Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
09-Sep-2013	SL-515-SA5D-SB-4.0-5.0	7191087	N	3546	8082A	III
09-Sep-2013	SL-515-SA5D-SB-4.0-5.0	7191087	N	3546	8270D SIM	III
09-Sep-2013	SL-515-SA5D-SB-4.0-5.0	7191087	N	5035A	8015M	III
09-Sep-2013	SL-515-SA5D-SB-4.0-5.0	7191087	N	METHOD	300.0	III
09-Sep-2013	SL-515-SA5D-SB-4.0-5.0	7191087	N	METHOD	7471B	III
09-Sep-2013	SL-515-SA5D-SB-9.0-10.0	7191088	N	3050B	6010C	III
09-Sep-2013	SL-515-SA5D-SB-9.0-10.0	7191088	N	3050B	6020A	III
09-Sep-2013	SL-515-SA5D-SB-9.0-10.0	7191088	N	3546	8015M	III
09-Sep-2013	SL-515-SA5D-SB-9.0-10.0	7191088	N	3546	8081B	III
09-Sep-2013	SL-515-SA5D-SB-9.0-10.0	7191088	N	3546	8082A	III
09-Sep-2013	SL-515-SA5D-SB-9.0-10.0	7191088	N	3546	8270D SIM	III
09-Sep-2013	SL-515-SA5D-SB-9.0-10.0	7191088	N	5035A	8015M	III
09-Sep-2013	SL-515-SA5D-SB-9.0-10.0	7191088	N	METHOD	300.0	III
09-Sep-2013	SL-515-SA5D-SB-9.0-10.0	7191088	N	METHOD	7471B	III
09-Sep-2013	SL-515-SA5D-SB-22.0-23.0	7191089	N	3050B	6010C	III
09-Sep-2013	SL-515-SA5D-SB-22.0-23.0	7191089	N	3050B	6020A	III
09-Sep-2013	SL-515-SA5D-SB-22.0-23.0	7191089	N	3546	8015M	III
09-Sep-2013	SL-515-SA5D-SB-22.0-23.0	7191089	N	3546	8081B	III
09-Sep-2013	SL-515-SA5D-SB-22.0-23.0	7191089	N	3546	8082A	III
09-Sep-2013	SL-515-SA5D-SB-22.0-23.0	7191089	N	3546	8270D SIM	III
09-Sep-2013	SL-515-SA5D-SB-22.0-23.0	7191089	N	5035A	8015M	III
09-Sep-2013	SL-515-SA5D-SB-22.0-23.0	7191089	N	METHOD	300.0	III
09-Sep-2013	SL-515-SA5D-SB-22.0-23.0	7191089	N	METHOD	7471B	III
09-Sep-2013	SL-601-SA5D-SB-0.0-0.5	7191096	N	METHOD	300.0	III
09-Sep-2013	SL-601-SA5D-SB-4.0-5.0	7191097	N	METHOD	300.0	III
09-Sep-2013	SL-601-SA5D-SB-9.0-10.0	7191098	N	METHOD	300.0	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
09-Sep-2013	SL-601-SA5D-SB-14.0-15.0	7191099	N	METHOD	300.0	III
09-Sep-2013	SL-601-SA5D-SB-20.5-21.5	7191100	N	METHOD	300.0	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: PH104 **Laboratory: LL**

EDD Filename: PH104 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: GENCHEM

Method: 300.0 **Matrix: SO**

Sample ID: SL-515-SA5D-SB-0.0-0.5 **Collected: 9/9/2013 9:30:00 AM** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORIDE	0.91	J	0.44	MDL	1.1	PQL	mg/Kg	J	Z, Q

Sample ID: SL-515-SA5D-SB-22.0-23.0 **Collected: 9/9/2013 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
FLUORIDE	3.7		0.47	MDL	1.2	PQL	mg/Kg	J	Q

Sample ID: SL-515-SA5D-SB-4.0-5.0 **Collected: 9/9/2013 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
FLUORIDE	1.5		0.47	MDL	1.2	PQL	mg/Kg	J	Q

Sample ID: SL-515-SA5D-SB-9.0-10.0 **Collected: 9/9/2013 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
FLUORIDE	6.5		0.47	MDL	1.2	PQL	mg/Kg	J	Q

Sample ID: SL-599-SA5D-SB-0.0-0.5 **Collected: 9/9/2013 7:45:00 AM** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORIDE	0.55	J	0.44	MDL	1.1	PQL	mg/Kg	J	Z, Q

Sample ID: SL-599-SA5D-SB-14.0-15.0 **Collected: 9/9/2013 8:15:00 AM** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORIDE	9.2		0.47	MDL	1.2	PQL	mg/Kg	J	Q

Sample ID: SL-599-SA5D-SB-19.0-20.0 **Collected: 9/9/2013 8:25:00 AM** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORIDE	6.9		0.46	MDL	1.2	PQL	mg/Kg	J	Q

Sample ID: SL-599-SA5D-SB-22.0-23.0 **Collected: 9/9/2013 8:35:00 AM** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORIDE	6.1		0.45	MDL	1.1	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: PH104 **Laboratory: LL**

EDD Filename: PH104 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: GENCHEM

Method: 300.0 **Matrix: SO**

Sample ID: SL-599-SA5D-SB-4.0-5.0 **Collected: 9/9/2013 7:55:00 AM** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORIDE	1.4		0.46	MDL	1.2	PQL	mg/Kg	J	Q

Sample ID: SL-599-SA5D-SB-9.0-10.0 **Collected: 9/9/2013 8:05:00 AM** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORIDE	10.9		0.46	MDL	1.2	PQL	mg/Kg	J	Q

Sample ID: SL-601-SA5D-SB-0.0-0.5 **Collected: 9/9/2013 1:10:00 PM** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORIDE	1.8		0.44	MDL	1.1	PQL	mg/Kg	J	Q

Sample ID: SL-601-SA5D-SB-14.0-15.0 **Collected: 9/9/2013 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
FLUORIDE	10.7		0.45	MDL	1.1	PQL	mg/Kg	J	Q

Sample ID: SL-601-SA5D-SB-20.5-21.5 **Collected: 9/9/2013 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
FLUORIDE	4.4		0.41	MDL	1.0	PQL	mg/Kg	J	Q

Sample ID: SL-601-SA5D-SB-4.0-5.0 **Collected: 9/9/2013 1:20:00 PM** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORIDE	2.5		0.45	MDL	1.1	PQL	mg/Kg	J	Q

Sample ID: SL-601-SA5D-SB-9.0-10.0 **Collected: 9/9/2013 1:30:00 PM** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORIDE	9.0		0.45	MDL	1.1	PQL	mg/Kg	J	Q

Sample ID: SL-815-SA5D-SB-0.0-0.5 **Collected: 9/9/2013 9:40:00 AM** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORIDE	1.0	J	0.43	MDL	1.1	PQL	mg/Kg	J	Z, 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: PH104 **Laboratory: LL**

EDD Filename: PH104 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: GENCHEM

Method: 300.0 **Matrix:** SO

Method Category: METALS

Method: 6010C **Matrix:** SO

Sample ID: **SL-515-SA5D-SB-0.0-0.5** ***Collected:*** **9/9/2013 9:30:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	1.25	J	0.791	MDL	4.28	PQL	mg/Kg	J	Z, Q
BERYLLIUM	0.841	J	0.0716	MDL	1.07	PQL	mg/Kg	J	Z
CADMIUM	0.623	J	0.0813	MDL	1.07	PQL	mg/Kg	J	Z
CHROMIUM	34.7		0.171	MDL	3.21	PQL	mg/Kg	J	Q
COBALT	9.13		0.106	MDL	1.07	PQL	mg/Kg	J	A
MOLYBDENUM	0.504	J	0.182	MDL	2.14	PQL	mg/Kg	UJ	FD, F, F
TIN	3.34	J	0.235	MDL	10.7	PQL	mg/Kg	U	B
VANADIUM	65.9		0.139	MDL	1.07	PQL	mg/Kg	J	Q
Zirconium	2.64	J	0.898	MDL	5.35	PQL	mg/Kg	J	Z

Sample ID: **SL-515-SA5D-SB-22.0-23.0** ***Collected:*** **9/9/2013 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	4.67	U	0.864	MDL	4.67	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.915	J	0.0783	MDL	1.17	PQL	mg/Kg	J	Z
BORON	11.6	J	0.981	MDL	11.7	PQL	mg/Kg	J	Z
CADMIUM	0.504	J	0.0888	MDL	1.17	PQL	mg/Kg	J	Z
CHROMIUM	32.9		0.187	MDL	3.50	PQL	mg/Kg	J	Q
COBALT	9.46		0.116	MDL	1.17	PQL	mg/Kg	J	A
TIN	3.66	J	0.257	MDL	11.7	PQL	mg/Kg	U	B
VANADIUM	61.3		0.152	MDL	1.17	PQL	mg/Kg	J	Q
Zirconium	2.13	J	0.981	MDL	5.84	PQL	mg/Kg	J	Z

Sample ID: **SL-515-SA5D-SB-4.0-5.0** ***Collected:*** **9/9/2013 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	1.17	J	0.869	MDL	4.69	PQL	mg/Kg	J	Z, Q
BERYLLIUM	1.03	J	0.0786	MDL	1.17	PQL	mg/Kg	J	Z
CADMIUM	0.558	J	0.0892	MDL	1.17	PQL	mg/Kg	J	Z
CHROMIUM	40.0		0.188	MDL	3.52	PQL	mg/Kg	J	Q
COBALT	10.5		0.116	MDL	1.17	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: PH104 **Laboratory: LL**

EDD Filename: PH104 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-515-SA5D-SB-4.0-5.0** ***Collected:*** **9/9/2013 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
SODIUM	116	J	19.6	MDL	117	PQL	mg/Kg	J	Z
TIN	4.04	J	0.258	MDL	11.7	PQL	mg/Kg	U	B
VANADIUM	78.8		0.153	MDL	1.17	PQL	mg/Kg	J	Q
Zirconium	4.45	J	0.986	MDL	5.87	PQL	mg/Kg	J	Z

Sample ID: **SL-515-SA5D-SB-9.0-10.0** ***Collected:*** **9/9/2013 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	0.958	J	0.851	MDL	4.60	PQL	mg/Kg	J	Z, Q
BERYLLIUM	0.929	J	0.0771	MDL	1.15	PQL	mg/Kg	J	Z
CADMIUM	0.508	J	0.0874	MDL	1.15	PQL	mg/Kg	J	Z
CHROMIUM	34.2		0.184	MDL	3.45	PQL	mg/Kg	J	Q
COBALT	9.88		0.114	MDL	1.15	PQL	mg/Kg	J	A
TIN	3.43	J	0.253	MDL	11.5	PQL	mg/Kg	U	B
VANADIUM	63.5		0.150	MDL	1.15	PQL	mg/Kg	J	Q
Zirconium	2.56	J	0.966	MDL	5.75	PQL	mg/Kg	J	Z

Sample ID: **SL-815-SA5D-SB-0.0-0.5** ***Collected:*** **9/9/2013 9:40:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	1.25	J	0.786	MDL	4.25	PQL	mg/Kg	J	Z, Q
BERYLLIUM	0.829	J	0.0712	MDL	1.06	PQL	mg/Kg	J	Z
CADMIUM	0.648	J	0.0807	MDL	1.06	PQL	mg/Kg	J	Z
CHROMIUM	33.8		0.170	MDL	3.19	PQL	mg/Kg	J	Q
COBALT	9.08		0.105	MDL	1.06	PQL	mg/Kg	J	A
MOLYBDENUM	0.247	J	0.181	MDL	2.12	PQL	mg/Kg	UJ	FD, F, F
TIN	3.54	J	0.234	MDL	10.6	PQL	mg/Kg	U	B
VANADIUM	64.7		0.138	MDL	1.06	PQL	mg/Kg	J	Q
Zirconium	1.93	J	0.892	MDL	5.31	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: PH104 **Laboratory: LL**

EDD Filename: PH104 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-515-SA5D-SB-0.0-0.5 **Collected: 9/9/2013 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	0.327	J	0.107	MDL	0.428	PQL	mg/Kg	J	Z

Sample ID: SL-515-SA5D-SB-0.0-0.5 **Collected: 9/9/2013 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	0.0315	J	0.0278	MDL	0.214	PQL	mg/Kg	J	Z
STRONTIUM	89.4		0.0727	MDL	0.428	PQL	mg/Kg	J	A

Sample ID: SL-515-SA5D-SB-22.0-23.0 **Collected: 9/9/2013 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	0.0505	J	0.0304	MDL	0.234	PQL	mg/Kg	J	Z
STRONTIUM	37.4		0.0794	MDL	0.467	PQL	mg/Kg	J	A

Sample ID: SL-515-SA5D-SB-4.0-5.0 **Collected: 9/9/2013 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	0.220	J	0.117	MDL	0.469	PQL	mg/Kg	J	Z

Sample ID: SL-515-SA5D-SB-4.0-5.0 **Collected: 9/9/2013 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	0.0433	J	0.0305	MDL	0.235	PQL	mg/Kg	J	Z
STRONTIUM	49.2		0.0798	MDL	0.469	PQL	mg/Kg	J	A

Sample ID: SL-515-SA5D-SB-9.0-10.0 **Collected: 9/9/2013 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	0.140	J	0.115	MDL	0.460	PQL	mg/Kg	J	Z

Sample ID: SL-515-SA5D-SB-9.0-10.0 **Collected: 9/9/2013 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	0.0376	J	0.0299	MDL	0.230	PQL	mg/Kg	J	Z
STRONTIUM	49.0		0.0782	MDL	0.460	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: PH104 **Laboratory: LL**

EDD Filename: PH104 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: **SL-815-SA5D-SB-0.0-0.5** *Collected:* **9/9/2013 9:40:00 AM** *Analysis Type:* **REA2** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.346	J	0.106	MDL	0.425	PQL	mg/Kg	J	Z

Sample ID: **SL-815-SA5D-SB-0.0-0.5** *Collected:* **9/9/2013 9:40:00 AM** *Analysis Type:* **RES** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0321	J	0.0276	MDL	0.212	PQL	mg/Kg	J	Z
STRONTIUM	82.8		0.0722	MDL	0.425	PQL	mg/Kg	J	A

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: **SL-515-SA5D-SB-9.0-10.0** *Collected:* **9/9/2013 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
MERCURY	0.0122	J	0.0115	MDL	0.0191	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-515-SA5D-SB-0.0-0.5** *Collected:* **9/9/2013 9:30:00 AM** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.403	J	0.0568	MDL	5.24	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.159	JBQ	0.0224	MDL	5.24	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0746	JBQ	0.0383	MDL	5.24	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	5.24	U	0.0393	MDL	5.24	PQL	ng/Kg	UJ	FD
1,2,3,4,7,8-HXCDF	0.0599	JQ	0.0290	MDL	5.24	PQL	ng/Kg	J	Z, FD
1,2,3,6,7,8-HXCDD	5.24	U	0.0392	MDL	5.24	PQL	ng/Kg	UJ	FD
1,2,3,6,7,8-HXCDF	5.24	U	0.0280	MDL	5.24	PQL	ng/Kg	UJ	FD
1,2,3,7,8,9-HXCDD	0.0862	JQ	0.0416	MDL	5.24	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.174	JQ	0.0365	MDL	5.24	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.0657	JQ	0.0602	MDL	5.24	PQL	ng/Kg	J	Z, FD
1,2,3,7,8-PECDF	0.156	JQ	0.0465	MDL	5.24	PQL	ng/Kg	J	Z, FD
2,3,4,6,7,8-HXCDF	5.24	U	0.0259	MDL	5.24	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: PH104 **Laboratory: LL**

EDD Filename: PH104 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-515-SA5D-SB-0.0-0.5** *Collected:* **9/9/2013 9:30:00 AM** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,3,4,7,8-PECDF	5.24	U	0.0469	MDL	5.24	PQL	ng/Kg	UJ	FD
OCDD	3.47	JB	0.0626	MDL	10.5	PQL	ng/Kg	J	Z
OCDF	0.321	JB	0.0644	MDL	10.5	PQL	ng/Kg	U	B

Sample ID: **SL-815-SA5D-SB-0.0-0.5** *Collected:* **9/9/2013 9:40:00 AM** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.529	J	0.0620	MDL	5.40	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.196	JBQ	0.0297	MDL	5.40	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.114	JB	0.0479	MDL	5.40	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0610	JQ	0.0440	MDL	5.40	PQL	ng/Kg	J	Z, FD
1,2,3,4,7,8-HXCDF	0.194	JQ	0.0402	MDL	5.40	PQL	ng/Kg	J	Z, FD
1,2,3,6,7,8-HXCDD	0.151	J	0.0471	MDL	5.40	PQL	ng/Kg	J	Z, FD
1,2,3,6,7,8-HXCDF	0.101	JQ	0.0365	MDL	5.40	PQL	ng/Kg	J	Z, FD
1,2,3,7,8,9-HXCDD	0.133	JQ	0.0475	MDL	5.40	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.192	JQ	0.0486	MDL	5.40	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	5.40	U	0.0686	MDL	5.40	PQL	ng/Kg	UJ	FD
1,2,3,7,8-PECDF	5.40	U	0.0585	MDL	5.40	PQL	ng/Kg	UJ	FD
2,3,4,6,7,8-HXCDF	0.149	JBQ	0.0364	MDL	5.40	PQL	ng/Kg	UJ	B, FD
2,3,4,7,8-PECDF	0.112	JQ	0.0573	MDL	5.40	PQL	ng/Kg	J	Z, FD
OCDD	3.63	JB	0.0783	MDL	10.8	PQL	ng/Kg	J	Z
OCDF	0.382	JB	0.0758	MDL	10.8	PQL	ng/Kg	U	B

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: **SL-515-SA5D-SB-0.0-0.5** *Collected:* **9/9/2013 9:30:00 AM** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C21-C30)	5.5	J	2.2	MDL	5.5	PQL	mg/Kg	J	Q, Q, FD
EFH (C30-C40)	11	J	4.4	MDL	11	PQL	mg/Kg	J	Q, Q, 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: PH104 **Laboratory: LL**

EDD Filename: PH104 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: **SL-515-SA5D-SB-4.0-5.0** *Collected:* **9/9/2013 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
EFH (C21-C30)	4.4	J	2.3	MDL	5.9	PQL	mg/Kg	J	Z
EFH (C30-C40)	9.0	J	4.7	MDL	12	PQL	mg/Kg	J	Z

Sample ID: **SL-515-SA5D-SB-9.0-10.0** *Collected:* **9/9/2013 10:00:00** *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)	2.8	J	2.4	MDL	5.9	PQL	mg/Kg	J	Z
EFH (C30-C40)	6.9	J	4.7	MDL	12	PQL	mg/Kg	J	Z

Sample ID: **SL-815-SA5D-SB-0.0-0.5** *Collected:* **9/9/2013 9:40:00 AM** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C21-C30)	10		2.2	MDL	5.4	PQL	mg/Kg	J	FD
EFH (C30-C40)	22		4.3	MDL	11	PQL	mg/Kg	J	FD

Method Category: SVOA

Method: 8081B **Matrix: SO**

Sample ID: **SL-515-SA5D-SB-0.0-0.5** *Collected:* **9/9/2013 9:30:00 AM** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDE	0.65	J	0.36	MDL	1.9	PQL	ug/Kg	J	Z

Sample ID: **SL-815-SA5D-SB-0.0-0.5** *Collected:* **9/9/2013 9:40:00 AM** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDE	0.58	J	0.36	MDL	1.8	PQL	ug/Kg	J	Z

Method Category: SVOA

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

Sample ID: **SL-515-SA5D-SB-0.0-0.5** *Collected:* **9/9/2013 9:30:00 AM** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(B)FLUORANTHENE	1.5	J	0.73	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: PH104 **Laboratory: LL**

EDD Filename: PH104 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

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

Sample ID: **SL-515-SA5D-SB-0.0-0.5** *Collected:* **9/9/2013 9:30:00 AM** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHRYSENE	1.2	J	0.37	MDL	1.8	PQL	ug/Kg	J	Z
FLUORANTHENE	1.8	U	0.73	MDL	1.8	PQL	ug/Kg	UJ	FD
NAPHTHALENE	1.8	U	0.73	MDL	1.8	PQL	ug/Kg	UJ	FD
PHENANTHRENE	1.8	U	0.73	MDL	1.8	PQL	ug/Kg	UJ	FD

Sample ID: **SL-515-SA5D-SB-22.0-23.0** *Collected:* **9/9/2013 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
BIS(2-ETHYLHEXYL)PHTHALATE	7.6	J	7.0	MDL	21	PQL	ug/Kg	J	Z

Sample ID: **SL-515-SA5D-SB-4.0-5.0** *Collected:* **9/9/2013 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
BIS(2-ETHYLHEXYL)PHTHALATE	10	J	7.0	MDL	21	PQL	ug/Kg	J	Z

Sample ID: **SL-815-SA5D-SB-0.0-0.5** *Collected:* **9/9/2013 9:40:00 AM** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(B)FLUORANTHENE	1.4	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z
CHRYSENE	1.5	J	0.36	MDL	1.8	PQL	ug/Kg	J	Z
FLUORANTHENE	0.89	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z, FD
NAPHTHALENE	0.79	J	0.72	MDL	1.8	PQL	ug/Kg	UJ	F, FD
PHENANTHRENE	0.81	J	0.72	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: PH104 **Laboratory: LL**

EDD Filename: PH104 **eQAPP Name: CDM_SSFL_131101_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
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

PH104

Method Blank Outlier Report

Lab Reporting Batch ID: PH104 **Laboratory: LL**

EDD Filename: PH104 **eQAPP Name: CDM_SSFL_131101_Lan**

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2550B370931	9/14/2013 9:31:00 AM	1,2,3,4,6,7,8-HPCDF 1,2,3,4,7,8,9-HPCDF 2,3,4,6,7,8-HXCDF OCDD OCDF	0.0282 ng/Kg 0.0482 ng/Kg 0.0500 ng/Kg 0.194 ng/Kg 0.0941 ng/Kg	SL-515-SA5D-SB-0.0-0.5 SL-815-SA5D-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-515-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0746 ng/Kg	0.0746U ng/Kg
SL-515-SA5D-SB-0.0-0.5(RES)	OCDF	0.321 ng/Kg	0.321U ng/Kg
SL-815-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.114 ng/Kg	0.114U ng/Kg
SL-815-SA5D-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.149 ng/Kg	0.149U ng/Kg
SL-815-SA5D-SB-0.0-0.5(RES)	OCDF	0.382 ng/Kg	0.382U ng/Kg

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P25637BB221459	9/17/2013 2:59:00 PM	CALCIUM TIN	5.14 mg/Kg 1.20 mg/Kg	SL-515-SA5D-SB-0.0-0.5 SL-515-SA5D-SB-22.0-23.0 SL-515-SA5D-SB-4.0-5.0 SL-515-SA5D-SB-9.0-10.0 SL-815-SA5D-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-515-SA5D-SB-0.0-0.5(RES)	TIN	3.34 mg/Kg	3.34U mg/Kg
SL-515-SA5D-SB-22.0-23.0(RES)	TIN	3.66 mg/Kg	3.66U mg/Kg
SL-515-SA5D-SB-4.0-5.0(RES)	TIN	4.04 mg/Kg	4.04U mg/Kg
SL-515-SA5D-SB-9.0-10.0(RES)	TIN	3.43 mg/Kg	3.43U mg/Kg
SL-815-SA5D-SB-0.0-0.5(RES)	TIN	3.54 mg/Kg	3.54U mg/Kg

Equipment Rinsate Blank Outlier Report

Lab Reporting Batch ID: PH104 **Laboratory: LL**

EDD Filename: PrepPH104 **eQAPP Name: CDM_SSFL_131101_Lan**

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

Equipment Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
EB-091113(REA2)	9/11/2013 3:00:00 PM	COPPER MANGANESE MOLYBDENUM	0.004 mg/L 0.0019 mg/L 0.0087 mg/L	SL-515-SA5D-SB-0.0-0.5 SL-515-SA5D-SB-22.0-23.0 SL-515-SA5D-SB-4.0-5.0 SL-515-SA5D-SB-9.0-10.0 SL-599-SA5D-SB-0.0-0.5 SL-599-SA5D-SB-14.0-15.0 SL-599-SA5D-SB-19.0-20.0 SL-599-SA5D-SB-22.0-23.0 SL-599-SA5D-SB-4.0-5.0 SL-599-SA5D-SB-9.0-10.0 SL-601-SA5D-SB-0.0-0.5 SL-601-SA5D-SB-14.0-15.0 SL-601-SA5D-SB-20.5-21.5 SL-601-SA5D-SB-4.0-5.0 SL-601-SA5D-SB-9.0-10.0 SL-815-SA5D-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-515-SA5D-SB-0.0-0.5(RES)	MOLYBDENUM	0.504 mg/Kg	0.504U mg/Kg
SL-815-SA5D-SB-0.0-0.5(RES)	MOLYBDENUM	0.247 mg/Kg	0.247U mg/Kg

Field Blank Outlier Report

Lab Reporting Batch ID: PH104 **Laboratory: LL**

EDD Filename: PrepPH104 **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	0.0036 mg/L	SL-515-SA5D-SB-0.0-0.5
		MOLYBDENUM	0.0036 mg/L	SL-515-SA5D-SB-22.0-23.0
				SL-515-SA5D-SB-4.0-5.0
				SL-515-SA5D-SB-9.0-10.0
				SL-599-SA5D-SB-0.0-0.5
				SL-599-SA5D-SB-14.0-15.0
				SL-599-SA5D-SB-19.0-20.0
				SL-599-SA5D-SB-22.0-23.0
				SL-599-SA5D-SB-4.0-5.0
				SL-599-SA5D-SB-9.0-10.0
				SL-601-SA5D-SB-0.0-0.5
				SL-601-SA5D-SB-14.0-15.0
				SL-601-SA5D-SB-20.5-21.5
				SL-601-SA5D-SB-4.0-5.0
				SL-601-SA5D-SB-9.0-10.0
				SL-815-SA5D-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-515-SA5D-SB-0.0-0.5(RES)	MOLYBDENUM	0.504 mg/Kg	0.504U mg/Kg
SL-815-SA5D-SB-0.0-0.5(RES)	MOLYBDENUM	0.247 mg/Kg	0.247U mg/Kg

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

Field Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
FB-041113(RES)	4/11/2013 3:00:00 PM	1-METHYLNAPHTHALENE	0.019 ug/L	SL-515-SA5D-SB-0.0-0.5
		2-METHYLNAPHTHALENE	0.024 ug/L	SL-515-SA5D-SB-22.0-23.0
		BIS(2-ETHYLHEXYL)PHTHALATE	0.082 ug/L	SL-515-SA5D-SB-4.0-5.0
		Diethylphthalate	0.18 ug/L	SL-515-SA5D-SB-9.0-10.0
		Di-n-butylphthalate	0.17 ug/L	SL-599-SA5D-SB-0.0-0.5
		NAPHTHALENE	0.17 ug/L	SL-599-SA5D-SB-14.0-15.0
				SL-599-SA5D-SB-19.0-20.0
				SL-599-SA5D-SB-22.0-23.0
				SL-599-SA5D-SB-4.0-5.0
				SL-599-SA5D-SB-9.0-10.0
				SL-601-SA5D-SB-0.0-0.5
				SL-601-SA5D-SB-14.0-15.0
				SL-601-SA5D-SB-20.5-21.5
				SL-601-SA5D-SB-4.0-5.0
				SL-601-SA5D-SB-9.0-10.0
				SL-815-SA5D-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-815-SA5D-SB-0.0-0.5(RES)	NAPHTHALENE	0.79 ug/Kg	1.8U ug/Kg

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH104 **Laboratory: LL**

EDD Filename: PH104 **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-515-SA5D-SB-0.0-0.5MS	EFH (C15-C20)	145	182	49.00-123.00	22 (20.00)	EFH (C15-C20)	J (all detects)
SL-515-SA5D-SB-0.0-0.5MSD	EFH (C21-C30)	127	273	49.00-123.00	46 (20.00)	EFH (C21-C30)	
(SL-515-SA5D-SB-0.0-0.5)	EFH (C30-C40)	127	384	49.00-123.00	57 (20.00)	EFH (C30-C40)	

Method: 8270D SIM
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-515-SA5D-SB-0.0-0.5MS SL-515-SA5D-SB-0.0-0.5MSD (SL-515-SA5D-SB-0.0-0.5)	N-NITROSODIMETHYLAMINE	177	171	48.00-113.00	-	N-NITROSODIMETHYLAMINE	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-515-SA5D-SB-0.0-0.5MS (TOT) SL-515-SA5D-SB-0.0-0.5MSD (TOT) (SL-515-SA5D-SB-0.0-0.5 SL-515-SA5D-SB-22.0-23.0 SL-515-SA5D-SB-4.0-5.0 SL-515-SA5D-SB-9.0-10.0 SL-815-SA5D-SB-0.0-0.5)	ALUMINUM CHROMIUM IRON MAGNESIUM POTASSIUM TITANIUM VANADIUM	4743 128 1924 519 196 605 130	4362 - 1020 442 183 550 -	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 POTASSIUM TITANIUM VANADIUM	J(all detects) Al, Fe, Mg, K, Ti, No Qual, >4x
SL-515-SA5D-SB-0.0-0.5MS (TOT) SL-515-SA5D-SB-0.0-0.5MSD (TOT) (SL-515-SA5D-SB-0.0-0.5 SL-515-SA5D-SB-22.0-23.0 SL-515-SA5D-SB-4.0-5.0 SL-515-SA5D-SB-9.0-10.0 SL-815-SA5D-SB-0.0-0.5)	CALCIUM	-243	618	75.00-125.00	-	CALCIUM	No Qual, >4x
SL-515-SA5D-SB-0.0-0.5MS (TOT) SL-515-SA5D-SB-0.0-0.5MSD (TOT) (SL-515-SA5D-SB-0.0-0.5 SL-515-SA5D-SB-22.0-23.0 SL-515-SA5D-SB-4.0-5.0 SL-515-SA5D-SB-9.0-10.0 SL-815-SA5D-SB-0.0-0.5)	ANTIMONY	48	48	75.00-125.00	-	ANTIMONY	J(all detects) UJ(all non-detects)

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH104 **Laboratory: LL**

EDD Filename: PH104 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 6020A
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-515-SA5D-SB-0.0-0.5MSD (TOT) (SL-515-SA5D-SB-0.0-0.5 SL -515-SA5D-SB-22.0-23.0 SL -515-SA5D-SB-4.0-5.0 SL -515-SA5D-SB-9.0-10.0 SL -815-SA5D-SB-0.0-0.5)	STRONTIUM	-	144	75.00-125.00	-	STRONTIUM	No Qual, >4x

Method: 300.0
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-515-SA5D-SB-0.0-0.5MS (SL-515-SA5D-SB-0.0-0.5 SL -515-SA5D-SB-22.0-23.0 SL -515-SA5D-SB-4.0-5.0 SL -515-SA5D-SB-9.0-10.0 SL -599-SA5D-SB-0.0-0.5 SL -599-SA5D-SB-14.0-15.0 SL -599-SA5D-SB-19.0-20.0 SL -599-SA5D-SB-4.0-5.0 SL -599-SA5D-SB-9.0-10.0 SL -815-SA5D-SB-0.0-0.5)	FLUORIDE	67	-	80.00-120.00	-	FLUORIDE	J(all detects) UJ(all non-detects)
SL-599-SA5D-SB-22.0-23.0MS (SL-599-SA5D-SB-22.0-23.0 SL -601-SA5D-SB-0.0-0.5 SL -601-SA5D-SB-14.0-15.0 SL -601-SA5D-SB-20.5-21.5 SL -601-SA5D-SB-4.0-5.0 SL -601-SA5D-SB-9.0-10.0)	FLUORIDE	58	-	80.00-120.00	-	FLUORIDE	J(all detects) UJ(all non-detects)

Lab Duplicate Outlier Report

Lab Reporting Batch ID: PH104 **Laboratory: LL**

EDD Filename: PH104 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 6010C
Matrix: SO

QC Sample ID (Associated Sample ID)	*Analyte*	*Sample RPD*	*eQAPP RPD*	*Flag*
SL-515-SA5D-SB-0.0-0.5DUP (TOT) (SL-515-SA5D-SB-0.0-0.5 SL -515-SA5D-SB-22.0-23.0 SL -515-SA5D-SB-4.0-5.0 SL -515-SA5D-SB-9.0-10.0 SL -815-SA5D-SB-0.0-0.5)	MOLYBDENUM Zirconium	73 34	20.00 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: PH104 **Laboratory: LL**

EDD Filename: PH104 **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*
P5LBLCSQ260429 (SL-515-SA5D-SB-0.0-0.5 SL-515-SA5D-SB-22.0-23.0 SL-515-SA5D-SB-4.0-5.0 SL-515-SA5D-SB-9.0-10.0 SL-815-SA5D-SB-0.0-0.5)	N-NITROSODIMETHYLAMINE	189	-	71.00-124.00	-	N-NITROSODIMETHYLAMINE	J (all detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: PH104 **Laboratory: LL**

EDD Filename: PH104 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 160.3M
Matrix: SO

Analyte	Concentration (%)		Sample RPD	eQAPP RPD	Flag
	SL-515-SA5D-SB-0.0-0.5	SL-815-SA5D-SB-0.0-0.5			
MOISTURE	9.2	7.7	18		No Qualifiers Applied

Method: 1613B
Matrix: SO

Analyte	Concentration (ng/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-515-SA5D-SB-0.0-0.5	SL-815-SA5D-SB-0.0-0.5			
1,2,3,4,6,7,8-HPCDD	0.403	0.529	27	50.00	No Qualifiers Applied
1,2,3,4,6,7,8-HPCDF	0.159	0.196	21	50.00	
1,2,3,4,7,8,9-HPCDF	0.0746	0.114	42	50.00	
1,2,3,7,8,9-HXCDD	0.0862	0.133	43	50.00	
1,2,3,7,8,9-HXCDF	0.174	0.192	10	50.00	
OCDD	3.47	3.63	5	50.00	
OCDF	0.321	0.382	17	50.00	
1,2,3,4,7,8-HxCDD	5.24 U	0.0610	200	50.00	J(all detects) UJ(all non-detects)
1,2,3,4,7,8-HXCDF	0.0599	0.194	106	50.00	
1,2,3,6,7,8-HXCDD	5.24 U	0.151	200	50.00	
1,2,3,6,7,8-HXCDF	5.24 U	0.101	200	50.00	
1,2,3,7,8-PECDD	0.0657	5.40 U	200	50.00	
1,2,3,7,8-PECDF	0.156	5.40 U	200	50.00	
2,3,4,6,7,8-HXCDF	5.24 U	0.149	200	50.00	
2,3,4,7,8-PECDF	5.24 U	0.112	200	50.00	

Method: 300.0
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-515-SA5D-SB-0.0-0.5	SL-815-SA5D-SB-0.0-0.5			
FLUORIDE	0.91	1.0	9	50.00	No Qualifiers Applied

Field Duplicate RPD Report

Lab Reporting Batch ID: PH104 **Laboratory: LL**

EDD Filename: PH104 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 6010C
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-515-SA5D-SB-0.0-0.5 (TOT)	SL-815-SA5D-SB-0.0-0.5 (TOT)			
ALUMINUM	24700	24600	0	50.00	
ANTIMONY	1.25	1.25	0	50.00	
ARSENIC	5.42	5.34	1	50.00	
BARIUM	102	100	2	50.00	
BERYLLIUM	0.841	0.829	1	50.00	
BORON	20.1	19.1	5	50.00	
CADMIUM	0.623	0.648	4	50.00	
CALCIUM	45600	37200	20	50.00	
CHROMIUM	34.7	33.8	3	50.00	
COBALT	9.13	9.08	1	50.00	
COPPER	17.6	17.6	0	50.00	
IRON	33100	31800	4	50.00	
LEAD	9.92	9.96	0	50.00	No Qualifiers Applied
LITHIUM	23.8	23.6	1	50.00	
MAGNESIUM	7600	7620	0	50.00	
MANGANESE	421	424	1	50.00	
NICKEL	18.4	18.4	0	50.00	
PHOSPHORUS	720	737	2	50.00	
POTASSIUM	6910	7150	3	50.00	
SODIUM	111	109	2	50.00	
TIN	3.34	3.54	6	50.00	
TITANIUM	1250	1250	0	50.00	
VANADIUM	65.9	64.7	2	50.00	
ZINC	81.6	81.2	0	50.00	
Zirconium	2.64	1.93	31	50.00	
MOLYBDENUM	0.504	0.247	68	50.00	J(all detects)

Method: 6020A
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-515-SA5D-SB-0.0-0.5 (TOT)	SL-815-SA5D-SB-0.0-0.5 (TOT)			
SELENIUM	0.327	0.346	6	50.00	No Qualifiers Applied
SILVER	0.0315	0.0321	2	50.00	
STRONTIUM	89.4	82.8	8	50.00	
THALLIUM	0.329	0.356	8	50.00	

Method: 8015M
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-515-SA5D-SB-0.0-0.5	SL-815-SA5D-SB-0.0-0.5			
EFH (C21-C30)	5.5	10	58	50.00	J(all detects)
EFH (C30-C40)	11	22	67	50.00	

Method: 8081B
Matrix: SO

Analyte	Concentration (ug/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-515-SA5D-SB-0.0-0.5	SL-815-SA5D-SB-0.0-0.5			
4,4'-DDE	0.65	0.58	11	50.00	No Qualifiers Applied

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

Field Duplicate RPD Report

Lab Reporting Batch ID: PH104 **Laboratory: LL**

EDD Filename: PH104 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 8270D SIM
Matrix: SO

Analyte	*Concentration (ug/Kg)*		*Sample RPD*	*eQAPP RPD*	*Flag*
	SL-515-SA5D-SB-0.0-0.5	SL-815-SA5D-SB-0.0-0.5			
BENZO(B)FLUORANTHENE	1.5	1.4	7	50.00	No Qualifiers Applied
CHRYSENE	1.2	1.5	22	50.00	
FLUORANTHENE	1.8 U	0.89	200	50.00	J(all detects) UJ(all non-detects)
NAPHTHALENE	1.8 U	0.79	200	50.00	
PHENANTHRENE	1.8 U	0.81	200	50.00	

Method: 9045M
Matrix: SO

Analyte	*Concentration (pH unit)*		*Sample RPD*	*eQAPP RPD*	*Flag*
	SL-515-SA5D-SB-0.0-0.5	SL-815-SA5D-SB-0.0-0.5			
PH	7.60	8.05	6	50.00	No Qualifiers Applied

Reporting Limit Outliers

Lab Reporting Batch ID: PH104 **Laboratory: LL**

EDD Filename: PH104 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-515-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	J	0.403	5.24	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JBQ	0.159	5.24	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0746	5.24	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JQ	0.0599	5.24	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JQ	0.0862	5.24	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JQ	0.174	5.24	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.0657	5.24	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JQ	0.156	5.24	PQL	ng/Kg	
	OCDD	JB	3.47	10.5	PQL	ng/Kg	
	OCDF	JB	0.321	10.5	PQL	ng/Kg	
SL-815-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	J	0.529	5.40	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JBQ	0.196	5.40	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.114	5.40	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.0610	5.40	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JQ	0.194	5.40	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	J	0.151	5.40	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JQ	0.101	5.40	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JQ	0.133	5.40	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JQ	0.192	5.40	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.149	5.40	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.112	5.40	PQL	ng/Kg	
	OCDD	JB	3.63	10.8	PQL	ng/Kg	
	OCDF	JB	0.382	10.8	PQL	ng/Kg	

Method: 300.0

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-515-SA5D-SB-0.0-0.5	FLUORIDE	J	0.91	1.1	PQL	mg/Kg	J (all detects)
SL-599-SA5D-SB-0.0-0.5	FLUORIDE	J	0.55	1.1	PQL	mg/Kg	J (all detects)
SL-815-SA5D-SB-0.0-0.5	FLUORIDE	J	1.0	1.1	PQL	mg/Kg	J (all detects)

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-515-SA5D-SB-0.0-0.5	ANTIMONY	J	1.25	4.28	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.841	1.07	PQL	mg/Kg	
	CADMIUM	J	0.623	1.07	PQL	mg/Kg	
	MOLYBDENUM	J	0.504	2.14	PQL	mg/Kg	
	TIN	J	3.34	10.7	PQL	mg/Kg	
	Zirconium	J	2.64	5.35	PQL	mg/Kg	
SL-515-SA5D-SB-22.0-23.0	BERYLLIUM	J	0.915	1.17	PQL	mg/Kg	J (all detects)
	BORON	J	11.6	11.7	PQL	mg/Kg	
	CADMIUM	J	0.504	1.17	PQL	mg/Kg	
	TIN	J	3.66	11.7	PQL	mg/Kg	
	Zirconium	J	2.13	5.84	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH104 **Laboratory: LL**

EDD Filename: PH104 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-515-SA5D-SB-4.0-5.0	ANTIMONY	J	1.17	4.69	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	1.03	1.17	PQL	mg/Kg	
	CADMIUM	J	0.558	1.17	PQL	mg/Kg	
	SODIUM	J	116	117	PQL	mg/Kg	
	TIN	J	4.04	11.7	PQL	mg/Kg	
	Zirconium	J	4.45	5.87	PQL	mg/Kg	
SL-515-SA5D-SB-9.0-10.0	ANTIMONY	J	0.958	4.60	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.929	1.15	PQL	mg/Kg	
	CADMIUM	J	0.508	1.15	PQL	mg/Kg	
	TIN	J	3.43	11.5	PQL	mg/Kg	
	Zirconium	J	2.56	5.75	PQL	mg/Kg	
SL-815-SA5D-SB-0.0-0.5	ANTIMONY	J	1.25	4.25	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.829	1.06	PQL	mg/Kg	
	CADMIUM	J	0.648	1.06	PQL	mg/Kg	
	MOLYBDENUM	J	0.247	2.12	PQL	mg/Kg	
	TIN	J	3.54	10.6	PQL	mg/Kg	
	Zirconium	J	1.93	5.31	PQL	mg/Kg	

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-515-SA5D-SB-0.0-0.5	SELENIUM	J	0.327	0.428	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0315	0.214	PQL	mg/Kg	
SL-515-SA5D-SB-22.0-23.0	SILVER	J	0.0505	0.234	PQL	mg/Kg	J (all detects)
SL-515-SA5D-SB-4.0-5.0	SELENIUM	J	0.220	0.469	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0433	0.235	PQL	mg/Kg	
SL-515-SA5D-SB-9.0-10.0	SELENIUM	J	0.140	0.460	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0376	0.230	PQL	mg/Kg	
SL-815-SA5D-SB-0.0-0.5	SELENIUM	J	0.346	0.425	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0321	0.212	PQL	mg/Kg	

Method: 7471B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-515-SA5D-SB-9.0-10.0	MERCURY	J	0.0122	0.0191	PQL	mg/Kg	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH104 **Laboratory: LL**

EDD Filename: PH104 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 8015M

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-515-SA5D-SB-4.0-5.0	EFH (C21-C30) EFH (C30-C40)	J J	4.4 9.0	5.9 12	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-515-SA5D-SB-9.0-10.0	EFH (C21-C30) EFH (C30-C40)	J J	2.8 6.9	5.9 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-515-SA5D-SB-0.0-0.5	4,4'-DDE	J	0.65	1.9	PQL	ug/Kg	J (all detects)
SL-815-SA5D-SB-0.0-0.5	4,4'-DDE	J	0.58	1.8	PQL	ug/Kg	J (all detects)

Method: 8270D SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-515-SA5D-SB-0.0-0.5	BENZO(B)FLUORANTHENE CHRYSENE	J J	1.5 1.2	1.8 1.8	PQL PQL	ug/Kg ug/Kg	J (all detects)
SL-515-SA5D-SB-22.0-23.0	BIS(2-ETHYLHEXYL)PHTHALATE	J	7.6	21	PQL	ug/Kg	J (all detects)
SL-515-SA5D-SB-4.0-5.0	BIS(2-ETHYLHEXYL)PHTHALATE	J	10	21	PQL	ug/Kg	J (all detects)
SL-815-SA5D-SB-0.0-0.5	BENZO(B)FLUORANTHENE CHRYSENE FLUORANTHENE NAPHTHALENE PHENANTHRENE	J J J J J	1.4 1.5 0.89 0.79 0.81	1.8 1.8 1.8 1.8 1.8	PQL PQL PQL PQL PQL	ug/Kg ug/Kg ug/Kg ug/Kg ug/Kg	J (all detects)

LDC #: 30695G4
SDG #: PH104
Laboratory: Eurofins Lancaster Laboratories

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 11/11/13
Page: 1 of 1
Reviewer:
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: 9/9/13
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)	~~NA~~	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= EB-041113 (PH1106) FB= FB-041113 (PH0209)

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-515-SA5D-SB-0.0-0.5	11		21		31	
2	SL-815-SA5D-SB-0.0-0.5	12		22		32	
3	SL-515-SA5D-SB-4.0-5.0	13		23		33	
4	SL-515-SA5D-SB-9.0-10.0	14		24		34	
5	SL-515-SA5D-SB-22.0-23.0	15		25		35	
6	SL-515-SA5D-SB-0.0-0.5MS	16		26		36	
7	SL-515-SA5D-SB-0.0-0.5MSD	17		27		37	
8	SL-515-SA5D-SB-0.0-0.5DUP	18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 30695G4

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	2										
Cu	0.0036	1.8												
Mo	0.0036	1.8	0.504	~~0.25~~ 0.247 APR 18/4/13										

Sampling date: 8/28/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All

Analyte	Blank ID	Sample Identification												
	EB-091113 (SDG: PH106)	Action Limit	1	2										
Cu	0.0040	2												
Mn	0.0019	0.95												
Mo	0.0087	4.35	See FB	See FB										

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



QUALITY ASSURANCE SUMMARY
FORM 5A(MS/MSD)
MATRIX SPIKE/MATRIX SPIKE DUPLICATE
SDG No.: PH104
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7191082BKG Matrix Spike Lab Sample ID: 7191083MS Matrix Spike Duplicate Lab Sample ID: 7191084MSD
Batch Id(s): P25637B, P25638B

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		22412.1864		31621.7553		30881.3515		194.1748	194.1748	MG/KG	4743		4362		2			20	P
Antimony		1.1359	B	24.5252		24.6641		48.5437	48.5437	MG/KG	48	N	48	N	1		75 - 125	20	P
Arsenic		4.9223		19.2311		19.2534		14.5631	14.5631	MG/KG	98		98		0		75 - 125	20	P
Barium		93.0680		291.2010		290.7883		194.1748	194.1748	MG/KG	102		102		0		75 - 125	20	P
Beryllium		0.7641	B	5.6252		5.5845		4.8544	4.8544	MG/KG	100		99		1		75 - 125	20	P
Boron		18.2437		210.3864		209.3252		194.1748	194.1748	MG/KG	99		98		1		75 - 125	20	P
Cadmium		0.5660	B	5.0427		5.0777		4.8544	4.8544	MG/KG	92		93		1		75 - 125	20	P
Calcium		41435.6942		40492.8417		43835.8621		388.3495	388.3495	MG/KG	-243		618		8			20	P
Chromium		31.5000		56.2981		55.1068		19.4175	19.4175	MG/KG	128	N	122		2		75 - 125	20	P
Cobalt		8.2903		52.3534		52.5913		48.5437	48.5437	MG/KG	91		91		0		75 - 125	20	P
Copper		15.9417		42.0126		41.4961		24.2718	24.2718	MG/KG	107		105		1		75 - 125	20	P
Iron		30065.2718		31933.4796		31055.6194		97.0874	97.0874	MG/KG	1924		1020		3			20	P
Lead		9.0039		22.2204		22.3981		14.5631	14.5631	MG/KG	91		92		1		75 - 125	20	P
Lithium		21.6466		124.9534		125.6000		97.0874	97.0874	MG/KG	106		107		1		75 - 125	20	P
Magnesium		6896.5553		7905.1456		7755.2903		194.1748	194.1748	MG/KG	519		442		2			20	P
Manganese		382.0680		431.9515		431.4612		48.5437	48.5437	MG/KG	103		102		0			20	P
Mercury		0.0096	U	0.1820		0.1903		0.1572	0.1601	MG/KG	116		119		4		65 - 135	20	CV
Molybdenum		0.4573	B	180.0330		180.6563		194.1748	194.1748	MG/KG	92		93		0		75 - 125	20	P
Nickel		16.6699		61.6223		61.6301		48.5437	48.5437	MG/KG	93		93		0		75 - 125	20	P
Phosphorus		653.8893		750.4990		726.9660		97.0874	97.0874	MG/KG	100		75		3			20	P
Potassium		6272.6495		8179.2573		8047.6592		970.8738	970.8738	MG/KG	196		183		2			20	P
Selenium	78	0.2973	B	2.0117		2.1184		1.9417	1.9417	MG/KG	88		94		5		75 - 125	20	MS
Silver	107	0.0286	B	9.6369		9.8447		9.7087	9.7087	MG/KG	99		101		2		75 - 125	20	MS
Sodium		100.6524		1070.7942		1085.1058		970.8738	970.8738	MG/KG	100		101		1		75 - 125	20	P
Strontium	88	81.1650		90.1456		92.3301		7.7670	7.7670	MG/KG	116		144		2			20	MS
Thallium	203	0.2990		0.6833		0.6751		0.3883	0.3883	MG/KG	99		97		1		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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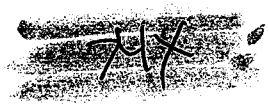

QUALITY ASSURANCE SUMMARY
FORM 5A(MS/MSD)
MATRIX SPIKE/MATRIX SPIKE DUPLICATE
SDG No.: PH104
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7191082BKG Matrix Spike Lab Sample ID: 7191083MS Matrix Spike Duplicate Lab Sample ID: 7191084MSD
Batch Id(s): P25637B, P25638B

		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		3.0369	B	344.5932		345.0243		388.3495	388.3495	MG/KG	88		88		0		75 - 125	20	P
Titanium		1135.2505		1722.9505		1669.6117		97.0874	97.0874	MG/KG	605		550		3			20	P
Vanadium		59.8282		122.8748		120.1883		48.5437	48.5437	MG/KG	130	N	124		2		75 - 125	20	P
Zinc		74.1078		124.1660		123.3029		48.5437	48.5437	MG/KG	103		101		1		75 - 125	20	P
Zirconium		2.3981	B	77.6650		77.4184		97.0874	97.0874	MG/KG	78		77		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.: PH104
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7191082BKG Duplicate Lab Sample ID: 7191085DUP
Batch ID(s): P25637B, P25638B
Concentration Units: MG/KG

Analyte	Mass	Control Limit	Samples (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum			22412.1864		22931.0592		2		P
Antimony			1.1359	B	0.9709	B	16		P
Arsenic		3.9	4.9223		4.7320		4		P
Barium			93.0680		92.5699		1		P
Beryllium			0.7641	B	0.7718	B	1		P
Boron		9.7	18.2437		17.5214		4		P
Cadmium			0.5660	B	0.5680	B	0		P
Calcium			41435.6942		42533.7204		3		P
Chromium			31.5000		31.2825		1		P
Cobalt			8.2903		8.5262		3		P
Copper			15.9417		16.0854		1		P
Iron			30065.2718		30156.8718		0		P
Lead		2.9	9.0039		9.0350		0		P
Lithium			21.6466		22.0437		2		P
Magnesium			6896.5553		7035.8010		2		P
Manganese			382.0680		381.3825		0		P
Mercury			0.0096	U	0.0095	U			CV
Molybdenum			0.4573	B	0.2126	B	73		P
Nickel			16.6699		16.7408		0		P
Phosphorus			653.8893		652.8816		0		P
Potassium			6272.6495		6411.6864		2		P
Selenium	78		0.2973	B	0.2858	B	4		MS
Silver	107		0.0286	B	0.0299	B	4		MS
Sodium		97.1	100.6524		103.6476		3		P
Strontium	88		81.1650		76.5049		6		MS
Thallium	203	0.2	0.2990		0.3285		9		MS
Tin			3.0369	B	3.2835	B	8		P
Titanium			1135.2505		1164.7961		3		P
Vanadium			59.8282		60.1670		1		P
Zinc			74.1078		74.5592		1		P
Zirconium			2.3981	B	3.3825	B	34		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.: PH104
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7191082BKG Serial Dilution Lab Sample ID: 7191082L
Batch ID(s): P25637B
Concentration Units: UG/L

Analyte	Mass	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Diff.	Q	M
Aluminum		230845.5200		245277.4500		6		P
Antimony		11.7000	B	37.0000	U	100		P
Arsenic		50.7000		70.2000	B	38		P
Barium		958.6000		1004.5000		5		P
Beryllium		7.8700	B	8.3500	B	6		P
Boron		187.9100		209.6500	B	12		P
Cadmium		5.8300	B	8.0000	B	37		P
Calcium		426787.6500		446670.9500		5		P
Chromium		324.4500		337.9000		4		P
Cobalt		85.3900		95.1500		11	E	P
Copper		164.2000		168.2500		2		P
Iron		154836.1500		150588.2000		3		P
Lead		92.7400		93.1500	B	0		P
Lithium		222.9600		227.6000		2		P
Magnesium		71034.5200		74843.9500		5		P
Manganese		3935.3000		4080.5500		4		P
Molybdenum		4.7100	B	15.3000	B	225		P
Nickel		171.7000		186.5000		9		P
Phosphorus		6735.0600		6922.3000		3		P
Potassium		64608.2900		66473.3500		3		P
Selenium	78	1.5310	B	2.5000	U	100		MS
Silver	107	0.1474	B	0.6500	U	100		MS
Sodium		1036.7200		1065.8500	B	3		P
Strontium	88	418.0000		517.0000		24	E	MS
Thallium	203	1.5400		2.0470	B	33		MS
Tin		31.2800	B	37.2500	B	19		P
Titanium		11693.0800		12231.6000		5		P
Vanadium		616.2300		636.4000		3		P
Zinc		763.3100		779.4000		2		P
Zirconium		24.7000	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.

5/05/A CA

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 5D

SDG: PH105

Prepared for

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December 10, 2013

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on September 10, 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 and 7471B
Herbicides by EPA SW 846 Method 8151A
Total Petroleum Hydrocarbons (TPH) as Gasoline by EPA SW 846 Method 8015M
TPH as Extractables by EPA SW 846 Method 8015M
Dioxins and Dibenzofurans by EPA Method 1613B

Wet Chemistry:
Fluoride by EPA Method 300.0

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 duplicates. No samples in this SDG were subjected to Level IV evaluation.

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

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

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 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.

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 fluoride and one pair for metals in SDG PH107. 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 PH107.

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 fluoride. The associated sample results were qualified as detected estimated (J). 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 SVOCs. No data were qualified 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 (in SDG PH107). The analysis criteria were met with the following exceptions:

Diluted Sample	Analyte	%D (Limits)	Associated Samples	Flag	A or P
SL-553-SA5D-SB-0.0-0.5 (SDG PH107)	Cobalt Strontium	12 (≤10) 12 (≤10)	All soil samples in SDG PH105	J (all detects) UJ (all non-detects)	A

The associated sample results were qualified as detected estimated (J).

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 PH105	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 fluoride. All RPDs were within QC limits with the exception of fluoride. In these duplicate pairs, the associated sample results were qualified as detected estimated (J). 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 volatile contaminants were found in the trip blank.

One equipment blank (from SDG PH106) was collected and analyzed for SVOCs, pesticides, PCBs, metals, herbicides, TPH as gasoline, TPH as extractables, dioxins and fluoride. The equipment blank had detections for SVOCs, metals and dioxins. The associated sample results were qualified as non-detected (U) due to equipment blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the equipment blanks were not qualified. The equipment blank outlier reports are presented in Enclosure I.

One field blank (from SDG PH029) was collected and analyzed for SVOCs, pesticides, PCBs, metals, herbicides, TPH as gasoline, TPH as extractables, dioxins and fluoride. The field blank had detections for 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
10-Sep-2013	SL-605-SA5D-SB-0.0-0.5	7192789	N	METHOD	300.0	III
10-Sep-2013	SL-605-SA5D-SB-4.0-5.0	7192790	N	METHOD	300.0	III
10-Sep-2013	SL-605-SA5D-SB-4.0-5.0MS	7192791	MS	METHOD	300.0	III
10-Sep-2013	SL-605-SA5D-SB-4.0-5.0DUP	7192792	DUP	METHOD	300.0	III
10-Sep-2013	TB-091013	7192780	TB	5030B	8015M	III
10-Sep-2013	SL-905-SA5D-SB-4.0-5.0	7192793	FD	METHOD	300.0	III
10-Sep-2013	SL-905-SA5D-SB-4.0-5.0DUP	P192793D271316A	DUP	METHOD	300.0	III
10-Sep-2013	SL-905-SA5D-SB-4.0-5.0MS	P192793R271333A	MS	METHOD	300.0	III
10-Sep-2013	SL-605-SA5D-SB-9.0-10.0	7192794	N	METHOD	300.0	III
10-Sep-2013	SL-605-SA5D-SB-14.5-15.5	7192795	N	METHOD	300.0	III
10-Sep-2013	SL-604-SA5D-SB-0.0-0.5	7192785	N	METHOD	300.0	III
10-Sep-2013	SL-604-SA5D-SB-4.0-5.0	7192786	N	METHOD	300.0	III
10-Sep-2013	SL-604-SA5D-SB-9.0-10.0	7192787	N	METHOD	300.0	III
10-Sep-2013	SL-604-SA5D-SB-16.5-17.5	7192788	N	METHOD	300.0	III
10-Sep-2013	SL-603-SA5D-SB-0.0-0.5	7192781	N	METHOD	300.0	III
10-Sep-2013	SL-603-SA5D-SB-4.0-5.0	7192782	N	METHOD	300.0	III
10-Sep-2013	SL-603-SA5D-SB-9.0-10.0	7192783	N	METHOD	300.0	III
10-Sep-2013	SL-603-SA5D-SB-13.0-14.0	7192784	N	METHOD	300.0	III
10-Sep-2013	SL-606-SA5D-SB-0.0-0.5	7192800	N	METHOD	300.0	III
10-Sep-2013	SL-606-SA5D-SB-4.0-5.0	7192801	N	METHOD	300.0	III
10-Sep-2013	SL-606-SA5D-SB-9.0-10.0	7192802	N	METHOD	300.0	III
10-Sep-2013	SL-606-SA5D-SB-13.0-14.0	7192803	N	METHOD	300.0	III
10-Sep-2013	SL-606-SA5D-SB-13.0-14.0D	P192803D271712B	DUP	METHOD	300.0	III
10-Sep-2013	SL-606-SA5D-SB-13.0-14.0M	P192803R271729B	MS	METHOD	300.0	III
10-Sep-2013	SL-518-SA5D-SB-0.0-0.5	7192796	N	3050B	6010C	III
10-Sep-2013	SL-518-SA5D-SB-0.0-0.5	7192796	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
10-Sep-2013	SL-518-SA5D-SB-0.0-0.5	7192796	N	3546	8015M	III
10-Sep-2013	SL-518-SA5D-SB-0.0-0.5	7192796	N	3546	8081B	III
10-Sep-2013	SL-518-SA5D-SB-0.0-0.5	7192796	N	3546	8082A	III
10-Sep-2013	SL-518-SA5D-SB-0.0-0.5	7192796	N	3546	8270D SIM	III
10-Sep-2013	SL-518-SA5D-SB-0.0-0.5	7192796	N	3550B	8151A	III
10-Sep-2013	SL-518-SA5D-SB-0.0-0.5	7192796	N	METHOD	1613B	III
10-Sep-2013	SL-518-SA5D-SB-0.0-0.5	7192796	N	METHOD	300.0	III
10-Sep-2013	SL-518-SA5D-SB-0.0-0.5	7192796	N	METHOD	7471B	III
10-Sep-2013	SL-518-SA5D-SB-4.0-5.0	7192797	N	3050B	6010C	III
10-Sep-2013	SL-518-SA5D-SB-4.0-5.0	7192797	N	3050B	6020A	III
10-Sep-2013	SL-518-SA5D-SB-4.0-5.0	7192797	N	3546	8015M	III
10-Sep-2013	SL-518-SA5D-SB-4.0-5.0	7192797	N	3546	8081B	III
10-Sep-2013	SL-518-SA5D-SB-4.0-5.0	7192797	N	3546	8082A	III
10-Sep-2013	SL-518-SA5D-SB-4.0-5.0	7192797	N	3546	8270D SIM	III
10-Sep-2013	SL-518-SA5D-SB-4.0-5.0	7192797	N	3550B	8151A	III
10-Sep-2013	SL-518-SA5D-SB-4.0-5.0	7192797	N	5035A	8015M	III
10-Sep-2013	SL-518-SA5D-SB-4.0-5.0	7192797	N	METHOD	300.0	III
10-Sep-2013	SL-518-SA5D-SB-4.0-5.0	7192797	N	METHOD	7471B	III
10-Sep-2013	SL-518-SA5D-SB-9.0-10.0	7192798	N	3050B	6010C	III
10-Sep-2013	SL-518-SA5D-SB-9.0-10.0	7192798	N	3050B	6020A	III
10-Sep-2013	SL-518-SA5D-SB-9.0-10.0	7192798	N	3546	8015M	III
10-Sep-2013	SL-518-SA5D-SB-9.0-10.0	7192798	N	3546	8081B	III
10-Sep-2013	SL-518-SA5D-SB-9.0-10.0	7192798	N	3546	8082A	III
10-Sep-2013	SL-518-SA5D-SB-9.0-10.0	7192798	N	3546	8270D SIM	III
10-Sep-2013	SL-518-SA5D-SB-9.0-10.0	7192798	N	3550B	8151A	III
10-Sep-2013	SL-518-SA5D-SB-9.0-10.0	7192798	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
10-Sep-2013	SL-518-SA5D-SB-9.0-10.0	7192798	N	METHOD	300.0	III
10-Sep-2013	SL-518-SA5D-SB-9.0-10.0	7192798	N	METHOD	7471B	III
10-Sep-2013	SL-518-SA5D-SB-15.0-16.0	7192799	N	3050B	6010C	III
10-Sep-2013	SL-518-SA5D-SB-15.0-16.0	7192799	N	3050B	6020A	III
10-Sep-2013	SL-518-SA5D-SB-15.0-16.0	7192799	N	3546	8015M	III
10-Sep-2013	SL-518-SA5D-SB-15.0-16.0	7192799	N	3546	8081B	III
10-Sep-2013	SL-518-SA5D-SB-15.0-16.0	7192799	N	3546	8082A	III
10-Sep-2013	SL-518-SA5D-SB-15.0-16.0	7192799	N	3546	8270D SIM	III
10-Sep-2013	SL-518-SA5D-SB-15.0-16.0	7192799	N	3550B	8151A	III
10-Sep-2013	SL-518-SA5D-SB-15.0-16.0	7192799	N	5035A	8015M	III
10-Sep-2013	SL-518-SA5D-SB-15.0-16.0	7192799	N	METHOD	300.0	III
10-Sep-2013	SL-518-SA5D-SB-15.0-16.0	7192799	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: PH105 **Laboratory: LL**

EDD Filename: PH105 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: GENCHEM

Method: 300.0 **Matrix: SO**

Sample ID: SL-518-SA5D-SB-0.0-0.5 **Collected: 9/10/2013 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
FLUORIDE	1.7	J	1.5	MDL	3.8	PQL	mg/Kg	J	Z, Q

Sample ID: SL-518-SA5D-SB-15.0-16.0 **Collected: 9/10/2013 1:50:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORIDE	1.1	J	0.44	MDL	1.1	PQL	mg/Kg	J	Q

Sample ID: SL-518-SA5D-SB-4.0-5.0 **Collected: 9/10/2013 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
FLUORIDE	0.75	J	0.47	MDL	1.2	PQL	mg/Kg	J	Z, Q

Sample ID: SL-518-SA5D-SB-9.0-10.0 **Collected: 9/10/2013 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
FLUORIDE	1.3		0.47	MDL	1.2	PQL	mg/Kg	J	Q

Sample ID: SL-603-SA5D-SB-0.0-0.5 **Collected: 9/10/2013 10:10:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORIDE	1.2		0.42	MDL	1.0	PQL	mg/Kg	J	Q, E

Sample ID: SL-603-SA5D-SB-13.0-14.0 **Collected: 9/10/2013 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
FLUORIDE	2.3		0.44	MDL	1.1	PQL	mg/Kg	J	Q, E

Sample ID: SL-603-SA5D-SB-4.0-5.0 **Collected: 9/10/2013 10:20:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORIDE	3.3		0.45	MDL	1.1	PQL	mg/Kg	J	Q, E

Sample ID: SL-603-SA5D-SB-9.0-10.0 **Collected: 9/10/2013 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
FLUORIDE	6.5		0.46	MDL	1.1	PQL	mg/Kg	J	Q, E

* denotes a non-reportable result

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

Data Qualifier Summary

Lab Reporting Batch ID: PH105 **Laboratory: LL**

EDD Filename: PH105 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: GENCHEM

Method: 300.0 **Matrix: SO**

Sample ID: SL-604-SA5D-SB-0.0-0.5 **Collected: 9/10/2013 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
FLUORIDE	1.6		0.44	MDL	1.1	PQL	mg/Kg	J	Q, E

Sample ID: SL-604-SA5D-SB-16.5-17.5 **Collected: 9/10/2013 9:25:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORIDE	2.3		0.45	MDL	1.1	PQL	mg/Kg	J	Q, E

Sample ID: SL-604-SA5D-SB-4.0-5.0 **Collected: 9/10/2013 9:05:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORIDE	2.0		0.45	MDL	1.1	PQL	mg/Kg	J	Q, E

Sample ID: SL-604-SA5D-SB-9.0-10.0 **Collected: 9/10/2013 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
FLUORIDE	5.7		0.45	MDL	1.1	PQL	mg/Kg	J	Q, E

Sample ID: SL-605-SA5D-SB-0.0-0.5 **Collected: 9/10/2013 7:45:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORIDE	1.9		0.45	MDL	0.56	PQL	mg/Kg	J	Q, E

Sample ID: SL-605-SA5D-SB-14.5-15.5 **Collected: 9/10/2013 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
FLUORIDE	1.6		0.43	MDL	1.1	PQL	mg/Kg	J	Q

Sample ID: SL-605-SA5D-SB-4.0-5.0 **Collected: 9/10/2013 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
FLUORIDE	3.2		0.46	MDL	1.2	PQL	mg/Kg	J	Q, E, FD

Sample ID: SL-605-SA5D-SB-9.0-10.0 **Collected: 9/10/2013 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
FLUORIDE	2.6		0.45	MDL	1.1	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: PH105 **Laboratory: LL**

EDD Filename: PH105 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: GENCHEM

Method: 300.0 **Matrix: SO**

Sample ID: **SL-606-SA5D-SB-0.0-0.5** *Collected:* **9/10/2013 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
FLUORIDE	0.83	J	0.43	MDL	1.1	PQL	mg/Kg	J	Z, Q

Sample ID: **SL-606-SA5D-SB-13.0-14.0** *Collected:* **9/10/2013 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
FLUORIDE	1.5		0.43	MDL	1.1	PQL	mg/Kg	J	Q

Sample ID: **SL-606-SA5D-SB-4.0-5.0** *Collected:* **9/10/2013 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
FLUORIDE	1.4		0.45	MDL	1.1	PQL	mg/Kg	J	Q

Sample ID: **SL-606-SA5D-SB-9.0-10.0** *Collected:* **9/10/2013 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
FLUORIDE	2.2		0.45	MDL	1.1	PQL	mg/Kg	J	Q

Sample ID: **SL-905-SA5D-SB-4.0-5.0** *Collected:* **9/10/2013 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
FLUORIDE	1.5		0.46	MDL	1.2	PQL	mg/Kg	J	Q, FD

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-518-SA5D-SB-0.0-0.5** *Collected:* **9/10/2013 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	4.32	U	0.800	MDL	4.32	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.983	J	0.0724	MDL	1.08	PQL	mg/Kg	J	Z
BORON	5.36	J	0.908	MDL	10.8	PQL	mg/Kg	J	Z
CADMIUM	0.513	J	0.0821	MDL	1.08	PQL	mg/Kg	J	Z
COBALT	9.33		0.107	MDL	1.08	PQL	mg/Kg	J	A
MOLYBDENUM	0.351	J	0.184	MDL	2.16	PQL	mg/Kg	U	F, F
SODIUM	90.4	J	18.1	MDL	108	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: PH105 **Laboratory: LL**

EDD Filename: PH105 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-518-SA5D-SB-0.0-0.5 **Collected: 9/10/2013 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
TIN	3.02	J	0.238	MDL	10.8	PQL	mg/Kg	U	B

Sample ID: SL-518-SA5D-SB-15.0-16.0 **Collected: 9/10/2013 1:50:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.32	U	0.800	MDL	4.32	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.665	J	0.0724	MDL	1.08	PQL	mg/Kg	J	Z
CADMIUM	0.196	J	0.0821	MDL	1.08	PQL	mg/Kg	J	Z
COBALT	4.38		0.107	MDL	1.08	PQL	mg/Kg	J	A
SODIUM	87.7	J	18.1	MDL	108	PQL	mg/Kg	J	Z
TIN	2.92	J	0.238	MDL	10.8	PQL	mg/Kg	U	B
Zirconium	3.64	J	0.908	MDL	5.40	PQL	mg/Kg	J	Z

Sample ID: SL-518-SA5D-SB-4.0-5.0 **Collected: 9/10/2013 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	4.59	U	0.850	MDL	4.59	PQL	mg/Kg	UJ	Q
BERYLLIUM	1.07	J	0.0769	MDL	1.15	PQL	mg/Kg	J	Z
BORON	2.63	J	0.964	MDL	11.5	PQL	mg/Kg	J	Z
CADMIUM	0.352	J	0.0872	MDL	1.15	PQL	mg/Kg	J	Z
COBALT	7.61		0.114	MDL	1.15	PQL	mg/Kg	J	A
MOLYBDENUM	0.240	J	0.195	MDL	2.30	PQL	mg/Kg	U	F, F
SODIUM	99.5	J	19.2	MDL	115	PQL	mg/Kg	J	Z
TIN	3.29	J	0.253	MDL	11.5	PQL	mg/Kg	U	B

Sample ID: SL-518-SA5D-SB-9.0-10.0 **Collected: 9/10/2013 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	4.63	U	0.856	MDL	4.63	PQL	mg/Kg	UJ	Q
BERYLLIUM	1.04	J	0.0775	MDL	1.16	PQL	mg/Kg	J	Z
CADMIUM	0.212	J	0.0879	MDL	1.16	PQL	mg/Kg	J	Z
COBALT	10.1		0.115	MDL	1.16	PQL	mg/Kg	J	A
MOLYBDENUM	0.296	J	0.197	MDL	2.31	PQL	mg/Kg	U	F, F
SODIUM	98.0	J	19.3	MDL	116	PQL	mg/Kg	J	Z
TIN	3.35	J	0.254	MDL	11.6	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: PH105 **Laboratory: LL**

EDD Filename: PH105 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: **SL-518-SA5D-SB-0.0-0.5** ***Collected:*** **9/10/2013 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	0.265	J	0.108	MDL	0.432	PQL	mg/Kg	J	Z

Sample ID: **SL-518-SA5D-SB-0.0-0.5** ***Collected:*** **9/10/2013 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	0.0639	J	0.0281	MDL	0.216	PQL	mg/Kg	J	Z, Q
STRONTIUM	36.2		0.0735	MDL	0.432	PQL	mg/Kg	J	Q, A
THALLIUM	0.437		0.0324	MDL	0.216	PQL	mg/Kg	J	Q

Sample ID: **SL-518-SA5D-SB-15.0-16.0** ***Collected:*** **9/10/2013 1:50:00** ***Analysis Type:*** **RES** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	25.9		0.0735	MDL	0.432	PQL	mg/Kg	J	Q, A
THALLIUM	0.322		0.0324	MDL	0.216	PQL	mg/Kg	J	Q

Sample ID: **SL-518-SA5D-SB-4.0-5.0** ***Collected:*** **9/10/2013 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	0.116	J	0.115	MDL	0.459	PQL	mg/Kg	J	Z

Sample ID: **SL-518-SA5D-SB-4.0-5.0** ***Collected:*** **9/10/2013 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	0.0557	J	0.0298	MDL	0.230	PQL	mg/Kg	J	Z, Q
STRONTIUM	54.0		0.0781	MDL	0.459	PQL	mg/Kg	J	Q, A
THALLIUM	0.453		0.0344	MDL	0.230	PQL	mg/Kg	J	Q

Sample ID: **SL-518-SA5D-SB-9.0-10.0** ***Collected:*** **9/10/2013 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	0.0508	J	0.0301	MDL	0.231	PQL	mg/Kg	J	Z, Q
STRONTIUM	36.8		0.0787	MDL	0.463	PQL	mg/Kg	J	Q, 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: PH105 **Laboratory: LL**

EDD Filename: PH105 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: **SL-518-SA5D-SB-9.0-10.0** *Collected:* **9/10/2013 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
THALLIUM	0.345		0.0347	MDL	0.231	PQL	mg/Kg	J	Q

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: **SL-518-SA5D-SB-15.0-16.0** *Collected:* **9/10/2013 1:50:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0109	J	0.0108	MDL	0.0181	PQL	mg/Kg	J	Z

Sample ID: **SL-518-SA5D-SB-4.0-5.0** *Collected:* **9/10/2013 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
MERCURY	0.0179	J	0.0111	MDL	0.0186	PQL	mg/Kg	J	Z

Sample ID: **SL-518-SA5D-SB-9.0-10.0** *Collected:* **9/10/2013 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	0.0181	J	0.0112	MDL	0.0186	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-518-SA5D-SB-0.0-0.5** *Collected:* **9/10/2013 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	2.68	J	0.0989	MDL	5.32	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.450	JB	0.0343	MDL	5.32	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.126	JBQ	0.0561	MDL	5.32	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0869	JQ	0.0521	MDL	5.32	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.121	JQ	0.0476	MDL	5.32	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.163	JQ	0.0544	MDL	5.32	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.165	J	0.0437	MDL	5.32	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.209	J	0.0520	MDL	5.32	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.338	J	0.0588	MDL	5.32	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: PH105 **Laboratory: LL**

EDD Filename: PH105 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-518-SA5D-SB-0.0-0.5 *Collected:* 9/10/2013 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
1,2,3,7,8-PECDF	0.487	JQ	0.0678	MDL	5.32	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.131	JBQ	0.0447	MDL	5.32	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.105	JQ	0.0645	MDL	5.32	PQL	ng/Kg	J	Z
OCDF	0.774	JB	0.0731	MDL	10.6	PQL	ng/Kg	J	Z

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: SL-518-SA5D-SB-4.0-5.0 *Collected:* 9/10/2013 1:30:00 *Analysis Type:* REA *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C21-C30)	5.1	J	2.3	MDL	5.8	PQL	mg/Kg	J	Z
EFH (C30-C40)	8.6	J	4.6	MDL	12	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 8081B **Matrix: SO**

Sample ID: SL-518-SA5D-SB-0.0-0.5 *Collected:* 9/10/2013 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
4,4'-DDE	1.2	J	0.36	MDL	1.9	PQL	ug/Kg	J	Z

Method Category: SVOA

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

Sample ID: SL-518-SA5D-SB-0.0-0.5 *Collected:* 9/10/2013 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	0.76	J	0.73	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(A)ANTHRACENE	0.84	J	0.73	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(B)FLUORANTHENE	1.7	J	0.73	MDL	1.8	PQL	ug/Kg	J	Z
NAPHTHALENE	0.99	J	0.73	MDL	1.8	PQL	ug/Kg	J	Z
PHENANTHRENE	1.4	J	0.73	MDL	1.8	PQL	ug/Kg	J	Z
PYRENE	1.4	J	0.73	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: PH105 **Laboratory: LL**

EDD Filename: PH105 **eQAPP Name: CDM_SSFL_131101_Lan**

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

* denotes a non-reportable result

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

Data Qualifier Summary

Lab Reporting Batch ID: PH105 **Laboratory: LL**

EDD Filename: PH105 **eQAPP Name: CDM_SSFL_131101_Lan**

Reason Code Legend

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

PH105

Method Blank Outlier Report

Lab Reporting Batch ID: PH105 **Laboratory: LL**

EDD Filename: PH105 **eQAPP Name: CDM_SSFL_131101_Lan**

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2550B370931	9/14/2013 9:31:00 AM	1,2,3,4,6,7,8-HPCDF 1,2,3,4,7,8,9-HPCDF 2,3,4,6,7,8-HXCDF OCDD OCDF	0.0282 ng/Kg 0.0482 ng/Kg 0.0500 ng/Kg 0.194 ng/Kg 0.0941 ng/Kg	SL-518-SA5D-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-518-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.126 ng/Kg	0.126U ng/Kg
SL-518-SA5D-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.131 ng/Kg	0.131U ng/Kg

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P26237AB222024	9/21/2013 8:24:00 PM	CALCIUM TIN	10.3 mg/Kg 1.36 mg/Kg	SL-518-SA5D-SB-0.0-0.5 SL-518-SA5D-SB-15.0-16.0 SL-518-SA5D-SB-4.0-5.0 SL-518-SA5D-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-518-SA5D-SB-0.0-0.5(RES)	TIN	3.02 mg/Kg	3.02U mg/Kg
SL-518-SA5D-SB-15.0-16.0(RES)	TIN	2.92 mg/Kg	2.92U mg/Kg
SL-518-SA5D-SB-4.0-5.0(RES)	TIN	3.29 mg/Kg	3.29U mg/Kg
SL-518-SA5D-SB-9.0-10.0(RES)	TIN	3.35 mg/Kg	3.35U mg/Kg

Equipment Rinsate Blank Outlier Report

Lab Reporting Batch ID: PH105 **Laboratory: LL**

EDD Filename: PH105 **eQAPP Name: CDM_SSFL_131101_Lan**

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

Equipment Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
EB-091113(REA2)	9/11/2013 3:00:00 PM	COPPER MANGANESE MOLYBDENUM	0.004 mg/L 0.0019 mg/L 0.0087 mg/L	SL-518-SA5D-SB-0.0-0.5 SL-518-SA5D-SB-15.0-16.0 SL-518-SA5D-SB-4.0-5.0 SL-518-SA5D-SB-9.0-10.0 SL-603-SA5D-SB-0.0-0.5 SL-603-SA5D-SB-13.0-14.0 SL-603-SA5D-SB-4.0-5.0 SL-603-SA5D-SB-9.0-10.0 SL-604-SA5D-SB-0.0-0.5 SL-604-SA5D-SB-16.5-17.5 SL-604-SA5D-SB-4.0-5.0 SL-604-SA5D-SB-9.0-10.0 SL-605-SA5D-SB-0.0-0.5 SL-605-SA5D-SB-14.5-15.5 SL-605-SA5D-SB-4.0-5.0 SL-605-SA5D-SB-9.0-10.0 SL-606-SA5D-SB-0.0-0.5 SL-606-SA5D-SB-13.0-14.0 SL-606-SA5D-SB-4.0-5.0 SL-606-SA5D-SB-9.0-10.0 SL-905-SA5D-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-518-SA5D-SB-0.0-0.5(RES)	MOLYBDENUM	0.351 mg/Kg	0.351U mg/Kg
SL-518-SA5D-SB-4.0-5.0(RES)	MOLYBDENUM	0.240 mg/Kg	0.240U mg/Kg
SL-518-SA5D-SB-9.0-10.0(RES)	MOLYBDENUM	0.296 mg/Kg	0.296U mg/Kg

Field Blank Outlier Report

Lab Reporting Batch ID: PH105 **Laboratory: LL**

EDD Filename: PH105 **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-518-SA5D-SB-0.0-0.5 SL-518-SA5D-SB-15.0-16.0 SL-518-SA5D-SB-4.0-5.0 SL-518-SA5D-SB-9.0-10.0 SL-603-SA5D-SB-0.0-0.5 SL-603-SA5D-SB-13.0-14.0 SL-603-SA5D-SB-4.0-5.0 SL-603-SA5D-SB-9.0-10.0 SL-604-SA5D-SB-0.0-0.5 SL-604-SA5D-SB-16.5-17.5 SL-604-SA5D-SB-4.0-5.0 SL-604-SA5D-SB-9.0-10.0 SL-605-SA5D-SB-0.0-0.5 SL-605-SA5D-SB-14.5-15.5 SL-605-SA5D-SB-4.0-5.0 SL-605-SA5D-SB-9.0-10.0 SL-606-SA5D-SB-0.0-0.5 SL-606-SA5D-SB-13.0-14.0 SL-606-SA5D-SB-4.0-5.0 SL-606-SA5D-SB-9.0-10.0 SL-905-SA5D-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-518-SA5D-SB-0.0-0.5(RES)	MOLYBDENUM	0.351 mg/Kg	0.351U mg/Kg
SL-518-SA5D-SB-4.0-5.0(RES)	MOLYBDENUM	0.240 mg/Kg	0.240U mg/Kg
SL-518-SA5D-SB-9.0-10.0(RES)	MOLYBDENUM	0.296 mg/Kg	0.296U mg/Kg

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH105 **Laboratory: LL**

EDD Filename: PH105 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: **300.0**
Matrix: **SO**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
SL-605-SA5D-SB-4.0-5.0MS (SL-603-SA5D-SB-0.0-0.5 SL-603-SA5D-SB-13.0-14.0 SL-603-SA5D-SB-4.0-5.0 SL-603-SA5D-SB-9.0-10.0 SL-604-SA5D-SB-0.0-0.5 SL-604-SA5D-SB-16.5-17.5 SL-604-SA5D-SB-4.0-5.0 SL-604-SA5D-SB-9.0-10.0 SL-605-SA5D-SB-0.0-0.5 SL-605-SA5D-SB-4.0-5.0)	FLUORIDE	65	-	80.00-120.00	-	FLUORIDE	J (all detects) UJ (all non-detects)
SL-905-SA5D-SB-4.0-5.0MS (SL-518-SA5D-SB-0.0-0.5 SL-518-SA5D-SB-15.0-16.0 SL-518-SA5D-SB-4.0-5.0 SL-518-SA5D-SB-9.0-10.0 SL-605-SA5D-SB-14.5-15.5 SL-605-SA5D-SB-9.0-10.0 SL-606-SA5D-SB-0.0-0.5 SL-606-SA5D-SB-4.0-5.0 SL-606-SA5D-SB-9.0-10.0 SL-905-SA5D-SB-4.0-5.0)	FLUORIDE	70	-	80.00-120.00	-	FLUORIDE	J(all detects) UJ(all non-detects)
SL-606-SA5D-SB-13.0-14.0MS (SL-606-SA5D-SB-13.0-14.0)	FLUORIDE	77	-	80.00-120.00	-	FLUORIDE	J(all detects) UJ(all non-detects)

Lab Duplicate Outlier Report

Lab Reporting Batch ID: PH105 **Laboratory: LL**

EDD Filename: PH105 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 300.0
Matrix: SO

QC Sample ID (Associated Sample ID)	*Analyte*	*Sample RPD*	*eQAPP RPD*	*Flag*
SL-605-SA5D-SB-4.0-5.0DUP (SL-603-SA5D-SB-0.0-0.5 SL-603-SA5D-SB-13.0-14.0 SL-603-SA5D-SB-4.0-5.0 SL-603-SA5D-SB-9.0-10.0 SL-604-SA5D-SB-0.0-0.5 SL-604-SA5D-SB-16.5-17.5 SL-604-SA5D-SB-4.0-5.0 SL-604-SA5D-SB-9.0-10.0 SL-605-SA5D-SB-0.0-0.5 SL-605-SA5D-SB-4.0-5.0)	FLUORIDE	2.9 mg/kg	≤0.92 mg/kg	J (all detects) UJ (all non-detects)

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: PH105 **Laboratory: LL**

EDD Filename: PH105 **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*
P5LBLCSQ260429 (SL-518-SA5D-SB-0.0-0.5 SL-518-SA5D-SB-15.0-16.0 SL-518-SA5D-SB-4.0-5.0 SL-518-SA5D-SB-9.0-10.0)	N-NITROSODIMETHYLAMINE	189	-	71.00-124.00	-	N-NITROSODIMETHYLAMINE	J (all detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: PH105 **Laboratory: LL**

EDD Filename: PH105 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 160.3M
Matrix: SO

Analyte	Concentration (%)		Sample RPD	eQAPP RPD	Flag
	SL-605-SA5D-SB-4.0-5.0	SL-905-SA5D-SB-4.0-5.0			
MOISTURE	13.9	14.5	4		No Qualifiers Applied

Method: 300.0
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-605-SA5D-SB-4.0-5.0	SL-905-SA5D-SB-4.0-5.0			
FLUORIDE	3.2	1.5	72	50.00	J(all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH105 **Laboratory: LL**

EDD Filename: PH105 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-518-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	J	2.68	5.32	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.450	5.32	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.126	5.32	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.0869	5.32	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JQ	0.121	5.32	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JQ	0.163	5.32	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	J	0.165	5.32	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDD	J	0.209	5.32	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	J	0.338	5.32	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JQ	0.487	5.32	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.131	5.32	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.105	5.32	PQL	ng/Kg	
	OCDF	JB	0.774	10.6	PQL	ng/Kg	

Method: 300.0

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-518-SA5D-SB-0.0-0.5	FLUORIDE	J	1.7	3.8	PQL	mg/Kg	J (all detects)
SL-518-SA5D-SB-4.0-5.0	FLUORIDE	J	0.75	1.2	PQL	mg/Kg	J (all detects)
SL-606-SA5D-SB-0.0-0.5	FLUORIDE	J	0.83	1.1	PQL	mg/Kg	J (all detects)

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-518-SA5D-SB-0.0-0.5	BERYLLIUM	J	0.983	1.08	PQL	mg/Kg	
	BORON	J	5.36	10.8	PQL	mg/Kg	
	CADMIUM	J	0.513	1.08	PQL	mg/Kg	
	MOLYBDENUM	J	0.351	2.16	PQL	mg/Kg	J (all detects)
	SODIUM	J	90.4	108	PQL	mg/Kg	
	TIN	J	3.02	10.8	PQL	mg/Kg	
SL-518-SA5D-SB-15.0-16.0	BERYLLIUM	J	0.665	1.08	PQL	mg/Kg	
	CADMIUM	J	0.196	1.08	PQL	mg/Kg	
	SODIUM	J	87.7	108	PQL	mg/Kg	J (all detects)
	TIN	J	2.92	10.8	PQL	mg/Kg	
	Zirconium	J	3.64	5.40	PQL	mg/Kg	
SL-518-SA5D-SB-4.0-5.0	BERYLLIUM	J	1.07	1.15	PQL	mg/Kg	
	BORON	J	2.63	11.5	PQL	mg/Kg	
	CADMIUM	J	0.352	1.15	PQL	mg/Kg	
	MOLYBDENUM	J	0.240	2.30	PQL	mg/Kg	J (all detects)
	SODIUM	J	99.5	115	PQL	mg/Kg	
	TIN	J	3.29	11.5	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH105 **Laboratory: LL**

EDD Filename: PH105 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-518-SA5D-SB-9.0-10.0	BERYLLIUM	J	1.04	1.16	PQL	mg/Kg	
	CADMIUM	J	0.212	1.16	PQL	mg/Kg	
	MOLYBDENUM	J	0.296	2.31	PQL	mg/Kg	J (all detects)
	SODIUM	J	98.0	116	PQL	mg/Kg	
	TIN	J	3.35	11.6	PQL	mg/Kg	

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-518-SA5D-SB-0.0-0.5	SELENIUM	J	0.265	0.432	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0639	0.216	PQL	mg/Kg	
SL-518-SA5D-SB-4.0-5.0	SELENIUM	J	0.116	0.459	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0557	0.230	PQL	mg/Kg	
SL-518-SA5D-SB-9.0-10.0	SILVER	J	0.0508	0.231	PQL	mg/Kg	J (all detects)

Method: 7471B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-518-SA5D-SB-15.0-16.0	MERCURY	J	0.0109	0.0181	PQL	mg/Kg	J (all detects)
SL-518-SA5D-SB-4.0-5.0	MERCURY	J	0.0179	0.0186	PQL	mg/Kg	J (all detects)
SL-518-SA5D-SB-9.0-10.0	MERCURY	J	0.0181	0.0186	PQL	mg/Kg	J (all detects)

Method: 8015M

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-518-SA5D-SB-4.0-5.0	EFH (C21-C30)	J	5.1	5.8	PQL	mg/Kg	J (all detects)
	EFH (C30-C40)	J	8.6	12	PQL	mg/Kg	

Method: 8081B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-518-SA5D-SB-0.0-0.5	4,4'-DDE	J	1.2	1.9	PQL	ug/Kg	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH105 **Laboratory: LL**

EDD Filename: PH105 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: **8270D SIM**

Matrix: **SO**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
SL-518-SA5D-SB-0.0-0.5	2-METHYLNAPHTHALENE	J	0.76	1.8	PQL	ug/Kg	J (all detects)
	BENZO(A)ANTHRACENE	J	0.84	1.8	PQL	ug/Kg	
	BENZO(B)FLUORANTHENE	J	1.7	1.8	PQL	ug/Kg	
	NAPHTHALENE	J	0.99	1.8	PQL	ug/Kg	
	PHENANTHRENE	J	1.4	1.8	PQL	ug/Kg	
	PYRENE	J	1.4	1.8	PQL	ug/Kg	

LDC #: 30695H4
SDG #: PH105
Laboratory: Eurofins Lancaster Laboratories

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 11/11/13
Page: 1 of 1
Reviewer: CR
2nd Reviewer: ✓

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

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

	Validation Area		Comments
I.	Technical holding times	—	Sampling dates: 9/10/13
II.	ICP/MS Tune	—	
III.	Calibration	—	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	—	
VI.	Matrix Spike Analysis	N	MS/D (see PH107)
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	see PH107
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	N	
XIV.	Field Duplicates	N	
XV	Field Blanks	SW	EB=EB-091113 FB=FB-041113 (PH106) (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-518-SA5D-SB-0.0-0.5	11		21		31	
2	SL-518-SA5D-SB-4.0-5.0	12		22		32	
3	SL-518-SA5D-SB-9.0-10.0	13		23		33	
4	SL-518-SA5D-SB-15.0-16.0	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 #: 30695H4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: AL
2nd Reviewer: MV

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

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

Analyte	Blank ID	Sample Identification												
	FB-041113 (SDG: PH029)	Action Limit	1	2	3									
Cu	0.0036	1.8												
Mo	0.0036	1.8	0.351	0.240	~~0.30~~ 0.296									

Sampling date: 8/28/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: All

Analyte	Blank ID	Sample Identification												
	EB-091113 (SDG: PH106)	Action Limit	1	2	3									
Cu	0.0040	2												
Mn	0.0019	0.95												
Mo	0.0087	4.35	See FB	See FB	See FB									

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 5D

SDG: PH106

Prepared for

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Denver, CO 80202

Prepared by

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2701 Loker Ave West, Suite 220
Carlsbad, California 92010

December 10, 2013

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on September 11, 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
Perchlorate by EPA Method 6850
Total Petroleum Hydrocarbons (TPH) as Gasoline by EPA SW 846 Method 8015M
TPH as Extractables by EPA SW 846 Method 8015M
Dioxins and Dibenzofurans by EPA Method 1613B

Wet Chemistry:
Hexavalent Chromium by EPA Method 7199
Fluoride by EPA Method 300.0

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 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 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 several blanks for 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
PH106/ 6010C	ICB/CCB	Copper Molybdenum	4.2 ug/L 3.7 ug/L	EB-091113

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
PH106/ 6010C	EB-091113	Copper Molybdenum	4.0 ug/L 8.7 ug/L	4.0U ug/L 8.7U 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 PCBs. The associated sample results were qualified as non-detected estimated (UJ). The details regarding the qualification of data are provided in Enclosure I.

VI. ICP Interference Check Sample (ICS) Analysis

ICP interference check data were not reviewed for level III.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed at the required frequency. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of one MS/MSD pair for SVOCs, TPH as extractables, and one pair for metals from SDG PH104. 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 PH104.

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. 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 (in SDG PH104). The analysis criteria were met with the following exceptions:

Diluted Sample	Analyte	%D (Limits)	Associated Samples	Flag	A or P
SL-515-SA5D-SB-0.0-0.5 (from SDG PH104)	Cobalt Strontium	11 (≤10) 24 (≤10)	All soil samples in SDG PH106	J (all detects) UJ (all non-detects)	A

The associated sample results were qualified as detected estimated (J).

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 PH106	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 volatile contaminants were found in the trip blank.

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

One field blank (from SDG PH029) was collected and analyzed for SVOCs, pesticides, PCBs, metals, herbicides, perchlorate, TPH as gasoline, TPH as extractables, dioxins, hexavalent chromium and fluoride. The field blank had detections for 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
11-Sep-2013	SL-519-SA5D-SB-0.0-0.5	7194441	N	3050B	6010C	III
11-Sep-2013	SL-519-SA5D-SB-0.0-0.5	7194441	N	3050B	6020A	III
11-Sep-2013	SL-519-SA5D-SB-0.0-0.5	7194441	N	3546	8015M	III
11-Sep-2013	SL-519-SA5D-SB-0.0-0.5	7194441	N	3546	8082A	III
11-Sep-2013	SL-519-SA5D-SB-0.0-0.5	7194441	N	3546	8270D SIM	III
11-Sep-2013	SL-519-SA5D-SB-0.0-0.5	7194441	N	METHOD	1613B	III
11-Sep-2013	SL-519-SA5D-SB-0.0-0.5	7194441	N	METHOD	7471B	III
11-Sep-2013	SL-519-SA5D-SB-0.0-0.5MSD	P194441M241004A	MSD	3546	8082A	III
11-Sep-2013	SL-519-SA5D-SB-0.0-0.5MSD	P194441M260847	MSD	3546	8270D SIM	III
11-Sep-2013	SL-519-SA5D-SB-0.0-0.5MSD	P194441M322241A	MSD	3546	8015M	III
11-Sep-2013	SL-519-SA5D-SB-0.0-0.5MS	P194441R240945A	MS	3546	8082A	III
11-Sep-2013	SL-519-SA5D-SB-0.0-0.5MS	P194441R260815	MS	3546	8270D SIM	III
11-Sep-2013	SL-519-SA5D-SB-0.0-0.5MS	P194441R322220A	MS	3546	8015M	III
11-Sep-2013	TB-091113	7194440	TB	5030B	8015M	III
11-Sep-2013	SL-519-SA5D-SB-4.0-5.0	7194442	N	3050B	6010C	III
11-Sep-2013	SL-519-SA5D-SB-4.0-5.0	7194442	N	3050B	6020A	III
11-Sep-2013	SL-519-SA5D-SB-4.0-5.0	7194442	N	3546	8015M	III
11-Sep-2013	SL-519-SA5D-SB-4.0-5.0	7194442	N	3546	8082A	III
11-Sep-2013	SL-519-SA5D-SB-4.0-5.0	7194442	N	3546	8270D SIM	III
11-Sep-2013	SL-519-SA5D-SB-4.0-5.0	7194442	N	5035A	8015M	III
11-Sep-2013	SL-519-SA5D-SB-4.0-5.0	7194442	N	METHOD	7471B	III
11-Sep-2013	SL-520-SA5D-SB-0.0-0.5	7194443	N	3050B	6010C	III
11-Sep-2013	SL-520-SA5D-SB-0.0-0.5	7194443	N	3050B	6020A	III
11-Sep-2013	SL-520-SA5D-SB-0.0-0.5	7194443	N	3546	8015M	III
11-Sep-2013	SL-520-SA5D-SB-0.0-0.5	7194443	N	3546	8081B	III
11-Sep-2013	SL-520-SA5D-SB-0.0-0.5	7194443	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
11-Sep-2013	SL-520-SA5D-SB-0.0-0.5	7194443	N	3546	8270D SIM	III
11-Sep-2013	SL-520-SA5D-SB-0.0-0.5	7194443	N	METHOD	1613B	III
11-Sep-2013	SL-520-SA5D-SB-0.0-0.5	7194443	N	METHOD	7471B	III
11-Sep-2013	SL-520-SA5D-SB-4.0-5.0	7194444	N	3050B	6010C	III
11-Sep-2013	SL-520-SA5D-SB-4.0-5.0	7194444	N	3050B	6020A	III
11-Sep-2013	SL-520-SA5D-SB-4.0-5.0	7194444	N	3546	8015M	III
11-Sep-2013	SL-520-SA5D-SB-4.0-5.0	7194444	N	3546	8081B	III
11-Sep-2013	SL-520-SA5D-SB-4.0-5.0	7194444	N	3546	8082A	III
11-Sep-2013	SL-520-SA5D-SB-4.0-5.0	7194444	N	3546	8270D SIM	III
11-Sep-2013	SL-520-SA5D-SB-4.0-5.0	7194444	N	5035A	8015M	III
11-Sep-2013	SL-520-SA5D-SB-4.0-5.0	7194444	N	METHOD	1613B	III
11-Sep-2013	SL-520-SA5D-SB-4.0-5.0	7194444	N	METHOD	7471B	III
11-Sep-2013	SL-520-SA5D-SB-8.0-9.0	7194445	N	3050B	6010C	III
11-Sep-2013	SL-520-SA5D-SB-8.0-9.0	7194445	N	3050B	6020A	III
11-Sep-2013	SL-520-SA5D-SB-8.0-9.0	7194445	N	3546	8015M	III
11-Sep-2013	SL-520-SA5D-SB-8.0-9.0	7194445	N	3546	8081B	III
11-Sep-2013	SL-520-SA5D-SB-8.0-9.0	7194445	N	3546	8082A	III
11-Sep-2013	SL-520-SA5D-SB-8.0-9.0	7194445	N	3546	8270D SIM	III
11-Sep-2013	SL-520-SA5D-SB-8.0-9.0	7194445	N	5035A	8015M	III
11-Sep-2013	SL-520-SA5D-SB-8.0-9.0	7194445	N	METHOD	1613B	III
11-Sep-2013	SL-520-SA5D-SB-8.0-9.0	7194445	N	METHOD	7471B	III
11-Sep-2013	SL-521-SA5D-SB-0.0-0.5	7194446	N	3050B	6010C	III
11-Sep-2013	SL-521-SA5D-SB-0.0-0.5	7194446	N	3050B	6020A	III
11-Sep-2013	SL-521-SA5D-SB-0.0-0.5	7194446	N	3546	8015M	III
11-Sep-2013	SL-521-SA5D-SB-0.0-0.5	7194446	N	3546	8082A	III
11-Sep-2013	SL-521-SA5D-SB-0.0-0.5	7194446	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
11-Sep-2013	SL-521-SA5D-SB-0.0-0.5	7194446	N	METHOD	1613B	III
11-Sep-2013	SL-521-SA5D-SB-0.0-0.5	7194446	N	METHOD	7471B	III
11-Sep-2013	SL-521-SA5D-SB-5.5-6.5	7194447	N	3050B	6010C	III
11-Sep-2013	SL-521-SA5D-SB-5.5-6.5	7194447	N	3050B	6020A	III
11-Sep-2013	SL-521-SA5D-SB-5.5-6.5	7194447	N	3546	8015M	III
11-Sep-2013	SL-521-SA5D-SB-5.5-6.5	7194447	N	3546	8082A	III
11-Sep-2013	SL-521-SA5D-SB-5.5-6.5	7194447	N	3546	8270D SIM	III
11-Sep-2013	SL-521-SA5D-SB-5.5-6.5	7194447	N	5035A	8015M	III
11-Sep-2013	SL-521-SA5D-SB-5.5-6.5	7194447	N	METHOD	1613B	III
11-Sep-2013	SL-521-SA5D-SB-5.5-6.5	7194447	N	METHOD	7471B	III
11-Sep-2013	SL-522-SA5D-SB-0.0-0.5	7194448	N	3050B	6010C	III
11-Sep-2013	SL-522-SA5D-SB-0.0-0.5	7194448	N	3050B	6020A	III
11-Sep-2013	SL-522-SA5D-SB-0.0-0.5	7194448	N	3546	8015M	III
11-Sep-2013	SL-522-SA5D-SB-0.0-0.5	7194448	N	3546	8081B	III
11-Sep-2013	SL-522-SA5D-SB-0.0-0.5	7194448	N	3546	8082A	III
11-Sep-2013	SL-522-SA5D-SB-0.0-0.5	7194448	N	3546	8270D SIM	III
11-Sep-2013	SL-522-SA5D-SB-0.0-0.5	7194448	N	METHOD	1613B	III
11-Sep-2013	SL-522-SA5D-SB-0.0-0.5	7194448	N	METHOD	7471B	III
11-Sep-2013	SL-522-SA5D-SB-6.0-7.0	7194449	N	3050B	6010C	III
11-Sep-2013	SL-522-SA5D-SB-6.0-7.0	7194449	N	3050B	6020A	III
11-Sep-2013	SL-522-SA5D-SB-6.0-7.0	7194449	N	3546	8015M	III
11-Sep-2013	SL-522-SA5D-SB-6.0-7.0	7194449	N	3546	8081B	III
11-Sep-2013	SL-522-SA5D-SB-6.0-7.0	7194449	N	3546	8082A	III
11-Sep-2013	SL-522-SA5D-SB-6.0-7.0	7194449	N	3546	8270D SIM	III
11-Sep-2013	SL-522-SA5D-SB-6.0-7.0	7194449	N	5035A	8015M	III
11-Sep-2013	SL-522-SA5D-SB-6.0-7.0	7194449	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
11-Sep-2013	SL-522-SA5D-SB-6.0-7.0	7194449	N	METHOD	7471B	III
11-Sep-2013	SL-523-SA5D-SB-0.0-0.5	7194452	N	3050B	6010C	III
11-Sep-2013	SL-523-SA5D-SB-0.0-0.5	7194452	N	3050B	6020A	III
11-Sep-2013	SL-523-SA5D-SB-0.0-0.5	7194452	N	3546	8015M	III
11-Sep-2013	SL-523-SA5D-SB-0.0-0.5	7194452	N	3546	8081B	III
11-Sep-2013	SL-523-SA5D-SB-0.0-0.5	7194452	N	3546	8082A	III
11-Sep-2013	SL-523-SA5D-SB-0.0-0.5	7194452	N	3546	8270D SIM	III
11-Sep-2013	SL-523-SA5D-SB-0.0-0.5	7194452	N	METHOD	1613B	III
11-Sep-2013	SL-523-SA5D-SB-0.0-0.5	7194452	N	METHOD	7471B	III
11-Sep-2013	SL-529-SA5D-SB-0.0-0.5	7194453	N	3050B	6010C	III
11-Sep-2013	SL-529-SA5D-SB-0.0-0.5	7194453	N	3050B	6020A	III
11-Sep-2013	SL-529-SA5D-SB-0.0-0.5	7194453	N	3546	8015M	III
11-Sep-2013	SL-529-SA5D-SB-0.0-0.5	7194453	N	3546	8081B	III
11-Sep-2013	SL-529-SA5D-SB-0.0-0.5	7194453	N	3546	8082A	III
11-Sep-2013	SL-529-SA5D-SB-0.0-0.5	7194453	N	3546	8270D SIM	III
11-Sep-2013	SL-529-SA5D-SB-0.0-0.5	7194453	N	METHOD	1613B	III
11-Sep-2013	SL-529-SA5D-SB-0.0-0.5	7194453	N	METHOD	7471B	III
11-Sep-2013	SL-529-SA5D-SB-3.0-4.0	7194454	N	3050B	6010C	III
11-Sep-2013	SL-529-SA5D-SB-3.0-4.0	7194454	N	3050B	6020A	III
11-Sep-2013	SL-529-SA5D-SB-3.0-4.0	7194454	N	3546	8015M	III
11-Sep-2013	SL-529-SA5D-SB-3.0-4.0	7194454	N	3546	8081B	III
11-Sep-2013	SL-529-SA5D-SB-3.0-4.0	7194454	N	3546	8082A	III
11-Sep-2013	SL-529-SA5D-SB-3.0-4.0	7194454	N	3546	8270D SIM	III
11-Sep-2013	SL-529-SA5D-SB-3.0-4.0	7194454	N	5035A	8015M	III
11-Sep-2013	SL-529-SA5D-SB-3.0-4.0	7194454	N	METHOD	7471B	III
11-Sep-2013	SL-506-SA5D-SB-0.0-0.5	7194450	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
11-Sep-2013	SL-506-SA5D-SB-0.0-0.5	7194450	N	3050B	6020A	III
11-Sep-2013	SL-506-SA5D-SB-0.0-0.5	7194450	N	3546	8015M	III
11-Sep-2013	SL-506-SA5D-SB-0.0-0.5	7194450	N	3546	8082A	III
11-Sep-2013	SL-506-SA5D-SB-0.0-0.5	7194450	N	3546	8270D SIM	III
11-Sep-2013	SL-506-SA5D-SB-0.0-0.5	7194450	N	METHOD	1613B	III
11-Sep-2013	SL-506-SA5D-SB-0.0-0.5	7194450	N	METHOD	7471B	III
11-Sep-2013	SL-506-SA5D-SB-4.0-5.0	7194451	N	3050B	6010C	III
11-Sep-2013	SL-506-SA5D-SB-4.0-5.0	7194451	N	3050B	6020A	III
11-Sep-2013	SL-506-SA5D-SB-4.0-5.0	7194451	N	3546	8015M	III
11-Sep-2013	SL-506-SA5D-SB-4.0-5.0	7194451	N	3546	8082A	III
11-Sep-2013	SL-506-SA5D-SB-4.0-5.0	7194451	N	3546	8270D SIM	III
11-Sep-2013	SL-506-SA5D-SB-4.0-5.0	7194451	N	5035A	8015M	III
11-Sep-2013	SL-506-SA5D-SB-4.0-5.0	7194451	N	METHOD	7471B	III
11-Sep-2013	EB-091113	7194439	EB	3005A	6010C	III
11-Sep-2013	EB-091113	7194439	EB	3510C	8015M	III
11-Sep-2013	EB-091113	7194439	EB	3510C	8081B	III
11-Sep-2013	EB-091113	7194439	EB	3510C	8082A	III
11-Sep-2013	EB-091113	7194439	EB	3510C	8270D SIM	III
11-Sep-2013	EB-091113	7194439	EB	5030B	8015M	III
11-Sep-2013	EB-091113	7194439	EB	Gen Prep	300.0	III
11-Sep-2013	EB-091113	7194439	EB	Gen Prep	6850	III
11-Sep-2013	EB-091113	7194439	EB	Gen Prep	7199	III
11-Sep-2013	EB-091113	7194439	EB	M3010A	6020A	III
11-Sep-2013	EB-091113	7194439	EB	METHOD	1613B	III
11-Sep-2013	EB-091113	7194439	EB	METHOD	7470A	III
11-Sep-2013	EB-091113	7194439	EB	METHOD	8151A	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
11-Sep-2013	EB-091113MSD	P194439M242312A	MSD	Gen Prep	6850	III
11-Sep-2013	EB-091113MS	P194439R242259A	MS	Gen Prep	6850	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: PH106 **Laboratory: LL**

EDD Filename: PH106 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: AQ**

Sample ID: **EB-091113** *Collected:* **9/11/2013 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
COPPER	0.0040	J	0.0027	MDL	0.0200	PQL	mg/L	U	B, B
MANGANESE	0.0019	J	0.00083	MDL	0.0100	PQL	mg/L	J	Z
MOLYBDENUM	0.0087	J	0.0017	MDL	0.0200	PQL	mg/L	U	B

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-506-SA5D-SB-0.0-0.5** *Collected:* **9/11/2013 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	0.910	J	0.819	MDL	4.43	PQL	mg/Kg	J	Z, Q
BERYLLIUM	1.00	J	0.0742	MDL	1.11	PQL	mg/Kg	J	Z
CADMIUM	0.617	J	0.0842	MDL	1.11	PQL	mg/Kg	J	Z
CHROMIUM	35.9		0.177	MDL	3.32	PQL	mg/Kg	J	Q
COBALT	11.8		0.110	MDL	1.11	PQL	mg/Kg	J	A
TIN	3.60	J	0.244	MDL	11.1	PQL	mg/Kg	U	B
VANADIUM	65.1		0.144	MDL	1.11	PQL	mg/Kg	J	Q
Zirconium	1.78	J	0.930	MDL	5.54	PQL	mg/Kg	J	Z

Sample ID: **SL-506-SA5D-SB-4.0-5.0** *Collected:* **9/11/2013 1:50:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	1.26	J	0.841	MDL	4.54	PQL	mg/Kg	J	Z, Q
BERYLLIUM	1.06	J	0.0761	MDL	1.14	PQL	mg/Kg	J	Z
CADMIUM	0.325	J	0.0863	MDL	1.14	PQL	mg/Kg	J	Z
CHROMIUM	41.0		0.182	MDL	3.41	PQL	mg/Kg	J	Q
COBALT	8.91		0.112	MDL	1.14	PQL	mg/Kg	J	A
TIN	3.84	J	0.250	MDL	11.4	PQL	mg/Kg	U	B
VANADIUM	75.0		0.148	MDL	1.14	PQL	mg/Kg	J	Q
Zirconium	4.15	J	0.954	MDL	5.68	PQL	mg/Kg	J	Z

Sample ID: **SL-519-SA5D-SB-0.0-0.5** *Collected:* **9/11/2013 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
ANTIMONY	1.04	J	0.791	MDL	4.28	PQL	mg/Kg	J	Z, 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: PH106 **Laboratory: LL**

EDD Filename: PH106 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-519-SA5D-SB-0.0-0.5** ***Collected:*** **9/11/2013 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
BERYLLIUM	0.938	J	0.0716	MDL	1.07	PQL	mg/Kg	J	Z
CADMIUM	0.628	J	0.0813	MDL	1.07	PQL	mg/Kg	J	Z
CHROMIUM	35.7		0.171	MDL	3.21	PQL	mg/Kg	J	Q
COBALT	10.1		0.106	MDL	1.07	PQL	mg/Kg	J	A
MOLYBDENUM	0.280	J	0.182	MDL	2.14	PQL	mg/Kg	U	F, F
SODIUM	87.6	J	17.9	MDL	107	PQL	mg/Kg	J	Z
TIN	3.49	J	0.235	MDL	10.7	PQL	mg/Kg	U	B
VANADIUM	65.7		0.139	MDL	1.07	PQL	mg/Kg	J	Q
Zirconium	4.49	J	0.898	MDL	5.35	PQL	mg/Kg	J	Z

Sample ID: **SL-519-SA5D-SB-4.0-5.0** ***Collected:*** **9/11/2013 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	0.850	J	0.820	MDL	4.43	PQL	mg/Kg	J	Z, Q
BERYLLIUM	1.03	J	0.0742	MDL	1.11	PQL	mg/Kg	J	Z
CADMIUM	0.417	J	0.0842	MDL	1.11	PQL	mg/Kg	J	Z
CHROMIUM	39.3		0.177	MDL	3.32	PQL	mg/Kg	J	Q
COBALT	10.5		0.110	MDL	1.11	PQL	mg/Kg	J	A
TIN	4.04	J	0.244	MDL	11.1	PQL	mg/Kg	U	B
VANADIUM	71.6		0.144	MDL	1.11	PQL	mg/Kg	J	Q
Zirconium	3.54	J	0.931	MDL	5.54	PQL	mg/Kg	J	Z

Sample ID: **SL-520-SA5D-SB-0.0-0.5** ***Collected:*** **9/11/2013 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	1.16	J	0.820	MDL	4.43	PQL	mg/Kg	J	Z, Q
BERYLLIUM	1.04	J	0.0742	MDL	1.11	PQL	mg/Kg	J	Z
CADMIUM	0.495	J	0.0842	MDL	1.11	PQL	mg/Kg	J	Z
CHROMIUM	37.2		0.177	MDL	3.32	PQL	mg/Kg	J	Q
COBALT	10.3		0.110	MDL	1.11	PQL	mg/Kg	J	A
SODIUM	102	J	18.5	MDL	111	PQL	mg/Kg	J	Z
TIN	3.69	J	0.244	MDL	11.1	PQL	mg/Kg	U	B
VANADIUM	68.3		0.144	MDL	1.11	PQL	mg/Kg	J	Q
Zirconium	4.08	J	0.930	MDL	5.54	PQL	mg/Kg	J	Z

* denotes a non-reportable result

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

Data Qualifier Summary

Lab Reporting Batch ID: PH106 **Laboratory: LL**

EDD Filename: PH106 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-520-SA5D-SB-4.0-5.0** ***Collected:*** **9/11/2013 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	1.21	J	0.870	MDL	4.70	PQL	mg/Kg	J	Z, Q
BERYLLIUM	0.958	J	0.0788	MDL	1.18	PQL	mg/Kg	J	Z
CADMIUM	0.600	J	0.0894	MDL	1.18	PQL	mg/Kg	J	Z
CHROMIUM	37.1		0.188	MDL	3.53	PQL	mg/Kg	J	Q
COBALT	10.7		0.116	MDL	1.18	PQL	mg/Kg	J	A
TIN	3.91	J	0.259	MDL	11.8	PQL	mg/Kg	U	B
VANADIUM	69.1		0.153	MDL	1.18	PQL	mg/Kg	J	Q
Zirconium	3.92	J	0.988	MDL	5.88	PQL	mg/Kg	J	Z

Sample ID: **SL-520-SA5D-SB-8.0-9.0** ***Collected:*** **9/11/2013 9:10:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.50	U	0.832	MDL	4.50	PQL	mg/Kg	UJ	Q
ARSENIC	3.59	J	0.787	MDL	4.50	PQL	mg/Kg	J	Z
BERYLLIUM	0.546	J	0.0754	MDL	1.12	PQL	mg/Kg	J	Z
BORON	8.62	J	0.945	MDL	11.2	PQL	mg/Kg	J	Z
CADMIUM	0.470	J	0.0855	MDL	1.12	PQL	mg/Kg	J	Z
CHROMIUM	19.2		0.180	MDL	3.37	PQL	mg/Kg	J	Q
COBALT	5.45		0.111	MDL	1.12	PQL	mg/Kg	J	A
TIN	3.20	J	0.247	MDL	11.2	PQL	mg/Kg	U	B
VANADIUM	37.5		0.146	MDL	1.12	PQL	mg/Kg	J	Q
Zirconium	2.48	J	0.945	MDL	5.62	PQL	mg/Kg	J	Z

Sample ID: **SL-521-SA5D-SB-0.0-0.5** ***Collected:*** **9/11/2013 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	4.30	U	0.795	MDL	4.30	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.858	J	0.0719	MDL	1.07	PQL	mg/Kg	J	Z
CADMIUM	0.559	J	0.0816	MDL	1.07	PQL	mg/Kg	J	Z
CHROMIUM	31.3		0.172	MDL	3.22	PQL	mg/Kg	J	Q
COBALT	9.77		0.106	MDL	1.07	PQL	mg/Kg	J	A
MOLYBDENUM	0.366	J	0.183	MDL	2.15	PQL	mg/Kg	U	F, F
SODIUM	96.1	J	17.9	MDL	107	PQL	mg/Kg	J	Z
TIN	3.64	J	0.236	MDL	10.7	PQL	mg/Kg	U	B
VANADIUM	58.6		0.140	MDL	1.07	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: PH106 **Laboratory: LL**

EDD Filename: PH106 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-521-SA5D-SB-0.0-0.5** ***Collected:*** **9/11/2013 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
Zirconium	2.99	J	0.902	MDL	5.37	PQL	mg/Kg	J	Z

Sample ID: **SL-521-SA5D-SB-5.5-6.5** ***Collected:*** **9/11/2013 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	4.23	U	0.782	MDL	4.23	PQL	mg/Kg	UJ	Q
ARSENIC	3.89	J	0.740	MDL	4.23	PQL	mg/Kg	J	Z
BERYLLIUM	0.447	J	0.0708	MDL	1.06	PQL	mg/Kg	J	Z
BORON	7.52	J	0.887	MDL	10.6	PQL	mg/Kg	J	Z
CADMIUM	0.318	J	0.0803	MDL	1.06	PQL	mg/Kg	J	Z
CHROMIUM	17.2		0.169	MDL	3.17	PQL	mg/Kg	J	Q
COBALT	4.76		0.105	MDL	1.06	PQL	mg/Kg	J	A
SODIUM	85.4	J	17.6	MDL	106	PQL	mg/Kg	J	Z
TIN	3.45	J	0.232	MDL	10.6	PQL	mg/Kg	U	B
VANADIUM	33.9		0.137	MDL	1.06	PQL	mg/Kg	J	Q

Sample ID: **SL-522-SA5D-SB-0.0-0.5** ***Collected:*** **9/11/2013 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	4.28	U	0.791	MDL	4.28	PQL	mg/Kg	UJ	Q
ARSENIC	3.86	J	0.748	MDL	4.28	PQL	mg/Kg	J	Z
BERYLLIUM	0.756	J	0.0716	MDL	1.07	PQL	mg/Kg	J	Z
CADMIUM	0.521	J	0.0813	MDL	1.07	PQL	mg/Kg	J	Z
CHROMIUM	34.8		0.171	MDL	3.21	PQL	mg/Kg	J	Q
COBALT	9.25		0.106	MDL	1.07	PQL	mg/Kg	J	A
MOLYBDENUM	0.365	J	0.182	MDL	2.14	PQL	mg/Kg	U	F, F
TIN	3.22	J	0.235	MDL	10.7	PQL	mg/Kg	U	B
VANADIUM	57.8		0.139	MDL	1.07	PQL	mg/Kg	J	Q

Sample ID: **SL-522-SA5D-SB-6.0-7.0** ***Collected:*** **9/11/2013 10:25:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	1.04	J	0.796	MDL	4.30	PQL	mg/Kg	J	Z, Q
CADMIUM	0.476	J	0.0818	MDL	1.08	PQL	mg/Kg	J	Z
CHROMIUM	34.8		0.172	MDL	3.23	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: PH106 **Laboratory: LL**

EDD Filename: PH106 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-522-SA5D-SB-6.0-7.0** ***Collected:*** **9/11/2013 10:25:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COBALT	9.62		0.107	MDL	1.08	PQL	mg/Kg	J	A
TIN	4.23	J	0.237	MDL	10.8	PQL	mg/Kg	U	B
VANADIUM	63.2		0.140	MDL	1.08	PQL	mg/Kg	J	Q

Sample ID: **SL-523-SA5D-SB-0.0-0.5** ***Collected:*** **9/11/2013 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	4.15	U	0.767	MDL	4.15	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.455	J	0.0694	MDL	1.04	PQL	mg/Kg	J	Z
BORON	6.99	J	0.870	MDL	10.4	PQL	mg/Kg	J	Z
CADMIUM	0.268	J	0.0788	MDL	1.04	PQL	mg/Kg	J	Z
CHROMIUM	24.2		0.166	MDL	3.11	PQL	mg/Kg	J	Q
COBALT	6.03		0.103	MDL	1.04	PQL	mg/Kg	J	A
TIN	3.62	J	0.228	MDL	10.4	PQL	mg/Kg	U	B
VANADIUM	42.3		0.135	MDL	1.04	PQL	mg/Kg	J	Q
Zirconium	1.49	J	0.870	MDL	5.18	PQL	mg/Kg	J	Z

Sample ID: **SL-529-SA5D-SB-0.0-0.5** ***Collected:*** **9/11/2013 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	0.825	J	0.774	MDL	4.19	PQL	mg/Kg	J	Z, Q
BERYLLIUM	0.713	J	0.0701	MDL	1.05	PQL	mg/Kg	J	Z
BORON	9.15	J	0.879	MDL	10.5	PQL	mg/Kg	J	Z
CADMIUM	0.398	J	0.0795	MDL	1.05	PQL	mg/Kg	J	Z
CHROMIUM	25.1		0.167	MDL	3.14	PQL	mg/Kg	J	Q
COBALT	7.18		0.104	MDL	1.05	PQL	mg/Kg	J	A
MOLYBDENUM	0.292	J	0.178	MDL	2.09	PQL	mg/Kg	U	F, F
SODIUM	104	J	17.5	MDL	105	PQL	mg/Kg	J	Z
TIN	3.22	J	0.230	MDL	10.5	PQL	mg/Kg	U	B
VANADIUM	46.8		0.136	MDL	1.05	PQL	mg/Kg	J	Q
Zirconium	2.32	J	0.879	MDL	5.23	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: PH106 **Laboratory: LL**

EDD Filename: PH106 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-529-SA5D-SB-3.0-4.0** *Collected:* **9/11/2013 1:15:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	1.21	J	0.772	MDL	4.17	PQL	mg/Kg	J	Z, Q
BERYLLIUM	0.693	J	0.0699	MDL	1.04	PQL	mg/Kg	J	Z
BORON	8.48	J	0.876	MDL	10.4	PQL	mg/Kg	J	Z
CADMIUM	0.286	J	0.0793	MDL	1.04	PQL	mg/Kg	J	Z
CHROMIUM	29.3		0.167	MDL	3.13	PQL	mg/Kg	J	Q
COBALT	7.56		0.103	MDL	1.04	PQL	mg/Kg	J	A
MOLYBDENUM	0.200	J	0.177	MDL	2.09	PQL	mg/Kg	U	F, F
TIN	3.70	J	0.229	MDL	10.4	PQL	mg/Kg	U	B
VANADIUM	54.6		0.136	MDL	1.04	PQL	mg/Kg	J	Q
Zirconium	1.56	J	0.876	MDL	5.21	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: **SL-506-SA5D-SB-0.0-0.5** *Collected:* **9/11/2013 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	0.196	J	0.111	MDL	0.443	PQL	mg/Kg	J	Z

Sample ID: **SL-506-SA5D-SB-0.0-0.5** *Collected:* **9/11/2013 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	0.0511	J	0.0288	MDL	0.221	PQL	mg/Kg	J	Z
STRONTIUM	42.9		0.0753	MDL	0.443	PQL	mg/Kg	J	A

Sample ID: **SL-506-SA5D-SB-4.0-5.0** *Collected:* **9/11/2013 1:50:00** *Analysis Type:* **RES** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0670	J	0.0295	MDL	0.227	PQL	mg/Kg	J	Z
STRONTIUM	42.9		0.0772	MDL	0.454	PQL	mg/Kg	J	A

Sample ID: **SL-519-SA5D-SB-0.0-0.5** *Collected:* **9/11/2013 7:40:00** *Analysis Type:* **REA** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.243	J	0.107	MDL	0.428	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: PH106 **Laboratory: LL**

EDD Filename: PH106 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: **METALS**

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

Sample ID: **SL-519-SA5D-SB-0.0-0.5** ***Collected:*** **9/11/2013 7:40:00** ***Analysis Type:*** **RES** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0463	J	0.0278	MDL	0.214	PQL	mg/Kg	J	Z
STRONTIUM	32.9		0.0727	MDL	0.428	PQL	mg/Kg	J	A

Sample ID: **SL-519-SA5D-SB-4.0-5.0** ***Collected:*** **9/11/2013 8:00:00** ***Analysis Type:*** **REA** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.127	J	0.111	MDL	0.443	PQL	mg/Kg	J	Z

Sample ID: **SL-519-SA5D-SB-4.0-5.0** ***Collected:*** **9/11/2013 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	0.0493	J	0.0288	MDL	0.222	PQL	mg/Kg	J	Z
STRONTIUM	39.7		0.0753	MDL	0.443	PQL	mg/Kg	J	A

Sample ID: **SL-520-SA5D-SB-0.0-0.5** ***Collected:*** **9/11/2013 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	0.274	J	0.111	MDL	0.443	PQL	mg/Kg	J	Z

Sample ID: **SL-520-SA5D-SB-0.0-0.5** ***Collected:*** **9/11/2013 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	0.0488	J	0.0288	MDL	0.221	PQL	mg/Kg	J	Z
STRONTIUM	33.7		0.0753	MDL	0.443	PQL	mg/Kg	J	A

Sample ID: **SL-520-SA5D-SB-4.0-5.0** ***Collected:*** **9/11/2013 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	0.0489	J	0.0306	MDL	0.235	PQL	mg/Kg	J	Z
STRONTIUM	37.7		0.0800	MDL	0.470	PQL	mg/Kg	J	A

Sample ID: **SL-520-SA5D-SB-8.0-9.0** ***Collected:*** **9/11/2013 9:10:00** ***Analysis Type:*** **RES** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0388	J	0.0292	MDL	0.225	PQL	mg/Kg	J	Z
STRONTIUM	30.4		0.0765	MDL	0.450	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: PH106 **Laboratory: LL**

EDD Filename: PH106 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: **METALS**

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

Sample ID: **SL-521-SA5D-SB-0.0-0.5** ***Collected:*** **9/11/2013 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
SELENIUM	0.208	J	0.107	MDL	0.430	PQL	mg/Kg	J	Z

Sample ID: **SL-521-SA5D-SB-0.0-0.5** ***Collected:*** **9/11/2013 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
SILVER	0.0373	J	0.0279	MDL	0.215	PQL	mg/Kg	J	Z
STRONTIUM	30.1		0.0730	MDL	0.430	PQL	mg/Kg	J	A

Sample ID: **SL-521-SA5D-SB-5.5-6.5** ***Collected:*** **9/11/2013 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
STRONTIUM	19.6		0.0718	MDL	0.423	PQL	mg/Kg	J	A

Sample ID: **SL-522-SA5D-SB-0.0-0.5** ***Collected:*** **9/11/2013 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	0.204	J	0.107	MDL	0.428	PQL	mg/Kg	J	Z

Sample ID: **SL-522-SA5D-SB-0.0-0.5** ***Collected:*** **9/11/2013 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	0.0324	J	0.0278	MDL	0.214	PQL	mg/Kg	J	Z
STRONTIUM	28.6		0.0727	MDL	0.428	PQL	mg/Kg	J	A

Sample ID: **SL-522-SA5D-SB-6.0-7.0** ***Collected:*** **9/11/2013 10:25:00** ***Analysis Type:*** **REA** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.219	J	0.108	MDL	0.430	PQL	mg/Kg	J	Z

Sample ID: **SL-522-SA5D-SB-6.0-7.0** ***Collected:*** **9/11/2013 10:25:00** ***Analysis Type:*** **RES** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.157	J	0.0280	MDL	0.215	PQL	mg/Kg	J	Z
STRONTIUM	35.9		0.0732	MDL	0.430	PQL	mg/Kg	J	A

* denotes a non-reportable result

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

Data Qualifier Summary

Lab Reporting Batch ID: PH106 **Laboratory: LL**

EDD Filename: PH106 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: **SL-523-SA5D-SB-0.0-0.5** *Collected:* **9/11/2013 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
STRONTIUM	14.8		0.0705	MDL	0.415	PQL	mg/Kg	J	A

Sample ID: **SL-529-SA5D-SB-0.0-0.5** *Collected:* **9/11/2013 1:10:00** *Analysis Type:* **REA** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.152	J	0.105	MDL	0.419	PQL	mg/Kg	J	Z

Sample ID: **SL-529-SA5D-SB-0.0-0.5** *Collected:* **9/11/2013 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
SILVER	0.0281	J	0.0272	MDL	0.209	PQL	mg/Kg	J	Z
STRONTIUM	24.3		0.0712	MDL	0.419	PQL	mg/Kg	J	A

Sample ID: **SL-529-SA5D-SB-3.0-4.0** *Collected:* **9/11/2013 1:15:00** *Analysis Type:* **REA** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.142	J	0.104	MDL	0.417	PQL	mg/Kg	J	Z

Sample ID: **SL-529-SA5D-SB-3.0-4.0** *Collected:* **9/11/2013 1:15:00** *Analysis Type:* **RES** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	25.4		0.0709	MDL	0.417	PQL	mg/Kg	J	A

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: **SL-506-SA5D-SB-4.0-5.0** *Collected:* **9/11/2013 1:50:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0157	J	0.0111	MDL	0.0184	PQL	mg/Kg	J	Z

Sample ID: **SL-522-SA5D-SB-0.0-0.5** *Collected:* **9/11/2013 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	0.0112	J	0.0105	MDL	0.0175	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: PH106 **Laboratory: LL**

EDD Filename: PH106 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: **SL-522-SA5D-SB-6.0-7.0** *Collected:* **9/11/2013 10:25:00** *Analysis Type:* **RES** *Dilution:* **1**

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

Method Category: SVOA

Method: 1613B **Matrix: AQ**

Sample ID: **EB-091113** *Collected:* **9/11/2013 3:00:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	1.74	JQ	0.272	MDL	9.62	PQL	pg/L	U	B
1,2,3,4,6,7,8-HPCDF	1.63	JQ	0.157	MDL	9.62	PQL	pg/L	U	B
1,2,3,4,7,8,9-HPCDF	0.942	J	0.122	MDL	9.62	PQL	pg/L	U	B
1,2,3,4,7,8-HxCDD	1.49	JQ	0.387	MDL	9.62	PQL	pg/L	U	B
1,2,3,4,7,8-HXCDF	2.00	JQ	0.351	MDL	9.62	PQL	pg/L	U	B
1,2,3,6,7,8-HXCDD	1.68	JQ	0.385	MDL	9.62	PQL	pg/L	U	B
1,2,3,6,7,8-HXCDF	1.83	JQ	0.342	MDL	9.62	PQL	pg/L	U	B
1,2,3,7,8,9-HXCDD	1.48	JQ	0.221	MDL	9.62	PQL	pg/L	U	B
1,2,3,7,8,9-HXCDF	0.931	JQ	0.169	MDL	9.62	PQL	pg/L	U	B
1,2,3,7,8-PECDD	2.30	JQ	0.525	MDL	9.62	PQL	pg/L	U	B
1,2,3,7,8-PECDF	1.67	JQ	0.248	MDL	9.62	PQL	pg/L	U	B
2,3,4,6,7,8-HXCDF	1.37	JQ	0.222	MDL	9.62	PQL	pg/L	U	B
2,3,4,7,8-PECDF	1.79	JQ	0.309	MDL	9.62	PQL	pg/L	U	B
2,3,7,8-TCDD	0.813	JQ	0.458	MDL	1.92	PQL	pg/L	J	Z
OCDD	2.74	J	0.245	MDL	19.2	PQL	pg/L	U	B
OCDF	2.98	J	0.382	MDL	19.2	PQL	pg/L	U	B

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-506-SA5D-SB-0.0-0.5** *Collected:* **9/11/2013 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	0.171	JB	0.0563	MDL	5.28	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0542	JBQ	0.0181	MDL	5.28	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0751	JBQ	0.0347	MDL	5.28	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: PH106 **Laboratory: LL**

EDD Filename: PH106 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-506-SA5D-SB-0.0-0.5** ***Collected:*** **9/11/2013 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-HxCDD	0.0624	JBQ	0.0477	MDL	5.28	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0546	J	0.0503	MDL	5.28	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.253	JQ	0.0523	MDL	5.28	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.307	JBQ	0.0492	MDL	5.28	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.665	JB	0.0626	MDL	5.28	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.563	JB	0.0511	MDL	5.28	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.0702	JQ	0.0449	MDL	5.28	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.0605	JQ	0.0487	MDL	5.28	PQL	ng/Kg	J	Z
OCDD	0.920	JB	0.0497	MDL	10.6	PQL	ng/Kg	U	B
OCDF	0.149	JB	0.0829	MDL	10.6	PQL	ng/Kg	U	B

Sample ID: **SL-519-SA5D-SB-0.0-0.5** ***Collected:*** **9/11/2013 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	1.03	JBQ	0.0912	MDL	5.32	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.212	JB	0.0238	MDL	5.32	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.0548	J	0.0477	MDL	5.32	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.342	J	0.0654	MDL	5.32	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0606	JBQ	0.0434	MDL	5.32	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.506	JB	0.0628	MDL	5.32	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.727	JB	0.0526	MDL	5.32	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.185	JBQ	0.115	MDL	5.32	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.345	JBQ	0.0592	MDL	5.32	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0469	JQ	0.0420	MDL	5.32	PQL	ng/Kg	J	Z
OCDF	0.508	JB	0.0986	MDL	10.6	PQL	ng/Kg	U	B

Sample ID: **SL-520-SA5D-SB-0.0-0.5** ***Collected:*** **9/11/2013 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	0.465	JB	0.0607	MDL	5.55	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.109	JB	0.0195	MDL	5.55	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0571	JQ	0.0453	MDL	5.55	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.0786	JQ	0.0573	MDL	5.55	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.278	JBQ	0.0565	MDL	5.55	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.413	JB	0.0492	MDL	5.55	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: PH106 **Laboratory: LL**

EDD Filename: PH106 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-520-SA5D-SB-0.0-0.5** ***Collected:*** **9/11/2013 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-PECDF	0.128	JBQ	0.0483	MDL	5.55	PQL	ng/Kg	U	B
OCDD	4.19	JBQ	0.0730	MDL	11.1	PQL	ng/Kg	J	Z
OCDF	0.158	JBQ	0.101	MDL	11.1	PQL	ng/Kg	U	B

Sample ID: **SL-520-SA5D-SB-4.0-5.0** ***Collected:*** **9/11/2013 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	0.142	JBQ	0.0533	MDL	5.69	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0418	JBQ	0.0230	MDL	5.69	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0597	JQ	0.0590	MDL	5.69	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.172	JQ	0.144	MDL	1.14	PQL	ng/Kg	J	Z
OCDD	0.674	JBQ	0.0591	MDL	11.4	PQL	ng/Kg	U	B
OCDF	0.284	JBQ	0.105	MDL	11.4	PQL	ng/Kg	U	B

Sample ID: **SL-520-SA5D-SB-8.0-9.0** ***Collected:*** **9/11/2013 9:10:00** ***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	1.15	JBQ	0.0784	MDL	5.53	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.156	JBQ	0.0294	MDL	5.53	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0914	JBQ	0.0516	MDL	5.53	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0716	JQ	0.0589	MDL	5.53	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.0660	JQ	0.0612	MDL	5.53	PQL	ng/Kg	J	Z
OCDF	0.432	JB	0.113	MDL	11.1	PQL	ng/Kg	U	B

Sample ID: **SL-521-SA5D-SB-0.0-0.5** ***Collected:*** **9/11/2013 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	0.860	JBQ	0.0615	MDL	5.41	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.110	JBQ	0.0172	MDL	5.41	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0691	JQ	0.0552	MDL	5.41	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.725	J	0.0664	MDL	5.41	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.101	JBQ	0.0497	MDL	5.41	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	1.04	JB	0.0664	MDL	5.41	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	1.84	JB	0.0638	MDL	5.41	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.198	JB	0.0953	MDL	5.41	PQL	ng/Kg	U	B

* denotes a non-reportable result

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

Data Qualifier Summary

Lab Reporting Batch ID: PH106 **Laboratory: LL**

EDD Filename: PH106 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-521-SA5D-SB-0.0-0.5** ***Collected:*** **9/11/2013 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
1,2,3,7,8-PECDF	0.327	JB	0.0543	MDL	5.41	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0719	JQ	0.0508	MDL	5.41	PQL	ng/Kg	J	Z
OCDF	0.288	JBQ	0.0839	MDL	10.8	PQL	ng/Kg	U	B

Sample ID: **SL-521-SA5D-SB-5.5-6.5** ***Collected:*** **9/11/2013 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	0.265	JBQ	0.0582	MDL	5.33	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0497	JB	0.0171	MDL	5.33	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0601	JQ	0.0519	MDL	5.33	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0476	JBQ	0.0335	MDL	5.33	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.124	JBQ	0.0434	MDL	5.33	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.104	JBQ	0.0516	MDL	5.33	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0879	JQ	0.0489	MDL	5.33	PQL	ng/Kg	J	Z
OCDD	2.46	JB	0.0666	MDL	10.7	PQL	ng/Kg	J	Z

Sample ID: **SL-522-SA5D-SB-0.0-0.5** ***Collected:*** **9/11/2013 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	0.419	JBQ	0.0554	MDL	5.40	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.0487	JBQ	0.0179	MDL	5.40	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0703	JB	0.0306	MDL	5.40	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0665	JBQ	0.0510	MDL	5.40	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.108	JQ	0.0458	MDL	5.40	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.317	J	0.0519	MDL	5.40	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0998	JBQ	0.0407	MDL	5.40	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.680	JB	0.0506	MDL	5.40	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	1.11	JB	0.0519	MDL	5.40	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.195	JBQ	0.0952	MDL	5.40	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.381	JBQ	0.0510	MDL	5.40	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0928	JQ	0.0413	MDL	5.40	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.172	J	0.0458	MDL	5.40	PQL	ng/Kg	J	Z
OCDD	4.89	JB	0.0643	MDL	10.8	PQL	ng/Kg	J	Z
OCDF	0.153	JBQ	0.0811	MDL	10.8	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: PH106 **Laboratory: LL**

EDD Filename: PH106 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-522-SA5D-SB-6.0-7.0** ***Collected:*** **9/11/2013 10:25:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.471	JBQ	0.0849	MDL	5.46	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.0390	JB	0.0240	MDL	5.46	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0967	JQ	0.0458	MDL	5.46	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.150	JQ	0.106	MDL	5.46	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0729	JB	0.0409	MDL	5.46	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.265	JBQ	0.113	MDL	5.46	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0731	JBQ	0.0559	MDL	5.46	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.168	JBQ	0.151	MDL	5.46	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.141	JBQ	0.0730	MDL	5.46	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0865	J	0.0695	MDL	5.46	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.254	J	0.211	MDL	1.09	PQL	ng/Kg	J	Z
OCDD	0.328	JBQ	0.0629	MDL	10.9	PQL	ng/Kg	U	B

Sample ID: **SL-523-SA5D-SB-0.0-0.5** ***Collected:*** **9/11/2013 12:20:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.121	JB	0.0507	MDL	4.94	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0342	JBQ	0.0175	MDL	4.94	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0464	JBQ	0.0341	MDL	4.94	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0733	JQ	0.0396	MDL	4.94	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.0874	JBQ	0.0398	MDL	4.94	PQL	ng/Kg	U	B
OCDD	0.525	JBQ	0.0420	MDL	9.89	PQL	ng/Kg	U	B
OCDF	0.107	JBQ	0.0842	MDL	9.89	PQL	ng/Kg	U	B

Sample ID: **SL-529-SA5D-SB-0.0-0.5** ***Collected:*** **9/11/2013 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	1.96	JB	0.0722	MDL	5.06	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.281	JB	0.0204	MDL	5.06	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0533	JB	0.0351	MDL	5.06	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0689	JQ	0.0385	MDL	5.06	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.283	JQ	0.0463	MDL	5.06	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0509	JBQ	0.0356	MDL	5.06	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.335	JB	0.0471	MDL	5.06	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.375	JBQ	0.0458	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: PH106 **Laboratory: LL**

EDD Filename: PH106 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-529-SA5D-SB-0.0-0.5** *Collected:* **9/11/2013 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
1,2,3,7,8-PECDF	0.117	JBQ	0.0430	MDL	5.06	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.109	J	0.0349	MDL	5.06	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.0575	JQ	0.0407	MDL	5.06	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.141	JQ	0.120	MDL	1.01	PQL	ng/Kg	J	Z
OCDF	0.733	JB	0.0886	MDL	10.1	PQL	ng/Kg	U	B

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: **SL-506-SA5D-SB-0.0-0.5** *Collected:* **9/11/2013 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)	3.7	J	2.2	MDL	5.5	PQL	mg/Kg	J	Z
EFH (C30-C40)	7.6	J	4.4	MDL	11	PQL	mg/Kg	J	Z

Sample ID: **SL-519-SA5D-SB-0.0-0.5** *Collected:* **9/11/2013 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
EFH (C21-C30)	5.1	J	2.2	MDL	5.4	PQL	mg/Kg	J	Z, Q
EFH (C30-C40)	9.8	J	4.3	MDL	11	PQL	mg/Kg	J	Z, Q
EFH (C8-C11)	2.2	J	2.2	MDL	5.4	PQL	mg/Kg	J	Z, Q, Q, Q

Sample ID: **SL-520-SA5D-SB-0.0-0.5** *Collected:* **9/11/2013 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
EFH (C8-C11)	2.9	J	2.2	MDL	5.6	PQL	mg/Kg	J	Z

Sample ID: **SL-521-SA5D-SB-0.0-0.5** *Collected:* **9/11/2013 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
EFH (C15-C20)	2.2	J	2.1	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: PH106 **Laboratory: LL**

EDD Filename: PH106 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: **SL-521-SA5D-SB-5.5-6.5** *Collected:* **9/11/2013 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 (C8-C11)	3.4	J	2.1	MDL	5.4	PQL	mg/Kg	J	Z

Sample ID: **SL-522-SA5D-SB-0.0-0.5** *Collected:* **9/11/2013 10:15:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C15-C20)	2.2	J	2.1	MDL	5.3	PQL	mg/Kg	J	Z
EFH (C21-C30)	5.1	J	2.1	MDL	5.3	PQL	mg/Kg	J	Z
EFH (C30-C40)	10	J	4.2	MDL	11	PQL	mg/Kg	J	Z

Sample ID: **SL-522-SA5D-SB-6.0-7.0** *Collected:* **9/11/2013 10:25:00** *Analysis Type:* **REA** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C8-C11)	3.2	J	2.2	MDL	5.5	PQL	mg/Kg	J	Z

Sample ID: **SL-529-SA5D-SB-0.0-0.5** *Collected:* **9/11/2013 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
EFH (C21-C30)	4.7	J	2.1	MDL	5.3	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 8082A **Matrix: AQ**

Sample ID: **EB-091113** *Collected:* **9/11/2013 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
AROCLOR 1016	0.41	U	0.083	MDL	0.41	PQL	ug/L	UJ	S
AROCLOR 1221	0.41	U	0.083	MDL	0.41	PQL	ug/L	UJ	S
AROCLOR 1232	0.41	U	0.17	MDL	0.41	PQL	ug/L	UJ	S
AROCLOR 1242	0.41	U	0.083	MDL	0.41	PQL	ug/L	UJ	S
AROCLOR 1248	0.41	U	0.083	MDL	0.41	PQL	ug/L	UJ	S
AROCLOR 1254	0.41	U	0.083	MDL	0.41	PQL	ug/L	UJ	S
AROCLOR 1260	0.41	U	0.12	MDL	0.41	PQL	ug/L	UJ	S
Aroclor 1262	0.41	U	0.17	MDL	0.41	PQL	ug/L	UJ	S
Aroclor 1268	0.41	U	0.13	MDL	0.41	PQL	ug/L	UJ	S
Aroclor 5432	0.41	U	0.083	MDL	0.41	PQL	ug/L	UJ	S

* denotes a non-reportable result

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

Data Qualifier Summary

Lab Reporting Batch ID: PH106 **Laboratory: LL**

EDD Filename: PH106 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 8082A **Matrix: AQ**

Sample ID: **EB-091113** *Collected:* **9/11/2013 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
Aroclor 5442	0.41	U	0.083	MDL	0.41	PQL	ug/L	UJ	S
Aroclor 5460	0.41	U	0.091	MDL	0.41	PQL	ug/L	UJ	S

Method Category: SVOA

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

Sample ID: **EB-091113** *Collected:* **9/11/2013 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
BIS(2-ETHYLHEXYL)PHTHALATE	0.21	J	0.051	MDL	1.0	PQL	ug/L	J	Z
Butylbenzylphthalate	1.0	U	0.051	MDL	1.0	PQL	ug/L	UJ	L, E
Diethylphthalate	0.24	J	0.051	MDL	1.0	PQL	ug/L	J	Z, L, E
Dimethylphthalate	1.0	U	0.051	MDL	1.0	PQL	ug/L	UJ	L, E
Di-n-butylphthalate	0.20	J	0.051	MDL	1.0	PQL	ug/L	J	Z
NAPHTHALENE	0.038	J	0.031	MDL	0.051	PQL	ug/L	J	Z

Method Category: SVOA

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

Sample ID: **SL-506-SA5D-SB-0.0-0.5** *Collected:* **9/11/2013 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
CHRYSENE	0.46	J	0.37	MDL	1.8	PQL	ug/Kg	J	Z
NAPHTHALENE	0.84	J	0.74	MDL	1.8	PQL	ug/Kg	U	F

Sample ID: **SL-506-SA5D-SB-4.0-5.0** *Collected:* **9/11/2013 1:50:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NAPHTHALENE	0.99	J	0.77	MDL	1.9	PQL	ug/Kg	J	Z

Sample ID: **SL-519-SA5D-SB-0.0-0.5** *Collected:* **9/11/2013 7:40:00** *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	1.4	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z, Q
BENZO(E)PYRENE	18	U	3.6	MDL	18	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: PH106 **Laboratory: LL**

EDD Filename: PH106 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

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

Sample ID: SL-519-SA5D-SB-0.0-0.5 **Collected: 9/11/2013 7:40:00** **Analysis Type: RES-BASE/NEUTRAL** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHRYSENE	1.7	J	0.36	MDL	1.8	PQL	ug/Kg	J	Z, Q
FLUORANTHENE	1.2	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z, Q
NAPHTHALENE	1.4	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z, Q
PHENANTHRENE	0.94	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z, Q
PYRENE	0.98	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z, Q

Sample ID: SL-520-SA5D-SB-0.0-0.5 **Collected: 9/11/2013 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
NAPHTHALENE	1.0	J	0.74	MDL	1.9	PQL	ug/Kg	J	Z

Sample ID: SL-520-SA5D-SB-4.0-5.0 **Collected: 9/11/2013 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
NAPHTHALENE	1.0	J	0.79	MDL	2.0	PQL	ug/Kg	J	Z

Sample ID: SL-520-SA5D-SB-8.0-9.0 **Collected: 9/11/2013 9:10:00** **Analysis Type: RES-BASE/NEUTRAL** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTHRACENE	0.38	J	0.37	MDL	1.9	PQL	ug/Kg	J	Z
BENZO(A)PYRENE	1.6	J	0.75	MDL	1.9	PQL	ug/Kg	J	Z
BENZO(G,H,I)PERYLENE	1.1	J	0.75	MDL	1.9	PQL	ug/Kg	J	Z
BENZO(K)FLUORANTHENE	1.4	J	0.75	MDL	1.9	PQL	ug/Kg	J	Z
INDENO(1,2,3-CD)PYRENE	0.85	J	0.75	MDL	1.9	PQL	ug/Kg	J	Z
NAPHTHALENE	1.1	J	0.75	MDL	1.9	PQL	ug/Kg	J	Z

Sample ID: SL-521-SA5D-SB-0.0-0.5 **Collected: 9/11/2013 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(B)FLUORANTHENE	1.2	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z
FLUORANTHENE	0.73	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z
NAPHTHALENE	1.5	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: PH106 **Laboratory: LL**

EDD Filename: PH106 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

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

Sample ID: **SL-521-SA5D-SB-5.5-6.5** *Collected:* **9/11/2013 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
NAPHTHALENE	0.83	J	0.72	MDL	1.8	PQL	ug/Kg	U	F

Sample ID: **SL-522-SA5D-SB-0.0-0.5** *Collected:* **9/11/2013 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(B)FLUORANTHENE	1.2	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z
CHRYSENE	1.5	J	0.36	MDL	1.8	PQL	ug/Kg	J	Z
FLUORANTHENE	0.82	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z
NAPHTHALENE	1.0	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z
PYRENE	0.83	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: **SL-523-SA5D-SB-0.0-0.5** *Collected:* **9/11/2013 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
NAPHTHALENE	0.82	J	0.69	MDL	1.7	PQL	ug/Kg	U	F

Sample ID: **SL-529-SA5D-SB-0.0-0.5** *Collected:* **9/11/2013 1:10:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHRYSENE	0.61	J	0.35	MDL	1.8	PQL	ug/Kg	J	Z
NAPHTHALENE	0.85	J	0.70	MDL	1.8	PQL	ug/Kg	U	F

Sample ID: **SL-529-SA5D-SB-3.0-4.0** *Collected:* **9/11/2013 1:15:00** *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	0.57	J	0.35	MDL	1.8	PQL	ug/Kg	J	Z
NAPHTHALENE	1.0	J	0.71	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: PH106 **Laboratory: LL**

EDD Filename: PH106 **eQAPP Name: CDM_SSFL_131101_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
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	Matrix Spike Lower Estimation
Q	Matrix Spike Precision
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

EPA Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control
Outlier Reports

PH106

Method Blank Outlier Report

Lab Reporting Batch ID: PH106 **Laboratory: LL**

EDD Filename: PH106 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: **1613B**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2660B370248	9/25/2013 2:48:00 AM	1,2,3,4,6,7,8-HPCDD	1.27 pg/L	EB-091113
		1,2,3,4,6,7,8-HPCDF	1.58 pg/L	
		1,2,3,4,7,8,9-HPCDF	1.12 pg/L	
		1,2,3,4,7,8-HxCDD	1.45 pg/L	
		1,2,3,4,7,8-HXCDF	1.70 pg/L	
		1,2,3,6,7,8-HXCDD	1.49 pg/L	
		1,2,3,6,7,8-HXCDF	1.55 pg/L	
		1,2,3,7,8,9-HXCDD	0.932 pg/L	
		1,2,3,7,8,9-HXCDF	1.03 pg/L	
		1,2,3,7,8-PECDD	1.71 pg/L	
		1,2,3,7,8-PECDF	1.48 pg/L	
		2,3,4,6,7,8-HXCDF	1.30 pg/L	
		2,3,4,7,8-PECDF	1.58 pg/L	
		OCDD	2.51 pg/L	
		OCDF	2.72 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
EB-091113(RES)	1,2,3,4,6,7,8-HPCDD	1.74 pg/L	1.74U pg/L
EB-091113(RES)	1,2,3,4,6,7,8-HPCDF	1.63 pg/L	1.63U pg/L
EB-091113(RES)	1,2,3,4,7,8,9-HPCDF	0.942 pg/L	0.942U pg/L
EB-091113(RES)	1,2,3,4,7,8-HxCDD	1.49 pg/L	1.49U pg/L
EB-091113(RES)	1,2,3,4,7,8-HXCDF	2.00 pg/L	2.00U pg/L
EB-091113(RES)	1,2,3,6,7,8-HXCDD	1.68 pg/L	1.68U pg/L
EB-091113(RES)	1,2,3,6,7,8-HXCDF	1.83 pg/L	1.83U pg/L
EB-091113(RES)	1,2,3,7,8,9-HXCDD	1.48 pg/L	1.48U pg/L
EB-091113(RES)	1,2,3,7,8,9-HXCDF	0.931 pg/L	0.931U pg/L
EB-091113(RES)	1,2,3,7,8-PECDD	2.30 pg/L	2.30U pg/L
EB-091113(RES)	1,2,3,7,8-PECDF	1.67 pg/L	1.67U pg/L
EB-091113(RES)	2,3,4,6,7,8-HXCDF	1.37 pg/L	1.37U pg/L
EB-091113(RES)	2,3,4,7,8-PECDF	1.79 pg/L	1.79U pg/L
EB-091113(RES)	OCDD	2.74 pg/L	2.74U pg/L
EB-091113(RES)	OCDF	2.98 pg/L	2.98U pg/L

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2610B370454	9/20/2013 4:54:00 AM	1,2,3,4,6,7,8-HPCDD	0.0535 ng/Kg	SL-506-SA5D-SB-0.0-0.5
		1,2,3,4,6,7,8-HPCDF	0.0418 ng/Kg	SL-519-SA5D-SB-0.0-0.5
		1,2,3,4,7,8,9-HPCDF	0.0583 ng/Kg	SL-520-SA5D-SB-0.0-0.5
		1,2,3,4,7,8-HxCDD	0.0859 ng/Kg	SL-520-SA5D-SB-4.0-5.0
		1,2,3,6,7,8-HXCDF	0.0456 ng/Kg	SL-520-SA5D-SB-8.0-9.0
		1,2,3,7,8,9-HXCDD	0.0579 ng/Kg	SL-521-SA5D-SB-0.0-0.5
		1,2,3,7,8,9-HXCDF	0.0750 ng/Kg	SL-521-SA5D-SB-5.5-6.5
		1,2,3,7,8-PECDD	0.122 ng/Kg	SL-522-SA5D-SB-0.0-0.5
		1,2,3,7,8-PECDF	0.0876 ng/Kg	SL-522-SA5D-SB-6.0-7.0
		OCDD	0.197 ng/Kg	SL-523-SA5D-SB-0.0-0.5
		OCDF	0.197 ng/Kg	SL-529-SA5D-SB-0.0-0.5

Method Blank Outlier Report

Lab Reporting Batch ID: PH106 **Laboratory: LL**

EDD Filename: PH106 **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-506-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDD	0.171 ng/Kg	0.171U ng/Kg
SL-506-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDF	0.0542 ng/Kg	0.0542U ng/Kg
SL-506-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0751 ng/Kg	0.0751U ng/Kg
SL-506-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.0624 ng/Kg	0.0624U ng/Kg
SL-506-SA5D-SB-0.0-0.5(RES)	OCDD	0.920 ng/Kg	0.920U ng/Kg
SL-506-SA5D-SB-0.0-0.5(RES)	OCDF	0.149 ng/Kg	0.149U ng/Kg
SL-519-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.0606 ng/Kg	0.0606U ng/Kg
SL-519-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.185 ng/Kg	0.185U ng/Kg
SL-519-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.345 ng/Kg	0.345U ng/Kg
SL-519-SA5D-SB-0.0-0.5(RES)	OCDF	0.508 ng/Kg	0.508U ng/Kg
SL-520-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDF	0.109 ng/Kg	0.109U ng/Kg
SL-520-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDD	0.278 ng/Kg	0.278U ng/Kg
SL-520-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.128 ng/Kg	0.128U ng/Kg
SL-520-SA5D-SB-0.0-0.5(RES)	OCDF	0.158 ng/Kg	0.158U ng/Kg
SL-520-SA5D-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDD	0.142 ng/Kg	0.142U ng/Kg
SL-520-SA5D-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0418 ng/Kg	0.0418U ng/Kg
SL-520-SA5D-SB-4.0-5.0(RES)	OCDD	0.674 ng/Kg	0.674U ng/Kg
SL-520-SA5D-SB-4.0-5.0(RES)	OCDF	0.284 ng/Kg	0.284U ng/Kg
SL-520-SA5D-SB-8.0-9.0(RES)	1,2,3,4,6,7,8-HPCDF	0.156 ng/Kg	0.156U ng/Kg
SL-520-SA5D-SB-8.0-9.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0914 ng/Kg	0.0914U ng/Kg
SL-520-SA5D-SB-8.0-9.0(RES)	OCDF	0.432 ng/Kg	0.432U ng/Kg
SL-521-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDF	0.110 ng/Kg	0.110U ng/Kg
SL-521-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.101 ng/Kg	0.101U ng/Kg
SL-521-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.198 ng/Kg	0.198U ng/Kg
SL-521-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.327 ng/Kg	0.327U ng/Kg
SL-521-SA5D-SB-0.0-0.5(RES)	OCDF	0.288 ng/Kg	0.288U ng/Kg
SL-521-SA5D-SB-5.5-6.5(RES)	1,2,3,4,6,7,8-HPCDD	0.265 ng/Kg	0.265U ng/Kg
SL-521-SA5D-SB-5.5-6.5(RES)	1,2,3,4,6,7,8-HPCDF	0.0497 ng/Kg	0.0497U ng/Kg
SL-521-SA5D-SB-5.5-6.5(RES)	1,2,3,6,7,8-HXCDF	0.0476 ng/Kg	0.0476U ng/Kg
SL-521-SA5D-SB-5.5-6.5(RES)	1,2,3,7,8,9-HXCDF	0.124 ng/Kg	0.124U ng/Kg
SL-521-SA5D-SB-5.5-6.5(RES)	1,2,3,7,8-PECDF	0.104 ng/Kg	0.104U ng/Kg
SL-522-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDF	0.0487 ng/Kg	0.0487U ng/Kg
SL-522-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0703 ng/Kg	0.0703U ng/Kg
SL-522-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.0665 ng/Kg	0.0665U ng/Kg
SL-522-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.0998 ng/Kg	0.0998U ng/Kg
SL-522-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.195 ng/Kg	0.195U ng/Kg
SL-522-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.381 ng/Kg	0.381U ng/Kg
SL-522-SA5D-SB-0.0-0.5(RES)	OCDF	0.153 ng/Kg	0.153U ng/Kg
SL-522-SA5D-SB-6.0-7.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0390 ng/Kg	0.0390U ng/Kg
SL-522-SA5D-SB-6.0-7.0(RES)	1,2,3,6,7,8-HXCDF	0.0729 ng/Kg	0.0729U ng/Kg

Method Blank Outlier Report

Lab Reporting Batch ID: PH106 **Laboratory: LL**

EDD Filename: PH106 **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-522-SA5D-SB-6.0-7.0(RES)	1,2,3,7,8,9-HXCDD	0.265 ng/Kg	0.265U ng/Kg
SL-522-SA5D-SB-6.0-7.0(RES)	1,2,3,7,8,9-HXCDF	0.0731 ng/Kg	0.0731U ng/Kg
SL-522-SA5D-SB-6.0-7.0(RES)	1,2,3,7,8-PECDD	0.168 ng/Kg	0.168U ng/Kg
SL-522-SA5D-SB-6.0-7.0(RES)	1,2,3,7,8-PECDF	0.141 ng/Kg	0.141U ng/Kg
SL-522-SA5D-SB-6.0-7.0(RES)	OCDD	0.328 ng/Kg	0.328U ng/Kg
SL-523-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDD	0.121 ng/Kg	0.121U ng/Kg
SL-523-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDF	0.0342 ng/Kg	0.0342U ng/Kg
SL-523-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0464 ng/Kg	0.0464U ng/Kg
SL-523-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDD	0.0874 ng/Kg	0.0874U ng/Kg
SL-523-SA5D-SB-0.0-0.5(RES)	OCDD	0.525 ng/Kg	0.525U ng/Kg
SL-523-SA5D-SB-0.0-0.5(RES)	OCDF	0.107 ng/Kg	0.107U ng/Kg
SL-529-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0533 ng/Kg	0.0533U ng/Kg
SL-529-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.0509 ng/Kg	0.0509U ng/Kg
SL-529-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.375 ng/Kg	0.375U ng/Kg
SL-529-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.117 ng/Kg	0.117U ng/Kg
SL-529-SA5D-SB-0.0-0.5(RES)	OCDF	0.733 ng/Kg	0.733U ng/Kg

Method: **6010C**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P26135AB221650	9/19/2013 4:50:00 PM	COPPER	0.0044 mg/L	EB-091113

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

Sample ID	Analyte	Reported Result	Modified Final Result
EB-091113(REA2)	COPPER	0.0040 mg/L	0.0040U mg/L

Method Blank Outlier Report

Lab Reporting Batch ID: PH106 **Laboratory: LL**

EDD Filename: PH106 **eQAPP Name: CDM_SSFL_131101_Lan**

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P25637BB221459	9/17/2013 2:59:00 PM	CALCIUM TIN	5.14 mg/Kg 1.20 mg/Kg	SL-506-SA5D-SB-0.0-0.5 SL-506-SA5D-SB-4.0-5.0 SL-519-SA5D-SB-0.0-0.5 SL-519-SA5D-SB-4.0-5.0 SL-520-SA5D-SB-0.0-0.5 SL-520-SA5D-SB-4.0-5.0 SL-520-SA5D-SB-8.0-9.0 SL-521-SA5D-SB-0.0-0.5 SL-521-SA5D-SB-5.5-6.5 SL-522-SA5D-SB-0.0-0.5 SL-522-SA5D-SB-6.0-7.0 SL-523-SA5D-SB-0.0-0.5 SL-529-SA5D-SB-0.0-0.5 SL-529-SA5D-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-506-SA5D-SB-0.0-0.5(RES)	TIN	3.60 mg/Kg	3.60U mg/Kg
SL-506-SA5D-SB-4.0-5.0(RES)	TIN	3.84 mg/Kg	3.84U mg/Kg
SL-519-SA5D-SB-0.0-0.5(RES)	TIN	3.49 mg/Kg	3.49U mg/Kg
SL-519-SA5D-SB-4.0-5.0(RES)	TIN	4.04 mg/Kg	4.04U mg/Kg
SL-520-SA5D-SB-0.0-0.5(RES)	TIN	3.69 mg/Kg	3.69U mg/Kg
SL-520-SA5D-SB-4.0-5.0(RES)	TIN	3.91 mg/Kg	3.91U mg/Kg
SL-520-SA5D-SB-8.0-9.0(RES)	TIN	3.20 mg/Kg	3.20U mg/Kg
SL-521-SA5D-SB-0.0-0.5(RES)	TIN	3.64 mg/Kg	3.64U mg/Kg
SL-521-SA5D-SB-5.5-6.5(RES)	TIN	3.45 mg/Kg	3.45U mg/Kg
SL-522-SA5D-SB-0.0-0.5(RES)	TIN	3.22 mg/Kg	3.22U mg/Kg
SL-522-SA5D-SB-6.0-7.0(RES)	TIN	4.23 mg/Kg	4.23U mg/Kg
SL-523-SA5D-SB-0.0-0.5(RES)	TIN	3.62 mg/Kg	3.62U mg/Kg
SL-529-SA5D-SB-0.0-0.5(RES)	TIN	3.22 mg/Kg	3.22U mg/Kg
SL-529-SA5D-SB-3.0-4.0(RES)	TIN	3.70 mg/Kg	3.70U mg/Kg

Equipment Rinsate Blank Outlier Report

Lab Reporting Batch ID: PH106 **Laboratory: LL**

EDD Filename: PH106 **eQAPP Name: CDM_SSFL_131101_Lan**

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

Equipment Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
EB-091113(REA2)	9/11/2013 3:00:00 PM	COPPER MANGANESE MOLYBDENUM	0.004 mg/L 0.0019 mg/L 0.0087 mg/L	SL-506-SA5D-SB-0.0-0.5 SL-506-SA5D-SB-4.0-5.0 SL-519-SA5D-SB-0.0-0.5 SL-519-SA5D-SB-4.0-5.0 SL-520-SA5D-SB-0.0-0.5 SL-520-SA5D-SB-4.0-5.0 SL-520-SA5D-SB-8.0-9.0 SL-521-SA5D-SB-0.0-0.5 SL-521-SA5D-SB-5.5-6.5 SL-522-SA5D-SB-0.0-0.5 SL-522-SA5D-SB-6.0-7.0 SL-523-SA5D-SB-0.0-0.5 SL-529-SA5D-SB-0.0-0.5 SL-529-SA5D-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-519-SA5D-SB-0.0-0.5(RES)	MOLYBDENUM	0.280 mg/Kg	0.280U mg/Kg
SL-521-SA5D-SB-0.0-0.5(RES)	MOLYBDENUM	0.366 mg/Kg	0.366U mg/Kg
SL-522-SA5D-SB-0.0-0.5(RES)	MOLYBDENUM	0.365 mg/Kg	0.365U mg/Kg
SL-529-SA5D-SB-0.0-0.5(RES)	MOLYBDENUM	0.292 mg/Kg	0.292U mg/Kg
SL-529-SA5D-SB-3.0-4.0(RES)	MOLYBDENUM	0.200 mg/Kg	0.200U mg/Kg

Field Blank Outlier Report

Lab Reporting Batch ID: PH106 **Laboratory: LL**

EDD Filename: PH106 **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-506-SA5D-SB-0.0-0.5 SL-506-SA5D-SB-4.0-5.0 SL-519-SA5D-SB-0.0-0.5 SL-519-SA5D-SB-4.0-5.0 SL-520-SA5D-SB-0.0-0.5 SL-520-SA5D-SB-4.0-5.0 SL-520-SA5D-SB-8.0-9.0 SL-521-SA5D-SB-0.0-0.5 SL-521-SA5D-SB-5.5-6.5 SL-522-SA5D-SB-0.0-0.5 SL-522-SA5D-SB-6.0-7.0 SL-523-SA5D-SB-0.0-0.5 SL-529-SA5D-SB-0.0-0.5 SL-529-SA5D-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-519-SA5D-SB-0.0-0.5(RES)	MOLYBDENUM	0.280 mg/Kg	0.280U mg/Kg
SL-521-SA5D-SB-0.0-0.5(RES)	MOLYBDENUM	0.366 mg/Kg	0.366U mg/Kg
SL-522-SA5D-SB-0.0-0.5(RES)	MOLYBDENUM	0.365 mg/Kg	0.365U mg/Kg
SL-529-SA5D-SB-0.0-0.5(RES)	MOLYBDENUM	0.292 mg/Kg	0.292U mg/Kg
SL-529-SA5D-SB-3.0-4.0(RES)	MOLYBDENUM	0.200 mg/Kg	0.200U 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-SA5D-SB-0.0-0.5 SL-506-SA5D-SB-4.0-5.0 SL-519-SA5D-SB-0.0-0.5 SL-519-SA5D-SB-4.0-5.0 SL-520-SA5D-SB-0.0-0.5 SL-520-SA5D-SB-4.0-5.0 SL-520-SA5D-SB-8.0-9.0 SL-521-SA5D-SB-0.0-0.5 SL-521-SA5D-SB-5.5-6.5 SL-522-SA5D-SB-0.0-0.5 SL-522-SA5D-SB-6.0-7.0 SL-523-SA5D-SB-0.0-0.5 SL-529-SA5D-SB-0.0-0.5 SL-529-SA5D-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-506-SA5D-SB-0.0-0.5(RES)	NAPHTHALENE	0.84 ug/Kg	1.8U ug/Kg
SL-521-SA5D-SB-5.5-6.5(RES)	NAPHTHALENE	0.83 ug/Kg	1.8U ug/Kg
SL-523-SA5D-SB-0.0-0.5(RES)	NAPHTHALENE	0.82 ug/Kg	1.7U ug/Kg
SL-529-SA5D-SB-0.0-0.5(RES)	NAPHTHALENE	0.85 ug/Kg	1.8U ug/Kg

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

Surrogate Outlier Report

Lab Reporting Batch ID: PH106 **Laboratory: LL**

EDD Filename: PH106 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: **8082A**
Matrix: **AQ**

Sample ID (Analysis Type)	*Surrogate*	*Sample % Recovery*	*% Recovery Limits*	*Affected Compounds*	*Flag*
EB-091113	DECACHLOROBIPHENYL	34	45.00-120.00	All Target Analytes	J (all detects) UJ (all non-detects)

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH106 **Laboratory: LL**

EDD Filename: PH106 **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-519-SA5D-SB-0.0-0.5MS **SL-519-SA5D-SB-0.0-0.5MSD** (SL-519-SA5D-SB-0.0-0.5)	EFH (C12-C14)	125	-	49.00-123.00	-	EFH (C12-C14)	J (all detects)
	EFH (C15-C20)	223	194	49.00-123.00	-	EFH (C15-C20)	
	EFH (C21-C30)	176	154	49.00-123.00	-	EFH (C21-C30)	
	EFH (C30-C40)	225	184	49.00-123.00	-	EFH (C30-C40)	
SL-519-SA5D-SB-0.0-0.5MS **SL-519-SA5D-SB-0.0-0.5MSD** (SL-519-SA5D-SB-0.0-0.5)	EFH (C8-C11)	141	20	49.00-123.00	59 (20.00)	EFH (C8-C11)	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-519-SA5D-SB-0.0-0.5MS **SL-519-SA5D-SB-0.0-0.5MSD** (SL-519-SA5D-SB-0.0-0.5)	1-METHYLNAPHTHALENE	-	-	50.00-131.00	46 (30.00)	1-METHYLNAPHTHALENE	J(all detects)
	2-METHYLNAPHTHALENE	-	-	35.00-152.00	46 (30.00)	2-METHYLNAPHTHALENE	
	ACENAPHTHENE	-	-	48.00-127.00	44 (30.00)	ACENAPHTHENE	
	ACENAPHTHYLENE	-	-	49.00-121.00	45 (30.00)	ACENAPHTHYLENE	
	ANTHRACENE	-	-	52.00-126.00	41 (30.00)	ANTHRACENE	
	BENZO(A)ANTHRACENE	-	-	44.00-143.00	43 (30.00)	BENZO(A)ANTHRACENE	
	BENZO(A)PYRENE	-	-	44.00-140.00	43 (30.00)	BENZO(A)PYRENE	
	BENZO(B)FLUORANTHENE	-	-	26.00-142.00	39 (30.00)	BENZO(B)FLUORANTHENE	
	BENZO(G,H,I)PERYLENE	-	-	33.00-141.00	42 (30.00)	BENZO(G,H,I)PERYLENE	
	BENZO(K)FLUORANTHENE	-	-	54.00-142.00	45 (30.00)	BENZO(K)FLUORANTHENE	
	BIS(2-ETHYLHEXYL)PHTHALAT	-	-	39.00-167.00	44 (30.00)	BIS(2-ETHYLHEXYL)PHTHALA	
	Butylbenzylphthalate	-	-	49.00-151.00	41 (30.00)	Butylbenzylphthalate	
	CHRYSENE	-	-	29.00-148.00	39 (30.00)	CHRYSENE	
	DIBENZO(A,H)ANTHRACENE	-	-	20.00-137.00	43 (30.00)	DIBENZO(A,H)ANTHRACENE	
	Diethylphthalate	-	-	43.00-145.00	46 (30.00)	Diethylphthalate	
	Dimethylphthalate	-	-	58.00-129.00	45 (30.00)	Dimethylphthalate	
	Di-n-butylphthalate	-	-	52.00-147.00	41 (30.00)	Di-n-butylphthalate	
	Di-n-octylphthalate	-	-	52.00-162.00	43 (30.00)	Di-n-octylphthalate	
	FLUORANTHENE	-	-	40.00-148.00	39 (30.00)	FLUORANTHENE	
	FLUORENE	-	-	51.00-137.00	44 (30.00)	FLUORENE	
	INDENO(1,2,3-CD)PYRENE	-	-	17.00-136.00	42 (30.00)	INDENO(1,2,3-CD)PYRENE	
	NAPHTHALENE	-	-	31.00-148.00	46 (30.00)	NAPHTHALENE	
	N-NITROSODIMETHYLAMINE	186	-	48.00-113.00	56 (30.00)	N-NITROSODIMETHYLAMINE	
	PHENANTHRENE	-	-	29.00-142.00	43 (30.00)	PHENANTHRENE	
	PYRENE	-	-	26.00-143.00	41 (30.00)	PYRENE	
SL-519-SA5D-SB-0.0-0.5MSD (SL-519-SA5D-SB-0.0-0.5)	BENZO(E)PYRENE	-	61	70.00-130.00	41 (30.00)	BENZO(E)PYRENE	J(all detects) UJ(all non-detects)

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH106 **Laboratory: LL**

EDD Filename: PH106 **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
P7WMLCSQ261255	Butylbenzylphthalate	21	37	40.00-138.00	54 (30.00)	Butylbenzylphthalate	J(all detects)
P7WMLCSY261322	Diethylphthalate	51	-	64.00-128.00	33 (30.00)	Diethylphthalate	UJ(all non-detects)
(EB-091113)	Dimethylphthalate	10	-	23.00-139.00	79 (30.00)	Dimethylphthalate	

Method: 8270D SIM
Matrix: SO

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
P6LDLCSQ260424	N-NITROSODIMETHYLAMINE	196	-	71.00-124.00	-	N-NITROSODIMETHYLAMINE	
(SL-506-SA5D-SB-0.0-0.5							
SL-506-SA5D-SB-4.0-5.0							
SL-519-SA5D-SB-0.0-0.5							
SL-519-SA5D-SB-4.0-5.0							
SL-520-SA5D-SB-0.0-0.5							
SL-520-SA5D-SB-4.0-5.0							
SL-520-SA5D-SB-8.0-9.0							J (all detects)
SL-521-SA5D-SB-0.0-0.5							
SL-521-SA5D-SB-5.5-6.5							
SL-522-SA5D-SB-0.0-0.5							
SL-522-SA5D-SB-6.0-7.0							
SL-523-SA5D-SB-0.0-0.5							
SL-529-SA5D-SB-0.0-0.5							
SL-529-SA5D-SB-3.0-4.0)							

Reporting Limit Outliers

Lab Reporting Batch ID: PH106 **Laboratory: LL**

EDD Filename: PH106 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 1613B

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-091113	1,2,3,4,6,7,8-HPCDD	JQ	1.74	9.62	PQL	pg/L	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JQ	1.63	9.62	PQL	pg/L	
	1,2,3,4,7,8,9-HPCDF	J	0.942	9.62	PQL	pg/L	
	1,2,3,4,7,8-HxCDD	JQ	1.49	9.62	PQL	pg/L	
	1,2,3,4,7,8-HXCDF	JQ	2.00	9.62	PQL	pg/L	
	1,2,3,6,7,8-HXCDD	JQ	1.68	9.62	PQL	pg/L	
	1,2,3,6,7,8-HXCDF	JQ	1.83	9.62	PQL	pg/L	
	1,2,3,7,8,9-HXCDD	JQ	1.48	9.62	PQL	pg/L	
	1,2,3,7,8,9-HXCDF	JQ	0.931	9.62	PQL	pg/L	
	1,2,3,7,8-PECDD	JQ	2.30	9.62	PQL	pg/L	
	1,2,3,7,8-PECDF	JQ	1.67	9.62	PQL	pg/L	
	2,3,4,6,7,8-HXCDF	JQ	1.37	9.62	PQL	pg/L	
	2,3,4,7,8-PECDF	JQ	1.79	9.62	PQL	pg/L	
	2,3,7,8-TCDD	JQ	0.813	1.92	PQL	pg/L	
	OCDD	J	2.74	19.2	PQL	pg/L	
	OCDF	J	2.98	19.2	PQL	pg/L	

Method: 6010C

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-091113	COPPER	J	0.0040	0.0200	PQL	mg/L	J (all detects)
	MANGANESE	J	0.0019	0.0100	PQL	mg/L	
	MOLYBDENUM	J	0.0087	0.0200	PQL	mg/L	

Method: 8270D SIM

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-091113	BIS(2-ETHYLHEXYL)PHTHALATE	J	0.21	1.0	PQL	ug/L	J (all detects)
	Diethylphthalate	J	0.24	1.0	PQL	ug/L	
	Di-n-butylphthalate	J	0.20	1.0	PQL	ug/L	
	NAPHTHALENE	J	0.038	0.051	PQL	ug/L	

Reporting Limit Outliers

Lab Reporting Batch ID: PH106 **Laboratory: LL**

EDD Filename: PH106 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-506-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	0.171	5.28	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0542	5.28	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0751	5.28	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0624	5.28	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	J	0.0546	5.28	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JQ	0.253	5.28	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.307	5.28	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	0.665	5.28	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.563	5.28	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JQ	0.0702	5.28	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.0605	5.28	PQL	ng/Kg	
	OCDD	JB	0.920	10.6	PQL	ng/Kg	
	OCDF	JB	0.149	10.6	PQL	ng/Kg	
SL-519-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JBQ	1.03	5.32	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.212	5.32	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	J	0.0548	5.32	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	J	0.342	5.32	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0606	5.32	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.506	5.32	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	0.727	5.32	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.185	5.32	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.345	5.32	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JQ	0.0469	5.32	PQL	ng/Kg	
	OCDF	JB	0.508	10.6	PQL	ng/Kg	
SL-520-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	0.465	5.55	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.109	5.55	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JQ	0.0571	5.55	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JQ	0.0786	5.55	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.278	5.55	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	0.413	5.55	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.128	5.55	PQL	ng/Kg	
	OCDD	JBQ	4.19	11.1	PQL	ng/Kg	
	OCDF	JBQ	0.158	11.1	PQL	ng/Kg	
SL-520-SA5D-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.142	5.69	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0418	5.69	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.0597	5.69	PQL	ng/Kg	J (all detects)
	2,3,7,8-TCDF	JQ	0.172	1.14	PQL	ng/Kg	
	OCDD	JBQ	0.674	11.4	PQL	ng/Kg	
	OCDF	JBQ	0.284	11.4	PQL	ng/Kg	
SL-520-SA5D-SB-8.0-9.0	1,2,3,4,6,7,8-HPCDD	JBQ	1.15	5.53	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.156	5.53	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0914	5.53	PQL	ng/Kg	J (all detects)
	1,2,3,6,7,8-HXCDD	JQ	0.0716	5.53	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.0660	5.53	PQL	ng/Kg	
	OCDF	JB	0.432	11.1	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH106 **Laboratory: LL**

EDD Filename: PH106 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-521-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JBQ	0.860	5.41	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.110	5.41	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JQ	0.0691	5.41	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	J	0.725	5.41	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.101	5.41	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	1.04	5.41	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	1.84	5.41	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JB	0.198	5.41	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.327	5.41	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.0719	5.41	PQL	ng/Kg	
	OCDF	JBQ	0.288	10.8	PQL	ng/Kg	
SL-521-SA5D-SB-5.5-6.5	1,2,3,4,6,7,8-HPCDD	JBQ	0.265	5.33	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.0497	5.33	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JQ	0.0601	5.33	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0476	5.33	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JBQ	0.124	5.33	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.104	5.33	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.0879	5.33	PQL	ng/Kg	
	OCDD	JB	2.46	10.7	PQL	ng/Kg	
SL-522-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JBQ	0.419	5.40	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0487	5.40	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.0703	5.40	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0665	5.40	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JQ	0.108	5.40	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	J	0.317	5.40	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0998	5.40	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.680	5.40	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	1.11	5.40	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.195	5.40	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.381	5.40	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JQ	0.0928	5.40	PQL	ng/Kg	
	2,3,4,7,8-PECDF	J	0.172	5.40	PQL	ng/Kg	
	OCDD	JB	4.89	10.8	PQL	ng/Kg	
	OCDF	JBQ	0.153	10.8	PQL	ng/Kg	
SL-522-SA5D-SB-6.0-7.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.471	5.46	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.0390	5.46	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JQ	0.0967	5.46	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JQ	0.150	5.46	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.0729	5.46	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.265	5.46	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JBQ	0.0731	5.46	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.168	5.46	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.141	5.46	PQL	ng/Kg	
	2,3,4,7,8-PECDF	J	0.0865	5.46	PQL	ng/Kg	
	2,3,7,8-TCDD	J	0.254	1.09	PQL	ng/Kg	
	OCDD	JBQ	0.328	10.9	PQL	ng/Kg	
SL-523-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	0.121	4.94	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0342	4.94	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0464	4.94	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JQ	0.0733	4.94	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDD	JBQ	0.0874	4.94	PQL	ng/Kg	
	OCDD	JBQ	0.525	9.89	PQL	ng/Kg	
	OCDF	JBQ	0.107	9.89	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH106 **Laboratory: LL**

EDD Filename: PH106 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-529-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	1.96	5.06	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.281	5.06	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.0533	5.06	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JQ	0.0689	5.06	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JQ	0.283	5.06	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0509	5.06	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.335	5.06	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JBQ	0.375	5.06	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.117	5.06	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	J	0.109	5.06	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.0575	5.06	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.141	1.01	PQL	ng/Kg	
	OCDF	JB	0.733	10.1	PQL	ng/Kg	

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-506-SA5D-SB-0.0-0.5	ANTIMONY	J	0.910	4.43	PQL	mg/Kg	
	BERYLLIUM	J	1.00	1.11	PQL	mg/Kg	
	CADMIUM	J	0.617	1.11	PQL	mg/Kg	J (all detects)
	TIN	J	3.60	11.1	PQL	mg/Kg	
	Zirconium	J	1.78	5.54	PQL	mg/Kg	
SL-506-SA5D-SB-4.0-5.0	ANTIMONY	J	1.26	4.54	PQL	mg/Kg	
	BERYLLIUM	J	1.06	1.14	PQL	mg/Kg	
	CADMIUM	J	0.325	1.14	PQL	mg/Kg	J (all detects)
	TIN	J	3.84	11.4	PQL	mg/Kg	
	Zirconium	J	4.15	5.68	PQL	mg/Kg	
SL-519-SA5D-SB-0.0-0.5	ANTIMONY	J	1.04	4.28	PQL	mg/Kg	
	BERYLLIUM	J	0.938	1.07	PQL	mg/Kg	
	CADMIUM	J	0.628	1.07	PQL	mg/Kg	
	MOLYBDENUM	J	0.280	2.14	PQL	mg/Kg	J (all detects)
	SODIUM	J	87.6	107	PQL	mg/Kg	
	TIN	J	3.49	10.7	PQL	mg/Kg	
	Zirconium	J	4.49	5.35	PQL	mg/Kg	
SL-519-SA5D-SB-4.0-5.0	ANTIMONY	J	0.850	4.43	PQL	mg/Kg	
	BERYLLIUM	J	1.03	1.11	PQL	mg/Kg	
	CADMIUM	J	0.417	1.11	PQL	mg/Kg	J (all detects)
	TIN	J	4.04	11.1	PQL	mg/Kg	
	Zirconium	J	3.54	5.54	PQL	mg/Kg	
SL-520-SA5D-SB-0.0-0.5	ANTIMONY	J	1.16	4.43	PQL	mg/Kg	
	BERYLLIUM	J	1.04	1.11	PQL	mg/Kg	
	CADMIUM	J	0.495	1.11	PQL	mg/Kg	J (all detects)
	SODIUM	J	102	111	PQL	mg/Kg	
	TIN	J	3.69	11.1	PQL	mg/Kg	
	Zirconium	J	4.08	5.54	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH106 **Laboratory: LL**

EDD Filename: PH106 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-520-SA5D-SB-4.0-5.0	ANTIMONY	J	1.21	4.70	PQL	mg/Kg	
	BERYLLIUM	J	0.958	1.18	PQL	mg/Kg	
	CADMIUM	J	0.600	1.18	PQL	mg/Kg	J (all detects)
	TIN	J	3.91	11.8	PQL	mg/Kg	
	Zirconium	J	3.92	5.88	PQL	mg/Kg	
SL-520-SA5D-SB-8.0-9.0	ARSENIC	J	3.59	4.50	PQL	mg/Kg	
	BERYLLIUM	J	0.546	1.12	PQL	mg/Kg	
	BORON	J	8.62	11.2	PQL	mg/Kg	J (all detects)
	CADMIUM	J	0.470	1.12	PQL	mg/Kg	
	TIN	J	3.20	11.2	PQL	mg/Kg	
	Zirconium	J	2.48	5.62	PQL	mg/Kg	
SL-521-SA5D-SB-0.0-0.5	BERYLLIUM	J	0.858	1.07	PQL	mg/Kg	
	CADMIUM	J	0.559	1.07	PQL	mg/Kg	
	MOLYBDENUM	J	0.366	2.15	PQL	mg/Kg	J (all detects)
	SODIUM	J	96.1	107	PQL	mg/Kg	
	TIN	J	3.64	10.7	PQL	mg/Kg	
	Zirconium	J	2.99	5.37	PQL	mg/Kg	
SL-521-SA5D-SB-5.5-6.5	ARSENIC	J	3.89	4.23	PQL	mg/Kg	
	BERYLLIUM	J	0.447	1.06	PQL	mg/Kg	
	BORON	J	7.52	10.6	PQL	mg/Kg	J (all detects)
	CADMIUM	J	0.318	1.06	PQL	mg/Kg	
	SODIUM	J	85.4	106	PQL	mg/Kg	
	TIN	J	3.45	10.6	PQL	mg/Kg	
SL-522-SA5D-SB-0.0-0.5	ARSENIC	J	3.86	4.28	PQL	mg/Kg	
	BERYLLIUM	J	0.756	1.07	PQL	mg/Kg	
	CADMIUM	J	0.521	1.07	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.365	2.14	PQL	mg/Kg	
	TIN	J	3.22	10.7	PQL	mg/Kg	
SL-522-SA5D-SB-6.0-7.0	ANTIMONY	J	1.04	4.30	PQL	mg/Kg	
	CADMIUM	J	0.476	1.08	PQL	mg/Kg	J (all detects)
	TIN	J	4.23	10.8	PQL	mg/Kg	
SL-523-SA5D-SB-0.0-0.5	BERYLLIUM	J	0.455	1.04	PQL	mg/Kg	
	BORON	J	6.99	10.4	PQL	mg/Kg	
	CADMIUM	J	0.268	1.04	PQL	mg/Kg	J (all detects)
	TIN	J	3.62	10.4	PQL	mg/Kg	
	Zirconium	J	1.49	5.18	PQL	mg/Kg	
SL-529-SA5D-SB-0.0-0.5	ANTIMONY	J	0.825	4.19	PQL	mg/Kg	
	BERYLLIUM	J	0.713	1.05	PQL	mg/Kg	
	BORON	J	9.15	10.5	PQL	mg/Kg	
	CADMIUM	J	0.398	1.05	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.292	2.09	PQL	mg/Kg	
	SODIUM	J	104	105	PQL	mg/Kg	
	TIN	J	3.22	10.5	PQL	mg/Kg	
	Zirconium	J	2.32	5.23	PQL	mg/Kg	
SL-529-SA5D-SB-3.0-4.0	ANTIMONY	J	1.21	4.17	PQL	mg/Kg	
	BERYLLIUM	J	0.693	1.04	PQL	mg/Kg	
	BORON	J	8.48	10.4	PQL	mg/Kg	
	CADMIUM	J	0.286	1.04	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.200	2.09	PQL	mg/Kg	
	TIN	J	3.70	10.4	PQL	mg/Kg	
	Zirconium	J	1.56	5.21	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH106 **Laboratory: LL**

EDD Filename: PH106 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-506-SA5D-SB-0.0-0.5	SELENIUM SILVER	J J	0.196 0.0511	0.443 0.221	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-506-SA5D-SB-4.0-5.0	SILVER	J	0.0670	0.227	PQL	mg/Kg	J (all detects)
SL-519-SA5D-SB-0.0-0.5	SELENIUM SILVER	J J	0.243 0.0463	0.428 0.214	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-519-SA5D-SB-4.0-5.0	SELENIUM SILVER	J J	0.127 0.0493	0.443 0.222	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-520-SA5D-SB-0.0-0.5	SELENIUM SILVER	J J	0.274 0.0488	0.443 0.221	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-520-SA5D-SB-4.0-5.0	SILVER	J	0.0489	0.235	PQL	mg/Kg	J (all detects)
SL-520-SA5D-SB-8.0-9.0	SILVER	J	0.0388	0.225	PQL	mg/Kg	J (all detects)
SL-521-SA5D-SB-0.0-0.5	SELENIUM SILVER	J J	0.208 0.0373	0.430 0.215	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-522-SA5D-SB-0.0-0.5	SELENIUM SILVER	J J	0.204 0.0324	0.428 0.214	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-522-SA5D-SB-6.0-7.0	SELENIUM SILVER	J J	0.219 0.157	0.430 0.215	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-529-SA5D-SB-0.0-0.5	SELENIUM SILVER	J J	0.152 0.0281	0.419 0.209	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-529-SA5D-SB-3.0-4.0	SELENIUM	J	0.142	0.417	PQL	mg/Kg	J (all detects)

Method: 7471B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-506-SA5D-SB-4.0-5.0	MERCURY	J	0.0157	0.0184	PQL	mg/Kg	J (all detects)
SL-522-SA5D-SB-0.0-0.5	MERCURY	J	0.0112	0.0175	PQL	mg/Kg	J (all detects)
SL-522-SA5D-SB-6.0-7.0	MERCURY	J	0.0110	0.0180	PQL	mg/Kg	J (all detects)

Method: 8015M

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-506-SA5D-SB-0.0-0.5	EFH (C21-C30) EFH (C30-C40)	J J	3.7 7.6	5.5 11	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-519-SA5D-SB-0.0-0.5	EFH (C21-C30) EFH (C30-C40) EFH (C8-C11)	J J J	5.1 9.8 2.2	5.4 11 5.4	PQL PQL PQL	mg/Kg mg/Kg mg/Kg	J (all detects)
SL-520-SA5D-SB-0.0-0.5	EFH (C8-C11)	J	2.9	5.6	PQL	mg/Kg	J (all detects)
SL-521-SA5D-SB-0.0-0.5	EFH (C15-C20)	J	2.2	5.4	PQL	mg/Kg	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH106 **Laboratory: LL**

EDD Filename: PH106 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 8015M

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-521-SA5D-SB-5.5-6.5	EFH (C8-C11)	J	3.4	5.4	PQL	mg/Kg	J (all detects)
SL-522-SA5D-SB-0.0-0.5	EFH (C15-C20) EFH (C21-C30) EFH (C30-C40)	J J J	2.2 5.1 10	5.3 5.3 11	PQL PQL PQL	mg/Kg mg/Kg mg/Kg	J (all detects)
SL-522-SA5D-SB-6.0-7.0	EFH (C8-C11)	J	3.2	5.5	PQL	mg/Kg	J (all detects)
SL-529-SA5D-SB-0.0-0.5	EFH (C21-C30)	J	4.7	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-506-SA5D-SB-0.0-0.5	CHRYSENE NAPHTHALENE	J J	0.46 0.84	1.8 1.8	PQL PQL	ug/Kg ug/Kg	J (all detects)
SL-506-SA5D-SB-4.0-5.0	NAPHTHALENE	J	0.99	1.9	PQL	ug/Kg	J (all detects)
SL-519-SA5D-SB-0.0-0.5	BENZO(B)FLUORANTHENE CHRYSENE FLUORANTHENE NAPHTHALENE PHENANTHRENE PYRENE	J J J J J J	1.4 1.7 1.2 1.4 0.94 0.98	1.8 1.8 1.8 1.8 1.8 1.8	PQL PQL PQL PQL PQL PQL	ug/Kg ug/Kg ug/Kg ug/Kg ug/Kg ug/Kg	J (all detects)
SL-520-SA5D-SB-0.0-0.5	NAPHTHALENE	J	1.0	1.9	PQL	ug/Kg	J (all detects)
SL-520-SA5D-SB-4.0-5.0	NAPHTHALENE	J	1.0	2.0	PQL	ug/Kg	J (all detects)
SL-520-SA5D-SB-8.0-9.0	ANTHRACENE BENZO(A)PYRENE BENZO(G,H,I)PERYLENE BENZO(K)FLUORANTHENE INDENO(1,2,3-CD)PYRENE NAPHTHALENE	J J J J J J	0.38 1.6 1.1 1.4 0.85 1.1	1.9 1.9 1.9 1.9 1.9 1.9	PQL PQL PQL PQL PQL PQL	ug/Kg ug/Kg ug/Kg ug/Kg ug/Kg ug/Kg	J (all detects)
SL-521-SA5D-SB-0.0-0.5	BENZO(B)FLUORANTHENE FLUORANTHENE NAPHTHALENE	J J J	1.2 0.73 1.5	1.8 1.8 1.8	PQL PQL PQL	ug/Kg ug/Kg ug/Kg	J (all detects)
SL-521-SA5D-SB-5.5-6.5	NAPHTHALENE	J	0.83	1.8	PQL	ug/Kg	J (all detects)
SL-522-SA5D-SB-0.0-0.5	BENZO(B)FLUORANTHENE CHRYSENE FLUORANTHENE NAPHTHALENE PYRENE	J J J J J	1.2 1.5 0.82 1.0 0.83	1.8 1.8 1.8 1.8 1.8	PQL PQL PQL PQL PQL	ug/Kg ug/Kg ug/Kg ug/Kg ug/Kg	J (all detects)
SL-523-SA5D-SB-0.0-0.5	NAPHTHALENE	J	0.82	1.7	PQL	ug/Kg	J (all detects)
SL-529-SA5D-SB-0.0-0.5	CHRYSENE NAPHTHALENE	J J	0.61 0.85	1.8 1.8	PQL PQL	ug/Kg ug/Kg	J (all detects)
SL-529-SA5D-SB-3.0-4.0	CHRYSENE NAPHTHALENE	J J	0.57 1.0	1.8 1.8	PQL PQL	ug/Kg ug/Kg	J (all detects)

LDC #: 30695I4
SDG #: PH106
Laboratory: Eurofins Lancaster Laboratories

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 11/11/13
Page: 1 of 1
Reviewer: CA
2nd Reviewer: W

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

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

	Validation Area		Comments
I.	Technical holding times	—	Sampling dates: 9/11/13
II.	ICP/MS Tune	—	
III.	Calibration	—	
IV.	Blanks	SW	
V.	ICP Interference Check Sample (ICS) Analysis	—	
VI.	Matrix Spike Analysis	N	MS/D (see PH104)
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	—	See PH104
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	N	
XIV.	Field Duplicates	—	
XV	Field Blanks	SW	EB=1 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	EB-091113	11	SL-506-SA5D-SB-0.0-0.5	21		31	
2	SL-519-SA5D-SB-0.0-0.5	12	SL-506-SA5D-SB-4.0-5.0	22		32	
3	SL-519-SA5D-SB-4.0-5.0	13	SL-523-SA5D-SB-0.0-0.5	23		33	
4	SL-520-SA5D-SB-0.0-0.5	14	SL-529-SA5D-SB-0.0-0.5	24		34	
5	SL-520-SA5D-SB-4.0-5.0	15	SL-529-SA5D-SB-3.0-4.0	25		35	
6	SL-520-SA5D-SB-8.0-9.0	16		26		36	
7	SL-521-SA5D-SB-0.0-0.5	17		27		37	
8	SL-521-SA5D-SB-5.5-6.5	18		28		38	
9	SL-522-SA5D-SB-0.0-0.5	19		29		39	
10	SL-522-SA5D-SB-6.0-7.0	20		30		40	

Notes: _____

LDC #: 30695I4

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: a
2nd Reviewer: v

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										
Cu			4.2	21	4.0										
Mo			3.7	18.5	8.7										

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 #: 30695I4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: CL
2nd Reviewer: VA

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	2	7	9	14	15							
Cu	0.0036	1.8												
Mo	0.0036	1.8	0.280	~~0.37~~ 0.3606	0.365	0.292	0.200							

Sampling date: 8/28/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All

Analyte	Blank ID	Sample Identification												
	EB-091113 (SDG: PH106)	Action Limit	2	7	9	14	15							
Cu	0.0040	2												
Mn	0.0019	0.95												
Mo	0.0087	4.35	See FB	See FB	See FB	See FB	See FB							

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 5D

SDG: PH107

Prepared for

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Denver, CO 80202

Prepared by

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2701 Loker Ave West, Suite 220
Carlsbad, California 92010

December 11, 2013

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on September 12, 2013. Data validation was performed in accordance with the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008), Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005) and for Inorganic Data Review (January 2010). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Semivolatiles (SVOCs) by 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
Perchlorate by EPA Method 6850
Total Petroleum Hydrocarbons (TPH) as Gasoline by EPA SW 846 Method 8015M
TPH as Extractables by EPA SW 846 Method 8015M
Dioxins and Dibenzofurans by EPA Method 1613B

Wet Chemistry:
Hexavalent Chromium by EPA Method 7199
Fluoride by EPA Method 300.0

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 duplicates. No samples in this SDG were subjected to Level IV evaluation.

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

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

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 blanks for SVOCs, 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
PH107/ 6010C	ICB/CCB	Copper Molybdenum	4.2 ug/L 3.7 ug/L	EB-091213

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
PH107/ 6010C	EB-091213	Copper Molybdenum	4.5 ug/L 3.2 ug/L	4.5U ug/L 3.2U 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 SVOCs. The associated sample result was qualified as non-detected estimated (UJ). The details regarding the qualification of data are provided in Enclosure I.

VI. ICP Interference Check Sample (ICS) Analysis

ICP interference check data were not reviewed for level III.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed at the required frequency. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of two MS/MSD pairs for herbicides, metals, TPH as extractables and fluoride. The dinoseb result in sample SL-853-SA5D-SB-0.0-0.5 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. 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. The associated sample results were qualified as non-detected estimated (UJ). 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-553-SA5D-SB-0.0-0.5	Cobalt Strontium	12 (≤10) 12 (≤10)	All soil samples in SDG PH107	J (all detects) UJ (all non-detects)	A

The associated sample results were qualified as detected estimated (J).

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 PH107	All compounds reported as detected below the RL.	J (all detects)	A

XIII. Field Duplicate Samples

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

XIV. Field Blank Samples

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

Two equipment blanks (one from PH106) were collected and analyzed for SVOCs, pesticides, PCBs, metals, herbicides, perchlorate, TPH as gasoline, TPH as extractables, dioxins, hexavalent chromium and fluoride. The equipment blanks had 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.

Two field blanks (from SDG PH029 and PH032) were collected and analyzed for SVOCs, pesticides, PCBs, metals, herbicides, perchlorate, TPH as gasoline, TPH as extractables, dioxins, hexavalent chromium and fluoride. The field blanks had detections for 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

One herbicide 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
12-Sep-2013	SL-553-SA5D-SB-0.0-0.5	7196426	N	3050B	6010C	III
12-Sep-2013	SL-553-SA5D-SB-0.0-0.5	7196426	N	3050B	6020A	III
12-Sep-2013	SL-553-SA5D-SB-0.0-0.5	7196426	N	3060A	7199	III
12-Sep-2013	SL-553-SA5D-SB-0.0-0.5	7196426	N	3546	8015M	III
12-Sep-2013	SL-553-SA5D-SB-0.0-0.5	7196426	N	3546	8082A	III
12-Sep-2013	SL-553-SA5D-SB-0.0-0.5	7196426	N	3546	8270D SIM	III
12-Sep-2013	SL-553-SA5D-SB-0.0-0.5	7196426	N	3550B	8151A	III
12-Sep-2013	SL-553-SA5D-SB-0.0-0.5	7196426	N	METHOD	1613B	III
12-Sep-2013	SL-553-SA5D-SB-0.0-0.5	7196426	N	METHOD	300.0	III
12-Sep-2013	SL-553-SA5D-SB-0.0-0.5	7196426	N	METHOD	6850	III
12-Sep-2013	SL-553-SA5D-SB-0.0-0.5	7196426	N	METHOD	7471B	III
12-Sep-2013	SL-553-SA5D-SB-0.0-0.5MS	7196427	MS	3050B	6010C	III
12-Sep-2013	SL-553-SA5D-SB-0.0-0.5MS	7196427	MS	3050B	6020A	III
12-Sep-2013	SL-553-SA5D-SB-0.0-0.5MS	7196427	MS	3546	8015M	III
12-Sep-2013	SL-553-SA5D-SB-0.0-0.5MS	7196427	MS	3546	8082A	III
12-Sep-2013	SL-553-SA5D-SB-0.0-0.5MS	7196427	MS	3546	8270D SIM	III
12-Sep-2013	SL-553-SA5D-SB-0.0-0.5MS	7196427	MS	3550B	8151A	III
12-Sep-2013	SL-553-SA5D-SB-0.0-0.5MS	7196427	MS	METHOD	1613B	III
12-Sep-2013	SL-553-SA5D-SB-0.0-0.5MS	7196427	MS	METHOD	300.0	III
12-Sep-2013	SL-553-SA5D-SB-0.0-0.5MS	7196427	MS	METHOD	6850	III
12-Sep-2013	SL-553-SA5D-SB-0.0-0.5MS	7196427	MS	METHOD	7471B	III
12-Sep-2013	SL-553-SA5D-SB-0.0-0.5MSD	7196428	MSD	3050B	6010C	III
12-Sep-2013	SL-553-SA5D-SB-0.0-0.5MSD	7196428	MSD	3050B	6020A	III
12-Sep-2013	SL-553-SA5D-SB-0.0-0.5MSD	7196428	MSD	3546	8015M	III
12-Sep-2013	SL-553-SA5D-SB-0.0-0.5MSD	7196428	MSD	3546	8082A	III
12-Sep-2013	SL-553-SA5D-SB-0.0-0.5MSD	7196428	MSD	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
12-Sep-2013	SL-553-SA5D-SB-0.0-0.5MSD	7196428	MSD	3550B	8151A	III
12-Sep-2013	SL-553-SA5D-SB-0.0-0.5MSD	7196428	MSD	METHOD	1613B	III
12-Sep-2013	SL-553-SA5D-SB-0.0-0.5MSD	7196428	MSD	METHOD	6850	III
12-Sep-2013	SL-553-SA5D-SB-0.0-0.5MSD	7196428	MSD	METHOD	7471B	III
12-Sep-2013	SL-553-SA5D-SB-0.0-0.5MS	7196429	MS	3060A	7199	III
12-Sep-2013	SL-553-SA5D-SB-0.0-0.5MS	7196430	MS	3060A	7199	III
12-Sep-2013	SL-553-SA5D-SB-0.0-0.5DUP	7196432	DUP	3050B	6010C	III
12-Sep-2013	SL-553-SA5D-SB-0.0-0.5DUP	7196432	DUP	3050B	6020A	III
12-Sep-2013	SL-553-SA5D-SB-0.0-0.5DUP	7196432	DUP	3060A	7199	III
12-Sep-2013	SL-553-SA5D-SB-0.0-0.5DUP	7196432	DUP	METHOD	300.0	III
12-Sep-2013	SL-553-SA5D-SB-0.0-0.5DUP	7196432	DUP	METHOD	7471B	III
12-Sep-2013	SL-853-SA5D-SB-0.0-0.5	7196433	FD	3050B	6010C	III
12-Sep-2013	SL-853-SA5D-SB-0.0-0.5	7196433	FD	3050B	6020A	III
12-Sep-2013	SL-853-SA5D-SB-0.0-0.5	7196433	FD	3060A	7199	III
12-Sep-2013	SL-853-SA5D-SB-0.0-0.5	7196433	FD	3546	8015M	III
12-Sep-2013	SL-853-SA5D-SB-0.0-0.5	7196433	FD	3546	8082A	III
12-Sep-2013	SL-853-SA5D-SB-0.0-0.5	7196433	FD	3546	8270D SIM	III
12-Sep-2013	SL-853-SA5D-SB-0.0-0.5	7196433	FD	Gen Prep	8151A	III
12-Sep-2013	SL-853-SA5D-SB-0.0-0.5	7196433	FD	METHOD	1613B	III
12-Sep-2013	SL-853-SA5D-SB-0.0-0.5	7196433	FD	METHOD	300.0	III
12-Sep-2013	SL-853-SA5D-SB-0.0-0.5	7196433	FD	METHOD	6850	III
12-Sep-2013	SL-853-SA5D-SB-0.0-0.5	7196433	FD	METHOD	7471B	III
12-Sep-2013	SL-853-SA5D-SB-0.0-0.5MSD	P196433M241803A	MSD	Gen Prep	8151A	III
12-Sep-2013	SL-853-SA5D-SB-0.0-0.5MS	P196433R241737A	MS	Gen Prep	8151A	III
12-Sep-2013	SL-553-SA5D-SB-4.5-5.5	7196434	N	3050B	6010C	III
12-Sep-2013	SL-553-SA5D-SB-4.5-5.5	7196434	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
12-Sep-2013	SL-553-SA5D-SB-4.5-5.5	7196434	N	3060A	7199	III
12-Sep-2013	SL-553-SA5D-SB-4.5-5.5	7196434	N	3546	8015M	III
12-Sep-2013	SL-553-SA5D-SB-4.5-5.5	7196434	N	3546	8082A	III
12-Sep-2013	SL-553-SA5D-SB-4.5-5.5	7196434	N	3546	8270D SIM	III
12-Sep-2013	SL-553-SA5D-SB-4.5-5.5	7196434	N	3550B	8151A	III
12-Sep-2013	SL-553-SA5D-SB-4.5-5.5	7196434	N	5035A	8015M	III
12-Sep-2013	SL-553-SA5D-SB-4.5-5.5	7196434	N	METHOD	300.0	III
12-Sep-2013	SL-553-SA5D-SB-4.5-5.5	7196434	N	METHOD	6850	III
12-Sep-2013	SL-553-SA5D-SB-4.5-5.5	7196434	N	METHOD	7471B	III
12-Sep-2013	TB-091213	7196425	TB	5030B	8015M	III
12-Sep-2013	SL-551-SA5D-SB-0.0-0.5	7196435	N	3050B	6010C	III
12-Sep-2013	SL-551-SA5D-SB-0.0-0.5	7196435	N	3050B	6020A	III
12-Sep-2013	SL-551-SA5D-SB-0.0-0.5	7196435	N	3546	8015M	III
12-Sep-2013	SL-551-SA5D-SB-0.0-0.5	7196435	N	3546	8081B	III
12-Sep-2013	SL-551-SA5D-SB-0.0-0.5	7196435	N	3546	8082A	III
12-Sep-2013	SL-551-SA5D-SB-0.0-0.5	7196435	N	3546	8270D SIM	III
12-Sep-2013	SL-551-SA5D-SB-0.0-0.5	7196435	N	METHOD	1613B	III
12-Sep-2013	SL-551-SA5D-SB-0.0-0.5	7196435	N	METHOD	300.0	III
12-Sep-2013	SL-551-SA5D-SB-0.0-0.5	7196435	N	METHOD	6850	III
12-Sep-2013	SL-551-SA5D-SB-0.0-0.5	7196435	N	METHOD	7471B	III
12-Sep-2013	SL-551-SA5D-SB-0.0-0.5MSD	P196435M241433A	MSD	3546	8081B	III
12-Sep-2013	SL-551-SA5D-SB-0.0-0.5MS	P196435R241417A	MS	3546	8081B	III
12-Sep-2013	SL-551-SA5D-SB-4.0-5.0	7196436	N	3050B	6010C	III
12-Sep-2013	SL-551-SA5D-SB-4.0-5.0	7196436	N	3050B	6020A	III
12-Sep-2013	SL-551-SA5D-SB-4.0-5.0	7196436	N	3546	8015M	III
12-Sep-2013	SL-551-SA5D-SB-4.0-5.0	7196436	N	3546	8081B	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-Sep-2013	SL-551-SA5D-SB-4.0-5.0	7196436	N	3546	8082A	III
12-Sep-2013	SL-551-SA5D-SB-4.0-5.0	7196436	N	3546	8270D SIM	III
12-Sep-2013	SL-551-SA5D-SB-4.0-5.0	7196436	N	5035A	8015M	III
12-Sep-2013	SL-551-SA5D-SB-4.0-5.0	7196436	N	METHOD	300.0	III
12-Sep-2013	SL-551-SA5D-SB-4.0-5.0	7196436	N	METHOD	6850	III
12-Sep-2013	SL-551-SA5D-SB-4.0-5.0	7196436	N	METHOD	7471B	III
12-Sep-2013	SL-551-SA5D-SB-9.0-10.0	7196437	N	3050B	6010C	III
12-Sep-2013	SL-551-SA5D-SB-9.0-10.0	7196437	N	3050B	6020A	III
12-Sep-2013	SL-551-SA5D-SB-9.0-10.0	7196437	N	3546	8015M	III
12-Sep-2013	SL-551-SA5D-SB-9.0-10.0	7196437	N	3546	8081B	III
12-Sep-2013	SL-551-SA5D-SB-9.0-10.0	7196437	N	3546	8082A	III
12-Sep-2013	SL-551-SA5D-SB-9.0-10.0	7196437	N	3546	8270D SIM	III
12-Sep-2013	SL-551-SA5D-SB-9.0-10.0	7196437	N	5035A	8015M	III
12-Sep-2013	SL-551-SA5D-SB-9.0-10.0	7196437	N	METHOD	300.0	III
12-Sep-2013	SL-551-SA5D-SB-9.0-10.0	7196437	N	METHOD	6850	III
12-Sep-2013	SL-551-SA5D-SB-9.0-10.0	7196437	N	METHOD	7471B	III
12-Sep-2013	SL-551-SA5D-SB-14.0-15.0	7196438	N	3050B	6010C	III
12-Sep-2013	SL-551-SA5D-SB-14.0-15.0	7196438	N	3050B	6020A	III
12-Sep-2013	SL-551-SA5D-SB-14.0-15.0	7196438	N	3546	8015M	III
12-Sep-2013	SL-551-SA5D-SB-14.0-15.0	7196438	N	3546	8081B	III
12-Sep-2013	SL-551-SA5D-SB-14.0-15.0	7196438	N	3546	8082A	III
12-Sep-2013	SL-551-SA5D-SB-14.0-15.0	7196438	N	3546	8270D SIM	III
12-Sep-2013	SL-551-SA5D-SB-14.0-15.0	7196438	N	5035A	8015M	III
12-Sep-2013	SL-551-SA5D-SB-14.0-15.0	7196438	N	METHOD	300.0	III
12-Sep-2013	SL-551-SA5D-SB-14.0-15.0	7196438	N	METHOD	6850	III
12-Sep-2013	SL-551-SA5D-SB-14.0-15.0	7196438	N	METHOD	7471B	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
12-Sep-2013	SL-551-SA5D-SB-17.5.-18.5	7196439	N	3050B	6010C	III
12-Sep-2013	SL-551-SA5D-SB-17.5.-18.5	7196439	N	3050B	6020A	III
12-Sep-2013	SL-551-SA5D-SB-17.5.-18.5	7196439	N	3546	8015M	III
12-Sep-2013	SL-551-SA5D-SB-17.5.-18.5	7196439	N	3546	8081B	III
12-Sep-2013	SL-551-SA5D-SB-17.5.-18.5	7196439	N	3546	8082A	III
12-Sep-2013	SL-551-SA5D-SB-17.5.-18.5	7196439	N	3546	8270D SIM	III
12-Sep-2013	SL-551-SA5D-SB-17.5.-18.5	7196439	N	5035A	8015M	III
12-Sep-2013	SL-551-SA5D-SB-17.5.-18.5	7196439	N	METHOD	300.0	III
12-Sep-2013	SL-551-SA5D-SB-17.5.-18.5	7196439	N	METHOD	6850	III
12-Sep-2013	SL-551-SA5D-SB-17.5.-18.5	7196439	N	METHOD	7471B	III
12-Sep-2013	SL-592-SA5D-SB-0.0-0.5	7196442	N	METHOD	300.0	III
12-Sep-2013	SL-592-SA5D-SB-0.0-0.5DUP	P196442D271520B	DUP	METHOD	300.0	III
12-Sep-2013	SL-592-SA5D-SB-0.0-0.5MS	P196442R271537B	MS	METHOD	300.0	III
12-Sep-2013	SL-592-SA5D-SB-4.0-5.0	7196443	N	METHOD	300.0	III
12-Sep-2013	SL-592-SA5D-SB-10.5-11.5	7196444	N	METHOD	300.0	III
12-Sep-2013	SL-591-SA5D-SB-0.0-0.5	7196440	N	METHOD	300.0	III
12-Sep-2013	SL-591-SA5D-SB-6.5-7.5	7196441	N	METHOD	300.0	III
12-Sep-2013	EB-091213	7196445	EB	3005A	6010C	III
12-Sep-2013	EB-091213	7196445	EB	3510C	8015M	III
12-Sep-2013	EB-091213	7196445	EB	3510C	8082A	III
12-Sep-2013	EB-091213	7196445	EB	3510C	8270D SIM	III
12-Sep-2013	EB-091213	7196445	EB	Gen Prep	300.0	III
12-Sep-2013	EB-091213	7196445	EB	Gen Prep	6850	III
12-Sep-2013	EB-091213	7196445	EB	Gen Prep	7199	III
12-Sep-2013	EB-091213	7196445	EB	M3010A	6020A	III
12-Sep-2013	EB-091213	7196445	EB	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-Sep-2013	EB-091213	7196445	EB	METHOD	7470A	III
12-Sep-2013	EB-091213	7196445	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: PH107 **Laboratory: LL**

EDD Filename: PrepPH107 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: **GENCHEM**

Method: **300.0** ***Matrix:*** **SO**

Sample ID: **SL-551-SA5D-SB-0.0-0.5** ***Collected:*** **9/12/2013 9:05:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORIDE	0.68	J	0.42	MDL	1.0	PQL	mg/Kg	J	Z, Q

Sample ID: **SL-551-SA5D-SB-14.0-15.0** ***Collected:*** **9/12/2013 9:35:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORIDE	2.7		0.45	MDL	1.1	PQL	mg/Kg	J	Q

Sample ID: **SL-551-SA5D-SB-17.5.-18.5** ***Collected:*** **9/12/2013 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
FLUORIDE	4.2		0.43	MDL	1.1	PQL	mg/Kg	J	Q

Sample ID: **SL-551-SA5D-SB-4.0-5.0** ***Collected:*** **9/12/2013 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
FLUORIDE	1.8		0.43	MDL	1.1	PQL	mg/Kg	J	Q

Sample ID: **SL-551-SA5D-SB-9.0-10.0** ***Collected:*** **9/12/2013 9:25:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORIDE	2.2		0.43	MDL	1.1	PQL	mg/Kg	J	Q

Sample ID: **SL-553-SA5D-SB-0.0-0.5** ***Collected:*** **9/12/2013 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
FLUORIDE	0.80	J	0.40	MDL	1.0	PQL	mg/Kg	J	Z, Q

Sample ID: **SL-553-SA5D-SB-4.5-5.5** ***Collected:*** **9/12/2013 7:45:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORIDE	3.6		0.42	MDL	1.1	PQL	mg/Kg	J	Q

Sample ID: **SL-591-SA5D-SB-0.0-0.5** ***Collected:*** **9/12/2013 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
FLUORIDE	1.4		0.41	MDL	1.0	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: PH107 **Laboratory: LL**

EDD Filename: PrepPH107 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: GENCHEM

Method: 300.0 **Matrix: SO**

Sample ID: **SL-591-SA5D-SB-6.5-7.5** *Collected:* **9/12/2013 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
FLUORIDE	6.6		0.44	MDL	1.1	PQL	mg/Kg	J	Q

Sample ID: **SL-592-SA5D-SB-0.0-0.5** *Collected:* **9/12/2013 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
FLUORIDE	0.54	J	0.42	MDL	1.0	PQL	mg/Kg	J	Z, Q

Sample ID: **SL-592-SA5D-SB-10.5-11.5** *Collected:* **9/12/2013 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
FLUORIDE	15.8		0.44	MDL	1.1	PQL	mg/Kg	J	Q

Sample ID: **SL-592-SA5D-SB-4.0-5.0** *Collected:* **9/12/2013 12:05:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORIDE	3.2		0.44	MDL	1.1	PQL	mg/Kg	J	Q

Sample ID: **SL-853-SA5D-SB-0.0-0.5** *Collected:* **9/12/2013 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
FLUORIDE	0.86	J	0.40	MDL	1.0	PQL	mg/Kg	J	Z, Q

Method Category: METALS

Method: 6010C **Matrix: AQ**

Sample ID: **EB-091213** *Collected:* **9/12/2013 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
COPPER	0.0045	J	0.0027	MDL	0.0200	PQL	mg/L	U	B, B
MOLYBDENUM	0.0032	J	0.0017	MDL	0.0200	PQL	mg/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: PH107 **Laboratory: LL**

EDD Filename: PrepPH107 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: **METALS**

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

Sample ID: **SL-551-SA5D-SB-0.0-0.5** ***Collected:*** **9/12/2013 9:05:00** ***Analysis Type:*** **REA** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.10	U	0.758	MDL	4.10	PQL	mg/Kg	UJ	Q
ARSENIC	3.90	J	0.717	MDL	4.10	PQL	mg/Kg	J	Z
BERYLLIUM	0.767	J	0.0686	MDL	1.02	PQL	mg/Kg	J	Z
BORON	1.03	J	0.861	MDL	10.2	PQL	mg/Kg	J	Z
CADMIUM	0.216	J	0.0779	MDL	1.02	PQL	mg/Kg	J	Z
COBALT	7.95		0.101	MDL	1.02	PQL	mg/Kg	J	A
MOLYBDENUM	0.209	J	0.174	MDL	2.05	PQL	mg/Kg	U	F, F
SODIUM	92.2	J	17.1	MDL	102	PQL	mg/Kg	J	Z
TIN	2.96	J	0.225	MDL	10.2	PQL	mg/Kg	U	B

Sample ID: **SL-551-SA5D-SB-14.0-15.0** ***Collected:*** **9/12/2013 9:35:00** ***Analysis Type:*** **REA** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.52	U	0.835	MDL	4.52	PQL	mg/Kg	UJ	Q
CADMIUM	0.117	J	0.0858	MDL	1.13	PQL	mg/Kg	J	Z
COBALT	7.84		0.112	MDL	1.13	PQL	mg/Kg	J	A
MOLYBDENUM	0.524	J	0.192	MDL	2.26	PQL	mg/Kg	U	F, F
TIN	4.01	J	0.248	MDL	11.3	PQL	mg/Kg	U	B

Sample ID: **SL-551-SA5D-SB-17.5.-18.5** ***Collected:*** **9/12/2013 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
ANTIMONY	4.25	U	0.786	MDL	4.25	PQL	mg/Kg	UJ	Q
BERYLLIUM	1.00	J	0.0712	MDL	1.06	PQL	mg/Kg	J	Z
CADMIUM	0.171	J	0.0807	MDL	1.06	PQL	mg/Kg	J	Z
COBALT	11.6		0.105	MDL	1.06	PQL	mg/Kg	J	A
MOLYBDENUM	0.383	J	0.181	MDL	2.12	PQL	mg/Kg	U	F, F
TIN	3.99	J	0.234	MDL	10.6	PQL	mg/Kg	U	B

Sample ID: **SL-551-SA5D-SB-4.0-5.0** ***Collected:*** **9/12/2013 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
ANTIMONY	4.31	U	0.797	MDL	4.31	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.789	J	0.0722	MDL	1.08	PQL	mg/Kg	J	Z
BORON	1.15	J	0.905	MDL	10.8	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: PH107 **Laboratory: LL**

EDD Filename: PrepPH107 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-551-SA5D-SB-4.0-5.0 **Collected: 9/12/2013 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
CADMIUM	0.183	J	0.0819	MDL	1.08	PQL	mg/Kg	J	Z
COBALT	8.35		0.107	MDL	1.08	PQL	mg/Kg	J	A
MOLYBDENUM	0.222	J	0.183	MDL	2.16	PQL	mg/Kg	U	F, F
TIN	3.09	J	0.237	MDL	10.8	PQL	mg/Kg	U	B

Sample ID: SL-551-SA5D-SB-9.0-10.0 **Collected: 9/12/2013 9:25:00** **Analysis Type: REA** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.22	U	0.780	MDL	4.22	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.826	J	0.0706	MDL	1.05	PQL	mg/Kg	J	Z
CADMIUM	0.135	J	0.0801	MDL	1.05	PQL	mg/Kg	J	Z
COBALT	9.83		0.104	MDL	1.05	PQL	mg/Kg	J	A
MOLYBDENUM	0.385	J	0.179	MDL	2.11	PQL	mg/Kg	U	F, F
TIN	3.01	J	0.232	MDL	10.5	PQL	mg/Kg	U	B

Sample ID: SL-553-SA5D-SB-0.0-0.5 **Collected: 9/12/2013 7:30:00** **Analysis Type: REA** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.02	U	0.743	MDL	4.02	PQL	mg/Kg	UJ	Q
ARSENIC	3.46	J	0.703	MDL	4.02	PQL	mg/Kg	J	Z
BERYLLIUM	0.634	J	0.0673	MDL	1.00	PQL	mg/Kg	J	Z
BORON	3.72	J	0.843	MDL	10.0	PQL	mg/Kg	J	Z
CADMIUM	0.320	J	0.0763	MDL	1.00	PQL	mg/Kg	J	Z
COBALT	6.45		0.0994	MDL	1.00	PQL	mg/Kg	J	A
MOLYBDENUM	0.360	J	0.171	MDL	2.01	PQL	mg/Kg	U	F, F
SODIUM	78.9	J	16.8	MDL	100	PQL	mg/Kg	J	Z
TIN	2.65	J	0.221	MDL	10.0	PQL	mg/Kg	U	B

Sample ID: SL-553-SA5D-SB-4.5-5.5 **Collected: 9/12/2013 7:45:00** **Analysis Type: REA** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.15	U	0.768	MDL	4.15	PQL	mg/Kg	UJ	Q
ARSENIC	3.85	J	0.726	MDL	4.15	PQL	mg/Kg	J	Z
BERYLLIUM	0.757	J	0.0695	MDL	1.04	PQL	mg/Kg	J	Z
BORON	1.35	J	0.871	MDL	10.4	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: PH107 **Laboratory: LL**

EDD Filename: PrepPH107 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-553-SA5D-SB-4.5-5.5** *Collected:* **9/12/2013 7:45:00** *Analysis Type:* **REA** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CADMIUM	0.241	J	0.0788	MDL	1.04	PQL	mg/Kg	J	Z
COBALT	7.05		0.103	MDL	1.04	PQL	mg/Kg	J	A
MOLYBDENUM	0.364	J	0.176	MDL	2.07	PQL	mg/Kg	U	F, F
TIN	2.96	J	0.228	MDL	10.4	PQL	mg/Kg	U	B

Sample ID: **SL-853-SA5D-SB-0.0-0.5** *Collected:* **9/12/2013 7:35:00** *Analysis Type:* **REA** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	3.94	U	0.729	MDL	3.94	PQL	mg/Kg	UJ	Q
ARSENIC	3.83	J	0.689	MDL	3.94	PQL	mg/Kg	J	Z
BERYLLIUM	0.662	J	0.0660	MDL	0.985	PQL	mg/Kg	J	Z
BORON	3.06	J	0.827	MDL	9.85	PQL	mg/Kg	J	Z
CADMIUM	0.363	J	0.0748	MDL	0.985	PQL	mg/Kg	J	Z
COBALT	7.28		0.0975	MDL	0.985	PQL	mg/Kg	J	A
MOLYBDENUM	0.374	J	0.167	MDL	1.97	PQL	mg/Kg	U	F, F
SODIUM	83.4	J	16.4	MDL	98.5	PQL	mg/Kg	J	Z
TIN	2.80	J	0.217	MDL	9.85	PQL	mg/Kg	U	B

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: **SL-551-SA5D-SB-0.0-0.5** *Collected:* **9/12/2013 9:05:00** *Analysis Type:* **REA2** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	28.3		0.0697	MDL	0.410	PQL	mg/Kg	J	Q, A
THALLIUM	0.359		0.0307	MDL	0.205	PQL	mg/Kg	J	Q

Sample ID: **SL-551-SA5D-SB-0.0-0.5** *Collected:* **9/12/2013 9:05:00** *Analysis Type:* **REA3** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.206	J	0.102	MDL	0.410	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: PH107 **Laboratory: LL**

EDD Filename: PrepPH107 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-551-SA5D-SB-14.0-15.0 **Collected: 9/12/2013 9:35:00** **Analysis Type: REA2** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0421	J	0.0294	MDL	0.226	PQL	mg/Kg	J	Z, Q
STRONTIUM	57.9		0.0768	MDL	0.452	PQL	mg/Kg	J	Q, A
THALLIUM	0.588		0.0339	MDL	0.226	PQL	mg/Kg	J	Q

Sample ID: SL-551-SA5D-SB-14.0-15.0 **Collected: 9/12/2013 9:35:00** **Analysis Type: REA3** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.227	J	0.113	MDL	0.452	PQL	mg/Kg	J	Z

Sample ID: SL-551-SA5D-SB-17.5.-18.5 **Collected: 9/12/2013 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
SILVER	0.0336	J	0.0276	MDL	0.212	PQL	mg/Kg	J	Z, Q
STRONTIUM	28.1		0.0722	MDL	0.425	PQL	mg/Kg	J	Q, A
THALLIUM	0.556		0.0319	MDL	0.212	PQL	mg/Kg	J	Q

Sample ID: SL-551-SA5D-SB-17.5.-18.5 **Collected: 9/12/2013 9:45:00** **Analysis Type: REA3** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.125	J	0.106	MDL	0.425	PQL	mg/Kg	J	Z

Sample ID: SL-551-SA5D-SB-4.0-5.0 **Collected: 9/12/2013 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
STRONTIUM	31.1		0.0733	MDL	0.431	PQL	mg/Kg	J	Q, A
THALLIUM	0.383		0.0323	MDL	0.216	PQL	mg/Kg	J	Q

Sample ID: SL-551-SA5D-SB-4.0-5.0 **Collected: 9/12/2013 9:15:00** **Analysis Type: REA3** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.142	J	0.108	MDL	0.431	PQL	mg/Kg	J	Z

Sample ID: SL-551-SA5D-SB-9.0-10.0 **Collected: 9/12/2013 9:25:00** **Analysis Type: REA2** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0290	J	0.0274	MDL	0.211	PQL	mg/Kg	J	Z, 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: PH107 **Laboratory: LL**

EDD Filename: PrepPH107 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: **SL-551-SA5D-SB-9.0-10.0** ***Collected:*** **9/12/2013 9:25:00** ***Analysis Type:*** **REA2** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	28.6		0.0717	MDL	0.422	PQL	mg/Kg	J	Q, A
THALLIUM	0.390		0.0316	MDL	0.211	PQL	mg/Kg	J	Q

Sample ID: **SL-551-SA5D-SB-9.0-10.0** ***Collected:*** **9/12/2013 9:25:00** ***Analysis Type:*** **REA3** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.112	J	0.105	MDL	0.422	PQL	mg/Kg	J	Z

Sample ID: **SL-553-SA5D-SB-0.0-0.5** ***Collected:*** **9/12/2013 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
SILVER	0.0272	J	0.0261	MDL	0.201	PQL	mg/Kg	J	Z, Q
STRONTIUM	26.7		0.0683	MDL	0.402	PQL	mg/Kg	J	Q, A
THALLIUM	0.277		0.0301	MDL	0.201	PQL	mg/Kg	J	Q

Sample ID: **SL-553-SA5D-SB-0.0-0.5** ***Collected:*** **9/12/2013 7:30:00** ***Analysis Type:*** **REA3** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.232	J	0.100	MDL	0.402	PQL	mg/Kg	J	Z

Sample ID: **SL-553-SA5D-SB-4.5-5.5** ***Collected:*** **9/12/2013 7:45:00** ***Analysis Type:*** **REA2** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	26.4		0.0705	MDL	0.415	PQL	mg/Kg	J	Q, A
THALLIUM	0.325		0.0311	MDL	0.207	PQL	mg/Kg	J	Q

Sample ID: **SL-553-SA5D-SB-4.5-5.5** ***Collected:*** **9/12/2013 7:45:00** ***Analysis Type:*** **REA3** ***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-853-SA5D-SB-0.0-0.5** ***Collected:*** **9/12/2013 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
SILVER	0.0309	J	0.0256	MDL	0.197	PQL	mg/Kg	J	Z, Q
STRONTIUM	34.9		0.0670	MDL	0.394	PQL	mg/Kg	J	Q, 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: PH107 **Laboratory: LL**

EDD Filename: PrepPH107 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: **SL-853-SA5D-SB-0.0-0.5** *Collected:* **9/12/2013 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
THALLIUM	0.391		0.0295	MDL	0.197	PQL	mg/Kg	J	Q

Sample ID: **SL-853-SA5D-SB-0.0-0.5** *Collected:* **9/12/2013 7:35:00** *Analysis Type:* **REA3** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.284	J	0.0985	MDL	0.394	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 7199 **Matrix: SO**

Sample ID: **SL-553-SA5D-SB-0.0-0.5** *Collected:* **9/12/2013 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
HEXAVALENT CHROMIUM	0.20	J	0.14	MDL	0.41	PQL	mg/Kg	J	Z

Sample ID: **SL-553-SA5D-SB-4.5-5.5** *Collected:* **9/12/2013 7:45:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
HEXAVALENT CHROMIUM	0.34	J	0.15	MDL	0.42	PQL	mg/Kg	J	Z

Sample ID: **SL-853-SA5D-SB-0.0-0.5** *Collected:* **9/12/2013 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	0.24	J	0.14	MDL	0.41	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: **SL-551-SA5D-SB-0.0-0.5** *Collected:* **9/12/2013 9:05:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0112	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: PH107 **Laboratory: LL**

EDD Filename: PrepPH107 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: SL-551-SA5D-SB-9.0-10.0 *Collected:* 9/12/2013 9:25:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0138	J	0.0107	MDL	0.0178	PQL	mg/Kg	J	Z

Sample ID: SL-553-SA5D-SB-4.5-5.5 *Collected:* 9/12/2013 7:45:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0119	J	0.0104	MDL	0.0173	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 1613B **Matrix: AQ**

Sample ID: EB-091213 *Collected:* 9/12/2013 3:00:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	1.20	JQ	0.210	MDL	9.71	PQL	pg/L	U	B
1,2,3,4,6,7,8-HPCDF	0.957	JQ	0.105	MDL	9.71	PQL	pg/L	U	B
1,2,3,4,7,8,9-HPCDF	1.11	JQ	0.113	MDL	9.71	PQL	pg/L	U	B
1,2,3,4,7,8-HxCDD	0.821	J	0.182	MDL	9.71	PQL	pg/L	U	B
1,2,3,4,7,8-HXCDF	1.13	JQ	0.161	MDL	9.71	PQL	pg/L	U	B
1,2,3,6,7,8-HXCDD	0.991	J	0.191	MDL	9.71	PQL	pg/L	U	B
1,2,3,6,7,8-HXCDF	0.613	J	0.159	MDL	9.71	PQL	pg/L	U	B
1,2,3,7,8,9-HXCDD	1.03	J	0.179	MDL	9.71	PQL	pg/L	U	B
1,2,3,7,8,9-HXCDF	1.29	J	0.152	MDL	9.71	PQL	pg/L	U	B
1,2,3,7,8-PECDD	1.14	J	0.292	MDL	9.71	PQL	pg/L	U	B
1,2,3,7,8-PECDF	0.812	JQ	0.171	MDL	9.71	PQL	pg/L	U	B
2,3,4,6,7,8-HXCDF	1.03	JQ	0.151	MDL	9.71	PQL	pg/L	U	B
2,3,4,7,8-PECDF	0.639	JQ	0.155	MDL	9.71	PQL	pg/L	U	B
OCDD	1.79	J	0.223	MDL	19.4	PQL	pg/L	U	B
OCDF	2.16	JQ	0.241	MDL	19.4	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: PH107 **Laboratory: LL**

EDD Filename: PrepPH107 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-551-SA5D-SB-0.0-0.5** *Collected:* **9/12/2013 9:05:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDF	0.0749	JB	0.0250	MDL	5.06	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0716	JBQ	0.0381	MDL	5.06	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0425	JB	0.0422	MDL	5.06	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0687	JQ	0.0425	MDL	5.06	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.158	JQ	0.0442	MDL	5.06	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0806	JB	0.0402	MDL	5.06	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.248	JB	0.0449	MDL	5.06	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.358	JB	0.0437	MDL	5.06	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.117	JBQ	0.0633	MDL	5.06	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0571	JQ	0.0559	MDL	5.06	PQL	ng/Kg	J	Z
OCDD	1.11	JB	0.0494	MDL	10.1	PQL	ng/Kg	J	Z
OCDF	0.171	JB	0.0708	MDL	10.1	PQL	ng/Kg	U	B

Sample ID: **SL-553-SA5D-SB-0.0-0.5** *Collected:* **9/12/2013 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-HPCDF	1.59	JB	0.0415	MDL	5.03	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.178	JBQ	0.0682	MDL	5.03	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.190	JB	0.0650	MDL	5.03	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.251	J	0.0640	MDL	5.03	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.581	J	0.0695	MDL	5.03	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.163	JBQ	0.0563	MDL	5.03	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.585	JBQ	0.0687	MDL	5.03	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.471	JBQ	0.0694	MDL	5.03	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.195	JBQ	0.0839	MDL	5.03	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.367	JB	0.0595	MDL	5.03	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.207	J	0.0582	MDL	5.03	PQL	ng/Kg	J	Z, FD
2,3,4,7,8-PECDF	0.195	JQ	0.0603	MDL	5.03	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	1.01	U	0.116	MDL	1.01	PQL	ng/Kg	UJ	FD
OCDD	150	B	0.0674	MDL	10.1	PQL	ng/Kg	J	FD
OCDF	4.59	JB	0.0839	MDL	10.1	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: PH107 **Laboratory: LL**

EDD Filename: PrepPH107 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-853-SA5D-SB-0.0-0.5** *Collected:* **9/12/2013 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	1.28	JB	0.0330	MDL	4.89	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.181	JBQ	0.0597	MDL	4.89	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.197	JBQ	0.0673	MDL	4.89	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.352	JQ	0.0650	MDL	4.89	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.577	JQ	0.0687	MDL	4.89	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.271	JB	0.0598	MDL	4.89	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.649	JB	0.0697	MDL	4.89	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.559	JB	0.0796	MDL	4.89	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.154	JBQ	0.0844	MDL	4.89	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.398	JB	0.0635	MDL	4.89	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.380	JQ	0.0615	MDL	4.89	PQL	ng/Kg	J	Z, FD
2,3,4,7,8-PECDF	0.223	JQ	0.0619	MDL	4.89	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.127	J	0.125	MDL	0.977	PQL	ng/Kg	J	Z, FD
OCDD	86.0	B	0.0700	MDL	9.77	PQL	ng/Kg	J	FD
OCDF	3.29	JB	0.0862	MDL	9.77	PQL	ng/Kg	J	Z

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: **SL-553-SA5D-SB-0.0-0.5** *Collected:* **9/12/2013 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
EFH (C15-C20)	2.5	J	2.0	MDL	5.1	PQL	mg/Kg	J	Z
EFH (C21-C30)	13		2.0	MDL	5.1	PQL	mg/Kg	J	Q, Q

Sample ID: **SL-553-SA5D-SB-4.5-5.5** *Collected:* **9/12/2013 7:45:00** *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)	4.4	J	2.1	MDL	5.3	PQL	mg/Kg	J	Z
EFH (C30-C40)	8.2	J	4.2	MDL	11	PQL	mg/Kg	J	Z

Sample ID: **SL-553-SA5D-SB-4.5-5.5** *Collected:* **9/12/2013 7:45:00** *Analysis Type:* **RES** *Dilution:* **24.61**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
GASOLINE RANGE ORGANICS (C5-C12)	0.2	J	0.2	MDL	1.0	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: PH107 **Laboratory: LL**

EDD Filename: PrepPH107 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: SL-853-SA5D-SB-0.0-0.5 *Collected:* 9/12/2013 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 (C15-C20)	2.1	J	2.0	MDL	5.1	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 8151A **Matrix: SO**

Sample ID: SL-853-SA5D-SB-0.0-0.5 *Collected:* 9/12/2013 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
2,4,5-TP (Silvex)	1.7	U	0.76	MDL	1.7	PQL	ug/Kg	UJ	Q
2,4-DB	17	U	6.9	MDL	17	PQL	ug/Kg	UJ	Q
DINOSEB	24	U	9.1	MDL	24	PQL	ug/Kg	R	Q

Method Category: SVOA

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

Sample ID: EB-091213 *Collected:* 9/12/2013 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-METHYLNAPHTHALENE	0.20	U	0.041	MDL	0.20	PQL	ug/L	UJ	S

Sample ID: EB-091213 *Collected:* 9/12/2013 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	0.20	U	0.041	MDL	0.20	PQL	ug/L	UJ	S
ACENAPHTHENE	0.20	U	0.041	MDL	0.20	PQL	ug/L	UJ	S
ACENAPHTHYLENE	0.20	U	0.041	MDL	0.20	PQL	ug/L	UJ	S
ANTHRACENE	0.20	U	0.041	MDL	0.20	PQL	ug/L	UJ	S
BENZO(A)ANTHRACENE	0.20	U	0.041	MDL	0.20	PQL	ug/L	UJ	S
BENZO(A)PYRENE	0.20	U	0.041	MDL	0.20	PQL	ug/L	UJ	S
BENZO(B)FLUORANTHENE	0.20	U	0.041	MDL	0.20	PQL	ug/L	UJ	S
BENZO(E)PYRENE	0.20	U	0.041	MDL	0.20	PQL	ug/L	UJ	S
BENZO(G,H,I)PERYLENE	0.20	U	0.041	MDL	0.20	PQL	ug/L	UJ	S
BENZO(K)FLUORANTHENE	0.20	U	0.041	MDL	0.20	PQL	ug/L	UJ	S
BIS(2-ETHYLHEXYL)PHTHALATE	4.1	U	0.20	MDL	4.1	PQL	ug/L	UJ	S

* denotes a non-reportable result

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

Data Qualifier Summary

Lab Reporting Batch ID: PH107 **Laboratory: LL**

EDD Filename: PrepPH107 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

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

Sample ID: EB-091213 *Collected:* 9/12/2013 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
Butylbenzylphthalate	4.1	U	0.20	MDL	4.1	PQL	ug/L	UJ	L, E, S
CHRYSENE	0.20	U	0.041	MDL	0.20	PQL	ug/L	UJ	S
DIBENZO(A,H)ANTHRACENE	0.20	U	0.041	MDL	0.20	PQL	ug/L	UJ	S
Diethylphthalate	4.1	U	0.20	MDL	4.1	PQL	ug/L	UJ	L, E, S
Dimethylphthalate	4.1	U	0.20	MDL	4.1	PQL	ug/L	UJ	L, E, S
Di-n-butylphthalate	4.1	U	0.20	MDL	4.1	PQL	ug/L	UJ	S
Di-n-octylphthalate	4.1	U	0.20	MDL	4.1	PQL	ug/L	UJ	S
FLUORANTHENE	0.20	U	0.041	MDL	0.20	PQL	ug/L	UJ	S
FLUORENE	0.20	U	0.041	MDL	0.20	PQL	ug/L	UJ	S
INDENO(1,2,3-CD)PYRENE	0.20	U	0.041	MDL	0.20	PQL	ug/L	UJ	S
NAPHTHALENE	0.20	U	0.12	MDL	0.20	PQL	ug/L	UJ	S
N-NITROSODIMETHYLAMINE	0.20	U	0.041	MDL	0.20	PQL	ug/L	UJ	S
PHENANTHRENE	0.20	U	0.12	MDL	0.20	PQL	ug/L	UJ	S
PYRENE	0.20	U	0.041	MDL	0.20	PQL	ug/L	UJ	S

Method Category: SVOA

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

Sample ID: SL-551-SA5D-SB-0.0-0.5 *Collected:* 9/12/2013 9:05:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NAPHTHALENE	1.0	J	0.69	MDL	1.7	PQL	ug/Kg	U	B

Sample ID: SL-551-SA5D-SB-14.0-15.0 *Collected:* 9/12/2013 9:35:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NAPHTHALENE	1.3	J	0.76	MDL	1.9	PQL	ug/Kg	U	B

Sample ID: SL-551-SA5D-SB-17.5.-18.5 *Collected:* 9/12/2013 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
NAPHTHALENE	2.2		0.72	MDL	1.8	PQL	ug/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: PH107 **Laboratory: LL**

EDD Filename: PrepPH107 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

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

Sample ID: **SL-551-SA5D-SB-4.0-5.0** *Collected:* **9/12/2013 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
NAPHTHALENE	1.2	J	0.71	MDL	1.8	PQL	ug/Kg	U	B

Sample ID: **SL-551-SA5D-SB-9.0-10.0** *Collected:* **9/12/2013 9:25:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NAPHTHALENE	1.1	J	0.72	MDL	1.8	PQL	ug/Kg	U	B

Sample ID: **SL-553-SA5D-SB-0.0-0.5** *Collected:* **9/12/2013 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(A)ANTHRACENE	1.6	J	0.67	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(A)PYRENE	1.6	J	0.67	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(G,H,I)PERYLENE	1.2	J	0.67	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(K)FLUORANTHENE	1.2	J	0.67	MDL	1.7	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	18	U	6.0	MDL	18	PQL	ug/Kg	UJ	FD
INDENO(1,2,3-CD)PYRENE	0.90	J	0.67	MDL	1.7	PQL	ug/Kg	J	Z
NAPHTHALENE	1.5	J	0.67	MDL	1.7	PQL	ug/Kg	U	B

Sample ID: **SL-553-SA5D-SB-4.5-5.5** *Collected:* **9/12/2013 7:45:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NAPHTHALENE	1.1	J	0.70	MDL	1.7	PQL	ug/Kg	U	B

Sample ID: **SL-853-SA5D-SB-0.0-0.5** *Collected:* **9/12/2013 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(A)ANTHRACENE	1.1	J	0.67	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(A)PYRENE	1.1	J	0.67	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(G,H,I)PERYLENE	1.0	J	0.67	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(K)FLUORANTHENE	0.77	J	0.67	MDL	1.7	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	17	J	6.1	MDL	18	PQL	ug/Kg	J	Z, FD
INDENO(1,2,3-CD)PYRENE	0.72	J	0.67	MDL	1.7	PQL	ug/Kg	J	Z
NAPHTHALENE	1.5	J	0.67	MDL	1.7	PQL	ug/Kg	U	B
PHENANTHRENE	1.4	J	0.67	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: PH107 **Laboratory: LL**

EDD Filename: PrepPH107 **eQAPP Name: CDM_SSFL_131101_Lan**

* denotes a non-reportable result

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

Data Qualifier Summary

Lab Reporting Batch ID: PH107 **Laboratory: LL**

EDD Filename: PrepPH107 **eQAPP Name: CDM_SSFL_131101_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	Laboratory Duplicate Precision
E	Matrix Spike Precision
F	Equipment Blank Contamination
F	Field Blank Contamination
FD	Field Duplicate Precision
L	Laboratory Control Precision
L	Laboratory Control Spike Lower 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 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

EPA Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control Outlier Reports

PH107

Method Blank Outlier Report

Lab Reporting Batch ID: PH107 **Laboratory: LL**

EDD Filename: PH107 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: **1613B**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2660B370248	9/25/2013 2:48:00 AM	1,2,3,4,6,7,8-HPCDD	1.27 pg/L	EB-091213
		1,2,3,4,6,7,8-HPCDF	1.58 pg/L	
		1,2,3,4,7,8,9-HPCDF	1.12 pg/L	
		1,2,3,4,7,8-HxCDD	1.45 pg/L	
		1,2,3,4,7,8-HXCDF	1.70 pg/L	
		1,2,3,6,7,8-HXCDD	1.49 pg/L	
		1,2,3,6,7,8-HXCDF	1.55 pg/L	
		1,2,3,7,8,9-HXCDD	0.932 pg/L	
		1,2,3,7,8,9-HXCDF	1.03 pg/L	
		1,2,3,7,8-PECDD	1.71 pg/L	
		1,2,3,7,8-PECDF	1.48 pg/L	
		2,3,4,6,7,8-HXCDF	1.30 pg/L	
		2,3,4,7,8-PECDF	1.58 pg/L	
		OCDD	2.51 pg/L	
		OCDF	2.72 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
EB-091213(RES)	1,2,3,4,6,7,8-HPCDD	1.20 pg/L	1.20U pg/L
EB-091213(RES)	1,2,3,4,6,7,8-HPCDF	0.957 pg/L	0.957U pg/L
EB-091213(RES)	1,2,3,4,7,8,9-HPCDF	1.11 pg/L	1.11U pg/L
EB-091213(RES)	1,2,3,4,7,8-HxCDD	0.821 pg/L	0.821U pg/L
EB-091213(RES)	1,2,3,4,7,8-HXCDF	1.13 pg/L	1.13U pg/L
EB-091213(RES)	1,2,3,6,7,8-HXCDD	0.991 pg/L	0.991U pg/L
EB-091213(RES)	1,2,3,6,7,8-HXCDF	0.613 pg/L	0.613U pg/L
EB-091213(RES)	1,2,3,7,8,9-HXCDD	1.03 pg/L	1.03U pg/L
EB-091213(RES)	1,2,3,7,8,9-HXCDF	1.29 pg/L	1.29U pg/L
EB-091213(RES)	1,2,3,7,8-PECDD	1.14 pg/L	1.14U pg/L
EB-091213(RES)	1,2,3,7,8-PECDF	0.812 pg/L	0.812U pg/L
EB-091213(RES)	2,3,4,6,7,8-HXCDF	1.03 pg/L	1.03U pg/L
EB-091213(RES)	2,3,4,7,8-PECDF	0.639 pg/L	0.639U pg/L
EB-091213(RES)	OCDD	1.79 pg/L	1.79U pg/L
EB-091213(RES)	OCDF	2.16 pg/L	2.16U pg/L

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2610B370454	9/20/2013 4:54:00 AM	1,2,3,4,6,7,8-HPCDD	0.0535 ng/Kg	SL-551-SA5D-SB-0.0-0.5
		1,2,3,4,6,7,8-HPCDF	0.0418 ng/Kg	SL-553-SA5D-SB-0.0-0.5
		1,2,3,4,7,8,9-HPCDF	0.0583 ng/Kg	SL-853-SA5D-SB-0.0-0.5
		1,2,3,4,7,8-HxCDD	0.0859 ng/Kg	
		1,2,3,6,7,8-HXCDF	0.0456 ng/Kg	
		1,2,3,7,8,9-HXCDD	0.0579 ng/Kg	
		1,2,3,7,8,9-HXCDF	0.0750 ng/Kg	
		1,2,3,7,8-PECDD	0.122 ng/Kg	
		1,2,3,7,8-PECDF	0.0876 ng/Kg	
		OCDD	0.197 ng/Kg	
		OCDF	0.197 ng/Kg	

Method Blank Outlier Report

Lab Reporting Batch ID: PH107 **Laboratory: LL**

EDD Filename: PH107 **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-551-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDF	0.0749 ng/Kg	0.0749U ng/Kg
SL-551-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0716 ng/Kg	0.0716U ng/Kg
SL-551-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.0425 ng/Kg	0.0425U ng/Kg
SL-551-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.0806 ng/Kg	0.0806U ng/Kg
SL-551-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDD	0.248 ng/Kg	0.248U ng/Kg
SL-551-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.358 ng/Kg	0.358U ng/Kg
SL-551-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.117 ng/Kg	0.117U ng/Kg
SL-551-SA5D-SB-0.0-0.5(RES)	OCDF	0.171 ng/Kg	0.171U ng/Kg
SL-553-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.178 ng/Kg	0.178U ng/Kg
SL-553-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.190 ng/Kg	0.190U ng/Kg
SL-553-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.163 ng/Kg	0.163U ng/Kg
SL-553-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.195 ng/Kg	0.195U ng/Kg
SL-553-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.367 ng/Kg	0.367U ng/Kg
SL-853-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.181 ng/Kg	0.181U ng/Kg
SL-853-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.197 ng/Kg	0.197U ng/Kg
SL-853-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.154 ng/Kg	0.154U ng/Kg
SL-853-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.398 ng/Kg	0.398U ng/Kg

Method: **6010C**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P26135AB221650	9/19/2013 4:50:00 PM	COPPER	0.0044 mg/L	EB-091213

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

Sample ID	Analyte	Reported Result	Modified Final Result
EB-091213(RES)	COPPER	0.0045 mg/L	0.0045U mg/L

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P26237AB222024	9/21/2013 8:24:00 PM	CALCIUM TIN	10.3 mg/Kg 1.36 mg/Kg	SL-551-SA5D-SB-0.0-0.5 SL-551-SA5D-SB-14.0-15.0 SL-551-SA5D-SB-17.5.-18.5 SL-551-SA5D-SB-4.0-5.0 SL-551-SA5D-SB-9.0-10.0 SL-553-SA5D-SB-0.0-0.5 SL-553-SA5D-SB-4.5-5.5 SL-853-SA5D-SB-0.0-0.5

Method Blank Outlier Report

Lab Reporting Batch ID: PH107 **Laboratory: LL**

EDD Filename: PH107 **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-551-SA5D-SB-0.0-0.5(REA)	TIN	2.96 mg/Kg	2.96U mg/Kg
SL-551-SA5D-SB-14.0-15.0(REA)	TIN	4.01 mg/Kg	4.01U mg/Kg
SL-551-SA5D-SB-17.5.-18.5(REA)	TIN	3.99 mg/Kg	3.99U mg/Kg
SL-551-SA5D-SB-4.0-5.0(REA)	TIN	3.09 mg/Kg	3.09U mg/Kg
SL-551-SA5D-SB-9.0-10.0(REA)	TIN	3.01 mg/Kg	3.01U mg/Kg
SL-553-SA5D-SB-0.0-0.5(REA)	TIN	2.65 mg/Kg	2.65U mg/Kg
SL-553-SA5D-SB-4.5-5.5(REA)	TIN	2.96 mg/Kg	2.96U mg/Kg
SL-853-SA5D-SB-0.0-0.5(REA)	TIN	2.80 mg/Kg	2.80U mg/Kg

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
PLKLC26B260219	9/25/2013 2:19:00 AM	NAPHTHALENE	0.92 ug/Kg	SL-551-SA5D-SB-0.0-0.5 SL-551-SA5D-SB-14.0-15.0 SL-551-SA5D-SB-17.5.-18.5 SL-551-SA5D-SB-4.0-5.0 SL-551-SA5D-SB-9.0-10.0 SL-553-SA5D-SB-0.0-0.5 SL-553-SA5D-SB-4.5-5.5 SL-853-SA5D-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-551-SA5D-SB-0.0-0.5(RES)	NAPHTHALENE	1.0 ug/Kg	1.7U ug/Kg
SL-551-SA5D-SB-14.0-15.0(RES)	NAPHTHALENE	1.3 ug/Kg	1.9U ug/Kg
SL-551-SA5D-SB-17.5.-18.5(RES)	NAPHTHALENE	2.2 ug/Kg	2.2U ug/Kg
SL-551-SA5D-SB-4.0-5.0(RES)	NAPHTHALENE	1.2 ug/Kg	1.8U ug/Kg
SL-551-SA5D-SB-9.0-10.0(RES)	NAPHTHALENE	1.1 ug/Kg	1.8U ug/Kg
SL-553-SA5D-SB-0.0-0.5(RES)	NAPHTHALENE	1.5 ug/Kg	1.7U ug/Kg
SL-553-SA5D-SB-4.5-5.5(RES)	NAPHTHALENE	1.1 ug/Kg	1.7U ug/Kg
SL-853-SA5D-SB-0.0-0.5(RES)	NAPHTHALENE	1.5 ug/Kg	1.7U ug/Kg

Equipment Rinsate Blank Outlier Report

Lab Reporting Batch ID: PH107 **Laboratory: LL**

EDD Filename: PH107 **eQAPP Name: CDM_SSFL_131101_Lan**

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

Equipment Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
EB-091113(REA2)	9/11/2013 3:00:00 PM	COPPER MANGANESE MOLYBDENUM	0.004 mg/L 0.0019 mg/L 0.0087 mg/L	SL-551-SA5D-SB-0.0-0.5 SL-551-SA5D-SB-14.0-15.0 SL-551-SA5D-SB-17.5.-18.5 SL-551-SA5D-SB-4.0-5.0 SL-551-SA5D-SB-9.0-10.0 SL-553-SA5D-SB-4.5-5.5 SL-591-SA5D-SB-0.0-0.5 SL-591-SA5D-SB-6.5-7.5 SL-592-SA5D-SB-0.0-0.5 SL-592-SA5D-SB-10.5-11.5 SL-592-SA5D-SB-4.0-5.0
EB-091213(RES)	9/12/2013 3:00:00 PM	COPPER MOLYBDENUM	0.0045 mg/L 0.0032 mg/L	SL-553-SA5D-SB-0.0-0.5 SL-853-SA5D-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-551-SA5D-SB-0.0-0.5(REA)	MOLYBDENUM	0.209 mg/Kg	0.209U mg/Kg
SL-551-SA5D-SB-14.0-15.0(REA)	MOLYBDENUM	0.524 mg/Kg	0.524U mg/Kg
SL-551-SA5D-SB-17.5.-18.5(REA)	MOLYBDENUM	0.383 mg/Kg	0.383U mg/Kg
SL-551-SA5D-SB-4.0-5.0(REA)	MOLYBDENUM	0.222 mg/Kg	0.222U mg/Kg
SL-551-SA5D-SB-9.0-10.0(REA)	MOLYBDENUM	0.385 mg/Kg	0.385U mg/Kg
SL-553-SA5D-SB-0.0-0.5(REA)	MOLYBDENUM	0.360 mg/Kg	0.360U mg/Kg
SL-553-SA5D-SB-4.5-5.5(REA)	MOLYBDENUM	0.364 mg/Kg	0.364U mg/Kg
SL-853-SA5D-SB-0.0-0.5(REA)	MOLYBDENUM	0.374 mg/Kg	0.374U mg/Kg

Field Blank Outlier Report

Lab Reporting Batch ID: PH107 **Laboratory: LL**

EDD Filename: PH107 **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-551-SA5D-SB-0.0-0.5 SL-551-SA5D-SB-14.0-15.0 SL-551-SA5D-SB-17.5.-18.5 SL-551-SA5D-SB-4.0-5.0 SL-551-SA5D-SB-9.0-10.0 SL-553-SA5D-SB-4.5-5.5
FB-041613(REA2/TOT)	4/16/2013 3:15:00 PM	MOLYBDENUM TIN	0.0132 mg/L 0.0029 mg/L	SL-553-SA5D-SB-0.0-0.5 SL-591-SA5D-SB-0.0-0.5 SL-591-SA5D-SB-6.5-7.5 SL-592-SA5D-SB-0.0-0.5 SL-592-SA5D-SB-10.5-11.5 SL-592-SA5D-SB-4.0-5.0 SL-853-SA5D-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-551-SA5D-SB-0.0-0.5(REA)	MOLYBDENUM	0.209 mg/Kg	0.209U mg/Kg
SL-551-SA5D-SB-14.0-15.0(REA)	MOLYBDENUM	0.524 mg/Kg	0.524U mg/Kg
SL-551-SA5D-SB-17.5.-18.5(REA)	MOLYBDENUM	0.383 mg/Kg	0.383U mg/Kg
SL-551-SA5D-SB-4.0-5.0(REA)	MOLYBDENUM	0.222 mg/Kg	0.222U mg/Kg
SL-551-SA5D-SB-9.0-10.0(REA)	MOLYBDENUM	0.385 mg/Kg	0.385U mg/Kg
SL-553-SA5D-SB-0.0-0.5(REA)	MOLYBDENUM	0.360 mg/Kg	0.360U mg/Kg
SL-553-SA5D-SB-4.5-5.5(REA)	MOLYBDENUM	0.364 mg/Kg	0.364U mg/Kg
SL-853-SA5D-SB-0.0-0.5(REA)	MOLYBDENUM	0.374 mg/Kg	0.374U mg/Kg

Surrogate Outlier Report

Lab Reporting Batch ID: PH107 **Laboratory: LL**

EDD Filename: PrepPH107 **eQAPP Name: CDM_SSFL_131101_Lan**

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

Sample ID (Analysis Type)	*Surrogate*	*Sample % Recovery*	*% Recovery Limits*	*Affected Compounds*	*Flag*
EB-091213	1-Methylnaphthalene-d10	25	51.00-136.00	All Base Target Analytes	J(all detects) UJ(all non-detects)
	Benzo(a)pyrene-d12	24	62.00-141.00		
	Fluoranthene-d10	23	44.00-137.00		

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH107 **Laboratory: LL**

EDD Filename: PH107 **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-553-SA5D-SB-0.0-0.5MSD (SL-553-SA5D-SB-0.0-0.5)	DALAPON	-	-	19.00-109.00	67 (50.00)	DALAPON	J (all detects)

Method: 8015M
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-553-SA5D-SB-0.0-0.5MS SL-553-SA5D-SB-0.0-0.5MSD (SL-553-SA5D-SB-0.0-0.5)	EFH (C30-C40)	-85	261	49.00-123.00	38 (20.00)	EFH (C30-C40)	No Qual, >4x
SL-553-SA5D-SB-0.0-0.5MS SL-553-SA5D-SB-0.0-0.5MSD (SL-553-SA5D-SB-0.0-0.5)	EFH (C21-C30)	32	-	49.00-123.00	22 (20.00)	EFH (C21-C30)	J(all detects) UJ(all non-detects)

Method: 8151A
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-853-SA5D-SB-0.0-0.5MS SL-853-SA5D-SB-0.0-0.5MSD (SL-853-SA5D-SB-0.0-0.5)	DINOSEB	0	0	10.00-52.00	-	DINOSEB	J(all detects) R(all non-detects)
SL-853-SA5D-SB-0.0-0.5MSD (SL-853-SA5D-SB-0.0-0.5)	2,4,5-TP (Silvex) 2,4-DB	- -	9 8	10.00-142.00 10.00-179.00	163 (35.00) 171 (50.00)	2,4,5-TP (Silvex) 2,4-DB	J(all detects) UJ(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-553-SA5D-SB-0.0-0.5MS (TOT) SL-553-SA5D-SB-0.0-0.5MSD (TOT) (SL-551-SA5D-SB-0.0-0.5 SL -551-SA5D-SB-14.0-15.0 SL -551-SA5D-SB-17.5.-18.5 SL -551-SA5D-SB-4.0-5.0 SL -551-SA5D-SB-9.0-10.0 SL -553-SA5D-SB-0.0-0.5 SL -553-SA5D-SB-4.5-5.5 SL -853-SA5D-SB-0.0-0.5)	ALUMINUM CALCIUM IRON MAGNESIUM POTASSIUM TITANIUM	2099 205 658 229 142 426	2459 229 1662 334 166 501	75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00	- - - - - -	ALUMINUM CALCIUM IRON MAGNESIUM POTASSIUM TITANIUM	No Qual, >4x

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH107 **Laboratory: LL**

EDD Filename: PH107 **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-553-SA5D-SB-0.0-0.5MS (TOT) **SL-553-SA5D-SB-0.0-0.5MSD (TOT)** (SL-551-SA5D-SB-0.0-0.5 SL-551-SA5D-SB-14.0-15.0 SL-551-SA5D-SB-17.5.-18.5 SL-551-SA5D-SB-4.0-5.0 SL-551-SA5D-SB-9.0-10.0 SL-553-SA5D-SB-0.0-0.5 SL-553-SA5D-SB-4.5-5.5 SL-853-SA5D-SB-0.0-0.5)	ANTIMONY	41	43	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-553-SA5D-SB-0.0-0.5MS (TOT)	SILVER	-	126	75.00-125.00	-	SILVER	
	STRONTIUM	134	182	75.00-125.00	-	STRONTIUM	
SL-553-SA5D-SB-0.0-0.5MSD (TOT)	THALLIUM	-	131	75.00-125.00	-	THALLIUM	
(SL-551-SA5D-SB-0.0-0.5 SL-551-SA5D-SB-14.0-15.0 SL-551-SA5D-SB-17.5.-18.5 SL-551-SA5D-SB-4.0-5.0 SL-551-SA5D-SB-9.0-10.0 SL-553-SA5D-SB-0.0-0.5 SL-553-SA5D-SB-4.5-5.5 SL-853-SA5D-SB-0.0-0.5)							J(all detects)

Method: 300.0
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-553-SA5D-SB-0.0-0.5MS	FLUORIDE	33	-	80.00-120.00	-	FLUORIDE	
(SL-551-SA5D-SB-0.0-0.5 SL-551-SA5D-SB-14.0-15.0 SL-551-SA5D-SB-17.5.-18.5 SL-551-SA5D-SB-4.0-5.0 SL-551-SA5D-SB-9.0-10.0 SL-553-SA5D-SB-0.0-0.5 SL-553-SA5D-SB-4.5-5.5 SL-591-SA5D-SB-0.0-0.5 SL-591-SA5D-SB-6.5-7.5 SL-853-SA5D-SB-0.0-0.5)							J(all detects) UJ(all non-detects)
SL-592-SA5D-SB-0.0-0.5MS (SL-592-SA5D-SB-0.0-0.5 SL-592-SA5D-SB-10.5-11.5 SL-592-SA5D-SB-4.0-5.0)	FLUORIDE	12	-	80.00-120.00	-	FLUORIDE	J(all detects) R(all non-detects)

Lab Duplicate Outlier Report

Lab Reporting Batch ID: PH107 **Laboratory: LL**

EDD Filename: PH107 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 7199
Matrix: SO

QC Sample ID (Associated Sample ID)	*Analyte*	*Sample RPD*	*eQAPP RPD*	*Flag*
SL-553-SA5D-SB-0.0-0.5DUP (TOT) (SL-553-SA5D-SB-0.0-0.5 SL -553-SA5D-SB-4.5-5.5 SL -853-SA5D-SB-0.0-0.5)	HEXAVALENT CHROMIUM	97	20.00	No Qual, OK by Difference

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH107 **Laboratory: LL**

EDD Filename: PH107 **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*
P7WMLCSQ261255	Butylbenzylphthalate	21	37	40.00-138.00	54 (30.00)	Butylbenzylphthalate	J (all detects)
P7WMLCSY261322	Diethylphthalate	51	-	64.00-128.00	33 (30.00)	Diethylphthalate	UJ (all non-detects)
(EB-091213)	Dimethylphthalate	10	-	23.00-139.00	79 (30.00)	Dimethylphthalate	

Field Duplicate RPD Report

Lab Reporting Batch ID: PH107 **Laboratory: LL**

EDD Filename: PrepPH107 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 160.3M
Matrix: SO

Analyte	Concentration (%)		Sample RPD	eQAPP RPD	Flag
	SL-553-SA5D-SB-0.0-0.5	SL-853-SA5D-SB-0.0-0.5			
MOISTURE	1.4	1.4	0		No Qualifiers Applied

Method: 1613B
Matrix: SO

Analyte	Concentration (ng/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-553-SA5D-SB-0.0-0.5	SL-853-SA5D-SB-0.0-0.5			
1,2,3,4,6,7,8-HPCDD	9.20	6.28	38	50.00	No Qualifiers Applied
1,2,3,4,6,7,8-HPCDF	1.59	1.28	22	50.00	
1,2,3,4,7,8,9-HPCDF	0.178	0.181	2	50.00	
1,2,3,4,7,8-HxCDD	0.190	0.197	4	50.00	
1,2,3,4,7,8-HXCDF	0.251	0.352	33	50.00	
1,2,3,6,7,8-HXCDD	0.581	0.577	1	50.00	
1,2,3,6,7,8-HXCDF	0.163	0.271	50	50.00	
1,2,3,7,8,9-HXCDD	0.585	0.649	10	50.00	
1,2,3,7,8,9-HXCDF	0.471	0.559	17	50.00	
1,2,3,7,8-PECDD	0.195	0.154	23	50.00	
1,2,3,7,8-PECDF	0.367	0.398	8	50.00	
2,3,4,7,8-PECDF	0.195	0.223	13	50.00	
OCDF	4.59	3.29	33	50.00	
2,3,4,6,7,8-HXCDF	0.207	0.380	59	50.00	J(all detects) UJ(all non-detects)
2,3,7,8-TCDF	1.01 U	0.127	200	50.00	
OCDD	150	86.0	54	50.00	

Method: 300.0
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-553-SA5D-SB-0.0-0.5	SL-853-SA5D-SB-0.0-0.5			
FLUORIDE	0.80	0.86	7	50.00	No Qualifiers Applied

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

Field Duplicate RPD Report

Lab Reporting Batch ID: PH107 **Laboratory: LL**

EDD Filename: PrepPH107 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 6010C
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-553-SA5D-SB-0.0-0.5 (TOT)	SL-853-SA5D-SB-0.0-0.5 (TOT)			
ALUMINUM	15900	16800	6	50.00	
ARSENIC	3.46	3.83	10	50.00	
BARIUM	82.1	87.3	6	50.00	
BERYLLIUM	0.634	0.662	4	50.00	
BORON	3.72	3.06	19	50.00	
CADMIUM	0.320	0.363	13	50.00	
CALCIUM	4450	4570	3	50.00	
CHROMIUM	29.1	30.3	4	50.00	
COBALT	6.45	7.28	12	50.00	
COPPER	10.7	12.5	16	50.00	
IRON	24500	27000	10	50.00	
LEAD	10.1	11.8	16	50.00	
LITHIUM	21.6	24.3	12	50.00	No Qualifiers Applied
MAGNESIUM	5370	5840	8	50.00	
MANGANESE	358	386	8	50.00	
MOLYBDENUM	0.360	0.374	4	50.00	
NICKEL	11.6	12.7	9	50.00	
PHOSPHORUS	586	579	1	50.00	
POTASSIUM	4690	4940	5	50.00	
SODIUM	78.9	83.4	6	50.00	
TIN	2.65	2.80	6	50.00	
TITANIUM	1040	1090	5	50.00	
VANADIUM	51.4	53.6	4	50.00	
ZINC	60.3	67.0	11	50.00	
Zirconium	6.10	6.53	7	50.00	

Method: 6020A
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-553-SA5D-SB-0.0-0.5 (TOT)	SL-853-SA5D-SB-0.0-0.5 (TOT)			
SELENIUM	0.232	0.284	20	50.00	
SILVER	0.0272	0.0309	13	50.00	No Qualifiers Applied
STRONTIUM	26.7	34.9	27	50.00	
THALLIUM	0.277	0.391	34	50.00	

Method: 7199
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-553-SA5D-SB-0.0-0.5 (TOT)	SL-853-SA5D-SB-0.0-0.5 (TOT)			
HEXAVALENT CHROMIUM	0.20	0.24	18	50.00	No Qualifiers Applied

Method: 7471B
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-553-SA5D-SB-0.0-0.5 (TOT)	SL-853-SA5D-SB-0.0-0.5 (TOT)			
MERCURY	0.0205	0.0215	5	50.00	No Qualifiers Applied

Field Duplicate RPD Report

Lab Reporting Batch ID: PH107 **Laboratory: LL**

EDD Filename: PrepPH107 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 8015M
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-553-SA5D-SB-0.0-0.5	SL-853-SA5D-SB-0.0-0.5			
EFH (C15-C20)	2.5	2.1	17	50.00	
EFH (C21-C30)	13	11	17	50.00	No Qualifiers Applied
EFH (C30-C40)	41	32	25	50.00	

Method: 8270D SIM
Matrix: SO

Analyte	Concentration (ug/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-553-SA5D-SB-0.0-0.5	SL-853-SA5D-SB-0.0-0.5			
BENZO(A)ANTHRACENE	1.6	1.1	37	50.00	
BENZO(A)PYRENE	1.6	1.1	37	50.00	
BENZO(B)FLUORANTHENE	2.4	2.3	4	50.00	
BENZO(G,H,I)PERYLENE	1.2	1.0	18	50.00	
BENZO(K)FLUORANTHENE	1.2	0.77	44	50.00	
CHRYSENE	2.7	2.2	20	50.00	No Qualifiers Applied
FLUORANTHENE	3.2	2.3	33	50.00	
INDENO(1,2,3-CD)PYRENE	0.90	0.72	22	50.00	
NAPHTHALENE	1.5	1.5	0	50.00	
PHENANTHRENE	2.0	1.4	35	50.00	
PYRENE	3.2	2.2	37	50.00	
BIS(2-ETHYLHEXYL)PHTHALATE	18 U	17	200	50.00	J(all detects) UJ(all non-detects)

Method: 9045M
Matrix: SO

Analyte	Concentration (pH unit)		Sample RPD	eQAPP RPD	Flag
	SL-553-SA5D-SB-0.0-0.5	SL-853-SA5D-SB-0.0-0.5			
PH	7.11	7.66	7	50.00	No Qualifiers Applied

Reporting Limit Outliers

Lab Reporting Batch ID: PH107 **Laboratory: LL**

EDD Filename: PH107 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 1613B

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-091213	1,2,3,4,6,7,8-HPCDD	JQ	1.20	9.71	PQL	pg/L	
	1,2,3,4,6,7,8-HPCDF	JQ	0.957	9.71	PQL	pg/L	
	1,2,3,4,7,8,9-HPCDF	JQ	1.11	9.71	PQL	pg/L	
	1,2,3,4,7,8-HxCDD	J	0.821	9.71	PQL	pg/L	
	1,2,3,4,7,8-HXCDF	JQ	1.13	9.71	PQL	pg/L	
	1,2,3,6,7,8-HXCDD	J	0.991	9.71	PQL	pg/L	
	1,2,3,6,7,8-HXCDF	J	0.613	9.71	PQL	pg/L	
	1,2,3,7,8,9-HXCDD	J	1.03	9.71	PQL	pg/L	J (all detects)
	1,2,3,7,8,9-HXCDF	J	1.29	9.71	PQL	pg/L	
	1,2,3,7,8-PECDD	J	1.14	9.71	PQL	pg/L	
	1,2,3,7,8-PECDF	JQ	0.812	9.71	PQL	pg/L	
	2,3,4,6,7,8-HXCDF	JQ	1.03	9.71	PQL	pg/L	
	2,3,4,7,8-PECDF	JQ	0.639	9.71	PQL	pg/L	
	OCDD	J	1.79	19.4	PQL	pg/L	
	OCDF	JQ	2.16	19.4	PQL	pg/L	

Method: 6010C

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-091213	COPPER	J	0.0045	0.0200	PQL	mg/L	J (all detects)
	MOLYBDENUM	J	0.0032	0.0200	PQL	mg/L	

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-551-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDF	JB	0.0749	5.06	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0716	5.06	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.0425	5.06	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JQ	0.0687	5.06	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JQ	0.158	5.06	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.0806	5.06	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.248	5.06	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	0.358	5.06	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.117	5.06	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.0571	5.06	PQL	ng/Kg	
	OCDD	JB	1.11	10.1	PQL	ng/Kg	
	OCDF	JB	0.171	10.1	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH107 **Laboratory: LL**

EDD Filename: PH107 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-553-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDF	JB	1.59	5.03	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.178	5.03	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.190	5.03	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	J	0.251	5.03	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	J	0.581	5.03	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.163	5.03	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.585	5.03	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JBQ	0.471	5.03	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.195	5.03	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.367	5.03	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	J	0.207	5.03	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.195	5.03	PQL	ng/Kg	
	OCDF	JB	4.59	10.1	PQL	ng/Kg	
SL-853-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDF	JB	1.28	4.89	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.181	4.89	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.197	4.89	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JQ	0.352	4.89	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JQ	0.577	4.89	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.271	4.89	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.649	4.89	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	0.559	4.89	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.154	4.89	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.398	4.89	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JQ	0.380	4.89	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.223	4.89	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.127	0.977	PQL	ng/Kg	
	OCDF	JB	3.29	9.77	PQL	ng/Kg	

Method: 300.0

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-551-SA5D-SB-0.0-0.5	FLUORIDE	J	0.68	1.0	PQL	mg/Kg	J (all detects)
SL-553-SA5D-SB-0.0-0.5	FLUORIDE	J	0.80	1.0	PQL	mg/Kg	J (all detects)
SL-592-SA5D-SB-0.0-0.5	FLUORIDE	J	0.54	1.0	PQL	mg/Kg	J (all detects)
SL-853-SA5D-SB-0.0-0.5	FLUORIDE	J	0.86	1.0	PQL	mg/Kg	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH107 **Laboratory: LL**

EDD Filename: PH107 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-551-SA5D-SB-0.0-0.5	ARSENIC	J	3.90	4.10	PQL	mg/Kg	
	BERYLLIUM	J	0.767	1.02	PQL	mg/Kg	
	BORON	J	1.03	10.2	PQL	mg/Kg	
	CADMIUM	J	0.216	1.02	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.209	2.05	PQL	mg/Kg	
	SODIUM	J	92.2	102	PQL	mg/Kg	
	TIN	J	2.96	10.2	PQL	mg/Kg	
SL-551-SA5D-SB-14.0-15.0	CADMIUM	J	0.117	1.13	PQL	mg/Kg	
	MOLYBDENUM	J	0.524	2.26	PQL	mg/Kg	J (all detects)
	TIN	J	4.01	11.3	PQL	mg/Kg	
SL-551-SA5D-SB-17.5.-18.5	BERYLLIUM	J	1.00	1.06	PQL	mg/Kg	
	CADMIUM	J	0.171	1.06	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.383	2.12	PQL	mg/Kg	
	TIN	J	3.99	10.6	PQL	mg/Kg	
SL-551-SA5D-SB-4.0-5.0	BERYLLIUM	J	0.789	1.08	PQL	mg/Kg	
	BORON	J	1.15	10.8	PQL	mg/Kg	
	CADMIUM	J	0.183	1.08	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.222	2.16	PQL	mg/Kg	
	TIN	J	3.09	10.8	PQL	mg/Kg	
SL-551-SA5D-SB-9.0-10.0	BERYLLIUM	J	0.826	1.05	PQL	mg/Kg	
	CADMIUM	J	0.135	1.05	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.385	2.11	PQL	mg/Kg	
	TIN	J	3.01	10.5	PQL	mg/Kg	
SL-553-SA5D-SB-0.0-0.5	ARSENIC	J	3.46	4.02	PQL	mg/Kg	
	BERYLLIUM	J	0.634	1.00	PQL	mg/Kg	
	BORON	J	3.72	10.0	PQL	mg/Kg	
	CADMIUM	J	0.320	1.00	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.360	2.01	PQL	mg/Kg	
	SODIUM	J	78.9	100	PQL	mg/Kg	
	TIN	J	2.65	10.0	PQL	mg/Kg	
SL-553-SA5D-SB-4.5-5.5	ARSENIC	J	3.85	4.15	PQL	mg/Kg	
	BERYLLIUM	J	0.757	1.04	PQL	mg/Kg	
	BORON	J	1.35	10.4	PQL	mg/Kg	J (all detects)
	CADMIUM	J	0.241	1.04	PQL	mg/Kg	
	MOLYBDENUM	J	0.364	2.07	PQL	mg/Kg	
	TIN	J	2.96	10.4	PQL	mg/Kg	
SL-853-SA5D-SB-0.0-0.5	ARSENIC	J	3.83	3.94	PQL	mg/Kg	
	BERYLLIUM	J	0.662	0.985	PQL	mg/Kg	
	BORON	J	3.06	9.85	PQL	mg/Kg	
	CADMIUM	J	0.363	0.985	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.374	1.97	PQL	mg/Kg	
	SODIUM	J	83.4	98.5	PQL	mg/Kg	
	TIN	J	2.80	9.85	PQL	mg/Kg	

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-551-SA5D-SB-0.0-0.5	SELENIUM	J	0.206	0.410	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: PH107 **Laboratory: LL**

EDD Filename: PH107 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-551-SA5D-SB-14.0-15.0	SELENIUM SILVER	J J	0.227 0.0421	0.452 0.226	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-551-SA5D-SB-17.5.-18.5	SELENIUM SILVER	J J	0.125 0.0336	0.425 0.212	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-551-SA5D-SB-4.0-5.0	SELENIUM	J	0.142	0.431	PQL	mg/Kg	J (all detects)
SL-551-SA5D-SB-9.0-10.0	SELENIUM SILVER	J J	0.112 0.0290	0.422 0.211	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-553-SA5D-SB-0.0-0.5	SELENIUM SILVER	J J	0.232 0.0272	0.402 0.201	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-553-SA5D-SB-4.5-5.5	SELENIUM	J	0.189	0.415	PQL	mg/Kg	J (all detects)
SL-853-SA5D-SB-0.0-0.5	SELENIUM SILVER	J J	0.284 0.0309	0.394 0.197	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-553-SA5D-SB-0.0-0.5	HEXAVALENT CHROMIUM	J	0.20	0.41	PQL	mg/Kg	J (all detects)
SL-553-SA5D-SB-4.5-5.5	HEXAVALENT CHROMIUM	J	0.34	0.42	PQL	mg/Kg	J (all detects)
SL-853-SA5D-SB-0.0-0.5	HEXAVALENT CHROMIUM	J	0.24	0.41	PQL	mg/Kg	J (all detects)

Method: 7471B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-551-SA5D-SB-0.0-0.5	MERCURY	J	0.0112	0.0166	PQL	mg/Kg	J (all detects)
SL-551-SA5D-SB-9.0-10.0	MERCURY	J	0.0138	0.0178	PQL	mg/Kg	J (all detects)
SL-553-SA5D-SB-4.5-5.5	MERCURY	J	0.0119	0.0173	PQL	mg/Kg	J (all detects)

Method: 8015M

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-553-SA5D-SB-0.0-0.5	EFH (C15-C20)	J	2.5	5.1	PQL	mg/Kg	J (all detects)
SL-553-SA5D-SB-4.5-5.5	EFH (C21-C30) EFH (C30-C40) GASOLINE RANGE ORGANICS (C5-C12)	J J J	4.4 8.2 0.2	5.3 11 1.0	PQL PQL PQL	mg/Kg mg/Kg mg/Kg	J (all detects)
SL-853-SA5D-SB-0.0-0.5	EFH (C15-C20)	J	2.1	5.1	PQL	mg/Kg	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH107 **Laboratory: LL**

EDD Filename: PH107 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 8270D SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-551-SA5D-SB-0.0-0.5	NAPHTHALENE	J	1.0	1.7	PQL	ug/Kg	J (all detects)
SL-551-SA5D-SB-14.0-15.0	NAPHTHALENE	J	1.3	1.9	PQL	ug/Kg	J (all detects)
SL-551-SA5D-SB-4.0-5.0	NAPHTHALENE	J	1.2	1.8	PQL	ug/Kg	J (all detects)
SL-551-SA5D-SB-9.0-10.0	NAPHTHALENE	J	1.1	1.8	PQL	ug/Kg	J (all detects)
SL-553-SA5D-SB-0.0-0.5	BENZO(A)ANTHRACENE	J	1.6	1.7	PQL	ug/Kg	J (all detects)
	BENZO(A)PYRENE	J	1.6	1.7	PQL	ug/Kg	
	BENZO(G,H,I)PERYLENE	J	1.2	1.7	PQL	ug/Kg	
	BENZO(K)FLUORANTHENE	J	1.2	1.7	PQL	ug/Kg	
	INDENO(1,2,3-CD)PYRENE	J	0.90	1.7	PQL	ug/Kg	
	NAPHTHALENE	J	1.5	1.7	PQL	ug/Kg	
SL-553-SA5D-SB-4.5-5.5	NAPHTHALENE	J	1.1	1.7	PQL	ug/Kg	J (all detects)
SL-853-SA5D-SB-0.0-0.5	BENZO(A)ANTHRACENE	J	1.1	1.7	PQL	ug/Kg	J (all detects)
	BENZO(A)PYRENE	J	1.1	1.7	PQL	ug/Kg	
	BENZO(G,H,I)PERYLENE	J	1.0	1.7	PQL	ug/Kg	
	BENZO(K)FLUORANTHENE	J	0.77	1.7	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	17	18	PQL	ug/Kg	
	INDENO(1,2,3-CD)PYRENE	J	0.72	1.7	PQL	ug/Kg	
	NAPHTHALENE	J	1.5	1.7	PQL	ug/Kg	
	PHENANTHRENE	J	1.4	1.7	PQL	ug/Kg	

LDC #: 30695J4
SDG #: PH107
Laboratory: Eurofins Lancaster Laboratories

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 11/11/13
Page: 1 of 1
Reviewer: QR
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: 9/12/13
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	NA	Dup
VIII.	Laboratory Control Samples (LCS)	NA	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=9, EB-091113 FB= FB-091113

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate (PH106)
TB = Trip blank
EB = Equipment blank
(PH029) FB= FB-041613 (PH032)

Validated Samples:

1	SL-553-SA5D-SB-0.0-0.5	11	SL-553-SA5D-SB-0.0-0.5MSD	21		31	
2	SL-853-SA5D-SB-0.0-0.5	12	SL-553-SA5D-SB-0.0-0.5DUP	22		32	
3	SL-553-SA5D-SB-4.5-5.5	13		23		33	
4	SL-551-SA5D-SB-0.0-0.5	14		24		34	
5	SL-551-SA5D-SB-4.0-5.0	15		25		35	
6	SL-551-SA5D-SB-9.0-10.0	16		26		36	
7	SL-551-SA5D-SB-14.0-15.0	17		27		37	
8	SL-551-SA5D-SB-17.5-18.5	18		28		38	
9	EB-091213	19		29		39	
10	SL-553-SA5D-SB-0.0-0.5MS	20		30		40	

Notes:

LDC #: 30695J4

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: [illegible]
2nd Reviewer: [illegible]

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	9										
Cu			4.2	21	4.5										
Mo			3.7	18.5	3.2										

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 #: 30695J4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: QL
2nd Reviewer: QL

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~~ 3-8

Analyte	Blank ID	Sample Identification											
	FB-041113 (SDG: PH029)	Action Limit	1	~~2~~	3	4	5	6	7	8			
Cu	0.0036	1.8											
Mo	0.0036	1.8	0.36	0.37	0.36	0.21	0.22	0.38	0.52	0.38			

Sampling date: 9/11/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: 3-8

Analyte	Blank ID	Sample Identification											
	EB-091113 (SDG: PH106)	Action Limit	3	4	5	6	7	8					
Cu	0.0040	2											
Mn	0.0019	0.95											
Mo	0.0087	4.35	See FB	See FB	See FB	See FB	See FB	See FB					

Sampling date: 9/12/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: 1, 2

Analyte	Blank ID	Sample Identification											
	EB-091213 (SDG: PH107)	Action Limit	1	2									
Cu	0.0045	2.25											
Mo	0.0032	1.6	See FB	See FB									

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 #: 30695J4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: 9
2nd Reviewer: 12

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

Blank units: mg/L **Associated sample units:** mg/Kg Reason: F
Sampling date: 4/16/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: 1, 2

Analyte	Blank ID	Sample Identification												
	FB-041613 (SDG: PH032)	Action Limit	1	2										
Sn	0.0029	1.45												
Mo	0.0132	6.6	0.364	0.374										

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.: PH107
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7196426BKG Matrix Spike Lab Sample ID: 7196427MS Matrix Spike Duplicate Lab Sample ID: 7196428MSD
Batch Id(s): P26237A, P26238A

		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		15647.5644		19803.8713		20516.1347		198.0198	198.0198	MG/KG	2099		2459		4			20	P
Antimony		0.7327	U	20.4446		21.4010		49.5050	49.5050	MG/KG	41	N	43	N	5		75 - 125	20	P
Arsenic		3.4149	B	17.5257		17.9465		14.8515	14.8515	MG/KG	95		98		2		75 - 125	20	P
Barium		80.9653		271.9069		276.0683		198.0198	198.0198	MG/KG	96		99		2		75 - 125	20	P
Beryllium		0.6248	B	5.5069		5.5842		4.9505	4.9505	MG/KG	99		100		1		75 - 125	20	P
Boron		3.6653	B	194.1782		196.1000		198.0198	198.0198	MG/KG	96		97		1		75 - 125	20	P
Cadmium		0.3158	B	4.8574		4.9059		4.9505	4.9505	MG/KG	92		93		1		75 - 125	20	P
Calcium		4388.8446		5202.5960		5296.0931		396.0396	396.0396	MG/KG	205		229		2			20	P
Chromium		28.6564		50.3960		51.0446		19.8020	19.8020	MG/KG	110		113		1		75 - 125	20	P
Cobalt		6.3564		50.9762		51.1188		49.5050	49.5050	MG/KG	90		90		0		75 - 125	20	P
Copper		10.5931		35.2842		35.7733		24.7525	24.7525	MG/KG	100		102		1		75 - 125	20	P
Iron		24140.2683		24791.4594		25785.6535		99.0099	99.0099	MG/KG	658		1662		4			20	P
Lead		9.9525		23.5446		23.1535		14.8515	14.8515	MG/KG	92		89		2		75 - 125	20	P
Lithium		21.2921		119.4356		121.3000		99.0099	99.0099	MG/KG	99		101		2		75 - 125	20	P
Magnesium		5295.9059		5750.1970		5957.1881		198.0198	198.0198	MG/KG	229		334		4			20	P
Manganese		353.4139		393.9030		400.8079		49.5050	49.5050	MG/KG	82		96		2			20	P
Mercury		0.0202		0.1955		0.1932		0.1629	0.1636	MG/KG	108		106		1		65 - 135	20	CV
Molybdenum		0.3554	B	181.9564		183.8079		198.0198	198.0198	MG/KG	92		93		1		75 - 125	20	P
Nickel		11.3960		57.9842		58.1297		49.5050	49.5050	MG/KG	94		94		0		75 - 125	20	P
Phosphorus		578.0782		666.0158		683.5505		99.0099	99.0099	MG/KG	89		107		3			20	P
Potassium		4620.6782		6024.2416		6259.7376		990.0990	990.0990	MG/KG	142		166		4			20	P
Selenium	78	0.2289	B	2.2455		2.3228		1.9802	1.9802	MG/KG	102		106		3		75 - 125	20	MS
Silver	107	0.0269	B	11.4257		12.5168		9.9010	9.9010	MG/KG	115		126	N	9		75 - 125	20	MS
Sodium		77.8178	B	1027.8891		1045.5960		990.0990	990.0990	MG/KG	96		98		2		75 - 125	20	P
Strontium	88	26.2772		36.9109		40.6931		7.9208	7.9208	MG/KG	134	N	182	N	10		75 - 125	20	MS
Thallium	203	0.2735		0.7168		0.7935		0.3960	0.3960	MG/KG	112		131	N	10		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.: PH107
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7196426BKG Matrix Spike Lab Sample ID: 7196427MS Matrix Spike Duplicate Lab Sample ID: 7196428MSD
Batch Id(s): P26237A, P26238A

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		2.6129	B	341.9624		343.8158		396.0396	396.0396	MG/KG	86		86		1		75 - 125	20	P
Titanium		1028.9000		1450.9941		1525.2931		99.0099	99.0099	MG/KG	426		501		5			20	P
Vanadium		50.6545		101.4426		104.1990		49.5050	49.5050	MG/KG	103		108		3		75 - 125	20	P
Zinc		59.4109		107.4228		109.3535		49.5050	49.5050	MG/KG	97		101		2		75 - 125	20	P
Zirconium		6.0109		97.1347		97.9178		99.0099	99.0099	MG/KG	92		93		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.: PH107
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7196426BKG Serial Dilution Lab Sample ID: 7196426L
Batch ID(s): P26237A
Concentration Units: UG/L

Analyte	Mass	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Diff.	Q	M
Aluminum		158040.4000		168424.1500		7		P
Antimony		7.4000	U	37.0000	U			P
Arsenic		34.4900	B	35.0000	U	100		P
Barium		817.7500		885.3500		8		P
Beryllium		6.3100	B	7.0500	B	12		P
Boron		37.0200	B	56.7500	B	53		P
Cadmium		3.1900	B	5.3000	B	66		P
Calcium		44327.3300		48033.7000		8		P
Chromium		289.4300		307.4000		6		P
Cobalt		64.2000		71.8500		12	E	P
Copper		106.9900		142.4000		33		P
Iron		243816.7100		244399.5000		0		P
Lead		100.5200		113.0500	B	12		P
Lithium		215.0500		236.3000		10		P
Magnesium		53488.6500		57207.8500		7		P
Manganese		3569.4800		3884.6000		9		P
Molybdenum		3.5900	B	8.5000	U	100		P
Nickel		115.1000		125.1500		9		P
Phosphorus		5838.5900		6067.7000		4		P
Potassium		46668.8500		49111.3500		5		P
Selenium	78	1.1560	B	2.5000	U	100		MS
Silver	107	0.1356	B	0.6500	U	100		MS
Sodium		785.9600	B	835.0000	U	100		P
Strontium	88	132.7000		117.2000		12	E	MS
Thallium	203	1.3810		1.2945	B	6		MS
Tin		26.3900	B	29.5000	B	12		P
Titanium		10391.8900		11235.6000		8		P
Vanadium		511.6100		548.1500		7		P
Zinc		600.0500		627.6500		5		P
Zirconium		60.7100		63.1000	B	4		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:	CONCENTRATION QUALIFIERS:
P = ICP Atomic Emission Spectrometer	U= Below MDL
MS = ICP Mass Spectrometry	B= Below LOQ
	FLAGS:
	E = Matrix Effects exist as proven by Serial Dilution or Spiked Dilution

Data Validation Report
Santa Susana Field Laboratory

Subarea 5D

SDG: PH108

Prepared for

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December 11, 2013

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on September 16, 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 and 7471B
Total Petroleum Hydrocarbons (TPH) as Gasoline by EPA SW 846 Method 8015M
TPH as Extractables by EPA SW 846 Method 8015M
Dioxins and Dibenzofurans by EPA Method 1613B

Wet Chemistry:
Fluoride by EPA Method 300.0

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 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 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 several blanks for SVOCs, 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.

V. Surrogate Spikes

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

VI. ICP Interference Check Sample (ICS) Analysis

ICP interference check data were not reviewed for level III.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed at the required frequency. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of one MS/MSD pair for metals in SDG PH109. 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 in SDG PH109.

VIII. Laboratory Duplicates Sample

Laboratory duplicates (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits with the exception of one DUP for metals in SDG PH109. The associated sample results were qualified as detected estimated (J). The details regarding the qualification of data are provided in Enclosure I in SDG PH109.

IX. Laboratory Control Samples (LCS)

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

X. Internal Standards

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

XI. ICP Serial Dilution

ICP serial dilution analysis was performed by the laboratory in SDG PH109. The analysis criteria were met with the following exceptions:

Diluted Sample	Analyte	%D (Limits)	Associated Samples	Flag	A or P
SL-504-SA5D-SB-4.0-5.0 (from SDG PH109)	Aluminum Barium Chromium Cobalt Magnesium Manganese Nickel	11 (≤10) 11 (≤10) 12(≤10) 17(≤10) 11(≤10) 11(≤10) 17(≤10)	All soil samples in SDG PH108	J (all detects) UJ (all non-detects)	A

The associated sample results were qualified as detected estimated (J).

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 PH108	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 volatile contaminants were found in the trip blank.

One equipment blank (from SDG PH110) was collected and analyzed for SVOCs, pesticides, PCBs, metals, TPH as gasoline, TPH as extractables, dioxins and fluoride. The equipment blank had 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 PH032) was collected and analyzed for SVOCs, pesticides, PCBs, metals, TPH as gasoline, TPH as extractables, dioxins and fluoride. The field blank had detections for 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
16-Sep-2013	TB-091613	7200145	TB	5030B	8015M	III
16-Sep-2013	SL-505-SA5D-SB-0.0-0.5	7200146	N	3050B	6010C	III
16-Sep-2013	SL-505-SA5D-SB-0.0-0.5	7200146	N	3050B	6020A	III
16-Sep-2013	SL-505-SA5D-SB-0.0-0.5	7200146	N	3546	8015M	III
16-Sep-2013	SL-505-SA5D-SB-0.0-0.5	7200146	N	3546	8081B	III
16-Sep-2013	SL-505-SA5D-SB-0.0-0.5	7200146	N	3546	8082A	III
16-Sep-2013	SL-505-SA5D-SB-0.0-0.5	7200146	N	3546	8270D SIM	III
16-Sep-2013	SL-505-SA5D-SB-0.0-0.5	7200146	N	METHOD	1613B	III
16-Sep-2013	SL-505-SA5D-SB-0.0-0.5	7200146	N	METHOD	7471B	III
16-Sep-2013	SL-505-SA5D-SB-4.0-5.0	7200147	N	3050B	6010C	III
16-Sep-2013	SL-505-SA5D-SB-4.0-5.0	7200147	N	3050B	6020A	III
16-Sep-2013	SL-505-SA5D-SB-4.0-5.0	7200147	N	3546	8015M	III
16-Sep-2013	SL-505-SA5D-SB-4.0-5.0	7200147	N	3546	8081B	III
16-Sep-2013	SL-505-SA5D-SB-4.0-5.0	7200147	N	3546	8082A	III
16-Sep-2013	SL-505-SA5D-SB-4.0-5.0	7200147	N	3546	8270D SIM	III
16-Sep-2013	SL-505-SA5D-SB-4.0-5.0	7200147	N	5035A	8015M	III
16-Sep-2013	SL-505-SA5D-SB-4.0-5.0	7200147	N	METHOD	7471B	III
16-Sep-2013	SL-505-SA5D-SB-9.0-10.0	7200148	N	3050B	6010C	III
16-Sep-2013	SL-505-SA5D-SB-9.0-10.0	7200148	N	3050B	6020A	III
16-Sep-2013	SL-505-SA5D-SB-9.0-10.0	7200148	N	3546	8015M	III
16-Sep-2013	SL-505-SA5D-SB-9.0-10.0	7200148	N	3546	8081B	III
16-Sep-2013	SL-505-SA5D-SB-9.0-10.0	7200148	N	3546	8082A	III
16-Sep-2013	SL-505-SA5D-SB-9.0-10.0	7200148	N	3546	8270D SIM	III
16-Sep-2013	SL-505-SA5D-SB-9.0-10.0	7200148	N	5035A	8015M	III
16-Sep-2013	SL-505-SA5D-SB-9.0-10.0	7200148	N	METHOD	300.0	III
16-Sep-2013	SL-505-SA5D-SB-9.0-10.0	7200148	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-Sep-2013	SL-505-SA5D-SB-14.0-15.0	7200149	N	3050B	6010C	III
16-Sep-2013	SL-505-SA5D-SB-14.0-15.0	7200149	N	3050B	6020A	III
16-Sep-2013	SL-505-SA5D-SB-14.0-15.0	7200149	N	3546	8015M	III
16-Sep-2013	SL-505-SA5D-SB-14.0-15.0	7200149	N	3546	8081B	III
16-Sep-2013	SL-505-SA5D-SB-14.0-15.0	7200149	N	3546	8082A	III
16-Sep-2013	SL-505-SA5D-SB-14.0-15.0	7200149	N	3546	8270D SIM	III
16-Sep-2013	SL-505-SA5D-SB-14.0-15.0	7200149	N	5035A	8015M	III
16-Sep-2013	SL-505-SA5D-SB-14.0-15.0	7200149	N	METHOD	300.0	III
16-Sep-2013	SL-505-SA5D-SB-14.0-15.0	7200149	N	METHOD	7471B	III
16-Sep-2013	SL-505-SA5D-SB-19.0-20.0	7200150	N	3050B	6010C	III
16-Sep-2013	SL-505-SA5D-SB-19.0-20.0	7200150	N	3050B	6020A	III
16-Sep-2013	SL-505-SA5D-SB-19.0-20.0	7200150	N	3546	8015M	III
16-Sep-2013	SL-505-SA5D-SB-19.0-20.0	7200150	N	3546	8081B	III
16-Sep-2013	SL-505-SA5D-SB-19.0-20.0	7200150	N	3546	8082A	III
16-Sep-2013	SL-505-SA5D-SB-19.0-20.0	7200150	N	3546	8270D SIM	III
16-Sep-2013	SL-505-SA5D-SB-19.0-20.0	7200150	N	5035A	8015M	III
16-Sep-2013	SL-505-SA5D-SB-19.0-20.0	7200150	N	METHOD	300.0	III
16-Sep-2013	SL-505-SA5D-SB-19.0-20.0	7200150	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: PH108 **Laboratory: LL**

EDD Filename: PH108 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-505-SA5D-SB-0.0-0.5 **Collected: 9/16/2013 8:05:00** **Analysis Type: REA** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	30900		7.40	MDL	81.8	PQL	mg/Kg	J	E

Sample ID: SL-505-SA5D-SB-0.0-0.5 **Collected: 9/16/2013 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
ALUMINUM	24700		7.37	MDL	40.9	PQL	mg/Kg	J	A
ANTIMONY	4.09	U	0.757	MDL	4.09	PQL	mg/Kg	UJ	Q
BARIUM	121		0.0337	MDL	1.02	PQL	mg/Kg	J	A
BERYLLIUM	0.880	J	0.0685	MDL	1.02	PQL	mg/Kg	J	Z
CADMIUM	0.175	J	0.0777	MDL	1.02	PQL	mg/Kg	J	Z
CALCIUM	10400		3.41	MDL	20.4	PQL	mg/Kg	J	E, E
CHROMIUM	37.4		0.164	MDL	3.07	PQL	mg/Kg	J	A
COBALT	9.64		0.101	MDL	1.02	PQL	mg/Kg	J	A
MAGNESIUM	6300		1.71	MDL	10.2	PQL	mg/Kg	J	A
MANGANESE	477		0.0849	MDL	1.02	PQL	mg/Kg	J	A
MOLYBDENUM	0.477	J	0.174	MDL	2.04	PQL	mg/Kg	U	F, F
NICKEL	19.8		0.133	MDL	2.04	PQL	mg/Kg	J	A
POTASSIUM	5560		8.53	MDL	102	PQL	mg/Kg	J	Q
TIN	2.85	J	0.225	MDL	10.2	PQL	mg/Kg	U	B
Zirconium	4.22	J	0.859	MDL	5.11	PQL	mg/Kg	J	Z

Sample ID: SL-505-SA5D-SB-14.0-15.0 **Collected: 9/16/2013 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
ALUMINUM	21900		7.84	MDL	43.5	PQL	mg/Kg	J	A
ANTIMONY	4.35	U	0.804	MDL	4.35	PQL	mg/Kg	UJ	Q
BARIUM	91.6		0.0359	MDL	1.09	PQL	mg/Kg	J	A
BERYLLIUM	0.784	J	0.0728	MDL	1.09	PQL	mg/Kg	J	Z
BORON	7.03	J	0.913	MDL	10.9	PQL	mg/Kg	J	Z
CALCIUM	8130		3.63	MDL	21.7	PQL	mg/Kg	J	E, E
CHROMIUM	30.9		0.174	MDL	3.26	PQL	mg/Kg	J	A
COBALT	6.72		0.108	MDL	1.09	PQL	mg/Kg	J	A
IRON	27800		3.93	MDL	43.5	PQL	mg/Kg	J	E
MAGNESIUM	5680		1.82	MDL	10.9	PQL	mg/Kg	J	A
MANGANESE	315		0.0902	MDL	1.09	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: PH108 **Laboratory: LL**

EDD Filename: PH108 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix:** SO

Sample ID: SL-505-SA5D-SB-14.0-15.0 **Collected:** 9/16/2013 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
NICKEL	16.9		0.141	MDL	2.17	PQL	mg/Kg	J	A
POTASSIUM	3290		9.06	MDL	109	PQL	mg/Kg	J	Q
TIN	3.12	J	0.239	MDL	10.9	PQL	mg/Kg	U	B
Zirconium	2.68	J	0.913	MDL	5.43	PQL	mg/Kg	J	Z

Sample ID: SL-505-SA5D-SB-19.0-20.0 **Collected:** 9/16/2013 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	31100		7.82	MDL	86.4	PQL	mg/Kg	J	E

Sample ID: SL-505-SA5D-SB-19.0-20.0 **Collected:** 9/16/2013 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
ALUMINUM	23800		7.79	MDL	43.2	PQL	mg/Kg	J	A
ANTIMONY	4.32	U	0.799	MDL	4.32	PQL	mg/Kg	UJ	Q
BARIUM	106		0.0356	MDL	1.08	PQL	mg/Kg	J	A
BERYLLIUM	0.876	J	0.0724	MDL	1.08	PQL	mg/Kg	J	Z
BORON	7.33	J	0.907	MDL	10.8	PQL	mg/Kg	J	Z
CALCIUM	15200		3.61	MDL	21.6	PQL	mg/Kg	J	E, E
CHROMIUM	32.7		0.173	MDL	3.24	PQL	mg/Kg	J	A
COBALT	10.4		0.107	MDL	1.08	PQL	mg/Kg	J	A
MAGNESIUM	6140		1.80	MDL	10.8	PQL	mg/Kg	J	A
MANGANESE	627		0.0896	MDL	1.08	PQL	mg/Kg	J	A
MOLYBDENUM	0.220	J	0.184	MDL	2.16	PQL	mg/Kg	U	F, F
NICKEL	25.0		0.140	MDL	2.16	PQL	mg/Kg	J	A
POTASSIUM	3360		9.01	MDL	108	PQL	mg/Kg	J	Q
TIN	3.33	J	0.238	MDL	10.8	PQL	mg/Kg	U	B
Zirconium	3.02	J	0.907	MDL	5.40	PQL	mg/Kg	J	Z

Sample ID: SL-505-SA5D-SB-4.0-5.0 **Collected:** 9/16/2013 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
IRON	33200		7.87	MDL	86.9	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: PH108 **Laboratory: LL**

EDD Filename: PH108 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: **METALS**

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

Sample ID: **SL-505-SA5D-SB-4.0-5.0** ***Collected:*** **9/16/2013 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
ALUMINUM	28600		7.84	MDL	43.5	PQL	mg/Kg	J	A
ANTIMONY	4.35	U	0.804	MDL	4.35	PQL	mg/Kg	UJ	Q
BARIUM	136		0.0359	MDL	1.09	PQL	mg/Kg	J	A
BERYLLIUM	0.946	J	0.0728	MDL	1.09	PQL	mg/Kg	J	Z
CALCIUM	9050		3.63	MDL	21.7	PQL	mg/Kg	J	E, E
CHROMIUM	39.8		0.174	MDL	3.26	PQL	mg/Kg	J	A
COBALT	9.46		0.108	MDL	1.09	PQL	mg/Kg	J	A
MAGNESIUM	7040		1.82	MDL	10.9	PQL	mg/Kg	J	A
MANGANESE	470		0.0902	MDL	1.09	PQL	mg/Kg	J	A
MOLYBDENUM	0.283	J	0.185	MDL	2.17	PQL	mg/Kg	U	F, F
NICKEL	21.7		0.141	MDL	2.17	PQL	mg/Kg	J	A
POTASSIUM	5000		9.06	MDL	109	PQL	mg/Kg	J	Q
TIN	3.06	J	0.239	MDL	10.9	PQL	mg/Kg	U	B
Zirconium	3.72	J	0.913	MDL	5.43	PQL	mg/Kg	J	Z

Sample ID: **SL-505-SA5D-SB-9.0-10.0** ***Collected:*** **9/16/2013 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
IRON	33000		8.09	MDL	89.4	PQL	mg/Kg	J	E

Sample ID: **SL-505-SA5D-SB-9.0-10.0** ***Collected:*** **9/16/2013 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
ALUMINUM	29600		8.06	MDL	44.7	PQL	mg/Kg	J	A
ANTIMONY	4.47	U	0.827	MDL	4.47	PQL	mg/Kg	UJ	Q
BARIUM	132		0.0369	MDL	1.12	PQL	mg/Kg	J	A
BERYLLIUM	0.973	J	0.0749	MDL	1.12	PQL	mg/Kg	J	Z
BORON	9.81	J	0.939	MDL	11.2	PQL	mg/Kg	J	Z
CALCIUM	17600		3.73	MDL	22.3	PQL	mg/Kg	J	E, E
CHROMIUM	35.8		0.179	MDL	3.35	PQL	mg/Kg	J	A
COBALT	10.9		0.111	MDL	1.12	PQL	mg/Kg	J	A
MAGNESIUM	6820		1.87	MDL	11.2	PQL	mg/Kg	J	A
MANGANESE	455		0.0928	MDL	1.12	PQL	mg/Kg	J	A
MOLYBDENUM	0.194	J	0.190	MDL	2.23	PQL	mg/Kg	U	F, F
NICKEL	23.4		0.145	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: PH108 **Laboratory: LL**

EDD Filename: PH108 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-505-SA5D-SB-9.0-10.0** *Collected:* **9/16/2013 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
POTASSIUM	4020		9.32	MDL	112	PQL	mg/Kg	J	Q
TIN	3.16	J	0.246	MDL	11.2	PQL	mg/Kg	U	B
Zirconium	2.68	J	0.939	MDL	5.59	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: **SL-505-SA5D-SB-0.0-0.5** *Collected:* **9/16/2013 8:05:00** *Analysis Type:* **REA** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.285	J	0.102	MDL	0.409	PQL	mg/Kg	J	Z

Sample ID: **SL-505-SA5D-SB-0.0-0.5** *Collected:* **9/16/2013 8:05:00** *Analysis Type:* **RES** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0615	J	0.0266	MDL	0.204	PQL	mg/Kg	J	Z, Q
THALLIUM	0.414		0.0307	MDL	0.204	PQL	mg/Kg	J	Q

Sample ID: **SL-505-SA5D-SB-14.0-15.0** *Collected:* **9/16/2013 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	0.0543	J	0.0283	MDL	0.217	PQL	mg/Kg	J	Z, Q
THALLIUM	0.342		0.0326	MDL	0.217	PQL	mg/Kg	J	Q

Sample ID: **SL-505-SA5D-SB-19.0-20.0** *Collected:* **9/16/2013 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	0.0460	J	0.0281	MDL	0.216	PQL	mg/Kg	J	Z, Q
THALLIUM	0.392		0.0324	MDL	0.216	PQL	mg/Kg	J	Q

Sample ID: **SL-505-SA5D-SB-4.0-5.0** *Collected:* **9/16/2013 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
SELENIUM	0.214	J	0.109	MDL	0.435	PQL	mg/Kg	J	Z

* denotes a non-reportable result

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

Data Qualifier Summary

Lab Reporting Batch ID: PH108 **Laboratory: LL**

EDD Filename: PH108 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: **SL-505-SA5D-SB-4.0-5.0** *Collected:* **9/16/2013 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	0.0571	J	0.0283	MDL	0.217	PQL	mg/Kg	J	Z, Q
THALLIUM	0.394		0.0326	MDL	0.217	PQL	mg/Kg	J	Q

Sample ID: **SL-505-SA5D-SB-9.0-10.0** *Collected:* **9/16/2013 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	0.0492	J	0.0291	MDL	0.223	PQL	mg/Kg	J	Z, Q
THALLIUM	0.416		0.0335	MDL	0.223	PQL	mg/Kg	J	Q

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: **SL-505-SA5D-SB-0.0-0.5** *Collected:* **9/16/2013 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
MERCURY	0.0147	J	0.0099	MDL	0.0165	PQL	mg/Kg	J	Z

Sample ID: **SL-505-SA5D-SB-4.0-5.0** *Collected:* **9/16/2013 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
MERCURY	0.0112	J	0.0107	MDL	0.0178	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-505-SA5D-SB-0.0-0.5** *Collected:* **9/16/2013 8:05:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDF	1.90	JB	0.0469	MDL	5.11	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.143	JBQ	0.0897	MDL	5.11	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.225	JBQ	0.0900	MDL	5.11	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.341	J	0.0735	MDL	5.11	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.863	J	0.0952	MDL	5.11	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.535	JB	0.0655	MDL	5.11	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.870	JB	0.0938	MDL	5.11	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: PH108 **Laboratory: LL**

EDD Filename: PH108 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-505-SA5D-SB-0.0-0.5** *Collected:* **9/16/2013 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
1,2,3,7,8,9-HXCDF	0.577	JBQ	0.0773	MDL	5.11	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.292	JQ	0.0641	MDL	5.11	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.351	JQ	0.0952	MDL	5.11	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.291	JQ	0.205	MDL	1.02	PQL	ng/Kg	J	Z
OCDF	4.44	JB	0.174	MDL	10.2	PQL	ng/Kg	J	Z

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: **SL-505-SA5D-SB-4.0-5.0** *Collected:* **9/16/2013 8:35:00** *Analysis Type:* **REA** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C15-C20)	4.0	J	2.2	MDL	5.5	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 8081B **Matrix: SO**

Sample ID: **SL-505-SA5D-SB-0.0-0.5** *Collected:* **9/16/2013 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
DIELDRIN	0.38	J	0.34	MDL	1.8	PQL	ug/Kg	J	Z
HEPTACHLOR EPOXIDE	0.23	J	0.18	MDL	0.87	PQL	ug/Kg	J	Z

Sample ID: **SL-505-SA5D-SB-4.0-5.0** *Collected:* **9/16/2013 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
4,4'-DDE	1.3	J	0.36	MDL	1.9	PQL	ug/Kg	J	Z
4,4'-DDT	1.8	J	0.38	MDL	1.9	PQL	ug/Kg	J	Z
BETA-BHC	1.4	J	1.1	MDL	2.1	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: PH108 **Laboratory: LL**

EDD Filename: PH108 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 8082A **Matrix: SO**

Sample ID: **SL-505-SA5D-SB-4.0-5.0** *Collected:* **9/16/2013 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
AROCLOR 1254	18	J	4.8	MDL	19	PQL	ug/Kg	J	Z

Method Category: SVOA

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

Sample ID: **SL-505-SA5D-SB-0.0-0.5** *Collected:* **9/16/2013 8:05:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-METHYLNAPHTHALENE	0.77	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(E)PYRENE	3.5	J	3.4	MDL	17	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	12	J	6.2	MDL	18	PQL	ug/Kg	J	Z
INDENO(1,2,3-CD)PYRENE	1.3	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
NAPHTHALENE	1.8		0.68	MDL	1.7	PQL	ug/Kg	U	B

Sample ID: **SL-505-SA5D-SB-14.0-15.0** *Collected:* **9/16/2013 10:05:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BIS(2-ETHYLHEXYL)PHTHALATE	18	J	6.6	MDL	20	PQL	ug/Kg	J	Z
NAPHTHALENE	1.2	J	0.73	MDL	1.8	PQL	ug/Kg	U	B

Sample ID: **SL-505-SA5D-SB-19.0-20.0** *Collected:* **9/16/2013 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
NAPHTHALENE	1.2	J	0.73	MDL	1.8	PQL	ug/Kg	U	B

Sample ID: **SL-505-SA5D-SB-4.0-5.0** *Collected:* **9/16/2013 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
2-METHYLNAPHTHALENE	0.73	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(A)ANTHRACENE	0.75	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(A)PYRENE	0.84	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(G,H,I)PERYLENE	0.81	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(K)FLUORANTHENE	0.96	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	16	J	6.5	MDL	20	PQL	ug/Kg	J	Z
NAPHTHALENE	1.8		0.72	MDL	1.8	PQL	ug/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: PH108 **Laboratory: LL**

EDD Filename: PH108 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

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

Sample ID: **SL-505-SA5D-SB-4.0-5.0** *Collected:* **9/16/2013 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
PHENANTHRENE	1.2	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z
PYRENE	1.6	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: **SL-505-SA5D-SB-9.0-10.0** *Collected:* **9/16/2013 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
CHRYSENE	1.7	J	0.37	MDL	1.9	PQL	ug/Kg	J	Z
NAPHTHALENE	1.2	J	0.74	MDL	1.9	PQL	ug/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: PH108 **Laboratory: LL**

EDD Filename: PH108 **eQAPP Name: CDM_SSFL_131101_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
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

PH108

Method Blank Outlier Report

Lab Reporting Batch ID: PH108 **Laboratory: LL**

EDD Filename: PH108 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 1613B
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2610B370454	9/20/2013 4:54:00 AM	1,2,3,4,6,7,8-HPCDD	0.0535 ng/Kg	SL-505-SA5D-SB-0.0-0.5
		1,2,3,4,6,7,8-HPCDF	0.0418 ng/Kg	
		1,2,3,4,7,8,9-HPCDF	0.0583 ng/Kg	
		1,2,3,4,7,8-HxCDD	0.0859 ng/Kg	
		1,2,3,6,7,8-HXCDF	0.0456 ng/Kg	
		1,2,3,7,8,9-HXCDD	0.0579 ng/Kg	
		1,2,3,7,8,9-HXCDF	0.0750 ng/Kg	
		1,2,3,7,8-PECDD	0.122 ng/Kg	
		1,2,3,7,8-PECDF	0.0876 ng/Kg	
		OCDD	0.197 ng/Kg	
		OCDF	0.197 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-505-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.143 ng/Kg	0.143U ng/Kg
SL-505-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.225 ng/Kg	0.225U ng/Kg

Method: 6010C
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P26137BB220814	9/22/2013 8:14:00 AM	TIN	1.64 mg/Kg	SL-505-SA5D-SB-0.0-0.5
				SL-505-SA5D-SB-14.0-15.0
				SL-505-SA5D-SB-19.0-20.0
				SL-505-SA5D-SB-4.0-5.0
				SL-505-SA5D-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-505-SA5D-SB-0.0-0.5(RES)	TIN	2.85 mg/Kg	2.85U mg/Kg
SL-505-SA5D-SB-14.0-15.0(RES)	TIN	3.12 mg/Kg	3.12U mg/Kg
SL-505-SA5D-SB-19.0-20.0(RES)	TIN	3.33 mg/Kg	3.33U mg/Kg
SL-505-SA5D-SB-4.0-5.0(RES)	TIN	3.06 mg/Kg	3.06U mg/Kg
SL-505-SA5D-SB-9.0-10.0(RES)	TIN	3.16 mg/Kg	3.16U mg/Kg

Method: 8270D SIM
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
PLKLC26B260219	9/25/2013 2:19:00 AM	NAPHTHALENE	0.92 ug/Kg	SL-505-SA5D-SB-0.0-0.5
				SL-505-SA5D-SB-14.0-15.0
				SL-505-SA5D-SB-19.0-20.0
				SL-505-SA5D-SB-4.0-5.0
				SL-505-SA5D-SB-9.0-10.0

Method Blank Outlier Report

Lab Reporting Batch ID: PH108 **Laboratory: LL**

EDD Filename: PH108 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: **8270D SIM**
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-505-SA5D-SB-0.0-0.5(RES)	NAPHTHALENE	1.8 ug/Kg	1.8U ug/Kg
SL-505-SA5D-SB-14.0-15.0(RES)	NAPHTHALENE	1.2 ug/Kg	1.8U ug/Kg
SL-505-SA5D-SB-19.0-20.0(RES)	NAPHTHALENE	1.2 ug/Kg	1.8U ug/Kg
SL-505-SA5D-SB-4.0-5.0(RES)	NAPHTHALENE	1.8 ug/Kg	1.8U ug/Kg
SL-505-SA5D-SB-9.0-10.0(RES)	NAPHTHALENE	1.2 ug/Kg	1.9U ug/Kg

Equipment Rinsate Blank Outlier Report

Lab Reporting Batch ID: PH108 **Laboratory: LL**

EDD Filename: PH108 **eQAPP Name: CDM_SSFL_131101_Lan**

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

Equipment Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
EB2-091813(REA2)	9/18/2013 3:30:00 PM	CALCIUM MOLYBDENUM	0.055 mg/L 0.0025 mg/L	SL-505-SA5D-SB-0.0-0.5 SL-505-SA5D-SB-14.0-15.0 SL-505-SA5D-SB-19.0-20.0 SL-505-SA5D-SB-4.0-5.0 SL-505-SA5D-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-505-SA5D-SB-0.0-0.5(RES)	MOLYBDENUM	0.477 mg/Kg	0.477U mg/Kg
SL-505-SA5D-SB-19.0-20.0(RES)	MOLYBDENUM	0.220 mg/Kg	0.220U mg/Kg
SL-505-SA5D-SB-4.0-5.0(RES)	MOLYBDENUM	0.283 mg/Kg	0.283U mg/Kg
SL-505-SA5D-SB-9.0-10.0(RES)	MOLYBDENUM	0.194 mg/Kg	0.194U mg/Kg

Field Blank Outlier Report

Lab Reporting Batch ID: PH108 **Laboratory: LL**

EDD Filename: PH108 **eQAPP Name: CDM_SSFL_131101_Lan**

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

Field Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
FB-041613(REA2/TOT)	4/16/2013 3:15:00 PM	MOLYBDENUM TIN	0.0132 mg/L 0.0029 mg/L	SL-505-SA5D-SB-0.0-0.5 SL-505-SA5D-SB-14.0-15.0 SL-505-SA5D-SB-19.0-20.0 SL-505-SA5D-SB-4.0-5.0 SL-505-SA5D-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-505-SA5D-SB-0.0-0.5(RES)	MOLYBDENUM	0.477 mg/Kg	0.477U mg/Kg
SL-505-SA5D-SB-19.0-20.0(RES)	MOLYBDENUM	0.220 mg/Kg	0.220U mg/Kg
SL-505-SA5D-SB-4.0-5.0(RES)	MOLYBDENUM	0.283 mg/Kg	0.283U mg/Kg
SL-505-SA5D-SB-9.0-10.0(RES)	MOLYBDENUM	0.194 mg/Kg	0.194U mg/Kg

Reporting Limit Outliers

Lab Reporting Batch ID: PH108 **Laboratory: LL**

EDD Filename: PH108 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-505-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDF	JB	1.90	5.11	PQL	ng/Kg	J (all detects)
	1,2,3,4,7,8,9-HPCDF	JBQ	0.143	5.11	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.225	5.11	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	J	0.341	5.11	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	J	0.863	5.11	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.535	5.11	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.870	5.11	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.577	5.11	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JQ	0.292	5.11	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.351	5.11	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.291	1.02	PQL	ng/Kg	
	OCDF	JB	4.44	10.2	PQL	ng/Kg	

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-505-SA5D-SB-0.0-0.5	BERYLLIUM	J	0.880	1.02	PQL	mg/Kg	J (all detects)
	CADMIUM	J	0.175	1.02	PQL	mg/Kg	
	MOLYBDENUM	J	0.477	2.04	PQL	mg/Kg	
	TIN	J	2.85	10.2	PQL	mg/Kg	
	Zirconium	J	4.22	5.11	PQL	mg/Kg	
SL-505-SA5D-SB-14.0-15.0	BERYLLIUM	J	0.784	1.09	PQL	mg/Kg	J (all detects)
	BORON	J	7.03	10.9	PQL	mg/Kg	
	TIN	J	3.12	10.9	PQL	mg/Kg	
	Zirconium	J	2.68	5.43	PQL	mg/Kg	
SL-505-SA5D-SB-19.0-20.0	BERYLLIUM	J	0.876	1.08	PQL	mg/Kg	J (all detects)
	BORON	J	7.33	10.8	PQL	mg/Kg	
	MOLYBDENUM	J	0.220	2.16	PQL	mg/Kg	
	TIN	J	3.33	10.8	PQL	mg/Kg	
	Zirconium	J	3.02	5.40	PQL	mg/Kg	
SL-505-SA5D-SB-4.0-5.0	BERYLLIUM	J	0.946	1.09	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.283	2.17	PQL	mg/Kg	
	TIN	J	3.06	10.9	PQL	mg/Kg	
	Zirconium	J	3.72	5.43	PQL	mg/Kg	
SL-505-SA5D-SB-9.0-10.0	BERYLLIUM	J	0.973	1.12	PQL	mg/Kg	J (all detects)
	BORON	J	9.81	11.2	PQL	mg/Kg	
	MOLYBDENUM	J	0.194	2.23	PQL	mg/Kg	
	TIN	J	3.16	11.2	PQL	mg/Kg	
	Zirconium	J	2.68	5.59	PQL	mg/Kg	

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-505-SA5D-SB-0.0-0.5	SELENIUM	J	0.285	0.409	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0615	0.204	PQL	mg/Kg	

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

Reporting Limit Outliers

Lab Reporting Batch ID: PH108 **Laboratory: LL**

EDD Filename: PH108 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-505-SA5D-SB-14.0-15.0	SILVER	J	0.0543	0.217	PQL	mg/Kg	J (all detects)
SL-505-SA5D-SB-19.0-20.0	SILVER	J	0.0460	0.216	PQL	mg/Kg	J (all detects)
SL-505-SA5D-SB-4.0-5.0	SELENIUM SILVER	J J	0.214 0.0571	0.435 0.217	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-505-SA5D-SB-9.0-10.0	SILVER	J	0.0492	0.223	PQL	mg/Kg	J (all detects)

Method: 7471B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-505-SA5D-SB-0.0-0.5	MERCURY	J	0.0147	0.0165	PQL	mg/Kg	J (all detects)
SL-505-SA5D-SB-4.0-5.0	MERCURY	J	0.0112	0.0178	PQL	mg/Kg	J (all detects)

Method: 8015M

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-505-SA5D-SB-4.0-5.0	EFH (C15-C20)	J	4.0	5.5	PQL	mg/Kg	J (all detects)

Method: 8081B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-505-SA5D-SB-0.0-0.5	DIELDRIN HEPTACHLOR EPOXIDE	J J	0.38 0.23	1.8 0.87	PQL PQL	ug/Kg ug/Kg	J (all detects)
SL-505-SA5D-SB-4.0-5.0	4,4'-DDE 4,4'-DDT BETA-BHC	J J J	1.3 1.8 1.4	1.9 1.9 2.1	PQL PQL PQL	ug/Kg ug/Kg ug/Kg	J (all detects)

Method: 8082A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-505-SA5D-SB-4.0-5.0	AROCLOR 1254	J	18	19	PQL	ug/Kg	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH108 **Laboratory: LL**

EDD Filename: PH108 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 8270D SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-505-SA5D-SB-0.0-0.5	2-METHYLNAPHTHALENE	J	0.77	1.7	PQL	ug/Kg	J (all detects)
	BENZO(E)PYRENE	J	3.5	17	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	12	18	PQL	ug/Kg	
	INDENO(1,2,3-CD)PYRENE	J	1.3	1.7	PQL	ug/Kg	
SL-505-SA5D-SB-14.0-15.0	BIS(2-ETHYLHEXYL)PHTHALATE	J	18	20	PQL	ug/Kg	J (all detects)
	NAPHTHALENE	J	1.2	1.8	PQL	ug/Kg	
SL-505-SA5D-SB-19.0-20.0	NAPHTHALENE	J	1.2	1.8	PQL	ug/Kg	J (all detects)
SL-505-SA5D-SB-4.0-5.0	2-METHYLNAPHTHALENE	J	0.73	1.8	PQL	ug/Kg	J (all detects)
	BENZO(A)ANTHRACENE	J	0.75	1.8	PQL	ug/Kg	
	BENZO(A)PYRENE	J	0.84	1.8	PQL	ug/Kg	
	BENZO(G,H,I)PERYLENE	J	0.81	1.8	PQL	ug/Kg	
	BENZO(K)FLUORANTHENE	J	0.96	1.8	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	16	20	PQL	ug/Kg	
	PHENANTHRENE	J	1.2	1.8	PQL	ug/Kg	
	PYRENE	J	1.6	1.8	PQL	ug/Kg	
SL-505-SA5D-SB-9.0-10.0	CHRYSENE	J	1.7	1.9	PQL	ug/Kg	J (all detects)
	NAPHTHALENE	J	1.2	1.9	PQL	ug/Kg	

LDC #: 30695K4

SDG #: PH108

Laboratory: Eurofins Lancaster Laboratories

VALIDATION COMPLETENESS WORKSHEET

ADR

Date: 1/11/13

Page: of 1

Reviewer: CR

2nd Reviewer: ✓

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

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

	Validation Area		Comments
I.	Technical holding times	—	Sampling dates: 9/16/13
II.	ICP/MS Tune	—	
III.	Calibration	—	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	—	
VI.	Matrix Spike Analysis	N	MS/D (See PH109)
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	see PH109
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	N	
XIV.	Field Duplicates	N	041613
XV	Field Blanks	SW	EB=EB2-091813 FB=FB-041113 (PH110) (PH029 32)

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-505-SA5D-SB-0.0-0.5	11		21		31	
2	SL-505-SA5D-SB-4.0-5.0	12		22		32	
3	SL-505-SA5D-SB-9.0-10.0	13		23		33	
4	SL-505-SA5D-SB-14.0-15.0	14		24		34	
5	SL-505-SA5D-SB-19.0-20.0	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 #: 30695K4

VALIDATION FINDINGS WORKSHEET
Field Blanks

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

Blank units: mg/L **Associated sample units:** mg/Kg Reason: F
Sampling date: 4/16/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All

Analyte	Blank ID	Sample Identification												
	FB-041613 (SDG: PH032)	Action Limit	1	2	3	5								
Sn	0.0029	1.45												
Mo	0.0132	6.6	0.477	0.283	0.194	0.220								

Sampling date: 9/18/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All

Analyte	Blank ID	Sample Identification											
	EB2-091813 (SDG: PH110)	Action Limit	1	2	3	5							
Ca	0.055	27.5											
Mo	0.0025	1.25	See FB	See FB	See FB	See FB							

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 5D

SDG: PH109

Prepared for

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Prepared by

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December 11, 2013

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on September 17, 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 (TPH) as Gasoline by EPA SW 846 Method 8015M
TPH as Extractables by EPA SW 846 Method 8015M
Dioxins and Dibenzofurans by EPA Method 1613B

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

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

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

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

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 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.

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 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). The details regarding the qualification of data are provided in Enclosure I.

IX. Laboratory Control Samples (LCS)

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

X. Internal Standards

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

XI. ICP Serial Dilution

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

Diluted Sample	Analyte	%D (Limits)	Associated Samples	Flag	A or P
SL-504-SA5D-SB-4.0-5.0	Aluminum Barium Chromium Cobalt Magnesium Manganese Nickel	11 (≤10) 11 (≤10) 12(≤10) 17(≤10) 11(≤10) 11(≤10) 17(≤10)	All soil samples in SDG PH109	J (all detects) UJ (all non-detects)	A

The associated sample results were qualified as detected estimated (J).

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 PH109	All compounds reported as detected below the RL.	J (all detects)	A

XIII. Field Duplicate Samples

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

XIV. Field Blank Samples

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

One equipment blank (from SDG PH110) was collected and analyzed for SVOCs, PCBs, metals, TPH as gasoline, TPH as extractables and dioxins. The equipment blank had 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 PH032) was collected and analyzed for SVOCs, PCBs, metals, TPH as gasoline, TPH as extractables and dioxins. The field blank had detections for 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
17-Sep-2013	SL-504-SA5D-SB-0.0-0.5	7201707	N	3050B	6010C	III
17-Sep-2013	SL-504-SA5D-SB-0.0-0.5	7201707	N	3050B	6020A	III
17-Sep-2013	SL-504-SA5D-SB-0.0-0.5	7201707	N	3546	8015M	III
17-Sep-2013	SL-504-SA5D-SB-0.0-0.5	7201707	N	3546	8082A	III
17-Sep-2013	SL-504-SA5D-SB-0.0-0.5	7201707	N	3546	8270D SIM	III
17-Sep-2013	SL-504-SA5D-SB-0.0-0.5	7201707	N	METHOD	1613B	III
17-Sep-2013	SL-504-SA5D-SB-0.0-0.5	7201707	N	METHOD	7471B	III
17-Sep-2013	SL-504-SA5D-SB-4.0-5.0	7201708	N	3050B	6010C	III
17-Sep-2013	SL-504-SA5D-SB-4.0-5.0	7201708	N	3050B	6020A	III
17-Sep-2013	SL-504-SA5D-SB-4.0-5.0	7201708	N	3546	8015M	III
17-Sep-2013	SL-504-SA5D-SB-4.0-5.0	7201708	N	3546	8082A	III
17-Sep-2013	SL-504-SA5D-SB-4.0-5.0	7201708	N	3546	8270D SIM	III
17-Sep-2013	SL-504-SA5D-SB-4.0-5.0	7201708	N	5035A	8015M	III
17-Sep-2013	SL-504-SA5D-SB-4.0-5.0	7201708	N	METHOD	7471B	III
17-Sep-2013	SL-504-SA5D-SB-4.0-5.0MS	7201709	MS	3050B	6010C	III
17-Sep-2013	SL-504-SA5D-SB-4.0-5.0MS	7201709	MS	3050B	6020A	III
17-Sep-2013	SL-504-SA5D-SB-4.0-5.0MS	7201709	MS	3546	8015M	III
17-Sep-2013	SL-504-SA5D-SB-4.0-5.0MS	7201709	MS	3546	8082A	III
17-Sep-2013	SL-504-SA5D-SB-4.0-5.0MS	7201709	MS	3546	8270D SIM	III
17-Sep-2013	SL-504-SA5D-SB-4.0-5.0MS	7201709	MS	5035A	8015M	III
17-Sep-2013	SL-504-SA5D-SB-4.0-5.0MS	7201709	MS	METHOD	7471B	III
17-Sep-2013	SL-504-SA5D-SB-4.0-5.0MSD	7201710	MSD	3050B	6010C	III
17-Sep-2013	SL-504-SA5D-SB-4.0-5.0MSD	7201710	MSD	3050B	6020A	III
17-Sep-2013	SL-504-SA5D-SB-4.0-5.0MSD	7201710	MSD	3546	8015M	III
17-Sep-2013	SL-504-SA5D-SB-4.0-5.0MSD	7201710	MSD	3546	8082A	III
17-Sep-2013	SL-504-SA5D-SB-4.0-5.0MSD	7201710	MSD	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
17-Sep-2013	SL-504-SA5D-SB-4.0-5.0MSD	7201710	MSD	5035A	8015M	III
17-Sep-2013	SL-504-SA5D-SB-4.0-5.0MSD	7201710	MSD	METHOD	7471B	III
17-Sep-2013	SL-504-SA5D-SB-4.0-5.0DUP	7201711	DUP	3050B	6010C	III
17-Sep-2013	SL-504-SA5D-SB-4.0-5.0DUP	7201711	DUP	3050B	6020A	III
17-Sep-2013	SL-504-SA5D-SB-4.0-5.0DUP	7201711	DUP	METHOD	7471B	III
17-Sep-2013	TB-091713	7201704	TB	5030B	8015M	III
17-Sep-2013	SL-804-SA5D-SB-4.0-5.0	7201712	FD	3050B	6010C	III
17-Sep-2013	SL-804-SA5D-SB-4.0-5.0	7201712	FD	3050B	6020A	III
17-Sep-2013	SL-804-SA5D-SB-4.0-5.0	7201712	FD	3546	8015M	III
17-Sep-2013	SL-804-SA5D-SB-4.0-5.0	7201712	FD	3546	8082A	III
17-Sep-2013	SL-804-SA5D-SB-4.0-5.0	7201712	FD	3546	8270D SIM	III
17-Sep-2013	SL-804-SA5D-SB-4.0-5.0	7201712	FD	5035A	8015M	III
17-Sep-2013	SL-804-SA5D-SB-4.0-5.0	7201712	FD	METHOD	7471B	III
17-Sep-2013	SL-504-SA5D-SB-9.0-10.0	7201713	N	3050B	6010C	III
17-Sep-2013	SL-504-SA5D-SB-9.0-10.0	7201713	N	3050B	6020A	III
17-Sep-2013	SL-504-SA5D-SB-9.0-10.0	7201713	N	3546	8015M	III
17-Sep-2013	SL-504-SA5D-SB-9.0-10.0	7201713	N	3546	8082A	III
17-Sep-2013	SL-504-SA5D-SB-9.0-10.0	7201713	N	3546	8270D SIM	III
17-Sep-2013	SL-504-SA5D-SB-9.0-10.0	7201713	N	5035A	8015M	III
17-Sep-2013	SL-504-SA5D-SB-9.0-10.0	7201713	N	METHOD	7471B	III
17-Sep-2013	SL-504-SA5D-SB-16.0-17.0	7201714	N	3050B	6010C	III
17-Sep-2013	SL-504-SA5D-SB-16.0-17.0	7201714	N	3050B	6020A	III
17-Sep-2013	SL-504-SA5D-SB-16.0-17.0	7201714	N	3546	8015M	III
17-Sep-2013	SL-504-SA5D-SB-16.0-17.0	7201714	N	3546	8082A	III
17-Sep-2013	SL-504-SA5D-SB-16.0-17.0	7201714	N	3546	8270D SIM	III
17-Sep-2013	SL-504-SA5D-SB-16.0-17.0	7201714	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
17-Sep-2013	SL-504-SA5D-SB-16.0-17.0	7201714	N	METHOD	7471B	III
17-Sep-2013	SL-503-SA5D-SB-0.0-0.5	7201705	N	3050B	6010C	III
17-Sep-2013	SL-503-SA5D-SB-0.0-0.5	7201705	N	3050B	6020A	III
17-Sep-2013	SL-503-SA5D-SB-0.0-0.5	7201705	N	3546	8015M	III
17-Sep-2013	SL-503-SA5D-SB-0.0-0.5	7201705	N	3546	8082A	III
17-Sep-2013	SL-503-SA5D-SB-0.0-0.5	7201705	N	3546	8270D SIM	III
17-Sep-2013	SL-503-SA5D-SB-0.0-0.5	7201705	N	METHOD	1613B	III
17-Sep-2013	SL-503-SA5D-SB-0.0-0.5	7201705	N	METHOD	7471B	III
17-Sep-2013	SL-503-SA5D-SB-4.0-5.0	7201706	N	3050B	6010C	III
17-Sep-2013	SL-503-SA5D-SB-4.0-5.0	7201706	N	3050B	6020A	III
17-Sep-2013	SL-503-SA5D-SB-4.0-5.0	7201706	N	3546	8015M	III
17-Sep-2013	SL-503-SA5D-SB-4.0-5.0	7201706	N	3546	8082A	III
17-Sep-2013	SL-503-SA5D-SB-4.0-5.0	7201706	N	3546	8270D SIM	III
17-Sep-2013	SL-503-SA5D-SB-4.0-5.0	7201706	N	5035A	8015M	III
17-Sep-2013	SL-503-SA5D-SB-4.0-5.0	7201706	N	METHOD	7471B	III
17-Sep-2013	SL-501-SA5D-SB-0.0-0.5	7201715	N	3050B	6010C	III
17-Sep-2013	SL-501-SA5D-SB-0.0-0.5	7201715	N	3050B	6020A	III
17-Sep-2013	SL-501-SA5D-SB-0.0-0.5	7201715	N	3546	8015M	III
17-Sep-2013	SL-501-SA5D-SB-0.0-0.5	7201715	N	3546	8082A	III
17-Sep-2013	SL-501-SA5D-SB-0.0-0.5	7201715	N	3546	8270D SIM	III
17-Sep-2013	SL-501-SA5D-SB-0.0-0.5	7201715	N	METHOD	1613B	III
17-Sep-2013	SL-501-SA5D-SB-0.0-0.5	7201715	N	METHOD	7471B	III
17-Sep-2013	SL-501-SA5D-SB-4.0-5.0	7201716	N	3050B	6010C	III
17-Sep-2013	SL-501-SA5D-SB-4.0-5.0	7201716	N	3050B	6020A	III
17-Sep-2013	SL-501-SA5D-SB-4.0-5.0	7201716	N	3546	8015M	III
17-Sep-2013	SL-501-SA5D-SB-4.0-5.0	7201716	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
17-Sep-2013	SL-501-SA5D-SB-4.0-5.0	7201716	N	3546	8270D SIM	III
17-Sep-2013	SL-501-SA5D-SB-4.0-5.0	7201716	N	5035A	8015M	III
17-Sep-2013	SL-501-SA5D-SB-4.0-5.0	7201716	N	METHOD	1613B	III
17-Sep-2013	SL-501-SA5D-SB-4.0-5.0	7201716	N	METHOD	7471B	III
17-Sep-2013	SL-501-SA5D-SB-9.0-10.0	7201717	N	3050B	6010C	III
17-Sep-2013	SL-501-SA5D-SB-9.0-10.0	7201717	N	3050B	6020A	III
17-Sep-2013	SL-501-SA5D-SB-9.0-10.0	7201717	N	3546	8015M	III
17-Sep-2013	SL-501-SA5D-SB-9.0-10.0	7201717	N	3546	8082A	III
17-Sep-2013	SL-501-SA5D-SB-9.0-10.0	7201717	N	3546	8270D SIM	III
17-Sep-2013	SL-501-SA5D-SB-9.0-10.0	7201717	N	5035A	8015M	III
17-Sep-2013	SL-501-SA5D-SB-9.0-10.0	7201717	N	METHOD	7471B	III
17-Sep-2013	SL-501-SA5D-SB-14.0-15.0	7201718	N	3050B	6010C	III
17-Sep-2013	SL-501-SA5D-SB-14.0-15.0	7201718	N	3050B	6020A	III
17-Sep-2013	SL-501-SA5D-SB-14.0-15.0	7201718	N	3546	8015M	III
17-Sep-2013	SL-501-SA5D-SB-14.0-15.0	7201718	N	3546	8082A	III
17-Sep-2013	SL-501-SA5D-SB-14.0-15.0	7201718	N	3546	8270D SIM	III
17-Sep-2013	SL-501-SA5D-SB-14.0-15.0	7201718	N	5035A	8015M	III
17-Sep-2013	SL-501-SA5D-SB-14.0-15.0	7201718	N	METHOD	7471B	III
17-Sep-2013	SL-501-SA5D-SB-19.0-20.0	7201719	N	3050B	6010C	III
17-Sep-2013	SL-501-SA5D-SB-19.0-20.0	7201719	N	3050B	6020A	III
17-Sep-2013	SL-501-SA5D-SB-19.0-20.0	7201719	N	3546	8015M	III
17-Sep-2013	SL-501-SA5D-SB-19.0-20.0	7201719	N	3546	8082A	III
17-Sep-2013	SL-501-SA5D-SB-19.0-20.0	7201719	N	3546	8270D SIM	III
17-Sep-2013	SL-501-SA5D-SB-19.0-20.0	7201719	N	5035A	8015M	III
17-Sep-2013	SL-501-SA5D-SB-19.0-20.0	7201719	N	METHOD	7471B	III
17-Sep-2013	SL-501-SA5D-SB-24.0-25.0	7201720	N	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
17-Sep-2013	SL-501-SA5D-SB-24.0-25.0	7201720	N	3050B	6020A	III
17-Sep-2013	SL-501-SA5D-SB-24.0-25.0	7201720	N	3546	8015M	III
17-Sep-2013	SL-501-SA5D-SB-24.0-25.0	7201720	N	3546	8082A	III
17-Sep-2013	SL-501-SA5D-SB-24.0-25.0	7201720	N	3546	8270D SIM	III
17-Sep-2013	SL-501-SA5D-SB-24.0-25.0	7201720	N	5035A	8015M	III
17-Sep-2013	SL-501-SA5D-SB-24.0-25.0	7201720	N	METHOD	7471B	III
17-Sep-2013	SL-501-SA5D-SB-28.0-29.0	7201721	N	3050B	6010C	III
17-Sep-2013	SL-501-SA5D-SB-28.0-29.0	7201721	N	3050B	6020A	III
17-Sep-2013	SL-501-SA5D-SB-28.0-29.0	7201721	N	3546	8015M	III
17-Sep-2013	SL-501-SA5D-SB-28.0-29.0	7201721	N	3546	8082A	III
17-Sep-2013	SL-501-SA5D-SB-28.0-29.0	7201721	N	3546	8270D SIM	III
17-Sep-2013	SL-501-SA5D-SB-28.0-29.0	7201721	N	5035A	8015M	III
17-Sep-2013	SL-501-SA5D-SB-28.0-29.0	7201721	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: PH109 **Laboratory: LL**

EDD Filename: PH109 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-501-SA5D-SB-0.0-0.5** ***Collected:*** **9/17/2013 12:15:00** ***Analysis Type:*** **REA** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	35300		7.59	MDL	83.9	PQL	mg/Kg	J	E

Sample ID: **SL-501-SA5D-SB-0.0-0.5** ***Collected:*** **9/17/2013 12:15:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	31000		7.56	MDL	41.9	PQL	mg/Kg	J	A
ANTIMONY	4.19	U	0.776	MDL	4.19	PQL	mg/Kg	UJ	Q
BARIUM	142		0.0346	MDL	1.05	PQL	mg/Kg	J	A
BERYLLIUM	1.03	J	0.0703	MDL	1.05	PQL	mg/Kg	J	Z
CALCIUM	6660		3.50	MDL	21.0	PQL	mg/Kg	J	E, E
CHROMIUM	40.9		0.168	MDL	3.15	PQL	mg/Kg	J	A
COBALT	10.3		0.104	MDL	1.05	PQL	mg/Kg	J	A
MAGNESIUM	7210		1.75	MDL	10.5	PQL	mg/Kg	J	A
MANGANESE	507		0.0870	MDL	1.05	PQL	mg/Kg	J	A
MOLYBDENUM	0.208	J	0.178	MDL	2.10	PQL	mg/Kg	U	F, F
NICKEL	22.7		0.136	MDL	2.10	PQL	mg/Kg	J	A
POTASSIUM	5360		8.75	MDL	105	PQL	mg/Kg	J	Q
SODIUM	97.6	J	17.5	MDL	105	PQL	mg/Kg	J	Z
TIN	3.11	J	0.231	MDL	10.5	PQL	mg/Kg	U	B
Zirconium	4.36	J	0.881	MDL	5.24	PQL	mg/Kg	J	Z

Sample ID: **SL-501-SA5D-SB-14.0-15.0** ***Collected:*** **9/17/2013 12:45:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	20300		7.68	MDL	42.6	PQL	mg/Kg	J	A
ANTIMONY	4.26	U	0.788	MDL	4.26	PQL	mg/Kg	UJ	Q
BARIUM	78.6		0.0351	MDL	1.06	PQL	mg/Kg	J	A
BERYLLIUM	0.703	J	0.0713	MDL	1.06	PQL	mg/Kg	J	Z
BORON	6.38	J	0.894	MDL	10.6	PQL	mg/Kg	J	Z
CALCIUM	15700		3.56	MDL	21.3	PQL	mg/Kg	J	E, E
CHROMIUM	25.5		0.170	MDL	3.19	PQL	mg/Kg	J	A
COBALT	4.93		0.105	MDL	1.06	PQL	mg/Kg	J	A
IRON	25500		3.85	MDL	42.6	PQL	mg/Kg	J	E
MAGNESIUM	5280		1.78	MDL	10.6	PQL	mg/Kg	J	A
MANGANESE	262		0.0884	MDL	1.06	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: PH109 **Laboratory: LL**

EDD Filename: PH109 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: **METALS**

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

Sample ID: **SL-501-SA5D-SB-14.0-15.0** ***Collected:*** **9/17/2013 12:45:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
NICKEL	14.1		0.138	MDL	2.13	PQL	mg/Kg	J	A
POTASSIUM	3460		8.88	MDL	106	PQL	mg/Kg	J	Q
TIN	3.05	J	0.234	MDL	10.6	PQL	mg/Kg	U	B
Zirconium	2.81	J	0.894	MDL	5.32	PQL	mg/Kg	J	Z

Sample ID: **SL-501-SA5D-SB-19.0-20.0** ***Collected:*** **9/17/2013 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*
ALUMINUM	14100		7.92	MDL	44.0	PQL	mg/Kg	J	A
ANTIMONY	4.40	U	0.813	MDL	4.40	PQL	mg/Kg	UJ	Q
BARIUM	73.3		0.0363	MDL	1.10	PQL	mg/Kg	J	A
BERYLLIUM	0.512	J	0.0736	MDL	1.10	PQL	mg/Kg	J	Z
BORON	4.84	J	0.923	MDL	11.0	PQL	mg/Kg	J	Z
CALCIUM	5850		3.67	MDL	22.0	PQL	mg/Kg	J	E, E
CHROMIUM	18.3		0.176	MDL	3.30	PQL	mg/Kg	J	A
COBALT	5.98		0.109	MDL	1.10	PQL	mg/Kg	J	A
IRON	20400		3.98	MDL	44.0	PQL	mg/Kg	J	E
MAGNESIUM	4130		1.84	MDL	11.0	PQL	mg/Kg	J	A
MANGANESE	390		0.0912	MDL	1.10	PQL	mg/Kg	J	A
NICKEL	12.8		0.143	MDL	2.20	PQL	mg/Kg	J	A
POTASSIUM	2720		9.16	MDL	110	PQL	mg/Kg	J	Q
TIN	2.94	J	0.242	MDL	11.0	PQL	mg/Kg	U	B
Zirconium	1.52	J	0.923	MDL	5.49	PQL	mg/Kg	J	Z

Sample ID: **SL-501-SA5D-SB-24.0-25.0** ***Collected:*** **9/17/2013 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*
ALUMINUM	12800		7.72	MDL	42.8	PQL	mg/Kg	J	A
ANTIMONY	4.28	U	0.792	MDL	4.28	PQL	mg/Kg	UJ	Q
BARIUM	64.6		0.0353	MDL	1.07	PQL	mg/Kg	J	A
BERYLLIUM	0.472	J	0.0717	MDL	1.07	PQL	mg/Kg	J	Z
BORON	4.04	J	0.899	MDL	10.7	PQL	mg/Kg	J	Z
CALCIUM	4210		3.58	MDL	21.4	PQL	mg/Kg	J	E, E
CHROMIUM	18.4		0.171	MDL	3.21	PQL	mg/Kg	J	A
COBALT	5.02		0.106	MDL	1.07	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: PH109 **Laboratory: LL**

EDD Filename: PH109 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: **METALS**

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

Sample ID: **SL-501-SA5D-SB-24.0-25.0** ***Collected:*** **9/17/2013 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
IRON	19400		3.87	MDL	42.8	PQL	mg/Kg	J	E
MAGNESIUM	4010		1.79	MDL	10.7	PQL	mg/Kg	J	A
MANGANESE	329		0.0888	MDL	1.07	PQL	mg/Kg	J	A
NICKEL	12.2		0.139	MDL	2.14	PQL	mg/Kg	J	A
POTASSIUM	2540		8.93	MDL	107	PQL	mg/Kg	J	Q
TIN	2.86	J	0.235	MDL	10.7	PQL	mg/Kg	U	B
Zirconium	1.46	J	0.899	MDL	5.35	PQL	mg/Kg	J	Z

Sample ID: **SL-501-SA5D-SB-28.0-29.0** ***Collected:*** **9/17/2013 1:15:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	13600		7.62	MDL	42.3	PQL	mg/Kg	J	A
ANTIMONY	4.23	U	0.782	MDL	4.23	PQL	mg/Kg	UJ	Q
BARIUM	65.9		0.0349	MDL	1.06	PQL	mg/Kg	J	A
BERYLLIUM	0.546	J	0.0708	MDL	1.06	PQL	mg/Kg	J	Z
BORON	4.09	J	0.887	MDL	10.6	PQL	mg/Kg	J	Z
CALCIUM	5940		3.53	MDL	21.1	PQL	mg/Kg	J	E, E
CHROMIUM	19.0		0.169	MDL	3.17	PQL	mg/Kg	J	A
COBALT	3.86		0.105	MDL	1.06	PQL	mg/Kg	J	A
IRON	20800		3.82	MDL	42.3	PQL	mg/Kg	J	E
MAGNESIUM	4320		1.76	MDL	10.6	PQL	mg/Kg	J	A
MANGANESE	201		0.0877	MDL	1.06	PQL	mg/Kg	J	A
NICKEL	10.1		0.137	MDL	2.11	PQL	mg/Kg	J	A
POTASSIUM	2630		8.81	MDL	106	PQL	mg/Kg	J	Q
TIN	2.84	J	0.232	MDL	10.6	PQL	mg/Kg	U	B
Zirconium	1.38	J	0.887	MDL	5.28	PQL	mg/Kg	J	Z

Sample ID: **SL-501-SA5D-SB-4.0-5.0** ***Collected:*** **9/17/2013 12:25:00** ***Analysis Type:*** **REA** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	38100		8.26	MDL	91.3	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: PH109 **Laboratory: LL**

EDD Filename: PH109 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-501-SA5D-SB-4.0-5.0** ***Collected:*** **9/17/2013 12:25:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	31600		8.22	MDL	45.6	PQL	mg/Kg	J	A
ANTIMONY	4.56	U	0.844	MDL	4.56	PQL	mg/Kg	UJ	Q
BARIUM	138		0.0376	MDL	1.14	PQL	mg/Kg	J	A
BERYLLIUM	1.03	J	0.0764	MDL	1.14	PQL	mg/Kg	J	Z
CALCIUM	10600		3.81	MDL	22.8	PQL	mg/Kg	J	E, E
CHROMIUM	40.8		0.183	MDL	3.42	PQL	mg/Kg	J	A
COBALT	11.9		0.113	MDL	1.14	PQL	mg/Kg	J	A
MAGNESIUM	8340		1.90	MDL	11.4	PQL	mg/Kg	J	A
MANGANESE	532		0.0947	MDL	1.14	PQL	mg/Kg	J	A
NICKEL	25.0		0.148	MDL	2.28	PQL	mg/Kg	J	A
POTASSIUM	3970		9.51	MDL	114	PQL	mg/Kg	J	Q
TIN	3.46	J	0.251	MDL	11.4	PQL	mg/Kg	U	B
Zirconium	3.70	J	0.958	MDL	5.70	PQL	mg/Kg	J	Z

Sample ID: **SL-501-SA5D-SB-9.0-10.0** ***Collected:*** **9/17/2013 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
ALUMINUM	23600		7.90	MDL	43.8	PQL	mg/Kg	J	A
ANTIMONY	4.38	U	0.810	MDL	4.38	PQL	mg/Kg	UJ	Q
BARIUM	88.0		0.0361	MDL	1.10	PQL	mg/Kg	J	A
BERYLLIUM	0.862	J	0.0734	MDL	1.10	PQL	mg/Kg	J	Z
BORON	7.28	J	0.920	MDL	11.0	PQL	mg/Kg	J	Z
CALCIUM	16000		3.66	MDL	21.9	PQL	mg/Kg	J	E, E
CHROMIUM	28.2		0.175	MDL	3.29	PQL	mg/Kg	J	A
COBALT	8.82		0.108	MDL	1.10	PQL	mg/Kg	J	A
IRON	27800		3.96	MDL	43.8	PQL	mg/Kg	J	E
MAGNESIUM	5510		1.83	MDL	11.0	PQL	mg/Kg	J	A
MANGANESE	394		0.0909	MDL	1.10	PQL	mg/Kg	J	A
NICKEL	16.7		0.142	MDL	2.19	PQL	mg/Kg	J	A
POTASSIUM	3470		9.13	MDL	110	PQL	mg/Kg	J	Q
TIN	3.07	J	0.241	MDL	11.0	PQL	mg/Kg	U	B
Zirconium	2.82	J	0.920	MDL	5.48	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: PH109 **Laboratory: LL**

EDD Filename: PH109 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-503-SA5D-SB-0.0-0.5 **Collected: 9/17/2013 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
IRON	36300		7.78	MDL	86.0	PQL	mg/Kg	J	E

Sample ID: SL-503-SA5D-SB-0.0-0.5 **Collected: 9/17/2013 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
ALUMINUM	32700		7.75	MDL	43.0	PQL	mg/Kg	J	A
ANTIMONY	4.30	U	0.795	MDL	4.30	PQL	mg/Kg	UJ	Q
BARIUM	144		0.0355	MDL	1.07	PQL	mg/Kg	J	A
BERYLLIUM	1.04	J	0.0720	MDL	1.07	PQL	mg/Kg	J	Z
CALCIUM	6590		3.59	MDL	21.5	PQL	mg/Kg	J	E, E
CHROMIUM	40.8		0.172	MDL	3.22	PQL	mg/Kg	J	A
COBALT	10.7		0.106	MDL	1.07	PQL	mg/Kg	J	A
MAGNESIUM	7290		1.80	MDL	10.7	PQL	mg/Kg	J	A
MANGANESE	505		0.0892	MDL	1.07	PQL	mg/Kg	J	A
NICKEL	22.0		0.140	MDL	2.15	PQL	mg/Kg	J	A
POTASSIUM	4320		8.97	MDL	107	PQL	mg/Kg	J	Q
TIN	3.41	J	0.236	MDL	10.7	PQL	mg/Kg	U	B
Zirconium	4.71	J	0.903	MDL	5.37	PQL	mg/Kg	J	Z

Sample ID: SL-503-SA5D-SB-4.0-5.0 **Collected: 9/17/2013 9:55:00** **Analysis Type: REA** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	31000		8.37	MDL	92.5	PQL	mg/Kg	J	E

Sample ID: SL-503-SA5D-SB-4.0-5.0 **Collected: 9/17/2013 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
ALUMINUM	27700		8.34	MDL	46.2	PQL	mg/Kg	J	A
ANTIMONY	4.62	U	0.855	MDL	4.62	PQL	mg/Kg	UJ	Q
BARIUM	146		0.0382	MDL	1.16	PQL	mg/Kg	J	A
BERYLLIUM	0.942	J	0.0775	MDL	1.16	PQL	mg/Kg	J	Z
BORON	10.2	J	0.971	MDL	11.6	PQL	mg/Kg	J	Z
CADMIUM	0.210	J	0.0879	MDL	1.16	PQL	mg/Kg	J	Z
CALCIUM	5790		3.86	MDL	23.1	PQL	mg/Kg	J	E, E
CHROMIUM	33.1		0.185	MDL	3.47	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: PH109 **Laboratory: LL**

EDD Filename: PH109 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: **METALS**

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

Sample ID: **SL-503-SA5D-SB-4.0-5.0** ***Collected:*** **9/17/2013 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
COBALT	10.2		0.114	MDL	1.16	PQL	mg/Kg	J	A
MAGNESIUM	6180		1.93	MDL	11.6	PQL	mg/Kg	J	A
MANGANESE	1000		0.0960	MDL	1.16	PQL	mg/Kg	J	A
NICKEL	27.1		0.150	MDL	2.31	PQL	mg/Kg	J	A
POTASSIUM	3610		9.64	MDL	116	PQL	mg/Kg	J	Q
TIN	2.89	J	0.254	MDL	11.6	PQL	mg/Kg	U	B
Zirconium	3.63	J	0.971	MDL	5.78	PQL	mg/Kg	J	Z

Sample ID: **SL-504-SA5D-SB-0.0-0.5** ***Collected:*** **9/17/2013 7:40:00** ***Analysis Type:*** **REA** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	41600		7.88	MDL	87.0	PQL	mg/Kg	J	E

Sample ID: **SL-504-SA5D-SB-0.0-0.5** ***Collected:*** **9/17/2013 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
ALUMINUM	30400		7.85	MDL	43.5	PQL	mg/Kg	J	A
ANTIMONY	4.35	U	0.805	MDL	4.35	PQL	mg/Kg	UJ	Q
BARIUM	133		0.0359	MDL	1.09	PQL	mg/Kg	J	A
BERYLLIUM	1.03	J	0.0729	MDL	1.09	PQL	mg/Kg	J	Z
CALCIUM	12500		3.63	MDL	21.8	PQL	mg/Kg	J	E, E
CHROMIUM	38.5		0.174	MDL	3.26	PQL	mg/Kg	J	A
COBALT	10.1		0.108	MDL	1.09	PQL	mg/Kg	J	A
MAGNESIUM	7110		1.82	MDL	10.9	PQL	mg/Kg	J	A
MANGANESE	505		0.0903	MDL	1.09	PQL	mg/Kg	J	A
MOLYBDENUM	0.239	J	0.185	MDL	2.18	PQL	mg/Kg	U	F, F
NICKEL	22.2		0.141	MDL	2.18	PQL	mg/Kg	J	A
POTASSIUM	4860		9.07	MDL	109	PQL	mg/Kg	J	Q
TIN	3.03	J	0.239	MDL	10.9	PQL	mg/Kg	U	B
Zirconium	3.86	J	0.914	MDL	5.44	PQL	mg/Kg	J	Z

Sample ID: **SL-504-SA5D-SB-16.0-17.0** ***Collected:*** **9/17/2013 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
ALUMINUM	15200		7.53	MDL	41.8	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: PH109 **Laboratory: LL**

EDD Filename: PH109 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-504-SA5D-SB-16.0-17.0 **Collected: 9/17/2013 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	4.18	U	0.773	MDL	4.18	PQL	mg/Kg	UJ	Q
BARIUM	68.0		0.0345	MDL	1.04	PQL	mg/Kg	J	A
BERYLLIUM	0.559	J	0.0699	MDL	1.04	PQL	mg/Kg	J	Z
BORON	4.74	J	0.877	MDL	10.4	PQL	mg/Kg	J	Z
CALCIUM	6510		3.49	MDL	20.9	PQL	mg/Kg	J	E, E
CHROMIUM	21.3		0.167	MDL	3.13	PQL	mg/Kg	J	A
COBALT	5.56		0.103	MDL	1.04	PQL	mg/Kg	J	A
IRON	22300		3.78	MDL	41.8	PQL	mg/Kg	J	E
MAGNESIUM	4460		1.74	MDL	10.4	PQL	mg/Kg	J	A
MANGANESE	303		0.0867	MDL	1.04	PQL	mg/Kg	J	A
NICKEL	13.9		0.136	MDL	2.09	PQL	mg/Kg	J	A
POTASSIUM	2630		8.71	MDL	104	PQL	mg/Kg	J	Q
TIN	2.97	J	0.230	MDL	10.4	PQL	mg/Kg	U	B
Zirconium	2.27	J	0.877	MDL	5.22	PQL	mg/Kg	J	Z

Sample ID: SL-504-SA5D-SB-4.0-5.0 **Collected: 9/17/2013 7:50:00** **Analysis Type: REA** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	32700		8.05	MDL	89.0	PQL	mg/Kg	J	E

Sample ID: SL-504-SA5D-SB-4.0-5.0 **Collected: 9/17/2013 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
ALUMINUM	32000		8.02	MDL	44.5	PQL	mg/Kg	J	A
ANTIMONY	4.45	U	0.823	MDL	4.45	PQL	mg/Kg	UJ	Q
BARIUM	111		0.0367	MDL	1.11	PQL	mg/Kg	J	A
BERYLLIUM	1.04	J	0.0745	MDL	1.11	PQL	mg/Kg	J	Z
BORON	8.90	J	0.934	MDL	11.1	PQL	mg/Kg	J	Z
CALCIUM	36200		3.71	MDL	22.2	PQL	mg/Kg	J	E, E, FD
CHROMIUM	35.6		0.178	MDL	3.34	PQL	mg/Kg	J	A
COBALT	8.09		0.110	MDL	1.11	PQL	mg/Kg	J	A
MAGNESIUM	6260		1.86	MDL	11.1	PQL	mg/Kg	J	A
MANGANESE	291		0.0923	MDL	1.11	PQL	mg/Kg	J	A
MOLYBDENUM	0.344	J	0.189	MDL	2.22	PQL	mg/Kg	UJ	FD, F, F
NICKEL	20.8		0.145	MDL	2.22	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: PH109 **Laboratory: LL**

EDD Filename: PH109 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-504-SA5D-SB-4.0-5.0** ***Collected:*** **9/17/2013 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
POTASSIUM	2780		9.28	MDL	111	PQL	mg/Kg	J	Q
TIN	3.39	J	0.245	MDL	11.1	PQL	mg/Kg	U	B
Zirconium	3.53	J	0.934	MDL	5.56	PQL	mg/Kg	J	Z

Sample ID: **SL-504-SA5D-SB-9.0-10.0** ***Collected:*** **9/17/2013 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
ALUMINUM	23800		7.81	MDL	43.3	PQL	mg/Kg	J	A
ANTIMONY	4.33	U	0.802	MDL	4.33	PQL	mg/Kg	UJ	Q
BARIUM	97.5		0.0357	MDL	1.08	PQL	mg/Kg	J	A
BERYLLIUM	0.817	J	0.0726	MDL	1.08	PQL	mg/Kg	J	Z
BORON	6.57	J	0.910	MDL	10.8	PQL	mg/Kg	J	Z
CALCIUM	12200		3.62	MDL	21.7	PQL	mg/Kg	J	E, E
CHROMIUM	30.1		0.173	MDL	3.25	PQL	mg/Kg	J	A
COBALT	7.83		0.107	MDL	1.08	PQL	mg/Kg	J	A
IRON	28500		3.92	MDL	43.3	PQL	mg/Kg	J	E
MAGNESIUM	5730		1.81	MDL	10.8	PQL	mg/Kg	J	A
MANGANESE	382		0.0899	MDL	1.08	PQL	mg/Kg	J	A
NICKEL	17.9		0.141	MDL	2.17	PQL	mg/Kg	J	A
POTASSIUM	3130		9.03	MDL	108	PQL	mg/Kg	J	Q
TIN	3.26	J	0.238	MDL	10.8	PQL	mg/Kg	U	B
Zirconium	3.19	J	0.910	MDL	5.42	PQL	mg/Kg	J	Z

Sample ID: **SL-804-SA5D-SB-4.0-5.0** ***Collected:*** **9/17/2013 8:00:00** ***Analysis Type:*** **REA** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CALCIUM	65200		7.44	MDL	44.6	PQL	mg/Kg	J	E, E, FD

Sample ID: **SL-804-SA5D-SB-4.0-5.0** ***Collected:*** **9/17/2013 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
ALUMINUM	28600		8.03	MDL	44.6	PQL	mg/Kg	J	A
ANTIMONY	4.46	U	0.824	MDL	4.46	PQL	mg/Kg	UJ	Q
BARIUM	127		0.0368	MDL	1.11	PQL	mg/Kg	J	A
BERYLLIUM	0.862	J	0.0746	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: PH109 **Laboratory: LL**

EDD Filename: PH109 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-804-SA5D-SB-4.0-5.0** *Collected:* **9/17/2013 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
BORON	10.5	J	0.936	MDL	11.1	PQL	mg/Kg	J	Z
CHROMIUM	33.4		0.178	MDL	3.34	PQL	mg/Kg	J	A
COBALT	8.27		0.110	MDL	1.11	PQL	mg/Kg	J	A
IRON	29400		4.03	MDL	44.6	PQL	mg/Kg	J	E
MAGNESIUM	6460		1.86	MDL	11.1	PQL	mg/Kg	J	A
MANGANESE	368		0.0925	MDL	1.11	PQL	mg/Kg	J	A
MOLYBDENUM	2.23	U	0.189	MDL	2.23	PQL	mg/Kg	UJ	FD
NICKEL	16.8		0.145	MDL	2.23	PQL	mg/Kg	J	A
POTASSIUM	3190		9.29	MDL	111	PQL	mg/Kg	J	Q
TIN	2.78	J	0.245	MDL	11.1	PQL	mg/Kg	U	B
Zirconium	3.33	J	0.936	MDL	5.57	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: **SL-501-SA5D-SB-0.0-0.5** *Collected:* **9/17/2013 12:15:00** *Analysis Type:* **REA** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.292	J	0.105	MDL	0.419	PQL	mg/Kg	J	Z

Sample ID: **SL-501-SA5D-SB-0.0-0.5** *Collected:* **9/17/2013 12:15:00** *Analysis Type:* **RES** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0600	J	0.0273	MDL	0.210	PQL	mg/Kg	J	Z, Q
THALLIUM	0.476		0.0315	MDL	0.210	PQL	mg/Kg	J	Q

Sample ID: **SL-501-SA5D-SB-14.0-15.0** *Collected:* **9/17/2013 12:45:00** *Analysis Type:* **RES** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0442	J	0.0277	MDL	0.213	PQL	mg/Kg	J	Z, Q
THALLIUM	0.359		0.0319	MDL	0.213	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: PH109 **Laboratory: LL**

EDD Filename: PH109 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: **METALS**

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

Sample ID: **SL-501-SA5D-SB-19.0-20.0** ***Collected:*** **9/17/2013 12:55:00** ***Analysis Type:*** **RES** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0321	J	0.0286	MDL	0.220	PQL	mg/Kg	J	Z, Q
THALLIUM	0.300		0.0330	MDL	0.220	PQL	mg/Kg	J	Q

Sample ID: **SL-501-SA5D-SB-24.0-25.0** ***Collected:*** **9/17/2013 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
THALLIUM	0.290		0.0321	MDL	0.214	PQL	mg/Kg	J	Q

Sample ID: **SL-501-SA5D-SB-28.0-29.0** ***Collected:*** **9/17/2013 1:15:00** ***Analysis Type:*** **RES** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0661	J	0.0275	MDL	0.211	PQL	mg/Kg	J	Z, Q
THALLIUM	0.344		0.0317	MDL	0.211	PQL	mg/Kg	J	Q

Sample ID: **SL-501-SA5D-SB-4.0-5.0** ***Collected:*** **9/17/2013 12:25:00** ***Analysis Type:*** **REA** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.154	J	0.114	MDL	0.456	PQL	mg/Kg	J	Z

Sample ID: **SL-501-SA5D-SB-4.0-5.0** ***Collected:*** **9/17/2013 12:25:00** ***Analysis Type:*** **RES** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0541	J	0.0297	MDL	0.228	PQL	mg/Kg	J	Z, Q
THALLIUM	0.487		0.0342	MDL	0.228	PQL	mg/Kg	J	Q

Sample ID: **SL-501-SA5D-SB-9.0-10.0** ***Collected:*** **9/17/2013 12:35:00** ***Analysis Type:*** **RES** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0397	J	0.0285	MDL	0.219	PQL	mg/Kg	J	Z, Q
THALLIUM	0.422		0.0329	MDL	0.219	PQL	mg/Kg	J	Q

Sample ID: **SL-503-SA5D-SB-0.0-0.5** ***Collected:*** **9/17/2013 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
SELENIUM	0.283	J	0.107	MDL	0.430	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: PH109 **Laboratory: LL**

EDD Filename: PH109 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: **METALS**

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

Sample ID: **SL-503-SA5D-SB-0.0-0.5** ***Collected:*** **9/17/2013 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
SILVER	0.0623	J	0.0279	MDL	0.215	PQL	mg/Kg	J	Z, Q
THALLIUM	0.477		0.0322	MDL	0.215	PQL	mg/Kg	J	Q

Sample ID: **SL-503-SA5D-SB-4.0-5.0** ***Collected:*** **9/17/2013 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	0.0687	J	0.0301	MDL	0.231	PQL	mg/Kg	J	Z, Q
THALLIUM	0.425		0.0347	MDL	0.231	PQL	mg/Kg	J	Q

Sample ID: **SL-504-SA5D-SB-0.0-0.5** ***Collected:*** **9/17/2013 7:40:00** ***Analysis Type:*** **REA** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.304	J	0.109	MDL	0.435	PQL	mg/Kg	J	Z

Sample ID: **SL-504-SA5D-SB-0.0-0.5** ***Collected:*** **9/17/2013 7:40:00** ***Analysis Type:*** **RES** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0479	J	0.0283	MDL	0.218	PQL	mg/Kg	J	Z, Q
THALLIUM	0.397		0.0326	MDL	0.218	PQL	mg/Kg	J	Q

Sample ID: **SL-504-SA5D-SB-16.0-17.0** ***Collected:*** **9/17/2013 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	0.0276	J	0.0271	MDL	0.209	PQL	mg/Kg	J	Z, Q
THALLIUM	0.301		0.0313	MDL	0.209	PQL	mg/Kg	J	Q

Sample ID: **SL-504-SA5D-SB-4.0-5.0** ***Collected:*** **9/17/2013 7:50:00** ***Analysis Type:*** **REA** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.445	U	0.111	MDL	0.445	PQL	mg/Kg	UJ	FD

Sample ID: **SL-504-SA5D-SB-4.0-5.0** ***Collected:*** **9/17/2013 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	0.0832	J	0.0289	MDL	0.222	PQL	mg/Kg	J	Z, Q
THALLIUM	0.333		0.0334	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: PH109 **Laboratory: LL**

EDD Filename: PH109 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: **SL-504-SA5D-SB-9.0-10.0** *Collected:* **9/17/2013 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	0.0433	J	0.0282	MDL	0.217	PQL	mg/Kg	J	Z, Q
THALLIUM	0.464		0.0325	MDL	0.217	PQL	mg/Kg	J	Q

Sample ID: **SL-804-SA5D-SB-4.0-5.0** *Collected:* **9/17/2013 8:00:00** *Analysis Type:* **REA** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.127	J	0.111	MDL	0.446	PQL	mg/Kg	J	Z, FD

Sample ID: **SL-804-SA5D-SB-4.0-5.0** *Collected:* **9/17/2013 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	0.0665	J	0.0290	MDL	0.223	PQL	mg/Kg	J	Z, Q
THALLIUM	0.467		0.0334	MDL	0.223	PQL	mg/Kg	J	Q

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: **SL-501-SA5D-SB-14.0-15.0** *Collected:* **9/17/2013 12:45:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0168	J	0.0109	MDL	0.0182	PQL	mg/Kg	J	Z

Sample ID: **SL-504-SA5D-SB-4.0-5.0** *Collected:* **9/17/2013 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
MERCURY	0.0133	J	0.0113	MDL	0.0189	PQL	mg/Kg	J	Z, FD

Sample ID: **SL-804-SA5D-SB-4.0-5.0** *Collected:* **9/17/2013 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
MERCURY	0.0180	U	0.0108	MDL	0.0180	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: PH109 **Laboratory: LL**

EDD Filename: PH109 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-501-SA5D-SB-0.0-0.5 **Collected: 9/17/2013 12:15:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.858	JB	0.0338	MDL	5.44	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.171	JB	0.0120	MDL	5.44	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.102	JBQ	0.0231	MDL	5.44	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0670	JBQ	0.0310	MDL	5.44	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0857	JBQ	0.0278	MDL	5.44	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.418	JBQ	0.0334	MDL	5.44	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0791	JBQ	0.0233	MDL	5.44	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.687	JB	0.0306	MDL	5.44	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.887	JB	0.0286	MDL	5.44	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.114	JBQ	0.0363	MDL	5.44	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.353	JBQ	0.0226	MDL	5.44	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.0871	JBQ	0.0270	MDL	5.44	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0823	JBQ	0.0241	MDL	5.44	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.0649	J	0.0532	MDL	1.09	PQL	ng/Kg	J	Z
OCDD	7.60	JB	0.0219	MDL	10.9	PQL	ng/Kg	J	Z
OCDF	0.504	JBQ	0.0462	MDL	10.9	PQL	ng/Kg	U	B

Sample ID: SL-501-SA5D-SB-4.0-5.0 **Collected: 9/17/2013 12:25:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.530	JB	0.0380	MDL	5.61	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.170	JB	0.0115	MDL	5.61	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0788	JBQ	0.0205	MDL	5.61	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0730	JB	0.0260	MDL	5.61	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.134	JB	0.0256	MDL	5.61	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0550	JBQ	0.0226	MDL	5.61	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.169	JBQ	0.0245	MDL	5.61	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.232	JBQ	0.0263	MDL	5.61	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0580	JBQ	0.0318	MDL	5.61	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.111	JBQ	0.0219	MDL	5.61	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0726	JBQ	0.0249	MDL	5.61	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0684	JBQ	0.0218	MDL	5.61	PQL	ng/Kg	U	B
OCDD	5.87	JB	0.0241	MDL	11.2	PQL	ng/Kg	J	Z
OCDF	0.375	JB	0.0450	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: PH109 **Laboratory: LL**

EDD Filename: PH109 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 1613B **Matrix:** SO

Sample ID: SL-503-SA5D-SB-0.0-0.5 **Collected:** 9/17/2013 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	0.691	JB	0.0411	MDL	5.44	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.148	JB	0.0126	MDL	5.44	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.120	JBQ	0.0208	MDL	5.44	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0734	JBQ	0.0367	MDL	5.44	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.154	JB	0.0318	MDL	5.44	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.353	JB	0.0391	MDL	5.44	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.102	JB	0.0288	MDL	5.44	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.503	JB	0.0364	MDL	5.44	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.674	JBQ	0.0338	MDL	5.44	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.137	JBQ	0.0481	MDL	5.44	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.360	JB	0.0285	MDL	5.44	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.0802	JBQ	0.0296	MDL	5.44	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.102	JB	0.0270	MDL	5.44	PQL	ng/Kg	U	B
2,3,7,8-TCDD	0.0679	JBQ	0.0672	MDL	1.09	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.0763	JQ	0.0602	MDL	1.09	PQL	ng/Kg	J	Z
OCDD	5.01	JB	0.0299	MDL	10.9	PQL	ng/Kg	J	Z
OCDF	0.369	JB	0.0481	MDL	10.9	PQL	ng/Kg	U	B

Sample ID: SL-504-SA5D-SB-0.0-0.5 **Collected:** 9/17/2013 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	0.463	JB	0.0370	MDL	5.46	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.154	JBQ	0.0140	MDL	5.46	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.150	JBQ	0.0259	MDL	5.46	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.217	JBQ	0.0364	MDL	5.46	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.223	JBQ	0.0295	MDL	5.46	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.113	JB	0.0310	MDL	5.46	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.397	JB	0.0283	MDL	5.46	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.569	JBQ	0.0342	MDL	5.46	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	2.65	JB	0.0440	MDL	5.46	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.0962	JB	0.0341	MDL	5.46	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.125	JBQ	0.0463	MDL	5.46	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.162	J	0.0919	MDL	1.09	PQL	ng/Kg	J	Z
OCDD	4.64	JB	0.0215	MDL	10.9	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: PH109 **Laboratory: LL**

EDD Filename: PH109 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-504-SA5D-SB-0.0-0.5** *Collected:* **9/17/2013 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
OCDF	0.344	JBQ	0.0501	MDL	10.9	PQL	ng/Kg	U	B

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: **SL-501-SA5D-SB-0.0-0.5** *Collected:* **9/17/2013 12:15:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C21-C30)	3.9	J	2.2	MDL	5.4	PQL	mg/Kg	J	Z
EFH (C30-C40)	6.5	J	4.3	MDL	11	PQL	mg/Kg	J	Z

Sample ID: **SL-503-SA5D-SB-0.0-0.5** *Collected:* **9/17/2013 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
EFH (C21-C30)	3.5	J	2.2	MDL	5.5	PQL	mg/Kg	J	Z
EFH (C30-C40)	6.7	J	4.4	MDL	11	PQL	mg/Kg	J	Z

Sample ID: **SL-504-SA5D-SB-0.0-0.5** *Collected:* **9/17/2013 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
EFH (C21-C30)	4.8	J	2.2	MDL	5.5	PQL	mg/Kg	J	Z
EFH (C30-C40)	5.8	J	4.4	MDL	11	PQL	mg/Kg	J	Z

Method Category: SVOA

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

Sample ID: **SL-501-SA5D-SB-0.0-0.5** *Collected:* **9/17/2013 12:15:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHRYSENE	0.97	J	0.36	MDL	1.8	PQL	ug/Kg	J	Z
NAPHTHALENE	1.0	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: PH109 **Laboratory: LL**

EDD Filename: PH109 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

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

Sample ID: **SL-503-SA5D-SB-0.0-0.5** *Collected:* **9/17/2013 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
CHRYSENE	0.62	J	0.37	MDL	1.8	PQL	ug/Kg	J	Z
NAPHTHALENE	1.0	J	0.73	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: **SL-503-SA5D-SB-4.0-5.0** *Collected:* **9/17/2013 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
NAPHTHALENE	0.78	J	0.77	MDL	1.9	PQL	ug/Kg	J	Z

Sample ID: **SL-504-SA5D-SB-0.0-0.5** *Collected:* **9/17/2013 7:40:00** *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	0.76	J	0.74	MDL	1.8	PQL	ug/Kg	J	Z
CHRYSENE	0.91	J	0.37	MDL	1.8	PQL	ug/Kg	J	Z
FLUORANTHENE	0.76	J	0.74	MDL	1.8	PQL	ug/Kg	J	Z
NAPHTHALENE	0.81	J	0.74	MDL	1.8	PQL	ug/Kg	J	Z
PYRENE	0.92	J	0.74	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: **SL-504-SA5D-SB-4.0-5.0** *Collected:* **9/17/2013 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
BENZO(E)PYRENE	19	U	3.8	MDL	19	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: PH109 **Laboratory: LL**

EDD Filename: PH109 **eQAPP Name: CDM_SSFL_131101_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
FD	Field Duplicate Precision
Q	Laboratory Duplicate Precision
Q	Matrix Spike Lower Estimation
Q	Matrix Spike Lower Rejection
Q	Matrix Spike Precision
Q	Matrix Spike Upper Estimation
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

PH109

Method Blank Outlier Report

Lab Reporting Batch ID: PH109 **Laboratory: LL**

EDD Filename: PH109 **eQAPP Name: CDM_SSFL_131101_Lan**

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2680B370155	9/27/2013 1:55:00 AM	1,2,3,4,6,7,8-HPCDD	0.127 ng/Kg	SL-501-SA5D-SB-0.0-0.5
		1,2,3,4,6,7,8-HPCDF	0.0505 ng/Kg	SL-501-SA5D-SB-4.0-5.0
		1,2,3,4,7,8,9-HPCDF	0.0860 ng/Kg	SL-503-SA5D-SB-0.0-0.5
		1,2,3,4,7,8-HxCDD	0.0483 ng/Kg	SL-504-SA5D-SB-0.0-0.5
		1,2,3,4,7,8-HXCDF	0.0573 ng/Kg	
		1,2,3,6,7,8-HXCDD	0.0406 ng/Kg	
		1,2,3,6,7,8-HXCDF	0.0517 ng/Kg	
		1,2,3,7,8,9-HXCDD	0.0644 ng/Kg	
		1,2,3,7,8,9-HXCDF	0.0692 ng/Kg	
		1,2,3,7,8-PECDD	0.103 ng/Kg	
		1,2,3,7,8-PECDF	0.0673 ng/Kg	
		2,3,4,6,7,8-HXCDF	0.0444 ng/Kg	
		2,3,4,7,8-PECDF	0.0538 ng/Kg	
		2,3,7,8-TCDD	0.104 ng/Kg	
		OCDD	0.212 ng/Kg	
		OCDF	0.223 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-501-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDF	0.171 ng/Kg	0.171U ng/Kg
SL-501-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.102 ng/Kg	0.102U ng/Kg
SL-501-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.0670 ng/Kg	0.0670U ng/Kg
SL-501-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.0857 ng/Kg	0.0857U ng/Kg
SL-501-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.0791 ng/Kg	0.0791U ng/Kg
SL-501-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.114 ng/Kg	0.114U ng/Kg
SL-501-SA5D-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0871 ng/Kg	0.0871U ng/Kg
SL-501-SA5D-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.0823 ng/Kg	0.0823U ng/Kg
SL-501-SA5D-SB-0.0-0.5(RES)	OCDF	0.504 ng/Kg	0.504U ng/Kg
SL-501-SA5D-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDD	0.530 ng/Kg	0.530U ng/Kg
SL-501-SA5D-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.170 ng/Kg	0.170U ng/Kg
SL-501-SA5D-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0788 ng/Kg	0.0788U ng/Kg
SL-501-SA5D-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.0730 ng/Kg	0.0730U ng/Kg
SL-501-SA5D-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDD	0.134 ng/Kg	0.134U ng/Kg
SL-501-SA5D-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.0550 ng/Kg	0.0550U ng/Kg
SL-501-SA5D-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDD	0.169 ng/Kg	0.169U ng/Kg
SL-501-SA5D-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDF	0.232 ng/Kg	0.232U ng/Kg
SL-501-SA5D-SB-4.0-5.0(RES)	1,2,3,7,8-PECDD	0.0580 ng/Kg	0.0580U ng/Kg
SL-501-SA5D-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.111 ng/Kg	0.111U ng/Kg
SL-501-SA5D-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0726 ng/Kg	0.0726U ng/Kg
SL-501-SA5D-SB-4.0-5.0(RES)	2,3,4,7,8-PECDF	0.0684 ng/Kg	0.0684U ng/Kg
SL-501-SA5D-SB-4.0-5.0(RES)	OCDF	0.375 ng/Kg	0.375U ng/Kg
SL-503-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDF	0.148 ng/Kg	0.148U ng/Kg
SL-503-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.120 ng/Kg	0.120U ng/Kg
SL-503-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.0734 ng/Kg	0.0734U ng/Kg
SL-503-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.154 ng/Kg	0.154U ng/Kg
SL-503-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.102 ng/Kg	0.102U ng/Kg
SL-503-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.137 ng/Kg	0.137U ng/Kg
SL-503-SA5D-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0802 ng/Kg	0.0802U ng/Kg

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

Method Blank Outlier Report

Lab Reporting Batch ID: PH109 **Laboratory: LL**

EDD Filename: PH109 **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-503-SA5D-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.102 ng/Kg	0.102U ng/Kg
SL-503-SA5D-SB-0.0-0.5(RES)	2,3,7,8-TCDD	0.0679 ng/Kg	0.0679U ng/Kg
SL-503-SA5D-SB-0.0-0.5(RES)	OCDF	0.369 ng/Kg	0.369U ng/Kg
SL-504-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDD	0.463 ng/Kg	0.463U ng/Kg
SL-504-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDF	0.154 ng/Kg	0.154U ng/Kg
SL-504-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.150 ng/Kg	0.150U ng/Kg
SL-504-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.217 ng/Kg	0.217U ng/Kg
SL-504-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.113 ng/Kg	0.113U ng/Kg
SL-504-SA5D-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0962 ng/Kg	0.0962U ng/Kg
SL-504-SA5D-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.125 ng/Kg	0.125U ng/Kg
SL-504-SA5D-SB-0.0-0.5(RES)	OCDF	0.344 ng/Kg	0.344U ng/Kg

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P26137BB220814	9/22/2013 8:14:00 AM	TIN	1.64 mg/Kg	SL-501-SA5D-SB-0.0-0.5 SL-501-SA5D-SB-14.0-15.0 SL-501-SA5D-SB-19.0-20.0 SL-501-SA5D-SB-24.0-25.0 SL-501-SA5D-SB-28.0-29.0 SL-501-SA5D-SB-4.0-5.0 SL-501-SA5D-SB-9.0-10.0 SL-503-SA5D-SB-0.0-0.5 SL-503-SA5D-SB-4.0-5.0 SL-504-SA5D-SB-0.0-0.5 SL-504-SA5D-SB-16.0-17.0 SL-504-SA5D-SB-4.0-5.0 SL-504-SA5D-SB-9.0-10.0 SL-804-SA5D-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-501-SA5D-SB-0.0-0.5(RES)	TIN	3.11 mg/Kg	3.11U mg/Kg
SL-501-SA5D-SB-14.0-15.0(RES)	TIN	3.05 mg/Kg	3.05U mg/Kg
SL-501-SA5D-SB-19.0-20.0(RES)	TIN	2.94 mg/Kg	2.94U mg/Kg
SL-501-SA5D-SB-24.0-25.0(RES)	TIN	2.86 mg/Kg	2.86U mg/Kg
SL-501-SA5D-SB-28.0-29.0(RES)	TIN	2.84 mg/Kg	2.84U mg/Kg
SL-501-SA5D-SB-4.0-5.0(RES)	TIN	3.46 mg/Kg	3.46U mg/Kg
SL-501-SA5D-SB-9.0-10.0(RES)	TIN	3.07 mg/Kg	3.07U mg/Kg
SL-503-SA5D-SB-0.0-0.5(RES)	TIN	3.41 mg/Kg	3.41U mg/Kg
SL-503-SA5D-SB-4.0-5.0(RES)	TIN	2.89 mg/Kg	2.89U mg/Kg
SL-504-SA5D-SB-0.0-0.5(RES)	TIN	3.03 mg/Kg	3.03U mg/Kg

Method Blank Outlier Report

Lab Reporting Batch ID: PH109 **Laboratory: LL**

EDD Filename: PH109 **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-504-SA5D-SB-16.0-17.0(RES)	TIN	2.97 mg/Kg	2.97U mg/Kg
SL-504-SA5D-SB-4.0-5.0(RES)	TIN	3.39 mg/Kg	3.39U mg/Kg
SL-504-SA5D-SB-9.0-10.0(RES)	TIN	3.26 mg/Kg	3.26U mg/Kg
SL-804-SA5D-SB-4.0-5.0(RES)	TIN	2.78 mg/Kg	2.78U mg/Kg

Equipment Rinsate Blank Outlier Report

Lab Reporting Batch ID: PH109 **Laboratory: LL**

EDD Filename: PH109 **eQAPP Name: CDM_SSFL_131101_Lan**

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

Equipment Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
EB1-091813(REA2)	9/18/2013 3:00:00 PM	CALCIUM MOLYBDENUM	0.0464 mg/L 0.0083 mg/L	SL-501-SA5D-SB-0.0-0.5 SL-501-SA5D-SB-14.0-15.0 SL-501-SA5D-SB-19.0-20.0 SL-501-SA5D-SB-24.0-25.0 SL-501-SA5D-SB-28.0-29.0 SL-501-SA5D-SB-4.0-5.0 SL-501-SA5D-SB-9.0-10.0 SL-503-SA5D-SB-0.0-0.5 SL-503-SA5D-SB-4.0-5.0 SL-504-SA5D-SB-0.0-0.5 SL-504-SA5D-SB-16.0-17.0 SL-504-SA5D-SB-4.0-5.0 SL-504-SA5D-SB-9.0-10.0 SL-804-SA5D-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-501-SA5D-SB-0.0-0.5(RES)	MOLYBDENUM	0.208 mg/Kg	0.208U mg/Kg
SL-504-SA5D-SB-0.0-0.5(RES)	MOLYBDENUM	0.239 mg/Kg	0.239U mg/Kg
SL-504-SA5D-SB-4.0-5.0(RES)	MOLYBDENUM	0.344 mg/Kg	0.344U mg/Kg

Field Blank Outlier Report

Lab Reporting Batch ID: PH109 **Laboratory: LL**

EDD Filename: PH109 **eQAPP Name: CDM_SSFL_131101_Lan**

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

Field Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
FB-041613(REA2/TOT)	4/16/2013 3:15:00 PM	MOLYBDENUM TIN	0.0132 mg/L 0.0029 mg/L	SL-501-SA5D-SB-0.0-0.5 SL-501-SA5D-SB-14.0-15.0 SL-501-SA5D-SB-19.0-20.0 SL-501-SA5D-SB-24.0-25.0 SL-501-SA5D-SB-28.0-29.0 SL-501-SA5D-SB-4.0-5.0 SL-501-SA5D-SB-9.0-10.0 SL-503-SA5D-SB-0.0-0.5 SL-503-SA5D-SB-4.0-5.0 SL-504-SA5D-SB-0.0-0.5 SL-504-SA5D-SB-16.0-17.0 SL-504-SA5D-SB-4.0-5.0 SL-504-SA5D-SB-9.0-10.0 SL-804-SA5D-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-501-SA5D-SB-0.0-0.5(RES)	MOLYBDENUM	0.208 mg/Kg	0.208U mg/Kg
SL-504-SA5D-SB-0.0-0.5(RES)	MOLYBDENUM	0.239 mg/Kg	0.239U mg/Kg
SL-504-SA5D-SB-4.0-5.0(RES)	MOLYBDENUM	0.344 mg/Kg	0.344U mg/Kg

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH109 **Laboratory: LL**

EDD Filename: PH109 **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-504-SA5D-SB-4.0-5.0MS (TOT) **SL-504-SA5D-SB-4.0-5.0MSD (TOT)** (SL-501-SA5D-SB-0.0-0.5 SL-501-SA5D-SB-14.0-15.0 SL-501-SA5D-SB-19.0-20.0 SL-501-SA5D-SB-24.0-25.0 SL-501-SA5D-SB-28.0-29.0 SL-501-SA5D-SB-4.0-5.0 SL-501-SA5D-SB-9.0-10.0 SL-503-SA5D-SB-0.0-0.5 SL-503-SA5D-SB-4.0-5.0 SL-504-SA5D-SB-0.0-0.5 SL-504-SA5D-SB-16.0-17.0 SL-504-SA5D-SB-4.0-5.0 SL-504-SA5D-SB-9.0-10.0 SL-804-SA5D-SB-4.0-5.0)	ALUMINUM MANGANESE POTASSIUM TITANIUM	- 181 - 146	3009 235 147 335	75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00	- - - -	ALUMINUM MANGANESE POTASSIUM TITANIUM	J (all detects) Al, Mn, Ti, No Qual, >4x
SL-504-SA5D-SB-4.0-5.0MS (TOT) **SL-504-SA5D-SB-4.0-5.0MSD (TOT)** (SL-501-SA5D-SB-0.0-0.5 SL-501-SA5D-SB-14.0-15.0 SL-501-SA5D-SB-19.0-20.0 SL-501-SA5D-SB-24.0-25.0 SL-501-SA5D-SB-28.0-29.0 SL-501-SA5D-SB-4.0-5.0 SL-501-SA5D-SB-9.0-10.0 SL-503-SA5D-SB-0.0-0.5 SL-503-SA5D-SB-4.0-5.0 SL-504-SA5D-SB-0.0-0.5 SL-504-SA5D-SB-16.0-17.0 SL-504-SA5D-SB-4.0-5.0 SL-504-SA5D-SB-9.0-10.0 SL-804-SA5D-SB-4.0-5.0)	CALCIUM IRON MAGNESIUM	12397 -5015 -142	-1955 1530 382	75.00-125.00 75.00-125.00 75.00-125.00	107 (20.00) 24 (20.00) -	CALCIUM IRON MAGNESIUM	J(all detects) UJ(all non-detects) Ca, Fe, No Qual %R >4x Mg, No Qual, >4x
SL-504-SA5D-SB-4.0-5.0MS (TOT) **SL-504-SA5D-SB-4.0-5.0MSD (TOT)** (SL-501-SA5D-SB-0.0-0.5 SL-501-SA5D-SB-14.0-15.0 SL-501-SA5D-SB-19.0-20.0 SL-501-SA5D-SB-24.0-25.0 SL-501-SA5D-SB-28.0-29.0 SL-501-SA5D-SB-4.0-5.0 SL-501-SA5D-SB-9.0-10.0 SL-503-SA5D-SB-0.0-0.5 SL-503-SA5D-SB-4.0-5.0 SL-504-SA5D-SB-0.0-0.5 SL-504-SA5D-SB-16.0-17.0 SL-504-SA5D-SB-4.0-5.0 SL-504-SA5D-SB-9.0-10.0 SL-804-SA5D-SB-4.0-5.0)	ANTIMONY	72	72	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: PH109 **Laboratory: LL**

EDD Filename: PH109 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 6020A
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-504-SA5D-SB-4.0-5.0MS (TOT)	SILVER	127	-	75.00-125.00	-	SILVER	
	STRONTIUM	300	280	75.00-125.00	-	STRONTIUM	
SL-504-SA5D-SB-4.0-5.0MSD (TOT)	THALLIUM	159	143	75.00-125.00	-	THALLIUM	
(SL-501-SA5D-SB-0.0-0.5							
SL-501-SA5D-SB-14.0-15.0							J(all detects)
SL-501-SA5D-SB-19.0-20.0							
SL-501-SA5D-SB-24.0-25.0							
SL-501-SA5D-SB-28.0-29.0							Sr,
SL-501-SA5D-SB-4.0-5.0							No Qual, >4x
SL-501-SA5D-SB-9.0-10.0							
SL-503-SA5D-SB-0.0-0.5							
SL-503-SA5D-SB-4.0-5.0							
SL-504-SA5D-SB-0.0-0.5							
SL-504-SA5D-SB-16.0-17.0							
SL-504-SA5D-SB-4.0-5.0							
SL-504-SA5D-SB-9.0-10.0							
SL-804-SA5D-SB-4.0-5.0)							

Method: 8270D SIM
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-504-SA5D-SB-4.0-5.0MS (SL-504-SA5D-SB-4.0-5.0)	BENZO(E)PYRENE	69	-	70.00-130.00	-	BENZO(E)PYRENE	J(all detects) UJ(all non-detects)

Lab Duplicate Outlier Report

Lab Reporting Batch ID: PH109 **Laboratory: LL**

EDD Filename: PH109 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 6010C
Matrix: SO

QC Sample ID (Associated Sample ID)	*Analyte*	*Sample RPD*	*eQAPP RPD*	*Flag*
SL-504-SA5D-SB-4.0-5.0DUP (TOT)	ARSENIC	21	20.00	
(SL-501-SA5D-SB-0.0-0.5	CADMIUM	200	20.00	
SL -501-SA5D-SB-14.0-15.0	CALCIUM	41	20.00	
SL -501-SA5D-SB-19.0-20.0	MOLYBDENUM	200	20.00	
SL -501-SA5D-SB-24.0-25.0	Zirconium	36	20.00	J (all detects)
SL -501-SA5D-SB-28.0-29.0				UJ (all non-detects)
SL -501-SA5D-SB-4.0-5.0				
SL -501-SA5D-SB-9.0-10.0				As, Cd, Mo, Zr,
SL -503-SA5D-SB-0.0-0.5				No Qual,
SL -503-SA5D-SB-4.0-5.0				OK by Difference
SL -504-SA5D-SB-0.0-0.5				
SL -504-SA5D-SB-16.0-17.0				
SL -504-SA5D-SB-4.0-5.0				
SL -504-SA5D-SB-9.0-10.0				
SL -804-SA5D-SB-4.0-5.0)				

Field Duplicate RPD Report

Lab Reporting Batch ID: PH109 **Laboratory: LL**

EDD Filename: PrepPH109 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 160.3M
Matrix: SO

Analyte	Concentration (%)		Sample RPD	eQAPP RPD	Flag
	SL-504-SA5D-SB-4.0-5.0	SL-804-SA5D-SB-4.0-5.0			
MOISTURE	12.7	12.0	6		No Qualifiers Applied

Method: 6010C
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-504-SