	J	A
MANGANESE	459		0.0922	MDL	1.11	PQL	mg/Kg	J	E
MOLYBDENUM	0.219	J	0.189	MDL	2.22	PQL	mg/Kg	U	F
POTASSIUM	5300		9.26	MDL	111	PQL	mg/Kg	J	Q
TIN	3.55	J	0.244	MDL	11.1	PQL	mg/Kg	U	B

Sample ID: **SL-551-SA8-SB-14.0-15.0** ***Collected:*** **7/23/2013 8:45:00** ***Analysis Type:*** **REA** ***Dilution:*** **5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CALCIUM	114000		19.3	MDL	116	PQL	mg/Kg	J	E

Sample ID: **SL-551-SA8-SB-14.0-15.0** ***Collected:*** **7/23/2013 8:45:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.62	U	0.855	MDL	4.62	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.793	J	0.0774	MDL	1.16	PQL	mg/Kg	J	Z
BORON	5.28	J	0.970	MDL	11.6	PQL	mg/Kg	J	Z
CADMIUM	0.402	J	0.0878	MDL	1.16	PQL	mg/Kg	J	Z
COBALT	7.37		0.114	MDL	1.16	PQL	mg/Kg	J	E, A
COPPER	15.4		0.335	MDL	2.31	PQL	mg/Kg	J	A
MANGANESE	331		0.0959	MDL	1.16	PQL	mg/Kg	J	E
MOLYBDENUM	0.202	J	0.196	MDL	2.31	PQL	mg/Kg	U	F
POTASSIUM	3950		9.64	MDL	116	PQL	mg/Kg	J	Q
TIN	3.10	J	0.254	MDL	11.6	PQL	mg/Kg	U	B

Sample ID: **SL-551-SA8-SB-19.0-20.0** ***Collected:*** **7/23/2013 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
CALCIUM	69500		7.56	MDL	45.2	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: PH073 **Laboratory: LL**

EDD Filename: PH073_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-551-SA8-SB-19.0-20.0 **Collected: 7/23/2013 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	4.52	U	0.837	MDL	4.52	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.876	J	0.0758	MDL	1.13	PQL	mg/Kg	J	Z
COBALT	7.63		0.112	MDL	1.13	PQL	mg/Kg	J	E, A
COPPER	14.3		0.328	MDL	2.26	PQL	mg/Kg	J	A
MANGANESE	344		0.0939	MDL	1.13	PQL	mg/Kg	J	E
POTASSIUM	3420		9.43	MDL	113	PQL	mg/Kg	J	Q
TIN	3.18	J	0.249	MDL	11.3	PQL	mg/Kg	U	B

Sample ID: SL-551-SA8-SB-4.0-5.0 **Collected: 7/23/2013 8:00:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.02	U	0.744	MDL	4.02	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.937	J	0.0674	MDL	1.01	PQL	mg/Kg	J	Z
BORON	2.35	J	0.845	MDL	10.1	PQL	mg/Kg	J	Z
CADMIUM	0.158	J	0.0764	MDL	1.01	PQL	mg/Kg	J	Z, FD
CALCIUM	43700		3.36	MDL	20.1	PQL	mg/Kg	J	E, FD
COBALT	15.1		0.0996	MDL	1.01	PQL	mg/Kg	J	E, FD, A
COPPER	16.4		0.292	MDL	2.01	PQL	mg/Kg	J	A
MANGANESE	445		0.0835	MDL	1.01	PQL	mg/Kg	J	E
POTASSIUM	2310		8.39	MDL	101	PQL	mg/Kg	J	Q
TIN	3.30	J	0.221	MDL	10.1	PQL	mg/Kg	U	B

Sample ID: SL-551-SA8-SB-9.0-10.0 **Collected: 7/23/2013 8:30:00** **Analysis Type: REA** **Dilution: 5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CALCIUM	255000		19.0	MDL	114	PQL	mg/Kg	J	E
COPPER	5.06	J	1.65	MDL	11.4	PQL	mg/Kg	J	Z, A
LEAD	9.21	J	2.85	MDL	17.1	PQL	mg/Kg	J	Z
LITHIUM	10.4	J	1.9	MDL	22.8	PQL	mg/Kg	J	Z

Sample ID: SL-551-SA8-SB-9.0-10.0 **Collected: 7/23/2013 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	4.55	U	0.842	MDL	4.55	PQL	mg/Kg	UJ	Q
ARSENIC	3.52	J	0.797	MDL	4.55	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: PH073 **Laboratory: LL**

EDD Filename: PH073_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-551-SA8-SB-9.0-10.0** ***Collected:*** **7/23/2013 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
BERYLLIUM	0.467	J	0.0763	MDL	1.14	PQL	mg/Kg	J	Z
BORON	4.04	J	0.956	MDL	11.4	PQL	mg/Kg	J	Z
CADMIUM	0.508	J	0.0865	MDL	1.14	PQL	mg/Kg	J	Z
COBALT	2.88		0.113	MDL	1.14	PQL	mg/Kg	J	E, A
MANGANESE	128		0.0945	MDL	1.14	PQL	mg/Kg	J	E
POTASSIUM	1480		9.49	MDL	114	PQL	mg/Kg	J	Q
TIN	2.39	J	0.250	MDL	11.4	PQL	mg/Kg	U	B
Zirconium	4.63	J	0.956	MDL	5.69	PQL	mg/Kg	J	Z

Sample ID: **SL-555-SA8-SB-0.0-0.5** ***Collected:*** **7/23/2013 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
ANTIMONY	4.42	U	0.818	MDL	4.42	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.966	J	0.0740	MDL	1.11	PQL	mg/Kg	J	Z
BORON	1.72	J	0.928	MDL	11.1	PQL	mg/Kg	J	Z
CADMIUM	0.311	J	0.0840	MDL	1.11	PQL	mg/Kg	J	Z
CALCIUM	15000		3.69	MDL	22.1	PQL	mg/Kg	J	E
COBALT	11.0		0.109	MDL	1.11	PQL	mg/Kg	J	E, A
COPPER	20.0		0.321	MDL	2.21	PQL	mg/Kg	J	A
MANGANESE	455		0.0917	MDL	1.11	PQL	mg/Kg	J	E
POTASSIUM	5500		9.22	MDL	111	PQL	mg/Kg	J	Q
SODIUM	93.0	J	18.5	MDL	111	PQL	mg/Kg	J	Z
TIN	1.45	J	0.243	MDL	11.1	PQL	mg/Kg	U	B

Sample ID: **SL-555-SA8-SB-4.0-5.0** ***Collected:*** **7/23/2013 12:30:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.43	U	0.820	MDL	4.43	PQL	mg/Kg	UJ	Q
BERYLLIUM	1.03	J	0.0742	MDL	1.11	PQL	mg/Kg	J	Z
BORON	3.77	J	0.931	MDL	11.1	PQL	mg/Kg	J	Z
CADMIUM	0.249	J	0.0842	MDL	1.11	PQL	mg/Kg	J	Z
CALCIUM	23300		3.70	MDL	22.2	PQL	mg/Kg	J	E
COBALT	10.4		0.110	MDL	1.11	PQL	mg/Kg	J	E, A
COPPER	19.3		0.321	MDL	2.22	PQL	mg/Kg	J	A
MANGANESE	427		0.0919	MDL	1.11	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: PH073 **Laboratory: LL**

EDD Filename: PH073_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-555-SA8-SB-4.0-5.0 *Collected:* 7/23/2013 12:30:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
POTASSIUM	4500		9.24	MDL	111	PQL	mg/Kg	J	Q
TIN	3.50	J	0.244	MDL	11.1	PQL	mg/Kg	U	B

Sample ID: SL-851-SA8-SB-4.0-5.0 *Collected:* 7/23/2013 8:15:00 *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CALCIUM	85800		7.52	MDL	45.0	PQL	mg/Kg	J	E, FD

Sample ID: SL-851-SA8-SB-4.0-5.0 *Collected:* 7/23/2013 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	4.50	U	0.833	MDL	4.50	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.994	J	0.0754	MDL	1.13	PQL	mg/Kg	J	Z
BORON	3.64	J	0.945	MDL	11.3	PQL	mg/Kg	J	Z
CADMIUM	0.278	J	0.0855	MDL	1.13	PQL	mg/Kg	J	Z, FD
COBALT	7.43		0.111	MDL	1.13	PQL	mg/Kg	J	E, FD, A
COPPER	14.8		0.326	MDL	2.25	PQL	mg/Kg	J	A
MANGANESE	288		0.0934	MDL	1.13	PQL	mg/Kg	J	E
POTASSIUM	2190		9.39	MDL	113	PQL	mg/Kg	J	Q
TIN	3.26	J	0.248	MDL	11.3	PQL	mg/Kg	U	B

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-551-SA8-SB-0.0-0.5 *Collected:* 7/23/2013 7:30:00 *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.274	J	0.111	MDL	0.444	PQL	mg/Kg	J	Z

Sample ID: SL-551-SA8-SB-0.0-0.5 *Collected:* 7/23/2013 7:30:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0554	J	0.0289	MDL	0.222	PQL	mg/Kg	J	Z
STRONTIUM	68.2		0.0755	MDL	0.444	PQL	mg/Kg	J	E
THALLIUM	0.463		0.0333	MDL	0.222	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: PH073 **Laboratory: LL**

EDD Filename: PH073_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: **SL-551-SA8-SB-14.0-15.0** *Collected:* **7/23/2013 8:45:00** *Analysis Type:* **REA** *Dilution:* **5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	197		0.196	MDL	1.16	PQL	mg/Kg	J	E

Sample ID: **SL-551-SA8-SB-14.0-15.0** *Collected:* **7/23/2013 8:45:00** *Analysis Type:* **REA2** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.222	J	0.116	MDL	0.462	PQL	mg/Kg	J	Z

Sample ID: **SL-551-SA8-SB-14.0-15.0** *Collected:* **7/23/2013 8:45:00** *Analysis Type:* **RES** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0493	J	0.0300	MDL	0.231	PQL	mg/Kg	J	Z
THALLIUM	0.267		0.0347	MDL	0.231	PQL	mg/Kg	J	Q

Sample ID: **SL-551-SA8-SB-19.0-20.0** *Collected:* **7/23/2013 9:00:00** *Analysis Type:* **REA** *Dilution:* **5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	180		0.192	MDL	1.13	PQL	mg/Kg	J	E

Sample ID: **SL-551-SA8-SB-19.0-20.0** *Collected:* **7/23/2013 9:00:00** *Analysis Type:* **REA2** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.156	J	0.113	MDL	0.452	PQL	mg/Kg	J	Z

Sample ID: **SL-551-SA8-SB-19.0-20.0** *Collected:* **7/23/2013 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	0.0404	J	0.0294	MDL	0.226	PQL	mg/Kg	J	Z
THALLIUM	0.327		0.0339	MDL	0.226	PQL	mg/Kg	J	Q

Sample ID: **SL-551-SA8-SB-4.0-5.0** *Collected:* **7/23/2013 8:00:00** *Analysis Type:* **REA2** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.402	U	0.101	MDL	0.402	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: PH073 **Laboratory: LL**

EDD Filename: PH073_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-551-SA8-SB-4.0-5.0 **Collected: 7/23/2013 8:00:00** **Analysis Type: RES** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0527	J	0.0262	MDL	0.201	PQL	mg/Kg	J	Z
STRONTIUM	61.2		0.0684	MDL	0.402	PQL	mg/Kg	J	E
THALLIUM	0.278		0.0302	MDL	0.201	PQL	mg/Kg	J	Q

Sample ID: SL-551-SA8-SB-9.0-10.0 **Collected: 7/23/2013 8:30:00** **Analysis Type: REA** **Dilution: 10**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	399		0.387	MDL	2.28	PQL	mg/Kg	J	E

Sample ID: SL-551-SA8-SB-9.0-10.0 **Collected: 7/23/2013 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
THALLIUM	0.196	J	0.0341	MDL	0.228	PQL	mg/Kg	J	Z, Q

Sample ID: SL-555-SA8-SB-0.0-0.5 **Collected: 7/23/2013 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	0.240	J	0.111	MDL	0.442	PQL	mg/Kg	J	Z

Sample ID: SL-555-SA8-SB-0.0-0.5 **Collected: 7/23/2013 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	0.0303	J	0.0287	MDL	0.221	PQL	mg/Kg	J	Z
STRONTIUM	54.7		0.0752	MDL	0.442	PQL	mg/Kg	J	E
THALLIUM	0.389		0.0332	MDL	0.221	PQL	mg/Kg	J	Q

Sample ID: SL-555-SA8-SB-4.0-5.0 **Collected: 7/23/2013 12:30:00** **Analysis Type: REA2** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.186	J	0.111	MDL	0.443	PQL	mg/Kg	J	Z

Sample ID: SL-555-SA8-SB-4.0-5.0 **Collected: 7/23/2013 12:30:00** **Analysis Type: RES** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0508	J	0.0288	MDL	0.222	PQL	mg/Kg	J	Z
STRONTIUM	69.2		0.0753	MDL	0.443	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: PH073 **Laboratory: LL**

EDD Filename: PH073_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-555-SA8-SB-4.0-5.0 *Collected:* 7/23/2013 12:30:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
THALLIUM	0.364		0.0332	MDL	0.222	PQL	mg/Kg	J	Q

Sample ID: SL-851-SA8-SB-4.0-5.0 *Collected:* 7/23/2013 8:15:00 *Analysis Type:* REA *Dilution:* 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	98.3		0.191	MDL	1.13	PQL	mg/Kg	J	E

Sample ID: SL-851-SA8-SB-4.0-5.0 *Collected:* 7/23/2013 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	0.120	J	0.113	MDL	0.450	PQL	mg/Kg	J	Z, FD

Sample ID: SL-851-SA8-SB-4.0-5.0 *Collected:* 7/23/2013 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	0.0716	J	0.0293	MDL	0.225	PQL	mg/Kg	J	Z
THALLIUM	0.351		0.0338	MDL	0.225	PQL	mg/Kg	J	Q

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-551-SA8-SB-0.0-0.5 *Collected:* 7/23/2013 7:30:00 *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	0.392	JB	0.0207	MDL	5.63	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.132	JB	0.00702	MDL	5.63	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0435	JBQ	0.0106	MDL	5.63	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.124	JBQ	0.0210	MDL	5.63	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.192	JB	0.0144	MDL	5.63	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.143	JBQ	0.0225	MDL	5.63	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.208	JB	0.0135	MDL	5.63	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.223	JBQ	0.0225	MDL	5.63	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.227	JBQ	0.0162	MDL	5.63	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.300	JB	0.0255	MDL	5.63	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.417	JB	0.0153	MDL	5.63	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: PH073 **Laboratory: LL**

EDD Filename: PH073_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-551-SA8-SB-0.0-0.5** *Collected:* **7/23/2013 7:30:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,3,4,6,7,8-HXCDF	0.109	JB	0.0139	MDL	5.63	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.301	JB	0.0145	MDL	5.63	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.0679	JB	0.0227	MDL	1.13	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.132	J	0.0207	MDL	1.13	PQL	ng/Kg	J	Z
OCDD	2.02	JB	0.0199	MDL	11.3	PQL	ng/Kg	J	Z
OCDF	0.254	JBQ	0.0219	MDL	11.3	PQL	ng/Kg	U	B

Sample ID: **SL-551-SA8-SB-4.0-5.0** *Collected:* **7/23/2013 8:00:00** *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	0.115	JB	0.0211	MDL	4.99	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.104	JB	0.00816	MDL	4.99	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0312	JB	0.0128	MDL	4.99	PQL	ng/Kg	UJ	B, FD
1,2,3,4,7,8-HxCDD	0.0680	JBQ	0.0171	MDL	4.99	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0963	JBQ	0.0122	MDL	4.99	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0539	JBQ	0.0187	MDL	4.99	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.112	JB	0.0115	MDL	4.99	PQL	ng/Kg	UJ	B, FD
1,2,3,7,8,9-HXCDD	0.110	JBQ	0.0199	MDL	4.99	PQL	ng/Kg	UJ	B, FD
1,2,3,7,8,9-HXCDF	0.0945	JB	0.0150	MDL	4.99	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.118	JBQ	0.0301	MDL	4.99	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.161	JB	0.0197	MDL	4.99	PQL	ng/Kg	UJ	B, FD
2,3,4,6,7,8-HXCDF	0.0968	JBQ	0.0117	MDL	4.99	PQL	ng/Kg	UJ	B, FD
2,3,4,7,8-PECDF	0.154	JBQ	0.0182	MDL	4.99	PQL	ng/Kg	UJ	B, FD
2,3,7,8-TCDD	0.997	U	0.0301	MDL	0.997	PQL	ng/Kg	UJ	FD
2,3,7,8-TCDF	0.0673	JQ	0.0238	MDL	0.997	PQL	ng/Kg	J	Z, FD
OCDD	0.907	JB	0.0242	MDL	9.97	PQL	ng/Kg	UJ	B, FD
OCDF	0.172	JBQ	0.0289	MDL	9.97	PQL	ng/Kg	U	B

Sample ID: **SL-555-SA8-SB-0.0-0.5** *Collected:* **7/23/2013 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	3.42	JB	0.0359	MDL	5.74	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	2.35	JB	0.0140	MDL	5.74	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.144	JBQ	0.0222	MDL	5.74	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0711	JB	0.0244	MDL	5.74	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: PH073 **Laboratory: LL**

EDD Filename: PH073_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-555-SA8-SB-0.0-0.5** *Collected:* **7/23/2013 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	0.146	JBQ	0.0245	MDL	5.74	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.203	JB	0.0264	MDL	5.74	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.135	JBQ	0.0224	MDL	5.74	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.231	JB	0.0266	MDL	5.74	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.297	JB	0.0286	MDL	5.74	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.124	JBQ	0.0277	MDL	5.74	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.331	JB	0.0180	MDL	5.74	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.158	JBQ	0.0226	MDL	5.74	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.228	JB	0.0183	MDL	5.74	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.0715	JBQ	0.0232	MDL	1.15	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.0476	J	0.0324	MDL	1.15	PQL	ng/Kg	J	Z
OCDF	5.92	JB	0.0230	MDL	11.5	PQL	ng/Kg	J	Z

Sample ID: **SL-555-SA8-SB-4.0-5.0** *Collected:* **7/23/2013 12:30:00** *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	0.221	JB	0.0182	MDL	5.51	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0681	JB	0.00508	MDL	5.51	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0406	JBQ	0.00927	MDL	5.51	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0685	JBQ	0.0200	MDL	5.51	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.103	JB	0.00994	MDL	5.51	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.149	JBQ	0.0210	MDL	5.51	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0871	JB	0.00904	MDL	5.51	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.243	JB	0.0210	MDL	5.51	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.350	JB	0.0122	MDL	5.51	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.140	JB	0.0219	MDL	5.51	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.222	JB	0.0131	MDL	5.51	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0786	JB	0.00960	MDL	5.51	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.139	JB	0.0125	MDL	5.51	PQL	ng/Kg	U	B
2,3,7,8-TCDD	0.0226	JB	0.0216	MDL	1.10	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.0630	JQ	0.0189	MDL	1.10	PQL	ng/Kg	J	Z
OCDD	0.717	JB	0.0169	MDL	11.0	PQL	ng/Kg	U	B
OCDF	0.175	JB	0.0235	MDL	11.0	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: PH073 **Laboratory:** LL

EDD Filename: PH073_v2 **eQAPP Name:** CDM_SSFL_130808_Lan

Method Category: SVOA

Method: 1613B **Matrix:** SO

Sample ID: SL-851-SA8-SB-4.0-5.0 **Collected:** 7/23/2013 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	0.108	JB	0.0147	MDL	5.71	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0636	JB	0.00608	MDL	5.71	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0608	JB	0.0102	MDL	5.71	PQL	ng/Kg	UJ	B, FD
1,2,3,4,7,8-HxCDD	0.0569	JBQ	0.0168	MDL	5.71	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0786	JBQ	0.00907	MDL	5.71	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0767	JB	0.0176	MDL	5.71	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0623	JB	0.00873	MDL	5.71	PQL	ng/Kg	UJ	B, FD
1,2,3,7,8,9-HXCDD	0.0564	JBQ	0.0177	MDL	5.71	PQL	ng/Kg	UJ	B, FD
1,2,3,7,8,9-HXCDF	0.118	JBQ	0.0103	MDL	5.71	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0944	JB	0.0237	MDL	5.71	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.0826	JBQ	0.0126	MDL	5.71	PQL	ng/Kg	UJ	B, FD
2,3,4,6,7,8-HXCDF	0.0578	JBQ	0.00896	MDL	5.71	PQL	ng/Kg	UJ	B, FD
2,3,4,7,8-PECDF	0.0857	JBQ	0.0122	MDL	5.71	PQL	ng/Kg	UJ	B, FD
2,3,7,8-TCDD	0.0276	JBQ	0.0202	MDL	1.14	PQL	ng/Kg	UJ	B, FD
2,3,7,8-TCDF	1.14	U	0.0156	MDL	1.14	PQL	ng/Kg	UJ	FD
OCDD	0.361	JB	0.0166	MDL	11.4	PQL	ng/Kg	UJ	B, FD
OCDF	0.157	JB	0.0201	MDL	11.4	PQL	ng/Kg	U	B

Method Category: SVOA

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

Sample ID: SL-551-SA8-SB-0.0-0.5 **Collected:** 7/23/2013 7:30:00 **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	8.1	J	6.7	MDL	20	PQL	ug/Kg	J	Z
CHRYSENE	0.59	J	0.37	MDL	1.9	PQL	ug/Kg	J	Z
PHENANTHRENE	0.97	J	0.75	MDL	1.9	PQL	ug/Kg	J	Z

Sample ID: SL-551-SA8-SB-14.0-15.0 **Collected:** 7/23/2013 8:45:00 **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	0.63	J	0.39	MDL	1.9	PQL	ug/Kg	J	Z
NAPHTHALENE	0.80	J	0.78	MDL	1.9	PQL	ug/Kg	U	F

* 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: PH073 **Laboratory: LL**

EDD Filename: PH073_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

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

Sample ID: **SL-551-SA8-SB-4.0-5.0** *Collected:* **7/23/2013 8:00:00** *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	1.7	U	0.70	MDL	1.7	PQL	ug/Kg	UJ	FD
NAPHTHALENE	1.7	U	0.70	MDL	1.7	PQL	ug/Kg	UJ	FD

Sample ID: **SL-555-SA8-SB-0.0-0.5** *Collected:* **7/23/2013 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
BENZO(B)FLUORANTHENE	1.8	J	0.76	MDL	1.9	PQL	ug/Kg	J	Z
BENZO(K)FLUORANTHENE	0.78	J	0.76	MDL	1.9	PQL	ug/Kg	J	Z
FLUORANTHENE	1.1	J	0.76	MDL	1.9	PQL	ug/Kg	J	Z
PHENANTHRENE	1.1	J	0.76	MDL	1.9	PQL	ug/Kg	J	Z
PYRENE	0.77	J	0.76	MDL	1.9	PQL	ug/Kg	J	Z

Sample ID: **SL-851-SA8-SB-4.0-5.0** *Collected:* **7/23/2013 8:15:00** *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	1.1	J	0.76	MDL	1.9	PQL	ug/Kg	J	Z, FD
NAPHTHALENE	2.9		0.76	MDL	1.9	PQL	ug/Kg	J	FD

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: PH073 **Laboratory: LL**

EDD Filename: PH073_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Reason Code Legend

Reason Code	*Description*
*#	Professional Judgment
A	ICP Serial Dilution
B	Method Blank Contamination
E	Laboratory Duplicate Precision
E	Matrix Spike Precision
F	Field Blank Contamination
FD	Field Duplicate Precision
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

Enclosure I

EPA Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control
Outlier Reports

PH073

Method Blank Outlier Report

Lab Reporting Batch ID: PH073 **Laboratory: LL**

EDD Filename: PH073_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: **1613B**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2100B372054	7/30/2013 8:54:00 PM	1,2,3,4,6,7,8-HPCDD	0.0567 ng/Kg	SL-551-SA8-SB-0.0-0.5
		1,2,3,4,6,7,8-HPCDF	0.0332 ng/Kg	SL-551-SA8-SB-4.0-5.0
		1,2,3,4,7,8,9-HPCDF	0.0325 ng/Kg	SL-555-SA8-SB-0.0-0.5
		1,2,3,4,7,8-HxCDD	0.0355 ng/Kg	SL-555-SA8-SB-4.0-5.0
		1,2,3,4,7,8-HXCDF	0.0517 ng/Kg	SL-851-SA8-SB-4.0-5.0
		1,2,3,6,7,8-HXCDD	0.0248 ng/Kg	
		1,2,3,6,7,8-HXCDF	0.0377 ng/Kg	
		1,2,3,7,8,9-HXCDD	0.0327 ng/Kg	
		1,2,3,7,8,9-HXCDF	0.0544 ng/Kg	
		1,2,3,7,8-PECDD	0.0311 ng/Kg	
		1,2,3,7,8-PECDF	0.0578 ng/Kg	
		2,3,4,6,7,8-HXCDF	0.0342 ng/Kg	
		2,3,4,7,8-PECDF	0.0367 ng/Kg	
		2,3,7,8-TCDD	0.0257 ng/Kg	
		OCDD	0.283 ng/Kg	
		OCDF	0.0947 ng/Kg	

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-551-SA8-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDF	0.132 ng/Kg	0.132U ng/Kg
SL-551-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0435 ng/Kg	0.0435U ng/Kg
SL-551-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.124 ng/Kg	0.124U ng/Kg
SL-551-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.192 ng/Kg	0.192U ng/Kg
SL-551-SA8-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.227 ng/Kg	0.227U ng/Kg
SL-551-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.109 ng/Kg	0.109U ng/Kg
SL-551-SA8-SB-0.0-0.5(RES)	2,3,7,8-TCDD	0.0679 ng/Kg	0.0679U ng/Kg
SL-551-SA8-SB-0.0-0.5(RES)	OCDF	0.254 ng/Kg	0.254U ng/Kg
SL-551-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDD	0.115 ng/Kg	0.115U ng/Kg
SL-551-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.104 ng/Kg	0.104U ng/Kg
SL-551-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0312 ng/Kg	0.0312U ng/Kg
SL-551-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HxCDD	0.0680 ng/Kg	0.0680U ng/Kg
SL-551-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.0963 ng/Kg	0.0963U ng/Kg
SL-551-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDD	0.0539 ng/Kg	0.0539U ng/Kg
SL-551-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.112 ng/Kg	0.112U ng/Kg
SL-551-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDD	0.110 ng/Kg	0.110U ng/Kg
SL-551-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDF	0.0945 ng/Kg	0.0945U ng/Kg
SL-551-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDD	0.118 ng/Kg	0.118U ng/Kg
SL-551-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.161 ng/Kg	0.161U ng/Kg
SL-551-SA8-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0968 ng/Kg	0.0968U ng/Kg
SL-551-SA8-SB-4.0-5.0(RES)	2,3,4,7,8-PECDF	0.154 ng/Kg	0.154U ng/Kg
SL-551-SA8-SB-4.0-5.0(RES)	OCDD	0.907 ng/Kg	0.907U ng/Kg
SL-551-SA8-SB-4.0-5.0(RES)	OCDF	0.172 ng/Kg	0.172U ng/Kg
SL-555-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.144 ng/Kg	0.144U ng/Kg
SL-555-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.0711 ng/Kg	0.0711U ng/Kg
SL-555-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.146 ng/Kg	0.146U ng/Kg
SL-555-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.135 ng/Kg	0.135U ng/Kg
SL-555-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.124 ng/Kg	0.124U ng/Kg
SL-555-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.158 ng/Kg	0.158U ng/Kg

Method Blank Outlier Report

Lab Reporting Batch ID: PH073 **Laboratory: LL**

EDD Filename: PH073_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: **1613B**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples

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-555-SA8-SB-0.0-0.5(RES)	2,3,7,8-TCDD	0.0715 ng/Kg	0.0715U ng/Kg
SL-555-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDD	0.221 ng/Kg	0.221U ng/Kg
SL-555-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0681 ng/Kg	0.0681U ng/Kg
SL-555-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0406 ng/Kg	0.0406U ng/Kg
SL-555-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HxCDD	0.0685 ng/Kg	0.0685U ng/Kg
SL-555-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.103 ng/Kg	0.103U ng/Kg
SL-555-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.0871 ng/Kg	0.0871U ng/Kg
SL-555-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDD	0.140 ng/Kg	0.140U ng/Kg
SL-555-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.222 ng/Kg	0.222U ng/Kg
SL-555-SA8-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0786 ng/Kg	0.0786U ng/Kg
SL-555-SA8-SB-4.0-5.0(RES)	2,3,4,7,8-PECDF	0.139 ng/Kg	0.139U ng/Kg
SL-555-SA8-SB-4.0-5.0(RES)	2,3,7,8-TCDD	0.0226 ng/Kg	0.0226U ng/Kg
SL-555-SA8-SB-4.0-5.0(RES)	OCDD	0.717 ng/Kg	0.717U ng/Kg
SL-555-SA8-SB-4.0-5.0(RES)	OCDF	0.175 ng/Kg	0.175U ng/Kg
SL-851-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDD	0.108 ng/Kg	0.108U ng/Kg
SL-851-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0636 ng/Kg	0.0636U ng/Kg
SL-851-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0608 ng/Kg	0.0608U ng/Kg
SL-851-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HxCDD	0.0569 ng/Kg	0.0569U ng/Kg
SL-851-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.0786 ng/Kg	0.0786U ng/Kg
SL-851-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDD	0.0767 ng/Kg	0.0767U ng/Kg
SL-851-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.0623 ng/Kg	0.0623U ng/Kg
SL-851-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDD	0.0564 ng/Kg	0.0564U ng/Kg
SL-851-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDF	0.118 ng/Kg	0.118U ng/Kg
SL-851-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDD	0.0944 ng/Kg	0.0944U ng/Kg
SL-851-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.0826 ng/Kg	0.0826U ng/Kg
SL-851-SA8-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0578 ng/Kg	0.0578U ng/Kg
SL-851-SA8-SB-4.0-5.0(RES)	2,3,4,7,8-PECDF	0.0857 ng/Kg	0.0857U ng/Kg
SL-851-SA8-SB-4.0-5.0(RES)	2,3,7,8-TCDD	0.0276 ng/Kg	0.0276U ng/Kg
SL-851-SA8-SB-4.0-5.0(RES)	OCDD	0.361 ng/Kg	0.361U ng/Kg
SL-851-SA8-SB-4.0-5.0(RES)	OCDF	0.157 ng/Kg	0.157U ng/Kg

Method Blank Outlier Report

Lab Reporting Batch ID: PH073 **Laboratory: LL**

EDD Filename: PH073_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: **6010C**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P20637AB221343	7/29/2013 1:43:00 PM	CALCIUM TIN ZINC	5.04 mg/Kg 1.80 mg/Kg 0.449 mg/Kg	SL-551-SA8-SB-0.0-0.5 SL-551-SA8-SB-14.0-15.0 SL-551-SA8-SB-19.0-20.0 SL-551-SA8-SB-4.0-5.0 SL-551-SA8-SB-9.0-10.0 SL-555-SA8-SB-0.0-0.5 SL-555-SA8-SB-4.0-5.0 SL-851-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-551-SA8-SB-0.0-0.5(RES)	TIN	3.55 mg/Kg	3.55U mg/Kg
SL-551-SA8-SB-14.0-15.0(RES)	TIN	3.10 mg/Kg	3.10U mg/Kg
SL-551-SA8-SB-19.0-20.0(RES)	TIN	3.18 mg/Kg	3.18U mg/Kg
SL-551-SA8-SB-4.0-5.0(RES)	TIN	3.30 mg/Kg	3.30U mg/Kg
SL-551-SA8-SB-9.0-10.0(RES)	TIN	2.39 mg/Kg	2.39U mg/Kg
SL-555-SA8-SB-0.0-0.5(RES)	TIN	1.45 mg/Kg	1.45U mg/Kg
SL-555-SA8-SB-4.0-5.0(RES)	TIN	3.50 mg/Kg	3.50U mg/Kg
SL-851-SA8-SB-4.0-5.0(RES)	TIN	3.26 mg/Kg	3.26U mg/Kg

Field Blank Outlier Report

Lab Reporting Batch ID: PH073 **Laboratory: LL**

EDD Filename: PH073_v2 **eQAPP Name: CDM_SSFL_130808_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-551-SA8-SB-0.0-0.5 SL-551-SA8-SB-14.0-15.0 SL-551-SA8-SB-19.0-20.0 SL-551-SA8-SB-4.0-5.0 SL-551-SA8-SB-9.0-10.0 SL-555-SA8-SB-0.0-0.5 SL-555-SA8-SB-4.0-5.0 SL-557A-SA8-SB-0.0-0.5 SL-557B-SA8-SB-0.0-0.5 SL-557C-SA8-SB-0.0-0.5 SL-557D-SA8-SB-0.0-0.5 SL-851-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-551-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.219 mg/Kg	0.219U mg/Kg
SL-551-SA8-SB-14.0-15.0(RES)	MOLYBDENUM	0.202 mg/Kg	0.202U 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-551-SA8-SB-0.0-0.5 SL-551-SA8-SB-14.0-15.0 SL-551-SA8-SB-19.0-20.0 SL-551-SA8-SB-4.0-5.0 SL-551-SA8-SB-9.0-10.0 SL-555-SA8-SB-0.0-0.5 SL-555-SA8-SB-4.0-5.0 SL-557A-SA8-SB-0.0-0.5 SL-557B-SA8-SB-0.0-0.5 SL-557C-SA8-SB-0.0-0.5 SL-557D-SA8-SB-0.0-0.5 SL-851-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-551-SA8-SB-14.0-15.0(RES)	NAPHTHALENE	0.80 ug/Kg	1.9U ug/Kg

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH073 **Laboratory: LL**

EDD Filename: PH073_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 8015M
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-551-SA8-SB-4.0-5.0MSD (SL-551-SA8-SB-4.0-5.0)	EFH (C15-C20) EFH (C21-C30)	- -	726 263	49.00-123.00 49.00-123.00	146 (20.00) 78 (20.00)	EFH (C15-C20) EFH (C21-C30)	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-551-SA8-SB-4.0-5.0MS (TOT) SL-551-SA8-SB-4.0-5.0MSD (TOT) (SL-551-SA8-SB-0.0-0.5 SL -551-SA8-SB-14.0-15.0 SL -551-SA8-SB-19.0-20.0 SL -551-SA8-SB-4.0-5.0 SL -551-SA8-SB-9.0-10.0 SL -555-SA8-SB-0.0-0.5 SL -555-SA8-SB-4.0-5.0 SL -851-SA8-SB-4.0-5.0)	ALUMINUM MAGNESIUM POTASSIUM	2431 292 131	1232 145 -	75.00-125.00 75.00-125.00 75.00-125.00	- - -	ALUMINUM MAGNESIUM POTASSIUM	J(all detects) Al, Mg, No Qual, >4x
SL-551-SA8-SB-4.0-5.0MS (TOT) SL-551-SA8-SB-4.0-5.0MSD (TOT) (SL-551-SA8-SB-0.0-0.5 SL -551-SA8-SB-14.0-15.0 SL -551-SA8-SB-19.0-20.0 SL -551-SA8-SB-4.0-5.0 SL -551-SA8-SB-9.0-10.0 SL -555-SA8-SB-0.0-0.5 SL -555-SA8-SB-4.0-5.0 SL -851-SA8-SB-4.0-5.0)	CALCIUM IRON MANGANESE TITANIUM	1129 804 -280 226	-272 -214 -294 -22	75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00	- - - -	CALCIUM IRON MANGANESE TITANIUM	No Qual, >4x
SL-551-SA8-SB-4.0-5.0MS (TOT) SL-551-SA8-SB-4.0-5.0MSD (TOT) (SL-551-SA8-SB-0.0-0.5 SL -551-SA8-SB-14.0-15.0 SL -551-SA8-SB-19.0-20.0 SL -551-SA8-SB-4.0-5.0 SL -551-SA8-SB-9.0-10.0 SL -555-SA8-SB-0.0-0.5 SL -555-SA8-SB-4.0-5.0 SL -851-SA8-SB-4.0-5.0)	ANTIMONY	61	66	75.00-125.00	-	ANTIMONY	J(all detects) UJ(all non-detects)

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

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH073 **Laboratory: LL**

EDD Filename: PH073_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: **6020A**
Matrix: **SO**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
SL-551-SA8-SB-4.0-5.0MSD (TOT) (SL-551-SA8-SB-0.0-0.5 SL -551-SA8-SB-14.0-15.0 SL -551-SA8-SB-19.0-20.0 SL -551-SA8-SB-4.0-5.0 SL -551-SA8-SB-9.0-10.0 SL -555-SA8-SB-0.0-0.5 SL -555-SA8-SB-4.0-5.0 SL -851-SA8-SB-4.0-5.0)	THALLIUM	-	131	75.00-125.00	-	THALLIUM	J(all detects)
SL-551-SA8-SB-4.0-5.0MS (TOT) **SL-551-SA8-SB-4.0-5.0MSD (TOT)** (SL-551-SA8-SB-0.0-0.5 SL -551-SA8-SB-14.0-15.0 SL -551-SA8-SB-19.0-20.0 SL -551-SA8-SB-4.0-5.0 SL -551-SA8-SB-9.0-10.0 SL -555-SA8-SB-0.0-0.5 SL -555-SA8-SB-4.0-5.0 SL -851-SA8-SB-4.0-5.0)	STRONTIUM	58	328	75.00-125.00	28 (20.00)	STRONTIUM	J(all detects) UJ(all non-detects) No Qual %R, >4x

Lab Duplicate Outlier Report

Lab Reporting Batch ID: PH073 **Laboratory: LL**

EDD Filename: PH073_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 6010C
Matrix: SO

QC Sample ID (Associated Sample ID)	Analyte	Sample RPD	eQAPP RPD	Flag
SL-551-SA8-SB-4.0-5.0DUP (TOT) (SL-551-SA8-SB-0.0-0.5 SL -551-SA8-SB-14.0-15.0 SL -551-SA8-SB-19.0-20.0 SL -551-SA8-SB-4.0-5.0 SL -551-SA8-SB-9.0-10.0 SL -555-SA8-SB-0.0-0.5 SL -555-SA8-SB-4.0-5.0 SL -851-SA8-SB-4.0-5.0)	BORON	41	20.00	B, Cd, No Qual, OK by Difference
	CADMIUM	65	20.00	
	CALCIUM	26	20.00	
	COBALT	45	20.00	J (all detects) UJ (all non-detects)
	MANGANESE	47	20.00	

Method: 6020A
Matrix: SO

QC Sample ID (Associated Sample ID)	Analyte	Sample RPD	eQAPP RPD	Flag
SL-551-SA8-SB-4.0-5.0DUP (TOT) (SL-551-SA8-SB-0.0-0.5 SL -551-SA8-SB-14.0-15.0 SL -551-SA8-SB-19.0-20.0 SL -551-SA8-SB-4.0-5.0 SL -551-SA8-SB-9.0-10.0 SL -555-SA8-SB-0.0-0.5 SL -555-SA8-SB-4.0-5.0 SL -851-SA8-SB-4.0-5.0)	SILVER	25	20.00	No Qual OK by Difference

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

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH073 **Laboratory: LL**

EDD Filename: PH073_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

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

QC Sample ID (Associated Samples)	*Compound*	*LCS %R*	*LCSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
P6LDLCSQ260622 (SL-551-SA8-SB-0.0-0.5 SL-551-SA8-SB-14.0-15.0 SL-551-SA8-SB-19.0-20.0 SL-551-SA8-SB-4.0-5.0 SL-551-SA8-SB-9.0-10.0 SL-555-SA8-SB-0.0-0.5 SL-555-SA8-SB-4.0-5.0 SL-851-SA8-SB-4.0-5.0)	Diethylphthalate	130	-	68.00-125.00	-	Diethylphthalate	J (all detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: PH073 **Laboratory: LL**

EDD Filename: PH073_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 160.3M
Matrix: SO

Analyte	Concentration (%) SL-551-SA8-SB-4.0-5.0	Concentration (%) SL-851-SA8-SB-4.0-5.0	Sample RPD	eQAPP RPD	Flag
MOISTURE	4.4	12.9	98		No Qualifiers Applied

Method: 1613B
Matrix: SO

Analyte	Concentration (ng/Kg) SL-551-SA8-SB-4.0-5.0	Concentration (ng/Kg) SL-851-SA8-SB-4.0-5.0	Sample RPD	eQAPP RPD	Flag
1,2,3,4,6,7,8-HPCDD	0.115	0.108	6	50.00	
1,2,3,4,6,7,8-HPCDF	0.104	0.0636	48	50.00	
1,2,3,4,7,8-HxCDD	0.0680	0.0569	18	50.00	
1,2,3,4,7,8-HXCDF	0.0963	0.0786	20	50.00	
1,2,3,6,7,8-HXCDD	0.0539	0.0767	35	50.00	No Qualifiers Applied
1,2,3,7,8,9-HXCDF	0.0945	0.118	22	50.00	
1,2,3,7,8-PECDD	0.118	0.0944	22	50.00	
OCDF	0.172	0.157	9	50.00	
TEQ WHO 2005 - EDLx0.0	0.0282	0.111	119		
1,2,3,4,7,8,9-HPCDF	0.0312	0.0608	64	50.00	
1,2,3,6,7,8-HXCDF	0.112	0.0623	57	50.00	
1,2,3,7,8,9-HXCDD	0.110	0.0564	64	50.00	
1,2,3,7,8-PECDF	0.161	0.0826	64	50.00	J(all detects)
2,3,4,6,7,8-HXCDF	0.0968	0.0578	50	50.00	UJ(all non-detects)
2,3,4,7,8-PECDF	0.154	0.0857	57	50.00	
2,3,7,8-TCDD	0.997 U	0.0276	200	50.00	
2,3,7,8-TCDF	0.0673	1.14 U	200	50.00	
OCDD	0.907	0.361	86	50.00	

Method: 6010C
Matrix: SO

Analyte	Concentration (mg/Kg) SL-551-SA8-SB-4.0-5.0 (TOT)	Concentration (mg/Kg) SL-851-SA8-SB-4.0-5.0 (TOT)	Sample RPD	eQAPP RPD	Flag
ALUMINUM	33200	32600	2	50.00	
ARSENIC	7.35	7.88	7	50.00	
BARIUM	125	107	16	50.00	
BERYLLIUM	0.937	0.994	6	50.00	
BORON	2.35	3.64	43	50.00	
CHROMIUM	34.9	35.1	1	50.00	
COPPER	16.4	14.8	10	50.00	
IRON	31200	30900	1	50.00	
LEAD	10.5	9.41	11	50.00	
LITHIUM	26.4	25.6	3	50.00	
MAGNESIUM	6690	7130	6	50.00	No Qualifiers Applied
MANGANESE	445	288	43	50.00	
NICKEL	18.2	17.8	2	50.00	
PHOSPHORUS	91.6	127	32	50.00	
POTASSIUM	2310	2190	5	50.00	
SODIUM	139	153	10	50.00	
TIN	3.30	3.26	1	50.00	
TITANIUM	1140	1330	15	50.00	
VANADIUM	67.7	68.9	2	50.00	
ZINC	55.5	55.2	1	50.00	
Zirconium	6.76	7.77	14	50.00	
CADMIUM	0.158	0.278	55	50.00	J(all detects)
CALCIUM	43700	85800	65	50.00	
COBALT	15.1	7.43	68	50.00	

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

Field Duplicate RPD Report

Lab Reporting Batch ID: PH073 **Laboratory: LL**

EDD Filename: PH073_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 6020A
Matrix: SO

Analyte	Concentration (mg/Kg) SL-551-SA8-SB-4.0-5.0 (TOT)	Concentration (mg/Kg) SL-851-SA8-SB-4.0-5.0 (TOT)	Sample RPD	eQAPP RPD	Flag
SILVER	0.0527	0.0716	30	50.00	
STRONTIUM	61.2	98.3	47	50.00	No Qualifiers Applied
THALLIUM	0.278	0.351	23	50.00	
SELENIUM	0.402 U	0.120	200	50.00	J(all detects) UJ(all non-detects)

Method: 8270D SIM
Matrix: SO

Analyte	Concentration (ug/Kg) SL-551-SA8-SB-4.0-5.0	Concentration (ug/Kg) SL-851-SA8-SB-4.0-5.0	Sample RPD	eQAPP RPD	Flag
2-METHYLNAPHTHALENE	1.7 U	1.1	200	50.00	J(all detects)
NAPHTHALENE	1.7 U	2.9	200	50.00	UJ(all non-detects)

Method: 9045M
Matrix: SO

Analyte	Concentration (pH unit) SL-551-SA8-SB-4.0-5.0	Concentration (pH unit) SL-851-SA8-SB-4.0-5.0	Sample RPD	eQAPP RPD	Flag
PH	7.42	7.97	7	50.00	No Qualifiers Applied

Reporting Limit Outliers

Lab Reporting Batch ID: PH073 **Laboratory: LL**

EDD Filename: PH073_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-551-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	0.392	5.63	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.132	5.63	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0435	5.63	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.124	5.63	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.192	5.63	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.143	5.63	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.208	5.63	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.223	5.63	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.227	5.63	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JB	0.300	5.63	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.417	5.63	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.109	5.63	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.301	5.63	PQL	ng/Kg	
	2,3,7,8-TCDD	JB	0.0679	1.13	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.132	1.13	PQL	ng/Kg	
	OCDD	JB	2.02	11.3	PQL	ng/Kg	
	OCDF	JBQ	0.254	11.3	PQL	ng/Kg	
SL-551-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JB	0.115	4.99	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.104	4.99	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.0312	4.99	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0680	4.99	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0963	4.99	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.0539	4.99	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.112	4.99	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.110	4.99	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	0.0945	4.99	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.118	4.99	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.161	4.99	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0968	4.99	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.154	4.99	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0673	0.997	PQL	ng/Kg	
	OCDD	JB	0.907	9.97	PQL	ng/Kg	
	OCDF	JBQ	0.172	9.97	PQL	ng/Kg	
SL-555-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	3.42	5.74	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	2.35	5.74	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.144	5.74	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.0711	5.74	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.146	5.74	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.203	5.74	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.135	5.74	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.231	5.74	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	0.297	5.74	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.124	5.74	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.331	5.74	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.158	5.74	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.228	5.74	PQL	ng/Kg	
	2,3,7,8-TCDD	JBQ	0.0715	1.15	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.0476	1.15	PQL	ng/Kg	
	OCDF	JB	5.92	11.5	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH073 **Laboratory: LL**

EDD Filename: PH073_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-555-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JB	0.221	5.51	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.0681	5.51	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0406	5.51	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0685	5.51	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.103	5.51	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.149	5.51	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.0871	5.51	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.243	5.51	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.350	5.51	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JB	0.140	5.51	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.222	5.51	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.0786	5.51	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.139	5.51	PQL	ng/Kg	
	2,3,7,8-TCDD	JB	0.0226	1.10	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0630	1.10	PQL	ng/Kg	
	OCDD	JB	0.717	11.0	PQL	ng/Kg	
	OCDF	JB	0.175	11.0	PQL	ng/Kg	
SL-851-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JB	0.108	5.71	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.0636	5.71	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.0608	5.71	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0569	5.71	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0786	5.71	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.0767	5.71	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.0623	5.71	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.0564	5.71	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JBQ	0.118	5.71	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JB	0.0944	5.71	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.0826	5.71	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0578	5.71	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0857	5.71	PQL	ng/Kg	
	2,3,7,8-TCDD	JBQ	0.0276	1.14	PQL	ng/Kg	
	OCDD	JB	0.361	11.4	PQL	ng/Kg	
	OCDF	JB	0.157	11.4	PQL	ng/Kg	

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-551-SA8-SB-0.0-0.5	BORON	J	4.75	11.1	PQL	mg/Kg	
	CADMIUM	J	0.122	1.11	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.219	2.22	PQL	mg/Kg	
	TIN	J	3.55	11.1	PQL	mg/Kg	
SL-551-SA8-SB-14.0-15.0	BERYLLIUM	J	0.793	1.16	PQL	mg/Kg	
	BORON	J	5.28	11.6	PQL	mg/Kg	
	CADMIUM	J	0.402	1.16	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.202	2.31	PQL	mg/Kg	
	TIN	J	3.10	11.6	PQL	mg/Kg	
SL-551-SA8-SB-19.0-20.0	BERYLLIUM	J	0.876	1.13	PQL	mg/Kg	J (all detects)
	TIN	J	3.18	11.3	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH073 **Laboratory: LL**

EDD Filename: PH073_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-551-SA8-SB-4.0-5.0	BERYLLIUM	J	0.937	1.01	PQL	mg/Kg	J (all detects)
	BORON	J	2.35	10.1	PQL	mg/Kg	
	CADMIUM	J	0.158	1.01	PQL	mg/Kg	
	TIN	J	3.30	10.1	PQL	mg/Kg	
SL-551-SA8-SB-9.0-10.0	ARSENIC	J	3.52	4.55	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.467	1.14	PQL	mg/Kg	
	BORON	J	4.04	11.4	PQL	mg/Kg	
	CADMIUM	J	0.508	1.14	PQL	mg/Kg	
	COPPER	J	5.06	11.4	PQL	mg/Kg	
	LEAD	J	9.21	17.1	PQL	mg/Kg	
	LITHIUM	J	10.4	22.8	PQL	mg/Kg	
	TIN	J	2.39	11.4	PQL	mg/Kg	
	Zirconium	J	4.63	5.69	PQL	mg/Kg	
SL-555-SA8-SB-0.0-0.5	BERYLLIUM	J	0.966	1.11	PQL	mg/Kg	J (all detects)
	BORON	J	1.72	11.1	PQL	mg/Kg	
	CADMIUM	J	0.311	1.11	PQL	mg/Kg	
	SODIUM	J	93.0	111	PQL	mg/Kg	
	TIN	J	1.45	11.1	PQL	mg/Kg	
SL-555-SA8-SB-4.0-5.0	BERYLLIUM	J	1.03	1.11	PQL	mg/Kg	J (all detects)
	BORON	J	3.77	11.1	PQL	mg/Kg	
	CADMIUM	J	0.249	1.11	PQL	mg/Kg	
	TIN	J	3.50	11.1	PQL	mg/Kg	
SL-851-SA8-SB-4.0-5.0	BERYLLIUM	J	0.994	1.13	PQL	mg/Kg	J (all detects)
	BORON	J	3.64	11.3	PQL	mg/Kg	
	CADMIUM	J	0.278	1.13	PQL	mg/Kg	
	TIN	J	3.26	11.3	PQL	mg/Kg	

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-551-SA8-SB-0.0-0.5	SELENIUM	J	0.274	0.444	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0554	0.222	PQL	mg/Kg	
SL-551-SA8-SB-14.0-15.0	SELENIUM	J	0.222	0.462	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0493	0.231	PQL	mg/Kg	
SL-551-SA8-SB-19.0-20.0	SELENIUM	J	0.156	0.452	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0404	0.226	PQL	mg/Kg	
SL-551-SA8-SB-4.0-5.0	SILVER	J	0.0527	0.201	PQL	mg/Kg	J (all detects)
SL-551-SA8-SB-9.0-10.0	THALLIUM	J	0.196	0.228	PQL	mg/Kg	J (all detects)
SL-555-SA8-SB-0.0-0.5	SELENIUM	J	0.240	0.442	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0303	0.221	PQL	mg/Kg	
SL-555-SA8-SB-4.0-5.0	SELENIUM	J	0.186	0.443	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0508	0.222	PQL	mg/Kg	
SL-851-SA8-SB-4.0-5.0	SELENIUM	J	0.120	0.450	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0716	0.225	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH073 **Laboratory: LL**

EDD Filename: PH073_v2 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: **8270D SIM**

Matrix: **SO**

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-551-SA8-SB-0.0-0.5	BIS(2-ETHYLHEXYL)PHTHALATE	J	8.1	20	PQL	ug/Kg	
	CHRYSENE	J	0.59	1.9	PQL	ug/Kg	J (all detects)
	PHENANTHRENE	J	0.97	1.9	PQL	ug/Kg	
SL-551-SA8-SB-14.0-15.0	CHRYSENE	J	0.63	1.9	PQL	ug/Kg	J (all detects)
	NAPHTHALENE	J	0.80	1.9	PQL	ug/Kg	
SL-555-SA8-SB-0.0-0.5	BENZO(B)FLUORANTHENE	J	1.8	1.9	PQL	ug/Kg	
	BENZO(K)FLUORANTHENE	J	0.78	1.9	PQL	ug/Kg	
	FLUORANTHENE	J	1.1	1.9	PQL	ug/Kg	J (all detects)
	PHENANTHRENE	J	1.1	1.9	PQL	ug/Kg	
	PYRENE	J	0.77	1.9	PQL	ug/Kg	
SL-851-SA8-SB-4.0-5.0	2-METHYLNAPHTHALENE	J	1.1	1.9	PQL	ug/Kg	J (all detects)

LDC #: 30289H4 **VALIDATION COMPLETENESS WORKSHEET** Date: 9/4/13
SDG #: PH073 ADR Page: 1 of 1
Laboratory: Eurofins Lancaster Laboratories Reviewer: AR
2nd Reviewer: [illegible]

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: 7/23/13
II.	ICP/MS Tune	—	
III.	Calibration	—	
IV.	Blanks	A	
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	—	(2,3)
XV	Field Blanks	SW	EB= EB1-072513 FB= FB-041113 (PH075) (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-551-SA8-SB-0.0-0.5	11	SL-551-SA8-SB-4.0-5.0DUP	21		31	
2	SL-551-SA8-SB-4.0-5.0	12		22		32	
3	SL-851-SA8-SB-4.0-5.0	13		23		33	
4	SL-551-SA8-SB-9.0-10.0	14		24		34	
5	SL-551-SA8-SB-14.0-15.0	15		25		35	
6	SL-551-SA8-SB-19.0-20.0	16		26		36	
7	SL-555-SA8-SB-0.0-0.5	17		27		37	
8	SL-555-SA8-SB-4.0-5.0	18		28		38	
9	SL-551-SA8-SB-4.0-5.0MS	19		29		39	
10	SL-551-SA8-SB-4.0-5.0MSD	20		30		40	

Notes: _____

LDC #: 30289H4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: CR
2nd Reviewer: LC

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	5								
Cu	0.0036	1.8										
Mo	0.0036	1.8	0.22	0.20								

Sampling date: 7/25/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All

Analyte	Blank ID	Sample Identification										
	EB1-072513 (SDG: PH075)	Action Limit	No Qualifiers									
Mo	0.0067	3.35										

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.: PH073
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7138011BKG Matrix Spike Lab Sample ID: 7138012MS Matrix Spike Duplicate Lab Sample ID: 7138013MSD
Batch Id(s): P20637A, P20638A

Analyte	Mass	BKG Sample Result	C	MS Sample Result	C	MSD Sample Result	C	MS Spike Added	MSD Spike Added	Units	MS %R	Q	MSD %R	Q	RPD	Q	Control Limit %R	Control Limit RPD	M
Aluminum		31773.9240		36449.5538		34142.9558		192.3077	192.3077	MG/KG	2431		1232		7			20	P
Antimony		0.7115	U	29.2529		31.8029		48.0769	48.0769	MG/KG	61	N	66	N	8		75 - 125	20	P
Arsenic		7.0250		20.6875		20.5519		14.4231	14.4231	MG/KG	95		94		1		75 - 125	20	P
Barium		119.4510		293.7827		299.0067		192.3077	192.3077	MG/KG	91		93		2		75 - 125	20	P
Beryllium		0.8962	B	5.6779		5.7673		4.8077	4.8077	MG/KG	99		101		2		75 - 125	20	P
Boron		2.2490	B	183.2817		185.6269		192.3077	192.3077	MG/KG	94		95		1		75 - 125	20	P
Cadmium		0.1510	B	4.5625		4.6625		4.8077	4.8077	MG/KG	92		94		2		75 - 125	20	P
Calcium		41744.5288		46084.5144		40694.0856		384.6154	384.6154	MG/KG	1129		-272		12			20	P
Chromium		33.3615		54.1077		52.7462		19.2308	19.2308	MG/KG	108		101		3		75 - 125	20	P
Cobalt		14.4356		52.0692		54.0779		48.0769	48.0769	MG/KG	78		82		4		75 - 125	20	P
Copper		15.6577		39.8010		40.2904		24.0385	24.0385	MG/KG	100		102		1		75 - 125	20	P
Iron		29788.6769		30561.5442		29582.9788		96.1538	96.1538	MG/KG	804		-214		3			20	P
Lead		10.0058		22.2192		23.1385		14.4231	14.4231	MG/KG	85		91		4		75 - 125	20	P
Lithium		25.2077		122.9548		123.1279		96.1538	96.1538	MG/KG	102		102		0		75 - 125	20	P
Magnesium		6395.3308		6956.4548		6674.8817		192.3077	192.3077	MG/KG	292		145		4			20	P
Manganese		425.5952		290.7433		284.2269		48.0769	48.0769	MG/KG	-280		-294	*	2			20	P
Mercury		0.0096	U	0.1972		0.2001		0.1609	0.1646	MG/KG	123		122		1		65 - 135	20	CV
Molybdenum		0.1635	U	175.9019		176.6385		192.3077	192.3077	MG/KG	91		92		0		75 - 125	20	P
Nickel		17.4183		60.0558		60.6587		48.0769	48.0769	MG/KG	89		90		1		75 - 125	20	P
Phosphorus		87.6019		186.5077		177.5192		96.1538	96.1538	MG/KG	103		94		5		75 - 125	20	P
Potassium		2206.6327		3462.8096		3202.9856		961.5385	961.5385	MG/KG	131	N	104		8		75 - 125	20	P
Selenium	78	0.0962	U	1.7242		1.7146		1.9231	1.9231	MG/KG	90		89		1		75 - 125	20	MS
Silver	107	0.0504	B	9.2788		10.4365		9.6154	9.6154	MG/KG	96		108		12		75 - 125	20	MS
Sodium		132.9596		1102.1596		1107.4298		961.5385	961.5385	MG/KG	101		101		0		75 - 125	20	P
Strontium	88	58.5192		63.0000		83.7692		7.6923	7.6923	MG/KG	58		328	*	28	*		20	MS
Thallium	203	0.2662		0.6552		0.7706		0.3846	0.3846	MG/KG	101		131	N	16		75 - 125	20	MS

Equal for RPD (J/UJ)

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

METHODS:
P = ICP Atomic Emission Spectrometer
CV = Cold Vapor
MS = ICP Mass Spectrometry
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.: PH073
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7138011BKG Matrix Spike Lab Sample ID: 7138012MS Matrix Spike Duplicate Lab Sample ID: 7138013MSD
Batch Id(s): P20637A, P20638A

Analyte	Mass	BKG Sample Result	C	MS Sample Result	C	MSD Sample Result	C	MS Spike Added	MSD Spike Added	Units	MS %R	Q	MSD %R	Q	RPD	Q	Control Limit %R	Control Limit RPD	M
Tin		3.1587	B	345.3606		347.5375		384.6154	384.6154	MG/KG	89		90		1		75 - 125	20	P
Titanium		1089.6926		1306.6683		1068.2952		96.1538	96.1538	MG/KG	226		-22		20			20	P
Vanadium		64.6952		114.7317		108.8510		48.0769	48.0769	MG/KG	104		92		5		75 - 125	20	P
Zinc		53.0731		100.3231		99.3106		48.0769	48.0769	MG/KG	98		96		1		75 - 125	20	P
Zirconium		6.4587		102.7346		101.5885		96.1538	96.1538	MG/KG	100		99		1		75 - 125	20	P

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

METHODS:
P = ICP Atomic Emission Spectrometer CV = Cold Vapor
MS = ICP Mass Spectrometry 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 6
DUPLICATES
SDG No.: PH073
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7138011BKG
Batch ID(s): P20637A, P20638A
Concentration Units: MG/KG

Duplicate Lab Sample ID: 7138014DUP

Analyte	Mass	Control Limit	Samples (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum			31773.9240		31772.9913		0		P
Antimony			-1.6154	B	-1.0885	B	39		P
Arsenic		3.8	7.0250		6.6308		6		P
Barium			119.4510		109.0635		9		P
Beryllium			0.8962	B	0.8962	B	0		P
Boron			2.2490	B	3.4029	B	41		P
Cadmium			0.1510	B	0.2962	B	65		P
Calcium			41741.5288		54413.2058		26	*	P
Chromium			33.3615		33.9567		2		P
Cobalt			14.4356		9.0962		45	*	P
Copper			15.6577		15.4087		2		P
Iron			29788.6769		28243.4846		5		P
Lead		2.9	10.0058		10.1327		1		P
Lithium			25.2077		24.7010		2		P
Magnesium			6395.3308		6262.8769		2		P
Manganese			425.5952		264.3904		47	*	P
Mercury			0.0096	U	0.0097	U			CV
Molybdenum			0.1635	U	0.1635	U			P
Nickel			17.4183		15.8798		9		P
Phosphorus			87.6019		94.3721		7		P
Potassium			2206.6327		2100.6971		5		P
Selenium	78		0.0962	U	0.0962	U			MS
Silver	107		-0.0504	B	0.0393	B	25		MS
Sodium		96.2	132.9596		129.3837		3		P
Strontium	88		58.5192		61.6346		5		MS
Thallium	203	0.2	0.2662		0.2792		5		MS
Tin			3.1587	B	3.1250	B	1		P
Titanium			1089.6923		1097.7490		1		P
Vanadium			64.6952		63.3750		2		P
Zinc			53.0731		53.3673		1		P
Zirconium		4.8	6.4587		7.8279		19		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.: PH073
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7138011BKG Serial Dilution Lab Sample ID: 7138011L
Batch ID(s): P20637A
Concentration Units: UG/L

Analyte	Mass	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Diff.	Q	M
Aluminum		330448.8100		338650.7000		2		P
Antimony		7.4000	U	37.0000	U			P
Arsenic		73.0600		48.0500	B	34		P
Barium		1242.2900		1334.2500		7		P
Beryllium		9.3200	B	9.6500	B	4		P
Boron		23.3900	B	69.8000	B	198		P
Cadmium		1.5700	B	3.9500	B	152		P
Calcium		434111.9000		440397.7500		1		P
Chromium		346.9600		372.4500		7		P
Cobalt		150.1300		166.7500		11	E	P
Copper		162.8400		190.3000		17	E	P
Iron		154901.1200		151565.3500		2		P
Lead		104.0600		115.0500	B	11		P
Lithium		262.1600		260.3500		1		P
Magnesium		66511.4400		69291.2500		4		P
Manganese		4426.1900		4808.4500		9		P
Molybdenum		1.7000	U	12.0000	B	100		P
Nickel		181.1500		194.6500		7		P
Phosphorus		911.0600		921.7500		1		P
Potassium		22948.9800		23410.4500		2		P
Selenium	78	0.5000	U	2.5000	U			MS
Silver	107	0.2620	B	0.6500	U	100		MS
Sodium		1382.7800		1334.5000	B	3		P
Strontium	88	304.3000		299.1500		2		MS
Thallium	203	1.3840		1.3620	B	2		MS
Tin		32.8500	B	33.1500	B	1		P
Titanium		11332.8000		10734.7500		5		P
Vanadium		672.8300		706.8500		5		P
Zinc		551.9600		566.1500		3		P
Zirconium		67.1700		83.0000	B	24		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 Serial Dilution or Spiked Dilution

LABORATORY DATA CONSULTANTS, INC.
7750 El Camino Real, Suite 2L, Carlsbad, CA 92009 Bus: 760/634-0437 Fax: 760/634-0439

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

September 25, 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 August 30, 2013. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 30330:

SDG #	Fraction
PH074 PH075 PH076 PH078	Semivolatiles, Chlorinated Pesticides, Polychlorinated Biphenyls, Metals, Herbicides, Total Petroleum Hydrocarbons as Gasoline, Total Petroleum Hydrocarbons as Extractables, Dioxins/Dibenzofurans, Cyanide

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,

Shauna McKellar
Project Manager/Chemist

280 pages-CD

Attachment 1

90/10 ADR/IV

LDC #30330 (CDM Federal Programs-Chantilly VA / Santa Susana Field Laboratory, Subarea 8)

LDC	SDG#	DATE REC'D	(4) DATE DUE	SVOA (8270D)		SVOA (8270D -SIM)		Pest. (8081B)		PCBs (8082A)		Metals & Hg (SW846)		Herbs (8151A)		TPH-G (8015M)		TPH-E (8015M)		Dioxins (1613B)		CN- (9012B)																	
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	PH074	08/30/13	09/30/13	-	-	0	3	-	-	0	3	0	7	-	-	1	2	0	3	0	3	-	-															
B	PH075	08/30/13	09/30/13	1	3	1	5	1	0	2	5	2	5	1	0	2	4	1	5	1	5	1	3															
C	PH076	08/30/13	09/30/13	-	-	0	6	-	-	0	9	0	6	-	-	1	3	0	6	0	6	-	-															
D	PH078	08/30/13	09/30/13	-	-	0	4	-	-	0	4	0	4	-	-	1	2	0	4	0	4	-	-															
Total	T/SM			1	3	1	18	1	0	2	21	2	22	1	0	5	11	1	18	1	18	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	130

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 Susan Field Laboratory
Subarea 8

SDG: PH074

Prepared for

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

Prepared by

Laboratory Data Consultants, Inc
7750 El Camino Real, Suite 2L
Carlsbad, California 92009

September 21, 2013

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on July 24, 2013. Data validation was performed in accordance with the Quality Assurance Project Plan for Santa Susana Field Laboratory, 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 by Environmental Protection Agency (EPA) SW 846 Method 8270D using Selective Ion Monitoring (SIM)
Polychorinated 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/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 calibrations 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, trip blanks, equipment blanks and field 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 the calibration blanks 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.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met QC criteria.

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 method blanks for dioxins and metals. The associated sample results were qualified as non-detected (U) due to method blank contamination. 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 was 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 performed in SDG PH075. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. Details regarding the qualification of data are provided in Enclosure I of the DVR for SDG PH075.

VIII. Laboratory Duplicates Sample

Laboratory duplicates (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits for metals performed in SDG PH075.

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 for SDG PH075. The analysis criteria were met with the following exceptions:

Diluted Sample	Analyte	%D (Limits)	Associated Samples	Flag	A or P
SL-523-SA8-SB-4.0-5.0	Iron	24 (≤10)	SL-527-SA8-SB-0.0-0.5 SL-527-SA8-SB-4.0-5.0 SL-528-SA8-SB-4.0-5.0 SL-528-SA8-SB-0.0-0.5 SL-538-SA8-SB-0.0-0.5 SL-522-SA8-SB-0.0-0.5-dtsc SL-536-SA8-SB-0.0-0.5	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 PH074	All compounds reported as detected below the RL.	J (all detects)	A

XIII. Field Duplicate Samples

No field duplicates was 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.

Two equipment blanks (from SDG PH075) were collected and analyzed for semivolatiles, PCBs, metals, TPH as gasoline, TPH as extractables, and dioxins. No contaminants were found in the equipment blank with the exception of several semivolatiles, several dioxins and one metal. The associated sample results were qualified as non-detected (U) due to equipment blank contamination as applicable. The samples results that were not detected or were significantly greater than the concentrations found in the associated 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 semivolatiles, PCBs, metals, TPH as gasoline, TPH as extractables and dioxins. No contaminants were found in the field blank with the exception of several semivolatiles, several dioxins and two metals. The associated sample results were qualified as non-detected (U) due to field blank contamination as applicable. The samples 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.

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
24-Jul-2013	TB-072413	7139501	TB	5030B	8015M	III
24-Jul-2013	SL-527-SA8-SB-0.0-0.5	7139498	N	3050B	6010C	III
24-Jul-2013	SL-527-SA8-SB-0.0-0.5	7139498	N	3050B	6020A	III
24-Jul-2013	SL-527-SA8-SB-0.0-0.5	7139498	N	3546	8015M	III
24-Jul-2013	SL-527-SA8-SB-0.0-0.5	7139498	N	3546	8082A	III
24-Jul-2013	SL-527-SA8-SB-0.0-0.5	7139498	N	3546	8270D SIM	III
24-Jul-2013	SL-527-SA8-SB-0.0-0.5	7139498	N	METHOD	1613B	III
24-Jul-2013	SL-527-SA8-SB-0.0-0.5	7139498	N	METHOD	7471B	III
24-Jul-2013	SL-527-SA8-SB-0.0-0.5MSD	P139498M260802	MSD	3546	8270D SIM	III
24-Jul-2013	SL-527-SA8-SB-0.0-0.5MS	P139498R260730	MS	3546	8270D SIM	III
24-Jul-2013	SL-527-SA8-SB-4.0-5.0	7139499	N	3050B	6010C	III
24-Jul-2013	SL-527-SA8-SB-4.0-5.0	7139499	N	3050B	6020A	III
24-Jul-2013	SL-527-SA8-SB-4.0-5.0	7139499	N	3546	8015M	III
24-Jul-2013	SL-527-SA8-SB-4.0-5.0	7139499	N	3546	8082A	III
24-Jul-2013	SL-527-SA8-SB-4.0-5.0	7139499	N	3546	8270D SIM	III
24-Jul-2013	SL-527-SA8-SB-4.0-5.0	7139499	N	5035A	8015M	III
24-Jul-2013	SL-527-SA8-SB-4.0-5.0	7139499	N	METHOD	1613B	III
24-Jul-2013	SL-527-SA8-SB-4.0-5.0	7139499	N	METHOD	7471B	III
24-Jul-2013	SL-528-SA8-SB-0.0-0.5-dts	7139502	N	3050B	6010C	III
24-Jul-2013	SL-528-SA8-SB-0.0-0.5-dts	7139502	N	3050B	6020A	III
24-Jul-2013	SL-528-SA8-SB-0.0-0.5-dts	7139502	N	METHOD	7471B	III
24-Jul-2013	SL-538-SA8-SB-0.0-0.5-dts	7139503	N	3050B	6010C	III
24-Jul-2013	SL-538-SA8-SB-0.0-0.5-dts	7139503	N	3050B	6020A	III
24-Jul-2013	SL-538-SA8-SB-0.0-0.5-dts	7139503	N	METHOD	7471B	III
24-Jul-2013	SL-522-SA8-SB-0.0-0.5-dts	7139504	N	3050B	6010C	III
24-Jul-2013	SL-522-SA8-SB-0.0-0.5-dts	7139504	N	3050B	6020A	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
24-Jul-2013	SL-522-SA8-SB-0.0-0.5-dts	7139504	N	METHOD	7471B	III
24-Jul-2013	SL-536-SA8-SB-0.0-0.5-dts	7139505	N	3050B	6010C	III
24-Jul-2013	SL-536-SA8-SB-0.0-0.5-dts	7139505	N	3050B	6020A	III
24-Jul-2013	SL-536-SA8-SB-0.0-0.5-dts	7139505	N	METHOD	7471B	III
24-Jul-2013	SL-528-SA8-SB-4.0-5.0	7139500	N	3050B	6010C	III
24-Jul-2013	SL-528-SA8-SB-4.0-5.0	7139500	N	3050B	6020A	III
24-Jul-2013	SL-528-SA8-SB-4.0-5.0	7139500	N	3546	8015M	III
24-Jul-2013	SL-528-SA8-SB-4.0-5.0	7139500	N	3546	8082A	III
24-Jul-2013	SL-528-SA8-SB-4.0-5.0	7139500	N	3546	8270D SIM	III
24-Jul-2013	SL-528-SA8-SB-4.0-5.0	7139500	N	5035A	8015M	III
24-Jul-2013	SL-528-SA8-SB-4.0-5.0	7139500	N	METHOD	1613B	III
24-Jul-2013	SL-528-SA8-SB-4.0-5.0	7139500	N	METHOD	7471B	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation
N = Normal Sample
FD = Field Duplicate
TB = Trip Blank
FB = Field Blank
MS = Matrix Spike
MSD = Matrix Spike Duplicate

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH074 **Laboratory: LL**

EDD Filename: PH074 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-522-SA8-SB-0.0-0.5-dtsc** ***Collected:*** **7/24/2013 11:20:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.07	U	0.753	MDL	4.07	PQL	mg/Kg	UJ	Q
ARSENIC	2.55	J	0.712	MDL	4.07	PQL	mg/Kg	J	Z
BERYLLIUM	0.450	J	0.0681	MDL	1.02	PQL	mg/Kg	J	Z
BORON	3.44	J	0.854	MDL	10.2	PQL	mg/Kg	J	Z
CADMIUM	0.439	J	0.0773	MDL	1.02	PQL	mg/Kg	J	Z
IRON	19000		3.68	MDL	40.7	PQL	mg/Kg	J	A
MOLYBDENUM	0.596	J	0.173	MDL	2.03	PQL	mg/Kg	U	F, F
POTASSIUM	3510		8.48	MDL	102	PQL	mg/Kg	J	Q
TIN	1.83	J	0.224	MDL	10.2	PQL	mg/Kg	U	B
Zirconium	1.97	J	0.854	MDL	5.09	PQL	mg/Kg	J	Z

Sample ID: **SL-527-SA8-SB-0.0-0.5** ***Collected:*** **7/24/2013 8:50:00** ***Analysis Type:*** **REA** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	36300		7.86	MDL	86.9	PQL	mg/Kg	J	A

Sample ID: **SL-527-SA8-SB-0.0-0.5** ***Collected:*** **7/24/2013 8:50:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.34	U	0.803	MDL	4.34	PQL	mg/Kg	UJ	Q
ARSENIC	3.56	J	0.760	MDL	4.34	PQL	mg/Kg	J	Z
BERYLLIUM	0.978	J	0.0727	MDL	1.09	PQL	mg/Kg	J	Z
BORON	2.08	J	0.912	MDL	10.9	PQL	mg/Kg	J	Z
CADMIUM	0.382	J	0.0825	MDL	1.09	PQL	mg/Kg	J	Z
POTASSIUM	4180		9.05	MDL	109	PQL	mg/Kg	J	Q
TIN	2.66	J	0.239	MDL	10.9	PQL	mg/Kg	U	B
Zirconium	3.55	J	0.912	MDL	5.43	PQL	mg/Kg	J	Z

Sample ID: **SL-527-SA8-SB-4.0-5.0** ***Collected:*** **7/24/2013 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
IRON	30800		8.42	MDL	93.1	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: PH074 **Laboratory: LL**

EDD Filename: PH074 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-527-SA8-SB-4.0-5.0** ***Collected:*** **7/24/2013 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	4.65	U	0.861	MDL	4.65	PQL	mg/Kg	UJ	Q
ARSENIC	3.24	J	0.814	MDL	4.65	PQL	mg/Kg	J	Z
BERYLLIUM	1.07	J	0.0780	MDL	1.16	PQL	mg/Kg	J	Z
CADMIUM	0.137	J	0.0884	MDL	1.16	PQL	mg/Kg	J	Z
POTASSIUM	3030		9.70	MDL	116	PQL	mg/Kg	J	Q
TIN	3.06	J	0.256	MDL	11.6	PQL	mg/Kg	U	B
Zirconium	3.16	J	0.977	MDL	5.82	PQL	mg/Kg	J	Z

Sample ID: **SL-528-SA8-SB-0.0-0.5-dtsc** ***Collected:*** **7/24/2013 10:30:00** ***Analysis Type:*** **REA** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	28400		7.49	MDL	82.7	PQL	mg/Kg	J	A

Sample ID: **SL-528-SA8-SB-0.0-0.5-dtsc** ***Collected:*** **7/24/2013 10:30:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.14	U	0.765	MDL	4.14	PQL	mg/Kg	UJ	Q
ARSENIC	3.37	J	0.724	MDL	4.14	PQL	mg/Kg	J	Z
BERYLLIUM	0.963	J	0.0693	MDL	1.03	PQL	mg/Kg	J	Z
BORON	2.78	J	0.869	MDL	10.3	PQL	mg/Kg	J	Z
CADMIUM	0.446	J	0.0786	MDL	1.03	PQL	mg/Kg	J	Z
POTASSIUM	6280		8.62	MDL	103	PQL	mg/Kg	J	Q
SODIUM	82.7	J	17.3	MDL	103	PQL	mg/Kg	J	Z
TIN	2.67	J	0.228	MDL	10.3	PQL	mg/Kg	U	B
Zirconium	4.45	J	0.869	MDL	5.17	PQL	mg/Kg	J	Z

Sample ID: **SL-528-SA8-SB-4.0-5.0** ***Collected:*** **7/24/2013 1:55:00** ***Analysis Type:*** **REA** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	29200		8.17	MDL	90.3	PQL	mg/Kg	J	A

Sample ID: **SL-528-SA8-SB-4.0-5.0** ***Collected:*** **7/24/2013 1:55:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.51	U	0.835	MDL	4.51	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: PH074 **Laboratory: LL**

EDD Filename: PH074 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-528-SA8-SB-4.0-5.0** ***Collected:*** **7/24/2013 1:55:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	1.02	J	0.0756	MDL	1.13	PQL	mg/Kg	J	Z
BORON	1.79	J	0.948	MDL	11.3	PQL	mg/Kg	J	Z
CADMIUM	0.346	J	0.0857	MDL	1.13	PQL	mg/Kg	J	Z
POTASSIUM	2970		9.41	MDL	113	PQL	mg/Kg	J	Q
TIN	3.13	J	0.248	MDL	11.3	PQL	mg/Kg	U	B
Zirconium	4.34	J	0.948	MDL	5.64	PQL	mg/Kg	J	Z

Sample ID: **SL-536-SA8-SB-0.0-0.5-dtsc** ***Collected:*** **7/24/2013 11:40:00** ***Analysis Type:*** **REA** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	27000		7.62	MDL	84.2	PQL	mg/Kg	J	A

Sample ID: **SL-536-SA8-SB-0.0-0.5-dtsc** ***Collected:*** **7/24/2013 11:40:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.21	U	0.779	MDL	4.21	PQL	mg/Kg	UJ	Q
ARSENIC	3.12	J	0.737	MDL	4.21	PQL	mg/Kg	J	Z
BERYLLIUM	0.987	J	0.0705	MDL	1.05	PQL	mg/Kg	J	Z
BORON	1.99	J	0.884	MDL	10.5	PQL	mg/Kg	J	Z
CADMIUM	0.456	J	0.0800	MDL	1.05	PQL	mg/Kg	J	Z
POTASSIUM	4450		8.78	MDL	105	PQL	mg/Kg	J	Q
SODIUM	82.3	J	17.6	MDL	105	PQL	mg/Kg	J	Z
TIN	2.71	J	0.232	MDL	10.5	PQL	mg/Kg	U	B
Zirconium	4.71	J	0.884	MDL	5.26	PQL	mg/Kg	J	Z

Sample ID: **SL-538-SA8-SB-0.0-0.5-dtsc** ***Collected:*** **7/24/2013 11:00:00** ***Analysis Type:*** **REA** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	28300		7.65	MDL	84.6	PQL	mg/Kg	J	A

Sample ID: **SL-538-SA8-SB-0.0-0.5-dtsc** ***Collected:*** **7/24/2013 11:00:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.23	U	0.782	MDL	4.23	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.870	J	0.0708	MDL	1.06	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: PH074 **Laboratory: LL**

EDD Filename: PH074 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-538-SA8-SB-0.0-0.5-dtsc ***Collected:*** 7/24/2013 11:00:00 ***Analysis Type:*** RES ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	3.86	J	0.888	MDL	10.6	PQL	mg/Kg	J	Z
CADMIUM	0.464	J	0.0803	MDL	1.06	PQL	mg/Kg	J	Z
POTASSIUM	5650		8.82	MDL	106	PQL	mg/Kg	J	Q
SODIUM	92.6	J	17.7	MDL	106	PQL	mg/Kg	J	Z
TIN	2.93	J	0.233	MDL	10.6	PQL	mg/Kg	U	B
Zirconium	3.43	J	0.888	MDL	5.29	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-522-SA8-SB-0.0-0.5-dtsc ***Collected:*** 7/24/2013 11:20:00 ***Analysis Type:*** RES ***Dilution:*** 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0307	J	0.0264	MDL	0.203	PQL	mg/Kg	J	Z
THALLIUM	0.179	J	0.0305	MDL	0.203	PQL	mg/Kg	J	Z

Sample ID: SL-527-SA8-SB-0.0-0.5 ***Collected:*** 7/24/2013 8:50:00 ***Analysis Type:*** REA ***Dilution:*** 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.223	J	0.109	MDL	0.434	PQL	mg/Kg	J	Z

Sample ID: SL-527-SA8-SB-0.0-0.5 ***Collected:*** 7/24/2013 8:50:00 ***Analysis Type:*** RES ***Dilution:*** 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0489	J	0.0282	MDL	0.217	PQL	mg/Kg	J	Z

Sample ID: SL-527-SA8-SB-4.0-5.0 ***Collected:*** 7/24/2013 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	0.121	J	0.116	MDL	0.465	PQL	mg/Kg	J	Z

Sample ID: SL-527-SA8-SB-4.0-5.0 ***Collected:*** 7/24/2013 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	0.0482	J	0.0302	MDL	0.233	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: PH074 **Laboratory: LL**

EDD Filename: PH074 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-528-SA8-SB-0.0-0.5-dtsc **Collected: 7/24/2013 10:30:00** **Analysis Type: REA** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.299	J	0.103	MDL	0.414	PQL	mg/Kg	J	Z

Sample ID: SL-528-SA8-SB-0.0-0.5-dtsc **Collected: 7/24/2013 10:30:00** **Analysis Type: RES** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0410	J	0.0269	MDL	0.207	PQL	mg/Kg	J	Z

Sample ID: SL-528-SA8-SB-4.0-5.0 **Collected: 7/24/2013 1:55:00** **Analysis Type: REA** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.153	J	0.113	MDL	0.451	PQL	mg/Kg	J	Z

Sample ID: SL-528-SA8-SB-4.0-5.0 **Collected: 7/24/2013 1:55:00** **Analysis Type: RES** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0607	J	0.0293	MDL	0.226	PQL	mg/Kg	J	Z

Sample ID: SL-536-SA8-SB-0.0-0.5-dtsc **Collected: 7/24/2013 11:40:00** **Analysis Type: REA** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.205	J	0.105	MDL	0.421	PQL	mg/Kg	J	Z

Sample ID: SL-536-SA8-SB-0.0-0.5-dtsc **Collected: 7/24/2013 11:40:00** **Analysis Type: RES** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0421	J	0.0274	MDL	0.211	PQL	mg/Kg	J	Z

Sample ID: SL-538-SA8-SB-0.0-0.5-dtsc **Collected: 7/24/2013 11:00:00** **Analysis Type: REA** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.301	J	0.106	MDL	0.423	PQL	mg/Kg	J	Z

Sample ID: SL-538-SA8-SB-0.0-0.5-dtsc **Collected: 7/24/2013 11:00:00** **Analysis Type: RES** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0554	J	0.0275	MDL	0.211	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: PH074 **Laboratory: LL**

EDD Filename: PH074 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: SL-527-SA8-SB-4.0-5.0 *Collected:* 7/24/2013 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
MERCURY	0.0128	J	0.0117	MDL	0.0196	PQL	mg/Kg	J	Z

Sample ID: SL-528-SA8-SB-0.0-0.5-dtsc *Collected:* 7/24/2013 10:30:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0126	J	0.010	MDL	0.0166	PQL	mg/Kg	J	Z

Sample ID: SL-536-SA8-SB-0.0-0.5-dtsc *Collected:* 7/24/2013 11:40:00 *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	0.0099	MDL	0.0165	PQL	mg/Kg	J	Z

Sample ID: SL-538-SA8-SB-0.0-0.5-dtsc *Collected:* 7/24/2013 11:00:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0164	J	0.0104	MDL	0.0173	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-527-SA8-SB-0.0-0.5 *Collected:* 7/24/2013 8:50:00 *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	4.53	JB	0.0626	MDL	5.36	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.507	J	0.0247	MDL	5.36	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0490	JQ	0.0289	MDL	5.36	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.0857	JBQ	0.0477	MDL	5.36	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0863	JQ	0.0293	MDL	5.36	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.285	JQ	0.0535	MDL	5.36	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0617	JB	0.0297	MDL	5.36	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.266	JBQ	0.0532	MDL	5.36	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.192	J	0.0358	MDL	5.36	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: PH074 **Laboratory: LL**

EDD Filename: PH074 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-527-SA8-SB-0.0-0.5** ***Collected:*** **7/24/2013 8:50:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,7,8-PECDD	0.119	J	0.0547	MDL	5.36	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.0777	JB	0.0461	MDL	5.36	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0731	JBQ	0.0280	MDL	5.36	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0959	JQ	0.0411	MDL	5.36	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.141	JQ	0.0813	MDL	1.07	PQL	ng/Kg	J	Z
OCDF	0.656	JB	0.0359	MDL	10.7	PQL	ng/Kg	J	Z

Sample ID: **SL-527-SA8-SB-4.0-5.0** ***Collected:*** **7/24/2013 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	0.271	JB	0.0423	MDL	5.87	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0161	J	0.00952	MDL	5.87	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.0300	JBQ	0.0256	MDL	5.87	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0426	JQ	0.0274	MDL	5.87	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0254	JBQ	0.0186	MDL	5.87	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0298	JBQ	0.0288	MDL	5.87	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0807	JQ	0.0562	MDL	5.87	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.0592	JBQ	0.0321	MDL	5.87	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0309	JBQ	0.0179	MDL	5.87	PQL	ng/Kg	U	B
OCDD	1.77	JB	0.0378	MDL	11.7	PQL	ng/Kg	J	Z
OCDF	0.102	JBQ	0.0442	MDL	11.7	PQL	ng/Kg	U	B

Sample ID: **SL-528-SA8-SB-4.0-5.0** ***Collected:*** **7/24/2013 1:55:00** ***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	0.190	JBQ	0.0305	MDL	5.69	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0360	JQ	0.0105	MDL	5.69	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0220	JQ	0.0159	MDL	5.69	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.0440	JBQ	0.0235	MDL	5.69	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0252	JQ	0.0132	MDL	5.69	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.0345	J	0.0254	MDL	5.69	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0368	JBQ	0.0127	MDL	5.69	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0388	JBQ	0.0252	MDL	5.69	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0345	JQ	0.0197	MDL	5.69	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.0446	JBQ	0.0143	MDL	5.69	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: PH074 **Laboratory: LL**

EDD Filename: PH074 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-528-SA8-SB-4.0-5.0** ***Collected:*** **7/24/2013 1:55:00** ***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	0.0274	JQ	0.0238	MDL	5.69	PQL	ng/Kg	J	Z
OCDD	1.01	JB	0.0297	MDL	11.4	PQL	ng/Kg	U	B
OCDF	0.0872	JB	0.0379	MDL	11.4	PQL	ng/Kg	U	B

Method Category: SVOA

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

Sample ID: **SL-527-SA8-SB-0.0-0.5** ***Collected:*** **7/24/2013 8:50:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-METHYLNAPHTHALENE	0.82	J	0.74	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(A)ANTHRACENE	0.77	J	0.74	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(B)FLUORANTHENE	1.5	J	0.74	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(G,H,I)PERYLENE	0.77	J	0.74	MDL	1.8	PQL	ug/Kg	J	Z
CHRYSENE	1.6	J	0.37	MDL	1.8	PQL	ug/Kg	J	Z
FLUORANTHENE	1.5	J	0.74	MDL	1.8	PQL	ug/Kg	J	Z
PHENANTHRENE	0.97	J	0.74	MDL	1.8	PQL	ug/Kg	J	Z
PYRENE	1.3	J	0.74	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: **SL-528-SA8-SB-4.0-5.0** ***Collected:*** **7/24/2013 1:55:00** ***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	1.4	J	0.77	MDL	1.9	PQL	ug/Kg	J	Z
BENZO(A)PYRENE	1.1	J	0.77	MDL	1.9	PQL	ug/Kg	J	Z
BENZO(B)FLUORANTHENE	1.8	J	0.77	MDL	1.9	PQL	ug/Kg	J	Z
BENZO(K)FLUORANTHENE	0.79	J	0.77	MDL	1.9	PQL	ug/Kg	J	Z
CHRYSENE	1.6	J	0.38	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

Data Qualifier Summary

Lab Reporting Batch ID: PH074 **Laboratory: LL**

EDD Filename: PH074 **eQAPP Name: CDM_SSFL_130808_Lan**

Reason Code Legend

Reason Code	*Description*
*#	Professional Judgment
A	ICP Serial Dilution
B	Method Blank Contamination
F	Equipment Blank Contamination
F	Field Blank Contamination
Q	Matrix Spike Lower Estimation
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

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control
Outlier Reports

PH074

Method Blank Outlier Report

Lab Reporting Batch ID: PH074 **Laboratory: LL**

EDD Filename: PH074 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: **1613B**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2120B370846	8/3/2013 8:46:00 AM	1,2,3,4,6,7,8-HPCDD	0.0840 ng/Kg	SL-527-SA8-SB-0.0-0.5
		1,2,3,4,7,8-HxCDD	0.0314 ng/Kg	SL-527-SA8-SB-4.0-5.0
		1,2,3,6,7,8-HXCDF	0.0274 ng/Kg	SL-528-SA8-SB-4.0-5.0
		1,2,3,7,8,9-HXCDD	0.0370 ng/Kg	
		1,2,3,7,8-PECDF	0.0452 ng/Kg	
		2,3,4,6,7,8-HXCDF	0.0162 ng/Kg	
		OCDD	0.248 ng/Kg	
		OCDF	0.0744 ng/Kg	

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-527-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.0857 ng/Kg	0.0857U ng/Kg
SL-527-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.0617 ng/Kg	0.0617U ng/Kg
SL-527-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.0777 ng/Kg	0.0777U ng/Kg
SL-527-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0731 ng/Kg	0.0731U ng/Kg
SL-527-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDD	0.271 ng/Kg	0.271U ng/Kg
SL-527-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HxCDD	0.0300 ng/Kg	0.0300U ng/Kg
SL-527-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.0254 ng/Kg	0.0254U ng/Kg
SL-527-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDD	0.0298 ng/Kg	0.0298U ng/Kg
SL-527-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.0592 ng/Kg	0.0592U ng/Kg
SL-527-SA8-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0309 ng/Kg	0.0309U ng/Kg
SL-527-SA8-SB-4.0-5.0(RES)	OCDF	0.102 ng/Kg	0.102U ng/Kg
SL-528-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDD	0.190 ng/Kg	0.190U ng/Kg
SL-528-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HxCDD	0.0440 ng/Kg	0.0440U ng/Kg
SL-528-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.0368 ng/Kg	0.0368U ng/Kg
SL-528-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDD	0.0388 ng/Kg	0.0388U ng/Kg
SL-528-SA8-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0446 ng/Kg	0.0446U ng/Kg
SL-528-SA8-SB-4.0-5.0(RES)	OCDD	1.01 ng/Kg	1.01U ng/Kg
SL-528-SA8-SB-4.0-5.0(RES)	OCDF	0.0872 ng/Kg	0.0872U ng/Kg

Method: **6010C**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P21037AB221259	8/3/2013 12:59:00 PM	CALCIUM	9.96 mg/Kg	SL-522-SA8-SB-0.0-0.5-dtsc
		TIN	1.28 mg/Kg	SL-527-SA8-SB-0.0-0.5
		ZINC	0.614 mg/Kg	SL-527-SA8-SB-4.0-5.0
				SL-528-SA8-SB-0.0-0.5-dtsc
				SL-528-SA8-SB-4.0-5.0
				SL-536-SA8-SB-0.0-0.5-dtsc
				SL-538-SA8-SB-0.0-0.5-dtsc

Method Blank Outlier Report

Lab Reporting Batch ID: PH074 **Laboratory: LL**

EDD Filename: PH074 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: **6010C**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples

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-522-SA8-SB-0.0-0.5-dtsc(RES)	TIN	1.83 mg/Kg	1.83U mg/Kg
SL-527-SA8-SB-0.0-0.5(RES)	TIN	2.66 mg/Kg	2.66U mg/Kg
SL-527-SA8-SB-4.0-5.0(RES)	TIN	3.06 mg/Kg	3.06U mg/Kg
SL-528-SA8-SB-0.0-0.5-dtsc(RES)	TIN	2.67 mg/Kg	2.67U mg/Kg
SL-528-SA8-SB-4.0-5.0(RES)	TIN	3.13 mg/Kg	3.13U mg/Kg
SL-536-SA8-SB-0.0-0.5-dtsc(RES)	TIN	2.71 mg/Kg	2.71U mg/Kg
SL-538-SA8-SB-0.0-0.5-dtsc(RES)	TIN	2.93 mg/Kg	2.93U mg/Kg

Field Blank Outlier Report

Lab Reporting Batch ID: PH074 **Laboratory: LL**

EDD Filename: PH074 **eQAPP Name: CDM_SSFL_130808_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-522-SA8-SB-0.0-0.5-dtsc SL-527-SA8-SB-0.0-0.5 SL-527-SA8-SB-4.0-5.0 SL-528-SA8-SB-0.0-0.5-dtsc SL-528-SA8-SB-4.0-5.0 SL-536-SA8-SB-0.0-0.5-dtsc SL-538-SA8-SB-0.0-0.5-dtsc

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-522-SA8-SB-0.0-0.5-dtsc(RES)	MOLYBDENUM	0.596 mg/Kg	0.596U mg/Kg

Equipment Rinsate Blank Outlier Report

Lab Reporting Batch ID: PH074 **Laboratory: LL**

EDD Filename: PH074 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: **6010C**
Matrix: **SO**

Equipment Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
EB2-072513(REA2)	7/25/2013 3:30:00 PM	MOLYBDENUM	0.0028 mg/L	SL-522-SA8-SB-0.0-0.5-dtsc SL-528-SA8-SB-0.0-0.5-dtsc SL-536-SA8-SB-0.0-0.5-dtsc SL-538-SA8-SB-0.0-0.5-dtsc

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-522-SA8-SB-0.0-0.5-dtsc(RES)	MOLYBDENUM	0.596 mg/Kg	0.596U mg/Kg

Reporting Limit Outliers

Lab Reporting Batch ID: PH074 **Laboratory: LL**

EDD Filename: PH074 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-527-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	4.53	5.36	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	J	0.507	5.36	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JQ	0.0490	5.36	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0857	5.36	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JQ	0.0863	5.36	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JQ	0.285	5.36	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.0617	5.36	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.266	5.36	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	J	0.192	5.36	PQL	ng/Kg	
	1,2,3,7,8-PECDD	J	0.119	5.36	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.0777	5.36	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0731	5.36	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.0959	5.36	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.141	1.07	PQL	ng/Kg	
	OCDF	JB	0.656	10.7	PQL	ng/Kg	
SL-527-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JB	0.271	5.87	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	J	0.0161	5.87	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0300	5.87	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JQ	0.0426	5.87	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0254	5.87	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.0298	5.87	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JQ	0.0807	5.87	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.0592	5.87	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0309	5.87	PQL	ng/Kg	
	OCDD	JB	1.77	11.7	PQL	ng/Kg	
	OCDF	JBQ	0.102	11.7	PQL	ng/Kg	
SL-528-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.190	5.69	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JQ	0.0360	5.69	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JQ	0.0220	5.69	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0440	5.69	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JQ	0.0252	5.69	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	J	0.0345	5.69	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0368	5.69	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDD	JBQ	0.0388	5.69	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JQ	0.0345	5.69	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0446	5.69	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.0274	5.69	PQL	ng/Kg	
	OCDD	JB	1.01	11.4	PQL	ng/Kg	
	OCDF	JB	0.0872	11.4	PQL	ng/Kg	

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-522-SA8-SB-0.0-0.5-dtsc	ARSENIC	J	2.55	4.07	PQL	mg/Kg	
	BERYLLIUM	J	0.450	1.02	PQL	mg/Kg	
	BORON	J	3.44	10.2	PQL	mg/Kg	
	CADMIUM	J	0.439	1.02	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.596	2.03	PQL	mg/Kg	
	TIN	J	1.83	10.2	PQL	mg/Kg	
	Zirconium	J	1.97	5.09	PQL	mg/Kg	

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

Reporting Limit Outliers

Lab Reporting Batch ID: PH074 **Laboratory: LL**

EDD Filename: PH074 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-527-SA8-SB-0.0-0.5	ARSENIC	J	3.56	4.34	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.978	1.09	PQL	mg/Kg	
	BORON	J	2.08	10.9	PQL	mg/Kg	
	CADMIUM	J	0.382	1.09	PQL	mg/Kg	
	TIN	J	2.66	10.9	PQL	mg/Kg	
	Zirconium	J	3.55	5.43	PQL	mg/Kg	
SL-527-SA8-SB-4.0-5.0	ARSENIC	J	3.24	4.65	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	1.07	1.16	PQL	mg/Kg	
	CADMIUM	J	0.137	1.16	PQL	mg/Kg	
	TIN	J	3.06	11.6	PQL	mg/Kg	
	Zirconium	J	3.16	5.82	PQL	mg/Kg	
SL-528-SA8-SB-0.0-0.5-dtsc	ARSENIC	J	3.37	4.14	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.963	1.03	PQL	mg/Kg	
	BORON	J	2.78	10.3	PQL	mg/Kg	
	CADMIUM	J	0.446	1.03	PQL	mg/Kg	
	SODIUM	J	82.7	103	PQL	mg/Kg	
	TIN	J	2.67	10.3	PQL	mg/Kg	
	Zirconium	J	4.45	5.17	PQL	mg/Kg	
SL-528-SA8-SB-4.0-5.0	BERYLLIUM	J	1.02	1.13	PQL	mg/Kg	J (all detects)
	BORON	J	1.79	11.3	PQL	mg/Kg	
	CADMIUM	J	0.346	1.13	PQL	mg/Kg	
	TIN	J	3.13	11.3	PQL	mg/Kg	
	Zirconium	J	4.34	5.64	PQL	mg/Kg	
SL-536-SA8-SB-0.0-0.5-dtsc	ARSENIC	J	3.12	4.21	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.987	1.05	PQL	mg/Kg	
	BORON	J	1.99	10.5	PQL	mg/Kg	
	CADMIUM	J	0.456	1.05	PQL	mg/Kg	
	SODIUM	J	82.3	105	PQL	mg/Kg	
	TIN	J	2.71	10.5	PQL	mg/Kg	
	Zirconium	J	4.71	5.26	PQL	mg/Kg	
SL-538-SA8-SB-0.0-0.5-dtsc	BERYLLIUM	J	0.870	1.06	PQL	mg/Kg	J (all detects)
	BORON	J	3.86	10.6	PQL	mg/Kg	
	CADMIUM	J	0.464	1.06	PQL	mg/Kg	
	SODIUM	J	92.6	106	PQL	mg/Kg	
	TIN	J	2.93	10.6	PQL	mg/Kg	
	Zirconium	J	3.43	5.29	PQL	mg/Kg	

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-522-SA8-SB-0.0-0.5-dtsc	SILVER	J	0.0307	0.203	PQL	mg/Kg	J (all detects)
	THALLIUM	J	0.179	0.203	PQL	mg/Kg	
SL-527-SA8-SB-0.0-0.5	SELENIUM	J	0.223	0.434	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0489	0.217	PQL	mg/Kg	
SL-527-SA8-SB-4.0-5.0	SELENIUM	J	0.121	0.465	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0482	0.233	PQL	mg/Kg	
SL-528-SA8-SB-0.0-0.5-dtsc	SELENIUM	J	0.299	0.414	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0410	0.207	PQL	mg/Kg	

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

Reporting Limit Outliers

Lab Reporting Batch ID: PH074 **Laboratory: LL**

EDD Filename: PH074 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-528-SA8-SB-4.0-5.0	SELENIUM	J	0.153	0.451	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0607	0.226	PQL	mg/Kg	
SL-536-SA8-SB-0.0-0.5-dtsc	SELENIUM	J	0.205	0.421	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0421	0.211	PQL	mg/Kg	
SL-538-SA8-SB-0.0-0.5-dtsc	SELENIUM	J	0.301	0.423	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0554	0.211	PQL	mg/Kg	

Method: 7471B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-527-SA8-SB-4.0-5.0	MERCURY	J	0.0128	0.0196	PQL	mg/Kg	J (all detects)
SL-528-SA8-SB-0.0-0.5-dtsc	MERCURY	J	0.0126	0.0166	PQL	mg/Kg	J (all detects)
SL-536-SA8-SB-0.0-0.5-dtsc	MERCURY	J	0.0156	0.0165	PQL	mg/Kg	J (all detects)
SL-538-SA8-SB-0.0-0.5-dtsc	MERCURY	J	0.0164	0.0173	PQL	mg/Kg	J (all detects)

Method: 8270D SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-527-SA8-SB-0.0-0.5	2-METHYLNAPHTHALENE	J	0.82	1.8	PQL	ug/Kg	J (all detects)
	BENZO(A)ANTHRACENE	J	0.77	1.8	PQL	ug/Kg	
	BENZO(B)FLUORANTHENE	J	1.5	1.8	PQL	ug/Kg	
	BENZO(G,H,I)PERYLENE	J	0.77	1.8	PQL	ug/Kg	
	CHRYSENE	J	1.6	1.8	PQL	ug/Kg	
	FLUORANTHENE	J	1.5	1.8	PQL	ug/Kg	
	PHENANTHRENE	J	0.97	1.8	PQL	ug/Kg	
	PYRENE	J	1.3	1.8	PQL	ug/Kg	
SL-528-SA8-SB-4.0-5.0	BENZO(A)ANTHRACENE	J	1.4	1.9	PQL	ug/Kg	J (all detects)
	BENZO(A)PYRENE	J	1.1	1.9	PQL	ug/Kg	
	BENZO(B)FLUORANTHENE	J	1.8	1.9	PQL	ug/Kg	
	BENZO(K)FLUORANTHENE	J	0.79	1.9	PQL	ug/Kg	
	CHRYSENE	J	1.6	1.9	PQL	ug/Kg	

LDC #: 30330A4

SDG #: PH074

Laboratory: Eurofins Lancaster Laboratories

VALIDATION COMPLETENESS WORKSHEET

ADR

Date: 9/4/13

Page: 1 of 1

Reviewer: CR

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: 7/24/13
II.	ICP/MS Tune	—	
III.	Calibration	—	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	—	
VI.	Matrix Spike Analysis	N	MS/D (from PH075)
VII.	Duplicate Sample Analysis	N	DUP ↓
VIII.	Laboratory Control Samples (LCS)	~~N~~ A	LCS
IX.	Internal Standard (ICP-MS)	N	
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	SW	fromPH075 - Fe:24% (J/UJ/A (A))
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	N	
XIV.	Field Duplicates	N	
XV	Field Blanks	SW	EB=EB1-072513 / PH075 FB=FB-041113 = EB2-072513 / (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-527-SA8-SB-0.0-0.5	11		21		31	
2	SL-527-SA8-SB-4.0-5.0	12		22		32	
3	SL-528-SA8-SB-4.0-5.0	13		23		33	
4	SL-528-SA8-SB-0.0-0.5	14		24		34	
5	SL-538-SA8-SB-0.0-0.5	15		25		35	
6	SL-522-SA8-SB-0.0-0.5-dtsc	16		26		36	
7	SL-536-SA8-SB-0.00.5	17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

LDC #: 30330A4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: [illegible]
2nd Reviewer: [illegible]

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	6									
Cu	0.0036	1.8										
Mo	0.0036	1.8	0.60									

Sampling date: 7/25/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: 1-3

Analyte	Blank ID	Sample Identification										
	EB1-072513 (SDG: PH075)	Action Limit	No Qualifiers									
Mo	0.0067	3.35										

Sampling date: 7/25/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: 4-7

Analyte	Blank ID	Sample Identification										
	EB2-072513 (SDG: PH075)	Action Limit	6									
Mo	0.0028	1.4	0.60									

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 Susan Field Laboratory
Subarea 8

SDG: PH075

Prepared for

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Prepared by

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September 21, 2013

INTRODUCTION

This Data Validation Report (DVR) presents Level III and Level IV data validation results for samples collected on July 25, 2013. Data validation was performed in accordance with the Quality Assurance Project Plan for Santa Susana Field Laboratory, 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 by Environmental Protection Agency (EPA) SW 846 Method 8270D
Semivolatiles by EPA SW 846 Method 8270D utilizing Selective Ion Monitoring (SIM)
Pesticides by EPA SW 846 Method 8081B
Polychorinated 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/Dibenzofurans by EPA Method 1613B
Cyanide by EPA SW 846 Method 9012B

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. Level IV DVRs are presented in Enclosure II.

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 calibrations 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, trip blanks, equipment blanks, field blanks and field duplicate samples. Approximately 50 percent of samples were subjected to EPA Level IV evaluation for cyanide as indicated in Attachment I, which comprised of the QC summary forms as well as 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 the calibration blanks 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.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met QC criteria.

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 method blanks for semivolatiles, dioxins and metals. The associated sample results were qualified as non-detected (U) due to method blank contamination. 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
PH075/ 6020A	ICB/CCB	Molybdenum	2.6 ug/L	EB1-072513 EB2-072513

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
PH075/ 6020A	EB1-072513	Molybdenum	6.7 ug/L	6.7U ug/L
PH075/ 6020A	EB2-072513	Molybdenum	2.8 ug/L	2.8U 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 was 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 semivolatiles and metals. The benzidine result in sample SL-523-SA8-SB-4.0-5.0 was qualified as rejected (R) due to MS/MSD %Rs grossly outside QC limits (i.e., ≤ 0%). The remainder of the associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. 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 with the exception of three LCS/LCSD pairs for TPH as extractables, pesticides and semivolatiles. 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.

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-523-SA8-SB-4.0-5.0	Iron	24 (≤10)	SL-523-SA8-SB-4.0-5.0 SL-823-SA8-SB-4.0-5.0 SL-524-SA8-SB-4.0-5.0 SL-525-SA8-SB-0.0-0.5 SL-525-SA8-SB-4.0-5.0	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 PH075	All compounds reported as detected below the RL.	J (all detects)	A

XIII. Field Duplicate Samples

One field duplicate pairs was collected and analyzed for semivolatiles, PCBs, metals, TPH as gasoline, TPH as extractables, dioxins and cyanide. All RPDs were within QC limits with the exception of several dioxins. In these duplicate pairs, the associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) due to RPDs outside the QC limits. 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.

Two equipment blanks were collected and analyzed for semivolatiles, pesticides, PCBs, herbicides, metals, TPH as gasoline, TPH as extractables, dioxins and cyanide. No contaminants were found in the equipment blank with the exception of several semivolatiles, several dioxins and one metal. All associated sample results were not detected or were significantly greater than the concentrations found in the associated blanks and no data were qualified.

One field blank (from SDG PH029) was collected and analyzed for semivolatiles, pesticides, PCBs, herbicides, metals, TPH as gasoline, TPH as extractables, dioxins and cyanide. No contaminants were found in the field blank with the exception of several semivolatiles, several dioxins and two metals. All associated sample results were not detected or were significantly greater than the concentrations found in the associated blanks and no data were qualified.

XV. Overall Assessment of Data

One SVOC result was rejected due to MS/MSD %Rs grossly outside of QC limits. This result is 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
25-Jul-2013	TB-072513	7141121	TB	5030B	8015M	III
25-Jul-2013	SL-523-SA8-SB-4.0-5.0	7141113	N	3050B	6010C	III
25-Jul-2013	SL-523-SA8-SB-4.0-5.0	7141113	N	3050B	6020A	III
25-Jul-2013	SL-523-SA8-SB-4.0-5.0	7141113	N	3546	8015M	III
25-Jul-2013	SL-523-SA8-SB-4.0-5.0	7141113	N	3546	8082A	III
25-Jul-2013	SL-523-SA8-SB-4.0-5.0	7141113	N	3546	8270D	III
25-Jul-2013	SL-523-SA8-SB-4.0-5.0	7141113	N	3546	8270D SIM	III
25-Jul-2013	SL-523-SA8-SB-4.0-5.0	7141113	N	5035A	8015M	III
25-Jul-2013	SL-523-SA8-SB-4.0-5.0	7141113	N	METHOD	1613B	III
25-Jul-2013	SL-523-SA8-SB-4.0-5.0	7141113	N	METHOD	7471B	III
25-Jul-2013	SL-523-SA8-SB-4.0-5.0	7141113	N	METHOD	9012B	IV
25-Jul-2013	SL-523-SA8-SB-4.0-5.0MS	7141114	MS	3050B	6010C	III
25-Jul-2013	SL-523-SA8-SB-4.0-5.0MS	7141114	MS	3050B	6020A	III
25-Jul-2013	SL-523-SA8-SB-4.0-5.0MS	7141114	MS	3546	8015M	III
25-Jul-2013	SL-523-SA8-SB-4.0-5.0MS	7141114	MS	3546	8082A	III
25-Jul-2013	SL-523-SA8-SB-4.0-5.0MS	7141114	MS	3546	8270D	III
25-Jul-2013	SL-523-SA8-SB-4.0-5.0MS	7141114	MS	3546	8270D SIM	III
25-Jul-2013	SL-523-SA8-SB-4.0-5.0MS	7141114	MS	5035A	8015M	III
25-Jul-2013	SL-523-SA8-SB-4.0-5.0MS	7141114	MS	METHOD	1613B	III
25-Jul-2013	SL-523-SA8-SB-4.0-5.0MS	7141114	MS	METHOD	7471B	III
25-Jul-2013	SL-523-SA8-SB-4.0-5.0MS	7141114	MS	METHOD	9012B	IV
25-Jul-2013	SL-523-SA8-SB-4.0-5.0MSD	7141115	MSD	3050B	6010C	III
25-Jul-2013	SL-523-SA8-SB-4.0-5.0MSD	7141115	MSD	3050B	6020A	III
25-Jul-2013	SL-523-SA8-SB-4.0-5.0MSD	7141115	MSD	3546	8015M	III
25-Jul-2013	SL-523-SA8-SB-4.0-5.0MSD	7141115	MSD	3546	8082A	III
25-Jul-2013	SL-523-SA8-SB-4.0-5.0MSD	7141115	MSD	3546	8270D	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
25-Jul-2013	SL-523-SA8-SB-4.0-5.0MSD	7141115	MSD	3546	8270D SIM	III
25-Jul-2013	SL-523-SA8-SB-4.0-5.0MSD	7141115	MSD	5035A	8015M	III
25-Jul-2013	SL-523-SA8-SB-4.0-5.0MSD	7141115	MSD	METHOD	1613B	III
25-Jul-2013	SL-523-SA8-SB-4.0-5.0MSD	7141115	MSD	METHOD	7471B	III
25-Jul-2013	SL-523-SA8-SB-4.0-5.0DUP	7141116	DUP	3050B	6010C	III
25-Jul-2013	SL-523-SA8-SB-4.0-5.0DUP	7141116	DUP	3050B	6020A	III
25-Jul-2013	SL-523-SA8-SB-4.0-5.0DUP	7141116	DUP	METHOD	7471B	III
25-Jul-2013	SL-523-SA8-SB-4.0-5.0DUP	7141116	DUP	METHOD	9012B	IV
25-Jul-2013	SL-823-SA8-SB-4.0-5.0	7141117	FD	3050B	6010C	III
25-Jul-2013	SL-823-SA8-SB-4.0-5.0	7141117	FD	3050B	6020A	III
25-Jul-2013	SL-823-SA8-SB-4.0-5.0	7141117	FD	3546	8015M	III
25-Jul-2013	SL-823-SA8-SB-4.0-5.0	7141117	FD	3546	8082A	III
25-Jul-2013	SL-823-SA8-SB-4.0-5.0	7141117	FD	3546	8270D	III
25-Jul-2013	SL-823-SA8-SB-4.0-5.0	7141117	FD	3546	8270D SIM	III
25-Jul-2013	SL-823-SA8-SB-4.0-5.0	7141117	FD	5035A	8015M	III
25-Jul-2013	SL-823-SA8-SB-4.0-5.0	7141117	FD	METHOD	1613B	III
25-Jul-2013	SL-823-SA8-SB-4.0-5.0	7141117	FD	METHOD	7471B	III
25-Jul-2013	SL-823-SA8-SB-4.0-5.0	7141117	FD	METHOD	9012B	IV
25-Jul-2013	SL-524-SA8-SB-4.0-5.0	7141118	N	3050B	6010C	III
25-Jul-2013	SL-524-SA8-SB-4.0-5.0	7141118	N	3050B	6020A	III
25-Jul-2013	SL-524-SA8-SB-4.0-5.0	7141118	N	3546	8015M	III
25-Jul-2013	SL-524-SA8-SB-4.0-5.0	7141118	N	3546	8082A	III
25-Jul-2013	SL-524-SA8-SB-4.0-5.0	7141118	N	3546	8270D	III
25-Jul-2013	SL-524-SA8-SB-4.0-5.0	7141118	N	3546	8270D SIM	III
25-Jul-2013	SL-524-SA8-SB-4.0-5.0	7141118	N	5035A	8015M	III
25-Jul-2013	SL-524-SA8-SB-4.0-5.0	7141118	N	METHOD	1613B	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
25-Jul-2013	SL-524-SA8-SB-4.0-5.0	7141118	N	METHOD	7471B	III
25-Jul-2013	SL-524-SA8-SB-4.0-5.0	7141118	N	METHOD	9012B	IV
25-Jul-2013	SL-525-SA8-SB-0.0-0.5	7141119	N	3050B	6010C	III
25-Jul-2013	SL-525-SA8-SB-0.0-0.5	7141119	N	3050B	6020A	III
25-Jul-2013	SL-525-SA8-SB-0.0-0.5	7141119	N	3546	8015M	III
25-Jul-2013	SL-525-SA8-SB-0.0-0.5	7141119	N	3546	8082A	III
25-Jul-2013	SL-525-SA8-SB-0.0-0.5	7141119	N	3546	8270D SIM	III
25-Jul-2013	SL-525-SA8-SB-0.0-0.5	7141119	N	METHOD	1613B	III
25-Jul-2013	SL-525-SA8-SB-0.0-0.5	7141119	N	METHOD	7471B	III
25-Jul-2013	SL-525-SA8-SB-4.0-5.0	7141120	N	3050B	6010C	III
25-Jul-2013	SL-525-SA8-SB-4.0-5.0	7141120	N	3050B	6020A	III
25-Jul-2013	SL-525-SA8-SB-4.0-5.0	7141120	N	3546	8015M	III
25-Jul-2013	SL-525-SA8-SB-4.0-5.0	7141120	N	3546	8082A	III
25-Jul-2013	SL-525-SA8-SB-4.0-5.0	7141120	N	3546	8270D SIM	III
25-Jul-2013	SL-525-SA8-SB-4.0-5.0	7141120	N	5035A	8015M	III
25-Jul-2013	SL-525-SA8-SB-4.0-5.0	7141120	N	METHOD	1613B	III
25-Jul-2013	SL-525-SA8-SB-4.0-5.0	7141120	N	METHOD	7471B	III
25-Jul-2013	EB1-072513	7141111	EB	3005A	6010C	III
25-Jul-2013	EB1-072513	7141111	EB	3510C	8015M	III
25-Jul-2013	EB1-072513	7141111	EB	3510C	8082A	III
25-Jul-2013	EB1-072513	7141111	EB	3510C	8270D	III
25-Jul-2013	EB1-072513	7141111	EB	3510C	8270D SIM	III
25-Jul-2013	EB1-072513	7141111	EB	5030B	8015M	III
25-Jul-2013	EB1-072513	7141111	EB	M3010A	6020A	III
25-Jul-2013	EB1-072513	7141111	EB	METHOD	1613B	III
25-Jul-2013	EB1-072513	7141111	EB	METHOD	7470A	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
25-Jul-2013	EB1-072513	7141111	EB	METHOD	9012B	IV
25-Jul-2013	EB2-072513	7141112	EB	3005A	6010C	III
25-Jul-2013	EB2-072513	7141112	EB	3510C	8081B	III
25-Jul-2013	EB2-072513	7141112	EB	3510C	8082A	III
25-Jul-2013	EB2-072513	7141112	EB	M3010A	6020A	III
25-Jul-2013	EB2-072513	7141112	EB	METHOD	7470A	III
25-Jul-2013	EB2-072513	7141112	EB	METHOD	8151A	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation
N = Normal Sample
FD = Field Duplicate
TB = Trip Blank
FB = Field Blank
MS = Matrix Spike
MSD = Matrix Spike Duplicate

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH075 **Laboratory: LL**

EDD Filename: PH075 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix: AQ**

Sample ID: EB1-072513 *Collected:* 7/25/2013 3:00:00 *Analysis Type:* REA2 *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.0067	J	0.0017	MDL	0.0200	PQL	mg/L	U	B

Sample ID: EB2-072513 *Collected:* 7/25/2013 3:30:00 *Analysis Type:* REA2 *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.0028	J	0.0017	MDL	0.0200	PQL	mg/L	U	B

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-523-SA8-SB-4.0-5.0 *Collected:* 7/25/2013 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
IRON	26100		8.15	MDL	90.0	PQL	mg/Kg	J	A

Sample ID: SL-523-SA8-SB-4.0-5.0 *Collected:* 7/25/2013 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	4.50	U	0.833	MDL	4.50	PQL	mg/Kg	UJ	Q
ARSENIC	3.09	J	0.788	MDL	4.50	PQL	mg/Kg	J	Z
BERYLLIUM	1.03	J	0.0754	MDL	1.13	PQL	mg/Kg	J	Z
BORON	1.92	J	0.945	MDL	11.3	PQL	mg/Kg	J	Z
CADMIUM	0.371	J	0.0855	MDL	1.13	PQL	mg/Kg	J	Z
POTASSIUM	4140		9.39	MDL	113	PQL	mg/Kg	J	Q
TIN	2.99	J	0.248	MDL	11.3	PQL	mg/Kg	U	B
Zirconium	4.53	J	0.945	MDL	5.63	PQL	mg/Kg	J	Z

Sample ID: SL-524-SA8-SB-4.0-5.0 *Collected:* 7/25/2013 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
IRON	32900		8.35	MDL	92.3	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: PH075 **Laboratory: LL**

EDD Filename: PH075 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-524-SA8-SB-4.0-5.0 **Collected: 7/25/2013 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	4.61	U	0.854	MDL	4.61	PQL	mg/Kg	UJ	Q
ARSENIC	4.06	J	0.807	MDL	4.61	PQL	mg/Kg	J	Z
BERYLLIUM	1.10	J	0.0773	MDL	1.15	PQL	mg/Kg	J	Z
BORON	1.25	J	0.969	MDL	11.5	PQL	mg/Kg	J	Z
CADMIUM	0.306	J	0.0877	MDL	1.15	PQL	mg/Kg	J	Z
POTASSIUM	3980		9.62	MDL	115	PQL	mg/Kg	J	Q
TIN	2.65	J	0.254	MDL	11.5	PQL	mg/Kg	U	B
Zirconium	4.36	J	0.969	MDL	5.77	PQL	mg/Kg	J	Z

Sample ID: SL-525-SA8-SB-0.0-0.5 **Collected: 7/25/2013 1:05:00** **Analysis Type: REA** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	25700		7.59	MDL	83.9	PQL	mg/Kg	J	A

Sample ID: SL-525-SA8-SB-0.0-0.5 **Collected: 7/25/2013 1:05:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.19	U	0.776	MDL	4.19	PQL	mg/Kg	UJ	Q
ARSENIC	3.30	J	0.734	MDL	4.19	PQL	mg/Kg	J	Z
BERYLLIUM	0.854	J	0.0703	MDL	1.05	PQL	mg/Kg	J	Z
BORON	4.06	J	0.881	MDL	10.5	PQL	mg/Kg	J	Z
CADMIUM	0.479	J	0.0797	MDL	1.05	PQL	mg/Kg	J	Z
POTASSIUM	6170		8.74	MDL	105	PQL	mg/Kg	J	Q
SODIUM	85.6	J	17.5	MDL	105	PQL	mg/Kg	J	Z
TIN	4.04	J	0.231	MDL	10.5	PQL	mg/Kg	U	B
Zirconium	3.58	J	0.881	MDL	5.24	PQL	mg/Kg	J	Z

Sample ID: SL-525-SA8-SB-4.0-5.0 **Collected: 7/25/2013 1:38:00** **Analysis Type: REA** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	28600		7.99	MDL	88.3	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: PH075 **Laboratory: LL**

EDD Filename: PH075 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-525-SA8-SB-4.0-5.0** *Collected:* **7/25/2013 1:38:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.42	U	0.817	MDL	4.42	PQL	mg/Kg	UJ	Q
ARSENIC	3.39	J	0.773	MDL	4.42	PQL	mg/Kg	J	Z
BERYLLIUM	1.03	J	0.0740	MDL	1.10	PQL	mg/Kg	J	Z
BORON	1.51	J	0.927	MDL	11.0	PQL	mg/Kg	J	Z
CADMIUM	0.368	J	0.0839	MDL	1.10	PQL	mg/Kg	J	Z
POTASSIUM	4010		9.21	MDL	110	PQL	mg/Kg	J	Q
TIN	3.05	J	0.243	MDL	11.0	PQL	mg/Kg	U	B
Zirconium	4.28	J	0.927	MDL	5.52	PQL	mg/Kg	J	Z

Sample ID: **SL-823-SA8-SB-4.0-5.0** *Collected:* **7/25/2013 8:50:00** *Analysis Type:* **REA** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	31600		7.94	MDL	87.7	PQL	mg/Kg	J	A

Sample ID: **SL-823-SA8-SB-4.0-5.0** *Collected:* **7/25/2013 8:50:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.39	U	0.811	MDL	4.39	PQL	mg/Kg	UJ	Q
ARSENIC	3.25	J	0.767	MDL	4.39	PQL	mg/Kg	J	Z
BERYLLIUM	1.06	J	0.0735	MDL	1.10	PQL	mg/Kg	J	Z
BORON	1.62	J	0.921	MDL	11.0	PQL	mg/Kg	J	Z
CADMIUM	0.356	J	0.0833	MDL	1.10	PQL	mg/Kg	J	Z
POTASSIUM	4010		9.14	MDL	110	PQL	mg/Kg	J	Q
TIN	2.84	J	0.241	MDL	11.0	PQL	mg/Kg	U	B
Zirconium	4.85	J	0.921	MDL	5.48	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: **SL-523-SA8-SB-4.0-5.0** *Collected:* **7/25/2013 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	0.192	J	0.113	MDL	0.450	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: PH075 **Laboratory: LL**

EDD Filename: PH075 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-523-SA8-SB-4.0-5.0 *Collected:* 7/25/2013 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	0.0484	J	0.0293	MDL	0.225	PQL	mg/Kg	J	Z

Sample ID: SL-524-SA8-SB-4.0-5.0 *Collected:* 7/25/2013 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	0.208	J	0.115	MDL	0.461	PQL	mg/Kg	J	Z

Sample ID: SL-524-SA8-SB-4.0-5.0 *Collected:* 7/25/2013 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	0.0549	J	0.0300	MDL	0.231	PQL	mg/Kg	J	Z

Sample ID: SL-525-SA8-SB-0.0-0.5 *Collected:* 7/25/2013 1:05:00 *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.325	J	0.105	MDL	0.419	PQL	mg/Kg	J	Z

Sample ID: SL-525-SA8-SB-0.0-0.5 *Collected:* 7/25/2013 1:05:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0386	J	0.0273	MDL	0.210	PQL	mg/Kg	J	Z

Sample ID: SL-525-SA8-SB-4.0-5.0 *Collected:* 7/25/2013 1:38:00 *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.254	J	0.110	MDL	0.442	PQL	mg/Kg	J	Z

Sample ID: SL-525-SA8-SB-4.0-5.0 *Collected:* 7/25/2013 1:38:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0380	J	0.0287	MDL	0.221	PQL	mg/Kg	J	Z

Sample ID: SL-823-SA8-SB-4.0-5.0 *Collected:* 7/25/2013 8:50:00 *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.176	J	0.110	MDL	0.439	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: PH075 **Laboratory: LL**

EDD Filename: PH075 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-823-SA8-SB-4.0-5.0 *Collected:* 7/25/2013 8:50:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0417	J	0.0285	MDL	0.219	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: SL-525-SA8-SB-0.0-0.5 *Collected:* 7/25/2013 1:05:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0133	J	0.0102	MDL	0.0169	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 1613B **Matrix: AQ**

Sample ID: EB1-072513 *Collected:* 7/25/2013 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	0.912	JBQ	0.191	MDL	9.93	PQL	pg/L	U	B
1,2,3,4,6,7,8-HPCDF	0.794	JBQ	0.0833	MDL	9.93	PQL	pg/L	U	B
1,2,3,4,7,8,9-HPCDF	0.466	JB	0.0989	MDL	9.93	PQL	pg/L	U	B
1,2,3,4,7,8-HxCDD	0.949	JBQ	0.188	MDL	9.93	PQL	pg/L	U	B
1,2,3,4,7,8-HXCDF	0.696	JBQ	0.106	MDL	9.93	PQL	pg/L	U	B
1,2,3,6,7,8-HXCDD	0.718	JBQ	0.189	MDL	9.93	PQL	pg/L	U	B
1,2,3,6,7,8-HXCDF	0.867	JBQ	0.121	MDL	9.93	PQL	pg/L	U	B
1,2,3,7,8,9-HXCDD	0.603	JBQ	0.200	MDL	9.93	PQL	pg/L	U	B
1,2,3,7,8,9-HXCDF	0.755	JB	0.118	MDL	9.93	PQL	pg/L	U	B
1,2,3,7,8-PECDD	0.743	JBQ	0.239	MDL	9.93	PQL	pg/L	U	B
1,2,3,7,8-PECDF	0.527	JBQ	0.129	MDL	9.93	PQL	pg/L	U	B
2,3,4,6,7,8-HXCDF	0.921	JBQ	0.104	MDL	9.93	PQL	pg/L	U	B
2,3,4,7,8-PECDF	0.912	JBQ	0.116	MDL	9.93	PQL	pg/L	U	B
OCDD	2.11	JB	0.191	MDL	19.9	PQL	pg/L	U	B
OCDF	1.86	JB	0.229	MDL	19.9	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: PH075 **Laboratory: LL**

EDD Filename: PH075 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-523-SA8-SB-4.0-5.0 **Collected:** 7/25/2013 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	0.193	JBQ	0.0386	MDL	5.69	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0361	JQ	0.00941	MDL	5.69	PQL	ng/Kg	J	Z, FD
1,2,3,4,7,8,9-HPCDF	0.0426	J	0.0188	MDL	5.69	PQL	ng/Kg	J	Z, FD
1,2,3,4,7,8-HxCDD	5.69	U	0.0312	MDL	5.69	PQL	ng/Kg	UJ	FD
1,2,3,4,7,8-HXCDF	0.0376	JQ	0.0180	MDL	5.69	PQL	ng/Kg	J	Z, FD
1,2,3,6,7,8-HXCDD	0.0765	JQ	0.0354	MDL	5.69	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0338	JBQ	0.0176	MDL	5.69	PQL	ng/Kg	UJ	B, FD
1,2,3,7,8,9-HXCDD	0.189	JB	0.0362	MDL	5.69	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.215	J	0.0263	MDL	5.69	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.0434	JBQ	0.0380	MDL	5.69	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0229	JBQ	0.0164	MDL	5.69	PQL	ng/Kg	UJ	B, FD
2,3,4,7,8-PECDF	5.69	U	0.0346	MDL	5.69	PQL	ng/Kg	UJ	FD
OCDD	0.661	JB	0.0320	MDL	11.4	PQL	ng/Kg	U	B
OCDF	0.102	JB	0.0434	MDL	11.4	PQL	ng/Kg	UJ	B, FD

Sample ID: SL-524-SA8-SB-4.0-5.0 **Collected:** 7/25/2013 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-HPCDD	0.135	JBQ	0.0337	MDL	5.65	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0430	JQ	0.0115	MDL	5.65	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0282	JQ	0.0240	MDL	5.65	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.0482	JBQ	0.0302	MDL	5.65	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0921	JQ	0.0150	MDL	5.65	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.112	JQ	0.0331	MDL	5.65	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0533	JB	0.0149	MDL	5.65	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.121	JBQ	0.0333	MDL	5.65	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.116	JQ	0.0234	MDL	5.65	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.158	JBQ	0.0311	MDL	5.65	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0187	JBQ	0.0163	MDL	5.65	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0594	JQ	0.0330	MDL	5.65	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.0425	JQ	0.0399	MDL	1.13	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.0557	JQ	0.0405	MDL	1.13	PQL	ng/Kg	J	Z
OCDD	0.492	JB	0.0429	MDL	11.3	PQL	ng/Kg	U	B
OCDF	0.0691	JB	0.0577	MDL	11.3	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: PH075 **Laboratory: LL**

EDD Filename: PH075 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-525-SA8-SB-0.0-0.5** ***Collected:*** **7/25/2013 1:05:00** ***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-HPCDD	1.33	JB	0.0579	MDL	5.23	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.433	JQ	0.0169	MDL	5.23	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0566	JQ	0.0351	MDL	5.23	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.126	JBQ	0.0306	MDL	5.23	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.242	J	0.0266	MDL	5.23	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.229	J	0.0337	MDL	5.23	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.227	JBQ	0.0259	MDL	5.23	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.312	JBQ	0.0340	MDL	5.23	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.357	JQ	0.0444	MDL	5.23	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.346	J	0.0545	MDL	5.23	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	1.81	JB	0.0399	MDL	5.23	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.132	JB	0.0277	MDL	5.23	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.198	JQ	0.0415	MDL	5.23	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.153	JQ	0.0865	MDL	1.05	PQL	ng/Kg	J	Z
OCDF	0.759	JB	0.0517	MDL	10.5	PQL	ng/Kg	J	Z

Sample ID: **SL-525-SA8-SB-4.0-5.0** ***Collected:*** **7/25/2013 1:38:00** ***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	0.138	JB	0.0364	MDL	5.47	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0576	JQ	0.00856	MDL	5.47	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.109	JQ	0.0186	MDL	5.47	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.104	JB	0.0291	MDL	5.47	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.260	J	0.0163	MDL	5.47	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.107	JQ	0.0315	MDL	5.47	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.185	JBQ	0.0173	MDL	5.47	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.227	JB	0.0318	MDL	5.47	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.261	J	0.0278	MDL	5.47	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.501	JQ	0.0620	MDL	5.47	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.505	JB	0.0288	MDL	5.47	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.197	JBQ	0.0199	MDL	5.47	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.413	J	0.0292	MDL	5.47	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.0966	J	0.0387	MDL	1.09	PQL	ng/Kg	J	Z
OCDD	0.557	JB	0.0398	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: PH075 **Laboratory: LL**

EDD Filename: PH075 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-525-SA8-SB-4.0-5.0 *Collected:* 7/25/2013 1:38:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
OCDF	0.131	JB	0.0597	MDL	10.9	PQL	ng/Kg	U	B

Sample ID: SL-823-SA8-SB-4.0-5.0 *Collected:* 7/25/2013 8:50:00 *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	0.303	JB	0.0429	MDL	5.67	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0755	JQ	0.0147	MDL	5.67	PQL	ng/Kg	J	Z, FD
1,2,3,4,7,8,9-HPCDF	0.126	J	0.0265	MDL	5.67	PQL	ng/Kg	J	Z, FD
1,2,3,4,7,8-HxCDD	0.0831	JBQ	0.0344	MDL	5.67	PQL	ng/Kg	UJ	B, FD
1,2,3,4,7,8-HXCDF	0.114	JQ	0.0202	MDL	5.67	PQL	ng/Kg	J	Z, FD
1,2,3,6,7,8-HXCDD	0.109	JQ	0.0387	MDL	5.67	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0665	JBQ	0.0209	MDL	5.67	PQL	ng/Kg	UJ	B, FD
1,2,3,7,8,9-HXCDD	0.188	JB	0.0385	MDL	5.67	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.139	JQ	0.0323	MDL	5.67	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.0583	JBQ	0.0359	MDL	5.67	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0896	JBQ	0.0217	MDL	5.67	PQL	ng/Kg	J	Z, FD
2,3,4,7,8-PECDF	0.0762	JQ	0.0353	MDL	5.67	PQL	ng/Kg	J	Z, FD
OCDD	0.931	JB	0.0417	MDL	11.3	PQL	ng/Kg	U	B
OCDF	0.270	JB	0.0603	MDL	11.3	PQL	ng/Kg	UJ	B, FD

Method Category: SVOA

Method: 8015M **Matrix: AQ**

Sample ID: EB1-072513 *Collected:* 7/25/2013 3:00:00 *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)	0.095	U	0.047	MDL	0.095	PQL	mg/L	UJ	L

* 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: PH075 **Laboratory: LL**

EDD Filename: PH075 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: SL-525-SA8-SB-0.0-0.5 *Collected:* 7/25/2013 1:05:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C15-C20)	2.5	J	2.1	MDL	5.3	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 8081B **Matrix: AQ**

Sample ID: EB2-072513 *Collected:* 7/25/2013 3:30:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ENDRIN	0.017	U	0.0067	MDL	0.017	PQL	ug/L	UJ	E
ENDRIN ALDEHYDE	0.083	U	0.017	MDL	0.083	PQL	ug/L	UJ	E
ENDRIN KETONE	0.017	U	0.0041	MDL	0.017	PQL	ug/L	UJ	E
gamma-BHC (Lindane)	0.0083	U	0.0017	MDL	0.0083	PQL	ug/L	UJ	L

Method Category: SVOA

Method: 8270D **Matrix: SO**

Sample ID: SL-523-SA8-SB-4.0-5.0 *Collected:* 7/25/2013 8:20:00 *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	1900	U	800	MDL	1900	PQL	ug/Kg	R	Q

Method Category: SVOA

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

Sample ID: EB1-072513 *Collected:* 7/25/2013 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	0.24	J	0.052	MDL	1.0	PQL	ug/L	J	Z
Di-n-butylphthalate	0.14	J	0.052	MDL	1.0	PQL	ug/L	J	Z
NAPHTHALENE	0.037	J	0.031	MDL	0.052	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: PH075 **Laboratory: LL**

EDD Filename: PH075 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

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

Sample ID: **SL-525-SA8-SB-0.0-0.5** ***Collected:*** **7/25/2013 1:05:00** ***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(B)FLUORANTHENE	1.5	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	10	J	6.4	MDL	19	PQL	ug/Kg	J	Z
FLUORANTHENE	1.2	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z
NAPHTHALENE	0.93	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z
PHENANTHRENE	0.96	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: **SL-525-SA8-SB-4.0-5.0** ***Collected:*** **7/25/2013 1:38:00** ***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	0.67	J	0.38	MDL	1.9	PQL	ug/Kg	J	Z
BENZO(E)PYRENE	6.5	J	3.8	MDL	19	PQL	ug/Kg	J	Z
DIBENZO(A,H)ANTHRACENE	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

Data Qualifier Summary

Lab Reporting Batch ID: PH075 **Laboratory: LL**

EDD Filename: PH075 **eQAPP Name: CDM_SSFL_130808_Lan**

Reason Code Legend

Reason Code	*Description*
*#	Professional Judgment
A	ICP Serial Dilution
B	Calibration Blank Contamination
B	Method Blank Contamination
E	Laboratory Control Precision
E	Matrix Spike Precision
FD	Field Duplicate Precision
L	Laboratory Control Precision
L	Laboratory Control Spike Lower Estimation
L	Laboratory Control Spike Upper Estimation
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

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control
Outlier Reports

PH075

Method Blank Outlier Report

Lab Reporting Batch ID: PH075 **Laboratory: LL**

EDD Filename: PH075 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B
Matrix: AQ

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2120B371613	8/5/2013 4:13:00 PM	1,2,3,4,6,7,8-HPCDD	1.39 pg/L	EB1-072513
		1,2,3,4,6,7,8-HPCDF	0.610 pg/L	
		1,2,3,4,7,8,9-HPCDF	0.809 pg/L	
		1,2,3,4,7,8-HxCDD	0.780 pg/L	
		1,2,3,4,7,8-HXCDF	0.898 pg/L	
		1,2,3,6,7,8-HXCDD	0.681 pg/L	
		1,2,3,6,7,8-HXCDF	0.859 pg/L	
		1,2,3,7,8,9-HXCDD	0.679 pg/L	
		1,2,3,7,8,9-HXCDF	0.974 pg/L	
		1,2,3,7,8-PECDD	1.39 pg/L	
		1,2,3,7,8-PECDF	0.757 pg/L	
		2,3,4,6,7,8-HXCDF	0.602 pg/L	
		2,3,4,7,8-PECDF	1.08 pg/L	
		OCDD	1.99 pg/L	
		OCDF	1.69 pg/L	

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
EB1-072513(RES)	1,2,3,4,6,7,8-HPCDD	0.912 pg/L	0.912U pg/L
EB1-072513(RES)	1,2,3,4,6,7,8-HPCDF	0.794 pg/L	0.794U pg/L
EB1-072513(RES)	1,2,3,4,7,8,9-HPCDF	0.466 pg/L	0.466U pg/L
EB1-072513(RES)	1,2,3,4,7,8-HxCDD	0.949 pg/L	0.949U pg/L
EB1-072513(RES)	1,2,3,4,7,8-HXCDF	0.696 pg/L	0.696U pg/L
EB1-072513(RES)	1,2,3,6,7,8-HXCDD	0.718 pg/L	0.718U pg/L
EB1-072513(RES)	1,2,3,6,7,8-HXCDF	0.867 pg/L	0.867U pg/L
EB1-072513(RES)	1,2,3,7,8,9-HXCDD	0.603 pg/L	0.603U pg/L
EB1-072513(RES)	1,2,3,7,8,9-HXCDF	0.755 pg/L	0.755U pg/L
EB1-072513(RES)	1,2,3,7,8-PECDD	0.743 pg/L	0.743U pg/L
EB1-072513(RES)	1,2,3,7,8-PECDF	0.527 pg/L	0.527U pg/L
EB1-072513(RES)	2,3,4,6,7,8-HXCDF	0.921 pg/L	0.921U pg/L
EB1-072513(RES)	2,3,4,7,8-PECDF	0.912 pg/L	0.912U pg/L
EB1-072513(RES)	OCDD	2.11 pg/L	2.11U pg/L
EB1-072513(RES)	OCDF	1.86 pg/L	1.86U pg/L

Method: 1613B
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2120B370846	8/3/2013 8:46:00 AM	1,2,3,4,6,7,8-HPCDD	0.0840 ng/Kg	SL-523-SA8-SB-4.0-5.0
		1,2,3,4,7,8-HxCDD	0.0314 ng/Kg	SL-524-SA8-SB-4.0-5.0
		1,2,3,6,7,8-HXCDF	0.0274 ng/Kg	SL-525-SA8-SB-0.0-0.5
		1,2,3,7,8,9-HXCDD	0.0370 ng/Kg	SL-525-SA8-SB-4.0-5.0
		1,2,3,7,8-PECDF	0.0452 ng/Kg	SL-823-SA8-SB-4.0-5.0
		2,3,4,6,7,8-HXCDF	0.0162 ng/Kg	
		OCDD	0.248 ng/Kg	
		OCDF	0.0744 ng/Kg	

Method Blank Outlier Report

Lab Reporting Batch ID: PH075 **Laboratory: LL**

EDD Filename: PH075 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples

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-523-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDD	0.193 ng/Kg	0.193U ng/Kg
SL-523-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.0338 ng/Kg	0.0338U ng/Kg
SL-523-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.0434 ng/Kg	0.0434U ng/Kg
SL-523-SA8-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0229 ng/Kg	0.0229U ng/Kg
SL-523-SA8-SB-4.0-5.0(RES)	OCDD	0.661 ng/Kg	0.661U ng/Kg
SL-523-SA8-SB-4.0-5.0(RES)	OCDF	0.102 ng/Kg	0.102U ng/Kg
SL-524-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDD	0.135 ng/Kg	0.135U ng/Kg
SL-524-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HxCDD	0.0482 ng/Kg	0.0482U ng/Kg
SL-524-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.0533 ng/Kg	0.0533U ng/Kg
SL-524-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDD	0.121 ng/Kg	0.121U ng/Kg
SL-524-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.158 ng/Kg	0.158U ng/Kg
SL-524-SA8-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0187 ng/Kg	0.0187U ng/Kg
SL-524-SA8-SB-4.0-5.0(RES)	OCDD	0.492 ng/Kg	0.492U ng/Kg
SL-524-SA8-SB-4.0-5.0(RES)	OCDF	0.0691 ng/Kg	0.0691U ng/Kg
SL-525-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.126 ng/Kg	0.126U ng/Kg
SL-525-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDD	0.138 ng/Kg	0.138U ng/Kg
SL-525-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HxCDD	0.104 ng/Kg	0.104U ng/Kg
SL-525-SA8-SB-4.0-5.0(RES)	OCDD	0.557 ng/Kg	0.557U ng/Kg
SL-525-SA8-SB-4.0-5.0(RES)	OCDF	0.131 ng/Kg	0.131U ng/Kg
SL-823-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDD	0.303 ng/Kg	0.303U ng/Kg
SL-823-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HxCDD	0.0831 ng/Kg	0.0831U ng/Kg
SL-823-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.0665 ng/Kg	0.0665U ng/Kg
SL-823-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.0583 ng/Kg	0.0583U ng/Kg
SL-823-SA8-SB-4.0-5.0(RES)	OCDD	0.931 ng/Kg	0.931U ng/Kg
SL-823-SA8-SB-4.0-5.0(RES)	OCDF	0.270 ng/Kg	0.270U ng/Kg

Method: 6010C
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P21037AB221259	8/3/2013 12:59:00 PM	CALCIUM TIN ZINC	9.96 mg/Kg 1.28 mg/Kg 0.614 mg/Kg	SL-523-SA8-SB-4.0-5.0 SL-524-SA8-SB-4.0-5.0 SL-525-SA8-SB-0.0-0.5 SL-525-SA8-SB-4.0-5.0 SL-823-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-523-SA8-SB-4.0-5.0(RES)	TIN	2.99 mg/Kg	2.99U mg/Kg
SL-524-SA8-SB-4.0-5.0(RES)	TIN	2.65 mg/Kg	2.65U mg/Kg

Method Blank Outlier Report

Lab Reporting Batch ID: PH075 **Laboratory: LL**

EDD Filename: PH075 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: **6010C**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples

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-525-SA8-SB-0.0-0.5(RES)	TIN	4.04 mg/Kg	4.04U mg/Kg
SL-525-SA8-SB-4.0-5.0(RES)	TIN	3.05 mg/Kg	3.05U mg/Kg
SL-823-SA8-SB-4.0-5.0(RES)	TIN	2.84 mg/Kg	2.84U mg/Kg

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
PLKWC21B260543	8/3/2013 5:43:00 AM	BIS(2-ETHYLHEXYL)PHTHALATE	1.3 ug/L	EB1-072513

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH075 **Laboratory: LL**

EDD Filename: PH075 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 8270D
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-523-SA8-SB-4.0-5.0MSD (SL-523-SA8-SB-4.0-5.0)	4-CHLOROANILINE	-	-	13.00-107.00	35 (30.00)	4-CHLOROANILINE	J (all detects)
SL-523-SA8-SB-4.0-5.0MS **SL-523-SA8-SB-4.0-5.0MSD** (SL-523-SA8-SB-4.0-5.0)	BENZIDINE	0	0	35.00-141.00	-	BENZIDINE	J(all detects) R(all non-detects)

Method: 6010C
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-523-SA8-SB-4.0-5.0MS	ALUMINUM	4133	3286	75.00-125.00	-	ALUMINUM	
(TOT)	CALCIUM	179	-	75.00-125.00	-	CALCIUM	J(all detects)
SL-523-SA8-SB-4.0-5.0MSD	IRON	6514	7090	75.00-125.00	-	IRON	
(TOT)	MAGNESIUM	428	336	75.00-125.00	-	MAGNESIUM	
(SL-523-SA8-SB-4.0-5.0	POTASSIUM	169	141	75.00-125.00	-	POTASSIUM	Al, Ca, Fe, Mg, Ti
SL -524-SA8-SB-4.0-5.0	TITANIUM	568	424	75.00-125.00	-	TITANIUM	No Qual, >4x
SL -525-SA8-SB-0.0-0.5							
SL -525-SA8-SB-4.0-5.0							
SL -823-SA8-SB-4.0-5.0)							
SL-523-SA8-SB-4.0-5.0MS	ANTIMONY	40	40	75.00-125.00	-	ANTIMONY	
(TOT)							
SL-523-SA8-SB-4.0-5.0MSD							
(TOT)							J(all detects)
(SL-523-SA8-SB-4.0-5.0							UJ(all non-detects)
SL -524-SA8-SB-4.0-5.0							
SL -525-SA8-SB-0.0-0.5							
SL -525-SA8-SB-4.0-5.0							
SL -823-SA8-SB-4.0-5.0)							

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH075 **Laboratory: LL**

EDD Filename: PH075 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 8015M
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
P32093AQ321907A (EB1-072513)	EFH (C8-C11)	66	-	70.00-130.00	-	EFH (C8-C11)	J (all detects) UJ (all non-detects)

Method: 8081B
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
P32124AQ241511A P32124AY241523A (EB2-072513)	ENDRIN ENDRIN ALDEHYDE ENDRIN KETONE gamma-BHC (Lindane)	- - - 66	- - - -	43.00-139.00 55.00-123.00 51.00-138.00 68.00-128.00	37 (30.00) 23 (20.00) 36 (30.00) -	ENDRIN ENDRIN ALDEHYDE ENDRIN KETONE gamma-BHC (Lindane)	J(all detects) UJ(all non-detects)

Method: 8270D SIM
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
P2WCLCSQ260613 P2WCLCSY260642 (EB1-072513)	BIS(2-ETHYLHEXYL)PHTHALAT Butylbenzylphthalate Di-n-octylphthalate	167 160 158	165 163 155	70.00-143.00 40.00-138.00 57.00-145.00	- - -	BIS(2-ETHYLHEXYL)PHTHALA Butylbenzylphthalate Di-n-octylphthalate	J(all detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: PH075 **Laboratory: LL**

EDD Filename: PH075 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 160.3M
Matrix: SO

Analyte	Concentration (%) SL-523-SA8-SB-4.0-5.0	Concentration (%) SL-823-SA8-SB-4.0-5.0	Sample RPD	eQAPP RPD	Flag
MOISTURE	12.9	12.3	5		No Qualifiers Applied

Method: 1613B
Matrix: SO

Analyte	Concentration (ng/Kg) SL-523-SA8-SB-4.0-5.0	Concentration (ng/Kg) SL-823-SA8-SB-4.0-5.0	Sample RPD	eQAPP RPD	Flag
1,2,3,4,6,7,8-HPCDD	0.193	0.303	44	50.00	
1,2,3,6,7,8-HXCDD	0.0765	0.109	35	50.00	
1,2,3,7,8,9-HXCDD	0.189	0.188	1	50.00	
1,2,3,7,8,9-HXCDF	0.215	0.139	43	50.00	No Qualifiers Applied
1,2,3,7,8-PECDF	0.0434	0.0583	29	50.00	
OCDD	0.661	0.931	34	50.00	
1,2,3,4,6,7,8-HPCDF	0.0361	0.0755	71	50.00	
1,2,3,4,7,8,9-HPCDF	0.0426	0.126	99	50.00	
1,2,3,4,7,8-HxCDD	5.69 U	0.0831	200	50.00	
1,2,3,4,7,8-HXCDF	0.0376	0.114	101	50.00	J(all detects)
1,2,3,6,7,8-HXCDF	0.0338	0.0665	65	50.00	UJ(all non-detects)
2,3,4,6,7,8-HXCDF	0.0229	0.0896	119	50.00	
2,3,4,7,8-PECDF	5.69 U	0.0762	200	50.00	
OCDF	0.102	0.270	90	50.00	

Method: 6010C
Matrix: SO

Analyte	Concentration (mg/Kg) SL-523-SA8-SB-4.0-5.0 (TOT)	Concentration (mg/Kg) SL-823-SA8-SB-4.0-5.0 (TOT)	Sample RPD	eQAPP RPD	Flag
ALUMINUM	28600	31300	9	50.00	
ARSENIC	3.09	3.25	5	50.00	
BARIUM	140	148	6	50.00	
BERYLLIUM	1.03	1.06	3	50.00	
BORON	1.92	1.62	17	50.00	
CADMIUM	0.371	0.356	4	50.00	
CALCIUM	7340	7400	1	50.00	
CHROMIUM	36.8	39.4	7	50.00	
COBALT	10.5	10.3	2	50.00	
COPPER	21.4	22.4	5	50.00	
IRON	26100	31600	19	50.00	
LEAD	11.1	10.2	8	50.00	
LITHIUM	23.7	26.3	10	50.00	No Qualifiers Applied
MAGNESIUM	7210	7680	6	50.00	
MANGANESE	479	456	5	50.00	
NICKEL	20.7	20.9	1	50.00	
PHOSPHORUS	295	300	2	50.00	
POTASSIUM	4140	4010	3	50.00	
SODIUM	159	179	12	50.00	
TIN	2.99	2.84	5	50.00	
TITANIUM	996	1210	19	50.00	
VANADIUM	62.2	67.8	9	50.00	
ZINC	70.6	71.7	2	50.00	
Zirconium	4.53	4.85	7	50.00	

Field Duplicate RPD Report

Lab Reporting Batch ID: PH075 **Laboratory: LL**

EDD Filename: PH075 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 6020A
Matrix: SO

Analyte	*Concentration (mg/Kg)*		*Sample RPD*	*eQAPP RPD*	*Flag*
	SL-523-SA8-SB-4.0-5.0 (TOT)	SL-823-SA8-SB-4.0-5.0 (TOT)			
SELENIUM	0.192	0.176	9	50.00	No Qualifiers Applied
SILVER	0.0484	0.0417	15	50.00	
STRONTIUM	34.8	35.8	3	50.00	
THALLIUM	0.339	0.355	5	50.00	

Method: 9045M
Matrix: SO

Analyte	*Concentration (pH unit)*		*Sample RPD*	*eQAPP RPD*	*Flag*
	SL-523-SA8-SB-4.0-5.0	SL-823-SA8-SB-4.0-5.0			
PH	8.01	8.10	1	50.00	No Qualifiers Applied

Reporting Limit Outliers

Lab Reporting Batch ID: PH075 **Laboratory: LL**

EDD Filename: PH075 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB1-072513	1,2,3,4,6,7,8-HPCDD	JBQ	0.912	9.93	PQL	pg/L	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.794	9.93	PQL	pg/L	
	1,2,3,4,7,8,9-HPCDF	JB	0.466	9.93	PQL	pg/L	
	1,2,3,4,7,8-HxCDD	JBQ	0.949	9.93	PQL	pg/L	
	1,2,3,4,7,8-HXCDF	JBQ	0.696	9.93	PQL	pg/L	
	1,2,3,6,7,8-HXCDD	JBQ	0.718	9.93	PQL	pg/L	
	1,2,3,6,7,8-HXCDF	JBQ	0.867	9.93	PQL	pg/L	
	1,2,3,7,8,9-HXCDD	JBQ	0.603	9.93	PQL	pg/L	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	0.755	9.93	PQL	pg/L	
	1,2,3,7,8-PECDD	JBQ	0.743	9.93	PQL	pg/L	
	1,2,3,7,8-PECDF	JBQ	0.527	9.93	PQL	pg/L	
	2,3,4,6,7,8-HXCDF	JBQ	0.921	9.93	PQL	pg/L	
	2,3,4,7,8-PECDF	JBQ	0.912	9.93	PQL	pg/L	
	OCDD	JB	2.11	19.9	PQL	pg/L	
	OCDF	JB	1.86	19.9	PQL	pg/L	

Method: 6010C
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB1-072513	MOLYBDENUM	J	0.0067	0.0200	PQL	mg/L	J (all detects)
EB2-072513	MOLYBDENUM	J	0.0028	0.0200	PQL	mg/L	J (all detects)

Method: 8270D SIM
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB1-072513	Diethylphthalate	J	0.24	1.0	PQL	ug/L	
	Di-n-butylphthalate	J	0.14	1.0	PQL	ug/L	J (all detects)
	NAPHTHALENE	J	0.037	0.052	PQL	ug/L	

Method: 1613B
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-523-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.193	5.69	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JQ	0.0361	5.69	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	J	0.0426	5.69	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JQ	0.0376	5.69	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JQ	0.0765	5.69	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0338	5.69	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.189	5.69	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	J	0.215	5.69	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.0434	5.69	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0229	5.69	PQL	ng/Kg	
	OCDD	JB	0.661	11.4	PQL	ng/Kg	
	OCDF	JB	0.102	11.4	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH075 **Laboratory: LL**

EDD Filename: PH075 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-524-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.135	5.65	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JQ	0.0430	5.65	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JQ	0.0282	5.65	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0482	5.65	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JQ	0.0921	5.65	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JQ	0.112	5.65	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.0533	5.65	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.121	5.65	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JQ	0.116	5.65	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.158	5.65	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0187	5.65	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.0594	5.65	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.0425	1.13	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0557	1.13	PQL	ng/Kg	
	OCDD	JB	0.492	11.3	PQL	ng/Kg	
	OCDF	JB	0.0691	11.3	PQL	ng/Kg	
SL-525-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	1.33	5.23	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JQ	0.433	5.23	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JQ	0.0566	5.23	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.126	5.23	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	J	0.242	5.23	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	J	0.229	5.23	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.227	5.23	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.312	5.23	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JQ	0.357	5.23	PQL	ng/Kg	
	1,2,3,7,8-PECDD	J	0.346	5.23	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	1.81	5.23	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.132	5.23	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.198	5.23	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.153	1.05	PQL	ng/Kg	
	OCDF	JB	0.759	10.5	PQL	ng/Kg	
SL-525-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JB	0.138	5.47	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JQ	0.0576	5.47	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JQ	0.109	5.47	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.104	5.47	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	J	0.260	5.47	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JQ	0.107	5.47	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.185	5.47	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.227	5.47	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	J	0.261	5.47	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.501	5.47	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.505	5.47	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.197	5.47	PQL	ng/Kg	
	2,3,4,7,8-PECDF	J	0.413	5.47	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.0966	1.09	PQL	ng/Kg	
	OCDD	JB	0.557	10.9	PQL	ng/Kg	
	OCDF	JB	0.131	10.9	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH075 **Laboratory: LL**

EDD Filename: PH075 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-823-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JB	0.303	5.67	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JQ	0.0755	5.67	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	J	0.126	5.67	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0831	5.67	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JQ	0.114	5.67	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JQ	0.109	5.67	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0665	5.67	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.188	5.67	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JQ	0.139	5.67	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.0583	5.67	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0896	5.67	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.0762	5.67	PQL	ng/Kg	
	OCDD	JB	0.931	11.3	PQL	ng/Kg	
	OCDF	JB	0.270	11.3	PQL	ng/Kg	

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-523-SA8-SB-4.0-5.0	ARSENIC	J	3.09	4.50	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	1.03	1.13	PQL	mg/Kg	
	BORON	J	1.92	11.3	PQL	mg/Kg	
	CADMIUM	J	0.371	1.13	PQL	mg/Kg	
	TIN	J	2.99	11.3	PQL	mg/Kg	
	Zirconium	J	4.53	5.63	PQL	mg/Kg	
SL-524-SA8-SB-4.0-5.0	ARSENIC	J	4.06	4.61	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	1.10	1.15	PQL	mg/Kg	
	BORON	J	1.25	11.5	PQL	mg/Kg	
	CADMIUM	J	0.306	1.15	PQL	mg/Kg	
	TIN	J	2.65	11.5	PQL	mg/Kg	
	Zirconium	J	4.36	5.77	PQL	mg/Kg	
SL-525-SA8-SB-0.0-0.5	ARSENIC	J	3.30	4.19	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.854	1.05	PQL	mg/Kg	
	BORON	J	4.06	10.5	PQL	mg/Kg	
	CADMIUM	J	0.479	1.05	PQL	mg/Kg	
	SODIUM	J	85.6	105	PQL	mg/Kg	
	TIN	J	4.04	10.5	PQL	mg/Kg	
	Zirconium	J	3.58	5.24	PQL	mg/Kg	
SL-525-SA8-SB-4.0-5.0	ARSENIC	J	3.39	4.42	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	1.03	1.10	PQL	mg/Kg	
	BORON	J	1.51	11.0	PQL	mg/Kg	
	CADMIUM	J	0.368	1.10	PQL	mg/Kg	
	TIN	J	3.05	11.0	PQL	mg/Kg	
	Zirconium	J	4.28	5.52	PQL	mg/Kg	
SL-823-SA8-SB-4.0-5.0	ARSENIC	J	3.25	4.39	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	1.06	1.10	PQL	mg/Kg	
	BORON	J	1.62	11.0	PQL	mg/Kg	
	CADMIUM	J	0.356	1.10	PQL	mg/Kg	
	TIN	J	2.84	11.0	PQL	mg/Kg	
	Zirconium	J	4.85	5.48	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH075 **Laboratory: LL**

EDD Filename: PH075 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 6020A
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-523-SA8-SB-4.0-5.0	SELENIUM	J	0.192	0.450	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0484	0.225	PQL	mg/Kg	
SL-524-SA8-SB-4.0-5.0	SELENIUM	J	0.208	0.461	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0549	0.231	PQL	mg/Kg	
SL-525-SA8-SB-0.0-0.5	SELENIUM	J	0.325	0.419	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0386	0.210	PQL	mg/Kg	
SL-525-SA8-SB-4.0-5.0	SELENIUM	J	0.254	0.442	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0380	0.221	PQL	mg/Kg	
SL-823-SA8-SB-4.0-5.0	SELENIUM	J	0.176	0.439	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0417	0.219	PQL	mg/Kg	

Method: 7471B
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-525-SA8-SB-0.0-0.5	MERCURY	J	0.0133	0.0169	PQL	mg/Kg	J (all detects)

Method: 8015M
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-525-SA8-SB-0.0-0.5	EFH (C15-C20)	J	2.5	5.3	PQL	mg/Kg	J (all detects)

Method: 8270D SIM
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-525-SA8-SB-0.0-0.5	BENZO(B)FLUORANTHENE	J	1.5	1.8	PQL	ug/Kg	J (all detects)
	BIS(2-ETHYLHEXYL)PHTHALATE	J	10	19	PQL	ug/Kg	
	FLUORANTHENE	J	1.2	1.8	PQL	ug/Kg	
	NAPHTHALENE	J	0.93	1.8	PQL	ug/Kg	
	PHENANTHRENE	J	0.96	1.8	PQL	ug/Kg	
SL-525-SA8-SB-4.0-5.0	ANTHRACENE	J	0.67	1.9	PQL	ug/Kg	J (all detects)
	BENZO(E)PYRENE	J	6.5	19	PQL	ug/Kg	
	DIBENZO(A,H)ANTHRACENE	J	1.6	1.9	PQL	ug/Kg	

LDC #: 30330B4
SDG #: PH075
Laboratory: Eurofins Lancaster Laboratories

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 9/4/13
Page: 1 of 1
Reviewer: CR
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: 7/25/13
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	A ~~SW~~	DUP
VIII.	Laboratory Control Samples (LCS)	~~A~~	LCS/D
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	—	(3,4)
XV	Field Blanks	SW	EB=1,2 FB= FB-041113

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	EB1-072513 W	11		21		31	
2	EB2-072513 ↓	12		22		32	
3	SL-523-SA8-SB-4.0-5.0	13		23		33	
4	SL-823-SA8-SB-4.0-5.0	14		24		34	
5	SL-524-SA8-SB-4.0-5.0	15		25		35	
6	SL-525-SA8-SB-0.0-0.5	16		26		36	
7	SL-525-SA8-SB-4.0-5.0	17		27		37	
8	SL-523-SA8-SB-4.0-5.0MS	18		28		38	
9	SL-523-SA8-SB-4.0-5.0MSD	19		29		39	
10	SL-523-SA8-SB-4.0-5.0DUP	20		30		40	

Notes: _____

LDC #: 30330B4

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: CA
2nd Reviewer: MC

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000) Soil preparation factor applied: 100x Reason: B
Sample Concentration units, unless otherwise noted: ug/L Associated Samples: All Water

					Sample Identification										
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Action Level	1	2									
Mo			2.6	13	6.7	2.8									

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.

LDC #: 30330B4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: CR
2nd Reviewer: LC

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	No Qualifiers									
Cu	0.0036	1.8										
Mo	0.0036	1.8										

Sampling date: 7/25/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All Soil

Analyte	Blank ID	Sample Identification										
	EB1-072513 (SDG: PH075)	Action Limit	No Qualifiers									
Mo	0.0067	3.35										

Sampling date: 7/25/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: None

Analyte	Blank ID	Sample Identification										
	EB2-072513 (SDG: PH075)	Action Limit	No Qualifiers									
Mo	0.0028	1.4										

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.: PH075
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7141113BKG Matrix Spike Lab Sample ID: 7141114MS Matrix Spike Duplicate Lab Sample ID: 7141115MSD
Batch Id(s): P21037A, P21038A

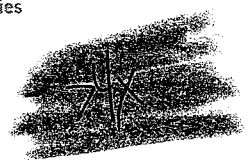
Analyte	Mass	BKG Sample Result	C	MS Sample Result	C	MSD Sample Result	C	MS Spike Added	MSD Spike Added	Units	MS %R	Q	MSD %R	Q	RPD	Q	Control Limit %R	Control Limit RPD	M
Aluminum		24871.6431		32976.4559		31251.2981		196.0784	194.1748	MG/KG	4133		3286		5			20	P
Antimony		0.7255	U	19.5382		19.2136		49.0196	48.5437	MG/KG	40	N	40	N	2		75 - 125	20	P
Arsenic		2.6941	B	17.3922		17.0631		14.7059	14.5631	MG/KG	100		99		2		75 - 125	20	P
Barium		122.0049		320.1980		314.6029		196.0784	194.1748	MG/KG	101		99		2		75 - 125	20	P
Beryllium		0.8951	B	5.9216		5.8466		4.9020	4.8544	MG/KG	103		102		1		75 - 125	20	P
Boron		1.6735	B	190.6598		186.5874		196.0784	194.1748	MG/KG	96		95		2		75 - 125	20	P
Cadmium		0.3235	B	4.9480		4.9233		4.9020	4.8544	MG/KG	94		95		1		75 - 125	20	P
Calcium		6394.6765		7098.1127		6811.2796		392.1569	388.3495	MG/KG	179	*	107		4			20	P
Chromium		32.0824		56.4500		54.5388		19.6078	19.4175	MG/KG	124		116		3		75 - 125	20	P
Cobalt		9.1206		54.9049		54.2680		49.0196	48.5437	MG/KG	93		93		1		75 - 125	20	P
Copper		18.6245		46.3931		44.7165		24.5098	24.2718	MG/KG	113		107		4		75 - 125	20	P
Iron		22689.9882		29076.6020		29573.5612		98.0392	97.0874	MG/KG	6514	*	7090		2			20	P
Lead		9.6824		22.9049		22.3718		14.7059	14.5631	MG/KG	90		87		2		75 - 125	20	P
Lithium		20.6608		121.8275		120.1340		98.0392	97.0874	MG/KG	103		102		1		75 - 125	20	P
Magnesium		6283.5765		7122.7225		6935.2485		196.0784	194.1748	MG/KG	428	*	336		3			20	P
Manganese		417.6275		472.1618		475.7621		49.0196	48.5437	MG/KG	111		120		1			20	P
Mercury		0.0099	U	0.1859		0.1783		0.1645	0.1619	MG/KG	113		110		4		65 - 135	20	CV
Molybdenum		0.1667	U	178.6167		175.1019		196.0784	194.1748	MG/KG	91		90		2		75 - 125	20	P
Nickel		18.0618		64.8176		64.0767		49.0196	48.5437	MG/KG	95		95		1		75 - 125	20	P
Phosphorus		256.7833		364.4882		358.1068		98.0392	97.0874	MG/KG	110		104		2		75 - 125	20	P
Potassium		3602.4108		5258.5745		4967.9427		980.3922	970.8738	MG/KG	169	N	141	N	6		75 - 125	20	P
Selenium	78	0.1671	B	1.9584		1.9392		1.9608	1.9417	MG/KG	91		91		1		75 - 125	20	MS
Silver	107	0.0422	B	9.7031		9.2977		9.8039	9.7087	MG/KG	99		95		4		75 - 125	20	MS
Sodium		138.7000		1089.6422		1074.8087		980.3922	970.8738	MG/KG	97		96		1		75 - 125	20	P
Strontium	88	30.3492		38.8902		37.3602		7.8431	7.7670	MG/KG	109		90		4		75 - 125	20	MS
Thallium	203	0.2957		0.7078		0.7087		0.3922	0.3883	MG/KG	105		106		0		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.: PH075
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7141113BKG Matrix Spike Lab Sample ID: 7141114MS Matrix Spike Duplicate Lab Sample ID: 7141115MSD
Batch Id(s): P21037A, P21038A

Analyte	Mass	BKG Sample Result	C	MS Sample Result	C	MSD Sample Result	C	MS Spike Added	MSD Spike Added	Units	MS %R	Q	MSD %R	Q	RPD	Q	Control Limit %R	Control Limit RPD	M
Tin		2.6078	B	343.9392		339.2932		392.1569	388.3495	MG/KG	87		87		1		75 - 125	20	P
Titanium		867.2137		1423.8147		1278.7777		98.0392	97.0874	MG/KG	568	*	424		11			20	P
Vanadium		54.1578		114.8980		111.2155		49.0196	48.5437	MG/KG	124		118		3		75 - 125	20	P
Zinc		61.5206		111.5931		109.3689		49.0196	48.5437	MG/KG	102		99		2		75 - 125	20	P
Zirconium		3.9480	B	96.7941		95.3709		98.0392	97.0874	MG/KG	95		94		1		75 - 125	20	P

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

METHODS:
P = ICP Atomic Emission Spectrometer
CV = Cold Vapor
MS = ICP Mass Spectrometry
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 9
SERIAL DILUTIONS
SDG No.: PH075
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7141113BKG Serial Dilution Lab Sample ID: 7141113L
Batch ID(s): P21037A
Concentration Units: UG/L

Analyte	Mass	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Diff.	Q	M
Aluminum		253690.7600		260339.1500		3		P
Antimony		7.4000	U	37.0000	U			P
Arsenic		27.4800	B	35.0000	U	100		P
Barium		1244.4500		1293.9000		4		P
Beryllium		9.1300	B	9.0500	B	1		P
Boron		17.0700	B	42.4000	B	148		P
Cadmium		3.3000	B	6.3000	B	91		P
Calcium		65225.7000		68044.3000		4		P
Chromium		327.2400		330.6000		1		P
Cobalt		93.0300		97.5000		5		P
Copper		189.9700		185.5500		2		P
Iron		115718.9400		142060.9500		24	E	P
Lead		98.7600		92.8500	B	6		P
Lithium		210.7400		205.0000		3		P
Magnesium		64092.4800		65964.9500		3		P
Manganese		4259.8000		4447.7000		4		P
Molybdenum		1.7000	U	11.8500	B	100		P
Nickel		184.2300		192.7500		5		P
Phosphorus		2619.1900		2599.8000		1		P
Potassium		36744.5900		37588.3500		2		P
Selenium	78	0.8520	B	2.5000	U	100		MS
Silver	107	0.2150	B	0.6500	U	100		MS
Sodium		1414.7400		1393.0000	B	2		P
Strontium	88	154.7810		158.0200		2		MS
Thallium	203	1.5080		1.5750	B	4		MS
Tin		26.6000	B	11.0000	U	100		P
Titanium		8845.5800		7993.2000		10		P
Vanadium		552.4100		549.7500		0		P
Zinc		627.5100		631.6000		1		P
Zirconium		40.2700	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.

[redacted]

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

Enclosure II

Level IV Data Validation Reports

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Santa Susana Field Laboratory

Collection Date: July 25, 2013

LDC Report Date: September 24, 2013

Matrix: Soil/Water

Parameters: Cyanide

Validation Level: Level IV

Laboratory: Eurofins Lancaster Laboratories

Sample Delivery Group (SDG): PH075

Sample Identification

EB1-072513
SL-523-SA8-SB-4.0-5.0
SL-823-SA8-SB-4.0-5.0
SL-524-SA8-SB-4.0-5.0
SL-523-SA8-SB-4.0-5.0MS
SL-523-SA8-SB-4.0-5.0MSD
SL-523-SA8-SB-4.0-5.0DUP

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 9012B for Cyanide.

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 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

All criteria for the initial calibration were met.

III. Calibration Verification

Continuing calibration frequency and analysis criteria were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No cyanide was found in the initial, continuing and preparation blanks.

Sample EB1-072513 was identified as an equipment blank. No cyanide was found.

Sample FB-041113 (from SDG PH029) was identified as a field blank. No cyanide was found.

V. 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.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results 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. Sample Result Verification

All sample result verifications were acceptable.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

Samples SL-523-SA8-SB-4.0-5.0 and SL-823-SA8-SB-4.0-5.0 were identified as field duplicates. No cyanide was detected in any of the samples.

Santa Susana Field Laboratory
Cyanide - Data Qualification Summary - SDG PH075

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Cyanide – Laboratory Blank Data Qualification Summary - SDG PH075

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Cyanide - Field Blank Data Qualification Summary - SDG PH075

No Sample Data Qualified in this SDG

LDC #: 30330B6 **VALIDATION COMPLETENESS WORKSHEET** Date: 9/4/13
SDG #: PH075 Level IV Page: 1 of 1
Laboratory: Eurofins Lancaster Laboratories Reviewer: AL
2nd Reviewer: W

METHOD: (Analyte) Cyanide (EPA SW846 Method 9012B)

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: 7/25/13
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	A	
IV	Matrix Spike/Matrix Spike Duplicates	A	MS/D
V	Duplicates	A	DUP
VI.	Laboratory control samples	A	LCS/D
VII.	Sample result verification	A	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	ND	(2,3)
X	Field blanks	ND	EB=1 FB= FB-041113 (P110291)

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/water

1	EB1-072513 W	11		21		31		
2	SL-523-SA8-SB-4.0-5.0 S	12		22		32		
3	SL-823-SA8-SB-4.0-5.0	13		23		33		
4	SL-524-SA8-SB-4.0-5.0	14		24		34		
5	SL-523-SA8-SB-4.0-5.0MS	15		25		35		
6	SL-523-SA8-SB-4.0-5.0DUP MSD	16		26		36		
7	↓ DUP	17		27		37		
8		18		28		38		
9		19		29		39		
10		20		30		40		

Notes:

LDC #: 30330B6

VALIDATION FINDINGS CHECKLIST

Reviewer: CR
2nd Reviewer: [illegible]

Method: Inorganics (EPA Method Sec cover)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Calibration				
Were all instruments calibrated daily, each set-up time?	✓			
Were the proper number of standards used?	✓			
Were all initial calibration correlation coefficients ≥ 0.995?	✓			
Were all initial and continuing calibration verification %Rs within the 90-110% QC limits?	✓			
Were titrant checks performed as required? (Level IV only)			✓	
Were balance checks performed as required? (Level IV only)			✓	
III. 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.		✓		
IV. Matrix spike/Matrix spike duplicates and 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) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of ≤ CRDL(≤ 2X CRDL for soil) was used for samples that were ≤ 5X the CRDL, including when only one of the duplicate sample values were ≤ 5X the CRDL.	✓			
V. Laboratory control samples				
Was an LCS anaylzed 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% (85-115% for Method 300.0) QC limits?	✓			
VI. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	

Validation Area	Yes	No	NA	Findings/Comments
VII. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
Were detection limits < RL?	✓			
VIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
IX. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target analytes were detected in the field duplicates.		✓		
X. Field blanks				
Field blanks were identified in this SDG.	✓			
Target analytes were detected in the field blanks.		✓		

LDC #: 30330B6

Validation Findings Worksheet
Initial and Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

Method: Inorganics, Method See Cover

The correlation coefficient (r) for the calibration of CN was recalculated. Calibration date: 8/7/13

An initial or continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

%R = Found X 100 / True

Where, Found = concentration of each analyte measured in the analysis of the ICV or CCV solution

True = concentration of each analyte in the ICV or CCV source

Type of analysis	Analyte	Standard	Conc. (mg/L)	Area	Recalculated r or r^2	Reported r or r^2	Acceptable (Y/N)
Initial calibration	CN	s1	0.0	0.4069	*1.0000*	1.0000	Y
		s2	0.02	0.4813			
		s3	0.05	0.7052			
		s4	0.1	1.0665			
		s5	0.2	1.7887			
		s6	0.35	2.8857			
Calibration verification		CCV	0.15	0.15360	102	102	
Calibration verification		↓	↓	0.15250	102	102	↓
Calibration verification							

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 #: 30330B6

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Page: 1 of 1
Reviewer: QR
2nd Reviewer: [illegible]

METHOD: Inorganics, Method seecover

Percent recoveries (%R) for a laboratory control sample and a matrix spike sample were recalculated using the following formula:

%R = Found x 100 / True 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 = |S-D| x 100 / (S+D)/2 Where, S = Original sample concentration
D = Duplicate sample concentration

Sample ID	Type of Analysis	Element	Found / S (units)	True / D (units)	Recalculated %R / RPD	Reported %R / RPD	Acceptable (Y/N)
LCS	Laboratory control sample	CN	4.7	4.93	95	95	Y
5	Matrix spike sample		(SSR-SR) 9.96	10	100	100	
7	Duplicate sample		ND	ND	0	0	

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.

LDC #: 30330B6

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: AR
2nd reviewer: [signature]

METHOD: Inorganics, Method see cover

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?
Y N N/A Are all detection limits below the CRQL?

Compound (analyte) results for _____ reported with a positive detect were recalculated and verified using the following equation:

Concentration = Recalculation:

Non Detect

#	Sample ID	Analyte	Reported Concentration ( )	Calculated Concentration ( )	Acceptable (Y/N)

Note: _____

Data Validation Report
Santa Susan Field Laboratory
Subarea 8

SDG: PH076

Prepared for

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

Prepared by

Laboratory Data Consultants, Inc
7750 El Camino Real, Suite 2L
Carlsbad, California 92009

September 21, 2013

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on July 26, 2013. Data validation was performed in accordance with the Quality Assurance Project Plan for Santa Susana Field Laboratory, 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 by Environmental Protection Agency (EPA) SW 846 Method 8270D using Selective Ion Monitoring (SIM)
Polychorinated 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
Total Petroleum Hydrocarbons (TPH) as Extractables by EPA SW 846 Method 8015M
Dioxins/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 calibrations 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, trip blanks, equipment blanks and field 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 the calibration blanks 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.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met QC criteria.

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 three method blanks for dioxins and metals. The associated sample results were qualified as non-detected (U) due to method blank contamination. 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 was 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 performed in SDG PH075. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. Details regarding the qualification of data are provided in Enclosure I of the DVR for SDG PH075.

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 for SDG PH075. The analysis criteria were met with the following exceptions:

Diluted Sample	Analyte	%D (Limits)	Associated Samples	Flag	A or P
SL-523-SA8-SB-4.0-5.0	Iron	24 (≤10)	SL-539B-SA8-SB-0.0-0.5 SL-539B-SA8-SB-2.0-3.0 SL-540-SA8-SB-0.0-0.5 SL-540-SA8-SB-4.0-5.0 SL-522-SA8-SB-0.0-0.5 SL-522-SA8-SB-4.0-5.0	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 PH076	All compounds reported as detected below the RL.	J (all detects)	A

XIII. Field Duplicate Samples

No field duplicates was 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 PH075) was collected and analyzed for semivolatiles, PCBs, metals, TPH as gasoline, TPH as extractables and dioxins. No contaminants were found in the equipment blank with the exception of several semivolatiles, several dioxins and one metal. All associated sample results were not detected or were significantly greater than the concentrations found in the associated blanks and no data were qualified.

One field blank (from SDG PH029) was collected and analyzed for semivolatiles, PCBs, metals, TPH as gasoline, TPH as extractables and dioxins. No contaminants were found in the field blank with the exception of several semivolatiles, several dioxins and two metals. All associated

sample results were not detected or were significantly greater than the concentrations found in the associated blanks and no data were qualified.

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
26-Jul-2013	SL-539B-SA8-SB-0.0-0.5	7142200	N	3050B	6010C	III
26-Jul-2013	SL-539B-SA8-SB-0.0-0.5	7142200	N	3050B	6020A	III
26-Jul-2013	SL-539B-SA8-SB-0.0-0.5	7142200	N	3546	8015M	III
26-Jul-2013	SL-539B-SA8-SB-0.0-0.5	7142200	N	3546	8082A	III
26-Jul-2013	SL-539B-SA8-SB-0.0-0.5	7142200	N	3546	8270D SIM	III
26-Jul-2013	SL-539B-SA8-SB-0.0-0.5	7142200	N	METHOD	1613B	III
26-Jul-2013	SL-539B-SA8-SB-0.0-0.5	7142200	N	METHOD	7471B	III
26-Jul-2013	SL-539B-SA8-SB-0.0-0.5MSD	P142200M241429A	MSD	3546	8082A	III
26-Jul-2013	SL-539B-SA8-SB-0.0-0.5MS	P142200R241411A	MS	3546	8082A	III
26-Jul-2013	TB-072613	7142209	TB	5030B	8015M	III
26-Jul-2013	SL-539B-SA8-SB-2.0-3.0	7142201	N	3050B	6010C	III
26-Jul-2013	SL-539B-SA8-SB-2.0-3.0	7142201	N	3050B	6020A	III
26-Jul-2013	SL-539B-SA8-SB-2.0-3.0	7142201	N	3546	8015M	III
26-Jul-2013	SL-539B-SA8-SB-2.0-3.0	7142201	N	3546	8082A	III
26-Jul-2013	SL-539B-SA8-SB-2.0-3.0	7142201	N	3546	8270D SIM	III
26-Jul-2013	SL-539B-SA8-SB-2.0-3.0	7142201	N	5035A	8015M	III
26-Jul-2013	SL-539B-SA8-SB-2.0-3.0	7142201	N	METHOD	1613B	III
26-Jul-2013	SL-539B-SA8-SB-2.0-3.0	7142201	N	METHOD	7471B	III
26-Jul-2013	SL-539A-SA8-SB-0.0-0.5	7142202	N	3546	8082A	III
26-Jul-2013	SL-539C-SA8-SB-0.0-0.5	7142203	N	3546	8082A	III
26-Jul-2013	SL-539D-SA8-SB-0.0-0.5	7142204	N	3546	8082A	III
26-Jul-2013	SL-540-SA8-SB-0.0-0.5	7142205	N	3050B	6010C	III
26-Jul-2013	SL-540-SA8-SB-0.0-0.5	7142205	N	3050B	6020A	III
26-Jul-2013	SL-540-SA8-SB-0.0-0.5	7142205	N	3546	8015M	III
26-Jul-2013	SL-540-SA8-SB-0.0-0.5	7142205	N	3546	8082A	III
26-Jul-2013	SL-540-SA8-SB-0.0-0.5	7142205	N	3546	8270D SIM	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
26-Jul-2013	SL-540-SA8-SB-0.0-0.5	7142205	N	METHOD	1613B	III
26-Jul-2013	SL-540-SA8-SB-0.0-0.5	7142205	N	METHOD	7471B	III
26-Jul-2013	SL-540-SA8-SB-4.0-5.0	7142206	N	3050B	6010C	III
26-Jul-2013	SL-540-SA8-SB-4.0-5.0	7142206	N	3050B	6020A	III
26-Jul-2013	SL-540-SA8-SB-4.0-5.0	7142206	N	3546	8015M	III
26-Jul-2013	SL-540-SA8-SB-4.0-5.0	7142206	N	3546	8082A	III
26-Jul-2013	SL-540-SA8-SB-4.0-5.0	7142206	N	3546	8270D SIM	III
26-Jul-2013	SL-540-SA8-SB-4.0-5.0	7142206	N	5035A	8015M	III
26-Jul-2013	SL-540-SA8-SB-4.0-5.0	7142206	N	METHOD	1613B	III
26-Jul-2013	SL-540-SA8-SB-4.0-5.0	7142206	N	METHOD	7471B	III
26-Jul-2013	SL-522-SA8-SB-0.0-0.5	7142207	N	3050B	6010C	III
26-Jul-2013	SL-522-SA8-SB-0.0-0.5	7142207	N	3050B	6020A	III
26-Jul-2013	SL-522-SA8-SB-0.0-0.5	7142207	N	3546	8015M	III
26-Jul-2013	SL-522-SA8-SB-0.0-0.5	7142207	N	3546	8082A	III
26-Jul-2013	SL-522-SA8-SB-0.0-0.5	7142207	N	3546	8270D SIM	III
26-Jul-2013	SL-522-SA8-SB-0.0-0.5	7142207	N	METHOD	1613B	III
26-Jul-2013	SL-522-SA8-SB-0.0-0.5	7142207	N	METHOD	7471B	III
26-Jul-2013	SL-522-SA8-SB-4.0-5.0	7142208	N	3050B	6010C	III
26-Jul-2013	SL-522-SA8-SB-4.0-5.0	7142208	N	3050B	6020A	III
26-Jul-2013	SL-522-SA8-SB-4.0-5.0	7142208	N	3546	8015M	III
26-Jul-2013	SL-522-SA8-SB-4.0-5.0	7142208	N	3546	8082A	III
26-Jul-2013	SL-522-SA8-SB-4.0-5.0	7142208	N	3546	8270D SIM	III
26-Jul-2013	SL-522-SA8-SB-4.0-5.0	7142208	N	5035A	8015M	III
26-Jul-2013	SL-522-SA8-SB-4.0-5.0	7142208	N	METHOD	1613B	III
26-Jul-2013	SL-522-SA8-SB-4.0-5.0	7142208	N	METHOD	7471B	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation
N = Normal Sample
FD = Field Duplicate
TB = Trip Blank
FB = Field Blank
MS = Matrix Spike
MSD = Matrix Spike Duplicate

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH076 **Laboratory: LL**

EDD Filename: PH076 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-522-SA8-SB-0.0-0.5** ***Collected:*** **7/26/2013 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
IRON	29300		7.85	MDL	86.8	PQL	mg/Kg	J	A

Sample ID: **SL-522-SA8-SB-0.0-0.5** ***Collected:*** **7/26/2013 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
ANTIMONY	4.34	U	0.802	MDL	4.34	PQL	mg/Kg	UJ	Q
ARSENIC	3.88	J	0.759	MDL	4.34	PQL	mg/Kg	J	Z
BERYLLIUM	0.808	J	0.0727	MDL	1.08	PQL	mg/Kg	J	Z
BORON	4.24	J	0.911	MDL	10.8	PQL	mg/Kg	J	Z
CADMIUM	0.510	J	0.0824	MDL	1.08	PQL	mg/Kg	J	Z
POTASSIUM	6000		9.04	MDL	108	PQL	mg/Kg	J	Q
SODIUM	103	J	18.1	MDL	108	PQL	mg/Kg	J	Z
TIN	2.59	J	0.239	MDL	10.8	PQL	mg/Kg	U	B
Zirconium	3.01	J	0.911	MDL	5.42	PQL	mg/Kg	J	Z

Sample ID: **SL-522-SA8-SB-4.0-5.0** ***Collected:*** **7/26/2013 1:20:00** ***Analysis Type:*** **REA** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	27300		8.09	MDL	89.4	PQL	mg/Kg	J	A

Sample ID: **SL-522-SA8-SB-4.0-5.0** ***Collected:*** **7/26/2013 1:20:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.47	U	0.827	MDL	4.47	PQL	mg/Kg	UJ	Q
ARSENIC	2.92	J	0.782	MDL	4.47	PQL	mg/Kg	J	Z
BERYLLIUM	0.849	J	0.0749	MDL	1.12	PQL	mg/Kg	J	Z
BORON	2.76	J	0.939	MDL	11.2	PQL	mg/Kg	J	Z
CADMIUM	0.447	J	0.0849	MDL	1.12	PQL	mg/Kg	J	Z
POTASSIUM	5650		9.32	MDL	112	PQL	mg/Kg	J	Q
SODIUM	90.4	J	18.7	MDL	112	PQL	mg/Kg	J	Z
TIN	2.59	J	0.246	MDL	11.2	PQL	mg/Kg	U	B
Zirconium	3.52	J	0.939	MDL	5.59	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: PH076 **Laboratory: LL**

EDD Filename: PH076 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-539B-SA8-SB-0.0-0.5 **Collected: 7/26/2013 7:55:00** **Analysis Type: REA** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	34100		8.08	MDL	89.3	PQL	mg/Kg	J	A

Sample ID: SL-539B-SA8-SB-0.0-0.5 **Collected: 7/26/2013 7:55:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.46	U	0.826	MDL	4.46	PQL	mg/Kg	UJ	Q
ARSENIC	4.00	J	0.781	MDL	4.46	PQL	mg/Kg	J	Z
BERYLLIUM	0.911	J	0.0748	MDL	1.12	PQL	mg/Kg	J	Z
BORON	3.27	J	0.937	MDL	11.2	PQL	mg/Kg	J	Z
CADMIUM	0.385	J	0.0848	MDL	1.12	PQL	mg/Kg	J	Z
POTASSIUM	4950		9.31	MDL	112	PQL	mg/Kg	J	Q
TIN	2.64	J	0.246	MDL	11.2	PQL	mg/Kg	U	B
Zirconium	4.27	J	0.937	MDL	5.58	PQL	mg/Kg	J	Z

Sample ID: SL-539B-SA8-SB-2.0-3.0 **Collected: 7/26/2013 8:15:00** **Analysis Type: REA** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	32200		8.19	MDL	90.5	PQL	mg/Kg	J	A

Sample ID: SL-539B-SA8-SB-2.0-3.0 **Collected: 7/26/2013 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	4.53	U	0.837	MDL	4.53	PQL	mg/Kg	UJ	Q
ARSENIC	3.73	J	0.792	MDL	4.53	PQL	mg/Kg	J	Z
BERYLLIUM	0.975	J	0.0758	MDL	1.13	PQL	mg/Kg	J	Z
BORON	1.96	J	0.951	MDL	11.3	PQL	mg/Kg	J	Z
CADMIUM	0.320	J	0.0860	MDL	1.13	PQL	mg/Kg	J	Z
POTASSIUM	2950		9.44	MDL	113	PQL	mg/Kg	J	Q
TIN	2.91	J	0.249	MDL	11.3	PQL	mg/Kg	U	B
Zirconium	3.91	J	0.951	MDL	5.66	PQL	mg/Kg	J	Z

Sample ID: SL-540-SA8-SB-0.0-0.5 **Collected: 7/26/2013 10:05:00** **Analysis Type: REA** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	34600		7.83	MDL	86.5	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: PH076 **Laboratory: LL**

EDD Filename: PH076 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-540-SA8-SB-0.0-0.5 *Collected:* 7/26/2013 10:05:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.32	U	0.800	MDL	4.32	PQL	mg/Kg	UJ	Q
ARSENIC	3.13	J	0.757	MDL	4.32	PQL	mg/Kg	J	Z
BERYLLIUM	0.986	J	0.0724	MDL	1.08	PQL	mg/Kg	J	Z
BORON	2.51	J	0.908	MDL	10.8	PQL	mg/Kg	J	Z
CADMIUM	0.472	J	0.0821	MDL	1.08	PQL	mg/Kg	J	Z
POTASSIUM	5480		9.01	MDL	108	PQL	mg/Kg	J	Q
TIN	2.79	J	0.238	MDL	10.8	PQL	mg/Kg	U	B
Zirconium	4.22	J	0.908	MDL	5.40	PQL	mg/Kg	J	Z

Sample ID: SL-540-SA8-SB-4.0-5.0 *Collected:* 7/26/2013 10:15:00 *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	37700		7.74	MDL	85.5	PQL	mg/Kg	J	A

Sample ID: SL-540-SA8-SB-4.0-5.0 *Collected:* 7/26/2013 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
ANTIMONY	4.27	U	0.791	MDL	4.27	PQL	mg/Kg	UJ	Q
ARSENIC	3.88	J	0.748	MDL	4.27	PQL	mg/Kg	J	Z
BERYLLIUM	0.971	J	0.0716	MDL	1.07	PQL	mg/Kg	J	Z
BORON	2.75	J	0.897	MDL	10.7	PQL	mg/Kg	J	Z
CADMIUM	0.419	J	0.0812	MDL	1.07	PQL	mg/Kg	J	Z
POTASSIUM	5320		8.91	MDL	107	PQL	mg/Kg	J	Q
SODIUM	102	J	17.8	MDL	107	PQL	mg/Kg	J	Z
TIN	2.62	J	0.235	MDL	10.7	PQL	mg/Kg	U	B
Zirconium	4.34	J	0.897	MDL	5.34	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-522-SA8-SB-0.0-0.5 *Collected:* 7/26/2013 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
SELENIUM	0.283	J	0.108	MDL	0.434	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: PH076 **Laboratory: LL**

EDD Filename: PH076 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-522-SA8-SB-0.0-0.5 *Collected:* 7/26/2013 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	0.0384	J	0.0282	MDL	0.217	PQL	mg/Kg	J	Z

Sample ID: SL-522-SA8-SB-4.0-5.0 *Collected:* 7/26/2013 1:20:00 *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.237	J	0.112	MDL	0.447	PQL	mg/Kg	J	Z

Sample ID: SL-522-SA8-SB-4.0-5.0 *Collected:* 7/26/2013 1:20:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0460	J	0.0291	MDL	0.223	PQL	mg/Kg	J	Z

Sample ID: SL-539B-SA8-SB-0.0-0.5 *Collected:* 7/26/2013 7:55:00 *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.264	J	0.112	MDL	0.446	PQL	mg/Kg	J	Z

Sample ID: SL-539B-SA8-SB-0.0-0.5 *Collected:* 7/26/2013 7:55:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0400	J	0.0290	MDL	0.223	PQL	mg/Kg	J	Z

Sample ID: SL-539B-SA8-SB-2.0-3.0 *Collected:* 7/26/2013 8:15:00 *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.133	J	0.113	MDL	0.453	PQL	mg/Kg	J	Z

Sample ID: SL-540-SA8-SB-0.0-0.5 *Collected:* 7/26/2013 10:05:00 *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.201	J	0.108	MDL	0.432	PQL	mg/Kg	J	Z

Sample ID: SL-540-SA8-SB-0.0-0.5 *Collected:* 7/26/2013 10:05:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0460	J	0.0281	MDL	0.216	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: PH076 **Laboratory: LL**

EDD Filename: PH076 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-540-SA8-SB-4.0-5.0 *Collected:* 7/26/2013 10:15:00 *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.222	J	0.107	MDL	0.427	PQL	mg/Kg	J	Z

Sample ID: SL-540-SA8-SB-4.0-5.0 *Collected:* 7/26/2013 10:15:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0511	J	0.0278	MDL	0.214	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-522-SA8-SB-0.0-0.5 *Collected:* 7/26/2013 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
1,2,3,4,7,8,9-HPCDF	0.518	JB	0.0276	MDL	5.47	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.257	JB	0.0414	MDL	5.47	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.363	JB	0.0309	MDL	5.47	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	2.96	JB	0.0444	MDL	5.47	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.299	JB	0.0303	MDL	5.47	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.759	JB	0.0434	MDL	5.47	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.178	JQ	0.0333	MDL	5.47	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.241	JB	0.0235	MDL	5.47	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.603	JB	0.0300	MDL	5.47	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.135	JB	0.0216	MDL	5.47	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.0519	JQ	0.0288	MDL	1.09	PQL	ng/Kg	J	Z
OCDF	8.96	JB	0.0325	MDL	10.9	PQL	ng/Kg	J	Z

Sample ID: SL-522-SA8-SB-4.0-5.0 *Collected:* 7/26/2013 1:20:00 *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	0.216	JB	0.0226	MDL	5.47	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0499	JB	0.00682	MDL	5.47	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0506	JBQ	0.0101	MDL	5.47	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0411	JBQ	0.0189	MDL	5.47	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0529	JBQ	0.0106	MDL	5.47	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0864	JBQ	0.0209	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: PH076 **Laboratory: LL**

EDD Filename: PH076 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-522-SA8-SB-4.0-5.0** ***Collected:*** **7/26/2013 1:20:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,6,7,8-HXCDF	0.0356	JB	0.0103	MDL	5.47	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.131	JB	0.0202	MDL	5.47	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.105	JBQ	0.0120	MDL	5.47	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0523	JBQ	0.0209	MDL	5.47	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.0884	JBQ	0.0135	MDL	5.47	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0286	JBQ	0.00994	MDL	5.47	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0313	JBQ	0.0124	MDL	5.47	PQL	ng/Kg	U	B
2,3,7,8-TCDD	0.0230	JQ	0.0217	MDL	1.09	PQL	ng/Kg	J	Z
OCDD	0.982	JB	0.0226	MDL	10.9	PQL	ng/Kg	U	B
OCDF	0.172	JB	0.0248	MDL	10.9	PQL	ng/Kg	U	B

Sample ID: **SL-539B-SA8-SB-0.0-0.5** ***Collected:*** **7/26/2013 7:55:00** ***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	0.643	JB	0.0205	MDL	5.73	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.120	JBQ	0.0264	MDL	5.73	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.149	JB	0.0562	MDL	5.73	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.197	JB	0.0290	MDL	5.73	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.329	JBQ	0.0617	MDL	5.73	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.144	JB	0.0283	MDL	5.73	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.303	JB	0.0468	MDL	5.73	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.275	JBQ	0.0208	MDL	5.73	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.142	JQ	0.0434	MDL	5.73	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.190	JBQ	0.0332	MDL	5.73	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.139	JB	0.0237	MDL	5.73	PQL	ng/Kg	U	B
2,3,7,8-TCDD	0.0357	JBQ	0.0286	MDL	1.15	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.0783	JQ	0.0369	MDL	1.15	PQL	ng/Kg	J	Z
OCDF	1.63	JB	0.0534	MDL	11.5	PQL	ng/Kg	J	Z

Sample ID: **SL-539B-SA8-SB-2.0-3.0** ***Collected:*** **7/26/2013 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	1.72	JB	0.0583	MDL	5.68	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.281	JBQ	0.0218	MDL	5.68	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0920	JBQ	0.0234	MDL	5.68	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: PH076 **Laboratory: LL**

EDD Filename: PH076 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-539B-SA8-SB-2.0-3.0** ***Collected:*** **7/26/2013 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
1,2,3,4,7,8-HxCDD	0.0641	JBQ	0.0393	MDL	5.68	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0810	JBQ	0.0246	MDL	5.68	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.116	JB	0.0413	MDL	5.68	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0570	JB	0.0232	MDL	5.68	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.0641	JB	0.0325	MDL	5.68	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.0797	JBQ	0.0312	MDL	5.68	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0534	JB	0.0192	MDL	5.68	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0714	JBQ	0.0304	MDL	5.68	PQL	ng/Kg	U	B
OCDF	0.241	JB	0.0472	MDL	11.4	PQL	ng/Kg	U	B

Sample ID: **SL-540-SA8-SB-0.0-0.5** ***Collected:*** **7/26/2013 10:05:00** ***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-HPCDD	0.254	JB	0.0152	MDL	5.45	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0874	JBQ	0.00551	MDL	5.45	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0405	JBQ	0.00772	MDL	5.45	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0353	JBQ	0.0129	MDL	5.45	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0473	JBQ	0.00628	MDL	5.45	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.102	JB	0.0138	MDL	5.45	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0362	JB	0.00606	MDL	5.45	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.285	JB	0.0136	MDL	5.45	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.281	JBQ	0.00717	MDL	5.45	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.0518	J	0.0173	MDL	5.45	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.0721	JB	0.0104	MDL	5.45	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0407	JBQ	0.00606	MDL	5.45	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0384	JBQ	0.00937	MDL	5.45	PQL	ng/Kg	U	B
2,3,7,8-TCDD	0.0219	JBQ	0.0155	MDL	1.09	PQL	ng/Kg	U	B
OCDD	0.678	JB	0.0162	MDL	10.9	PQL	ng/Kg	U	B
OCDF	0.0852	JBQ	0.0151	MDL	10.9	PQL	ng/Kg	U	B

Sample ID: **SL-540-SA8-SB-4.0-5.0** ***Collected:*** **7/26/2013 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-HPCDD	0.631	JB	0.0351	MDL	5.43	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.113	JB	0.0104	MDL	5.43	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: PH076 **Laboratory: LL**

EDD Filename: PH076 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-540-SA8-SB-4.0-5.0 *Collected:* 7/26/2013 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
1,2,3,4,7,8,9-HPCDF	0.0191	JBQ	0.0146	MDL	5.43	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0577	JBQ	0.0219	MDL	5.43	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0718	JBQ	0.0133	MDL	5.43	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0925	JBQ	0.0237	MDL	5.43	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0660	JB	0.0131	MDL	5.43	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.134	JBQ	0.0237	MDL	5.43	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.111	JB	0.0162	MDL	5.43	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0897	JB	0.0277	MDL	5.43	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.111	JBQ	0.0160	MDL	5.43	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0476	JB	0.0127	MDL	5.43	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0834	JB	0.0149	MDL	5.43	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.0334	JQ	0.0206	MDL	1.09	PQL	ng/Kg	J	Z
OCDD	5.67	JB	0.0271	MDL	10.9	PQL	ng/Kg	J	Z
OCDF	0.255	JB	0.0296	MDL	10.9	PQL	ng/Kg	U	B

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: SL-522-SA8-SB-0.0-0.5 *Collected:* 7/26/2013 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
EFH (C21-C30)	3.9	J	2.2	MDL	5.5	PQL	mg/Kg	J	Z

Sample ID: SL-522-SA8-SB-4.0-5.0 *Collected:* 7/26/2013 1:20:00 *Analysis Type:* REA *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C15-C20)	2.9	J	2.2	MDL	5.6	PQL	mg/Kg	J	Z

Sample ID: SL-539B-SA8-SB-0.0-0.5 *Collected:* 7/26/2013 7:55:00 *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)	2.8	J	2.3	MDL	5.7	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: PH076 **Laboratory: LL**

EDD Filename: PH076 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: SL-540-SA8-SB-0.0-0.5 *Collected:* 7/26/2013 10:05:00 *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)	3.2	J	2.2	MDL	5.5	PQL	mg/Kg	J	Z
EFH (C30-C40)	7.5	J	4.4	MDL	11	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 8082A **Matrix: SO**

Sample ID: SL-539C-SA8-SB-0.0-0.5 *Collected:* 7/26/2013 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
Aroclor 1268	11	J	3.9	MDL	20	PQL	ug/Kg	J	Z

Method Category: SVOA

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

Sample ID: SL-522-SA8-SB-0.0-0.5 *Collected:* 7/26/2013 12:50:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHRYSENE	0.62	J	0.37	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: SL-522-SA8-SB-4.0-5.0 *Collected:* 7/26/2013 1:20:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(B)FLUORANTHENE	0.79	J	0.74	MDL	1.9	PQL	ug/Kg	J	Z
NAPHTHALENE	0.93	J	0.74	MDL	1.9	PQL	ug/Kg	J	Z

Sample ID: SL-539B-SA8-SB-0.0-0.5 *Collected:* 7/26/2013 7:55:00 *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	1.1	J	0.38	MDL	1.9	PQL	ug/Kg	J	Z
BENZO(E)PYRENE	10	J	3.8	MDL	20	PQL	ug/Kg	J	Z

Sample ID: SL-540-SA8-SB-4.0-5.0 *Collected:* 7/26/2013 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
BENZO(K)FLUORANTHENE	0.90	J	0.74	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

Data Qualifier Summary

Lab Reporting Batch ID: PH076 **Laboratory: LL**

EDD Filename: PH076 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: **SVOA**

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

Sample ID: **SL-540-SA8-SB-4.0-5.0** ***Collected:*** **7/26/2013 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*
CHRYSENE	0.67	J	0.37	MDL	1.9	PQL	ug/Kg	J	Z
FLUORANTHENE	0.84	J	0.74	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

Data Qualifier Summary

Lab Reporting Batch ID: PH076 **Laboratory: LL**

EDD Filename: PH076 **eQAPP Name: CDM_SSFL_130808_Lan**

Reason Code Legend

Reason Code	*Description*
*#	Professional Judgment
A	ICP Serial Dilution
B	Method Blank Contamination
Q	Matrix Spike Lower Estimation
Q	Matrix Spike Upper Estimation
S	Surrogate/Tracer Recovery Lower Estimation
Z	Reporting Limit Trace Value

* denotes a non-reportable result

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

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control
Outlier Reports

PH076

Method Blank Outlier Report

Lab Reporting Batch ID: PH076 **Laboratory: LL**

EDD Filename: PH076 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2180B370402	8/8/2013 4:02:00 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-PECDF 2,3,4,6,7,8-HXCDF 2,3,4,7,8-PECDF 2,3,7,8-TCDD OCDD OCDF	0.0597 ng/Kg 0.0459 ng/Kg 0.0308 ng/Kg 0.0349 ng/Kg 0.0428 ng/Kg 0.0314 ng/Kg 0.00975 ng/Kg 0.0571 ng/Kg 0.0419 ng/Kg 0.0576 ng/Kg 0.0472 ng/Kg 0.0456 ng/Kg 0.0240 ng/Kg 0.310 ng/Kg 0.129 ng/Kg	SL-522-SA8-SB-0.0-0.5 SL-539B-SA8-SB-0.0-0.5 SL-539B-SA8-SB-2.0-3.0 SL-540-SA8-SB-0.0-0.5
BLK2210B371938	8/12/2013 7:38:00 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 OCDD OCDF	0.0631 ng/Kg 0.0690 ng/Kg 0.0395 ng/Kg 0.0401 ng/Kg 0.0315 ng/Kg 0.0496 ng/Kg 0.0303 ng/Kg 0.0309 ng/Kg 0.0360 ng/Kg 0.0500 ng/Kg 0.0497 ng/Kg 0.0403 ng/Kg 0.0240 ng/Kg 0.267 ng/Kg 0.145 ng/Kg	SL-522-SA8-SB-4.0-5.0 SL-540-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-522-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.241 ng/Kg	0.241U ng/Kg
SL-522-SA8-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.135 ng/Kg	0.135U ng/Kg
SL-522-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDD	0.216 ng/Kg	0.216U ng/Kg
SL-522-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0499 ng/Kg	0.0499U ng/Kg
SL-522-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0506 ng/Kg	0.0506U ng/Kg
SL-522-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HxCDD	0.0411 ng/Kg	0.0411U ng/Kg
SL-522-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.0529 ng/Kg	0.0529U ng/Kg
SL-522-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDD	0.0864 ng/Kg	0.0864U ng/Kg
SL-522-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.0356 ng/Kg	0.0356U ng/Kg
SL-522-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDD	0.131 ng/Kg	0.131U ng/Kg
SL-522-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDF	0.105 ng/Kg	0.105U ng/Kg
SL-522-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDD	0.0523 ng/Kg	0.0523U ng/Kg
SL-522-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.0884 ng/Kg	0.0884U ng/Kg
SL-522-SA8-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0286 ng/Kg	0.0286U ng/Kg
SL-522-SA8-SB-4.0-5.0(RES)	2,3,4,7,8-PECDF	0.0313 ng/Kg	0.0313U ng/Kg
SL-522-SA8-SB-4.0-5.0(RES)	OCDD	0.982 ng/Kg	0.982U ng/Kg
SL-522-SA8-SB-4.0-5.0(RES)	OCDF	0.172 ng/Kg	0.172U ng/Kg
SL-539B-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.120 ng/Kg	0.120U ng/Kg
SL-539B-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.149 ng/Kg	0.149U ng/Kg

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

Method Blank Outlier Report

Lab Reporting Batch ID: PH076 **Laboratory: LL**

EDD Filename: PH076 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: **1613B**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples

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-539B-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.197 ng/Kg	0.197U ng/Kg
SL-539B-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.190 ng/Kg	0.190U ng/Kg
SL-539B-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.139 ng/Kg	0.139U ng/Kg
SL-539B-SA8-SB-0.0-0.5(RES)	2,3,7,8-TCDD	0.0357 ng/Kg	0.0357U ng/Kg
SL-539B-SA8-SB-2.0-3.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0920 ng/Kg	0.0920U ng/Kg
SL-539B-SA8-SB-2.0-3.0(RES)	1,2,3,4,7,8-HxCDD	0.0641 ng/Kg	0.0641U ng/Kg
SL-539B-SA8-SB-2.0-3.0(RES)	1,2,3,4,7,8-HXCDF	0.0810 ng/Kg	0.0810U ng/Kg
SL-539B-SA8-SB-2.0-3.0(RES)	1,2,3,6,7,8-HXCDD	0.116 ng/Kg	0.116U ng/Kg
SL-539B-SA8-SB-2.0-3.0(RES)	1,2,3,7,8,9-HXCDD	0.0641 ng/Kg	0.0641U ng/Kg
SL-539B-SA8-SB-2.0-3.0(RES)	1,2,3,7,8-PECDF	0.0797 ng/Kg	0.0797U ng/Kg
SL-539B-SA8-SB-2.0-3.0(RES)	2,3,4,6,7,8-HXCDF	0.0534 ng/Kg	0.0534U ng/Kg
SL-539B-SA8-SB-2.0-3.0(RES)	2,3,4,7,8-PECDF	0.0714 ng/Kg	0.0714U ng/Kg
SL-539B-SA8-SB-2.0-3.0(RES)	OCDF	0.241 ng/Kg	0.241U ng/Kg
SL-540-SA8-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDD	0.254 ng/Kg	0.254U ng/Kg
SL-540-SA8-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDF	0.0874 ng/Kg	0.0874U ng/Kg
SL-540-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0405 ng/Kg	0.0405U ng/Kg
SL-540-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.0353 ng/Kg	0.0353U ng/Kg
SL-540-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.0473 ng/Kg	0.0473U ng/Kg
SL-540-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDD	0.102 ng/Kg	0.102U ng/Kg
SL-540-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.0362 ng/Kg	0.0362U ng/Kg
SL-540-SA8-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDD	0.285 ng/Kg	0.285U ng/Kg
SL-540-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.0721 ng/Kg	0.0721U ng/Kg
SL-540-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0407 ng/Kg	0.0407U ng/Kg
SL-540-SA8-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.0384 ng/Kg	0.0384U ng/Kg
SL-540-SA8-SB-0.0-0.5(RES)	2,3,7,8-TCDD	0.0219 ng/Kg	0.0219U ng/Kg
SL-540-SA8-SB-0.0-0.5(RES)	OCDD	0.678 ng/Kg	0.678U ng/Kg
SL-540-SA8-SB-0.0-0.5(RES)	OCDF	0.0852 ng/Kg	0.0852U ng/Kg
SL-540-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.113 ng/Kg	0.113U ng/Kg
SL-540-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0191 ng/Kg	0.0191U ng/Kg
SL-540-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HxCDD	0.0577 ng/Kg	0.0577U ng/Kg
SL-540-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.0718 ng/Kg	0.0718U ng/Kg
SL-540-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDD	0.0925 ng/Kg	0.0925U ng/Kg
SL-540-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.0660 ng/Kg	0.0660U ng/Kg
SL-540-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDD	0.134 ng/Kg	0.134U ng/Kg
SL-540-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDF	0.111 ng/Kg	0.111U ng/Kg
SL-540-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDD	0.0897 ng/Kg	0.0897U ng/Kg
SL-540-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.111 ng/Kg	0.111U ng/Kg
SL-540-SA8-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0476 ng/Kg	0.0476U ng/Kg
SL-540-SA8-SB-4.0-5.0(RES)	2,3,4,7,8-PECDF	0.0834 ng/Kg	0.0834U ng/Kg
SL-540-SA8-SB-4.0-5.0(RES)	OCDF	0.255 ng/Kg	0.255U ng/Kg

Method Blank Outlier Report

Lab Reporting Batch ID: PH076 **Laboratory: LL**

EDD Filename: PH076 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: **6010C**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P21037AB221259	8/3/2013 12:59:00 PM	CALCIUM TIN ZINC	9.96 mg/Kg 1.28 mg/Kg 0.614 mg/Kg	SL-522-SA8-SB-0.0-0.5 SL-522-SA8-SB-4.0-5.0 SL-539B-SA8-SB-0.0-0.5 SL-539B-SA8-SB-2.0-3.0 SL-540-SA8-SB-0.0-0.5 SL-540-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-522-SA8-SB-0.0-0.5(RES)	TIN	2.59 mg/Kg	2.59U mg/Kg
SL-522-SA8-SB-4.0-5.0(RES)	TIN	2.59 mg/Kg	2.59U mg/Kg
SL-539B-SA8-SB-0.0-0.5(RES)	TIN	2.64 mg/Kg	2.64U mg/Kg
SL-539B-SA8-SB-2.0-3.0(RES)	TIN	2.91 mg/Kg	2.91U mg/Kg
SL-540-SA8-SB-0.0-0.5(RES)	TIN	2.79 mg/Kg	2.79U mg/Kg
SL-540-SA8-SB-4.0-5.0(RES)	TIN	2.62 mg/Kg	2.62U mg/Kg

Reporting Limit Outliers

Lab Reporting Batch ID: PH076 **Laboratory: LL**

EDD Filename: PH076 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-522-SA8-SB-0.0-0.5	1,2,3,4,7,8,9-HPCDF	JB	0.518	5.47	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.257	5.47	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.363	5.47	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	2.96	5.47	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.299	5.47	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.759	5.47	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JQ	0.178	5.47	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.241	5.47	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.603	5.47	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.135	5.47	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0519	1.09	PQL	ng/Kg	
	OCDF	JB	8.96	10.9	PQL	ng/Kg	
SL-522-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JB	0.216	5.47	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.0499	5.47	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0506	5.47	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0411	5.47	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0529	5.47	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.0864	5.47	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.0356	5.47	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.131	5.47	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JBQ	0.105	5.47	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.0523	5.47	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.0884	5.47	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0286	5.47	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0313	5.47	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.0230	1.09	PQL	ng/Kg	
	OCDD	JB	0.982	10.9	PQL	ng/Kg	
	OCDF	JB	0.172	10.9	PQL	ng/Kg	
SL-539B-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDF	JB	0.643	5.73	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.120	5.73	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.149	5.73	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.197	5.73	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.329	5.73	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.144	5.73	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.303	5.73	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JBQ	0.275	5.73	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.142	5.73	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.190	5.73	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.139	5.73	PQL	ng/Kg	
	2,3,7,8-TCDD	JBQ	0.0357	1.15	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0783	1.15	PQL	ng/Kg	
	OCDF	JB	1.63	11.5	PQL	ng/Kg	
SL-539B-SA8-SB-2.0-3.0	1,2,3,4,6,7,8-HPCDD	JB	1.72	5.68	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.281	5.68	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0920	5.68	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0641	5.68	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0810	5.68	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.116	5.68	PQL	ng/Kg	J (all detects)
	1,2,3,6,7,8-HXCDF	JB	0.0570	5.68	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.0641	5.68	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.0797	5.68	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.0534	5.68	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0714	5.68	PQL	ng/Kg	
	OCDF	JB	0.241	11.4	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH076 **Laboratory: LL**

EDD Filename: PH076 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-540-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	0.254	5.45	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0874	5.45	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0405	5.45	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0353	5.45	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0473	5.45	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.102	5.45	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.0362	5.45	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.285	5.45	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.281	5.45	PQL	ng/Kg	
	1,2,3,7,8-PECDD	J	0.0518	5.45	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.0721	5.45	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0407	5.45	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0384	5.45	PQL	ng/Kg	
	2,3,7,8-TCDD	JBQ	0.0219	1.09	PQL	ng/Kg	
	OCDD	JB	0.678	10.9	PQL	ng/Kg	
	OCDF	JBQ	0.0852	10.9	PQL	ng/Kg	
SL-540-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JB	0.631	5.43	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JB	0.113	5.43	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0191	5.43	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0577	5.43	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0718	5.43	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.0925	5.43	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.0660	5.43	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.134	5.43	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.111	5.43	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JB	0.0897	5.43	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.111	5.43	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.0476	5.43	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.0834	5.43	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0334	1.09	PQL	ng/Kg	
	OCDD	JB	5.67	10.9	PQL	ng/Kg	
	OCDF	JB	0.255	10.9	PQL	ng/Kg	

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-522-SA8-SB-0.0-0.5	ARSENIC	J	3.88	4.34	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.808	1.08	PQL	mg/Kg	
	BORON	J	4.24	10.8	PQL	mg/Kg	
	CADMIUM	J	0.510	1.08	PQL	mg/Kg	
	SODIUM	J	103	108	PQL	mg/Kg	
	TIN	J	2.59	10.8	PQL	mg/Kg	
	Zirconium	J	3.01	5.42	PQL	mg/Kg	
SL-522-SA8-SB-4.0-5.0	ARSENIC	J	2.92	4.47	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.849	1.12	PQL	mg/Kg	
	BORON	J	2.76	11.2	PQL	mg/Kg	
	CADMIUM	J	0.447	1.12	PQL	mg/Kg	
	SODIUM	J	90.4	112	PQL	mg/Kg	
	TIN	J	2.59	11.2	PQL	mg/Kg	
	Zirconium	J	3.52	5.59	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH076 **Laboratory: LL**

EDD Filename: PH076 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 6010C
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-539B-SA8-SB-0.0-0.5	ARSENIC	J	4.00	4.46	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.911	1.12	PQL	mg/Kg	
	BORON	J	3.27	11.2	PQL	mg/Kg	
	CADMIUM	J	0.385	1.12	PQL	mg/Kg	
	TIN	J	2.64	11.2	PQL	mg/Kg	
	Zirconium	J	4.27	5.58	PQL	mg/Kg	
SL-539B-SA8-SB-2.0-3.0	ARSENIC	J	3.73	4.53	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.975	1.13	PQL	mg/Kg	
	BORON	J	1.96	11.3	PQL	mg/Kg	
	CADMIUM	J	0.320	1.13	PQL	mg/Kg	
	TIN	J	2.91	11.3	PQL	mg/Kg	
	Zirconium	J	3.91	5.66	PQL	mg/Kg	
SL-540-SA8-SB-0.0-0.5	ARSENIC	J	3.13	4.32	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.986	1.08	PQL	mg/Kg	
	BORON	J	2.51	10.8	PQL	mg/Kg	
	CADMIUM	J	0.472	1.08	PQL	mg/Kg	
	TIN	J	2.79	10.8	PQL	mg/Kg	
	Zirconium	J	4.22	5.40	PQL	mg/Kg	
SL-540-SA8-SB-4.0-5.0	ARSENIC	J	3.88	4.27	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.971	1.07	PQL	mg/Kg	
	BORON	J	2.75	10.7	PQL	mg/Kg	
	CADMIUM	J	0.419	1.07	PQL	mg/Kg	
	SODIUM	J	102	107	PQL	mg/Kg	
	TIN	J	2.62	10.7	PQL	mg/Kg	
	Zirconium	J	4.34	5.34	PQL	mg/Kg	

Method: 6020A
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-522-SA8-SB-0.0-0.5	SELENIUM	J	0.283	0.434	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0384	0.217	PQL	mg/Kg	
SL-522-SA8-SB-4.0-5.0	SELENIUM	J	0.237	0.447	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0460	0.223	PQL	mg/Kg	
SL-539B-SA8-SB-0.0-0.5	SELENIUM	J	0.264	0.446	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0400	0.223	PQL	mg/Kg	
SL-539B-SA8-SB-2.0-3.0	SELENIUM	J	0.133	0.453	PQL	mg/Kg	J (all detects)
SL-540-SA8-SB-0.0-0.5	SELENIUM	J	0.201	0.432	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0460	0.216	PQL	mg/Kg	
SL-540-SA8-SB-4.0-5.0	SELENIUM	J	0.222	0.427	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0511	0.214	PQL	mg/Kg	

Method: 8015M
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-522-SA8-SB-0.0-0.5	EFH (C21-C30)	J	3.9	5.5	PQL	mg/Kg	J (all detects)
SL-522-SA8-SB-4.0-5.0	EFH (C15-C20)	J	2.9	5.6	PQL	mg/Kg	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH076 **Laboratory: LL**

EDD Filename: PH076 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 8015M
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-539B-SA8-SB-0.0-0.5	EFH (C21-C30)	J	2.8	5.7	PQL	mg/Kg	J (all detects)
SL-540-SA8-SB-0.0-0.5	EFH (C21-C30) EFH (C30-C40)	J J	3.2 7.5	5.5 11	PQL PQL	mg/Kg mg/Kg	J (all detects)

Method: 8082A
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-539C-SA8-SB-0.0-0.5	Aroclor 1268	J	11	20	PQL	ug/Kg	J (all detects)

Method: 8270D SIM
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-522-SA8-SB-0.0-0.5	CHRYSENE	J	0.62	1.8	PQL	ug/Kg	J (all detects)
SL-522-SA8-SB-4.0-5.0	BENZO(B)FLUORANTHENE NAPHTHALENE	J J	0.79 0.93	1.9 1.9	PQL PQL	ug/Kg ug/Kg	J (all detects)
SL-539B-SA8-SB-0.0-0.5	ANTHRACENE BENZO(E)PYRENE	J J	1.1 10	1.9 20	PQL PQL	ug/Kg ug/Kg	J (all detects)
SL-540-SA8-SB-4.0-5.0	BENZO(K)FLUORANTHENE CHRYSENE FLUORANTHENE	J J J	0.90 0.67 0.84	1.9 1.9 1.9	PQL PQL PQL	ug/Kg ug/Kg ug/Kg	J (all detects)

LDC #: 30330C4
SDG #: PH076
Laboratory: Eurofins Lancaster Laboratories

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 9/4/13
Page: 1 of 1
Reviewer: AL
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	A	Sampling dates: 7/26/13
II.	ICP/MS Tune	—	
III.	Calibration	—	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	—	
VI.	Matrix Spike Analysis	N	MS/D (from PH075)
VII.	Duplicate Sample Analysis	N	Dup ↓
VIII.	Laboratory Control Samples (LCS)	N	
IX.	Internal Standard (ICP-MS)	N	
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	SW	fromPH075 (Fe: 24% : J/UJA)
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	N	
XIV.	Field Duplicates	—	
XV	Field Blanks	SW	EB=EB1-072513 (PH075) FB=FB-041113 (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-539B-SA8-SB-0.0-0.5	11		21		31	
2	SL-539B-SA8-SB-2.0-3.0	12		22		32	
3	SL-540-SA8-SB-0.0-0.5	13		23		33	
4	SL-540-SA8-SB-4.0-5.0	14		24		34	
5	SL-522-SA8-SB-0.0-0.5	15		25		35	
6	SL-522-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 #: 30330C4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer:
2nd Reviewer:

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	No Qualifiers									
Cu	0.0036	1.8										
Mo	0.0036	1.8										

Sampling date: 7/25/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All Soil

Analyte	Blank ID	Sample Identification										
	EB1-072513 (SDG: PH075)	Action Limit	No Qualifiers									
Mo	0.0067	3.35										

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 Susan Field Laboratory
Subarea 8

SDG: PH078

Prepared for

CDM
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Denver, CO 80202

Prepared by

Laboratory Data Consultants, Inc
7750 El Camino Real, Suite 2L
Carlsbad, California 92009

September 21, 2013

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on July 29, 2013. Data validation was performed in accordance with the Quality Assurance Project Plan for Santa Susana Field Laboratory, 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 by Environmental Protection Agency (EPA) SW 846 Method 8270D using Selective Ion Monitoring (SIM)
Polychorinated 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
Total Petroleum Hydrocarbons (TPH) as Extractables by EPA SW 846 Method 8015M
Dioxins/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 calibrations blanks (ICB/CCBs), surrogates, internal standards (dioxins only), laboratory control sample/laboratory control sample duplicates (LCS/LCSD), method blanks, trip blanks, equipment blanks and field 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 the calibration blanks 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.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met QC criteria.

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 method blanks for dioxins and metals. The associated sample results were qualified as non-detected (U) due to method blank contamination. 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
PH078/ 6020A	ICB/CCB	Molybdenum	2.0 ug/L	SL-529-SA8-SB-0.0-0.5 SL-529-SA8-SB-4.0-5.0 SL-526-SA8-SB-0.0-0.5 SL-526-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
PH078/ 6020A	SL-529-SA8-SB-0.0-0.5	Molybdenum	0.33 ug/L	0.33U ug/L
PH078/ 6020A	SL-526-SA8-SB-0.0-0.5	Molybdenum	0.23 ug/L	0.23U 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 was not reviewed for Level III.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Duplicates Sample

The laboratory has indicated that there were no laboratory duplicate (DUP) analyses specified for the samples in this SDG, and 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 with the exception of one LCS/LCSD pair for semivolatiles. The percent recovery was out high and all associated sample results were non-detect; therefore, no data were qualified. The details regarding the LCS outliers 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 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 PH078	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 PH082) was collected and analyzed for semivolatiles, PCBs, metals, TPH as gasoline, TPH as extractables and dioxins. No contaminants were found in the equipment blank with the exception of one semivolatile, several dioxins and one metal. All associated sample results were not detected or were significantly greater than the concentrations found in the associated blanks and no data were qualified.

One field blank (from SDG PH029) was collected and analyzed for semivolatiles, PCBs, metals, TPH as gasoline, TPH as extractables and dioxins. No contaminants were found in the field blank with the exception of several semivolatiles, several dioxins and two metals. The associated sample results were qualified as non-detected (U) due to field blank contamination as applicable. The samples 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.

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
29-Jul-2013	TB1-072913	7143812	N	5030B	8015M	III
29-Jul-2013	SL-529-SA8-SB-0.0-0.5	7143813	N	3050B	6010C	III
29-Jul-2013	SL-529-SA8-SB-0.0-0.5	7143813	N	3050B	6020A	III
29-Jul-2013	SL-529-SA8-SB-0.0-0.5	7143813	N	3546	8015M	III
29-Jul-2013	SL-529-SA8-SB-0.0-0.5	7143813	N	3546	8082A	III
29-Jul-2013	SL-529-SA8-SB-0.0-0.5	7143813	N	3546	8270D SIM	III
29-Jul-2013	SL-529-SA8-SB-0.0-0.5	7143813	N	METHOD	1613B	III
29-Jul-2013	SL-529-SA8-SB-0.0-0.5	7143813	N	METHOD	7471B	III
29-Jul-2013	SL-529-SA8-SB-4.0-5.0	7143814	N	3050B	6010C	III
29-Jul-2013	SL-529-SA8-SB-4.0-5.0	7143814	N	3050B	6020A	III
29-Jul-2013	SL-529-SA8-SB-4.0-5.0	7143814	N	3546	8015M	III
29-Jul-2013	SL-529-SA8-SB-4.0-5.0	7143814	N	3546	8082A	III
29-Jul-2013	SL-529-SA8-SB-4.0-5.0	7143814	N	3546	8270D SIM	III
29-Jul-2013	SL-529-SA8-SB-4.0-5.0	7143814	N	5035A	8015M	III
29-Jul-2013	SL-529-SA8-SB-4.0-5.0	7143814	N	METHOD	1613B	III
29-Jul-2013	SL-529-SA8-SB-4.0-5.0	7143814	N	METHOD	7471B	III
29-Jul-2013	SL-526-SA8-SB-0.0-0.5	7143815	N	3050B	6010C	III
29-Jul-2013	SL-526-SA8-SB-0.0-0.5	7143815	N	3050B	6020A	III
29-Jul-2013	SL-526-SA8-SB-0.0-0.5	7143815	N	3546	8015M	III
29-Jul-2013	SL-526-SA8-SB-0.0-0.5	7143815	N	3546	8082A	III
29-Jul-2013	SL-526-SA8-SB-0.0-0.5	7143815	N	3546	8270D SIM	III
29-Jul-2013	SL-526-SA8-SB-0.0-0.5	7143815	N	METHOD	1613B	III
29-Jul-2013	SL-526-SA8-SB-0.0-0.5	7143815	N	METHOD	7471B	III
29-Jul-2013	SL-526-SA8-SB-4.0-5.0	7143816	N	3050B	6010C	III
29-Jul-2013	SL-526-SA8-SB-4.0-5.0	7143816	N	3050B	6020A	III
29-Jul-2013	SL-526-SA8-SB-4.0-5.0	7143816	N	3546	8015M	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
29-Jul-2013	SL-526-SA8-SB-4.0-5.0	7143816	N	3546	8082A	III
29-Jul-2013	SL-526-SA8-SB-4.0-5.0	7143816	N	3546	8270D SIM	III
29-Jul-2013	SL-526-SA8-SB-4.0-5.0	7143816	N	5035A	8015M	III
29-Jul-2013	SL-526-SA8-SB-4.0-5.0	7143816	N	METHOD	1613B	III
29-Jul-2013	SL-526-SA8-SB-4.0-5.0	7143816	N	METHOD	7471B	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation
N = Normal Sample
FD = Field Duplicate
TB = Trip Blank
FB = Field Blank
MS = Matrix Spike
MSD = Matrix Spike Duplicate

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH078 **Laboratory: LL**

EDD Filename: PH078 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-526-SA8-SB-0.0-0.5 *Collected:* 7/29/2013 1:20:00 *Analysis Type:* REA *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	7.84	J	0.901	MDL	10.7	PQL	mg/Kg	J	Z

Sample ID: SL-526-SA8-SB-0.0-0.5 *Collected:* 7/29/2013 1:20:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	4.25	J	0.751	MDL	4.29	PQL	mg/Kg	J	Z
BERYLLIUM	0.928	J	0.0719	MDL	1.07	PQL	mg/Kg	J	Z
CADMIUM	0.231	J	0.0815	MDL	1.07	PQL	mg/Kg	J	Z
MOLYBDENUM	0.225	J	0.182	MDL	2.15	PQL	mg/Kg	U	B, F
SODIUM	94.9	J	17.9	MDL	107	PQL	mg/Kg	J	Z
TIN	2.88	J	0.236	MDL	10.7	PQL	mg/Kg	U	B
Zirconium	3.73	J	0.901	MDL	5.36	PQL	mg/Kg	J	Z

Sample ID: SL-526-SA8-SB-4.0-5.0 *Collected:* 7/29/2013 1:45:00 *Analysis Type:* REA *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	6.24	J	0.945	MDL	11.2	PQL	mg/Kg	J	Z

Sample ID: SL-526-SA8-SB-4.0-5.0 *Collected:* 7/29/2013 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
BERYLLIUM	0.981	J	0.0753	MDL	1.12	PQL	mg/Kg	J	Z
TIN	3.03	J	0.247	MDL	11.2	PQL	mg/Kg	U	B
Zirconium	3.38	J	0.945	MDL	5.62	PQL	mg/Kg	J	Z

Sample ID: SL-529-SA8-SB-0.0-0.5 *Collected:* 7/29/2013 12:10:00 *Analysis Type:* REA *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	8.74	J	0.870	MDL	10.4	PQL	mg/Kg	J	Z

Sample ID: SL-529-SA8-SB-0.0-0.5 *Collected:* 7/29/2013 12:10:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	0.872	J	0.0694	MDL	1.04	PQL	mg/Kg	J	Z
CADMIUM	0.194	J	0.0787	MDL	1.04	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: PH078 **Laboratory: LL**

EDD Filename: PH078 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-529-SA8-SB-0.0-0.5 *Collected:* 7/29/2013 12:10:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.332	J	0.176	MDL	2.07	PQL	mg/Kg	U	B, F
SODIUM	94.0	J	17.3	MDL	104	PQL	mg/Kg	J	Z
TIN	2.82	J	0.228	MDL	10.4	PQL	mg/Kg	U	B
Zirconium	3.12	J	0.870	MDL	5.18	PQL	mg/Kg	J	Z

Sample ID: SL-529-SA8-SB-4.0-5.0 *Collected:* 7/29/2013 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
BORON	4.91	J	0.965	MDL	11.5	PQL	mg/Kg	J	Z

Sample ID: SL-529-SA8-SB-4.0-5.0 *Collected:* 7/29/2013 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	4.23	J	0.804	MDL	4.59	PQL	mg/Kg	J	Z
BERYLLIUM	1.00	J	0.0770	MDL	1.15	PQL	mg/Kg	J	Z
CADMIUM	0.144	J	0.0873	MDL	1.15	PQL	mg/Kg	J	Z
SODIUM	107	J	19.2	MDL	115	PQL	mg/Kg	J	Z
TIN	2.93	J	0.253	MDL	11.5	PQL	mg/Kg	U	B
Zirconium	3.12	J	0.965	MDL	5.74	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-526-SA8-SB-0.0-0.5 *Collected:* 7/29/2013 1:20:00 *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.312	J	0.107	MDL	0.429	PQL	mg/Kg	J	Z

Sample ID: SL-526-SA8-SB-0.0-0.5 *Collected:* 7/29/2013 1:20:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0384	J	0.0279	MDL	0.215	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: PH078 **Laboratory: LL**

EDD Filename: PH078 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-526-SA8-SB-4.0-5.0 *Collected:* 7/29/2013 1:45:00 *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.166	J	0.112	MDL	0.450	PQL	mg/Kg	J	Z

Sample ID: SL-526-SA8-SB-4.0-5.0 *Collected:* 7/29/2013 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	0.0405	J	0.0292	MDL	0.225	PQL	mg/Kg	J	Z

Sample ID: SL-529-SA8-SB-0.0-0.5 *Collected:* 7/29/2013 12:10:00 *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.291	J	0.104	MDL	0.414	PQL	mg/Kg	J	Z

Sample ID: SL-529-SA8-SB-0.0-0.5 *Collected:* 7/29/2013 12:10:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0472	J	0.0269	MDL	0.207	PQL	mg/Kg	J	Z

Sample ID: SL-529-SA8-SB-4.0-5.0 *Collected:* 7/29/2013 12:40:00 *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.185	J	0.115	MDL	0.459	PQL	mg/Kg	J	Z

Sample ID: SL-529-SA8-SB-4.0-5.0 *Collected:* 7/29/2013 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	0.0430	J	0.0299	MDL	0.230	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-526-SA8-SB-0.0-0.5 *Collected:* 7/29/2013 1:20:00 *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-HPCDF	3.44	JB	0.0178	MDL	5.31	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.242	JB	0.0239	MDL	5.31	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: PH078 **Laboratory: LL**

EDD Filename: PH078 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-526-SA8-SB-0.0-0.5 *Collected:* 7/29/2013 1:20:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,7,8-HxCDD	0.382	JBQ	0.0402	MDL	5.31	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.319	JB	0.0198	MDL	5.31	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	1.05	JBQ	0.0425	MDL	5.31	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.283	JB	0.0202	MDL	5.31	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.913	JB	0.0418	MDL	5.31	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.462	JB	0.0240	MDL	5.31	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.194	JQ	0.0329	MDL	5.31	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.893	JB	0.0230	MDL	5.31	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.280	JB	0.0196	MDL	5.31	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.351	JBQ	0.0216	MDL	5.31	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.299	JQ	0.0407	MDL	1.06	PQL	ng/Kg	J	Z
OCDF	7.79	JB	0.0225	MDL	10.6	PQL	ng/Kg	J	Z

Sample ID: SL-526-SA8-SB-4.0-5.0 *Collected:* 7/29/2013 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	0.693	JB	0.0251	MDL	5.60	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.115	JB	0.00854	MDL	5.60	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0517	JBQ	0.0120	MDL	5.60	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0298	JB	0.0189	MDL	5.60	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0300	JBQ	0.00865	MDL	5.60	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0446	JBQ	0.0206	MDL	5.60	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0310	JB	0.00865	MDL	5.60	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0943	JBQ	0.0204	MDL	5.60	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0559	JBQ	0.0102	MDL	5.60	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0338	JQ	0.0212	MDL	5.60	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.0318	JBQ	0.0140	MDL	5.60	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0171	JB	0.00819	MDL	5.60	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0560	JBQ	0.0132	MDL	5.60	PQL	ng/Kg	U	B
OCDD	5.12	JB	0.0174	MDL	11.2	PQL	ng/Kg	J	Z
OCDF	0.271	JBQ	0.0209	MDL	11.2	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: PH078 **Laboratory: LL**

EDD Filename: PH078 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-529-SA8-SB-0.0-0.5 *Collected:* 7/29/2013 12:10:00 *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	3.21	JB	0.0318	MDL	5.23	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.841	JB	0.0111	MDL	5.23	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0881	JB	0.0152	MDL	5.23	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0813	JB	0.0250	MDL	5.23	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.112	JBQ	0.0156	MDL	5.23	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.230	JB	0.0266	MDL	5.23	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.107	JB	0.0156	MDL	5.23	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.280	JB	0.0263	MDL	5.23	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.166	JB	0.0178	MDL	5.23	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0707	JQ	0.0277	MDL	5.23	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.610	JB	0.0203	MDL	5.23	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.0848	JBQ	0.0148	MDL	5.23	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0763	JBQ	0.0192	MDL	5.23	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.108	J	0.0356	MDL	1.05	PQL	ng/Kg	J	Z
OCDF	2.41	JB	0.0207	MDL	10.5	PQL	ng/Kg	J	Z

Sample ID: SL-529-SA8-SB-4.0-5.0 *Collected:* 7/29/2013 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	0.303	JB	0.0188	MDL	5.66	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.0625	JB	0.00766	MDL	5.66	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0373	JBQ	0.0103	MDL	5.66	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0413	JBQ	0.0181	MDL	5.66	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0268	JBQ	0.00882	MDL	5.66	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0836	JBQ	0.0195	MDL	5.66	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0376	JBQ	0.00882	MDL	5.66	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.276	JB	0.0191	MDL	5.66	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.283	JBQ	0.0103	MDL	5.66	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.0444	JQ	0.0274	MDL	5.66	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.0582	JBQ	0.0140	MDL	5.66	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0317	JBQ	0.00858	MDL	5.66	PQL	ng/Kg	U	B
2,3,7,8-TCDD	0.0245	JBQ	0.0215	MDL	1.13	PQL	ng/Kg	U	B
OCDD	1.04	JB	0.0212	MDL	11.3	PQL	ng/Kg	U	B
OCDF	0.121	JBQ	0.0261	MDL	11.3	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: PH078 **Laboratory: LL**

EDD Filename: PH078 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: SL-526-SA8-SB-0.0-0.5 *Collected:* 7/29/2013 1:20:00 *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)	2.3	J	2.2	MDL	5.5	PQL	mg/Kg	J	Z

Sample ID: SL-526-SA8-SB-4.0-5.0 *Collected:* 7/29/2013 1:45:00 *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)	3.6	J	2.3	MDL	5.8	PQL	mg/Kg	J	Z
EFH (C30-C40)	6.8	J	4.6	MDL	12	PQL	mg/Kg	J	Z

Sample ID: SL-529-SA8-SB-0.0-0.5 *Collected:* 7/29/2013 12:10:00 *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)	2.5	J	2.2	MDL	5.4	PQL	mg/Kg	J	Z

Sample ID: SL-529-SA8-SB-4.0-5.0 *Collected:* 7/29/2013 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 (C21-C30)	3.8	J	2.3	MDL	5.8	PQL	mg/Kg	J	Z
EFH (C30-C40)	8.5	J	4.6	MDL	12	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 8082A **Matrix: SO**

Sample ID: SL-526-SA8-SB-0.0-0.5 *Collected:* 7/29/2013 1:20:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1254	15	J	4.7	MDL	18	PQL	ug/Kg	J	Z

Sample ID: SL-529-SA8-SB-0.0-0.5 *Collected:* 7/29/2013 12:10:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1254	7.3	J	4.7	MDL	18	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: PH078 **Laboratory: LL**

EDD Filename: PH078 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

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

Sample ID: SL-526-SA8-SB-0.0-0.5 *Collected:* 7/29/2013 1:20:00 *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	1.6	J	0.73	MDL	1.8	PQL	ug/Kg	J	Z
ACENAPHTHYLENE	0.55	J	0.36	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(A)PYRENE	1.6	J	0.73	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(G,H,I)PERYLENE	1.3	J	0.73	MDL	1.8	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	7.2	J	6.6	MDL	20	PQL	ug/Kg	J	Z
INDENO(1,2,3-CD)PYRENE	1.4	J	0.73	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: SL-526-SA8-SB-4.0-5.0 *Collected:* 7/29/2013 1:45:00 *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	0.46	J	0.39	MDL	1.9	PQL	ug/Kg	J	Z

Sample ID: SL-529-SA8-SB-0.0-0.5 *Collected:* 7/29/2013 12:10:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-METHYLNAPHTHALENE	0.83	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z
ANTHRACENE	0.38	J	0.36	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(G,H,I)PERYLENE	1.4	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(K)FLUORANTHENE	1.2	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z
INDENO(1,2,3-CD)PYRENE	1.3	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z
NAPHTHALENE	1.4	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: PH078 **Laboratory: LL**

EDD Filename: PH078 **eQAPP Name: CDM_SSFL_130808_Lan**

Reason Code Legend

Reason Code	*Description*
B	Calibration Blank Contamination
B	Method Blank Contamination
F	Field Blank Contamination
L	Laboratory Control Spike Upper Estimation
S	Surrogate/Tracer Recovery Lower 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

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control
Outlier Reports

PH078

Method Blank Outlier Report

Lab Reporting Batch ID: PH078 **Laboratory: LL**

EDD Filename: PH078 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: **1613B**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2180B370402	8/8/2013 4:02:00 AM	1,2,3,4,6,7,8-HPCDD	0.0597 ng/Kg	SL-526-SA8-SB-0.0-0.5
		1,2,3,4,6,7,8-HPCDF	0.0459 ng/Kg	SL-526-SA8-SB-4.0-5.0
		1,2,3,4,7,8,9-HPCDF	0.0308 ng/Kg	SL-529-SA8-SB-0.0-0.5
		1,2,3,4,7,8-HxCDD	0.0349 ng/Kg	SL-529-SA8-SB-4.0-5.0
		1,2,3,4,7,8-HXCDF	0.0428 ng/Kg	
		1,2,3,6,7,8-HXCDD	0.0314 ng/Kg	
		1,2,3,6,7,8-HXCDF	0.00975 ng/Kg	
		1,2,3,7,8,9-HXCDD	0.0571 ng/Kg	
		1,2,3,7,8,9-HXCDF	0.0419 ng/Kg	
		1,2,3,7,8-PECDF	0.0576 ng/Kg	
		2,3,4,6,7,8-HXCDF	0.0472 ng/Kg	
		2,3,4,7,8-PECDF	0.0456 ng/Kg	
		2,3,7,8-TCDD	0.0240 ng/Kg	
		OCDD	0.310 ng/Kg	
		OCDF	0.129 ng/Kg	

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-526-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.115 ng/Kg	0.115U ng/Kg
SL-526-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0517 ng/Kg	0.0517U ng/Kg
SL-526-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HxCDD	0.0298 ng/Kg	0.0298U ng/Kg
SL-526-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.0300 ng/Kg	0.0300U ng/Kg
SL-526-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDD	0.0446 ng/Kg	0.0446U ng/Kg
SL-526-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.0310 ng/Kg	0.0310U ng/Kg
SL-526-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDD	0.0943 ng/Kg	0.0943U ng/Kg
SL-526-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDF	0.0559 ng/Kg	0.0559U ng/Kg
SL-526-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.0318 ng/Kg	0.0318U ng/Kg
SL-526-SA8-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0171 ng/Kg	0.0171U ng/Kg
SL-526-SA8-SB-4.0-5.0(RES)	2,3,4,7,8-PECDF	0.0560 ng/Kg	0.0560U ng/Kg
SL-526-SA8-SB-4.0-5.0(RES)	OCDF	0.271 ng/Kg	0.271U ng/Kg
SL-529-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0881 ng/Kg	0.0881U ng/Kg
SL-529-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.0813 ng/Kg	0.0813U ng/Kg
SL-529-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.112 ng/Kg	0.112U ng/Kg
SL-529-SA8-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDD	0.280 ng/Kg	0.280U ng/Kg
SL-529-SA8-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.166 ng/Kg	0.166U ng/Kg
SL-529-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0848 ng/Kg	0.0848U ng/Kg
SL-529-SA8-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.0763 ng/Kg	0.0763U ng/Kg
SL-529-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0625 ng/Kg	0.0625U ng/Kg
SL-529-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0373 ng/Kg	0.0373U ng/Kg
SL-529-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HxCDD	0.0413 ng/Kg	0.0413U ng/Kg
SL-529-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.0268 ng/Kg	0.0268U ng/Kg
SL-529-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDD	0.0836 ng/Kg	0.0836U ng/Kg
SL-529-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.0376 ng/Kg	0.0376U ng/Kg
SL-529-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDD	0.276 ng/Kg	0.276U ng/Kg
SL-529-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.0582 ng/Kg	0.0582U ng/Kg
SL-529-SA8-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0317 ng/Kg	0.0317U ng/Kg
SL-529-SA8-SB-4.0-5.0(RES)	2,3,7,8-TCDD	0.0245 ng/Kg	0.0245U ng/Kg

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

Method Blank Outlier Report

Lab Reporting Batch ID: PH078 **Laboratory: LL**

EDD Filename: PH078 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: **1613B**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples

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-529-SA8-SB-4.0-5.0(RES)	OCDD	1.04 ng/Kg	1.04U ng/Kg
SL-529-SA8-SB-4.0-5.0(RES)	OCDF	0.121 ng/Kg	0.121U ng/Kg

Method: **6010C**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P21737AB222349	8/8/2013 11:49:00 PM	CALCIUM TIN	6.93 mg/Kg 1.37 mg/Kg	SL-526-SA8-SB-0.0-0.5 SL-526-SA8-SB-4.0-5.0 SL-529-SA8-SB-0.0-0.5 SL-529-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-526-SA8-SB-0.0-0.5(RES)	TIN	2.88 mg/Kg	2.88U mg/Kg
SL-526-SA8-SB-4.0-5.0(RES)	TIN	3.03 mg/Kg	3.03U mg/Kg
SL-529-SA8-SB-0.0-0.5(RES)	TIN	2.82 mg/Kg	2.82U mg/Kg
SL-529-SA8-SB-4.0-5.0(RES)	TIN	2.93 mg/Kg	2.93U mg/Kg

Field Blank Outlier Report

Lab Reporting Batch ID: PH078 **Laboratory: LL**

EDD Filename: PrepPH078 **eQAPP Name: CDM_SSFL_130808_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-526-SA8-SB-0.0-0.5 SL-526-SA8-SB-4.0-5.0 SL-529-SA8-SB-0.0-0.5 SL-529-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-526-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.225 mg/Kg	0.225U mg/Kg
SL-529-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.332 mg/Kg	0.332U mg/Kg

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH078 **Laboratory: LL**

EDD Filename: PH078 **eQAPP Name: CDM_SSFL_130808_Lan**

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

QC Sample ID (Associated Samples)	*Compound*	*LCS %R*	*LCSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
P4LCLCSQ260137 (SL-526-SA8-SB-0.0-0.5 SL-526-SA8-SB-4.0-5.0 SL-529-SA8-SB-0.0-0.5 SL-529-SA8-SB-4.0-5.0)	Diethylphthalate	134	-	68.00-125.00	-	Diethylphthalate	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH078 **Laboratory: LL**

EDD Filename: PH078 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-526-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDF	JB	3.44	5.31	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.242	5.31	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.382	5.31	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.319	5.31	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	1.05	5.31	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.283	5.31	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.913	5.31	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	0.462	5.31	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.194	5.31	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.893	5.31	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.280	5.31	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.351	5.31	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.299	1.06	PQL	ng/Kg	
	OCDF	JB	7.79	10.6	PQL	ng/Kg	
SL-526-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JB	0.693	5.60	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.115	5.60	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0517	5.60	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.0298	5.60	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0300	5.60	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.0446	5.60	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.0310	5.60	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.0943	5.60	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JBQ	0.0559	5.60	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.0338	5.60	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.0318	5.60	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.0171	5.60	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0560	5.60	PQL	ng/Kg	
	OCDD	JB	5.12	11.2	PQL	ng/Kg	
	OCDF	JBQ	0.271	11.2	PQL	ng/Kg	
SL-529-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	3.21	5.23	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.841	5.23	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.0881	5.23	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.0813	5.23	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.112	5.23	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.230	5.23	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.107	5.23	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.280	5.23	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	0.166	5.23	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.0707	5.23	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.610	5.23	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0848	5.23	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0763	5.23	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.108	1.05	PQL	ng/Kg	
	OCDF	JB	2.41	10.5	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH078 **Laboratory: LL**

EDD Filename: PH078 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-529-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JB	0.303	5.66	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.0625	5.66	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0373	5.66	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0413	5.66	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0268	5.66	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.0836	5.66	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0376	5.66	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.276	5.66	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JBQ	0.283	5.66	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.0444	5.66	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.0582	5.66	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0317	5.66	PQL	ng/Kg	
	2,3,7,8-TCDD	JBQ	0.0245	1.13	PQL	ng/Kg	
	OCDD	JB	1.04	11.3	PQL	ng/Kg	
	OCDF	JBQ	0.121	11.3	PQL	ng/Kg	

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-526-SA8-SB-0.0-0.5	ARSENIC	J	4.25	4.29	PQL	mg/Kg	
	BERYLLIUM	J	0.928	1.07	PQL	mg/Kg	
	BORON	J	7.84	10.7	PQL	mg/Kg	
	CADMIUM	J	0.231	1.07	PQL	mg/Kg	
	MOLYBDENUM	J	0.225	2.15	PQL	mg/Kg	J (all detects)
	SODIUM	J	94.9	107	PQL	mg/Kg	
	TIN	J	2.88	10.7	PQL	mg/Kg	
	Zirconium	J	3.73	5.36	PQL	mg/Kg	
SL-526-SA8-SB-4.0-5.0	BERYLLIUM	J	0.981	1.12	PQL	mg/Kg	
	BORON	J	6.24	11.2	PQL	mg/Kg	
	TIN	J	3.03	11.2	PQL	mg/Kg	J (all detects)
	Zirconium	J	3.38	5.62	PQL	mg/Kg	
SL-529-SA8-SB-0.0-0.5	BERYLLIUM	J	0.872	1.04	PQL	mg/Kg	
	BORON	J	8.74	10.4	PQL	mg/Kg	
	CADMIUM	J	0.194	1.04	PQL	mg/Kg	
	MOLYBDENUM	J	0.332	2.07	PQL	mg/Kg	J (all detects)
	SODIUM	J	94.0	104	PQL	mg/Kg	
	TIN	J	2.82	10.4	PQL	mg/Kg	
	Zirconium	J	3.12	5.18	PQL	mg/Kg	
SL-529-SA8-SB-4.0-5.0	ARSENIC	J	4.23	4.59	PQL	mg/Kg	
	BERYLLIUM	J	1.00	1.15	PQL	mg/Kg	
	BORON	J	4.91	11.5	PQL	mg/Kg	
	CADMIUM	J	0.144	1.15	PQL	mg/Kg	J (all detects)
	SODIUM	J	107	115	PQL	mg/Kg	
	TIN	J	2.93	11.5	PQL	mg/Kg	
	Zirconium	J	3.12	5.74	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH078 **Laboratory: LL**

EDD Filename: PH078 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 6020A
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-526-SA8-SB-0.0-0.5	SELENIUM	J	0.312	0.429	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0384	0.215	PQL	mg/Kg	
SL-526-SA8-SB-4.0-5.0	SELENIUM	J	0.166	0.450	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0405	0.225	PQL	mg/Kg	
SL-529-SA8-SB-0.0-0.5	SELENIUM	J	0.291	0.414	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0472	0.207	PQL	mg/Kg	
SL-529-SA8-SB-4.0-5.0	SELENIUM	J	0.185	0.459	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0430	0.230	PQL	mg/Kg	

Method: 8015M
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-526-SA8-SB-0.0-0.5	EFH (C15-C20)	J	2.3	5.5	PQL	mg/Kg	J (all detects)
SL-526-SA8-SB-4.0-5.0	EFH (C21-C30)	J	3.6	5.8	PQL	mg/Kg	J (all detects)
	EFH (C30-C40)	J	6.8	12	PQL	mg/Kg	
SL-529-SA8-SB-0.0-0.5	EFH (C15-C20)	J	2.5	5.4	PQL	mg/Kg	J (all detects)
SL-529-SA8-SB-4.0-5.0	EFH (C21-C30)	J	3.8	5.8	PQL	mg/Kg	J (all detects)
	EFH (C30-C40)	J	8.5	12	PQL	mg/Kg	

Method: 8082A
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-526-SA8-SB-0.0-0.5	AROCLOR 1254	J	15	18	PQL	ug/Kg	J (all detects)
SL-529-SA8-SB-0.0-0.5	AROCLOR 1254	J	7.3	18	PQL	ug/Kg	J (all detects)

Method: 8270D SIM
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-526-SA8-SB-0.0-0.5	2-METHYLNAPHTHALENE	J	1.6	1.8	PQL	ug/Kg	J (all detects)
	ACENAPHTHYLENE	J	0.55	1.8	PQL	ug/Kg	
	BENZO(A)PYRENE	J	1.6	1.8	PQL	ug/Kg	
	BENZO(G,H,I)PERYLENE	J	1.3	1.8	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	7.2	20	PQL	ug/Kg	
	INDENO(1,2,3-CD)PYRENE	J	1.4	1.8	PQL	ug/Kg	
SL-526-SA8-SB-4.0-5.0	CHRYSENE	J	0.46	1.9	PQL	ug/Kg	J (all detects)
SL-529-SA8-SB-0.0-0.5	2-METHYLNAPHTHALENE	J	0.83	1.8	PQL	ug/Kg	J (all detects)
	ANTHRACENE	J	0.38	1.8	PQL	ug/Kg	
	BENZO(G,H,I)PERYLENE	J	1.4	1.8	PQL	ug/Kg	
	BENZO(K)FLUORANTHENE	J	1.2	1.8	PQL	ug/Kg	
	INDENO(1,2,3-CD)PYRENE	J	1.3	1.8	PQL	ug/Kg	
	NAPHTHALENE	J	1.4	1.8	PQL	ug/Kg	

LDC #: 30330D4
SDG #: PH078
Laboratory: Eurofins Lancaster Laboratories

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 9/4/13
Page: 1 of 1
Reviewer: A
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	-	Sampling dates: 7/29/13
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	N	
XV	Field Blanks	SW	FB=FB011113 (PH029) EB=EB1-080113 (PH082)

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-529-SA8-SB-0.0-0.5	11		21		31	
2	SL-529-SA8-SB-4.0-5.0	12		22		32	
3	SL-526-SA8-SB-0.0-0.5	13		23		33	
4	SL-526-SA8-SB-4.0-5.0	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 30330D4

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: CA
2nd Reviewer:

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									
Mo			2.0	1	0.33	0.23									

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.

LDC #: 30330D4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: CR
2nd Reviewer: [illegible]

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								
Cu	0.0036	1.8										
Mo	0.0036	1.8	0.33	0.23								

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 #: 30330D4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: CA
2nd Reviewer:

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

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

Sampling date: 8/1/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All

Analyte	Blank ID	Sample Identification										
	EB1-080113 (SDG: PH082)	Action Limit	No Qualifiers									
Ba	0.00039	0.195										

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 13, 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 5, 2013. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 30362:

SDG #	Fraction
PH080	Semivolatiles, Chlorinated Pesticides, Polychlorinated Biphenyls,
PH081	Metals, Herbicides, Total Petroleum Hydrocarbons as Gasoline,
PH082	Total Petroleum Hydrocarbons as Extractables,
PH083	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,

Shauna McKellar
Project Manager/Chemist

2,649 pages-CD

Attachment 1

90/10 ADR/IV

LDC #30362 (CDM Federal Programs-Chantilly VA / Santa Susana Field Laboratory, Subarea 8)

LDC	SDG#	DATE REC'D	(4) DATE DUE	SVOA (8270D -SIM)		Pest. (8081B)		PCBs (8082)		Metals & Hg (SW846)		Herbs (8151A)		TPH-G (8015M)		TPH-E (8015M)		Dioxins (1613B)																			
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
A	PH080	09/05/13	10/03/13	0	9	-	-	0	9	0	9	-	-	1	4	0	9	0	9																
B	PH081	09/05/13	10/03/13	0	6	-	-	0	6	0	4	-	-	1	2	0	4	0	6																
C	PH082	09/05/13	10/03/13	2	6	1	3	2	6	2	6	1	3	3	4	2	6	2	5																
D	PH083	09/05/13	10/03/13	0	9	-	-	0	9	0	9	-	-	1	6	0	9	0	6																
Total	T/SM			2	30	1	3	2	30	2	28	1	3	6	16	2	28	2	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	182

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: PH080

Prepared for

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November 11, 2013

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on July 30, 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), 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 calibration blanks, 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
PH080/ 6010C	ICB/CCB	Molybdenum	2.0 ug/L	SL-560-SA8-SB-0.0-0.5 SL-560-SA8-SB-4.0-5.0 SL-549-SA8-SB-0.0-0.5 SL-549-SA8-SB-4.0-5.0 SL-612-SA8-SB-0.0-0.5 SL-612-SA8-SB-4.0-5.0 SL-596-SA8-SB-0.0-0.5 SL-589-SA8-SB-0.0-0.5 SL-589-SA8-SB-2.5-3.5

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
PH080/ 6010C	SL-560-SA8-SB-0.0-0.5	Molybdenum	0.726 ug/L	0.726U ug/L
PH080/ 6010C	SL-549-SA8-SB-0.0-0.5	Molybdenum	0.325 ug/L	0.325U ug/L
PH080/ 6010C	SL-596-SA8-SB-0.0-0.5	Molybdenum	0.288 ug/L	0.288U ug/L

SDG/Method	Sample	Compound	Reported Concentration	Modified Final Concentration
PH080/ 6010C	SL-589-SA8-SB-0.0-0.5	Molybdenum	0.255 ug/L	0.255U ug/L
PH080/ 6010C	SL-589-SA8-SB-2.5-3.5	Molybdenum	0.240 ug/L	0.240U 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 with the exception of one MS/MSD pair for TPH-G. The associated sample results were qualified as detected estimated (J) 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 with the exception of one LCS/LCSD pair for SVOCs. No data were qualified for due to high %Rs since the associated results were non-detected.

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 PH080	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 PH082) was collected and analyzed for SVOCs, PCBs, metals, TPH-G, TPH-E 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
30-Jul-2013	SL-560-SA8-SB-0.0-0.5	7145267	N	3050B	6010C	III
30-Jul-2013	SL-560-SA8-SB-0.0-0.5	7145267	N	3050B	6020A	III
30-Jul-2013	SL-560-SA8-SB-0.0-0.5	7145267	N	3546	8015M	III
30-Jul-2013	SL-560-SA8-SB-0.0-0.5	7145267	N	3546	8082A	III
30-Jul-2013	SL-560-SA8-SB-0.0-0.5	7145267	N	3546	8270D SIM	III
30-Jul-2013	SL-560-SA8-SB-0.0-0.5	7145267	N	METHOD	1613B	III
30-Jul-2013	SL-560-SA8-SB-0.0-0.5	7145267	N	METHOD	7471B	III
30-Jul-2013	TB-073013	7145266	TB	5030B	8015M	III
30-Jul-2013	SL-560-SA8-SB-4.0-5.0	7145268	N	3050B	6010C	III
30-Jul-2013	SL-560-SA8-SB-4.0-5.0	7145268	N	3050B	6020A	III
30-Jul-2013	SL-560-SA8-SB-4.0-5.0	7145268	N	3546	8015M	III
30-Jul-2013	SL-560-SA8-SB-4.0-5.0	7145268	N	3546	8082A	III
30-Jul-2013	SL-560-SA8-SB-4.0-5.0	7145268	N	3546	8270D SIM	III
30-Jul-2013	SL-560-SA8-SB-4.0-5.0	7145268	N	5035A	8015M	III
30-Jul-2013	SL-560-SA8-SB-4.0-5.0	7145268	N	METHOD	1613B	III
30-Jul-2013	SL-560-SA8-SB-4.0-5.0	7145268	N	METHOD	7471B	III
30-Jul-2013	SL-549-SA8-SB-0.0-0.5	7145269	N	3050B	6010C	III
30-Jul-2013	SL-549-SA8-SB-0.0-0.5	7145269	N	3050B	6020A	III
30-Jul-2013	SL-549-SA8-SB-0.0-0.5	7145269	N	3546	8015M	III
30-Jul-2013	SL-549-SA8-SB-0.0-0.5	7145269	N	3546	8082A	III
30-Jul-2013	SL-549-SA8-SB-0.0-0.5	7145269	N	3546	8270D SIM	III
30-Jul-2013	SL-549-SA8-SB-0.0-0.5	7145269	N	METHOD	1613B	III
30-Jul-2013	SL-549-SA8-SB-0.0-0.5	7145269	N	METHOD	7471B	III
30-Jul-2013	SL-549-SA8-SB-4.0-5.0	7145270	N	3050B	6010C	III
30-Jul-2013	SL-549-SA8-SB-4.0-5.0	7145270	N	3050B	6020A	III
30-Jul-2013	SL-549-SA8-SB-4.0-5.0	7145270	N	3546	8015M	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
30-Jul-2013	SL-549-SA8-SB-4.0-5.0	7145270	N	3546	8082A	III
30-Jul-2013	SL-549-SA8-SB-4.0-5.0	7145270	N	3546	8270D SIM	III
30-Jul-2013	SL-549-SA8-SB-4.0-5.0	7145270	N	5035A	8015M	III
30-Jul-2013	SL-549-SA8-SB-4.0-5.0	7145270	N	METHOD	1613B	III
30-Jul-2013	SL-549-SA8-SB-4.0-5.0	7145270	N	METHOD	7471B	III
30-Jul-2013	SL-549-SA8-SB-4.0-5.0DUP	P145270D220559	DUP	METHOD	7471B	III
30-Jul-2013	SL-549-SA8-SB-4.0-5.0MSD	P145270M220603	MSD	METHOD	7471B	III
30-Jul-2013	SL-549-SA8-SB-4.0-5.0MS	P145270R220601	MS	METHOD	7471B	III
30-Jul-2013	SL-612-SA8-SB-0.0-0.5	7145271	N	3050B	6010C	III
30-Jul-2013	SL-612-SA8-SB-0.0-0.5	7145271	N	3050B	6020A	III
30-Jul-2013	SL-612-SA8-SB-0.0-0.5	7145271	N	3546	8015M	III
30-Jul-2013	SL-612-SA8-SB-0.0-0.5	7145271	N	3546	8082A	III
30-Jul-2013	SL-612-SA8-SB-0.0-0.5	7145271	N	3546	8270D SIM	III
30-Jul-2013	SL-612-SA8-SB-0.0-0.5	7145271	N	METHOD	1613B	III
30-Jul-2013	SL-612-SA8-SB-0.0-0.5	7145271	N	METHOD	7471B	III
30-Jul-2013	SL-612-SA8-SB-4.0-5.0	7145272	N	3050B	6010C	III
30-Jul-2013	SL-612-SA8-SB-4.0-5.0	7145272	N	3050B	6020A	III
30-Jul-2013	SL-612-SA8-SB-4.0-5.0	7145272	N	3546	8015M	III
30-Jul-2013	SL-612-SA8-SB-4.0-5.0	7145272	N	3546	8082A	III
30-Jul-2013	SL-612-SA8-SB-4.0-5.0	7145272	N	3546	8270D SIM	III
30-Jul-2013	SL-612-SA8-SB-4.0-5.0	7145272	N	5035A	8015M	III
30-Jul-2013	SL-612-SA8-SB-4.0-5.0	7145272	N	METHOD	1613B	III
30-Jul-2013	SL-612-SA8-SB-4.0-5.0	7145272	N	METHOD	7471B	III
30-Jul-2013	SL-612-SA8-SB-4.0-5.0MSD	P145272M321820A	MSD	3546	8015M	III
30-Jul-2013	SL-612-SA8-SB-4.0-5.0MS	P145272R321759A	MS	3546	8015M	III
30-Jul-2013	SL-589-SA8-SB-0.0-0.5	7145274	N	3050B	6010C	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
30-Jul-2013	SL-589-SA8-SB-0.0-0.5	7145274	N	3050B	6020A	III
30-Jul-2013	SL-589-SA8-SB-0.0-0.5	7145274	N	3546	8015M	III
30-Jul-2013	SL-589-SA8-SB-0.0-0.5	7145274	N	3546	8082A	III
30-Jul-2013	SL-589-SA8-SB-0.0-0.5	7145274	N	3546	8270D SIM	III
30-Jul-2013	SL-589-SA8-SB-0.0-0.5	7145274	N	METHOD	1613B	III
30-Jul-2013	SL-589-SA8-SB-0.0-0.5	7145274	N	METHOD	7471B	III
30-Jul-2013	SL-589-SA8-SB-2.5-3.5	7145275	N	3050B	6010C	III
30-Jul-2013	SL-589-SA8-SB-2.5-3.5	7145275	N	3050B	6020A	III
30-Jul-2013	SL-589-SA8-SB-2.5-3.5	7145275	N	3546	8015M	III
30-Jul-2013	SL-589-SA8-SB-2.5-3.5	7145275	N	3546	8082A	III
30-Jul-2013	SL-589-SA8-SB-2.5-3.5	7145275	N	3546	8270D SIM	III
30-Jul-2013	SL-589-SA8-SB-2.5-3.5	7145275	N	5035A	8015M	III
30-Jul-2013	SL-589-SA8-SB-2.5-3.5	7145275	N	METHOD	1613B	III
30-Jul-2013	SL-589-SA8-SB-2.5-3.5	7145275	N	METHOD	7471B	III
30-Jul-2013	SL-596-SA8-SB-0.0-0.5	7145273	N	3050B	6010C	III
30-Jul-2013	SL-596-SA8-SB-0.0-0.5	7145273	N	3050B	6020A	III
30-Jul-2013	SL-596-SA8-SB-0.0-0.5	7145273	N	3546	8015M	III
30-Jul-2013	SL-596-SA8-SB-0.0-0.5	7145273	N	3546	8082A	III
30-Jul-2013	SL-596-SA8-SB-0.0-0.5	7145273	N	3546	8270D SIM	III
30-Jul-2013	SL-596-SA8-SB-0.0-0.5	7145273	N	METHOD	1613B	III
30-Jul-2013	SL-596-SA8-SB-0.0-0.5	7145273	N	METHOD	7471B	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation
N = Normal Sample
FD = Field Duplicate
TB = Trip Blank
FB = Field Blank
MS = Matrix Spike
MSD = Matrix Spike Duplicate

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH080 **Laboratory: LL**

EDD Filename: PrepPH080 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-549-SA8-SB-0.0-0.5 **Collected:** 7/30/2013 9:00:00 **Analysis Type:** REA **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	7.02	J	0.893	MDL	10.6	PQL	mg/Kg	J	Z

Sample ID: SL-549-SA8-SB-0.0-0.5 **Collected:** 7/30/2013 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
ARSENIC	3.65	J	0.744	MDL	4.25	PQL	mg/Kg	J	Z
BERYLLIUM	0.895	J	0.0712	MDL	1.06	PQL	mg/Kg	J	Z
CADMIUM	0.222	J	0.0808	MDL	1.06	PQL	mg/Kg	J	Z
MOLYBDENUM	0.325	J	0.181	MDL	2.13	PQL	mg/Kg	U	B, F
SODIUM	89.1	J	17.8	MDL	106	PQL	mg/Kg	J	Z
TIN	2.83	J	0.234	MDL	10.6	PQL	mg/Kg	U	B
Zirconium	3.43	J	0.893	MDL	5.32	PQL	mg/Kg	J	Z

Sample ID: SL-549-SA8-SB-4.0-5.0 **Collected:** 7/30/2013 9:30:00 **Analysis Type:** REA **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	5.30	J	0.937	MDL	11.1	PQL	mg/Kg	J	Z

Sample ID: SL-549-SA8-SB-4.0-5.0 **Collected:** 7/30/2013 9:30:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	3.64	J	0.780	MDL	4.46	PQL	mg/Kg	J	Z
BERYLLIUM	0.983	J	0.0747	MDL	1.11	PQL	mg/Kg	J	Z
SODIUM	103	J	18.6	MDL	111	PQL	mg/Kg	J	Z
TIN	2.97	J	0.245	MDL	11.1	PQL	mg/Kg	U	B
Zirconium	3.97	J	0.937	MDL	5.57	PQL	mg/Kg	J	Z

Sample ID: SL-560-SA8-SB-0.0-0.5 **Collected:** 7/30/2013 7:50:00 **Analysis Type:** REA **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	7.31	J	0.890	MDL	10.6	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: PH080 **Laboratory: LL**

EDD Filename: PrepPH080 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-560-SA8-SB-0.0-0.5 *Collected:* 7/30/2013 7:50:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	3.16	J	0.742	MDL	4.24	PQL	mg/Kg	J	Z
BERYLLIUM	0.866	J	0.0710	MDL	1.06	PQL	mg/Kg	J	Z
CADMIUM	0.234	J	0.0806	MDL	1.06	PQL	mg/Kg	J	Z
MOLYBDENUM	0.726	J	0.180	MDL	2.12	PQL	mg/Kg	U	B, F
TIN	2.98	J	0.233	MDL	10.6	PQL	mg/Kg	U	B
Zirconium	4.97	J	0.890	MDL	5.30	PQL	mg/Kg	J	Z

Sample ID: SL-560-SA8-SB-4.0-5.0 *Collected:* 7/30/2013 8:10:00 *Analysis Type:* REA *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	6.70	J	0.935	MDL	11.1	PQL	mg/Kg	J	Z

Sample ID: SL-560-SA8-SB-4.0-5.0 *Collected:* 7/30/2013 8:10:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	4.26	J	0.780	MDL	4.45	PQL	mg/Kg	J	Z
BERYLLIUM	1.03	J	0.0746	MDL	1.11	PQL	mg/Kg	J	Z
TIN	3.25	J	0.245	MDL	11.1	PQL	mg/Kg	U	B
Zirconium	3.80	J	0.935	MDL	5.57	PQL	mg/Kg	J	Z

Sample ID: SL-589-SA8-SB-0.0-0.5 *Collected:* 7/30/2013 12:50:00 *Analysis Type:* REA *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	1.52	J	0.864	MDL	10.3	PQL	mg/Kg	J	Z

Sample ID: SL-589-SA8-SB-0.0-0.5 *Collected:* 7/30/2013 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
ARSENIC	2.41	J	0.720	MDL	4.11	PQL	mg/Kg	J	Z
BERYLLIUM	0.628	J	0.0689	MDL	1.03	PQL	mg/Kg	J	Z
CADMIUM	0.147	J	0.0781	MDL	1.03	PQL	mg/Kg	J	Z
MOLYBDENUM	0.255	J	0.175	MDL	2.06	PQL	mg/Kg	U	B, F
SODIUM	85.8	J	17.2	MDL	103	PQL	mg/Kg	J	Z
TIN	2.66	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: PH080 **Laboratory: LL**

EDD Filename: PrepPH080 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-589-SA8-SB-2.5-3.5 *Collected:* 7/30/2013 1:00:00 *Analysis Type:* REA *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	1.32	J	0.853	MDL	10.1	PQL	mg/Kg	J	Z

Sample ID: SL-589-SA8-SB-2.5-3.5 *Collected:* 7/30/2013 1:00:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	2.72	J	0.710	MDL	4.06	PQL	mg/Kg	J	Z
BERYLLIUM	0.615	J	0.0680	MDL	1.01	PQL	mg/Kg	J	Z
CADMIUM	0.0842	J	0.0771	MDL	1.01	PQL	mg/Kg	J	Z
MOLYBDENUM	0.240	J	0.173	MDL	2.03	PQL	mg/Kg	U	B, F
SODIUM	87.2	J	16.9	MDL	101	PQL	mg/Kg	J	Z
TIN	2.56	J	0.223	MDL	10.1	PQL	mg/Kg	U	B

Sample ID: SL-596-SA8-SB-0.0-0.5 *Collected:* 7/30/2013 1:40:00 *Analysis Type:* REA *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	1.04	J	0.834	MDL	9.92	PQL	mg/Kg	J	Z

Sample ID: SL-596-SA8-SB-0.0-0.5 *Collected:* 7/30/2013 1:40:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	2.63	J	0.695	MDL	3.97	PQL	mg/Kg	J	Z
BERYLLIUM	0.534	J	0.0665	MDL	0.992	PQL	mg/Kg	J	Z
CADMIUM	0.113	J	0.0754	MDL	0.992	PQL	mg/Kg	J	Z
MOLYBDENUM	0.288	J	0.169	MDL	1.98	PQL	mg/Kg	U	B, F
SODIUM	80.2	J	16.6	MDL	99.2	PQL	mg/Kg	J	Z
TIN	2.40	J	0.218	MDL	9.92	PQL	mg/Kg	U	B

Sample ID: SL-612-SA8-SB-0.0-0.5 *Collected:* 7/30/2013 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
BERYLLIUM	0.364	J	0.0732	MDL	1.09	PQL	mg/Kg	J	Z
TIN	2.55	J	0.240	MDL	10.9	PQL	mg/Kg	U	B
Zirconium	3.13	J	0.918	MDL	5.46	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: PH080 **Laboratory: LL**

EDD Filename: PrepPH080 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-612-SA8-SB-4.0-5.0 *Collected:* 7/30/2013 11:00:00 *Analysis Type:* REA *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	9.47	J	0.881	MDL	10.5	PQL	mg/Kg	J	Z

Sample ID: SL-612-SA8-SB-4.0-5.0 *Collected:* 7/30/2013 11:00:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	0.337	J	0.0703	MDL	1.05	PQL	mg/Kg	J	Z
TIN	2.22	J	0.231	MDL	10.5	PQL	mg/Kg	U	B
Zirconium	3.26	J	0.881	MDL	5.24	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-549-SA8-SB-0.0-0.5 *Collected:* 7/30/2013 9:00:00 *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.338	J	0.106	MDL	0.425	PQL	mg/Kg	J	Z

Sample ID: SL-549-SA8-SB-0.0-0.5 *Collected:* 7/30/2013 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	0.0574	J	0.0276	MDL	0.213	PQL	mg/Kg	J	Z

Sample ID: SL-549-SA8-SB-4.0-5.0 *Collected:* 7/30/2013 9:30:00 *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.139	J	0.111	MDL	0.446	PQL	mg/Kg	J	Z

Sample ID: SL-549-SA8-SB-4.0-5.0 *Collected:* 7/30/2013 9:30:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0399	J	0.0290	MDL	0.223	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: PH080 **Laboratory: LL**

EDD Filename: PrepPH080 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: **SL-560-SA8-SB-0.0-0.5** *Collected:* **7/30/2013 7:50:00** *Analysis Type:* **REA2** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.385	J	0.106	MDL	0.424	PQL	mg/Kg	J	Z

Sample ID: **SL-560-SA8-SB-0.0-0.5** *Collected:* **7/30/2013 7:50:00** *Analysis Type:* **RES** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0541	J	0.0276	MDL	0.212	PQL	mg/Kg	J	Z

Sample ID: **SL-560-SA8-SB-4.0-5.0** *Collected:* **7/30/2013 8:10:00** *Analysis Type:* **REA2** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.130	J	0.111	MDL	0.445	PQL	mg/Kg	J	Z

Sample ID: **SL-560-SA8-SB-4.0-5.0** *Collected:* **7/30/2013 8:10:00** *Analysis Type:* **RES** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0503	J	0.0290	MDL	0.223	PQL	mg/Kg	J	Z

Sample ID: **SL-589-SA8-SB-0.0-0.5** *Collected:* **7/30/2013 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	0.163	J	0.103	MDL	0.411	PQL	mg/Kg	J	Z

Sample ID: **SL-589-SA8-SB-0.0-0.5** *Collected:* **7/30/2013 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	0.0306	J	0.0267	MDL	0.206	PQL	mg/Kg	J	Z

Sample ID: **SL-589-SA8-SB-2.5-3.5** *Collected:* **7/30/2013 1:00:00** *Analysis Type:* **REA2** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.128	J	0.101	MDL	0.406	PQL	mg/Kg	J	Z

Sample ID: **SL-589-SA8-SB-2.5-3.5** *Collected:* **7/30/2013 1:00:00** *Analysis Type:* **RES** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0302	J	0.0264	MDL	0.203	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: PH080 **Laboratory: LL**

EDD Filename: PrepPH080 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-596-SA8-SB-0.0-0.5 *Collected:* 7/30/2013 1:40:00 *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.201	J	0.0992	MDL	0.397	PQL	mg/Kg	J	Z

Sample ID: SL-596-SA8-SB-0.0-0.5 *Collected:* 7/30/2013 1:40:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0310	J	0.0258	MDL	0.198	PQL	mg/Kg	J	Z

Sample ID: SL-612-SA8-SB-0.0-0.5 *Collected:* 7/30/2013 10:40:00 *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.329	J	0.109	MDL	0.437	PQL	mg/Kg	J	Z

Sample ID: SL-612-SA8-SB-4.0-5.0 *Collected:* 7/30/2013 11:00:00 *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.283	J	0.105	MDL	0.419	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: SL-549-SA8-SB-0.0-0.5 *Collected:* 7/30/2013 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
MERCURY	0.0170	J	0.0107	MDL	0.0178	PQL	mg/Kg	J	Z

Sample ID: SL-589-SA8-SB-0.0-0.5 *Collected:* 7/30/2013 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
MERCURY	0.0132	J	0.0101	MDL	0.0168	PQL	mg/Kg	J	Z

Sample ID: SL-596-SA8-SB-0.0-0.5 *Collected:* 7/30/2013 1:40:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0137	J	0.0099	MDL	0.0164	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: PH080 **Laboratory: LL**

EDD Filename: PrepPH080 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: SL-612-SA8-SB-0.0-0.5 *Collected:* 7/30/2013 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
MERCURY	0.0163	J	0.0111	MDL	0.0185	PQL	mg/Kg	J	Z

Sample ID: SL-612-SA8-SB-4.0-5.0 *Collected:* 7/30/2013 11:00:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0148	J	0.0103	MDL	0.0172	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-549-SA8-SB-0.0-0.5 *Collected:* 7/30/2013 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	2.18	JB	0.0201	MDL	5.31	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.475	JB	0.0123	MDL	5.31	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0595	JBQ	0.0154	MDL	5.31	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0723	JBQ	0.0220	MDL	5.31	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.112	JBQ	0.0136	MDL	5.31	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.269	JB	0.0230	MDL	5.31	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.101	JBQ	0.0136	MDL	5.31	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.325	JB	0.0226	MDL	5.31	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.519	JB	0.0154	MDL	5.31	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.0745	JB	0.0228	MDL	5.31	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.377	JBQ	0.0168	MDL	5.31	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.105	JB	0.0131	MDL	5.31	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.151	JQ	0.0158	MDL	5.31	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.0209	JQ	0.0194	MDL	1.06	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.105	JB	0.0316	MDL	1.06	PQL	ng/Kg	J	Z
OCDF	1.13	JB	0.0188	MDL	10.6	PQL	ng/Kg	J	Z

Sample ID: SL-549-SA8-SB-4.0-5.0 *Collected:* 7/30/2013 9:30:00 *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	0.251	JBQ	0.0186	MDL	5.58	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0949	JBQ	0.00631	MDL	5.58	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: PH080 **Laboratory: LL**

EDD Filename: PrepPH080 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-549-SA8-SB-4.0-5.0 *Collected:* 7/30/2013 9:30:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,7,8,9-HPCDF	0.0612	JBQ	0.00957	MDL	5.58	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0594	JB	0.0195	MDL	5.58	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0584	JBQ	0.00923	MDL	5.58	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0983	JBQ	0.0206	MDL	5.58	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0604	JB	0.00912	MDL	5.58	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.128	JBQ	0.0205	MDL	5.58	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.193	JB	0.00991	MDL	5.58	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0594	JBQ	0.0216	MDL	5.58	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.0687	JBQ	0.0124	MDL	5.58	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0565	JBQ	0.00912	MDL	5.58	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0418	JQ	0.0124	MDL	5.58	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.0318	JQ	0.0171	MDL	1.12	PQL	ng/Kg	J	Z
OCDD	1.56	JB	0.0172	MDL	11.2	PQL	ng/Kg	U	B
OCDF	0.248	JB	0.0226	MDL	11.2	PQL	ng/Kg	U	B

Sample ID: SL-560-SA8-SB-0.0-0.5 *Collected:* 7/30/2013 7:50:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,7,8,9-HPCDF	0.384	JBQ	0.0198	MDL	5.28	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.800	JB	0.0375	MDL	5.28	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.505	JBQ	0.0228	MDL	5.28	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	2.94	JB	0.0398	MDL	5.28	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.514	JB	0.0239	MDL	5.28	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	1.86	JB	0.0389	MDL	5.28	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.717	JB	0.0255	MDL	5.28	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.508	JBQ	0.0337	MDL	5.28	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	1.11	JB	0.0270	MDL	5.28	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.581	JB	0.0233	MDL	5.28	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.446	JQ	0.0256	MDL	5.28	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.0384	JQ	0.0182	MDL	1.06	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.321	JBQ	0.0459	MDL	1.06	PQL	ng/Kg	J	Z
OCDF	6.57	JB	0.0210	MDL	10.6	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: PH080 **Laboratory: LL**

EDD Filename: PrepPH080 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-560-SA8-SB-4.0-5.0 *Collected:* 7/30/2013 8:10:00 *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	3.95	JB	0.0291	MDL	5.40	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.398	JB	0.0121	MDL	5.40	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0882	JB	0.0183	MDL	5.40	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.100	JB	0.0243	MDL	5.40	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0760	JBQ	0.0130	MDL	5.40	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.244	JBQ	0.0257	MDL	5.40	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0601	JB	0.0130	MDL	5.40	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.186	JBQ	0.0252	MDL	5.40	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.121	JB	0.0149	MDL	5.40	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0445	JBQ	0.0215	MDL	5.40	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.114	JBQ	0.0117	MDL	5.40	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0850	JBQ	0.0127	MDL	5.40	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0742	J	0.0117	MDL	5.40	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.0192	JQ	0.0155	MDL	1.08	PQL	ng/Kg	J	Z
OCDF	0.597	JB	0.0236	MDL	10.8	PQL	ng/Kg	U	B

Sample ID: SL-589-SA8-SB-0.0-0.5 *Collected:* 7/30/2013 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	0.114	JBQ	0.0169	MDL	5.10	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0834	JBQ	0.00768	MDL	5.10	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0396	JBQ	0.0109	MDL	5.10	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0832	JBQ	0.0192	MDL	5.10	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.115	JB	0.0116	MDL	5.10	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.202	JBQ	0.0206	MDL	5.10	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.129	JB	0.0116	MDL	5.10	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.342	JB	0.0202	MDL	5.10	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.316	JB	0.0138	MDL	5.10	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.161	JBQ	0.0239	MDL	5.10	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.228	JBQ	0.0148	MDL	5.10	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0864	JBQ	0.0110	MDL	5.10	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.138	JQ	0.0142	MDL	5.10	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.0432	JQ	0.0219	MDL	1.02	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.0684	JB	0.0160	MDL	1.02	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: PH080 **Laboratory: LL**

EDD Filename: PrepPH080 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-589-SA8-SB-0.0-0.5 *Collected:* 7/30/2013 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
OCDD	1.12	JB	0.0166	MDL	10.2	PQL	ng/Kg	U	B
OCDF	0.157	JBQ	0.0209	MDL	10.2	PQL	ng/Kg	U	B

Sample ID: SL-589-SA8-SB-2.5-3.5 *Collected:* 7/30/2013 1:00:00 *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	JB	0.0203	MDL	5.04	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.285	JB	0.00932	MDL	5.04	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0803	JB	0.0133	MDL	5.04	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.146	JB	0.0214	MDL	5.04	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.165	JB	0.0130	MDL	5.04	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.260	JB	0.0231	MDL	5.04	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.209	JBQ	0.0122	MDL	5.04	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.333	JB	0.0219	MDL	5.04	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.266	JB	0.0145	MDL	5.04	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.216	JBQ	0.0248	MDL	5.04	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.338	JBQ	0.0154	MDL	5.04	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.127	JBQ	0.0120	MDL	5.04	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.253	J	0.0146	MDL	5.04	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.0913	JQ	0.0224	MDL	1.01	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.0962	JBQ	0.0193	MDL	1.01	PQL	ng/Kg	J	Z
OCDF	0.480	JB	0.0212	MDL	10.1	PQL	ng/Kg	U	B

Sample ID: SL-596-SA8-SB-0.0-0.5 *Collected:* 7/30/2013 1:40:00 *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	0.924	JB	0.0178	MDL	4.93	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.199	JB	0.00729	MDL	4.93	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0337	JBQ	0.00992	MDL	4.93	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0362	JBQ	0.0169	MDL	4.93	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0773	JB	0.00769	MDL	4.93	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0845	JB	0.0186	MDL	4.93	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0502	JBQ	0.00729	MDL	4.93	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.106	JBQ	0.0177	MDL	4.93	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0904	JB	0.00810	MDL	4.93	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: PH080 **Laboratory: LL**

EDD Filename: PrepPH080 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-596-SA8-SB-0.0-0.5** *Collected:* **7/30/2013 1:40:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,7,8-PECDD	0.0406	JB	0.0171	MDL	4.93	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.0700	JB	0.0110	MDL	4.93	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0506	JBQ	0.00729	MDL	4.93	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0741	J	0.0100	MDL	4.93	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.0191	JQ	0.0168	MDL	0.986	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.0180	JBQ	0.0149	MDL	0.986	PQL	ng/Kg	U	B
OCDD	8.00	JB	0.0132	MDL	9.86	PQL	ng/Kg	J	Z
OCDF	0.414	JB	0.0158	MDL	9.86	PQL	ng/Kg	U	B

Sample ID: **SL-612-SA8-SB-0.0-0.5** *Collected:* **7/30/2013 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	0.0722	JB	0.0150	MDL	5.61	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0557	JB	0.00625	MDL	5.61	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0444	JBQ	0.00977	MDL	5.61	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0561	JBQ	0.0149	MDL	5.61	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0543	JBQ	0.00841	MDL	5.61	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0323	JBQ	0.0163	MDL	5.61	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0420	JBQ	0.00830	MDL	5.61	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0593	JBQ	0.0161	MDL	5.61	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0341	JBQ	0.0107	MDL	5.61	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0530	JBQ	0.0234	MDL	5.61	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.0522	JBQ	0.0136	MDL	5.61	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0497	JBQ	0.00795	MDL	5.61	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0540	JQ	0.0125	MDL	5.61	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.0276	JQ	0.0270	MDL	1.12	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.0272	JBQ	0.0194	MDL	1.12	PQL	ng/Kg	U	B
OCDD	0.264	JBQ	0.0172	MDL	11.2	PQL	ng/Kg	U	B
OCDF	0.151	JB	0.0231	MDL	11.2	PQL	ng/Kg	U	B

Sample ID: **SL-612-SA8-SB-4.0-5.0** *Collected:* **7/30/2013 11:00:00** *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	0.364	JBQ	0.0198	MDL	5.22	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.0976	JB	0.00727	MDL	5.22	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: PH080 **Laboratory: LL**

EDD Filename: PrepPH080 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-612-SA8-SB-4.0-5.0 *Collected:* 7/30/2013 11:00:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,7,8,9-HPCDF	0.0608	JBQ	0.0107	MDL	5.22	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0565	JBQ	0.0168	MDL	5.22	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0786	JB	0.0121	MDL	5.22	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0609	JB	0.0114	MDL	5.22	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0442	JBQ	0.0174	MDL	5.22	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0491	JBQ	0.0132	MDL	5.22	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.126	JB	0.0169	MDL	5.22	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0740	JBQ	0.0111	MDL	5.22	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0839	JQ	0.0157	MDL	5.22	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.0231	JQ	0.0203	MDL	1.04	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.0636	JBQ	0.0244	MDL	1.04	PQL	ng/Kg	U	B
OCDD	4.69	JB	0.0190	MDL	10.4	PQL	ng/Kg	J	Z
OCDF	0.258	JB	0.0191	MDL	10.4	PQL	ng/Kg	U	B

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: SL-549-SA8-SB-4.0-5.0 *Collected:* 7/30/2013 9:30:00 *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)	2.7	J	2.3	MDL	5.6	PQL	mg/Kg	J	Z
EFH (C30-C40)	5.1	J	4.5	MDL	11	PQL	mg/Kg	J	Z

Sample ID: SL-589-SA8-SB-0.0-0.5 *Collected:* 7/30/2013 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
EFH (C21-C30)	4.0	J	2.1	MDL	5.2	PQL	mg/Kg	J	Z
EFH (C30-C40)	8.5	J	4.2	MDL	10	PQL	mg/Kg	J	Z

Sample ID: SL-589-SA8-SB-2.5-3.5 *Collected:* 7/30/2013 1:00:00 *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)	3.8	J	2.1	MDL	5.2	PQL	mg/Kg	J	Z
EFH (C30-C40)	8.7	J	4.1	MDL	10	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: PH080 **Laboratory: LL**

EDD Filename: PrepPH080 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: SL-612-SA8-SB-0.0-0.5 *Collected:* 7/30/2013 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
EFH (C30-C40)	6.1	J	4.5	MDL	11	PQL	mg/Kg	J	Z

Sample ID: SL-612-SA8-SB-4.0-5.0 *Collected:* 7/30/2013 11:00:00 *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)	3.2	J	2.1	MDL	5.3	PQL	mg/Kg	J	Z
EFH (C30-C40)	12		4.3	MDL	11	PQL	mg/Kg	J	Q

Method Category: SVOA

Method: 8082A **Matrix: SO**

Sample ID: SL-560-SA8-SB-0.0-0.5 *Collected:* 7/30/2013 7:50:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1254	14	J	4.6	MDL	18	PQL	ug/Kg	J	Z
AROCLOR 1260	9.4	J	4.1	MDL	18	PQL	ug/Kg	J	Z

Method Category: SVOA

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

Sample ID: SL-549-SA8-SB-0.0-0.5 *Collected:* 7/30/2013 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
FLUORANTHENE	1.6	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z
NAPHTHALENE	0.95	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z
PHENANTHRENE	1.2	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: SL-549-SA8-SB-0.0-0.5 *Collected:* 7/30/2013 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
PYRENE	1.1	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: PH080 **Laboratory: LL**

EDD Filename: PrepPH080 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

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

Sample ID: **SL-560-SA8-SB-0.0-0.5** *Collected:* **7/30/2013 7:50:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTHRACENE	0.56	J	0.36	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(E)PYRENE	6.9	J	3.6	MDL	18	PQL	ug/Kg	J	Z
DIBENZO(A,H)ANTHRACENE	1.3	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z
NAPHTHALENE	0.80	J	0.71	MDL	1.8	PQL	ug/Kg	U	F

Sample ID: **SL-560-SA8-SB-4.0-5.0** *Collected:* **7/30/2013 8:10:00** *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(A)ANTHRACENE	0.80	J	0.74	MDL	1.9	PQL	ug/Kg	J	Z
BENZO(B)FLUORANTHENE	1.8	J	0.74	MDL	1.9	PQL	ug/Kg	J	Z
CHRYSENE	1.6	J	0.37	MDL	1.9	PQL	ug/Kg	J	Z
PHENANTHRENE	0.75	J	0.74	MDL	1.9	PQL	ug/Kg	J	Z

Sample ID: **SL-612-SA8-SB-4.0-5.0** *Collected:* **7/30/2013 11:00:00** *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	1.2	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(B)FLUORANTHENE	1.7	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z
CHRYSENE	1.5	J	0.36	MDL	1.8	PQL	ug/Kg	J	Z
PHENANTHRENE	1.3	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: PH080 **Laboratory: LL**

EDD Filename: PrepPH080 **eQAPP Name: CDM_SSFL_131101_Lan**

Reason Code Legend

Reason Code	*Description*
B	Calibration Blank Contamination
B	Method Blank Contamination
F	Field Blank Contamination
L	Laboratory Control Spike Upper Estimation
Q	Matrix Spike Upper Estimation
S	Surrogate/Tracer Recovery Upper Estimation
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Enclosure I

EPA Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control
Outlier Reports

PH080

Method Blank Outlier Report

Lab Reporting Batch ID: PH080 **Laboratory: LL**

EDD Filename: PH080_v2 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: **1613B**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2200B371345	8/10/2013 1:45:00 PM	1,2,3,4,6,7,8-HPCDD	0.0719 ng/Kg	SL-549-SA8-SB-0.0-0.5
		1,2,3,4,6,7,8-HPCDF	0.0373 ng/Kg	SL-549-SA8-SB-4.0-5.0
		1,2,3,4,7,8,9-HPCDF	0.0456 ng/Kg	SL-560-SA8-SB-0.0-0.5
		1,2,3,4,7,8-HxCDD	0.0477 ng/Kg	SL-560-SA8-SB-4.0-5.0
		1,2,3,4,7,8-HXCDF	0.0376 ng/Kg	SL-589-SA8-SB-0.0-0.5
		1,2,3,6,7,8-HXCDD	0.0420 ng/Kg	SL-589-SA8-SB-2.5-3.5
		1,2,3,6,7,8-HXCDF	0.0498 ng/Kg	SL-596-SA8-SB-0.0-0.5
		1,2,3,7,8,9-HXCDD	0.0352 ng/Kg	SL-612-SA8-SB-0.0-0.5
		1,2,3,7,8,9-HXCDF	0.0646 ng/Kg	SL-612-SA8-SB-4.0-5.0
		1,2,3,7,8-PECDD	0.0480 ng/Kg	
		1,2,3,7,8-PECDF	0.0644 ng/Kg	
		2,3,4,6,7,8-HXCDF	0.0470 ng/Kg	
		2,3,7,8-TCDF	0.0184 ng/Kg	
		OCDD	0.322 ng/Kg	
		OCDF	0.148 ng/Kg	

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-549-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0595 ng/Kg	0.0595U ng/Kg
SL-549-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.0723 ng/Kg	0.0723U ng/Kg
SL-549-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.112 ng/Kg	0.112U ng/Kg
SL-549-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.101 ng/Kg	0.101U ng/Kg
SL-549-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.0745 ng/Kg	0.0745U ng/Kg
SL-549-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.105 ng/Kg	0.105U ng/Kg
SL-549-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDD	0.251 ng/Kg	0.251U ng/Kg
SL-549-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0949 ng/Kg	0.0949U ng/Kg
SL-549-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0612 ng/Kg	0.0612U ng/Kg
SL-549-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HxCDD	0.0594 ng/Kg	0.0594U ng/Kg
SL-549-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.0584 ng/Kg	0.0584U ng/Kg
SL-549-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDD	0.0983 ng/Kg	0.0983U ng/Kg
SL-549-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.0604 ng/Kg	0.0604U ng/Kg
SL-549-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDD	0.128 ng/Kg	0.128U ng/Kg
SL-549-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDF	0.193 ng/Kg	0.193U ng/Kg
SL-549-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDD	0.0594 ng/Kg	0.0594U ng/Kg
SL-549-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.0687 ng/Kg	0.0687U ng/Kg
SL-549-SA8-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0565 ng/Kg	0.0565U ng/Kg
SL-549-SA8-SB-4.0-5.0(RES)	OCDD	1.56 ng/Kg	1.56U ng/Kg
SL-549-SA8-SB-4.0-5.0(RES)	OCDF	0.248 ng/Kg	0.248U ng/Kg
SL-560-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0882 ng/Kg	0.0882U ng/Kg
SL-560-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HxCDD	0.100 ng/Kg	0.100U ng/Kg
SL-560-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.0760 ng/Kg	0.0760U ng/Kg
SL-560-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.0601 ng/Kg	0.0601U ng/Kg
SL-560-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDF	0.121 ng/Kg	0.121U ng/Kg
SL-560-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDD	0.0445 ng/Kg	0.0445U ng/Kg
SL-560-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.114 ng/Kg	0.114U ng/Kg
SL-560-SA8-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0850 ng/Kg	0.0850U ng/Kg
SL-560-SA8-SB-4.0-5.0(RES)	OCDF	0.597 ng/Kg	0.597U ng/Kg

Method Blank Outlier Report

Lab Reporting Batch ID: PH080 **Laboratory: LL**

EDD Filename: PH080_v2 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: **1613B**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples

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-589-SA8-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDD	0.114 ng/Kg	0.114U ng/Kg
SL-589-SA8-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDF	0.0834 ng/Kg	0.0834U ng/Kg
SL-589-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0396 ng/Kg	0.0396U ng/Kg
SL-589-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.0832 ng/Kg	0.0832U ng/Kg
SL-589-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.115 ng/Kg	0.115U ng/Kg
SL-589-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDD	0.202 ng/Kg	0.202U ng/Kg
SL-589-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.129 ng/Kg	0.129U ng/Kg
SL-589-SA8-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.316 ng/Kg	0.316U ng/Kg
SL-589-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.161 ng/Kg	0.161U ng/Kg
SL-589-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.228 ng/Kg	0.228U ng/Kg
SL-589-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0864 ng/Kg	0.0864U ng/Kg
SL-589-SA8-SB-0.0-0.5(RES)	2,3,7,8-TCDF	0.0684 ng/Kg	0.0684U ng/Kg
SL-589-SA8-SB-0.0-0.5(RES)	OCDD	1.12 ng/Kg	1.12U ng/Kg
SL-589-SA8-SB-0.0-0.5(RES)	OCDF	0.157 ng/Kg	0.157U ng/Kg
SL-589-SA8-SB-2.5-3.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0803 ng/Kg	0.0803U ng/Kg
SL-589-SA8-SB-2.5-3.5(RES)	1,2,3,4,7,8-HxCDD	0.146 ng/Kg	0.146U ng/Kg
SL-589-SA8-SB-2.5-3.5(RES)	1,2,3,4,7,8-HXCDF	0.165 ng/Kg	0.165U ng/Kg
SL-589-SA8-SB-2.5-3.5(RES)	1,2,3,6,7,8-HXCDF	0.209 ng/Kg	0.209U ng/Kg
SL-589-SA8-SB-2.5-3.5(RES)	1,2,3,7,8,9-HXCDF	0.266 ng/Kg	0.266U ng/Kg
SL-589-SA8-SB-2.5-3.5(RES)	1,2,3,7,8-PECDD	0.216 ng/Kg	0.216U ng/Kg
SL-589-SA8-SB-2.5-3.5(RES)	2,3,4,6,7,8-HXCDF	0.127 ng/Kg	0.127U ng/Kg
SL-589-SA8-SB-2.5-3.5(RES)	OCDF	0.480 ng/Kg	0.480U ng/Kg
SL-596-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0337 ng/Kg	0.0337U ng/Kg
SL-596-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.0362 ng/Kg	0.0362U ng/Kg
SL-596-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.0773 ng/Kg	0.0773U ng/Kg
SL-596-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDD	0.0845 ng/Kg	0.0845U ng/Kg
SL-596-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.0502 ng/Kg	0.0502U ng/Kg
SL-596-SA8-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDD	0.106 ng/Kg	0.106U ng/Kg
SL-596-SA8-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.0904 ng/Kg	0.0904U ng/Kg
SL-596-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.0406 ng/Kg	0.0406U ng/Kg
SL-596-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.0700 ng/Kg	0.0700U ng/Kg
SL-596-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0506 ng/Kg	0.0506U ng/Kg
SL-596-SA8-SB-0.0-0.5(RES)	2,3,7,8-TCDF	0.0180 ng/Kg	0.0180U ng/Kg
SL-596-SA8-SB-0.0-0.5(RES)	OCDF	0.414 ng/Kg	0.414U ng/Kg
SL-612-SA8-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDD	0.0722 ng/Kg	0.0722U ng/Kg
SL-612-SA8-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDF	0.0557 ng/Kg	0.0557U ng/Kg
SL-612-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0444 ng/Kg	0.0444U ng/Kg
SL-612-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.0561 ng/Kg	0.0561U ng/Kg
SL-612-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.0543 ng/Kg	0.0543U ng/Kg
SL-612-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDD	0.0323 ng/Kg	0.0323U ng/Kg

Method Blank Outlier Report

Lab Reporting Batch ID: PH080 **Laboratory: LL**

EDD Filename: PH080_v2 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: **1613B**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples

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-612-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.0420 ng/Kg	0.0420U ng/Kg
SL-612-SA8-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDD	0.0593 ng/Kg	0.0593U ng/Kg
SL-612-SA8-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.0341 ng/Kg	0.0341U ng/Kg
SL-612-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.0530 ng/Kg	0.0530U ng/Kg
SL-612-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.0522 ng/Kg	0.0522U ng/Kg
SL-612-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0497 ng/Kg	0.0497U ng/Kg
SL-612-SA8-SB-0.0-0.5(RES)	2,3,7,8-TCDF	0.0272 ng/Kg	0.0272U ng/Kg
SL-612-SA8-SB-0.0-0.5(RES)	OCDD	0.264 ng/Kg	0.264U ng/Kg
SL-612-SA8-SB-0.0-0.5(RES)	OCDF	0.151 ng/Kg	0.151U ng/Kg
SL-612-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0976 ng/Kg	0.0976U ng/Kg
SL-612-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0608 ng/Kg	0.0608U ng/Kg
SL-612-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HxCDD	0.0565 ng/Kg	0.0565U ng/Kg
SL-612-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.0786 ng/Kg	0.0786U ng/Kg
SL-612-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.0609 ng/Kg	0.0609U ng/Kg
SL-612-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDD	0.0442 ng/Kg	0.0442U ng/Kg
SL-612-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDF	0.0491 ng/Kg	0.0491U ng/Kg
SL-612-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.126 ng/Kg	0.126U ng/Kg
SL-612-SA8-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0740 ng/Kg	0.0740U ng/Kg
SL-612-SA8-SB-4.0-5.0(RES)	2,3,7,8-TCDF	0.0636 ng/Kg	0.0636U ng/Kg
SL-612-SA8-SB-4.0-5.0(RES)	OCDF	0.258 ng/Kg	0.258U ng/Kg

Method: **6010C**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P21737AB222349	8/8/2013 11:49:00 PM	CALCIUM TIN	6.93 mg/Kg 1.37 mg/Kg	SL-549-SA8-SB-0.0-0.5 SL-549-SA8-SB-4.0-5.0 SL-560-SA8-SB-0.0-0.5 SL-560-SA8-SB-4.0-5.0 SL-589-SA8-SB-0.0-0.5 SL-589-SA8-SB-2.5-3.5 SL-596-SA8-SB-0.0-0.5 SL-612-SA8-SB-0.0-0.5 SL-612-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-549-SA8-SB-0.0-0.5(RES)	TIN	2.83 mg/Kg	2.83U mg/Kg
SL-549-SA8-SB-4.0-5.0(RES)	TIN	2.97 mg/Kg	2.97U mg/Kg
SL-560-SA8-SB-0.0-0.5(RES)	TIN	2.98 mg/Kg	2.98U mg/Kg
SL-560-SA8-SB-4.0-5.0(RES)	TIN	3.25 mg/Kg	3.25U mg/Kg
SL-589-SA8-SB-0.0-0.5(RES)	TIN	2.66 mg/Kg	2.66U mg/Kg

Method Blank Outlier Report

Lab Reporting Batch ID: PH080 **Laboratory: LL**

EDD Filename: PH080_v2 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: **6010C**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples

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-589-SA8-SB-2.5-3.5(RES)	TIN	2.56 mg/Kg	2.56U mg/Kg
SL-596-SA8-SB-0.0-0.5(RES)	TIN	2.40 mg/Kg	2.40U mg/Kg
SL-612-SA8-SB-0.0-0.5(RES)	TIN	2.55 mg/Kg	2.55U mg/Kg
SL-612-SA8-SB-4.0-5.0(RES)	TIN	2.22 mg/Kg	2.22U mg/Kg

Field Blank Outlier Report

Lab Reporting Batch ID: PH080 **Laboratory: LL**

EDD Filename: PrepPH080 **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-549-SA8-SB-0.0-0.5 SL-549-SA8-SB-4.0-5.0 SL-560-SA8-SB-0.0-0.5 SL-560-SA8-SB-4.0-5.0 SL-589-SA8-SB-0.0-0.5 SL-589-SA8-SB-2.5-3.5 SL-596-SA8-SB-0.0-0.5 SL-612-SA8-SB-0.0-0.5 SL-612-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-549-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.325 mg/Kg	0.325U mg/Kg
SL-560-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.726 mg/Kg	0.726U mg/Kg
SL-589-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.255 mg/Kg	0.255U mg/Kg
SL-589-SA8-SB-2.5-3.5(RES)	MOLYBDENUM	0.240 mg/Kg	0.240U mg/Kg
SL-596-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.288 mg/Kg	0.288U 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-549-SA8-SB-0.0-0.5 SL-549-SA8-SB-4.0-5.0 SL-560-SA8-SB-0.0-0.5 SL-560-SA8-SB-4.0-5.0 SL-589-SA8-SB-0.0-0.5 SL-589-SA8-SB-2.5-3.5 SL-596-SA8-SB-0.0-0.5 SL-612-SA8-SB-0.0-0.5 SL-612-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-560-SA8-SB-0.0-0.5(RES)	NAPHTHALENE	0.80 ug/Kg	1.8U ug/Kg

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH080 **Laboratory: LL**

EDD Filename: PH080_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-612-SA8-SB-4.0-5.0MS **SL-612-SA8-SB-4.0-5.0MSD** (SL-612-SA8-SB-4.0-5.0)	EFH (C30-C40)	151	165	49.00-123.00	-	EFH (C30-C40)	J (all detects)

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH080 **Laboratory: LL**

EDD Filename: PH080_v2 **eQAPP Name: CDM_SSFL_131101_Lan**

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

QC Sample ID (Associated Samples)	*Compound*	*LCS %R*	*LCSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
P4LCLCSQ260137 (SL-549-SA8-SB-0.0-0.5 SL-549-SA8-SB-4.0-5.0 SL-560-SA8-SB-0.0-0.5 SL-560-SA8-SB-4.0-5.0 SL-589-SA8-SB-0.0-0.5 SL-589-SA8-SB-2.5-3.5 SL-596-SA8-SB-0.0-0.5 SL-612-SA8-SB-0.0-0.5 SL-612-SA8-SB-4.0-5.0)	Diethylphthalate	134	-	77.00-130.00	-	Diethylphthalate	J (all detects)

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

Reporting Limit Outliers

Lab Reporting Batch ID: PH080 **Laboratory: LL**

EDD Filename: PH080_v2 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-549-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	2.18	5.31	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.475	5.31	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0595	5.31	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0723	5.31	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.112	5.31	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.269	5.31	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.101	5.31	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.325	5.31	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	0.519	5.31	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JB	0.0745	5.31	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.377	5.31	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.105	5.31	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.151	5.31	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.0209	1.06	PQL	ng/Kg	
	2,3,7,8-TCDF	JB	0.105	1.06	PQL	ng/Kg	
	OCDF	JB	1.13	10.6	PQL	ng/Kg	
SL-549-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.251	5.58	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0949	5.58	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0612	5.58	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.0594	5.58	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0584	5.58	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.0983	5.58	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.0604	5.58	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.128	5.58	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	0.193	5.58	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.0594	5.58	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.0687	5.58	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0565	5.58	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.0418	5.58	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.0318	1.12	PQL	ng/Kg	
	OCDD	JB	1.56	11.2	PQL	ng/Kg	
	OCDF	JB	0.248	11.2	PQL	ng/Kg	
SL-560-SA8-SB-0.0-0.5	1,2,3,4,7,8,9-HPCDF	JBQ	0.384	5.28	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.800	5.28	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.505	5.28	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	2.94	5.28	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.514	5.28	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	1.86	5.28	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.717	5.28	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JBQ	0.508	5.28	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	1.11	5.28	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.581	5.28	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.446	5.28	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.0384	1.06	PQL	ng/Kg	
	2,3,7,8-TCDF	JBQ	0.321	1.06	PQL	ng/Kg	
	OCDF	JB	6.57	10.6	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH080 **Laboratory: LL**

EDD Filename: PH080_v2 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-560-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JB	3.95	5.40	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.398	5.40	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.0882	5.40	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.100	5.40	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0760	5.40	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.244	5.40	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.0601	5.40	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.186	5.40	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	0.121	5.40	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.0445	5.40	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.114	5.40	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0850	5.40	PQL	ng/Kg	
	2,3,4,7,8-PECDF	J	0.0742	5.40	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.0192	1.08	PQL	ng/Kg	
	OCDF	JB	0.597	10.8	PQL	ng/Kg	
SL-589-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JBQ	0.114	5.10	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0834	5.10	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0396	5.10	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0832	5.10	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.115	5.10	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.202	5.10	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.129	5.10	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.342	5.10	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.316	5.10	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JBQ	0.161	5.10	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.228	5.10	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0864	5.10	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.138	5.10	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.0432	1.02	PQL	ng/Kg	
	2,3,7,8-TCDF	JB	0.0684	1.02	PQL	ng/Kg	
	OCDD	JB	1.12	10.2	PQL	ng/Kg	
	OCDF	JBQ	0.157	10.2	PQL	ng/Kg	
SL-589-SA8-SB-2.5-3.5	1,2,3,4,6,7,8-HPCDD	JB	1.09	5.04	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.285	5.04	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.0803	5.04	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.146	5.04	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.165	5.04	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.260	5.04	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.209	5.04	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.333	5.04	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	0.266	5.04	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.216	5.04	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.338	5.04	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.127	5.04	PQL	ng/Kg	
	2,3,4,7,8-PECDF	J	0.253	5.04	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.0913	1.01	PQL	ng/Kg	
	2,3,7,8-TCDF	JBQ	0.0962	1.01	PQL	ng/Kg	
	OCDF	JB	0.480	10.1	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH080 **Laboratory: LL**

EDD Filename: PH080_v2 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-596-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	0.924	4.93	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.199	4.93	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0337	4.93	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0362	4.93	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.0773	4.93	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.0845	4.93	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0502	4.93	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.106	4.93	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.0904	4.93	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JB	0.0406	4.93	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.0700	4.93	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0506	4.93	PQL	ng/Kg	
	2,3,4,7,8-PECDF	J	0.0741	4.93	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.0191	0.986	PQL	ng/Kg	
	2,3,7,8-TCDF	JBQ	0.0180	0.986	PQL	ng/Kg	
	OCDD	JB	8.00	9.86	PQL	ng/Kg	
	OCDF	JB	0.414	9.86	PQL	ng/Kg	
SL-612-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	0.0722	5.61	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.0557	5.61	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0444	5.61	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0561	5.61	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0543	5.61	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.0323	5.61	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0420	5.61	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.0593	5.61	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.0341	5.61	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JBQ	0.0530	5.61	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.0522	5.61	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0497	5.61	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.0540	5.61	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.0276	1.12	PQL	ng/Kg	
	2,3,7,8-TCDF	JBQ	0.0272	1.12	PQL	ng/Kg	
	OCDD	JBQ	0.264	11.2	PQL	ng/Kg	
	OCDF	JB	0.151	11.2	PQL	ng/Kg	
SL-612-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.364	5.22	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.0976	5.22	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0608	5.22	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0565	5.22	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.0786	5.22	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.0609	5.22	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.0442	5.22	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.0491	5.22	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDF	JB	0.126	5.22	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0740	5.22	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.0839	5.22	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.0231	1.04	PQL	ng/Kg	
	2,3,7,8-TCDF	JBQ	0.0636	1.04	PQL	ng/Kg	
	OCDD	JB	4.69	10.4	PQL	ng/Kg	
	OCDF	JB	0.258	10.4	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH080 **Laboratory: LL**

EDD Filename: PH080_v2 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-549-SA8-SB-0.0-0.5	ARSENIC	J	3.65	4.25	PQL	mg/Kg	
	BERYLLIUM	J	0.895	1.06	PQL	mg/Kg	
	BORON	J	7.02	10.6	PQL	mg/Kg	
	CADMIUM	J	0.222	1.06	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.325	2.13	PQL	mg/Kg	
	SODIUM	J	89.1	106	PQL	mg/Kg	
	TIN	J	2.83	10.6	PQL	mg/Kg	
	Zirconium	J	3.43	5.32	PQL	mg/Kg	
SL-549-SA8-SB-4.0-5.0	ARSENIC	J	3.64	4.46	PQL	mg/Kg	
	BERYLLIUM	J	0.983	1.11	PQL	mg/Kg	
	BORON	J	5.30	11.1	PQL	mg/Kg	J (all detects)
	SODIUM	J	103	111	PQL	mg/Kg	
	TIN	J	2.97	11.1	PQL	mg/Kg	
	Zirconium	J	3.97	5.57	PQL	mg/Kg	
SL-560-SA8-SB-0.0-0.5	ARSENIC	J	3.16	4.24	PQL	mg/Kg	
	BERYLLIUM	J	0.866	1.06	PQL	mg/Kg	
	BORON	J	7.31	10.6	PQL	mg/Kg	
	CADMIUM	J	0.234	1.06	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.726	2.12	PQL	mg/Kg	
	TIN	J	2.98	10.6	PQL	mg/Kg	
	Zirconium	J	4.97	5.30	PQL	mg/Kg	
SL-560-SA8-SB-4.0-5.0	ARSENIC	J	4.26	4.45	PQL	mg/Kg	
	BERYLLIUM	J	1.03	1.11	PQL	mg/Kg	
	BORON	J	6.70	11.1	PQL	mg/Kg	J (all detects)
	TIN	J	3.25	11.1	PQL	mg/Kg	
	Zirconium	J	3.80	5.57	PQL	mg/Kg	
SL-589-SA8-SB-0.0-0.5	ARSENIC	J	2.41	4.11	PQL	mg/Kg	
	BERYLLIUM	J	0.628	1.03	PQL	mg/Kg	
	BORON	J	1.52	10.3	PQL	mg/Kg	
	CADMIUM	J	0.147	1.03	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.255	2.06	PQL	mg/Kg	
	SODIUM	J	85.8	103	PQL	mg/Kg	
	TIN	J	2.66	10.3	PQL	mg/Kg	
SL-589-SA8-SB-2.5-3.5	ARSENIC	J	2.72	4.06	PQL	mg/Kg	
	BERYLLIUM	J	0.615	1.01	PQL	mg/Kg	
	BORON	J	1.32	10.1	PQL	mg/Kg	
	CADMIUM	J	0.0842	1.01	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.240	2.03	PQL	mg/Kg	
	SODIUM	J	87.2	101	PQL	mg/Kg	
	TIN	J	2.56	10.1	PQL	mg/Kg	
SL-596-SA8-SB-0.0-0.5	ARSENIC	J	2.63	3.97	PQL	mg/Kg	
	BERYLLIUM	J	0.534	0.992	PQL	mg/Kg	
	BORON	J	1.04	9.92	PQL	mg/Kg	
	CADMIUM	J	0.113	0.992	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.288	1.98	PQL	mg/Kg	
	SODIUM	J	80.2	99.2	PQL	mg/Kg	
	TIN	J	2.40	9.92	PQL	mg/Kg	
SL-612-SA8-SB-0.0-0.5	BERYLLIUM	J	0.364	1.09	PQL	mg/Kg	
	TIN	J	2.55	10.9	PQL	mg/Kg	J (all detects)
	Zirconium	J	3.13	5.46	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH080 **Laboratory: LL**

EDD Filename: PH080_v2 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-612-SA8-SB-4.0-5.0	BERYLLIUM	J	0.337	1.05	PQL	mg/Kg	J (all detects)
	BORON	J	9.47	10.5	PQL	mg/Kg	
	TIN	J	2.22	10.5	PQL	mg/Kg	
	Zirconium	J	3.26	5.24	PQL	mg/Kg	

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-549-SA8-SB-0.0-0.5	SELENIUM	J	0.338	0.425	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0574	0.213	PQL	mg/Kg	
SL-549-SA8-SB-4.0-5.0	SELENIUM	J	0.139	0.446	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0399	0.223	PQL	mg/Kg	
SL-560-SA8-SB-0.0-0.5	SELENIUM	J	0.385	0.424	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0541	0.212	PQL	mg/Kg	
SL-560-SA8-SB-4.0-5.0	SELENIUM	J	0.130	0.445	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0503	0.223	PQL	mg/Kg	
SL-589-SA8-SB-0.0-0.5	SELENIUM	J	0.163	0.411	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0306	0.206	PQL	mg/Kg	
SL-589-SA8-SB-2.5-3.5	SELENIUM	J	0.128	0.406	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0302	0.203	PQL	mg/Kg	
SL-596-SA8-SB-0.0-0.5	SELENIUM	J	0.201	0.397	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0310	0.198	PQL	mg/Kg	
SL-612-SA8-SB-0.0-0.5	SELENIUM	J	0.329	0.437	PQL	mg/Kg	J (all detects)
SL-612-SA8-SB-4.0-5.0	SELENIUM	J	0.283	0.419	PQL	mg/Kg	J (all detects)

Method: 7471B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-549-SA8-SB-0.0-0.5	MERCURY	J	0.0170	0.0178	PQL	mg/Kg	J (all detects)
SL-589-SA8-SB-0.0-0.5	MERCURY	J	0.0132	0.0168	PQL	mg/Kg	J (all detects)
SL-596-SA8-SB-0.0-0.5	MERCURY	J	0.0137	0.0164	PQL	mg/Kg	J (all detects)
SL-612-SA8-SB-0.0-0.5	MERCURY	J	0.0163	0.0185	PQL	mg/Kg	J (all detects)
SL-612-SA8-SB-4.0-5.0	MERCURY	J	0.0148	0.0172	PQL	mg/Kg	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH080 **Laboratory: LL**

EDD Filename: PH080_v2 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 8015M

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-549-SA8-SB-4.0-5.0	EFH (C21-C30)	J	2.7	5.6	PQL	mg/Kg	J (all detects)
	EFH (C30-C40)	J	5.1	11	PQL	mg/Kg	
SL-589-SA8-SB-0.0-0.5	EFH (C21-C30)	J	4.0	5.2	PQL	mg/Kg	J (all detects)
	EFH (C30-C40)	J	8.5	10	PQL	mg/Kg	
SL-589-SA8-SB-2.5-3.5	EFH (C21-C30)	J	3.8	5.2	PQL	mg/Kg	J (all detects)
	EFH (C30-C40)	J	8.7	10	PQL	mg/Kg	
SL-612-SA8-SB-0.0-0.5	EFH (C30-C40)	J	6.1	11	PQL	mg/Kg	J (all detects)
SL-612-SA8-SB-4.0-5.0	EFH (C21-C30)	J	3.2	5.3	PQL	mg/Kg	J (all detects)

Method: 8082A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-560-SA8-SB-0.0-0.5	AROCLOR 1254	J	14	18	PQL	ug/Kg	J (all detects)
	AROCLOR 1260	J	9.4	18	PQL	ug/Kg	

Method: 8270D SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-549-SA8-SB-0.0-0.5	FLUORANTHENE	J	1.6	1.8	PQL	ug/Kg	J (all detects)
	NAPHTHALENE	J	0.95	1.8	PQL	ug/Kg	
	PHENANTHRENE	J	1.2	1.8	PQL	ug/Kg	
	PYRENE	J	1.1	1.8	PQL	ug/Kg	
SL-560-SA8-SB-0.0-0.5	ANTHRACENE	J	0.56	1.8	PQL	ug/Kg	J (all detects)
	BENZO(E)PYRENE	J	6.9	18	PQL	ug/Kg	
	DIBENZO(A,H)ANTHRACENE	J	1.3	1.8	PQL	ug/Kg	
	NAPHTHALENE	J	0.80	1.8	PQL	ug/Kg	
SL-560-SA8-SB-4.0-5.0	BENZO(A)ANTHRACENE	J	0.80	1.9	PQL	ug/Kg	J (all detects)
	BENZO(B)FLUORANTHENE	J	1.8	1.9	PQL	ug/Kg	
	CHRYSENE	J	1.6	1.9	PQL	ug/Kg	
	PHENANTHRENE	J	0.75	1.9	PQL	ug/Kg	
SL-612-SA8-SB-4.0-5.0	BENZO(A)ANTHRACENE	J	1.2	1.8	PQL	ug/Kg	J (all detects)
	BENZO(A)PYRENE	J	0.93	1.8	PQL	ug/Kg	
	BENZO(B)FLUORANTHENE	J	1.7	1.8	PQL	ug/Kg	
	CHRYSENE	J	1.5	1.8	PQL	ug/Kg	
	PHENANTHRENE	J	1.3	1.8	PQL	ug/Kg	

LDC #: 30362A4 **VALIDATION COMPLETENESS WORKSHEET** Date: 9/10/13
SDG #: PH080 ADR Page: 1 of 1
Laboratory: Eurofins Lancaster Laboratories Reviewer: CL
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: 7/30/13
II.	ICP/MS Tune	-	
III.	Calibration	-	
IV.	Blanks	SW	
V.	ICP Interference Check Sample (ICS) Analysis	-	
VI.	Matrix Spike Analysis	N	MS/D
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	N	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	N	
XIV.	Field Duplicates	~~N~~	
XV	Field Blanks	SW	EB=EB1-080113 FB=FB-041113 (PH082) (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-560-SA8-SB-0.0-0.5	11	(Hg) MSD	21		31	
2	SL-560-SA8-SB-4.0-5.0	12	↓ DUP	22		32	
3	SL-549-SA8-SB-0.0-0.5	13		23		33	
4	SL-549-SA8-SB-4.0-5.0	14		24		34	
5	SL-612-SA8-SB-0.0-0.5	15		25		35	
6	SL-612-SA8-SB-4.0-5.0	16		26		36	
7	SL-596-SA8-SB-0.0-0.5	17		27		37	
8	SL-589-SA8-SB-0.0-0.5	18		28		38	
9	SL-589-SA8-SB-2.5-3.5	19		29		39	
10	(Hg) MS (Hg)	20		30		40	

Notes: _____

LDC #: 30362A4

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Page: 1 of 1
Reviewer:
2nd Reviewer:

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000) Soil preparation factor applied: 100x x 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	7	8	9						
Mo			2.0	1	0.726 ~~0.73~~	0.325 ~~0.33~~	0.288 ~~0.29~~	0.255 0.25	0.240 ~~0.24~~						

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.

LDC #: 30362A4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: AL
2nd Reviewer: M

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	7	8	9					
Cu	0.0036	1.8										
Mo	0.0036	1.8	0.726 ~~0.75~~	0.325 ~~0.33~~	0.288 ~~0.29~~	0.255 ~~0.25~~	0.240 ~~0.24~~					

Sampling date: 8/1/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: All

Analyte	Blank ID	Sample Identification										
	EB1-080113 (SDG: PH082)	Action Limit	No Qualifiers									
Ba	0.00039	0.195										

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: PH081

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 11, 2013

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on July 31, 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 calibration blanks, 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.

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 SVOCs and one 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 with the exception of one LCS/LCSD pair for SVOCs. No data were qualified for due to high %Rs since the associated results were non-detected.

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 PH081	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 PH082) was collected and analyzed for SVOCs, PCBs, metals, TPH-G, TPH-E and dioxins. The equipment blank had several detections for SVOCs 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-G, TPH-E 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
31-Jul-2013	SL-599-SA8-SB-0.0-0.5	7146669	N	3546	8082A	III
31-Jul-2013	SL-599-SA8-SB-0.0-0.5	7146669	N	METHOD	1613B	III
31-Jul-2013	SL-599-SA8-SB-0.0-0.5MSD	P146669M241743A	MSD	3546	8082A	III
31-Jul-2013	SL-599-SA8-SB-0.0-0.5MS	P146669R241725A	MS	3546	8082A	III
31-Jul-2013	TB-073113	7146675	TB	5030B	8015M	III
31-Jul-2013	SL-599-SA8-SB-3.0-4.0	7146670	N	3546	8082A	III
31-Jul-2013	SL-599-SA8-SB-3.0-4.0	7146670	N	METHOD	1613B	III
31-Jul-2013	SL-598-SA8-SB-0.0-0.5	7146667	N	3546	8270D SIM	III
31-Jul-2013	SL-598-SA8-SB-0.0-0.5MSD	P146667M261021	MSD	3546	8270D SIM	III
31-Jul-2013	SL-598-SA8-SB-0.0-0.5MS	P146667R260355	MS	3546	8270D SIM	III
31-Jul-2013	SL-598-SA8-SB-4.5-5.5	7146668	N	3546	8270D SIM	III
31-Jul-2013	SL-536-SA8-SB-0.0-0.5	7146671	N	3050B	6010C	III
31-Jul-2013	SL-536-SA8-SB-0.0-0.5	7146671	N	3050B	6020A	III
31-Jul-2013	SL-536-SA8-SB-0.0-0.5	7146671	N	3546	8015M	III
31-Jul-2013	SL-536-SA8-SB-0.0-0.5	7146671	N	3546	8082A	III
31-Jul-2013	SL-536-SA8-SB-0.0-0.5	7146671	N	3546	8270D SIM	III
31-Jul-2013	SL-536-SA8-SB-0.0-0.5	7146671	N	METHOD	1613B	III
31-Jul-2013	SL-536-SA8-SB-0.0-0.5	7146671	N	METHOD	7471B	III
31-Jul-2013	SL-536-SA8-SB-0.0-0.5DUP	P146671D220923	DUP	3050B	6010C	III
31-Jul-2013	SL-536-SA8-SB-0.0-0.5DUP	P146671D222037A	DUP	3050B	6020A	III
31-Jul-2013	SL-536-SA8-SB-0.0-0.5DUP	P146671D222321B	DUP	3050B	6020A	III
31-Jul-2013	SL-536-SA8-SB-0.0-0.5MSD	P146671M220930	MSD	3050B	6010C	III
31-Jul-2013	SL-536-SA8-SB-0.0-0.5MSD	P146671M222040A	MSD	3050B	6020A	III
31-Jul-2013	SL-536-SA8-SB-0.0-0.5MSD	P146671M222326B	MSD	3050B	6020A	III
31-Jul-2013	SL-536-SA8-SB-0.0-0.5MS	P146671R220926	MS	3050B	6010C	III
31-Jul-2013	SL-536-SA8-SB-0.0-0.5MS	P146671R222038A	MS	3050B	6020A	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation
N = Normal Sample
FD = Field Duplicate
TB = Trip Blank
FB = Field Blank
MS = Matrix Spike
MSD = Matrix Spike Duplicate

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
31-Jul-2013	SL-536-SA8-SB-0.0-0.5MS	P146671R222324B	MS	3050B	6020A	III
31-Jul-2013	SL-536-SA8-SB-4.0-5.0	7146672	N	3050B	6010C	III
31-Jul-2013	SL-536-SA8-SB-4.0-5.0	7146672	N	3050B	6020A	III
31-Jul-2013	SL-536-SA8-SB-4.0-5.0	7146672	N	3546	8015M	III
31-Jul-2013	SL-536-SA8-SB-4.0-5.0	7146672	N	3546	8082A	III
31-Jul-2013	SL-536-SA8-SB-4.0-5.0	7146672	N	3546	8270D SIM	III
31-Jul-2013	SL-536-SA8-SB-4.0-5.0	7146672	N	5035A	8015M	III
31-Jul-2013	SL-536-SA8-SB-4.0-5.0	7146672	N	METHOD	1613B	III
31-Jul-2013	SL-536-SA8-SB-4.0-5.0	7146672	N	METHOD	7471B	III
31-Jul-2013	SL-537-SA8-SB-0.0-0.5	7146673	N	3050B	6010C	III
31-Jul-2013	SL-537-SA8-SB-0.0-0.5	7146673	N	3050B	6020A	III
31-Jul-2013	SL-537-SA8-SB-0.0-0.5	7146673	N	3546	8015M	III
31-Jul-2013	SL-537-SA8-SB-0.0-0.5	7146673	N	3546	8082A	III
31-Jul-2013	SL-537-SA8-SB-0.0-0.5	7146673	N	3546	8270D SIM	III
31-Jul-2013	SL-537-SA8-SB-0.0-0.5	7146673	N	METHOD	1613B	III
31-Jul-2013	SL-537-SA8-SB-0.0-0.5	7146673	N	METHOD	7471B	III
31-Jul-2013	SL-537-SA8-SB-4.0-5.0	7146674	N	3050B	6010C	III
31-Jul-2013	SL-537-SA8-SB-4.0-5.0	7146674	N	3050B	6020A	III
31-Jul-2013	SL-537-SA8-SB-4.0-5.0	7146674	N	3546	8015M	III
31-Jul-2013	SL-537-SA8-SB-4.0-5.0	7146674	N	3546	8082A	III
31-Jul-2013	SL-537-SA8-SB-4.0-5.0	7146674	N	3546	8270D SIM	III
31-Jul-2013	SL-537-SA8-SB-4.0-5.0	7146674	N	5035A	8015M	III
31-Jul-2013	SL-537-SA8-SB-4.0-5.0	7146674	N	METHOD	1613B	III
31-Jul-2013	SL-537-SA8-SB-4.0-5.0	7146674	N	METHOD	7471B	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH081 **Laboratory: LL**

EDD Filename: PH081_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-536-SA8-SB-0.0-0.5 *Collected:* 7/31/2013 11:45:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.05	U	0.749	MDL	4.05	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.947	J	0.0679	MDL	1.01	PQL	mg/Kg	J	Z
CADMIUM	0.172	J	0.0770	MDL	1.01	PQL	mg/Kg	J	Z
CALCIUM	9200		3.38	MDL	20.3	PQL	mg/Kg	J	E
CHROMIUM	37.7		0.162	MDL	3.04	PQL	mg/Kg	J	Q
MOLYBDENUM	0.513	J	0.172	MDL	2.03	PQL	mg/Kg	U	F
SODIUM	87.1	J	16.9	MDL	101	PQL	mg/Kg	J	Z
TIN	1.47	J	0.223	MDL	10.1	PQL	mg/Kg	U	B
VANADIUM	64.7		0.132	MDL	1.01	PQL	mg/Kg	J	Q

Sample ID: SL-536-SA8-SB-4.0-5.0 *Collected:* 7/31/2013 12:35:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.34	U	0.803	MDL	4.34	PQL	mg/Kg	UJ	Q
ARSENIC	4.27	J	0.759	MDL	4.34	PQL	mg/Kg	J	Z
BERYLLIUM	0.490	J	0.0727	MDL	1.08	PQL	mg/Kg	J	Z
BORON	10.7	J	0.911	MDL	10.8	PQL	mg/Kg	J	Z
CADMIUM	0.174	J	0.0824	MDL	1.08	PQL	mg/Kg	J	Z
CALCIUM	55100		3.62	MDL	21.7	PQL	mg/Kg	J	E
CHROMIUM	23.8		0.174	MDL	3.25	PQL	mg/Kg	J	Q
SODIUM	86.8	J	18.1	MDL	108	PQL	mg/Kg	J	Z
TIN	1.40	J	0.239	MDL	10.8	PQL	mg/Kg	U	B
VANADIUM	43.6		0.141	MDL	1.08	PQL	mg/Kg	J	Q
Zirconium	2.50	J	0.911	MDL	5.42	PQL	mg/Kg	J	Z

Sample ID: SL-537-SA8-SB-0.0-0.5 *Collected:* 7/31/2013 1:00:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.06	U	0.751	MDL	4.06	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.836	J	0.0680	MDL	1.01	PQL	mg/Kg	J	Z
CADMIUM	0.245	J	0.0771	MDL	1.01	PQL	mg/Kg	J	Z
CALCIUM	18100		3.39	MDL	20.3	PQL	mg/Kg	J	E
CHROMIUM	33.2		0.162	MDL	3.04	PQL	mg/Kg	J	Q
MOLYBDENUM	0.296	J	0.173	MDL	2.03	PQL	mg/Kg	U	F
TIN	1.64	J	0.223	MDL	10.1	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: PH081 **Laboratory: LL**

EDD Filename: PH081_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-537-SA8-SB-0.0-0.5 *Collected:* 7/31/2013 1:00:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
VANADIUM	57.7		0.132	MDL	1.01	PQL	mg/Kg	J	Q
Zirconium	3.69	J	0.853	MDL	5.07	PQL	mg/Kg	J	Z

Sample ID: SL-537-SA8-SB-4.0-5.0 *Collected:* 7/31/2013 1:40:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.35	U	0.804	MDL	4.35	PQL	mg/Kg	UJ	Q
ARSENIC	4.15	J	0.761	MDL	4.35	PQL	mg/Kg	J	Z
BERYLLIUM	0.739	J	0.0728	MDL	1.09	PQL	mg/Kg	J	Z
CADMIUM	0.139	J	0.0826	MDL	1.09	PQL	mg/Kg	J	Z
CALCIUM	16100		3.63	MDL	21.7	PQL	mg/Kg	J	E
CHROMIUM	30.0		0.174	MDL	3.26	PQL	mg/Kg	J	Q
TIN	1.44	J	0.239	MDL	10.9	PQL	mg/Kg	U	B
VANADIUM	55.0		0.141	MDL	1.09	PQL	mg/Kg	J	Q
Zirconium	3.58	J	0.913	MDL	5.43	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-536-SA8-SB-0.0-0.5 *Collected:* 7/31/2013 11:45:00 *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.239	J	0.101	MDL	0.405	PQL	mg/Kg	J	Z

Sample ID: SL-536-SA8-SB-0.0-0.5 *Collected:* 7/31/2013 11:45:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0551	J	0.0263	MDL	0.203	PQL	mg/Kg	J	Z

Sample ID: SL-537-SA8-SB-0.0-0.5 *Collected:* 7/31/2013 1:00:00 *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.272	J	0.101	MDL	0.406	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: PH081 **Laboratory: LL**

EDD Filename: PH081_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-537-SA8-SB-0.0-0.5 *Collected:* 7/31/2013 1:00:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0371	J	0.0264	MDL	0.203	PQL	mg/Kg	J	Z

Sample ID: SL-537-SA8-SB-4.0-5.0 *Collected:* 7/31/2013 1:40:00 *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.191	J	0.109	MDL	0.435	PQL	mg/Kg	J	Z

Sample ID: SL-537-SA8-SB-4.0-5.0 *Collected:* 7/31/2013 1:40:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0363	J	0.0283	MDL	0.217	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: SL-536-SA8-SB-4.0-5.0 *Collected:* 7/31/2013 12:35:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0120	J	0.0106	MDL	0.0177	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-536-SA8-SB-0.0-0.5 *Collected:* 7/31/2013 11:45:00 *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	2.90	JB	0.0264	MDL	5.10	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.637	JB	0.0159	MDL	5.10	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0875	JB	0.0235	MDL	5.10	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.109	JBQ	0.0262	MDL	5.10	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.141	JBQ	0.0249	MDL	5.10	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.231	JBQ	0.0288	MDL	5.10	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.231	JB	0.0241	MDL	5.10	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.222	JBQ	0.0272	MDL	5.10	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.124	JBQ	0.0295	MDL	5.10	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: PH081 **Laboratory: LL**

EDD Filename: PH081_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-536-SA8-SB-0.0-0.5** *Collected:* **7/31/2013 11:45:00** *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-PECDD	0.0583	JB	0.0238	MDL	5.10	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.886	JBQ	0.0303	MDL	5.10	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.347	JB	0.0226	MDL	5.10	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.233	JB	0.0505	MDL	1.02	PQL	ng/Kg	J	Z
OCDF	0.878	JB	0.0197	MDL	10.2	PQL	ng/Kg	J	Z

Sample ID: **SL-536-SA8-SB-4.0-5.0** *Collected:* **7/31/2013 12:35:00** *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	0.421	JB	0.0222	MDL	5.42	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.116	JB	0.00841	MDL	5.42	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0337	JBQ	0.0122	MDL	5.42	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0336	JBQ	0.0159	MDL	5.42	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0483	JBQ	0.0106	MDL	5.42	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0763	JB	0.0176	MDL	5.42	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0675	JB	0.0110	MDL	5.42	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0593	JB	0.0173	MDL	5.42	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0370	JBQ	0.0128	MDL	5.42	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0537	JB	0.0103	MDL	5.42	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0413	JQ	0.0165	MDL	5.42	PQL	ng/Kg	J	Z
OCDD	3.18	JB	0.0168	MDL	10.8	PQL	ng/Kg	J	Z
OCDF	0.230	JBQ	0.0218	MDL	10.8	PQL	ng/Kg	U	B

Sample ID: **SL-537-SA8-SB-0.0-0.5** *Collected:* **7/31/2013 1:00:00** *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	4.06	JB	0.0206	MDL	4.98	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.955	JB	0.0201	MDL	4.98	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.289	JBQ	0.0281	MDL	4.98	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.227	JB	0.0257	MDL	4.98	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.338	JB	0.0252	MDL	4.98	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.409	JB	0.0276	MDL	4.98	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.434	JB	0.0246	MDL	4.98	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.352	JB	0.0263	MDL	4.98	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.294	JBQ	0.0277	MDL	4.98	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: PH081 **Laboratory: LL**

EDD Filename: PH081_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-537-SA8-SB-0.0-0.5 *Collected:* 7/31/2013 1:00:00 *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-PECDD	0.186	JBQ	0.0230	MDL	4.98	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	1.96	JB	0.0277	MDL	4.98	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.468	JB	0.0235	MDL	4.98	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.477	JQ	0.0257	MDL	4.98	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.0298	JQ	0.0143	MDL	0.995	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.352	JB	0.0457	MDL	0.995	PQL	ng/Kg	J	Z
OCDF	1.46	JB	0.0170	MDL	9.95	PQL	ng/Kg	J	Z

Sample ID: SL-537-SA8-SB-4.0-5.0 *Collected:* 7/31/2013 1:40:00 *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	0.681	JB	0.0169	MDL	5.44	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.203	JB	0.00757	MDL	5.44	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0488	JBQ	0.0121	MDL	5.44	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0376	JBQ	0.0167	MDL	5.44	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0685	JB	0.0135	MDL	5.44	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0661	JB	0.0179	MDL	5.44	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0784	JB	0.0127	MDL	5.44	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0741	JB	0.0172	MDL	5.44	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0701	JBQ	0.0162	MDL	5.44	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.321	JB	0.0164	MDL	5.44	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0967	JB	0.0120	MDL	5.44	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.102	JQ	0.0154	MDL	5.44	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.0254	JQ	0.0145	MDL	1.09	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.0553	JBQ	0.0222	MDL	1.09	PQL	ng/Kg	U	B
OCDD	4.35	JB	0.0182	MDL	10.9	PQL	ng/Kg	J	Z
OCDF	0.356	JBQ	0.0200	MDL	10.9	PQL	ng/Kg	U	B

Sample ID: SL-599-SA8-SB-0.0-0.5 *Collected:* 7/31/2013 7:40:00 *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	1.09	JB	0.0176	MDL	4.96	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.373	JB	0.0119	MDL	4.96	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.130	JBQ	0.0165	MDL	4.96	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0446	JB	0.0180	MDL	4.96	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: PH081 **Laboratory: LL**

EDD Filename: PH081_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-599-SA8-SB-0.0-0.5** *Collected:* **7/31/2013 7:40:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,7,8-HXCDF	0.316	JB	0.0180	MDL	4.96	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.0975	JBQ	0.0195	MDL	4.96	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.421	JB	0.0183	MDL	4.96	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.123	JBQ	0.0188	MDL	4.96	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0655	JB	0.0224	MDL	4.96	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.200	JB	0.0180	MDL	4.96	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.453	J	0.0272	MDL	4.96	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.0151	JQ	0.0150	MDL	0.992	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.530	JBQ	0.0541	MDL	0.992	PQL	ng/Kg	J	Z
OCDD	8.01	JB	0.0155	MDL	9.92	PQL	ng/Kg	J	Z
OCDF	0.544	JB	0.0183	MDL	9.92	PQL	ng/Kg	U	B

Sample ID: **SL-599-SA8-SB-3.0-4.0** *Collected:* **7/31/2013 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-HPCDD	0.0855	JBQ	0.0125	MDL	5.22	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0521	JBQ	0.00795	MDL	5.22	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0377	JBQ	0.0127	MDL	5.22	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0422	JB	0.0135	MDL	5.22	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0518	JBQ	0.00742	MDL	5.22	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0467	JB	0.0142	MDL	5.22	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0327	JB	0.00710	MDL	5.22	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.132	JB	0.0139	MDL	5.22	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.122	JB	0.00848	MDL	5.22	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0352	JBQ	0.0176	MDL	5.22	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.0744	JBQ	0.0111	MDL	5.22	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0297	JBQ	0.00721	MDL	5.22	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0395	J	0.0108	MDL	5.22	PQL	ng/Kg	J	Z
OCDD	0.417	JB	0.0151	MDL	10.4	PQL	ng/Kg	U	B
OCDF	0.141	JB	0.0168	MDL	10.4	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: PH081 **Laboratory: LL**

EDD Filename: PH081_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: **SVOA**

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

Sample ID: **SL-536-SA8-SB-0.0-0.5** ***Collected:*** **7/31/2013 11:45:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-METHYLNAPHTHALENE	1.2	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
CHRYSENE	1.5	J	0.34	MDL	1.7	PQL	ug/Kg	J	Z
FLUORANTHENE	1.3	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
NAPHTHALENE	1.4	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
PHENANTHRENE	0.96	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
PYRENE	1.2	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: **SL-537-SA8-SB-0.0-0.5** ***Collected:*** **7/31/2013 1:00:00** ***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	0.80	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
ANTHRACENE	0.34	J	0.34	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(A)PYRENE	0.72	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(K)FLUORANTHENE	0.75	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	7.2	J	6.2	MDL	19	PQL	ug/Kg	J	Z
NAPHTHALENE	0.95	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: **SL-537-SA8-SB-4.0-5.0** ***Collected:*** **7/31/2013 1:40:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BIS(2-ETHYLHEXYL)PHTHALATE	14	J	6.5	MDL	20	PQL	ug/Kg	J	Z
CHRYSENE	0.87	J	0.36	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: **SL-598-SA8-SB-0.0-0.5** ***Collected:*** **7/31/2013 9:15:00** ***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	1.4	J	0.70	MDL	1.7	PQL	ug/Kg	J	Z
ACENAPHTHYLENE	1.7	U	0.35	MDL	1.7	PQL	ug/Kg	UJ	Q
BENZO(A)ANTHRACENE	1.0	J	0.70	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(A)PYRENE	0.89	J	0.70	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(G,H,I)PERYLENE	0.99	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
Butylbenzylphthalate	49		6.3	MDL	19	PQL	ug/Kg	J	Q
DIBENZO(A,H)ANTHRACENE	1.2	J	0.70	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: PH081 **Laboratory: LL**

EDD Filename: PH081_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: **SVOA**

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

Sample ID: **SL-598-SA8-SB-0.0-0.5** ***Collected:*** **7/31/2013 9:15:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
Dimethylphthalate	19	U	6.3	MDL	19	PQL	ug/Kg	UJ	Q
Di-n-butylphthalate	7.0	J	6.3	MDL	19	PQL	ug/Kg	J	Z
INDENO(1,2,3-CD)PYRENE	0.82	J	0.70	MDL	1.7	PQL	ug/Kg	J	Z
NAPHTHALENE	1.3	J	0.70	MDL	1.7	PQL	ug/Kg	J	Z
PHENANTHRENE	1.6	J	0.70	MDL	1.7	PQL	ug/Kg	J	Z
PYRENE	1.6	J	0.70	MDL	1.7	PQL	ug/Kg	J	Z

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: PH081 **Laboratory: LL**

EDD Filename: PH081_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Reason Code Legend

Reason Code	*Description*
B	Method Blank Contamination
E	Laboratory Duplicate Precision
E	Matrix Spike Precision
F	Field Blank Contamination
L	Laboratory Control Spike Upper Estimation
Q	Laboratory Duplicate Precision
Q	Matrix Spike Lower Estimation
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

Enclosure I

EPA Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control
Outlier Reports

PH081

Method Blank Outlier Report

Lab Reporting Batch ID: PH081 **Laboratory: LL**

EDD Filename: PH081_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: **1613B**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2200B371345	8/10/2013 1:45:00 PM	1,2,3,4,6,7,8-HPCDD	0.0719 ng/Kg	SL-536-SA8-SB-0.0-0.5
		1,2,3,4,6,7,8-HPCDF	0.0373 ng/Kg	SL-536-SA8-SB-4.0-5.0
		1,2,3,4,7,8,9-HPCDF	0.0456 ng/Kg	SL-537-SA8-SB-0.0-0.5
		1,2,3,4,7,8-HxCDD	0.0477 ng/Kg	SL-537-SA8-SB-4.0-5.0
		1,2,3,4,7,8-HXCDF	0.0376 ng/Kg	SL-599-SA8-SB-0.0-0.5
		1,2,3,6,7,8-HXCDD	0.0420 ng/Kg	SL-599-SA8-SB-3.0-4.0
		1,2,3,6,7,8-HXCDF	0.0498 ng/Kg	
		1,2,3,7,8,9-HXCDD	0.0352 ng/Kg	
		1,2,3,7,8,9-HXCDF	0.0646 ng/Kg	
		1,2,3,7,8-PECDD	0.0480 ng/Kg	
		1,2,3,7,8-PECDF	0.0644 ng/Kg	
		2,3,4,6,7,8-HXCDF	0.0470 ng/Kg	
		2,3,7,8-TCDF	0.0184 ng/Kg	
		OCDD	0.322 ng/Kg	
		OCDF	0.148 ng/Kg	

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-536-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0875 ng/Kg	0.0875U ng/Kg
SL-536-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.109 ng/Kg	0.109U ng/Kg
SL-536-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.141 ng/Kg	0.141U ng/Kg
SL-536-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.231 ng/Kg	0.231U ng/Kg
SL-536-SA8-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.124 ng/Kg	0.124U ng/Kg
SL-536-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.0583 ng/Kg	0.0583U ng/Kg
SL-536-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.116 ng/Kg	0.116U ng/Kg
SL-536-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0337 ng/Kg	0.0337U ng/Kg
SL-536-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HxCDD	0.0336 ng/Kg	0.0336U ng/Kg
SL-536-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.0483 ng/Kg	0.0483U ng/Kg
SL-536-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDD	0.0763 ng/Kg	0.0763U ng/Kg
SL-536-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.0675 ng/Kg	0.0675U ng/Kg
SL-536-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDD	0.0593 ng/Kg	0.0593U ng/Kg
SL-536-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDF	0.0370 ng/Kg	0.0370U ng/Kg
SL-536-SA8-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0537 ng/Kg	0.0537U ng/Kg
SL-536-SA8-SB-4.0-5.0(RES)	OCDF	0.230 ng/Kg	0.230U ng/Kg
SL-537-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.227 ng/Kg	0.227U ng/Kg
SL-537-SA8-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.294 ng/Kg	0.294U ng/Kg
SL-537-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.186 ng/Kg	0.186U ng/Kg
SL-537-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0488 ng/Kg	0.0488U ng/Kg
SL-537-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HxCDD	0.0376 ng/Kg	0.0376U ng/Kg
SL-537-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.0685 ng/Kg	0.0685U ng/Kg
SL-537-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDD	0.0661 ng/Kg	0.0661U ng/Kg
SL-537-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.0784 ng/Kg	0.0784U ng/Kg
SL-537-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDD	0.0741 ng/Kg	0.0741U ng/Kg
SL-537-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDF	0.0701 ng/Kg	0.0701U ng/Kg
SL-537-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.321 ng/Kg	0.321U ng/Kg
SL-537-SA8-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0967 ng/Kg	0.0967U ng/Kg
SL-537-SA8-SB-4.0-5.0(RES)	2,3,7,8-TCDF	0.0553 ng/Kg	0.0553U ng/Kg

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

Method Blank Outlier Report

Lab Reporting Batch ID: PH081 **Laboratory: LL**

EDD Filename: PH081_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 1613B
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples

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-537-SA8-SB-4.0-5.0(RES)	OCDF	0.356 ng/Kg	0.356U ng/Kg
SL-599-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.130 ng/Kg	0.130U ng/Kg
SL-599-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.0446 ng/Kg	0.0446U ng/Kg
SL-599-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDD	0.0975 ng/Kg	0.0975U ng/Kg
SL-599-SA8-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDD	0.123 ng/Kg	0.123U ng/Kg
SL-599-SA8-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.0655 ng/Kg	0.0655U ng/Kg
SL-599-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.200 ng/Kg	0.200U ng/Kg
SL-599-SA8-SB-0.0-0.5(RES)	OCDF	0.544 ng/Kg	0.544U ng/Kg
SL-599-SA8-SB-3.0-4.0(RES)	1,2,3,4,6,7,8-HPCDD	0.0855 ng/Kg	0.0855U ng/Kg
SL-599-SA8-SB-3.0-4.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0521 ng/Kg	0.0521U ng/Kg
SL-599-SA8-SB-3.0-4.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0377 ng/Kg	0.0377U ng/Kg
SL-599-SA8-SB-3.0-4.0(RES)	1,2,3,4,7,8-HxCDD	0.0422 ng/Kg	0.0422U ng/Kg
SL-599-SA8-SB-3.0-4.0(RES)	1,2,3,4,7,8-HXCDF	0.0518 ng/Kg	0.0518U ng/Kg
SL-599-SA8-SB-3.0-4.0(RES)	1,2,3,6,7,8-HXCDD	0.0467 ng/Kg	0.0467U ng/Kg
SL-599-SA8-SB-3.0-4.0(RES)	1,2,3,6,7,8-HXCDF	0.0327 ng/Kg	0.0327U ng/Kg
SL-599-SA8-SB-3.0-4.0(RES)	1,2,3,7,8,9-HXCDD	0.132 ng/Kg	0.132U ng/Kg
SL-599-SA8-SB-3.0-4.0(RES)	1,2,3,7,8,9-HXCDF	0.122 ng/Kg	0.122U ng/Kg
SL-599-SA8-SB-3.0-4.0(RES)	1,2,3,7,8-PECDD	0.0352 ng/Kg	0.0352U ng/Kg
SL-599-SA8-SB-3.0-4.0(RES)	1,2,3,7,8-PECDF	0.0744 ng/Kg	0.0744U ng/Kg
SL-599-SA8-SB-3.0-4.0(RES)	2,3,4,6,7,8-HXCDF	0.0297 ng/Kg	0.0297U ng/Kg
SL-599-SA8-SB-3.0-4.0(RES)	OCDD	0.417 ng/Kg	0.417U ng/Kg
SL-599-SA8-SB-3.0-4.0(RES)	OCDF	0.141 ng/Kg	0.141U ng/Kg

Method: 6010C
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P21737BB221800	8/10/2013 6:00:00 PM	CALCIUM TIN ZINC	5.74 mg/Kg 1.54 mg/Kg 0.284 mg/Kg	SL-536-SA8-SB-0.0-0.5 SL-536-SA8-SB-4.0-5.0 SL-537-SA8-SB-0.0-0.5 SL-537-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-536-SA8-SB-0.0-0.5(RES)	TIN	1.47 mg/Kg	1.47U mg/Kg
SL-536-SA8-SB-4.0-5.0(RES)	TIN	1.40 mg/Kg	1.40U mg/Kg
SL-537-SA8-SB-0.0-0.5(RES)	TIN	1.64 mg/Kg	1.64U mg/Kg
SL-537-SA8-SB-4.0-5.0(RES)	TIN	1.44 mg/Kg	1.44U mg/Kg

Field Blank Outlier Report

Lab Reporting Batch ID: PH081 **Laboratory: LL**

EDD Filename: PH081_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-536-SA8-SB-0.0-0.5 SL-536-SA8-SB-4.0-5.0 SL-537-SA8-SB-0.0-0.5 SL-537-SA8-SB-4.0-5.0 SL-598-SA8-SB-0.0-0.5 SL-598-SA8-SB-4.5-5.5 SL-599-SA8-SB-0.0-0.5 SL-599-SA8-SB-3.0-4.0

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-536-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.513 mg/Kg	0.513U mg/Kg
SL-537-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.296 mg/Kg	0.296U mg/Kg

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH081 **Laboratory: LL**

EDD Filename: PH081_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-536-SA8-SB-0.0-0.5MS (TOT) SL-536-SA8-SB-0.0-0.5MSD (TOT) (SL-536-SA8-SB-0.0-0.5 SL-536-SA8-SB-4.0-5.0 SL-537-SA8-SB-0.0-0.5 SL-537-SA8-SB-4.0-5.0)	ALUMINUM CHROMIUM IRON MAGNESIUM MANGANESE POTASSIUM TITANIUM VANADIUM	3726 128 2733 425 - 169 469 126	3086 - 968 322 340 138 350 -	75.00-125.00 75.00-125.00 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 CHROMIUM IRON MAGNESIUM MANGANESE POTASSIUM TITANIUM VANADIUM	J (all detects) Al, Fe, Mg, Mn, K, Ti, No Qual, >4x
SL-536-SA8-SB-0.0-0.5MS (TOT) SL-536-SA8-SB-0.0-0.5MSD (TOT) (SL-536-SA8-SB-0.0-0.5 SL-536-SA8-SB-4.0-5.0 SL-537-SA8-SB-0.0-0.5 SL-537-SA8-SB-4.0-5.0)	ANTIMONY CALCIUM PHOSPHORUS	45 150 -	45 2494 69	75.00-125.00 75.00-125.00 75.00-125.00	- 65 (20.00) -	ANTIMONY CALCIUM PHOSPHORUS	J(all detects) UJ(all non-detects) Ca, P, No Qual, %R >4x

Method: 8270D SIM
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-598-SA8-SB-0.0-0.5MSD (SL-598-SA8-SB-0.0-0.5)	Butylbenzylphthalate Diethylphthalate Di-n-octylphthalate	- - -	169 152 325	59.00-153.00 76.00-127.00 52.00-162.00	- - 70 (30.00)	Butylbenzylphthalate Diethylphthalate Di-n-octylphthalate	J(all detects)
SL-598-SA8-SB-0.0-0.5MSD (SL-598-SA8-SB-0.0-0.5)	ACENAPHTHYLENE Dimethylphthalate	- -	48 60	49.00-121.00 62.00-136.00	52 (30.00) 45 (30.00)	ACENAPHTHYLENE Dimethylphthalate	J(all detects) UJ(all non-detects)

Lab Duplicate Outlier Report

Lab Reporting Batch ID: PH081 **Laboratory: LL**

EDD Filename: PH081_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 6010C
Matrix: SO

QC Sample ID (Associated Sample ID)	*Analyte*	*Sample RPD*	*eQAPP RPD*	*Flag*
SL-536-SA8-SB-0.0-0.5DUP (TOT) (SL-536-SA8-SB-0.0-0.5 SL-536-SA8-SB-4.0-5.0 SL -537-SA8-SB-0.0-0.5 SL -537-SA8-SB-4.0-5.0)	CADMIUM	32	20.00	
	MOLYBDENUM	51	20.00	No Qual, OK by Difference

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

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH081 **Laboratory: LL**

EDD Filename: PH081_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

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

QC Sample ID (Associated Samples)	*Compound*	*LCS %R*	*LCSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
P7LGLCSQ260219 (SL-536-SA8-SB-0.0-0.5 SL-536-SA8-SB-4.0-5.0 SL-537-SA8-SB-0.0-0.5 SL-537-SA8-SB-4.0-5.0 SL-598-SA8-SB-0.0-0.5 SL-598-SA8-SB-4.5-5.5)	Diethylphthalate	133	-	68.00-125.00	-	Diethylphthalate	J (all detects)

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

Reporting Limit Outliers

Lab Reporting Batch ID: PH081 **Laboratory: LL**

EDD Filename: PH081_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: **1613B**

Matrix: **SO**

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-536-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	2.90	5.10	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.637	5.10	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.0875	5.10	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.109	5.10	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.141	5.10	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.231	5.10	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.231	5.10	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.222	5.10	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JBQ	0.124	5.10	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JB	0.0583	5.10	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.886	5.10	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.347	5.10	PQL	ng/Kg	
	2,3,7,8-TCDF	JB	0.233	1.02	PQL	ng/Kg	
	OCDF	JB	0.878	10.2	PQL	ng/Kg	
SL-536-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JB	0.421	5.42	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.116	5.42	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0337	5.42	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0336	5.42	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0483	5.42	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.0763	5.42	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.0675	5.42	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDD	JB	0.0593	5.42	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.0370	5.42	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.0537	5.42	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.0413	5.42	PQL	ng/Kg	
	OCDD	JB	3.18	10.8	PQL	ng/Kg	
	OCDF	JBQ	0.230	10.8	PQL	ng/Kg	
SL-537-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	4.06	4.98	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.955	4.98	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.289	4.98	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.227	4.98	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.338	4.98	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.409	4.98	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.434	4.98	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.352	4.98	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.294	4.98	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JBQ	0.186	4.98	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	1.96	4.98	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.468	4.98	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.477	4.98	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.0298	0.995	PQL	ng/Kg	
	2,3,7,8-TCDF	JB	0.352	0.995	PQL	ng/Kg	
	OCDF	JB	1.46	9.95	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH081 **Laboratory: LL**

EDD Filename: PH081_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: **1613B**

Matrix: **SO**

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-537-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JB	0.681	5.44	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.203	5.44	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0488	5.44	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0376	5.44	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.0685	5.44	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.0661	5.44	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.0784	5.44	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.0741	5.44	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.0701	5.44	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDF	JB	0.321	5.44	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.0967	5.44	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.102	5.44	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.0254	1.09	PQL	ng/Kg	
	2,3,7,8-TCDF	JBQ	0.0553	1.09	PQL	ng/Kg	
	OCDD	JB	4.35	10.9	PQL	ng/Kg	
	OCDF	JBQ	0.356	10.9	PQL	ng/Kg	
SL-599-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	1.09	4.96	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.373	4.96	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.130	4.96	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.0446	4.96	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.316	4.96	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.0975	4.96	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.421	4.96	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.123	4.96	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	0.0655	4.96	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.200	4.96	PQL	ng/Kg	
	2,3,4,7,8-PECDF	J	0.453	4.96	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.0151	0.992	PQL	ng/Kg	
	2,3,7,8-TCDF	JBQ	0.530	0.992	PQL	ng/Kg	
	OCDD	JB	8.01	9.92	PQL	ng/Kg	
	OCDF	JB	0.544	9.92	PQL	ng/Kg	
SL-599-SA8-SB-3.0-4.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.0855	5.22	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0521	5.22	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0377	5.22	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.0422	5.22	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0518	5.22	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.0467	5.22	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.0327	5.22	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.132	5.22	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	0.122	5.22	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.0352	5.22	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.0744	5.22	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0297	5.22	PQL	ng/Kg	
	2,3,4,7,8-PECDF	J	0.0395	5.22	PQL	ng/Kg	
	OCDD	JB	0.417	10.4	PQL	ng/Kg	
	OCDF	JB	0.141	10.4	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH081 **Laboratory: LL**

EDD Filename: PH081_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-536-SA8-SB-0.0-0.5	BERYLLIUM	J	0.947	1.01	PQL	mg/Kg	
	CADMIUM	J	0.172	1.01	PQL	mg/Kg	
	MOLYBDENUM	J	0.513	2.03	PQL	mg/Kg	J (all detects)
	SODIUM	J	87.1	101	PQL	mg/Kg	
	TIN	J	1.47	10.1	PQL	mg/Kg	
SL-536-SA8-SB-4.0-5.0	ARSENIC	J	4.27	4.34	PQL	mg/Kg	
	BERYLLIUM	J	0.490	1.08	PQL	mg/Kg	
	BORON	J	10.7	10.8	PQL	mg/Kg	
	CADMIUM	J	0.174	1.08	PQL	mg/Kg	J (all detects)
	SODIUM	J	86.8	108	PQL	mg/Kg	
	TIN	J	1.40	10.8	PQL	mg/Kg	
	Zirconium	J	2.50	5.42	PQL	mg/Kg	
SL-537-SA8-SB-0.0-0.5	BERYLLIUM	J	0.836	1.01	PQL	mg/Kg	
	CADMIUM	J	0.245	1.01	PQL	mg/Kg	
	MOLYBDENUM	J	0.296	2.03	PQL	mg/Kg	J (all detects)
	TIN	J	1.64	10.1	PQL	mg/Kg	
	Zirconium	J	3.69	5.07	PQL	mg/Kg	
SL-537-SA8-SB-4.0-5.0	ARSENIC	J	4.15	4.35	PQL	mg/Kg	
	BERYLLIUM	J	0.739	1.09	PQL	mg/Kg	
	CADMIUM	J	0.139	1.09	PQL	mg/Kg	J (all detects)
	TIN	J	1.44	10.9	PQL	mg/Kg	
	Zirconium	J	3.58	5.43	PQL	mg/Kg	

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-536-SA8-SB-0.0-0.5	SELENIUM	J	0.239	0.405	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0551	0.203	PQL	mg/Kg	
SL-537-SA8-SB-0.0-0.5	SELENIUM	J	0.272	0.406	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0371	0.203	PQL	mg/Kg	
SL-537-SA8-SB-4.0-5.0	SELENIUM	J	0.191	0.435	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0363	0.217	PQL	mg/Kg	

Method: 7471B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-536-SA8-SB-4.0-5.0	MERCURY	J	0.0120	0.0177	PQL	mg/Kg	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH081 **Laboratory: LL**

EDD Filename: PH081_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 8270D SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-536-SA8-SB-0.0-0.5	2-METHYLNAPHTHALENE	J	1.2	1.7	PQL	ug/Kg	J (all detects)
	BENZO(B)FLUORANTHENE	J	1.3	1.7	PQL	ug/Kg	
	CHRYSENE	J	1.5	1.7	PQL	ug/Kg	
	FLUORANTHENE	J	1.3	1.7	PQL	ug/Kg	
	NAPHTHALENE	J	1.4	1.7	PQL	ug/Kg	
	PHENANTHRENE	J	0.96	1.7	PQL	ug/Kg	
	PYRENE	J	1.2	1.7	PQL	ug/Kg	
SL-537-SA8-SB-0.0-0.5	2-METHYLNAPHTHALENE	J	0.80	1.7	PQL	ug/Kg	J (all detects)
	ANTHRACENE	J	0.34	1.7	PQL	ug/Kg	
	BENZO(A)PYRENE	J	0.72	1.7	PQL	ug/Kg	
	BENZO(K)FLUORANTHENE	J	0.75	1.7	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	7.2	19	PQL	ug/Kg	
	NAPHTHALENE	J	0.95	1.7	PQL	ug/Kg	
SL-537-SA8-SB-4.0-5.0	BIS(2-ETHYLHEXYL)PHTHALATE	J	14	20	PQL	ug/Kg	J (all detects)
	CHRYSENE	J	0.87	1.8	PQL	ug/Kg	
SL-598-SA8-SB-0.0-0.5	2-METHYLNAPHTHALENE	J	1.4	1.7	PQL	ug/Kg	J (all detects)
	BENZO(A)ANTHRACENE	J	1.0	1.7	PQL	ug/Kg	
	BENZO(A)PYRENE	J	0.89	1.7	PQL	ug/Kg	
	BENZO(G,H,I)PERYLENE	J	0.99	1.7	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	16	19	PQL	ug/Kg	
	DIBENZO(A,H)ANTHRACENE	J	1.2	1.7	PQL	ug/Kg	
	Di-n-butylphthalate	J	7.0	19	PQL	ug/Kg	
	INDENO(1,2,3-CD)PYRENE	J	0.82	1.7	PQL	ug/Kg	
	NAPHTHALENE	J	1.3	1.7	PQL	ug/Kg	
	PHENANTHRENE	J	1.6	1.7	PQL	ug/Kg	
	PYRENE	J	1.6	1.7	PQL	ug/Kg	

LDC #: 30362B4 **VALIDATION COMPLETENESS WORKSHEET** Date: 9/10/13

SDG #: PH081 ADR Page: 1 of 1

Laboratory: Eurofins Lancaster Laboratories Reviewer: CR

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: 7/31/13
II.	ICP/MS Tune	—	
III.	Calibration	—	
IV.	Blanks	A	
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	A	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	N	
XIV.	Field Duplicates	—	
XV	Field Blanks	SW	EB= EB2-080113 (PH082) FB= FB-041113 (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-536-SA8-SB-0.0-0.5	11		21		31	
2	SL-536-SA8-SB-4.0-5.0	12		22		32	
3	SL-537-SA8-SB-0.0-0.5	13		23		33	
4	SL-537-SA8-SB-4.0-5.0	14		24		34	
5	(#1) MS	15		25		35	
6	MSD	16		26		36	
7	DUP	17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

LDC #: 30362B4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: [illegible]
2nd Reviewer: [illegible]

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								
Cu	0.0036	1.8										
Mo	0.0036	1.8	0.513	~~0.30~~ 0.296 J								

EB2-080113 (SDG: PH082) = ND

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.: PH081
Matrix: SOIL Level (low/med): LOW

74% (Ca qualified & off RPD)

Background Lab Sample ID: 7146671BKG Matrix Spike Lab Sample ID: 7146671MS Matrix Spike Duplicate Lab Sample ID: 7146671MSD
Batch Id(s): P21737B

Analyte	Mass	BKG Sample Result	C	MS Sample Result	C	MSD Sample Result	C	MS Spike Added	MSD Spike Added	Units	MS %R	Q	MSD %R	Q	RPD	Q	Control Limit %R	Control Limit RPD	M
Aluminum		26130.6176		33436.1020		32181.3912		196.0784	196.0784	MG/KG	3726		3086		4			20	P
Antimony		0.7255	U	21.8206		22.2049		49.0196	49.0196	MG/KG	45	N	45	N	2		75 - 125	20	P
Arsenic		5.4422		18.8824		19.3000		14.7059	14.7059	MG/KG	91		94		2		75 - 125	20	P
Barium		115.2922		309.1108		303.8167		196.0784	196.0784	MG/KG	99		96		2		75 - 125	20	P
Beryllium		0.9167	B	5.8206		5.6843		4.9020	4.9020	MG/KG	100		97		2		75 - 125	20	P
Boron		18.4618		204.1824		200.1373		196.0784	196.0784	MG/KG	95		93		2		75 - 125	20	P
Cadmium		0.1667	B	4.5853		4.6706		4.9020	4.9020	MG/KG	90		92		2		75 - 125	20	P
Calcium		8906.6127		9495.5990		18687.9039		392.1569	392.1569	MG/KG	150		2494		65	*		20	P
Chromium		36.5108		61.6578		59.2392		19.6078	19.6078	MG/KG	128	N	116		4		75 - 125	20	P
Cobalt		8.9382		53.4520		54.0422		49.0196	49.0196	MG/KG	91		92		1		75 - 125	20	P
Copper		18.8265		44.8941		44.2598		24.5098	24.5098	MG/KG	106		104		1		75 - 125	20	P
Iron		32443.8039		35123.4294		33392.3373		98.0392	98.0392	MG/KG	2733		968		5			20	P
Lead		12.2735		25.2431		24.5167		14.7059	14.7059	MG/KG	88		83		3		75 - 125	20	P
Lithium		23.3608		126.1706		125.6108		98.0392	98.0392	MG/KG	105		104		0		75 - 125	20	P
Magnesium		7003.3255		7836.1392		7634.5627		196.0784	196.0784	MG/KG	425		322		3			20	P
Manganese		454.8657		510.7157		621.3578		49.0196	49.0196	MG/KG	114		340		20			20	P
Molybdenum		0.4971	B	172.6471		169.5755		196.0784	196.0784	MG/KG	88		86		2		75 - 125	20	P
Nickel		17.6853		63.1039		63.3127		49.0196	49.0196	MG/KG	93		93		0		75 - 125	20	P
Phosphorus		421.8686		504.9186		489.1971		98.0392	98.0392	MG/KG	85		69		3			20	P
Potassium		4510.5216		6169.9059		5859.9000		980.3922	980.3922	MG/KG	169		138		5			20	P
Selenium	78	0.2310	B	1.9843		2.1198		1.9608	1.9608	MG/KG	89		96		7		75 - 125	20	MS
Silver	107	0.0533	B	10.1059		9.8849		9.8039	9.8039	MG/KG	103		100		2		75 - 125	20	MS
Sodium		84.3480	B	1072.1422		1071.7549		980.3922	980.3922	MG/KG	101		101		0		75 - 125	20	P
Strontium	88	29.2941		37.2433		38.7641		7.8431	7.8431	MG/KG	101		121		4		75 - 125	20	MS
Thallium	203	0.3063		0.6865		0.6876		0.3922	0.3922	MG/KG	97		97		0		75 - 125	20	MS
Tin		1.4225	B	333.9647		325.0578		392.1569	392.1569	MG/KG	85		83		3		75 - 125	20	P
Titanium		1177.4892		1637.3206		1520.5127		98.0392	98.0392	MG/KG	469		350		7			20	P
Vanadium		62.6598		124.3461		119.6814		49.0196	49.0196	MG/KG	126	N	116		4		75 - 125	20	P
Zinc		68.6078		116.3471		114.7647		49.0196	49.0196	MG/KG	97		94		1		75 - 125	20	P
Zirconium		5.2578		93.3029		92.3863		98.0392	98.0392	MG/KG	90		89		1		75 - 125	20	P

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

METHODS:
P = ICP Atomic Emission Spectrometer CV = Cold Vapor
MS = ICP Mass Spectrometry 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 6
DUPLICATES
SDG No.: PH081
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7146671BKG
Batch ID(s): P21737B
Concentration Units: MG/KG

Duplicate Lab Sample ID: 7146671DUP

Analyte	Mass	Control Limit	Samples (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum			26130.6176		25090.5088		4		P
Antimony			0.7255	U	0.7255	U			P
Arsenic		3.9	5.4422		5.0961		7		P
Barium			115.2922		119.8588		4		P
Beryllium			0.9167	B	0.8941	B	2		P
Boron		9.8	18.4618		18.2971		1		P
Cadmium			0.1667	B	0.2294	B	32		P
Calcium			8906.6127		9222.6814		3		P
Chromium			36.5108		35.1206		4		P
Cobalt			8.9382		9.4088		5		P
Copper			18.8265		18.7833		0		P
Iron			32443.8039		33992.6020		5		P
Lead		2.9	12.2735		12.2059		1		P
Lithium			23.3608		22.8461		2		P
Magnesium			7003.3255		6797.1676		3		P
Manganese			454.8657		471.8647		4		P
Molybdenum			0.4971	B	0.2961	B	51		P
Nickel			17.6853		17.8843		1		P
Phosphorus			421.8686		426.5824		1		P
Potassium			4510.5216		4426.5696		2		P
Selenium	78		0.2310	B	0.2018	B	13		MS
Silver	107		0.0533	B	0.0529	B	1		MS
Sodium			84.3480	B	80.9676	B	4		P
Strontium	88		29.2941		27.8898		5		MS
Thallium	203	0.2	0.3063		0.3039		1		MS
Tin			1.4225	B	1.5471	B	8		P
Titanium			1177.4892		1092.6167		7		P
Vanadium			62.6598		60.7549		3		P
Zinc			68.6078		68.7863		0		P
Zirconium		4.9	5.2578		5.1382		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.

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

Data Validation Report
Santa Susana Field Laboratory

Subarea 8

SDG: PH082

Prepared for

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November 13, 2013

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on August 1, 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 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 calibration blanks, 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, herbicides, metals 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 with the following exceptions:

SDG/ Method	Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PH082/ 6010C	ICB/CCB	Barium	0.35 ug/L	EB1-081113 EB2-080113

Sample concentrations were compared to concentrations detected in the initial and continuing blanks. The sample concentrations were not detected or were significantly greater (>5X for contaminants) than the concentrations found in the associated blanks with the following exceptions:

SDG/Method	Sample	Compound	Reported Concentration	Modified Final Concentration
PH082/ 6010C	EB1-080113	Barium	0.39 ug/L	0.39U 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 with the exception of one sample for pesticides and one sample for herbicides. 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.

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 herbicides and one MS/MSD pair for metals performed in SDG PH081. 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 this DVR and the DVR for SDG PH081.

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 with the exception of two LCS/LCSD pairs for SVOCs. No data were qualified for due to high %Rs since the associated results were non-detected.

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 PH082	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-G. No contaminants were found in the trip blank.

Two equipment blanks were collected and analyzed for SVOCs, pesticides, PCBs, metals, herbicides, TPH-G, TPH-E, and dioxins. The equipment blanks 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-G, TPH-E, 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
01-Aug-2013	SL-610-SA8-SB-0.0-0.5	7148142	N	3050B	6010C	III
01-Aug-2013	SL-610-SA8-SB-0.0-0.5	7148142	N	3050B	6020A	III
01-Aug-2013	SL-610-SA8-SB-0.0-0.5	7148142	N	3546	8015M	III
01-Aug-2013	SL-610-SA8-SB-0.0-0.5	7148142	N	3546	8081B	III
01-Aug-2013	SL-610-SA8-SB-0.0-0.5	7148142	N	3546	8082A	III
01-Aug-2013	SL-610-SA8-SB-0.0-0.5	7148142	N	3546	8270D SIM	III
01-Aug-2013	SL-610-SA8-SB-0.0-0.5	7148142	N	3550B	8151A	III
01-Aug-2013	SL-610-SA8-SB-0.0-0.5	7148142	N	METHOD	1613B	III
01-Aug-2013	SL-610-SA8-SB-0.0-0.5	7148142	N	METHOD	7471B	III
01-Aug-2013	TB-080113	7148148	TB	5030B	8015M	III
01-Aug-2013	SL-610-SA8-SB-0.0-0.5MSD	P148142M240914A	MSD	3550B	8151A	III
01-Aug-2013	SL-610-SA8-SB-0.0-0.5MS	P148142R240847A	MS	3550B	8151A	III
01-Aug-2013	SL-610-SA8-SB-4.0-5.0	7148143	N	3050B	6010C	III
01-Aug-2013	SL-610-SA8-SB-4.0-5.0	7148143	N	3050B	6020A	III
01-Aug-2013	SL-610-SA8-SB-4.0-5.0	7148143	N	3546	8015M	III
01-Aug-2013	SL-610-SA8-SB-4.0-5.0	7148143	N	3546	8081B	III
01-Aug-2013	SL-610-SA8-SB-4.0-5.0	7148143	N	3546	8082A	III
01-Aug-2013	SL-610-SA8-SB-4.0-5.0	7148143	N	3546	8270D SIM	III
01-Aug-2013	SL-610-SA8-SB-4.0-5.0	7148143	N	3550B	8151A	III
01-Aug-2013	SL-610-SA8-SB-4.0-5.0	7148143	N	5035A	8015M	III
01-Aug-2013	SL-610-SA8-SB-4.0-5.0	7148143	N	METHOD	1613B	III
01-Aug-2013	SL-610-SA8-SB-4.0-5.0	7148143	N	METHOD	7471B	III
01-Aug-2013	SL-610-SA8-SB-6.8-7.8	7148144	N	3050B	6010C	III
01-Aug-2013	SL-610-SA8-SB-6.8-7.8	7148144	N	3050B	6020A	III
01-Aug-2013	SL-610-SA8-SB-6.8-7.8	7148144	N	3546	8015M	III
01-Aug-2013	SL-610-SA8-SB-6.8-7.8	7148144	N	3546	8081B	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation
N = Normal Sample
FD = Field Duplicate
TB = Trip Blank
FB = Field Blank
MS = Matrix Spike
MSD = Matrix Spike Duplicate

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
01-Aug-2013	SL-610-SA8-SB-6.8-7.8	7148144	N	3546	8082A	III
01-Aug-2013	SL-610-SA8-SB-6.8-7.8	7148144	N	3546	8270D SIM	III
01-Aug-2013	SL-610-SA8-SB-6.8-7.8	7148144	N	3550B	8151A	III
01-Aug-2013	SL-610-SA8-SB-6.8-7.8	7148144	N	5035A	8015M	III
01-Aug-2013	SL-610-SA8-SB-6.8-7.8	7148144	N	METHOD	7471B	III
01-Aug-2013	SL-610-SA8-SB-6.8-7.8MSD	P148144M321937A	MSD	3546	8015M	III
01-Aug-2013	SL-610-SA8-SB-6.8-7.8MS	P148144R321916A	MS	3546	8015M	III
01-Aug-2013	SL-608-SA8-SB-0.0-0.5	7148145	N	3050B	6010C	III
01-Aug-2013	SL-608-SA8-SB-0.0-0.5	7148145	N	3050B	6020A	III
01-Aug-2013	SL-608-SA8-SB-0.0-0.5	7148145	N	3546	8015M	III
01-Aug-2013	SL-608-SA8-SB-0.0-0.5	7148145	N	3546	8082A	III
01-Aug-2013	SL-608-SA8-SB-0.0-0.5	7148145	N	3546	8270D SIM	III
01-Aug-2013	SL-608-SA8-SB-0.0-0.5	7148145	N	METHOD	1613B	III
01-Aug-2013	SL-608-SA8-SB-0.0-0.5	7148145	N	METHOD	7471B	III
01-Aug-2013	SL-608-SA8-SB-0.0-0.5DUP	P148145D220646	DUP	METHOD	7471B	III
01-Aug-2013	SL-608-SA8-SB-0.0-0.5MSD	P148145M220650	MSD	METHOD	7471B	III
01-Aug-2013	SL-608-SA8-SB-0.0-0.5MS	P148145R220648	MS	METHOD	7471B	III
01-Aug-2013	SL-608-SA8-SB-4.0-5.0	7148146	N	3050B	6010C	III
01-Aug-2013	SL-608-SA8-SB-4.0-5.0	7148146	N	3050B	6020A	III
01-Aug-2013	SL-608-SA8-SB-4.0-5.0	7148146	N	3546	8015M	III
01-Aug-2013	SL-608-SA8-SB-4.0-5.0	7148146	N	3546	8082A	III
01-Aug-2013	SL-608-SA8-SB-4.0-5.0	7148146	N	3546	8270D SIM	III
01-Aug-2013	SL-608-SA8-SB-4.0-5.0	7148146	N	5035A	8015M	III
01-Aug-2013	SL-608-SA8-SB-4.0-5.0	7148146	N	METHOD	1613B	III
01-Aug-2013	SL-608-SA8-SB-4.0-5.0	7148146	N	METHOD	7471B	III
01-Aug-2013	SL-608-SA8-SB-7.0-8.0	7148147	N	3050B	6010C	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation
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FB = Field Blank
MS = Matrix Spike
MSD = Matrix Spike Duplicate

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
01-Aug-2013	SL-608-SA8-SB-7.0-8.0	7148147	N	3050B	6020A	III
01-Aug-2013	SL-608-SA8-SB-7.0-8.0	7148147	N	3546	8015M	III
01-Aug-2013	SL-608-SA8-SB-7.0-8.0	7148147	N	3546	8082A	III
01-Aug-2013	SL-608-SA8-SB-7.0-8.0	7148147	N	3546	8270D SIM	III
01-Aug-2013	SL-608-SA8-SB-7.0-8.0	7148147	N	5035A	8015M	III
01-Aug-2013	SL-608-SA8-SB-7.0-8.0	7148147	N	METHOD	1613B	III
01-Aug-2013	SL-608-SA8-SB-7.0-8.0	7148147	N	METHOD	7471B	III
01-Aug-2013	EB1-080113	7148140	EB	3005A	6010C	III
01-Aug-2013	EB1-080113	7148140	EB	3510C	8015M	III
01-Aug-2013	EB1-080113	7148140	EB	3510C	8082A	III
01-Aug-2013	EB1-080113	7148140	EB	3510C	8270D SIM	III
01-Aug-2013	EB1-080113	7148140	EB	5030B	8015M	III
01-Aug-2013	EB1-080113	7148140	EB	M3010A	6020A	III
01-Aug-2013	EB1-080113	7148140	EB	METHOD	1613B	III
01-Aug-2013	EB1-080113	7148140	EB	METHOD	7470A	III
01-Aug-2013	EB2-080113	7148141	EB	3005A	6010C	III
01-Aug-2013	EB2-080113	7148141	EB	3510C	8015M	III
01-Aug-2013	EB2-080113	7148141	EB	3510C	8081B	III
01-Aug-2013	EB2-080113	7148141	EB	3510C	8082A	III
01-Aug-2013	EB2-080113	7148141	EB	3510C	8270D SIM	III
01-Aug-2013	EB2-080113	7148141	EB	5030B	8015M	III
01-Aug-2013	EB2-080113	7148141	EB	M3010A	6020A	III
01-Aug-2013	EB2-080113	7148141	EB	METHOD	1613B	III
01-Aug-2013	EB2-080113	7148141	EB	METHOD	7470A	III
01-Aug-2013	EB2-080113	7148141	EB	METHOD	8151A	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation
N = Normal Sample
FD = Field Duplicate
TB = Trip Blank
FB = Field Blank
MS = Matrix Spike
MSD = Matrix Spike Duplicate

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH082 **Laboratory: LL**

EDD Filename: PH082_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: AQ**

Sample ID: EB1-080113 *Collected:* 8/1/2013 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
BARIUM	0.00039	J	0.00033	MDL	0.0100	PQL	mg/L	U	B

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-608-SA8-SB-0.0-0.5 *Collected:* 8/1/2013 12:10:00 *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CALCIUM	58800		6.61	MDL	39.6	PQL	mg/Kg	J	E

Sample ID: SL-608-SA8-SB-0.0-0.5 *Collected:* 8/1/2013 12:10:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	3.96	U	0.732	MDL	3.96	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.721	J	0.0663	MDL	0.989	PQL	mg/Kg	J	Z
CADMIUM	0.193	J	0.0752	MDL	0.989	PQL	mg/Kg	J	Z
CHROMIUM	33.4		0.158	MDL	2.97	PQL	mg/Kg	J	Q
TIN	1.38	J	0.218	MDL	9.89	PQL	mg/Kg	U	B
VANADIUM	65.2		0.129	MDL	0.989	PQL	mg/Kg	J	Q
Zirconium	2.17	J	0.831	MDL	4.95	PQL	mg/Kg	J	Z

Sample ID: SL-608-SA8-SB-4.0-5.0 *Collected:* 8/1/2013 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
ANTIMONY	4.34	U	0.803	MDL	4.34	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.837	J	0.0727	MDL	1.09	PQL	mg/Kg	J	Z
CADMIUM	0.172	J	0.0825	MDL	1.09	PQL	mg/Kg	J	Z
CALCIUM	48100		3.63	MDL	21.7	PQL	mg/Kg	J	E
CHROMIUM	36.5		0.174	MDL	3.26	PQL	mg/Kg	J	Q
MOLYBDENUM	0.229	J	0.185	MDL	2.17	PQL	mg/Kg	U	F
TIN	1.32	J	0.239	MDL	10.9	PQL	mg/Kg	U	B
VANADIUM	70.7		0.141	MDL	1.09	PQL	mg/Kg	J	Q
Zirconium	3.32	J	0.912	MDL	5.43	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: PH082 **Laboratory: LL**

EDD Filename: PH082_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-608-SA8-SB-7.0-8.0 *Collected:* 8/1/2013 1:45:00 PM *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CALCIUM	66100		7.17	MDL	43.0	PQL	mg/Kg	J	E

Sample ID: SL-608-SA8-SB-7.0-8.0 *Collected:* 8/1/2013 1:45:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.30	U	0.795	MDL	4.30	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.787	J	0.0719	MDL	1.07	PQL	mg/Kg	J	Z
CADMIUM	0.226	J	0.0816	MDL	1.07	PQL	mg/Kg	J	Z
CHROMIUM	37.2		0.172	MDL	3.22	PQL	mg/Kg	J	Q
TIN	1.25	J	0.236	MDL	10.7	PQL	mg/Kg	U	B
VANADIUM	70.0		0.140	MDL	1.07	PQL	mg/Kg	J	Q
Zirconium	3.60	J	0.902	MDL	5.37	PQL	mg/Kg	J	Z

Sample ID: SL-610-SA8-SB-0.0-0.5 *Collected:* 8/1/2013 8:00:00 AM *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CALCIUM	75500		6.88	MDL	41.2	PQL	mg/Kg	J	E

Sample ID: SL-610-SA8-SB-0.0-0.5 *Collected:* 8/1/2013 8:00:00 AM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.12	U	0.762	MDL	4.12	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.618	J	0.0690	MDL	1.03	PQL	mg/Kg	J	Z
CADMIUM	0.282	J	0.0783	MDL	1.03	PQL	mg/Kg	J	Z
CHROMIUM	29.5		0.165	MDL	3.09	PQL	mg/Kg	J	Q
MOLYBDENUM	0.218	J	0.175	MDL	2.06	PQL	mg/Kg	U	F
TIN	1.36	J	0.227	MDL	10.3	PQL	mg/Kg	U	B
VANADIUM	57.4		0.134	MDL	1.03	PQL	mg/Kg	J	Q
Zirconium	2.14	J	0.865	MDL	5.15	PQL	mg/Kg	J	Z

Sample ID: SL-610-SA8-SB-4.0-5.0 *Collected:* 8/1/2013 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
ANTIMONY	4.42	U	0.818	MDL	4.42	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.875	J	0.0741	MDL	1.11	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: PH082 **Laboratory: LL**

EDD Filename: PH082_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-610-SA8-SB-4.0-5.0 *Collected:* 8/1/2013 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
CADMIUM	0.216	J	0.0840	MDL	1.11	PQL	mg/Kg	J	Z
CALCIUM	43100		3.69	MDL	22.1	PQL	mg/Kg	J	E
CHROMIUM	38.2		0.177	MDL	3.32	PQL	mg/Kg	J	Q
MOLYBDENUM	0.202	J	0.188	MDL	2.21	PQL	mg/Kg	U	F
TIN	1.38	J	0.243	MDL	11.1	PQL	mg/Kg	U	B
VANADIUM	76.0		0.144	MDL	1.11	PQL	mg/Kg	J	Q
Zirconium	3.46	J	0.928	MDL	5.53	PQL	mg/Kg	J	Z

Sample ID: SL-610-SA8-SB-6.8-7.8 *Collected:* 8/1/2013 9:00:00 AM *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CALCIUM	89600		7.32	MDL	43.8	PQL	mg/Kg	J	E

Sample ID: SL-610-SA8-SB-6.8-7.8 *Collected:* 8/1/2013 9:00:00 AM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.38	U	0.810	MDL	4.38	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.689	J	0.0734	MDL	1.10	PQL	mg/Kg	J	Z
CADMIUM	0.216	J	0.0832	MDL	1.10	PQL	mg/Kg	J	Z
CHROMIUM	33.5		0.175	MDL	3.29	PQL	mg/Kg	J	Q
TIN	1.43	J	0.241	MDL	11.0	PQL	mg/Kg	U	B
VANADIUM	64.9		0.142	MDL	1.10	PQL	mg/Kg	J	Q
Zirconium	3.34	J	0.920	MDL	5.48	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-608-SA8-SB-0.0-0.5 *Collected:* 8/1/2013 12:10:00 *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.363	J	0.0989	MDL	0.396	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: PH082 **Laboratory: LL**

EDD Filename: PH082_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-608-SA8-SB-0.0-0.5 *Collected:* 8/1/2013 12:10:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0309	J	0.0257	MDL	0.198	PQL	mg/Kg	J	Z

Sample ID: SL-608-SA8-SB-4.0-5.0 *Collected:* 8/1/2013 1:00:00 PM *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.339	J	0.109	MDL	0.434	PQL	mg/Kg	J	Z

Sample ID: SL-608-SA8-SB-4.0-5.0 *Collected:* 8/1/2013 1:00:00 PM *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0454	J	0.0282	MDL	0.217	PQL	mg/Kg	J	Z

Sample ID: SL-608-SA8-SB-7.0-8.0 *Collected:* 8/1/2013 1:45:00 PM *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.326	J	0.107	MDL	0.430	PQL	mg/Kg	J	Z

Sample ID: SL-608-SA8-SB-7.0-8.0 *Collected:* 8/1/2013 1:45:00 PM *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0361	J	0.0279	MDL	0.215	PQL	mg/Kg	J	Z

Sample ID: SL-610-SA8-SB-0.0-0.5 *Collected:* 8/1/2013 8:00:00 AM *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.353	J	0.103	MDL	0.412	PQL	mg/Kg	J	Z

Sample ID: SL-610-SA8-SB-4.0-5.0 *Collected:* 8/1/2013 8:20:00 AM *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.280	J	0.111	MDL	0.442	PQL	mg/Kg	J	Z

Sample ID: SL-610-SA8-SB-4.0-5.0 *Collected:* 8/1/2013 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	0.0517	J	0.0287	MDL	0.221	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: PH082 **Laboratory: LL**

EDD Filename: PH082_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-610-SA8-SB-6.8-7.8 *Collected:* 8/1/2013 9:00:00 AM *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.238	J	0.110	MDL	0.438	PQL	mg/Kg	J	Z

Sample ID: SL-610-SA8-SB-6.8-7.8 *Collected:* 8/1/2013 9:00:00 AM *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0475	J	0.0285	MDL	0.219	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: SL-608-SA8-SB-4.0-5.0 *Collected:* 8/1/2013 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
MERCURY	0.0117	J	0.0108	MDL	0.0179	PQL	mg/Kg	J	Z

Sample ID: SL-608-SA8-SB-7.0-8.0 *Collected:* 8/1/2013 1:45:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0179	J	0.0108	MDL	0.0181	PQL	mg/Kg	J	Z

Sample ID: SL-610-SA8-SB-4.0-5.0 *Collected:* 8/1/2013 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	0.0132	J	0.0109	MDL	0.0182	PQL	mg/Kg	J	Z

Sample ID: SL-610-SA8-SB-6.8-7.8 *Collected:* 8/1/2013 9:00:00 AM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0135	J	0.0109	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: PH082 **Laboratory: LL**

EDD Filename: PH082_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 1613B **Matrix: AQ**

Sample ID: EB1-080113 *Collected:* 8/1/2013 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	0.535	JBQ	0.145	MDL	9.79	PQL	pg/L	U	B
1,2,3,4,6,7,8-HPCDF	0.187	JBQ	0.0616	MDL	9.79	PQL	pg/L	U	B
1,2,3,4,7,8,9-HPCDF	0.188	JB	0.0839	MDL	9.79	PQL	pg/L	U	B
1,2,3,4,7,8-HxCDD	0.269	JB	0.120	MDL	9.79	PQL	pg/L	U	B
1,2,3,4,7,8-HXCDF	0.253	JBQ	0.0620	MDL	9.79	PQL	pg/L	U	B
1,2,3,6,7,8-HXCDD	0.172	JB	0.127	MDL	9.79	PQL	pg/L	U	B
1,2,3,6,7,8-HXCDF	0.138	JBQ	0.0622	MDL	9.79	PQL	pg/L	U	B
1,2,3,7,8,9-HXCDF	0.218	JBQ	0.104	MDL	9.79	PQL	pg/L	U	B
1,2,3,7,8-PECDD	0.175	JBQ	0.163	MDL	9.79	PQL	pg/L	U	B
1,2,3,7,8-PECDF	0.300	JBQ	0.110	MDL	9.79	PQL	pg/L	U	B
2,3,4,6,7,8-HXCDF	0.162	JB	0.0600	MDL	9.79	PQL	pg/L	U	B
2,3,4,7,8-PECDF	0.121	JBQ	0.0921	MDL	9.79	PQL	pg/L	U	B
OCDD	0.883	JBQ	0.183	MDL	19.6	PQL	pg/L	U	B

Sample ID: EB2-080113 *Collected:* 8/1/2013 3:30:00 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	1.92	JB	0.176	MDL	9.62	PQL	pg/L	J	Z
1,2,3,4,6,7,8-HPCDF	1.65	JB	0.0803	MDL	9.62	PQL	pg/L	U	B
1,2,3,4,7,8,9-HPCDF	1.47	JBQ	0.122	MDL	9.62	PQL	pg/L	U	B
1,2,3,4,7,8-HxCDD	1.74	JBQ	0.174	MDL	9.62	PQL	pg/L	J	Z
1,2,3,4,7,8-HXCDF	1.90	JBQ	0.103	MDL	9.62	PQL	pg/L	U	B
1,2,3,6,7,8-HXCDD	1.45	JBQ	0.195	MDL	9.62	PQL	pg/L	U	B
1,2,3,6,7,8-HXCDF	1.48	JB	0.102	MDL	9.62	PQL	pg/L	U	B
1,2,3,7,8,9-HXCDD	1.77	JBQ	0.193	MDL	9.62	PQL	pg/L	U	B
1,2,3,7,8,9-HXCDF	1.68	JB	0.131	MDL	9.62	PQL	pg/L	U	B
1,2,3,7,8-PECDD	1.84	JB	0.197	MDL	9.62	PQL	pg/L	J	Z
1,2,3,7,8-PECDF	1.94	JBQ	0.122	MDL	9.62	PQL	pg/L	U	B
2,3,4,6,7,8-HXCDF	1.48	JBQ	0.0975	MDL	9.62	PQL	pg/L	U	B
2,3,4,7,8-PECDF	1.58	JB	0.103	MDL	9.62	PQL	pg/L	U	B
2,3,7,8-TCDD	0.270	JBQ	0.202	MDL	1.92	PQL	pg/L	U	B
OCDD	3.88	JB	0.205	MDL	19.2	PQL	pg/L	U	B
OCDF	4.13	JB	0.280	MDL	19.2	PQL	pg/L	U	B

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: PH082 **Laboratory: LL**

EDD Filename: PH082_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-608-SA8-SB-0.0-0.5 *Collected:* 8/1/2013 12:10:00 *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	1.73	JB	0.0844	MDL	5.02	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.460	JB	0.0278	MDL	5.02	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0732	JB	0.0596	MDL	5.02	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.161	JQ	0.0483	MDL	5.02	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.129	JBQ	0.0461	MDL	5.02	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.203	JQ	0.0421	MDL	5.02	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.105	J	0.0485	MDL	5.02	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	4.47	J	0.0704	MDL	5.02	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.215	JQ	0.0464	MDL	5.02	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.221	JBQ	0.0789	MDL	5.02	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.194	JQ	0.187	MDL	1.00	PQL	ng/Kg	J	Z
OCDF	0.858	JB	0.0797	MDL	10.0	PQL	ng/Kg	U	B

Sample ID: SL-608-SA8-SB-4.0-5.0 *Collected:* 8/1/2013 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	0.423	JBQ	0.0541	MDL	5.33	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.124	JBQ	0.0168	MDL	5.33	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0541	JBQ	0.0314	MDL	5.33	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0654	JQ	0.0326	MDL	5.33	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.163	JQ	0.0247	MDL	5.33	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.0809	JBQ	0.0353	MDL	5.33	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0906	JQ	0.0237	MDL	5.33	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.0692	JQ	0.0351	MDL	5.33	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.0397	J	0.0336	MDL	5.33	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.218	JBQ	0.0661	MDL	5.33	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	1.18	J	0.0457	MDL	5.33	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.102	JQ	0.0249	MDL	5.33	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.376	JBQ	0.0438	MDL	5.33	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.128	JQ	0.0860	MDL	1.07	PQL	ng/Kg	J	Z
OCDD	3.56	JB	0.0456	MDL	10.7	PQL	ng/Kg	J	Z
OCDF	0.190	JBQ	0.0693	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: PH082 **Laboratory: LL**

EDD Filename: PH082_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-608-SA8-SB-7.0-8.0 *Collected:* 8/1/2013 1:45:00 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	0.483	JBQ	0.101	MDL	5.44	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.136	JBQ	0.0321	MDL	5.44	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.169	JQ	0.0596	MDL	5.44	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0967	J	0.0516	MDL	5.44	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.943	JQ	0.0884	MDL	5.44	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.0529	JQ	0.0486	MDL	5.44	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.145	J	0.142	MDL	1.09	PQL	ng/Kg	J	Z
OCDD	6.83	JB	0.0965	MDL	10.9	PQL	ng/Kg	J	Z
OCDF	0.289	JB	0.180	MDL	10.9	PQL	ng/Kg	U	B

Sample ID: SL-610-SA8-SB-0.0-0.5 *Collected:* 8/1/2013 8:00:00 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	1.24	JB	0.0355	MDL	5.11	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0791	JBQ	0.0642	MDL	5.11	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.106	JQ	0.0493	MDL	5.11	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.376	J	0.0578	MDL	5.11	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.279	JBQ	0.0566	MDL	5.11	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.757	JQ	0.0573	MDL	5.11	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.202	J	0.0544	MDL	5.11	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.158	JBQ	0.125	MDL	5.11	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.399	J	0.0531	MDL	5.11	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.411	JB	0.0931	MDL	5.11	PQL	ng/Kg	J	Z
OCDF	2.49	JB	0.0775	MDL	10.2	PQL	ng/Kg	J	Z

Sample ID: SL-610-SA8-SB-4.0-5.0 *Collected:* 8/1/2013 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	0.187	JBQ	0.0635	MDL	5.55	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0296	JBQ	0.0172	MDL	5.55	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0370	JQ	0.0278	MDL	5.55	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.0483	JBQ	0.0446	MDL	5.55	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0505	JQ	0.0441	MDL	5.55	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.0546	JQ	0.0454	MDL	5.55	PQL	ng/Kg	J	Z
OCDD	1.62	JB	0.0574	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: PH082 **Laboratory: LL**

EDD Filename: PH082_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-610-SA8-SB-4.0-5.0 *Collected:* 8/1/2013 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
OCDF	0.223	JBQ	0.0820	MDL	11.1	PQL	ng/Kg	U	B

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: SL-608-SA8-SB-4.0-5.0 *Collected:* 8/1/2013 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 (C15-C20)	2.2	J	2.2	MDL	5.5	PQL	mg/Kg	J	Z

Sample ID: SL-610-SA8-SB-0.0-0.5 *Collected:* 8/1/2013 8:00:00 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)	4.7	J	4.1	MDL	10	PQL	mg/Kg	J	Z

Sample ID: SL-610-SA8-SB-6.8-7.8 *Collected:* 8/1/2013 9:00:00 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)	4.4	J	2.2	MDL	5.5	PQL	mg/Kg	J	Z
EFH (C30-C40)	8.4	J	4.4	MDL	11	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 8081B **Matrix: SO**

Sample ID: SL-610-SA8-SB-0.0-0.5 *Collected:* 8/1/2013 8:00:00 AM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ENDOSULFAN II	1.1	J	0.34	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: PH082 **Laboratory: LL**

EDD Filename: PH082_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 8082A **Matrix: SO**

Sample ID: SL-610-SA8-SB-4.0-5.0 *Collected:* 8/1/2013 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
AROCLOR 1254	12	J	4.9	MDL	19	PQL	ug/Kg	J	Z

Sample ID: SL-610-SA8-SB-6.8-7.8 *Collected:* 8/1/2013 9:00:00 AM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1254	6.3	J	4.8	MDL	18	PQL	ug/Kg	J	Z

Method Category: SVOA

Method: 8151A **Matrix: SO**

Sample ID: SL-610-SA8-SB-0.0-0.5 *Collected:* 8/1/2013 8:00:00 AM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,5-T	1.8	U	0.85	MDL	1.8	PQL	ug/Kg	UJ	S
2,4,5-TP (Silvex)	1.8	U	0.78	MDL	1.8	PQL	ug/Kg	UJ	S
2,4-D	37	U	12	MDL	37	PQL	ug/Kg	UJ	S
2,4-DB	28		6.4	MDL	18	PQL	ug/Kg	J	S
DALAPON	93	U	45	MDL	93	PQL	ug/Kg	UJ	S
DICAMBA	12	U	4.1	MDL	12	PQL	ug/Kg	UJ	S
DICHLOROPROP	18	U	9.3	MDL	18	PQL	ug/Kg	UJ	S
DINOSEB	25	U	9.3	MDL	25	PQL	ug/Kg	UJ	S
MCPA	2600	U	790	MDL	2600	PQL	ug/Kg	UJ	S
MCPP	2600	U	780	MDL	2600	PQL	ug/Kg	UJ	S

Method Category: SVOA

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

Sample ID: EB1-080113 *Collected:* 8/1/2013 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
Diethylphthalate	0.43	J	0.051	MDL	1.0	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: PH082 **Laboratory: LL**

EDD Filename: PH082_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

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

Sample ID: EB2-080113 *Collected:* 8/1/2013 3:30:00 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
BIS(2-ETHYLHEXYL)PHTHALATE	0.16	J	0.051	MDL	1.0	PQL	ug/L	U	B
Diethylphthalate	0.49	J	0.051	MDL	1.0	PQL	ug/L	U	B
Di-n-butylphthalate	0.18	J	0.051	MDL	1.0	PQL	ug/L	U	B
NAPHTHALENE	0.033	J	0.030	MDL	0.051	PQL	ug/L	J	Z

Method Category: SVOA

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

Sample ID: SL-608-SA8-SB-0.0-0.5 *Collected:* 8/1/2013 12:10:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-METHYLNAPHTHALENE	0.69	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(B)FLUORANTHENE	0.86	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	8.0	J	6.2	MDL	19	PQL	ug/Kg	J	Z
CHRYSENE	0.99	J	0.34	MDL	1.7	PQL	ug/Kg	J	Z
FLUORANTHENE	0.82	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
FLUORENE	1.2	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
NAPHTHALENE	0.75	J	0.69	MDL	1.7	PQL	ug/Kg	U	F
PHENANTHRENE	0.86	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
PYRENE	0.74	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: SL-608-SA8-SB-4.0-5.0 *Collected:* 8/1/2013 1:00:00 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
CHRYSENE	0.55	J	0.36	MDL	1.8	PQL	ug/Kg	J	Z
NAPHTHALENE	0.92	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: SL-608-SA8-SB-7.0-8.0 *Collected:* 8/1/2013 1:45:00 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
BIS(2-ETHYLHEXYL)PHTHALATE	10	J	6.5	MDL	20	PQL	ug/Kg	J	Z
CHRYSENE	0.61	J	0.36	MDL	1.8	PQL	ug/Kg	J	Z
FLUORANTHENE	0.75	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z
NAPHTHALENE	0.79	J	0.72	MDL	1.8	PQL	ug/Kg	U	F

* 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: PH082 **Laboratory: LL**

EDD Filename: PH082_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: **SVOA**

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

Sample ID: **SL-610-SA8-SB-0.0-0.5** ***Collected:*** **8/1/2013 8:00:00 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	0.80	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
2-METHYLNAPHTHALENE	1.1	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
ACENAPHTHYLENE	0.35	J	0.34	MDL	1.7	PQL	ug/Kg	J	Z
ANTHRACENE	0.70	J	0.34	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(A)ANTHRACENE	1.0	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(A)PYRENE	0.91	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(K)FLUORANTHENE	1.1	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	8.3	J	6.2	MDL	18	PQL	ug/Kg	J	Z
Di-n-butylphthalate	16	J	6.2	MDL	18	PQL	ug/Kg	J	Z
NAPHTHALENE	1.4	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: **SL-610-SA8-SB-4.0-5.0** ***Collected:*** **8/1/2013 8:20:00 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
BENZO(B)FLUORANTHENE	1.2	J	0.75	MDL	1.9	PQL	ug/Kg	J	Z
CHRYSENE	0.99	J	0.37	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

Data Qualifier Summary

Lab Reporting Batch ID: PH082 **Laboratory: LL**

EDD Filename: PH082_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Reason Code Legend

Reason Code	*Description*
B	Calibration Blank Contamination
B	Method Blank Contamination
E	Matrix Spike Precision
F	Field Blank Contamination
L	Laboratory Control Spike Upper Estimation
Q	Matrix Spike Lower Estimation
Q	Matrix Spike Precision
Q	Matrix Spike Upper Estimation
S	Surrogate/Tracer Recovery Lower 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

Enclosure I

EPA Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control
Outlier Reports

PH082

Method Blank Outlier Report

Lab Reporting Batch ID: PH082 **Laboratory: LL**

EDD Filename: PH082_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: **1613B**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2180B371547	8/9/2013 3:47:00 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 2,3,7,8-TCDF OCDD OCDF	0.282 pg/L 0.366 pg/L 0.419 pg/L 0.338 pg/L 0.518 pg/L 0.329 pg/L 0.361 pg/L 0.446 pg/L 0.526 pg/L 0.362 pg/L 0.538 pg/L 0.413 pg/L 0.395 pg/L 0.332 pg/L 0.183 pg/L 1.13 pg/L 0.930 pg/L	EB2-080113
BLK2240B372051	8/13/2013 8:51:00 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-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	0.639 pg/L 0.344 pg/L 0.295 pg/L 0.259 pg/L 0.211 pg/L 0.295 pg/L 0.198 pg/L 0.460 pg/L 0.446 pg/L 0.588 pg/L 0.194 pg/L 0.334 pg/L 0.829 pg/L	EB1-080113

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
EB1-080113(RES)	1,2,3,4,6,7,8-HPCDD	0.535 pg/L	0.535U pg/L
EB1-080113(RES)	1,2,3,4,6,7,8-HPCDF	0.187 pg/L	0.187U pg/L
EB1-080113(RES)	1,2,3,4,7,8,9-HPCDF	0.188 pg/L	0.188U pg/L
EB1-080113(RES)	1,2,3,4,7,8-HxCDD	0.269 pg/L	0.269U pg/L
EB1-080113(RES)	1,2,3,4,7,8-HXCDF	0.253 pg/L	0.253U pg/L
EB1-080113(RES)	1,2,3,6,7,8-HXCDD	0.172 pg/L	0.172U pg/L
EB1-080113(RES)	1,2,3,6,7,8-HXCDF	0.138 pg/L	0.138U pg/L
EB1-080113(RES)	1,2,3,7,8,9-HXCDF	0.218 pg/L	0.218U pg/L
EB1-080113(RES)	1,2,3,7,8-PECDD	0.175 pg/L	0.175U pg/L
EB1-080113(RES)	1,2,3,7,8-PECDF	0.300 pg/L	0.300U pg/L
EB1-080113(RES)	2,3,4,6,7,8-HXCDF	0.162 pg/L	0.162U pg/L
EB1-080113(RES)	2,3,4,7,8-PECDF	0.121 pg/L	0.121U pg/L
EB1-080113(RES)	OCDD	0.883 pg/L	0.883U pg/L
EB2-080113(RES)	1,2,3,4,6,7,8-HPCDF	1.65 pg/L	1.65U pg/L
EB2-080113(RES)	1,2,3,4,7,8,9-HPCDF	1.47 pg/L	1.47U pg/L
EB2-080113(RES)	1,2,3,4,7,8-HXCDF	1.90 pg/L	1.90U pg/L
EB2-080113(RES)	1,2,3,6,7,8-HXCDD	1.45 pg/L	1.45U pg/L
EB2-080113(RES)	1,2,3,6,7,8-HXCDF	1.48 pg/L	1.48U pg/L
EB2-080113(RES)	1,2,3,7,8,9-HXCDD	1.77 pg/L	1.77U pg/L

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

Method Blank Outlier Report

Lab Reporting Batch ID: PH082 **Laboratory: LL**

EDD Filename: PH082_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: **1613B**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples

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
EB2-080113(RES)	1,2,3,7,8,9-HXCDF	1.68 pg/L	1.68U pg/L
EB2-080113(RES)	1,2,3,7,8-PECDF	1.94 pg/L	1.94U pg/L
EB2-080113(RES)	2,3,4,6,7,8-HXCDF	1.48 pg/L	1.48U pg/L
EB2-080113(RES)	2,3,4,7,8-PECDF	1.58 pg/L	1.58U pg/L
EB2-080113(RES)	2,3,7,8-TCDD	0.270 pg/L	0.270U pg/L
EB2-080113(RES)	OCDD	3.88 pg/L	3.88U pg/L
EB2-080113(RES)	OCDF	4.13 pg/L	4.13U pg/L

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	0.0637 ng/Kg	SL-608-SA8-SB-0.0-0.5
		1,2,3,4,6,7,8-HPCDF	0.0267 ng/Kg	SL-608-SA8-SB-4.0-5.0
		1,2,3,4,7,8,9-HPCDF	0.0434 ng/Kg	SL-608-SA8-SB-7.0-8.0
		1,2,3,6,7,8-HXCDD	0.0377 ng/Kg	SL-610-SA8-SB-0.0-0.5
		1,2,3,7,8-PECDD	0.0780 ng/Kg	SL-610-SA8-SB-4.0-5.0
		2,3,4,7,8-PECDF	0.0474 ng/Kg	
		OCDD	0.252 ng/Kg	
		OCDF	0.202 ng/Kg	

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-608-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0732 ng/Kg	0.0732U ng/Kg
SL-608-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDD	0.129 ng/Kg	0.129U ng/Kg
SL-608-SA8-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.221 ng/Kg	0.221U ng/Kg
SL-608-SA8-SB-0.0-0.5(RES)	OCDF	0.858 ng/Kg	0.858U ng/Kg
SL-608-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.124 ng/Kg	0.124U ng/Kg
SL-608-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0541 ng/Kg	0.0541U ng/Kg
SL-608-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDD	0.0809 ng/Kg	0.0809U ng/Kg
SL-608-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDD	0.218 ng/Kg	0.218U ng/Kg
SL-608-SA8-SB-4.0-5.0(RES)	OCDF	0.190 ng/Kg	0.190U ng/Kg
SL-608-SA8-SB-7.0-8.0(RES)	OCDF	0.289 ng/Kg	0.289U ng/Kg
SL-610-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0791 ng/Kg	0.0791U ng/Kg
SL-610-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.158 ng/Kg	0.158U ng/Kg
SL-610-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDD	0.187 ng/Kg	0.187U ng/Kg
SL-610-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0296 ng/Kg	0.0296U ng/Kg
SL-610-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDD	0.0483 ng/Kg	0.0483U ng/Kg
SL-610-SA8-SB-4.0-5.0(RES)	OCDF	0.223 ng/Kg	0.223U ng/Kg

Method Blank Outlier Report

Lab Reporting Batch ID: PH082 **Laboratory: LL**

EDD Filename: PH082_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 6010C
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P21737BB221800	8/10/2013 6:00:00 PM	CALCIUM TIN ZINC	5.74 mg/Kg 1.54 mg/Kg 0.284 mg/Kg	SL-608-SA8-SB-0.0-0.5 SL-608-SA8-SB-4.0-5.0 SL-608-SA8-SB-7.0-8.0 SL-610-SA8-SB-0.0-0.5 SL-610-SA8-SB-4.0-5.0 SL-610-SA8-SB-6.8-7.8

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-608-SA8-SB-0.0-0.5(RES)	TIN	1.38 mg/Kg	1.38U mg/Kg
SL-608-SA8-SB-4.0-5.0(RES)	TIN	1.32 mg/Kg	1.32U mg/Kg
SL-608-SA8-SB-7.0-8.0(RES)	TIN	1.25 mg/Kg	1.25U mg/Kg
SL-610-SA8-SB-0.0-0.5(RES)	TIN	1.36 mg/Kg	1.36U mg/Kg
SL-610-SA8-SB-4.0-5.0(RES)	TIN	1.38 mg/Kg	1.38U mg/Kg
SL-610-SA8-SB-6.8-7.8(RES)	TIN	1.43 mg/Kg	1.43U mg/Kg

Method: 8151A
Matrix: AQ

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P19193AB242220A	8/9/2013 10:20:00 PM	2,4,5-T	0.076 ug/L	EB2-080113

Method: 8270D SIM
Matrix: AQ

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
PLKWE22B261528	8/12/2013 3:28:00 PM	BIS(2-ETHYLHEXYL)PHTHALATE Diethylphthalate Di-n-butylphthalate	0.17 ug/L 0.069 ug/L 0.076 ug/L	EB2-080113

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
EB2-080113(RES)	BIS(2-ETHYLHEXYL)PHTHALATE	0.16 ug/L	1.0U ug/L
EB2-080113(RES)	Diethylphthalate	0.49 ug/L	1.0U ug/L
EB2-080113(RES)	Di-n-butylphthalate	0.18 ug/L	1.0U ug/L

Field Blank Outlier Report

Lab Reporting Batch ID: PH082 **Laboratory: LL**

EDD Filename: PH082_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-608-SA8-SB-0.0-0.5 SL-608-SA8-SB-4.0-5.0 SL-608-SA8-SB-7.0-8.0 SL-610-SA8-SB-0.0-0.5 SL-610-SA8-SB-4.0-5.0 SL-610-SA8-SB-6.8-7.8

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-608-SA8-SB-4.0-5.0(RES)	MOLYBDENUM	0.229 mg/Kg	0.229U mg/Kg
SL-610-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.218 mg/Kg	0.218U mg/Kg
SL-610-SA8-SB-4.0-5.0(RES)	MOLYBDENUM	0.202 mg/Kg	0.202U 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-608-SA8-SB-0.0-0.5 SL-608-SA8-SB-4.0-5.0 SL-608-SA8-SB-7.0-8.0 SL-610-SA8-SB-0.0-0.5 SL-610-SA8-SB-4.0-5.0 SL-610-SA8-SB-6.8-7.8

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-608-SA8-SB-0.0-0.5(RES)	NAPHTHALENE	0.75 ug/Kg	1.7U ug/Kg
SL-608-SA8-SB-7.0-8.0(RES)	NAPHTHALENE	0.79 ug/Kg	1.8U ug/Kg

Surrogate Outlier Report

Lab Reporting Batch ID: PH082 **Laboratory: LL**

EDD Filename: PH082_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 8081B
Matrix: SO

Sample ID (Analysis Type)	Surrogate	Sample % Recovery	% Recovery Limits	Affected Compounds	Flag
SL-610-SA8-SB-6.8 -7.8	DECACHLOROBIPHENYL	125	20.00-120.00	All Target Analytes	J(all detects)

Method: 8151A
Matrix: SO

Sample ID (Analysis Type)	Surrogate	Sample % Recovery	% Recovery Limits	Affected Compounds	Flag
SL-610-SA8-SB-0.0 -0.5	2,4-Dichlorophenylacetic acid	45	50.00-150.00	All Target Analytes	J(all detects) UJ(all non-detects)

Method: 8270D SIM
Matrix: SO

Sample ID (Analysis Type)	Surrogate	Sample % Recovery	% Recovery Limits	Affected Compounds	Flag
SL-608-SA8-SB-7.0 -8.0	Fluoranthene-d10	148	54.00-129.00	No Affected Compounds	

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH082 **Laboratory: LL**

EDD Filename: PH082_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: **8151A**
Matrix: **SO**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
SL-610-SA8-SB-0.0-0.5MSD (SL-610-SA8-SB-0.0-0.5)	DINOSEB	-	-	10.00-46.00	57 (35.00)	DINOSEB	J (all detects)

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH082 **Laboratory: LL**

EDD Filename: PH082_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 8270D SIM
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
P5WDLCSQ260150	BIS(2-ETHYLHEXYL)PHTHALAT	170	168	70.00-143.00	-	BIS(2-ETHYLHEXYL)PHTHALA	
P5WDLCSY260219	Butylbenzylphthalate	161	159	40.00-138.00	-	Butylbenzylphthalate	J (all detects)
(EB1-080113)	Di-n-octylphthalate	159	156	57.00-145.00	-	Di-n-octylphthalate	

Method: 8270D SIM
Matrix: SO

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
P7LGLCSQ260219 (SL-608-SA8-SB-0.0-0.5 SL-608-SA8-SB-4.0-5.0 SL-608-SA8-SB-7.0-8.0 SL-610-SA8-SB-0.0-0.5 SL-610-SA8-SB-4.0-5.0 SL-610-SA8-SB-6.8-7.8)	Diethylphthalate	133	-	68.00-125.00	-	Diethylphthalate	J(all detects)

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

Reporting Limit Outliers

Lab Reporting Batch ID: PH082 **Laboratory: LL**

EDD Filename: PH082_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 1613B

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB1-080113	1,2,3,4,6,7,8-HPCDD	JBQ	0.535	9.79	PQL	pg/L	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.187	9.79	PQL	pg/L	
	1,2,3,4,7,8,9-HPCDF	JB	0.188	9.79	PQL	pg/L	
	1,2,3,4,7,8-HxCDD	JB	0.269	9.79	PQL	pg/L	
	1,2,3,4,7,8-HXCDF	JBQ	0.253	9.79	PQL	pg/L	
	1,2,3,6,7,8-HXCDD	JB	0.172	9.79	PQL	pg/L	
	1,2,3,6,7,8-HXCDF	JBQ	0.138	9.79	PQL	pg/L	J (all detects)
	1,2,3,7,8,9-HXCDF	JBQ	0.218	9.79	PQL	pg/L	
	1,2,3,7,8-PECDD	JBQ	0.175	9.79	PQL	pg/L	
	1,2,3,7,8-PECDF	JBQ	0.300	9.79	PQL	pg/L	
	2,3,4,6,7,8-HXCDF	JB	0.162	9.79	PQL	pg/L	
	2,3,4,7,8-PECDF	JBQ	0.121	9.79	PQL	pg/L	
	OCDD	JBQ	0.883	19.6	PQL	pg/L	
EB2-080113	1,2,3,4,6,7,8-HPCDD	JB	1.92	9.62	PQL	pg/L	
	1,2,3,4,6,7,8-HPCDF	JB	1.65	9.62	PQL	pg/L	
	1,2,3,4,7,8,9-HPCDF	JBQ	1.47	9.62	PQL	pg/L	
	1,2,3,4,7,8-HxCDD	JBQ	1.74	9.62	PQL	pg/L	
	1,2,3,4,7,8-HXCDF	JBQ	1.90	9.62	PQL	pg/L	
	1,2,3,6,7,8-HXCDD	JBQ	1.45	9.62	PQL	pg/L	
	1,2,3,6,7,8-HXCDF	JB	1.48	9.62	PQL	pg/L	
	1,2,3,7,8,9-HXCDD	JBQ	1.77	9.62	PQL	pg/L	
	1,2,3,7,8,9-HXCDF	JB	1.68	9.62	PQL	pg/L	J (all detects)
	1,2,3,7,8-PECDD	JB	1.84	9.62	PQL	pg/L	
	1,2,3,7,8-PECDF	JBQ	1.94	9.62	PQL	pg/L	
	2,3,4,6,7,8-HXCDF	JBQ	1.48	9.62	PQL	pg/L	
	2,3,4,7,8-PECDF	JB	1.58	9.62	PQL	pg/L	
	2,3,7,8-TCDD	JBQ	0.270	1.92	PQL	pg/L	
	OCDD	JB	3.88	19.2	PQL	pg/L	
	OCDF	JB	4.13	19.2	PQL	pg/L	

Method: 6010C

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB1-080113	BARIUM	J	0.00039	0.0100	PQL	mg/L	J (all detects)

Method: 8270D SIM

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB1-080113	Diethylphthalate	J	0.43	1.0	PQL	ug/L	J (all detects)
EB2-080113	BIS(2-ETHYLHEXYL)PHTHALATE	J	0.16	1.0	PQL	ug/L	
	Diethylphthalate	J	0.49	1.0	PQL	ug/L	J (all detects)
	Di-n-butylphthalate	J	0.18	1.0	PQL	ug/L	
	NAPHTHALENE	J	0.033	0.051	PQL	ug/L	

Reporting Limit Outliers

Lab Reporting Batch ID: PH082 **Laboratory: LL**

EDD Filename: PH082_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-608-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	1.73	5.02	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.460	5.02	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.0732	5.02	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JQ	0.161	5.02	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.129	5.02	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JQ	0.203	5.02	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDD	J	0.105	5.02	PQL	ng/Kg	
	1,2,3,7,8-PECDF	J	4.47	5.02	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JQ	0.215	5.02	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.221	5.02	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.194	1.00	PQL	ng/Kg	
	OCDF	JB	0.858	10.0	PQL	ng/Kg	
SL-608-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.423	5.33	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.124	5.33	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0541	5.33	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.0654	5.33	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JQ	0.163	5.33	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.0809	5.33	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JQ	0.0906	5.33	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JQ	0.0692	5.33	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	J	0.0397	5.33	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.218	5.33	PQL	ng/Kg	
	1,2,3,7,8-PECDF	J	1.18	5.33	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JQ	0.102	5.33	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.376	5.33	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.128	1.07	PQL	ng/Kg	
	OCDD	JB	3.56	10.7	PQL	ng/Kg	
	OCDF	JBQ	0.190	10.7	PQL	ng/Kg	
SL-608-SA8-SB-7.0-8.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.483	5.44	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.136	5.44	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JQ	0.169	5.44	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	J	0.0967	5.44	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JQ	0.943	5.44	PQL	ng/Kg	J (all detects)
	2,3,4,6,7,8-HXCDF	JQ	0.0529	5.44	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.145	1.09	PQL	ng/Kg	
	OCDD	JB	6.83	10.9	PQL	ng/Kg	
	OCDF	JB	0.289	10.9	PQL	ng/Kg	
SL-610-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDF	JB	1.24	5.11	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0791	5.11	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.106	5.11	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	J	0.376	5.11	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.279	5.11	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JQ	0.757	5.11	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDD	J	0.202	5.11	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.158	5.11	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	J	0.399	5.11	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.411	5.11	PQL	ng/Kg	
	OCDF	JB	2.49	10.2	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH082 **Laboratory: LL**

EDD Filename: PH082_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-610-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.187	5.55	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0296	5.55	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JQ	0.0370	5.55	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.0483	5.55	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JQ	0.0505	5.55	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JQ	0.0546	5.55	PQL	ng/Kg	
	OCDD	JB	1.62	11.1	PQL	ng/Kg	
	OCDF	JBQ	0.223	11.1	PQL	ng/Kg	

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-608-SA8-SB-0.0-0.5	BERYLLIUM	J	0.721	0.989	PQL	mg/Kg	J (all detects)
	CADMIUM	J	0.193	0.989	PQL	mg/Kg	
	TIN	J	1.38	9.89	PQL	mg/Kg	
	Zirconium	J	2.17	4.95	PQL	mg/Kg	
SL-608-SA8-SB-4.0-5.0	BERYLLIUM	J	0.837	1.09	PQL	mg/Kg	J (all detects)
	CADMIUM	J	0.172	1.09	PQL	mg/Kg	
	MOLYBDENUM	J	0.229	2.17	PQL	mg/Kg	
	TIN	J	1.32	10.9	PQL	mg/Kg	
	Zirconium	J	3.32	5.43	PQL	mg/Kg	
SL-608-SA8-SB-7.0-8.0	BERYLLIUM	J	0.787	1.07	PQL	mg/Kg	J (all detects)
	CADMIUM	J	0.226	1.07	PQL	mg/Kg	
	TIN	J	1.25	10.7	PQL	mg/Kg	
	Zirconium	J	3.60	5.37	PQL	mg/Kg	
SL-610-SA8-SB-0.0-0.5	BERYLLIUM	J	0.618	1.03	PQL	mg/Kg	J (all detects)
	CADMIUM	J	0.282	1.03	PQL	mg/Kg	
	MOLYBDENUM	J	0.218	2.06	PQL	mg/Kg	
	TIN	J	1.36	10.3	PQL	mg/Kg	
	Zirconium	J	2.14	5.15	PQL	mg/Kg	
SL-610-SA8-SB-4.0-5.0	BERYLLIUM	J	0.875	1.11	PQL	mg/Kg	J (all detects)
	CADMIUM	J	0.216	1.11	PQL	mg/Kg	
	MOLYBDENUM	J	0.202	2.21	PQL	mg/Kg	
	TIN	J	1.38	11.1	PQL	mg/Kg	
	Zirconium	J	3.46	5.53	PQL	mg/Kg	
SL-610-SA8-SB-6.8-7.8	BERYLLIUM	J	0.689	1.10	PQL	mg/Kg	J (all detects)
	CADMIUM	J	0.216	1.10	PQL	mg/Kg	
	TIN	J	1.43	11.0	PQL	mg/Kg	
	Zirconium	J	3.34	5.48	PQL	mg/Kg	

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-608-SA8-SB-0.0-0.5	SELENIUM	J	0.363	0.396	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0309	0.198	PQL	mg/Kg	

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

Reporting Limit Outliers

Lab Reporting Batch ID: PH082 **Laboratory: LL**

EDD Filename: PH082_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-608-SA8-SB-4.0-5.0	SELENIUM SILVER	J J	0.339 0.0454	0.434 0.217	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-608-SA8-SB-7.0-8.0	SELENIUM SILVER	J J	0.326 0.0361	0.430 0.215	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-610-SA8-SB-0.0-0.5	SELENIUM	J	0.353	0.412	PQL	mg/Kg	J (all detects)
SL-610-SA8-SB-4.0-5.0	SELENIUM SILVER	J J	0.280 0.0517	0.442 0.221	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-610-SA8-SB-6.8-7.8	SELENIUM SILVER	J J	0.238 0.0475	0.438 0.219	PQL PQL	mg/Kg mg/Kg	J (all detects)

Method: 7471B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-608-SA8-SB-4.0-5.0	MERCURY	J	0.0117	0.0179	PQL	mg/Kg	J (all detects)
SL-608-SA8-SB-7.0-8.0	MERCURY	J	0.0179	0.0181	PQL	mg/Kg	J (all detects)
SL-610-SA8-SB-4.0-5.0	MERCURY	J	0.0132	0.0182	PQL	mg/Kg	J (all detects)
SL-610-SA8-SB-6.8-7.8	MERCURY	J	0.0135	0.0181	PQL	mg/Kg	J (all detects)

Method: 8015M

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-608-SA8-SB-4.0-5.0	EFH (C15-C20)	J	2.2	5.5	PQL	mg/Kg	J (all detects)
SL-610-SA8-SB-0.0-0.5	EFH (C15-C20)	J	4.7	10	PQL	mg/Kg	J (all detects)
SL-610-SA8-SB-6.8-7.8	EFH (C21-C30) EFH (C30-C40)	J J	4.4 8.4	5.5 11	PQL PQL	mg/Kg mg/Kg	J (all detects)

Method: 8081B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-610-SA8-SB-0.0-0.5	ENDOSULFAN II	J	1.1	1.8	PQL	ug/Kg	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH082 **Laboratory: LL**

EDD Filename: PH082_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 8082A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-610-SA8-SB-4.0-5.0	AROCLOR 1254	J	12	19	PQL	ug/Kg	J (all detects)
SL-610-SA8-SB-6.8-7.8	AROCLOR 1254	J	6.3	18	PQL	ug/Kg	J (all detects)

Method: 8270D SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-608-SA8-SB-0.0-0.5	2-METHYLNAPHTHALENE	J	0.69	1.7	PQL	ug/Kg	J (all detects)
	BENZO(B)FLUORANTHENE	J	0.86	1.7	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	8.0	19	PQL	ug/Kg	
	CHRYSENE	J	0.99	1.7	PQL	ug/Kg	
	FLUORANTHENE	J	0.82	1.7	PQL	ug/Kg	
	FLUORENE	J	1.2	1.7	PQL	ug/Kg	
	NAPHTHALENE	J	0.75	1.7	PQL	ug/Kg	
	PHENANTHRENE	J	0.86	1.7	PQL	ug/Kg	
	PYRENE	J	0.74	1.7	PQL	ug/Kg	
SL-608-SA8-SB-4.0-5.0	CHRYSENE	J	0.55	1.8	PQL	ug/Kg	J (all detects)
	NAPHTHALENE	J	0.92	1.8	PQL	ug/Kg	
SL-608-SA8-SB-7.0-8.0	BIS(2-ETHYLHEXYL)PHTHALATE	J	10	20	PQL	ug/Kg	J (all detects)
	CHRYSENE	J	0.61	1.8	PQL	ug/Kg	
	FLUORANTHENE	J	0.75	1.8	PQL	ug/Kg	
	NAPHTHALENE	J	0.79	1.8	PQL	ug/Kg	
SL-610-SA8-SB-0.0-0.5	1-METHYLNAPHTHALENE	J	0.80	1.7	PQL	ug/Kg	J (all detects)
	2-METHYLNAPHTHALENE	J	1.1	1.7	PQL	ug/Kg	
	ACENAPHTHYLENE	J	0.35	1.7	PQL	ug/Kg	
	ANTHRACENE	J	0.70	1.7	PQL	ug/Kg	
	BENZO(A)ANTHRACENE	J	1.0	1.7	PQL	ug/Kg	
	BENZO(A)PYRENE	J	0.91	1.7	PQL	ug/Kg	
	BENZO(K)FLUORANTHENE	J	1.1	1.7	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	8.3	18	PQL	ug/Kg	
	Di-n-butylphthalate	J	16	18	PQL	ug/Kg	
	NAPHTHALENE	J	1.4	1.7	PQL	ug/Kg	
SL-610-SA8-SB-4.0-5.0	BENZO(B)FLUORANTHENE	J	1.2	1.9	PQL	ug/Kg	J (all detects)
	CHRYSENE	J	0.99	1.9	PQL	ug/Kg	

LDC #: 30362C4 **VALIDATION COMPLETENESS WORKSHEET** Date: 9/16/13
SDG #: PH082 ADR Page: 1 of 1
Laboratory: Eurofins Lancaster Laboratories Reviewer: A
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	—	Sampling dates: 8/1/13
II.	ICP/MS Tune	—	
III.	Calibration	—	
IV.	Blanks	SW	
V.	ICP Interference Check Sample (ICS) Analysis	—	
VI.	Matrix Spike Analysis	N	MS/D (from PH081)
VII.	Duplicate Sample Analysis	N	DUP ↓
VIII.	Laboratory Control Samples (LCS)	~~A~~ N	
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	N	
XV	Field Blanks	SW	EB = 1, 2 FB= FB041113 (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: water/soil

1	EB1-080113	11	(#6) DUP	21		31	
2	EB2-080113	12		22		32	
3	SL-610-SA8-SB-0.0-0.5	13		23		33	
4	SL-610-SA8-SB-4.0-5.0	14		24		34	
5	SL-610-SA8-SB-6.8-7.8	15		25		35	
6	SL-608-SA8-SB-0.0-0.5	16		26		36	
7	SL-608-SA8-SB-4.0-5.0	17		27		37	
8	SL-608-SA8-SB-7.0-8.0	18		28		38	
9	(#6) MS (Hg)	19		29		39	
10	↓ MSD	20		30		40	

Notes:

LDC #: 30362C4

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000) Soil preparation factor applied: ____ Reason: B
Sample Concentration units, unless otherwise noted: ug/L Associated Samples: All Water

					Sample Identification										
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Action Level	1										
Ba			0.35	1.75	0.39										

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.

LDC #: 30362C4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: [illegible]
2nd Reviewer: [illegible]

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	3	4	7							
Cu	0.0036	1.8										
Mo	0.0036	1.8	0.218	0.202	0.239							

Sampling date: 8/1/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: None

Analyte	Blank ID	Sample Identification										
	EB1-080113 (SDG: PH082)	Action Limit	No Qualifiers									
Ba	0.00039	0.195										

EB2-080113 (SDG: PH082) = ND

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: PH083

Prepared for

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Prepared by

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November 11, 2013

INTRODUCTION

This Data Validation Report (DVR) presents Level IV data validation results for samples collected on August 2, 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. Level IV Data Validation Reports are presented in Enclosure II.

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, 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, equipment blanks, field blanks and trip blanks. All samples were subjected to EPA Level IV evaluation as indicated in Attachment I, which comprised of the QC summary forms as well as 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 the internal standards (for non-dioxin methods), calibration blanks, and 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

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 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 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 metals performed in SDG PH081. 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 PH081.

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 with the exception of one LCS/LCSD pair for SVOCs. 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

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 PH083	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 PH082) was collected and analyzed for SVOCs, PCBs, metals, TPH-G, TPH-E, and dioxins. The equipment blank had several detections for SVOCs 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-G, TPH-E, 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
02-Aug-2013	SL-552-SA8-SB-0.0-0.5	7149851	N	3050B	6010C	IV
02-Aug-2013	SL-552-SA8-SB-0.0-0.5	7149851	N	3050B	6020A	IV
02-Aug-2013	SL-552-SA8-SB-0.0-0.5	7149851	N	3546	8015M	IV
02-Aug-2013	SL-552-SA8-SB-0.0-0.5	7149851	N	3546	8082A	IV
02-Aug-2013	SL-552-SA8-SB-0.0-0.5	7149851	N	3546	8270D SIM	IV
02-Aug-2013	SL-552-SA8-SB-0.0-0.5	7149851	N	METHOD	1613B	IV
02-Aug-2013	SL-552-SA8-SB-0.0-0.5	7149851	N	METHOD	7471B	IV
02-Aug-2013	SL-552-SA8-SB-0.0-0.5MSD	P149851M242203A	MSD	3546	8082A	IV
02-Aug-2013	SL-552-SA8-SB-0.0-0.5MSD	P149851M261507	MSD	3546	8270D SIM	IV
02-Aug-2013	SL-552-SA8-SB-0.0-0.5MS	P149851R242145A	MS	3546	8082A	IV
02-Aug-2013	SL-552-SA8-SB-0.0-0.5MS	P149851R261435	MS	3546	8270D SIM	IV
02-Aug-2013	TB-080213	7149850	TB	5030B	8015M	IV
02-Aug-2013	SL-552-SA8-SB-4.0-5.0	7149852	N	3050B	6010C	IV
02-Aug-2013	SL-552-SA8-SB-4.0-5.0	7149852	N	3050B	6020A	IV
02-Aug-2013	SL-552-SA8-SB-4.0-5.0	7149852	N	3546	8015M	IV
02-Aug-2013	SL-552-SA8-SB-4.0-5.0	7149852	N	3546	8082A	IV
02-Aug-2013	SL-552-SA8-SB-4.0-5.0	7149852	N	3546	8270D SIM	IV
02-Aug-2013	SL-552-SA8-SB-4.0-5.0	7149852	N	5035A	8015M	IV
02-Aug-2013	SL-552-SA8-SB-4.0-5.0	7149852	N	METHOD	1613B	IV
02-Aug-2013	SL-552-SA8-SB-4.0-5.0	7149852	N	METHOD	7471B	IV
02-Aug-2013	SL-552-SA8-SB-7.5-8.5	7149853	N	3050B	6010C	IV
02-Aug-2013	SL-552-SA8-SB-7.5-8.5	7149853	N	3050B	6020A	IV
02-Aug-2013	SL-552-SA8-SB-7.5-8.5	7149853	N	3546	8015M	IV
02-Aug-2013	SL-552-SA8-SB-7.5-8.5	7149853	N	3546	8082A	IV
02-Aug-2013	SL-552-SA8-SB-7.5-8.5	7149853	N	3546	8270D SIM	IV
02-Aug-2013	SL-552-SA8-SB-7.5-8.5	7149853	N	5035A	8015M	IV

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation
N = Normal Sample
FD = Field Duplicate
TB = Trip Blank
FB = Field Blank
MS = Matrix Spike
MSD = Matrix Spike Duplicate

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
02-Aug-2013	SL-552-SA8-SB-7.5-8.5	7149853	N	METHOD	7471B	IV
02-Aug-2013	SL-559-SA8-SB-0.0-0.5	7149854	N	3050B	6010C	IV
02-Aug-2013	SL-559-SA8-SB-0.0-0.5	7149854	N	3050B	6020A	IV
02-Aug-2013	SL-559-SA8-SB-0.0-0.5	7149854	N	3546	8015M	IV
02-Aug-2013	SL-559-SA8-SB-0.0-0.5	7149854	N	3546	8082A	IV
02-Aug-2013	SL-559-SA8-SB-0.0-0.5	7149854	N	3546	8270D SIM	IV
02-Aug-2013	SL-559-SA8-SB-0.0-0.5	7149854	N	METHOD	1613B	IV
02-Aug-2013	SL-559-SA8-SB-0.0-0.5	7149854	N	METHOD	7471B	IV
02-Aug-2013	SL-559-SA8-SB-4.0-5.0	7149855	N	3050B	6010C	IV
02-Aug-2013	SL-559-SA8-SB-4.0-5.0	7149855	N	3050B	6020A	IV
02-Aug-2013	SL-559-SA8-SB-4.0-5.0	7149855	N	3546	8015M	IV
02-Aug-2013	SL-559-SA8-SB-4.0-5.0	7149855	N	3546	8082A	IV
02-Aug-2013	SL-559-SA8-SB-4.0-5.0	7149855	N	3546	8270D SIM	IV
02-Aug-2013	SL-559-SA8-SB-4.0-5.0	7149855	N	5035A	8015M	IV
02-Aug-2013	SL-559-SA8-SB-4.0-5.0	7149855	N	METHOD	1613B	IV
02-Aug-2013	SL-559-SA8-SB-4.0-5.0	7149855	N	METHOD	7471B	IV
02-Aug-2013	SL-558-SA8-SB-0.0-0.5	7149856	N	3050B	6010C	IV
02-Aug-2013	SL-558-SA8-SB-0.0-0.5	7149856	N	3050B	6020A	IV
02-Aug-2013	SL-558-SA8-SB-0.0-0.5	7149856	N	3546	8015M	IV
02-Aug-2013	SL-558-SA8-SB-0.0-0.5	7149856	N	3546	8082A	IV
02-Aug-2013	SL-558-SA8-SB-0.0-0.5	7149856	N	3546	8270D SIM	IV
02-Aug-2013	SL-558-SA8-SB-0.0-0.5	7149856	N	METHOD	1613B	IV
02-Aug-2013	SL-558-SA8-SB-0.0-0.5	7149856	N	METHOD	7471B	IV
02-Aug-2013	SL-558-SA8-SB-4.0-5.0	7149857	N	3050B	6010C	IV
02-Aug-2013	SL-558-SA8-SB-4.0-5.0	7149857	N	3050B	6020A	IV
02-Aug-2013	SL-558-SA8-SB-4.0-5.0	7149857	N	3546	8015M	IV

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FB = Field Blank
MS = Matrix Spike
MSD = Matrix Spike Duplicate

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
02-Aug-2013	SL-558-SA8-SB-4.0-5.0	7149857	N	3546	8082A	IV
02-Aug-2013	SL-558-SA8-SB-4.0-5.0	7149857	N	3546	8270D SIM	IV
02-Aug-2013	SL-558-SA8-SB-4.0-5.0	7149857	N	5035A	8015M	IV
02-Aug-2013	SL-558-SA8-SB-4.0-5.0	7149857	N	METHOD	1613B	IV
02-Aug-2013	SL-558-SA8-SB-4.0-5.0	7149857	N	METHOD	7471B	IV
02-Aug-2013	SL-558-SA8-SB-9.0-10.0	7149858	N	3050B	6010C	IV
02-Aug-2013	SL-558-SA8-SB-9.0-10.0	7149858	N	3050B	6020A	IV
02-Aug-2013	SL-558-SA8-SB-9.0-10.0	7149858	N	3546	8015M	IV
02-Aug-2013	SL-558-SA8-SB-9.0-10.0	7149858	N	3546	8082A	IV
02-Aug-2013	SL-558-SA8-SB-9.0-10.0	7149858	N	3546	8270D SIM	IV
02-Aug-2013	SL-558-SA8-SB-9.0-10.0	7149858	N	5035A	8015M	IV
02-Aug-2013	SL-558-SA8-SB-9.0-10.0	7149858	N	METHOD	7471B	IV
02-Aug-2013	SL-558-SA8-SB-12.5-13.5	7149859	N	3050B	6010C	IV
02-Aug-2013	SL-558-SA8-SB-12.5-13.5	7149859	N	3050B	6020A	IV
02-Aug-2013	SL-558-SA8-SB-12.5-13.5	7149859	N	3546	8015M	IV
02-Aug-2013	SL-558-SA8-SB-12.5-13.5	7149859	N	3546	8082A	IV
02-Aug-2013	SL-558-SA8-SB-12.5-13.5	7149859	N	3546	8270D SIM	IV
02-Aug-2013	SL-558-SA8-SB-12.5-13.5	7149859	N	5035A	8015M	IV
02-Aug-2013	SL-558-SA8-SB-12.5-13.5	7149859	N	METHOD	7471B	IV

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation
N = Normal Sample
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Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH083 **Laboratory: LL**

EDD Filename: PrepPH083 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-552-SA8-SB-0.0-0.5 *Collected:* 8/2/2013 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	4.07	U	0.753	MDL	4.07	PQL	mg/Kg	UJ	Q
ARSENIC	3.58	J	0.712	MDL	4.07	PQL	mg/Kg	J	Z
BERYLLIUM	0.603	J	0.0682	MDL	1.02	PQL	mg/Kg	J	Z
CADMIUM	0.992	J	0.0773	MDL	1.02	PQL	mg/Kg	J	Z
CALCIUM	7790		3.40	MDL	20.4	PQL	mg/Kg	J	E
CHROMIUM	29.8		0.163	MDL	3.05	PQL	mg/Kg	J	Q
MOLYBDENUM	0.885	J	0.173	MDL	2.04	PQL	mg/Kg	U	F
SODIUM	92.7	J	17.0	MDL	102	PQL	mg/Kg	J	Z
TIN	1.96	J	0.224	MDL	10.2	PQL	mg/Kg	U	B
VANADIUM	47.3		0.132	MDL	1.02	PQL	mg/Kg	J	Q
Zirconium	2.51	J	0.855	MDL	5.09	PQL	mg/Kg	J	Z

Sample ID: SL-552-SA8-SB-4.0-5.0 *Collected:* 8/2/2013 8:45:00 AM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.38	U	0.809	MDL	4.38	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.905	J	0.0733	MDL	1.09	PQL	mg/Kg	J	Z
CADMIUM	0.213	J	0.0831	MDL	1.09	PQL	mg/Kg	J	Z
CALCIUM	20700		3.65	MDL	21.9	PQL	mg/Kg	J	E
CHROMIUM	39.7		0.175	MDL	3.28	PQL	mg/Kg	J	Q
TIN	1.25	J	0.241	MDL	10.9	PQL	mg/Kg	U	B
VANADIUM	73.4		0.142	MDL	1.09	PQL	mg/Kg	J	Q
Zirconium	4.98	J	0.919	MDL	5.47	PQL	mg/Kg	J	Z

Sample ID: SL-552-SA8-SB-7.5-8.5 *Collected:* 8/2/2013 9:00:00 AM *Analysis Type:* REA *Dilution:* 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CALCIUM	156000		18.1	MDL	108	PQL	mg/Kg	J	E

Sample ID: SL-552-SA8-SB-7.5-8.5 *Collected:* 8/2/2013 9:00:00 AM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.33	U	0.801	MDL	4.33	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.649	J	0.0725	MDL	1.08	PQL	mg/Kg	J	Z
CADMIUM	0.327	J	0.0823	MDL	1.08	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: PH083 **Laboratory: LL**

EDD Filename: PrepPH083 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-552-SA8-SB-7.5-8.5 *Collected:* 8/2/2013 9:00:00 AM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	26.0		0.173	MDL	3.25	PQL	mg/Kg	J	Q
TIN	1.35	J	0.238	MDL	10.8	PQL	mg/Kg	U	B
VANADIUM	46.3		0.141	MDL	1.08	PQL	mg/Kg	J	Q
Zirconium	3.78	J	0.910	MDL	5.41	PQL	mg/Kg	J	Z

Sample ID: SL-558-SA8-SB-0.0-0.5 *Collected:* 8/2/2013 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	4.07	U	0.752	MDL	4.07	PQL	mg/Kg	UJ	Q
ARSENIC	4.01	J	0.712	MDL	4.07	PQL	mg/Kg	J	Z
BERYLLIUM	0.831	J	0.0681	MDL	1.02	PQL	mg/Kg	J	Z
CADMIUM	0.255	J	0.0773	MDL	1.02	PQL	mg/Kg	J	Z
CALCIUM	6700		3.40	MDL	20.3	PQL	mg/Kg	J	E
CHROMIUM	34.1		0.163	MDL	3.05	PQL	mg/Kg	J	Q
MOLYBDENUM	0.327	J	0.173	MDL	2.03	PQL	mg/Kg	U	F
SODIUM	89.0	J	17.0	MDL	102	PQL	mg/Kg	J	Z
TIN	1.79	J	0.224	MDL	10.2	PQL	mg/Kg	U	B
VANADIUM	63.4		0.132	MDL	1.02	PQL	mg/Kg	J	Q
Zirconium	3.57	J	0.854	MDL	5.08	PQL	mg/Kg	J	Z

Sample ID: SL-558-SA8-SB-12.5-13.5 *Collected:* 8/2/2013 1:40:00 PM *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CALCIUM	72400		7.28	MDL	43.6	PQL	mg/Kg	J	E

Sample ID: SL-558-SA8-SB-12.5-13.5 *Collected:* 8/2/2013 1:40:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.36	U	0.806	MDL	4.36	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.563	J	0.0730	MDL	1.09	PQL	mg/Kg	J	Z
BORON	9.94	J	0.915	MDL	10.9	PQL	mg/Kg	J	Z
CADMIUM	0.121	J	0.0828	MDL	1.09	PQL	mg/Kg	J	Z
CHROMIUM	22.2		0.174	MDL	3.27	PQL	mg/Kg	J	Q
TIN	1.53	J	0.240	MDL	10.9	PQL	mg/Kg	U	B
VANADIUM	40.8		0.142	MDL	1.09	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: PH083 **Laboratory: LL**

EDD Filename: PrepPH083 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-558-SA8-SB-12.5-13.5 *Collected:* 8/2/2013 1:40:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Zirconium	3.37	J	0.915	MDL	5.45	PQL	mg/Kg	J	Z

Sample ID: SL-558-SA8-SB-4.0-5.0 *Collected:* 8/2/2013 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
ANTIMONY	4.63	U	0.856	MDL	4.63	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.885	J	0.0775	MDL	1.16	PQL	mg/Kg	J	Z
CADMIUM	0.256	J	0.0879	MDL	1.16	PQL	mg/Kg	J	Z
CALCIUM	24600		3.86	MDL	23.1	PQL	mg/Kg	J	E
CHROMIUM	37.6		0.185	MDL	3.47	PQL	mg/Kg	J	Q
TIN	1.59	J	0.254	MDL	11.6	PQL	mg/Kg	U	B
VANADIUM	71.9		0.150	MDL	1.16	PQL	mg/Kg	J	Q
Zirconium	4.80	J	0.972	MDL	5.78	PQL	mg/Kg	J	Z

Sample ID: SL-558-SA8-SB-9.0-10.0 *Collected:* 8/2/2013 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
ANTIMONY	4.61	U	0.853	MDL	4.61	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.926	J	0.0772	MDL	1.15	PQL	mg/Kg	J	Z
CADMIUM	0.227	J	0.0876	MDL	1.15	PQL	mg/Kg	J	Z
CALCIUM	59500		3.85	MDL	23.0	PQL	mg/Kg	J	E
CHROMIUM	34.6		0.184	MDL	3.46	PQL	mg/Kg	J	Q
TIN	1.66	J	0.253	MDL	11.5	PQL	mg/Kg	U	B
VANADIUM	68.7		0.150	MDL	1.15	PQL	mg/Kg	J	Q
Zirconium	4.41	J	0.968	MDL	5.76	PQL	mg/Kg	J	Z

Sample ID: SL-559-SA8-SB-0.0-0.5 *Collected:* 8/2/2013 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
ANTIMONY	4.13	U	0.763	MDL	4.13	PQL	mg/Kg	UJ	Q
ARSENIC	3.69	J	0.722	MDL	4.13	PQL	mg/Kg	J	Z
BERYLLIUM	0.762	J	0.0691	MDL	1.03	PQL	mg/Kg	J	Z
CADMIUM	0.414	J	0.0784	MDL	1.03	PQL	mg/Kg	J	Z
CALCIUM	8840		3.44	MDL	20.6	PQL	mg/Kg	J	E
CHROMIUM	31.3		0.165	MDL	3.09	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: PH083 **Laboratory: LL**

EDD Filename: PrepPH083 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-559-SA8-SB-0.0-0.5 *Collected:* 8/2/2013 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
MOLYBDENUM	0.358	J	0.175	MDL	2.06	PQL	mg/Kg	U	F
SODIUM	92.8	J	17.2	MDL	103	PQL	mg/Kg	J	Z
TIN	3.85	J	0.227	MDL	10.3	PQL	mg/Kg	U	B
VANADIUM	57.2		0.134	MDL	1.03	PQL	mg/Kg	J	Q
Zirconium	3.33	J	0.866	MDL	5.16	PQL	mg/Kg	J	Z

Sample ID: SL-559-SA8-SB-4.0-5.0 *Collected:* 8/2/2013 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	4.42	U	0.817	MDL	4.42	PQL	mg/Kg	UJ	Q
ARSENIC	3.78	J	0.773	MDL	4.42	PQL	mg/Kg	J	Z
BERYLLIUM	0.913	J	0.0740	MDL	1.10	PQL	mg/Kg	J	Z
CADMIUM	0.176	J	0.0839	MDL	1.10	PQL	mg/Kg	J	Z
CALCIUM	9240		3.69	MDL	22.1	PQL	mg/Kg	J	E
CHROMIUM	36.6		0.177	MDL	3.31	PQL	mg/Kg	J	Q
TIN	1.81	J	0.243	MDL	11.0	PQL	mg/Kg	U	B
VANADIUM	63.4		0.144	MDL	1.10	PQL	mg/Kg	J	Q
Zirconium	3.61	J	0.927	MDL	5.52	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-552-SA8-SB-0.0-0.5 *Collected:* 8/2/2013 7:45:00 AM *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.209	J	0.102	MDL	0.407	PQL	mg/Kg	J	Z

Sample ID: SL-552-SA8-SB-4.0-5.0 *Collected:* 8/2/2013 8:45:00 AM *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.172	J	0.109	MDL	0.438	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: PH083 **Laboratory: LL**

EDD Filename: PrepPH083 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: **SL-552-SA8-SB-4.0-5.0** *Collected:* **8/2/2013 8:45:00 AM** *Analysis Type:* **RES** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0508	J	0.0284	MDL	0.219	PQL	mg/Kg	J	Z

Sample ID: **SL-552-SA8-SB-7.5-8.5** *Collected:* **8/2/2013 9:00:00 AM** *Analysis Type:* **RES** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0446	J	0.0282	MDL	0.217	PQL	mg/Kg	J	Z

Sample ID: **SL-558-SA8-SB-0.0-0.5** *Collected:* **8/2/2013 12:20:00** *Analysis Type:* **REA2** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.274	J	0.102	MDL	0.407	PQL	mg/Kg	J	Z

Sample ID: **SL-558-SA8-SB-0.0-0.5** *Collected:* **8/2/2013 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	0.0712	J	0.0264	MDL	0.203	PQL	mg/Kg	J	Z

Sample ID: **SL-558-SA8-SB-12.5-13.5** *Collected:* **8/2/2013 1:40:00 PM** *Analysis Type:* **RES** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0639	J	0.0283	MDL	0.218	PQL	mg/Kg	J	Z

Sample ID: **SL-558-SA8-SB-4.0-5.0** *Collected:* **8/2/2013 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	0.204	J	0.116	MDL	0.463	PQL	mg/Kg	J	Z

Sample ID: **SL-558-SA8-SB-4.0-5.0** *Collected:* **8/2/2013 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	0.0486	J	0.0301	MDL	0.231	PQL	mg/Kg	J	Z

Sample ID: **SL-558-SA8-SB-9.0-10.0** *Collected:* **8/2/2013 1:00:00 PM** *Analysis Type:* **RES** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0629	J	0.0300	MDL	0.230	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: PH083 **Laboratory: LL**

EDD Filename: PrepPH083 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-559-SA8-SB-0.0-0.5 *Collected:* 8/2/2013 9:30:00 AM *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.263	J	0.103	MDL	0.413	PQL	mg/Kg	J	Z

Sample ID: SL-559-SA8-SB-0.0-0.5 *Collected:* 8/2/2013 9:30:00 AM *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0854	J	0.0268	MDL	0.206	PQL	mg/Kg	J	Z

Sample ID: SL-559-SA8-SB-4.0-5.0 *Collected:* 8/2/2013 9:50:00 AM *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.214	J	0.110	MDL	0.442	PQL	mg/Kg	J	Z

Sample ID: SL-559-SA8-SB-4.0-5.0 *Collected:* 8/2/2013 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	0.0459	J	0.0287	MDL	0.221	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: SL-552-SA8-SB-4.0-5.0 *Collected:* 8/2/2013 8:45:00 AM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0142	J	0.0112	MDL	0.0186	PQL	mg/Kg	J	Z

Sample ID: SL-558-SA8-SB-12.5-13.5 *Collected:* 8/2/2013 1:40:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0173	J	0.0110	MDL	0.0183	PQL	mg/Kg	J	Z

Sample ID: SL-558-SA8-SB-4.0-5.0 *Collected:* 8/2/2013 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
MERCURY	0.0161	J	0.0109	MDL	0.0182	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: PH083 **Laboratory: LL**

EDD Filename: PrepPH083 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: SL-559-SA8-SB-4.0-5.0 *Collected:* 8/2/2013 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
MERCURY	0.0159	J	0.0110	MDL	0.0183	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-552-SA8-SB-0.0-0.5 *Collected:* 8/2/2013 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
1,2,3,4,7,8,9-HPCDF	1.54	JB	0.150	MDL	5.18	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	1.02	J	0.196	MDL	5.18	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.781	J	0.103	MDL	5.18	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	4.21	JB	0.221	MDL	5.18	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.638	JQ	0.105	MDL	5.18	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	1.94	J	0.224	MDL	5.18	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.395	J	0.143	MDL	5.18	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.616	JBQ	0.152	MDL	5.18	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	1.18	J	0.106	MDL	5.18	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.758	J	0.100	MDL	5.18	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.497	JB	0.0998	MDL	5.18	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.570	JQ	0.210	MDL	1.04	PQL	ng/Kg	J	Z

Sample ID: SL-552-SA8-SB-4.0-5.0 *Collected:* 8/2/2013 8:45:00 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	0.928	JBQ	0.0651	MDL	5.63	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.173	JB	0.0165	MDL	5.63	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0574	JBQ	0.0344	MDL	5.63	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0977	JQ	0.0336	MDL	5.63	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.136	JQ	0.0212	MDL	5.63	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.119	JBQ	0.0348	MDL	5.63	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.113	JQ	0.0208	MDL	5.63	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.130	J	0.0364	MDL	5.63	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.153	J	0.0311	MDL	5.63	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.237	JBQ	0.0658	MDL	5.63	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: PH083 **Laboratory: LL**

EDD Filename: PrepPH083 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-552-SA8-SB-4.0-5.0 *Collected:* 8/2/2013 8:45:00 AM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,7,8-PECDF	0.267	JQ	0.0303	MDL	5.63	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.0662	J	0.0200	MDL	5.63	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.198	JB	0.0306	MDL	5.63	PQL	ng/Kg	U	B
2,3,7,8-TCDD	0.0775	JQ	0.0603	MDL	1.13	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.0702	JQ	0.0563	MDL	1.13	PQL	ng/Kg	J	Z
OCDD	8.37	JB	0.0540	MDL	11.3	PQL	ng/Kg	J	Z
OCDF	0.355	JB	0.0689	MDL	11.3	PQL	ng/Kg	U	B

Sample ID: SL-558-SA8-SB-0.0-0.5 *Collected:* 8/2/2013 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
1,2,3,4,7,8,9-HPCDF	0.738	JB	0.106	MDL	5.01	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.607	J	0.109	MDL	5.01	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.664	J	0.0729	MDL	5.01	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	2.26	JB	0.121	MDL	5.01	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.667	J	0.0677	MDL	5.01	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	1.36	J	0.124	MDL	5.01	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.394	J	0.0905	MDL	5.01	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.201	JB	0.0935	MDL	5.01	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	2.92	J	0.0735	MDL	5.01	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.643	J	0.0682	MDL	5.01	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.918	JB	0.0723	MDL	5.01	PQL	ng/Kg	J	Z

Sample ID: SL-558-SA8-SB-4.0-5.0 *Collected:* 8/2/2013 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	0.412	JB	0.0533	MDL	5.84	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.0875	JB	0.0217	MDL	5.84	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0496	JBQ	0.0377	MDL	5.84	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0366	J	0.0188	MDL	5.84	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0324	JQ	0.0188	MDL	5.84	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.0560	JQ	0.0375	MDL	5.84	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.0258	JQ	0.0186	MDL	5.84	PQL	ng/Kg	J	Z
OCDD	5.38	JB	0.0429	MDL	11.7	PQL	ng/Kg	J	Z
OCDF	0.298	JBQ	0.0593	MDL	11.7	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: PH083 **Laboratory: LL**

EDD Filename: PrepPH083 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-559-SA8-SB-0.0-0.5** *Collected:* **8/2/2013 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
1,2,3,4,7,8,9-HPCDF	2.68	JB	0.174	MDL	5.10	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	1.34	J	0.191	MDL	5.10	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	1.44	J	0.137	MDL	5.10	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	1.83	J	0.126	MDL	5.10	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	3.31	J	0.223	MDL	5.10	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.349	JQ	0.207	MDL	5.10	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.617	JB	0.168	MDL	5.10	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	1.87	J	0.135	MDL	5.10	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	1.50	JB	0.125	MDL	5.10	PQL	ng/Kg	J	Z

Sample ID: **SL-559-SA8-SB-4.0-5.0** *Collected:* **8/2/2013 9:50:00 AM** *Analysis Type:* **REA** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,3,7,8-TCDF	0.528	JC	0.273	MDL	1.12	PQL	ng/Kg	J	Z

Sample ID: **SL-559-SA8-SB-4.0-5.0** *Collected:* **8/2/2013 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
1,2,3,4,7,8,9-HPCDF	0.655	JB	0.205	MDL	5.60	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.426	JQ	0.167	MDL	5.60	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.684	J	0.137	MDL	5.60	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	1.89	JB	0.174	MDL	5.60	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.648	J	0.124	MDL	5.60	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	1.07	J	0.166	MDL	5.60	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.347	J	0.161	MDL	5.60	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	1.53	J	0.131	MDL	5.60	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.422	J	0.121	MDL	5.60	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.640	JBQ	0.129	MDL	5.60	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: PH083 **Laboratory: LL**

EDD Filename: PrepPH083 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: **SL-552-SA8-SB-0.0-0.5** *Collected:* **8/2/2013 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)	4.8	J	4.2	MDL	10	PQL	mg/Kg	J	Z

Sample ID: **SL-552-SA8-SB-4.0-5.0** *Collected:* **8/2/2013 8:45:00 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)	3.8	J	2.3	MDL	5.7	PQL	mg/Kg	J	Z

Sample ID: **SL-552-SA8-SB-7.5-8.5** *Collected:* **8/2/2013 9:00:00 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)	3.0	J	2.3	MDL	5.6	PQL	mg/Kg	J	Z
EFH (C30-C40)	9.3	J	4.5	MDL	11	PQL	mg/Kg	J	Z

Sample ID: **SL-558-SA8-SB-0.0-0.5** *Collected:* **8/2/2013 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)	2.5	J	2.1	MDL	5.2	PQL	mg/Kg	J	Z

Sample ID: **SL-558-SA8-SB-12.5-13.5** *Collected:* **8/2/2013 1:40:00 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)	3.9	J	2.2	MDL	5.6	PQL	mg/Kg	J	Z
EFH (C30-C40)	9.9	J	4.5	MDL	11	PQL	mg/Kg	J	Z

Sample ID: **SL-558-SA8-SB-4.0-5.0** *Collected:* **8/2/2013 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 (C21-C30)	4.5	J	2.3	MDL	5.8	PQL	mg/Kg	J	Z
EFH (C30-C40)	11	J	4.7	MDL	12	PQL	mg/Kg	J	Z

Sample ID: **SL-558-SA8-SB-9.0-10.0** *Collected:* **8/2/2013 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)	3.5	J	2.4	MDL	5.9	PQL	mg/Kg	J	Z
EFH (C30-C40)	8.5	J	4.7	MDL	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: PH083 **Laboratory: LL**

EDD Filename: PrepPH083 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 8082A **Matrix: SO**

Sample ID: **SL-552-SA8-SB-0.0-0.5** ***Collected:*** **8/2/2013 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	8.6	J	4.0	MDL	18	PQL	ug/Kg	J	Z

Sample ID: **SL-558-SA8-SB-12.5-13.5** ***Collected:*** **8/2/2013 1:40:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1254	7.1	J	4.9	MDL	19	PQL	ug/Kg	J	Z

Sample ID: **SL-558-SA8-SB-4.0-5.0** ***Collected:*** **8/2/2013 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
AROCLOR 1254	9.6	J	5.1	MDL	20	PQL	ug/Kg	J	Z

Sample ID: **SL-559-SA8-SB-0.0-0.5** ***Collected:*** **8/2/2013 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
AROCLOR 1254	190		4.5	MDL	17	PQL	ug/Kg	J	*XIII
AROCLOR 1260	31		4.0	MDL	17	PQL	ug/Kg	J	*XIII
Aroclor 5460	13	J	10	MDL	34	PQL	ug/Kg	J	Z

Sample ID: **SL-559-SA8-SB-4.0-5.0** ***Collected:*** **8/2/2013 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 1260	14	J	4.3	MDL	19	PQL	ug/Kg	J	Z

Method Category: SVOA

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

Sample ID: **SL-552-SA8-SB-0.0-0.5** ***Collected:*** **8/2/2013 7:45:00 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
BENZO(A)PYRENE	7.6	J	7.0	MDL	17	PQL	ug/Kg	J	Z
BENZO(B)FLUORANTHENE	15	J	7.0	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: PH083 **Laboratory: LL**

EDD Filename: PrepPH083 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

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

Sample ID: **SL-552-SA8-SB-0.0-0.5** *Collected:* **8/2/2013 7:45:00 AM** *Analysis Type:* **RES** *Dilution:* **10**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BIS(2-ETHYLHEXYL)PHTHALATE	73	J	63	MDL	190	PQL	ug/Kg	J	Z, L

Sample ID: **SL-552-SA8-SB-0.0-0.5** *Collected:* **8/2/2013 7:45:00 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	13	J	3.5	MDL	17	PQL	ug/Kg	J	Z
FLUORANTHENE	9.1	J	7.0	MDL	17	PQL	ug/Kg	J	Z
INDENO(1,2,3-CD)PYRENE	16	J	7.0	MDL	17	PQL	ug/Kg	J	Z
PHENANTHRENE	9.0	J	7.0	MDL	17	PQL	ug/Kg	J	Z
PYRENE	7.9	J	7.0	MDL	17	PQL	ug/Kg	J	Z

Sample ID: **SL-552-SA8-SB-4.0-5.0** *Collected:* **8/2/2013 8:45:00 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	30		6.8	MDL	20	PQL	ug/Kg	J	L

Sample ID: **SL-552-SA8-SB-7.5-8.5** *Collected:* **8/2/2013 9:00:00 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(G,H,I)PERYLENE	0.93	J	0.75	MDL	1.9	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	8.3	J	6.8	MDL	20	PQL	ug/Kg	J	Z, L
CHRYSENE	0.57	J	0.38	MDL	1.9	PQL	ug/Kg	U	F
INDENO(1,2,3-CD)PYRENE	0.77	J	0.75	MDL	1.9	PQL	ug/Kg	J	Z

Sample ID: **SL-558-SA8-SB-0.0-0.5** *Collected:* **8/2/2013 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	0.72	J	0.70	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: **SL-558-SA8-SB-0.0-0.5** *Collected:* **8/2/2013 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
BENZO(A)ANTHRACENE	0.72	J	0.70	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(A)PYRENE	0.70	J	0.70	MDL	1.7	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	12	J	6.3	MDL	19	PQL	ug/Kg	J	Z, L

* 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: PH083 **Laboratory: LL**

EDD Filename: PrepPH083 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

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

Sample ID: **SL-558-SA8-SB-12.5-13.5** *Collected:* **8/2/2013 1:40:00 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
BIS(2-ETHYLHEXYL)PHTHALATE	11	J	6.7	MDL	20	PQL	ug/Kg	J	Z, L
CHRYSENE	0.49	J	0.37	MDL	1.9	PQL	ug/Kg	U	F

Sample ID: **SL-558-SA8-SB-4.0-5.0** *Collected:* **8/2/2013 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-METHYLNAPHTHALENE	1.4	J	0.78	MDL	1.9	PQL	ug/Kg	J	Z

Sample ID: **SL-558-SA8-SB-4.0-5.0** *Collected:* **8/2/2013 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
BIS(2-ETHYLHEXYL)PHTHALATE	19	J	7.0	MDL	21	PQL	ug/Kg	J	Z, L
PHENANTHRENE	0.95	J	0.78	MDL	1.9	PQL	ug/Kg	J	Z

Sample ID: **SL-559-SA8-SB-0.0-0.5** *Collected:* **8/2/2013 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-METHYLNAPHTHALENE	1.0	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: **SL-559-SA8-SB-0.0-0.5** *Collected:* **8/2/2013 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
ANTHRACENE	0.70	J	0.35	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(A)ANTHRACENE	0.93	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(A)PYRENE	1.1	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(G,H,I)PERYLENE	0.81	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(K)FLUORANTHENE	0.86	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	15	J	6.3	MDL	19	PQL	ug/Kg	J	Z, L

Sample ID: **SL-559-SA8-SB-4.0-5.0** *Collected:* **8/2/2013 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-METHYLNAPHTHALENE	1.2	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

Data Qualifier Summary

Lab Reporting Batch ID: PH083 **Laboratory: LL**

EDD Filename: PrepPH083 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: **SVOA**

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

Sample ID: **SL-559-SA8-SB-4.0-5.0** ***Collected:*** **8/2/2013 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)PYRENE	1.7	J	0.75	MDL	1.9	PQL	ug/Kg	J	Z
BENZO(G,H,I)PERYLENE	0.99	J	0.75	MDL	1.9	PQL	ug/Kg	J	Z
BENZO(K)FLUORANTHENE	1.6	J	0.75	MDL	1.9	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	44		6.8	MDL	20	PQL	ug/Kg	J	L
INDENO(1,2,3-CD)PYRENE	1.1	J	0.75	MDL	1.9	PQL	ug/Kg	J	Z

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: PH083 **Laboratory: LL**

EDD Filename: PrepPH083 **eQAPP Name: CDM_SSFL_131101_Lan**

Reason Code Legend

Reason Code	*Description*
*XIII	RPD Between Two Columns
A	ICP Serial Dilution
B	Method Blank Contamination
E	Matrix Spike Precision
F	Equipment Blank Contamination
F	Field Blank Contamination
L	Laboratory Control Spike Upper Estimation
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

Enclosure I

EPA Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control
Outlier Reports

PH083

Method Blank Outlier Report

Lab Reporting Batch ID: PH083 **Laboratory: LL**

EDD Filename: PH083_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	0.0637 ng/Kg	SL-552-SA8-SB-0.0-0.5
		1,2,3,4,6,7,8-HPCDF	0.0267 ng/Kg	SL-552-SA8-SB-4.0-5.0
		1,2,3,4,7,8,9-HPCDF	0.0434 ng/Kg	SL-558-SA8-SB-0.0-0.5
		1,2,3,6,7,8-HXCDD	0.0377 ng/Kg	SL-558-SA8-SB-4.0-5.0
		1,2,3,7,8-PECDD	0.0780 ng/Kg	SL-559-SA8-SB-0.0-0.5
		2,3,4,7,8-PECDF	0.0474 ng/Kg	SL-559-SA8-SB-4.0-5.0
		OCDD	0.252 ng/Kg	
		OCDF	0.202 ng/Kg	

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-552-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0574 ng/Kg	0.0574U ng/Kg
SL-552-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDD	0.119 ng/Kg	0.119U ng/Kg
SL-552-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDD	0.237 ng/Kg	0.237U ng/Kg
SL-552-SA8-SB-4.0-5.0(RES)	2,3,4,7,8-PECDF	0.198 ng/Kg	0.198U ng/Kg
SL-552-SA8-SB-4.0-5.0(RES)	OCDF	0.355 ng/Kg	0.355U ng/Kg
SL-558-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.201 ng/Kg	0.201U ng/Kg
SL-558-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0875 ng/Kg	0.0875U ng/Kg
SL-558-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0496 ng/Kg	0.0496U ng/Kg
SL-558-SA8-SB-4.0-5.0(RES)	OCDF	0.298 ng/Kg	0.298U ng/Kg

Method: **6010C**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P21737BB221800	8/10/2013 6:00:00 PM	CALCIUM	5.74 mg/Kg	SL-552-SA8-SB-0.0-0.5
		TIN	1.54 mg/Kg	SL-552-SA8-SB-4.0-5.0
		ZINC	0.284 mg/Kg	SL-552-SA8-SB-7.5-8.5
				SL-558-SA8-SB-0.0-0.5
				SL-558-SA8-SB-12.5-13.5
				SL-558-SA8-SB-4.0-5.0
				SL-558-SA8-SB-9.0-10.0
				SL-559-SA8-SB-0.0-0.5
				SL-559-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-552-SA8-SB-0.0-0.5(RES)	TIN	1.96 mg/Kg	1.96U mg/Kg
SL-552-SA8-SB-4.0-5.0(RES)	TIN	1.25 mg/Kg	1.25U mg/Kg
SL-552-SA8-SB-7.5-8.5(RES)	TIN	1.35 mg/Kg	1.35U mg/Kg
SL-558-SA8-SB-0.0-0.5(RES)	TIN	1.79 mg/Kg	1.79U mg/Kg
SL-558-SA8-SB-12.5-13.5(RES)	TIN	1.53 mg/Kg	1.53U mg/Kg
SL-558-SA8-SB-4.0-5.0(RES)	TIN	1.59 mg/Kg	1.59U mg/Kg
SL-558-SA8-SB-9.0-10.0(RES)	TIN	1.66 mg/Kg	1.66U mg/Kg
SL-559-SA8-SB-0.0-0.5(RES)	TIN	3.85 mg/Kg	3.85U mg/Kg
SL-559-SA8-SB-4.0-5.0(RES)	TIN	1.81 mg/Kg	1.81U mg/Kg

Equipment Rinsate Blank Outlier Report

Lab Reporting Batch ID: PH083 **Laboratory: LL**

EDD Filename: PrepPH083 **eQAPP Name: CDM_SSFL_131101_Lan**

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

Equipment Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
EB2-080113(RES)	8/1/2013 3:30:00 PM	BIS(2-ETHYLHEXYL)PHTHALATE	0.16 ug/L	SL-552-SA8-SB-0.0-0.5
		Diethylphthalate	0.49 ug/L	SL-552-SA8-SB-4.0-5.0
		Di-n-butylphthalate	0.18 ug/L	SL-552-SA8-SB-7.5-8.5
		NAPHTHALENE	0.033 ug/L	SL-558-SA8-SB-0.0-0.5
				SL-558-SA8-SB-12.5-13.5
				SL-558-SA8-SB-4.0-5.0
				SL-558-SA8-SB-9.0-10.0
				SL-559-SA8-SB-0.0-0.5
				SL-559-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-552-SA8-SB-7.5-8.5(RES)	CHRYSENE	0.57 ug/Kg	1.9U ug/Kg
SL-558-SA8-SB-12.5-13.5(RES)	CHRYSENE	0.49 ug/Kg	1.9U ug/Kg

Field Blank Outlier Report

Lab Reporting Batch ID: PH083 **Laboratory: LL**

EDD Filename: PrepPH083 **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-552-SA8-SB-0.0-0.5 SL-552-SA8-SB-4.0-5.0 SL-552-SA8-SB-7.5-8.5 SL-558-SA8-SB-0.0-0.5 SL-558-SA8-SB-12.5-13.5 SL-558-SA8-SB-4.0-5.0 SL-558-SA8-SB-9.0-10.0 SL-559-SA8-SB-0.0-0.5 SL-559-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-552-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.885 mg/Kg	0.885U mg/Kg
SL-558-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.327 mg/Kg	0.327U mg/Kg
SL-559-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.358 mg/Kg	0.358U mg/Kg

Surrogate Outlier Report

Lab Reporting Batch ID: PH083 **Laboratory: LL**

EDD Filename: PH083_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

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

Sample ID (Analysis Type)	*Surrogate*	*Sample % Recovery*	*% Recovery Limits*	*Affected Compounds*	*Flag*
SL-559-SA8-SB-0.0 -0.5	1-Methylnaphthalene-d10	128	61.00-125.00	No Affected Compounds	
SL-559-SA8-SB-4.0 -5.0	1-Methylnaphthalene-d10	138	61.00-125.00	No Affected Compounds	

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH083 **Laboratory: LL**

EDD Filename: PH083_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-552-SA8-SB-0.0-0.5MSD	ANTHRACENE	-	-	52.00-126.00	42 (30.00)	ANTHRACENE	
(SL-552-SA8-SB-0.0-0.5)	BENZO(E)PYRENE	-	137	70.00-130.00	-	BENZO(E)PYRENE	No Qual, Diluted Out
	FLUORANTHENE	-	150	40.00-148.00	35 (30.00)	FLUORANTHENE	
SL-552-SA8-SB-0.0-0.5MS	BIS(2-ETHYLHEXYL)PHTHALAT	0	0	39.00-167.00	-	BIS(2-ETHYLHEXYL)PHTHALA	
SL-552-SA8-SB-0.0-0.5MSD	Butylbenzylphthalate	0	0	59.00-153.00	-	Butylbenzylphthalate	
(SL-552-SA8-SB-0.0-0.5)	Diethylphthalate	0	0	76.00-127.00	-	Diethylphthalate	No Qual, Diluted Out
	Dimethylphthalate	0	0	62.00-136.00	-	Dimethylphthalate	
	Di-n-butylphthalate	0	0	62.00-154.00	-	Di-n-butylphthalate	
	Di-n-octylphthalate	0	0	52.00-162.00	-	Di-n-octylphthalate	

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH083 **Laboratory: LL**

EDD Filename: PH083_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

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

QC Sample ID (Associated Samples)	*Compound*	*LCS %R*	*LCSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
P0LCLCSQ260915	BENZO(E)PYRENE	122	-	81.00-110.00	-	BENZO(E)PYRENE	
(SL-552-SA8-SB-0.0-0.5	BIS(2-ETHYLHEXYL)PHTHALAT	135	-	79.00-121.00	-	BIS(2-ETHYLHEXYL)PHTHALA	
SL-552-SA8-SB-4.0-5.0	Diethylphthalate	134	-	68.00-125.00	-	Diethylphthalate	
SL-552-SA8-SB-7.5-8.5	Di-n-butylphthalate	127	-	78.00-125.00	-	Di-n-butylphthalate	
SL-558-SA8-SB-0.0-0.5							J (all detects)
SL-558-SA8-SB-12.5-13.5							
SL-558-SA8-SB-4.0-5.0							
SL-558-SA8-SB-9.0-10.0							
SL-559-SA8-SB-0.0-0.5							
SL-559-SA8-SB-4.0-5.0)							

Reporting Limit Outliers

Lab Reporting Batch ID: PH083 **Laboratory: LL**

EDD Filename: PH083_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-552-SA8-SB-0.0-0.5	1,2,3,4,7,8,9-HPCDF	JB	1.54	5.18	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	J	1.02	5.18	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	J	0.781	5.18	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	4.21	5.18	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JQ	0.638	5.18	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	J	1.94	5.18	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	J	0.395	5.18	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.616	5.18	PQL	ng/Kg	
	1,2,3,7,8-PECDF	J	1.18	5.18	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	J	0.758	5.18	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.497	5.18	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.570	1.04	PQL	ng/Kg	
SL-552-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.928	5.63	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.173	5.63	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0574	5.63	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.0977	5.63	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JQ	0.136	5.63	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.119	5.63	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JQ	0.113	5.63	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	J	0.130	5.63	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	J	0.153	5.63	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JBQ	0.237	5.63	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JQ	0.267	5.63	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	J	0.0662	5.63	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.198	5.63	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.0775	1.13	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0702	1.13	PQL	ng/Kg	
	OCDD	JB	8.37	11.3	PQL	ng/Kg	
	OCDF	JB	0.355	11.3	PQL	ng/Kg	
SL-558-SA8-SB-0.0-0.5	1,2,3,4,7,8,9-HPCDF	JB	0.738	5.01	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	J	0.607	5.01	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	J	0.664	5.01	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	2.26	5.01	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	J	0.667	5.01	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	J	1.36	5.01	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	J	0.394	5.01	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JB	0.201	5.01	PQL	ng/Kg	
	1,2,3,7,8-PECDF	J	2.92	5.01	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	J	0.643	5.01	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.918	5.01	PQL	ng/Kg	
SL-558-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JB	0.412	5.84	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.0875	5.84	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0496	5.84	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	J	0.0366	5.84	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JQ	0.0324	5.84	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDD	JQ	0.0560	5.84	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JQ	0.0258	5.84	PQL	ng/Kg	
	OCDD	JB	5.38	11.7	PQL	ng/Kg	
	OCDF	JBQ	0.298	11.7	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH083 **Laboratory: LL**

EDD Filename: PH083_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-559-SA8-SB-0.0-0.5	1,2,3,4,7,8,9-HPCDF	JB	2.68	5.10	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	J	1.34	5.10	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	J	1.44	5.10	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	J	1.83	5.10	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	J	3.31	5.10	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JQ	0.349	5.10	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JB	0.617	5.10	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	J	1.87	5.10	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	1.50	5.10	PQL	ng/Kg	
SL-559-SA8-SB-4.0-5.0	1,2,3,4,7,8,9-HPCDF	JB	0.655	5.60	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.426	5.60	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	J	0.684	5.60	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	1.89	5.60	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	J	0.648	5.60	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	J	1.07	5.60	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	J	0.347	5.60	PQL	ng/Kg	
	1,2,3,7,8-PECDF	J	1.53	5.60	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	J	0.422	5.60	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.640	5.60	PQL	ng/Kg	
	2,3,7,8-TCDF	JC	0.528	1.12	PQL	ng/Kg	

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-552-SA8-SB-0.0-0.5	ARSENIC	J	3.58	4.07	PQL	mg/Kg	
	BERYLLIUM	J	0.603	1.02	PQL	mg/Kg	
	CADMIUM	J	0.992	1.02	PQL	mg/Kg	
	MOLYBDENUM	J	0.885	2.04	PQL	mg/Kg	J (all detects)
	SODIUM	J	92.7	102	PQL	mg/Kg	
	TIN	J	1.96	10.2	PQL	mg/Kg	
	Zirconium	J	2.51	5.09	PQL	mg/Kg	
SL-552-SA8-SB-4.0-5.0	BERYLLIUM	J	0.905	1.09	PQL	mg/Kg	
	CADMIUM	J	0.213	1.09	PQL	mg/Kg	J (all detects)
	TIN	J	1.25	10.9	PQL	mg/Kg	
	Zirconium	J	4.98	5.47	PQL	mg/Kg	
SL-552-SA8-SB-7.5-8.5	BERYLLIUM	J	0.649	1.08	PQL	mg/Kg	
	CADMIUM	J	0.327	1.08	PQL	mg/Kg	J (all detects)
	TIN	J	1.35	10.8	PQL	mg/Kg	
	Zirconium	J	3.78	5.41	PQL	mg/Kg	
SL-558-SA8-SB-0.0-0.5	ARSENIC	J	4.01	4.07	PQL	mg/Kg	
	BERYLLIUM	J	0.831	1.02	PQL	mg/Kg	
	CADMIUM	J	0.255	1.02	PQL	mg/Kg	
	MOLYBDENUM	J	0.327	2.03	PQL	mg/Kg	J (all detects)
	SODIUM	J	89.0	102	PQL	mg/Kg	
	TIN	J	1.79	10.2	PQL	mg/Kg	
	Zirconium	J	3.57	5.08	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH083 **Laboratory: LL**

EDD Filename: PH083_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-558-SA8-SB-12.5-13.5	BERYLLIUM	J	0.563	1.09	PQL	mg/Kg	J (all detects)
	BORON	J	9.94	10.9	PQL	mg/Kg	
	CADMIUM	J	0.121	1.09	PQL	mg/Kg	
	TIN	J	1.53	10.9	PQL	mg/Kg	
	Zirconium	J	3.37	5.45	PQL	mg/Kg	
SL-558-SA8-SB-4.0-5.0	BERYLLIUM	J	0.885	1.16	PQL	mg/Kg	J (all detects)
	CADMIUM	J	0.256	1.16	PQL	mg/Kg	
	TIN	J	1.59	11.6	PQL	mg/Kg	
	Zirconium	J	4.80	5.78	PQL	mg/Kg	
SL-558-SA8-SB-9.0-10.0	BERYLLIUM	J	0.926	1.15	PQL	mg/Kg	J (all detects)
	CADMIUM	J	0.227	1.15	PQL	mg/Kg	
	TIN	J	1.66	11.5	PQL	mg/Kg	
	Zirconium	J	4.41	5.76	PQL	mg/Kg	
SL-559-SA8-SB-0.0-0.5	ARSENIC	J	3.69	4.13	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.762	1.03	PQL	mg/Kg	
	CADMIUM	J	0.414	1.03	PQL	mg/Kg	
	MOLYBDENUM	J	0.358	2.06	PQL	mg/Kg	
	SODIUM	J	92.8	103	PQL	mg/Kg	
	TIN	J	3.85	10.3	PQL	mg/Kg	
	Zirconium	J	3.33	5.16	PQL	mg/Kg	
SL-559-SA8-SB-4.0-5.0	ARSENIC	J	3.78	4.42	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.913	1.10	PQL	mg/Kg	
	CADMIUM	J	0.176	1.10	PQL	mg/Kg	
	TIN	J	1.81	11.0	PQL	mg/Kg	
	Zirconium	J	3.61	5.52	PQL	mg/Kg	

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-552-SA8-SB-0.0-0.5	SELENIUM	J	0.209	0.407	PQL	mg/Kg	J (all detects)
SL-552-SA8-SB-4.0-5.0	SELENIUM	J	0.172	0.438	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0508	0.219	PQL	mg/Kg	
SL-552-SA8-SB-7.5-8.5	SILVER	J	0.0446	0.217	PQL	mg/Kg	J (all detects)
SL-558-SA8-SB-0.0-0.5	SELENIUM	J	0.274	0.407	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0712	0.203	PQL	mg/Kg	
SL-558-SA8-SB-12.5-13.5	SILVER	J	0.0639	0.218	PQL	mg/Kg	J (all detects)
SL-558-SA8-SB-4.0-5.0	SELENIUM	J	0.204	0.463	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0486	0.231	PQL	mg/Kg	
SL-558-SA8-SB-9.0-10.0	SILVER	J	0.0629	0.230	PQL	mg/Kg	J (all detects)
SL-559-SA8-SB-0.0-0.5	SELENIUM	J	0.263	0.413	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0854	0.206	PQL	mg/Kg	
SL-559-SA8-SB-4.0-5.0	SELENIUM	J	0.214	0.442	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0459	0.221	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH083 **Laboratory: LL**

EDD Filename: PH083_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 7471B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-552-SA8-SB-4.0-5.0	MERCURY	J	0.0142	0.0186	PQL	mg/Kg	J (all detects)
SL-558-SA8-SB-12.5-13.5	MERCURY	J	0.0173	0.0183	PQL	mg/Kg	J (all detects)
SL-558-SA8-SB-4.0-5.0	MERCURY	J	0.0161	0.0182	PQL	mg/Kg	J (all detects)
SL-559-SA8-SB-4.0-5.0	MERCURY	J	0.0159	0.0183	PQL	mg/Kg	J (all detects)

Method: 8015M

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-552-SA8-SB-0.0-0.5	EFH (C15-C20)	J	4.8	10	PQL	mg/Kg	J (all detects)
SL-552-SA8-SB-4.0-5.0	EFH (C21-C30)	J	3.8	5.7	PQL	mg/Kg	J (all detects)
SL-552-SA8-SB-7.5-8.5	EFH (C21-C30) EFH (C30-C40)	J J	3.0 9.3	5.6 11	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-558-SA8-SB-0.0-0.5	EFH (C15-C20)	J	2.5	5.2	PQL	mg/Kg	J (all detects)
SL-558-SA8-SB-12.5-13.5	EFH (C21-C30) EFH (C30-C40)	J J	3.9 9.9	5.6 11	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-558-SA8-SB-4.0-5.0	EFH (C21-C30) EFH (C30-C40)	J J	4.5 11	5.8 12	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-558-SA8-SB-9.0-10.0	EFH (C21-C30) EFH (C30-C40)	J J	3.5 8.5	5.9 12	PQL PQL	mg/Kg mg/Kg	J (all detects)

Method: 8082A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-552-SA8-SB-0.0-0.5	AROCLOR 1260	J	8.6	18	PQL	ug/Kg	J (all detects)
SL-558-SA8-SB-12.5-13.5	AROCLOR 1254	J	7.1	19	PQL	ug/Kg	J (all detects)
SL-558-SA8-SB-4.0-5.0	AROCLOR 1254	J	9.6	20	PQL	ug/Kg	J (all detects)
SL-559-SA8-SB-0.0-0.5	Aroclor 5460	J	13	34	PQL	ug/Kg	J (all detects)
SL-559-SA8-SB-4.0-5.0	AROCLOR 1260	J	14	19	PQL	ug/Kg	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH083 **Laboratory: LL**

EDD Filename: PH083_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 8270D SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-552-SA8-SB-0.0-0.5	BENZO(A)PYRENE	J	7.6	17	PQL	ug/Kg	J (all detects)
	BENZO(B)FLUORANTHENE	J	15	17	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	73	190	PQL	ug/Kg	
	CHRYSENE	J	13	17	PQL	ug/Kg	
	FLUORANTHENE	J	9.1	17	PQL	ug/Kg	
	INDENO(1,2,3-CD)PYRENE	J	16	17	PQL	ug/Kg	
	PHENANTHRENE	J	9.0	17	PQL	ug/Kg	
	PYRENE	J	7.9	17	PQL	ug/Kg	
SL-552-SA8-SB-7.5-8.5	BENZO(G,H,I)PERYLENE	J	0.93	1.9	PQL	ug/Kg	J (all detects)
	BIS(2-ETHYLHEXYL)PHTHALATE	J	8.3	20	PQL	ug/Kg	
	CHRYSENE	J	0.57	1.9	PQL	ug/Kg	
	INDENO(1,2,3-CD)PYRENE	J	0.77	1.9	PQL	ug/Kg	
SL-558-SA8-SB-0.0-0.5	1-METHYLNAPHTHALENE	J	0.72	1.7	PQL	ug/Kg	J (all detects)
	BENZO(A)ANTHRACENE	J	0.72	1.7	PQL	ug/Kg	
	BENZO(A)PYRENE	J	0.70	1.7	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	12	19	PQL	ug/Kg	
SL-558-SA8-SB-12.5-13.5	BIS(2-ETHYLHEXYL)PHTHALATE	J	11	20	PQL	ug/Kg	J (all detects)
	CHRYSENE	J	0.49	1.9	PQL	ug/Kg	
SL-558-SA8-SB-4.0-5.0	1-METHYLNAPHTHALENE	J	1.4	1.9	PQL	ug/Kg	J (all detects)
	BIS(2-ETHYLHEXYL)PHTHALATE	J	19	21	PQL	ug/Kg	
	PHENANTHRENE	J	0.95	1.9	PQL	ug/Kg	
SL-559-SA8-SB-0.0-0.5	1-METHYLNAPHTHALENE	J	1.0	1.7	PQL	ug/Kg	J (all detects)
	ANTHRACENE	J	0.70	1.7	PQL	ug/Kg	
	BENZO(A)ANTHRACENE	J	0.93	1.7	PQL	ug/Kg	
	BENZO(A)PYRENE	J	1.1	1.7	PQL	ug/Kg	
	BENZO(G,H,I)PERYLENE	J	0.81	1.7	PQL	ug/Kg	
	BENZO(K)FLUORANTHENE	J	0.86	1.7	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	15	19	PQL	ug/Kg	
SL-559-SA8-SB-4.0-5.0	1-METHYLNAPHTHALENE	J	1.2	1.9	PQL	ug/Kg	J (all detects)
	BENZO(A)PYRENE	J	1.7	1.9	PQL	ug/Kg	
	BENZO(G,H,I)PERYLENE	J	0.99	1.9	PQL	ug/Kg	
	BENZO(K)FLUORANTHENE	J	1.6	1.9	PQL	ug/Kg	
	INDENO(1,2,3-CD)PYRENE	J	1.1	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 2, 2013

LDC Report Date: September 25, 2013

Matrix: Soil

Parameters: Semivolatiles

Validation Level: Level IV

Laboratory: Eurofins Lancaster Laboratories

Sample Delivery Group (SDG): PH083

Sample Identification

SL-552-SA8-SB-0.0-0.5
SL-552-SA8-SB-4.0-5.0
SL-552-SA8-SB-7.5-8.5
SL-559-SA8-SB-0.0-0.5
SL-559-SA8-SB-4.0-5.0
SL-558-SA8-SB-0.0-0.5
SL-558-SA8-SB-4.0-5.0
SL-558-SA8-SB-9.0-10.0
SL-558-SA8-SB-12.5-13.5

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 EB2-080113 (from SDG PH082) was identified as an equipment blank. No semivolatile contaminants were found with the following exceptions:

Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB2-080113	8/1/13	Chrysene Diethylphthalate Bis(2-ethylhexyl)phthalate Naphthalene	0.18 ug/L 0.49 ug/L 0.16 ug/L 0.033 ug/L	All samples in SDG PH083

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 PH083

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	Compound	Reported Concentration	Modified Final Concentration
SL-552-SA8-SB-7.5-8.5	Chrysene	0.57 ug/Kg	1.9U ug/Kg
SL-558-SA8-SB-12.5-13.5	Chrysene	0.49 ug/Kg	1.9U ug/Kg

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) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
220LCLCS (All samples in SDG PH083)	Diethylphthalate	134 (77-130)	-	-	J (all detects)	P
	Di-n-butylphthalate	127 (78-125)	-	-	J (all detects)	
	Bis(2-ethylhexyl)phthalate	135 (79-121)	-	-	J (all detects)	
	Benzo(e)pyrene	122 (81-110)	-	-	J (all detects)	

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 PH083	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

No field duplicates were identified in this SDG.

Santa Susana Field Laboratory
Semivolatiles - Data Qualification Summary - SDG PH083

SDG	Sample	Compound	Flag	A or P	Reason (Code)
PH083	SL-552-SA8-SB-0.0-0.5 SL-552-SA8-SB-4.0-5.0 SL-552-SA8-SB-7.5-8.5 SL-559-SA8-SB-0.0-0.5 SL-559-SA8-SB-4.0-5.0 SL-558-SA8-SB-0.0-0.5 SL-558-SA8-SB-4.0-5.0 SL-558-SA8-SB-9.0-10.0 SL-558-SA8-SB-12.5-13.5	Diethylphthalate Di-n-butylphthalate Bis(2-ethylhexyl)phthalate Benzo(e)pyrene	J (all detects) J (all detects) J (all detects) J (all detects)	P	Laboratory control samples (%R)(L)
PH083	SL-552-SA8-SB-0.0-0.5 SL-552-SA8-SB-4.0-5.0 SL-552-SA8-SB-7.5-8.5 SL-559-SA8-SB-0.0-0.5 SL-559-SA8-SB-4.0-5.0 SL-558-SA8-SB-0.0-0.5 SL-558-SA8-SB-4.0-5.0 SL-558-SA8-SB-9.0-10.0 SL-558-SA8-SB-12.5-13.5	All compounds reported below the RL.	J (all detects)	A	Compound quantitation (Z)

Santa Susana Field Laboratory
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG PH083

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Semivolatiles - Field Blank Data Qualification Summary - SDG PH083

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
PH083	SL-552-SA8-SB-7.5-8.5	Chrysene	1.9U ug/Kg	A	F
PH083	SL-558-SA8-SB-12.5-13.5	Chrysene	1.9U ug/Kg	A	F

LDC #: 30362D2b **VALIDATION COMPLETENESS WORKSHEET** Date: 9/25/13

SDG #: PH083 Level IV Page: 1 of 1

Laboratory: Eurofins Lancaster Laboratories Reviewer: [illegible]

2nd Reviewer:

METHOD: GC/MS ~~Polynuclear Aromatic Hydrocarbons~~ SVOA (EPA SW 846 Method 8270~~C~~D-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: 8/2/13
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% PSD ≤ 30
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 25
V.	Blanks	A	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	SW	
VIII.	Laboratory control samples	SW	LCS ID
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	N	
XVII.	Field blanks	SW	EB= EB2 - 080113 (SDG # PH082) 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-552-SA8-SB-0.0-0.5	11	#1MS	21		31	
2	SL-552-SA8-SB-4.0-5.0	12	#1MSD	22		32	
3	SL-552-SA8-SB-7.5-8.5	13		23		33	
4	SL-559-SA8-SB-0.0-0.5	14	SBLKLC22W	24		34	
5	SL-559-SA8-SB-4.0-5.0	15		25		35	
6	SL-558-SA8-SB-0.0-0.5	16		26		36	
7	SL-558-SA8-SB-4.0-5.0	17		27		37	
8	SL-558-SA8-SB-9.0-10.0	18		28		38	
9	SL-558-SA8-SB-12.5-13.5	19		29		39	
10		20		30		40	

LDC #: 30362D2b

VALIDATION FINDINGS CHECKLIST

Reviewer: FT
2nd Reviewer:

Method: Semivolatiles (EPA SW 846 Method 8270C) P

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) ≤ ~~30%~~/15% and relative response factors (RRF) ≥ 0.05? 30% F7	✓			
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) ≤ ~~20%~~ 25% P1 and relative response factors (RRF) ≥ 0.05?	✓			
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? F7	~~✓~~	✓		
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?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?		✓		
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds from the associated calibration standard?	✓			
XI. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XII. 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?	✓			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?			✓	
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data		✓		
Overall assessment of data was found to be acceptable.				
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XVII. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.	✓			

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.

LDC #: 30362D26

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: FT
2nd Reviewer:

METHOD: GC/MS BNA (EPA SW 846 Method 8270~~C~~D) F1

EB = EB2-080113

Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target compounds detected in the field blanks?

(F)

Blank units: ug/L **Associated sample units:** ug/kg
Sampling date: 8/01/13
Field blank type: (circle one) Field Blank / Rinsate / Other: EB Associated Samples: All

Compound	Blank ID	Sample Identification								
	EB	5X	3	9						
DDD	0.18	0.90	0.57/1.94	0.49/1.94						
LL	0.49	2.45								
EEE	0.16	0.80								
S	0.033	0.165								

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	5X								
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".

LDC #: 30362D26

VALIDATION FINDINGS WORKSHEET
Surrogate Recovery

METHOD: GC/MS BNA (EPA SW 846 Method 8270D)

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

F1

Y	N	N/A	Were percent recoveries (%R) for surrogates within QC limits?
Y	N	N/A	If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?
Y	N	N/A	If any %R was less than 10 percent, was a reanalysis performed to confirm %R?

#	Date	Sample ID	Surrogate	%R (Limits)	Qualifications
		4	1-Methyl naphthalene-d10	128 (61-125)	no qual
		5	↓	138 (↓)	↓
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
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				( )	
				( )	

(NBZ) = Nitrobenzene-d5
(FBP) = 2-Fluorobiphenyl
(TPH) = Terphenyl-d14
(PHL) = Phenol-d5
(2FP)= 2-Fluorophenol
(TBP) = 2,4,6-Tribromophenol
(2CP) = 2-Chlorophenol-d4
(DCB) = 1,2-Dichlorobenzene-d4

LDC #: 30362 026

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: FT
2nd Reviewer:

METHOD: GC/MS BNA (EPA SW 846 Method 8270D) FT

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

Y N N/A 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.

Y N N/A Was a MS/MSD analyzed every 20 samples of each matrix?

Y N N/A Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	Date	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		11 & 12	several	compounds	outside QC	limits	1	no qual 10x DL
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
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				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		

LDC #: 30362D2b

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Reviewer: FT
2nd Reviewer: _____

METHOD: GC/MS BNA (EPA SW 846 Method 8270~~C~~D) F7

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

Y N N/A Was a LCS required?

Y N N/A Were the LCS/LCSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	Date	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		220LCLCS	LL	134 (77-130)	( )	( )	All	J/Pdet (L)
			XX	127 (78-125)	( )	( )		
			EEE	135 (79-121)	( )	( )		
			Benzo(e)pyrene	122 (81-110)	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				(

LDC #: 30362D26

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: FT
2nd Reviewer:

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

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 RRF (1 std)	Recalculated RRF (1 std)	Reported Average RRF (initial)	Recalculated Average RRF (initial)	Reported %RSD	Recalculated %RSD
1	ICAL	6/24/13	OOO (1st internal standard)	0.831	0.831	0.839	0.839	3	3
			S (2nd internal standard)	1.049	1.049	1.046	1.046	3	3
			NN (3rd internal standard)	1.427	1.427	1.396	1.396	3	3
			YY (4th internal standard)	1.272	1.272	1.243	1.243	4	4
			EEE (5th internal standard)	1.168	1.168	1.136	1.136	4	4
			III (6th internal standard)	1.184	1.184	1.167	1.167	3	3
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 #: 30362 p26

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: FT
2nd Reviewer:

METHOD: GC/MS BNA (EPA SW 846 Method 8270D)

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, A_{is} = Area of associated internal standard
C_x = Concentration of compound, C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Average RRF (initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported %D	Recalculated %D
1	CCV 8:11	8/13/13	QQQ (1st internal standard)	0.839	0.678	0.678	19	19
			S (2nd internal standard)	1.046	1.012	1.012	3	3
			NN (3rd internal standard)	1.396	1.404	1.404	1	1
			YY (4th internal standard)	1.243	1.291	1.291	4	4
			EEE (5th internal standard)	1.136	1.273	1.273	12	12
			III (6th internal standard)	1.167	1.265	1.265	8	8
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.

LDC #: 30362D2C

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: FT
2nd reviewer:

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270D) FT

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 (Fluoranthene-d10)	0.1	0.061	61	61	0
2-Fluorobiphenyl (Benzo(a)pyrene-d12)	0.1	0.061	61	61	↓
Terphenyl-d14 (1-Methylnaphthalene)	0.1	0.086	86	86	↓
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					

LDC #: 30362D26

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: FT
2nd Reviewer:

METHOD: GC/MS BNA (EPA SW 846 Method 8270~~C~~D) FT

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 concentation

RPD = I MSC - MSC I * 2/(MSC + MSDC) MSC = Matrix spike concentration MSDC = Matrix spike duplicate concentration

MS/MSD samples: 11 + 12

Compound	Spike Added (ug/kg)		Sample Concentration (ug/kg)	Spiked Sample Concentration (ug/kg)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	------	MS	MSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
Phenol											
N-Nitroso-di-n-propylamine											
4-Chloro-3-methylphenol											
Acenaphthene	33.33	33.33	ND	29.5	28.88	89	89	87	87	2	2
Pentachlorophenol											
Pyrene	↓	↓	7.5	38.83	40.1	94	94	98	98	3	3

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 #: 30362D2b

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: FT
2nd Reviewer:

METHOD: GC/MS BNA (EPA SW 846 Method 8270~~C~~ D) F7

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 = I LCSC - LCSDC I * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: LCS/D

Compound	Spike Added (ug/kg)		Spike Concentration (ug/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
Phenol										
N-Nitroso-di-n-propylamine										
4-Chloro-3-methylphenol		NA F7								
Acenaphthene	33.33	~~33.33~~	37.17	NA	112	112				
Pentachlorophenol										
Pyrene	33.33	NA	31.96	NA	96	96	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.

LDC #: 30362026

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: FT
2nd reviewer: _____

METHOD: GC/MS BNA (EPA SW 846 Method 8270~~C~~) D F7

(Y) N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(V_t)(DF)(2.0)}{(A_{is})(RRF)(V_o)(V_i)(\%S)}$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

V_o = Volume or weight of sample extract in milliliters (ml) or grams (g).

V_i = Volume of extract injected in microliters (ul)

V_t = Volume of the concentrated extract in microliters (ul)

Df = Dilution Factor.

%S = Percent solids, applicable to soil and solid matrices only.

2.0 = Factor of 2 to account for GPC cleanup

Example:

Sample I.D. #1, Phenanthrene

Conc. = $\frac{(4970)(1)(1)(10)(1000)}{(154321)(1.244)(30)(0.95)}$

=

9.08 ug/kg

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Santa Susana Field Laboratory

Collection Date: August 2, 2013

LDC Report Date: September 26, 2013

Matrix: Soil

Parameters: Polychlorinated Biphenyls

Validation Level: Level IV

Laboratory: Eurofins Lancaster Laboratories

Sample Delivery Group (SDG): PH083

Sample Identification

SL-552-SA8-SB-0.0-0.5
SL-552-SA8-SB-4.0-5.0
SL-552-SA8-SB-7.5-8.5
SL-559-SA8-SB-0.0-0.5
SL-559-SA8-SB-4.0-5.0
SL-558-SA8-SB-0.0-0.5
SL-558-SA8-SB-4.0-5.0
SL-558-SA8-SB-9.0-10.0
SL-558-SA8-SB-12.5-13.5
SL-552-SA8-SB-0.0-0.5MS
SL-552-SA8-SB-0.0-0.5MSD

Introduction

This data review covers 11 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 EB2-080113 (from SDG PH082) 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) and relative percent differences (RPD) 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 PH083	All compounds reported below the RL.	J (all detects)	A

The sample results for detected compounds from the two columns were within 40% relative percent difference (RPD) with the following exceptions:

Sample	Compound	RPD	Flag	A or P
SL-559-SA8-SB-0.0-0.5	Aroclor-1260 Aroclor-1254	48 60	J (all detects) 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

No field duplicates were identified in this SDG.

Santa Susana Field Laboratory
Polychlorinated Biphenyls - Data Qualification Summary - SDG PH083

SDG	Sample	Compound	Flag	A or P	Reason (Code)
PH083	SL-552-SA8-SB-0.0-0.5 SL-552-SA8-SB-4.0-5.0 SL-552-SA8-SB-7.5-8.5 SL-559-SA8-SB-0.0-0.5 SL-559-SA8-SB-4.0-5.0 SL-558-SA8-SB-0.0-0.5 SL-558-SA8-SB-4.0-5.0 SL-558-SA8-SB-9.0-10.0	All compounds reported below the RL.	J (all detects)	A	Compound quantitation (Z)
PH083	SL-559-SA8-SB-0.0-0.5	Aroclor-1260 Aroclor-1254	J (all detects) J (all detects)	A	Compound quantitation (RPD)(*XIII)

Santa Susana Field Laboratory
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG PH083

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG PH083

No Sample Data Qualified in this SDG

LDC #: 30362D3b **VALIDATION COMPLETENESS WORKSHEET** Date: 9/23/13

SDG #: PH083 Level IV Page: 1 of 1

Laboratory: Eurofins Lancaster Laboratories Reviewer: FT

2nd Reviewer:

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	A	Sampling dates: 8/2/13
II.	GC/ECD Instrument Performance Check	NA	
III.	Initial calibration	A	% RSD ≤ 20
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 20
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	NA	~~client specified~~ FT
VIII.	Laboratory control samples	A	LCS/LCSD
IX.	Regional quality assurance and quality control	N	
X.	Florisil cartridge check	N	
XI.	GPC Calibration	N	
XII.	Target compound identification	A	
XIII.	Compound quantitation/RL/LOQ/LODs	SW	
XIV.	Overall assessment of data	A	
XV.	Field duplicates	N	
XVI.	Field blanks	ND	EB = EB2 - 080113 (SDG # PH082) 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-552-SA8-SB-0.0-0.5	11	PBLK26220	21		31	
2	SL-552-SA8-SB-4.0-5.0	12	#1 MS	22		32	
3	SL-552-SA8-SB-7.5-8.5	13	#1 MSD	23		33	
4	SL-559-SA8-SB-0.0-0.5	14		24		34	
5	SL-559-SA8-SB-4.0-5.0	15		25		35	
6	SL-558-SA8-SB-0.0-0.5	16		26		36	
7	SL-558-SA8-SB-4.0-5.0	17		27		37	
8	SL-558-SA8-SB-9.0-10.0	18		28		38	
9	SL-558-SA8-SB-12.5-13.5	19		29		39	
10		20		30		40	

Notes:

LDC #: 30362D3b

VALIDATION FINDINGS CHECKLIST

Reviewer: FT
2nd Reviewer:

Method: ✓ GC _____ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation?		✓		
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?			✓	
Were the RT windows properly established?	✓			
IV. Continuing calibration				
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20%.0 or percent recoveries 80-120%?	✓			
Were all the retention times within the acceptance windows?	✓			
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 the QC limits?	✓	✓		
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?			✓	
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?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	

LDC #: 30362123b

VALIDATION FINDINGS CHECKLIST

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. FT		✓	✓	

VALIDATION FINDINGS WORKSHEET

METHOD: Pesticide/PCBs (EPASW 846 Method 8081/8082)

A. alpha-BHC	I. Dieldrin	Q. Endrin ketone	Y. Aroclor-1242	GG.
B. beta-BHC	J. 4,4'-DDE	R. Endrin aldehyde	Z. Aroclor-1248	HH.
C. delta-BHC	K. Endrin	S. alpha-Chlordane	AA. Aroclor-1254	II.
D. gamma-BHC	L. Endosulfan II	T. gamma-Chlordane	BB. Aroclor-1260	JJ.
E. Heptachlor	M. 4,4'-DDD	U. Toxaphene	CC. DB 608	KK.
F. Aldrin	N. Endosulfan sulfate	V. Aroclor-1016	DD. DB 1701	LL.
G. Heptachlor epoxide	O. 4,4'-DDT	W. Aroclor-1221	EE.	MM.
H. Endosulfan I	P. Methoxychlor	X. Aroclor-1232	FF.	NN.

Notes: _____

LDC #: 30362 D3b

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and Reported CRQLs

Reviewer: FT
2nd Reviewer: _____

METHOD: ✓ **GC** __ **HPLC**

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

Level IV/D Only

Y N N/A Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

Y N N/A Did the reported results for detected target compounds agree within 10.0% of the recalculated results? Cold * X111

#	Compound Name	% RPD Bet 2 col ≤ 40 Finding	Associated Samples	Qualifications
	BB	48	4	J/A det
	AA	60	↓	

Comments: See sample calculation verification worksheet for recalculations

LDC #: 30362D3b

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: F 7
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 CF (200 std)	Recalculated CF (200 std)	Reported Ave CF (initial)	Recalculated Ave CF (intial)	Reported %RSD	Recalculated %RSD
1	ICAL	8/5/13	Aroclor - 1260	22002	22002	22268	22268	10	10
	ZB multi R1								
	ZB multi R2		↓	59768	59768	61380	61380	6	6
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 #: 30362036

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Page: 1 of 1
Reviewer: FD
2nd Reviewer: _____

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 CF/ Conc. CCV	Recalculated CF/ Conc. CCV	Reported %D	Recalculated %D
1	CCV 17:24	8/11/13	Aroclor 1260	200.00	191.22	191.22	4	4
	ZB MR2							
	ZB MR1		↓	200.00	208.30	208.30	4	4
2								
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.

LDC #: 30362p36

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: FT
2nd reviewer:

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	10.5308	106	105	0.9
DCB	↓	10	8.0755	81	81	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	

LDC #: 30362 D35

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Page: 1 of 1
Reviewer: EJ
2nd Reviewer:

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
RPD =(({SSCMS - SSCMSD} * 2) / (SSCMS + SSCMSD))*100 MS = Matrix spike MSD = Matrix spike duplicate

MS/MSD samples: 12 + 13

Compound	Spike Added (ug/kg)		Sample Conc. (ug/kg)	Spike Sample Concentration (ug/kg)		Matrix spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	---	MS	MSD	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	164	164	8.21	140.29	149.68	81	81	86	86	6	6

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 #: 30362D35

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: FJ

2nd Reviewer: _____

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, SA = Spike added, SC = Sample concentration

RPD =(({SSCLCS - SSCLCSD} * 2) / (SSCLCS + SSCLCSD))*100 LCS = Laboratory Control Sample, LCSD = Laboratory Control Sample duplicate

LCS/LCSD samples: LCS ID

Compound	Spike Added (ug/kg)		Sample Conc. (ug/kg)	Spike Sample Concentration (ug/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	---	LCS	LCSD	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	166.57	NA	100	100	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 #: 30362D36

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: F7
2nd Reviewer: _____

METHOD: ✓ **__ GC __ HPLC**

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration= $\frac{(A)(Fv)(Df)}{(RF)(Vs \text{ or } Ws)(\%S/100)}$

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

Example:

Sample ID. #1 Compound Name PCB-1260

Concentration = $\frac{8.2061}{0.954}$

8.6 ug/kg

#	Sample ID	Compound	Reported Concentrations ( )	Recalculated Results Concentrations ( )	Qualifications
	1260-1 = 657249 (10)			1260-1 = 9.677718	
	22268 (30.5)(0.954) F7			2 = 9.135263	
				3 = 13.779911	
	= 9.677718			4 = 6.115151	
				5 = 3.909048	
				6 = 6.620188	
				8.2061	

Comments: _____

SAMPCALew.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Santa Susana Field Laboratory

Collection Date: August 2, 2013

LDC Report Date: September 13, 2013

Matrix: Soil

Parameters: Metals

Validation Level: Level IV

Laboratory: Eurofins Lancaster Laboratories

Sample Delivery Group (SDG): PH083

Sample Identification

SL-552-SA8-SB-0.0-0.5
SL-552-SA8-SB-4.0-5.0
SL-552-SA8-SB-7.5-8.5
SL-559-SA8-SB-0.0-0.5
SL-559-SA8-SB-4.0-5.0
SL-558-SA8-SB-0.0-0.5
SL-558-SA8-SB-4.0-5.0
SL-558-SA8-SB-9.0-10.0
SL-558-SA8-SB-12.5-13.5

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 Methods 6010C, 6020A, and 7471A 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)	Calcium Tin Zinc	5.74 mg/Kg 1.54 mg/Kg 0.284 mg/Kg	All samples in SDG PH083
ICB/CCB	Arsenic	5.2 ug/L	All samples in SDG PH083
ICB/CCB	Aluminum	41.2 ug/L	SL-552-SA8-SB-0.0-0.5 SL-552-SA8-SB-4.0-5.0 SL-552-SA8-SB-7.5-8.5
ICB/CCB	Aluminum	37.4 ug/L	SL-559-SA8-SB-0.0-0.5 SL-559-SA8-SB-4.0-5.0 SL-558-SA8-SB-0.0-0.5 SL-558-SA8-SB-4.0-5.0 SL-558-SA8-SB-9.0-10.0 SL-558-SA8-SB-12.5-13.5

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-552-SA8-SB-0.0-0.5	Tin	1.96 mg/Kg	1.96U mg/Kg
SL-552-SA8-SB-4.0-5.0	Tin	1.25 mg/Kg	1.25U mg/Kg
SL-552-SA8-SB-7.5-8.5	Tin	1.35 mg/Kg	1.35U mg/Kg
SL-559-SA8-SB-0.0-0.5	Tin	3.85 mg/Kg	3.85U mg/Kg
SL-559-SA8-SB-4.0-5.0	Tin	1.81 mg/Kg	1.81U mg/Kg
SL-558-SA8-SB-0.0-0.5	Tin	1.79 mg/Kg	1.79U mg/Kg
SL-558-SA8-SB-4.0-5.0	Tin	1.59 mg/Kg	1.59U mg/Kg
SL-558-SA8-SB-9.0-10.0	Tin	1.66 mg/Kg	1.66U mg/Kg
SL-558-SA8-SB-12.5-13.5	Tin	1.53 mg/Kg	1.53U mg/Kg

Sample EB2-080113 (from SDG PH082) was identified as an equipment blank. No metal contaminants were found.

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 PH083

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-552-SA8-SB-0.0-0.5	Molybdenum	0.885 mg/Kg	0.885U mg/Kg
SL-559-SA8-SB-0.0-0.5	Molybdenum	0.358 mg/Kg	0.358U mg/Kg
SL-558-SA8-SB-0.0-0.5	Molybdenum	0.327 mg/Kg	0.327U 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-536-SA8-SB-0.0-0.5MS/MSD (All samples in SDG PH083)	Antimony	45 (75-125)	45 (75-125)	-	J (all detects) UJ (all non-detects)	A
	Calcium	-	-	65 (≤20)	J (all detects) UJ (all non-detects)	
SL-536-SA8-SB-0.0-0.5MS/MSD (All samples in SDG PH083)	Chromium	128 (75-125)	-	-	J (all detects)	A
	Vanadium	126 (75-125)	-	-	J (all detects)	

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results 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. 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 PH083	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

No field duplicates were identified in this SDG.

Santa Susana Field Laboratory
Metals - Data Qualification Summary - SDG PH083

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
PH083	SL-552-SA8-SB-0.0-0.5 SL-552-SA8-SB-4.0-5.0 SL-552-SA8-SB-7.5-8.5 SL-559-SA8-SB-0.0-0.5 SL-559-SA8-SB-4.0-5.0 SL-558-SA8-SB-0.0-0.5 SL-558-SA8-SB-4.0-5.0 SL-558-SA8-SB-9.0-10.0 SL-558-SA8-SB-12.5-13.5	Antimony	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (%R) (Q)
PH083	SL-552-SA8-SB-0.0-0.5 SL-552-SA8-SB-4.0-5.0 SL-552-SA8-SB-7.5-8.5 SL-559-SA8-SB-0.0-0.5 SL-559-SA8-SB-4.0-5.0 SL-558-SA8-SB-0.0-0.5 SL-558-SA8-SB-4.0-5.0 SL-558-SA8-SB-9.0-10.0 SL-558-SA8-SB-12.5-13.5	Chromium Vanadium	J (all detects) J (all detects)	A	Matrix spike/Matrix spike duplicate (%R) (Q)
PH083	SL-552-SA8-SB-0.0-0.5 SL-552-SA8-SB-4.0-5.0 SL-552-SA8-SB-7.5-8.5 SL-559-SA8-SB-0.0-0.5 SL-559-SA8-SB-4.0-5.0 SL-558-SA8-SB-0.0-0.5 SL-558-SA8-SB-4.0-5.0 SL-558-SA8-SB-9.0-10.0 SL-558-SA8-SB-12.5-13.5	Calcium	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (RPD) (E)
PH083	SL-552-SA8-SB-0.0-0.5 SL-552-SA8-SB-4.0-5.0 SL-552-SA8-SB-7.5-8.5 SL-559-SA8-SB-0.0-0.5 SL-559-SA8-SB-4.0-5.0 SL-558-SA8-SB-0.0-0.5 SL-558-SA8-SB-4.0-5.0 SL-558-SA8-SB-9.0-10.0 SL-558-SA8-SB-12.5-13.5	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 PH083

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
PH083	SL-552-SA8-SB-0.0-0.5	Tin	1.96U mg/Kg	A	B
PH083	SL-552-SA8-SB-4.0-5.0	Tin	1.25U mg/Kg	A	B
PH083	SL-552-SA8-SB-7.5-8.5	Tin	1.35U mg/Kg	A	B

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
PH083	SL-559-SA8-SB-0.0-0.5	Tin	3.85U mg/Kg	A	B
PH083	SL-559-SA8-SB-4.0-5.0	Tin	1.81U mg/Kg	A	B
PH083	SL-558-SA8-SB-0.0-0.5	Tin	1.79U mg/Kg	A	B
PH083	SL-558-SA8-SB-4.0-5.0	Tin	1.59U mg/Kg	A	B
PH083	SL-558-SA8-SB-9.0-10.0	Tin	1.66U mg/Kg	A	B
PH083	SL-558-SA8-SB-12.5-13.5	Tin	1.53U mg/Kg	A	B

Santa Susana Field Laboratory
Metals - Field Blank Data Qualification Summary - SDG PH083

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
PH083	SL-552-SA8-SB-0.0-0.5	Molybdenum	0.885U mg/Kg	A	F
PH083	SL-559-SA8-SB-0.0-0.5	Molybdenum	0.358U mg/Kg	A	F
PH083	SL-558-SA8-SB-0.0-0.5	Molybdenum	0.327U mg/Kg	A	F

LDC #: 30362D4

VALIDATION COMPLETENESS WORKSHEET

Level IV

Date: 9/10/13

SDG #: PH083

Page: 1 of 1

Laboratory: Eurofins Lancaster Laboratories

Reviewer: AL

2nd Reviewer: W

METHOD: Metals (EPA SW 846 Method 6010C/6020A/~~7000~~ 7471A)

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: 8/2/13
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 (PH081)
VII.	Duplicate Sample Analysis	A	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	N	
XV	Field Blanks	SW	EB=EB2-080113 (PH082) FB=FB-041113 (PH079)

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-552-SA8-SB-0.0-0.5	11		21		31	
2	SL-552-SA8-SB-4.0-5.0	12		22		32	
3	SL-552-SA8-SB-7.5-8.5	13		23		33	
4	SL-559-SA8-SB-0.0-0.5	14		24		34	
5	SL-559-SA8-SB-4.0-5.0	15		25		35	
6	SL-558-SA8-SB-0.0-0.5	16		26		36	
7	SL-558-SA8-SB-4.0-5.0	17		27		37	
8	SL-558-SA8-SB-9.0-10.0	18		28		38	
9	SL-558-SA8-SB-12.5-13.5	19		29		39	
10		20		30		40	

Notes: _____

LDC #: 30362D4

VALIDATION FINDINGS CHECKLIST

Reviewer: AR
2nd Reviewer: VV

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 ≤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) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of +/- RL(+/-2X RL for soil) was used for samples that were ≤ 5X the RL, including when only one of the duplicate sample values were ≤ 5X the RL.		✓		
VII. Laboratory control samples				
Was an LCS anaylzed 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 analysies 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.	✓			

LDC #: 30362D 4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: CR
2nd reviewer:

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-9		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr

Comments: Mercury by CVAA if performed

LDC #: 30362D4

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000) Soil preparation factor applied: 100x

Sample Concentration units, unless otherwise noted: mg/Kg Associated Samples: All

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	8	9		
As			5.2	2.6											
Ca	5.737			315.5											
Sn	1.540			84.7	1.96 ~~2.0~~	1.25 ~~1.3~~	1.35 ~~1.3~~	3.85 ~~3.9~~	1.81	1.79 ~~1.8~~	1.59 ~~1.6~~	1.66 ~~1.7~~	1.53		
Zn	0.284			15.62											

Sample Concentration units, unless otherwise noted: mg/Kg Associated Samples: 1-3

Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Action Level	Sample Identification No Qualifiers										
Al			41.2	20.6											

Sample Concentration units, unless otherwise noted: mg/Kg Associated Samples: 4-9

Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Action Level	Sample Identification No Qualifiers										
Al			37.4	18.7											

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.

LDC #: 30362D4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: a
2nd Reviewer: h

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	4	6							
Cu	0.0036	1.8										
Mo	0.0036	1.8	0.886 ~~0.89~~	0.358 ~~0.36~~	0.327 ~~0.33~~							

EB2-080113 (SDG: PH082) = ND

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 #: 30302Q4

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Page: 1 of 1
Reviewer: CR
2nd Reviewer: [illegible]

METHOD: Trace metals (EPA SW 846 Method 6010B/6020A/7000)

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

(Y) N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y (N) N/A Were matrix spike percent recoveries (%R) within the control limits of 75-125? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

Y (N) N/A Were all duplicate sample relative percent differences (RPD) ≤ 20% for water samples and ≤35% for soil samples?

LEVEL IV ONLY:

(Y) N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	MS/MSD ID	Matrix	Analyte	MS %Recovery	MSD %Recovery	RPD (Limits)	Associated Samples	Qualifications
	SL-536-SA8-SB-0.0-0.5MS/D							
			Sb	45	45		All	J (UJ) A (Q)
			Cd			65	↓	↓ (E)
			Cr	128				J (det) A (Q)
			V	126			↓	↓

Comments: _____

MSD.4SW

LDC #: 30302O5

VALIDATION FINDINGS WORKSHEET
Initial and Continuing Calibration Calculation Verification

Reviewer: QR
2nd Reviewer: LA

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 = Found x 100 / True

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 %R	Reported %R	Acceptable (Y/N)
ICV	ICP (Initial calibration)	Mn	5919.66	600	99.9	99.9	Y
ICV	ICP/MS (Initial calibration)	Tl	51.41	50	102.8	102.8	
ICV	CVAA (Initial calibration)	Hg	2.66	2.5	106.4	106.4	
CCV	ICP (Continuing calibration)	P	508.08	500	101.6	101.6	
CCV	ICP/MS (Continuing calibration)	~~Ag~~	25.80	25	103.2	103.2	
CCV	CVAA (Continuing calibration)	Hg	1.08	1	108.0	108.0	
	GFAA (Initial calibration)						
	GFAA (Continuing calibation)						

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 #: 30382Q4

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Page: 1 of 1
Reviewer: QR
2nd Reviewer:

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:

$\%R = \frac{Found}{True} \times 100$ 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 %R / RPD / %D	Reported %R / RPD / %D	Acceptable (Y/N)
ICSAB	ICP interference check	V	521.3	500	104.3	104.3	Y
LCS	Laboratory control sample	Mn	52150	50000	104	104	
SL-536-SAB-SB-0.0-0.5	Matrix spike	Sb	(SSR-SR) 21.8206	49.0196	45	45	
	Duplicate	Ba	115.2922	119.8588	4	4	
	ICP serial dilution	K	46007.32	44625.3	3	3	

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.

LDC #: 30362D4

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: QR
2nd reviewer: ✓

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 Mg were recalculated and verified using the following equation:

Concentration = $\frac{(RD)(FV)(Dil)}{(In.\ Vol.)}$

RD = Raw data concentration
FV = Final volume (ml)
In. Vol. = Initial volume (ml) or weight (G)
Dil = Dilution factor

Recalculation:

$$\frac{100mL\ (52.39579\ mg/L)}{0954(1.03g)} = 5332.3\ mg/kg$$

#	Sample ID	Analyte	Reported Concentration (mg/kg)	Calculated Concentration (mg/kg)	Acceptable (Y/N)
	1	Al	19100	19100	Y
		As	3.6	3.6	
		Ba	99.5	99.5	
		Be	0.60	0.60	
		B	14.7	14.7	
		Cd	0.99	0.99	
		Ca	7790	7790	
		Cr	29.8	29.8	
		Co	7.1	7.1	
		Cu	28.1	28.1	
		Fe	29300	29300	
		Pb	21.2	21.2	
		Li	21.8	21.8	
		Mg	5330	5330	
		Mn	372	372	
		Hg	0048	0.048	
		Mo	0.89	0.89	
		Ni	17.1	17.1	
		P	458	458	
		K	4630	4630	✓

Note: _____

LDC #: 50004 T
30302D4

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: CR
2nd reviewer:

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 = $\frac{(RD)(FV)(Dil)}{(In.\ Vol.)}$

RD = Raw data concentration
FV = Final volume (ml)
In. Vol. = Initial volume (ml) or weight (G)
Dil = Dilution factor

Recalculation: see previous page

#	Sample ID	Analyte	Reported Concentration (mg/kg)	Calculated Concentration (mg/kg)	Acceptable (Y/N)
	1	Se	0.21	0.21	Y
		As	0.46	0.46	
		Na	92.7	92.7	
		Sr	33.0	33.0	
		Tl	0.23	0.23	
		Sn	2.0	2.0	
		Ti	1080	1080	
		V	47.3	47.3	
		Zn	119	119	
		Zr	2.5	2.5	

Note: _____

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Santa Susana Field Laboratory
Collection Date:	August 2, 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):	PH083

Sample Identification

TB-080213
SL-552-SA8-SB-4.0-5.0
SL-552-SA8-SB-7.5-8.5
SL-559-SA8-SB-4.0-5.0
SL-558-SA8-SB-4.0-5.0
SL-558-SA8-SB-9.0-10.0
SL-558-SA8-SB-12.5-13.5

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 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-080213 was identified as a trip blank. No total petroleum hydrocarbons as gasoline contaminants were found.

Samples EB2-080113 (from SDG PH082) 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.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

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 PH083	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

No field duplicates were identified in this SDG.

Santa Susana Field Laboratory
Total Petroleum Hydrocarbons as Gasoline - Data Qualification Summary - SDG PH083

SDG	Sample	Compound	Flag	A or P	Reason (Code)
PH083	TB-080213 SL-552-SA8-SB-4.0-5.0 SL-552-SA8-SB-7.5-8.5 SL-559-SA8-SB-4.0-5.0 SL-558-SA8-SB-4.0-5.0 SL-558-SA8-SB-9.0-10.0 SL-558-SA8-SB-12.5-13.5	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 PH083

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Total Petroleum Hydrocarbons as Gasoline - Field Blank Data Qualification Summary - SDG PH083

No Sample Data Qualified in this SDG

LDC #: 30362D7 **VALIDATION COMPLETENESS WORKSHEET** Date: 9/25/13

SDG #: PH083 Level IV Page: 1 of 1

Laboratory: Eurofins Lancaster Laboratories Reviewer: FT

2nd Reviewer:

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: 8/2/13
II	Initial calibration	A	% RSD ≤ 20
III.	Calibration verification/ICV	A	ICV/CCV ≤ 20
IV.	Blanks	A	
V	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	N	client specified
VII.	Laboratory control samples	A	LCS ID
VIII.	Target compound identification	A	
IX.	Compound quantitation/RL/LOQ/LODs	A	
X.	System Performance	A	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	(SDG# PH082) (SDG PH029)
XIII.	Field blanks	ND	EB = EB2-080113 FB = FB-041113 TB = 1

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 + soil

1 2	TB-080213 W	11	BLKN7	21		31	
2 1	SL-552-SA8-SB-4.0-5.0 S	12 2	BLKNI	22		32	
3	SL-552-SA8-SB-7.5-8.5	13		23		33	
4	SL-559-SA8-SB-4.0-5.0	14		24		34	
5	SL-558-SA8-SB-4.0-5.0	15		25		35	
6	SL-558-SA8-SB-9.0-10.0	16		26		36	
7	SL-558-SA8-SB-12.5-13.5	17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 3036207

VALIDATION FINDINGS CHECKLIST

Reviewer: FT
2nd Reviewer:

Method: ✓ GC _____ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation?		✓		
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?			✓	
Were the RT windows properly established?	✓			
IV. Continuing calibration				
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20%.0 or percent recoveries 80-120%?	✓			
Were all the retention times within the acceptance windows?	✓			
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 the QC limits?	✓			
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?			✓	
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?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	

LDC #: 3036207

VALIDATION FINDINGS CHECKLIST

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 #: 30362D7

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: FT
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 CF (550 std)	Recalculated CF (550 std)	Reported Ave CF (initial)	Recalculated Ave CF (intial)	Reported %RSD	Recalculated %RSD
1	ICAL	1/12/12	GRO	6717	6717	6269	6269	9.2	9.2
	11002F								
				(220)	(220)				
2	ICAL	5/23/13	GRO	60597	60597	61516	61516	3	3
	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 #: 30362P7

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: FD
2nd Reviewer: _____

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 CF/ Conc. CCV	Recalculated CF/ Conc. CCV	Reported %D	Recalculated %D
1	CCV 20:36	8/6/13	GRO	550.0	519.79	519.79	5	5
	CCV 10:03	8/6/13	↓	220.0	196.79	196.79	11	11
2								
	CCV 18:56	8/6/13	↓	220.0	200.98	200.98	9	9
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.

LDC #: 30362D7

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: F7
2nd reviewer:

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: #8

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
TFT	NS	896.3	645.39	72	72	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	

LDC #: 3036207

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: FJ

2nd Reviewer:

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; SA = Spike added; SC = Sample concentration; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample duplicate

RPD =(({SSCLCS - SSCLCSD} * 2) / (SSCLCS + SSCLCSD))*100

LCS/LCSD samples: lcs/p soil

Compound	Spike Added (mg/kg)		Sample Conc. (mg/kg)	Spike Sample Concentration (mg/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	---	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)	11	11	ND	8.04	7.77	73	73	71	71	3	3
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.

LDC #: 30362D7

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: F7
2nd Reviewer: _____

METHOD: ✓ **GC** __ **HPLC**

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration= $\frac{(A)(Fv)(Df)}{(RF)(Vs \text{ or } Ws)(\%S/100)}$

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

Example:

Sample ID. LCS soil Compound Name GRO

Concentration = $\frac{19785960 \ (25)}{61516 \ (1)(1000)}$

= 8.0 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 2, 2013

LDC Report Date: September 25, 2013

Matrix: Soil

Parameters: Total Petroleum Hydrocarbons as Extractables

Validation Level: Level IV

Laboratory: Eurofins Lancaster Laboratories

Sample Delivery Group (SDG): PH083

Sample Identification

SL-552-SA8-SB-0.0-0.5
SL-552-SA8-SB-4.0-5.0
SL-552-SA8-SB-7.5-8.5
SL-559-SA8-SB-0.0-0.5
SL-559-SA8-SB-4.0-5.0
SL-558-SA8-SB-0.0-0.5
SL-558-SA8-SB-4.0-5.0
SL-558-SA8-SB-9.0-10.0
SL-558-SA8-SB-12.5-13.5

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 EB2-080113 (from SDG PH082) 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

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

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 PH083	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

No field duplicates were identified in this SDG.

Santa Susana Field Laboratory
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG PH083

SDG	Sample	Compound	Flag	A or P	Reason (Code)
PH083	SL-552-SA8-SB-0.0-0.5 SL-552-SA8-SB-4.0-5.0 SL-552-SA8-SB-7.5-8.5 SL-559-SA8-SB-0.0-0.5 SL-559-SA8-SB-4.0-5.0 SL-558-SA8-SB-0.0-0.5 SL-558-SA8-SB-4.0-5.0 SL-558-SA8-SB-9.0-10.0 SL-558-SA8-SB-12.5-13.5	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 PH083

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG PH083

No Sample Data Qualified in this SDG

LDC #: 30362D8 **VALIDATION COMPLETENESS WORKSHEET** Date: 9/25/13

SDG #: PH083 Level IV Page: 1 of 1

Laboratory: Eurofins Lancaster Laboratories Reviewer: [illegible]

2nd Reviewer:

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	A	Sampling dates: 8/2/13
II	Initial calibration	A	% RSD ≤ 20
III.	Calibration verification/ICV	A	ICV/CCV ≤
IV.	Blanks	A	
V	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	N	client specified
VII.	Laboratory control samples	A	LCS
VIII.	Target compound identification	A	
IX.	Compound quantitation/RL/LOQ/LODs	A	
X.	System Performance	A	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	NP	EB = EB2-080113 (SDG # PH082) 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-552-SA8-SB-0.0-0.5	11	PBLK15219	21		31	
2	SL-552-SA8-SB-4.0-5.0	12		22		32	
3	SL-552-SA8-SB-7.5-8.5	13		23		33	
4	SL-559-SA8-SB-0.0-0.5	14		24		34	
5	SL-559-SA8-SB-4.0-5.0	15		25		35	
6	SL-558-SA8-SB-0.0-0.5	16		26		36	
7	SL-558-SA8-SB-4.0-5.0	17		27		37	
8	SL-558-SA8-SB-9.0-10.0	18		28		38	
9	SL-558-SA8-SB-12.5-13.5	19		29		39	
10		20		30		40	

Notes:

LDC #: 30362D8

VALIDATION FINDINGS CHECKLIST

Page: 1 of 2
Reviewer: FT
2nd Reviewer:

Method: ✓ GC _____ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation?		✓		
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?			✓	
Were the RT windows properly established?	✓			
IV. Continuing calibration				
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20%.0 or percent recoveries 80-120%?	✓			
Were all the retention times within the acceptance windows?	✓			
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 the QC limits?	✓			
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?			✓	
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?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	

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 #: 30362D8

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: FT
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 CF (788 std)	Recalculated CF (788 std)	Reported Ave CF (initial)	Recalculated Ave CF (intial)	Reported %RSD	Recalculated %RSD
1	ICAL	6/28/13	~~TPH~~ ~~GRO~~ C8-C40 FT	23620	23620	24187	24187	2	2
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 #: 30362D8

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: FJ
2nd Reviewer: _____

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 CF/ Conc. CCV	Recalculated CF/ Conc. CCV	Reported %D	Recalculated %D
1	ICV 15:05	7/01/13	TPH C8-C40	272.95	282.97	282.97	4	4
	CCV 17:50	8/8/13	↓	288.01	31075	310.75	8	8
2								
	CCV 1:46	8/9/13	↓	288.01	318.03	318.03	10	10
3	CCV 15:51	8/9/13	↓	288.01	274.37	274.37	5	5
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.

LDC #: 30362D8

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Page: 1 of 1
Reviewer: EJ
2nd reviewer:

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	1.963777	99	99	0
orthoterphenyl	NS	2	2.141559	107	107	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	

LDC #: 30362D8

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Page: 1 of 1
Reviewer: FJ
2nd Reviewer:

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; SA = Spike added; SC = Sample concentration

RPD =(({SSCLCS - SSCLCSD} * 2) / (SSCLCS + SSCLCSD))*100

LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample duplicate

LCS/LCSD samples: LCS15219

Compound	Spike Added (mg/kg)		Sample Conc. (mg/kg)	Spike Sample Concentration (mg/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	---	LCS	LCSD	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 C8-C11	1.68	NA	ND	1.52	NA	91	91	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 #: 30362D8

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: F7
2nd Reviewer: _____

METHOD: ✓ **GC** __ **HPLC**

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration= $\frac{(A)(Fv)(Df)}{(RF)(Vs \text{ or } Ws)(\%S/100)}$

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

Example:

Sample ID. #1 Compound Name C30 - C40

Concentration = $\frac{44157868 \quad (1)(2)}{24187 \quad (30.1)(0.954)}$

= 130 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 2, 2013

LDC Report Date: September 13, 2013

Matrix: Soil

Parameters: Dioxins/Dibenzofurans

Validation Level: Level IV

Laboratory: Eurofins Lancaster Laboratories

Sample Delivery Group (SDG): PH083

Sample Identification

SL-552-SA8-SB-0.0-0.5
SL-552-SA8-SB-4.0-5.0
SL-559-SA8-SB-0.0-0.5
SL-559-SA8-SB-4.0-5.0
SL-558-SA8-SB-0.0-0.5
SL-558-SA8-SB-4.0-5.0

Introduction

This data review covers 6 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
BLK224001	8/12/13	1,2,3,7,8-PeCDD 1,2,3,6,7,8-HxCDD 1,2,3,4,6,7,8-HpCDD OCDD 2,3,4,7,8-PeCDF 1,2,3,4,6,7,8-HpCDF 1,2,3,4,7,8,9-HpCDF OCDF	0.0780 ng/Kg 0.0377 ng/Kg 0.0637 ng/Kg 0.252 ng/Kg 0.0474 ng/Kg 0.0267 ng/Kg 0.0434 ng/Kg 0.202 ng/Kg	All samples in SDG PH083

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-552-SA8-SB-4.0-5.0	1,2,3,7,8-PeCDD 1,2,3,6,7,8-HxCDD 2,3,4,7,8-PeCDF 1,2,3,4,7,8,9-HpCDF OCDF	0.237 ng/Kg 0.119 ng/Kg 0.198 ng/Kg 0.0574 ng/Kg 0.355 ng/Kg	0.237U ng/Kg 0.119U ng/Kg 0.198U ng/Kg 0.0574U ng/Kg 0.355U ng/Kg
SL-558-SA8-SB-0.0-0.5	1,2,3,7,8-PeCDD	0.201 ng/Kg	0.201U ng/Kg
SL-558-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HpCDF 1,2,3,4,7,8,9-HpCDF OCDF	0.0875 ng/Kg 0.0496 ng/Kg 0.298 ng/Kg	0.0875U ng/Kg 0.0496U ng/Kg 0.298U ng/Kg

Sample EB2-080113 (from SDG PH082) 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
EB2-080113	8/1/13	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 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 1,2,3,4,7,8,9-HpCDF OCDF	0.270 pg/L 1.84 pg/L 1.74 pg/L 1.45 pg/L 1.77 pg/L 1.92 pg/L 3.88 pg/L 1.94 pg/L 1.58 pg/L 1.90 pg/L 1.48 pg/L 1.68 pg/L 1.48 pg/L 1.65 pg/L 1.47 pg/L 4.13 pg/L	All samples in SDG PH083

Sample FB-041113 (from SDG 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 PH083

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

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

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-552-SA8-SB-0.0-0.5 SL-552-SA8-SB-4.0-5.0 SL-558-SA8-SB-0.0-0.5	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 SDG PH083	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

No field duplicates were identified in this SDG.

Santa Susana Field Laboratory
Dioxins/Dibenzofurans - Data Qualification Summary - SDG PH083

SDG	Sample	Compound	Flag	A or P	Reason (Code)
PH083	SL-552-SA8-SB-0.0-0.5 SL-552-SA8-SB-4.0-5.0 SL-558-SA8-SB-0.0-0.5	2,3,7,8-TCDF	None	P	Compound quantitation (no confirmation analysis)
PH083	SL-552-SA8-SB-0.0-0.5 SL-552-SA8-SB-4.0-5.0 SL-559-SA8-SB-0.0-0.5 SL-559-SA8-SB-4.0-5.0 SL-558-SA8-SB-0.0-0.5 SL-558-SA8-SB-4.0-5.0	All compounds reported below the RL.	J (all detects)	A	Compound quantitation (Z)

Santa Susana Field Laboratory
Dioxins/Dibenzofurans - Laboratory Blank Data Qualification Summary - SDG PH083

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
PH083	SL-552-SA8-SB-4.0-5.0	1,2,3,7,8-PeCDD 1,2,3,6,7,8-HxCDD 2,3,4,7,8-PeCDF 1,2,3,4,7,8,9-HpCDF OCDF	0.237U ng/Kg 0.119U ng/Kg 0.198U ng/Kg 0.0574U ng/Kg 0.355U ng/Kg	A	B
PH083	SL-558-SA8-SB-0.0-0.5	1,2,3,7,8-PeCDD	0.201U ng/Kg	A	B
PH083	SL-558-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HpCDF 1,2,3,4,7,8,9-HpCDF OCDF	0.0875U ng/Kg 0.0496U ng/Kg 0.298U ng/Kg	A	B

Santa Susana Field Laboratory
Dioxins/Dibenzofurans - Field Blank Data Qualification Summary - SDG PH083

No Sample Data Qualified in this SDG

LDC #: 30362D21 **VALIDATION COMPLETENESS WORKSHEET** Date: 9-12-13
SDG #: PH083 Level IV Page: 1 of 1
Laboratory: Eurofins Lancaster Laboratories Reviewer: [illegible]
2nd Reviewer:

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: 8/2/13
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	N	
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~~	~~A~~ SW	
XII.	System performance	A	
XIII.	Overall assessment of data	A	
XIV.	Field duplicates	N	
XV.	Field blanks	SW	FB=FB-041113(PH029); EB=EB2-080113 (PH082)

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-552-SA8-SB-0.0-0.5	11		21		31	
2	SL-552-SA8-SB-4.0-5.0	12		22		32	
3	SL-559-SA8-SB-0.0-0.5	13		23		33	
4	SL-559-SA8-SB-4.0-5.0	14		24		34	
5	SL-558-SA8-SB-0.0-0.5	15		25		35	
6	SL-558-SA8-SB-4.0-5.0	16		26		36	
7		17		27		37	
8		18		28		38	
9		19	BLK 224001	29		39	
10		20		30		40	

Notes: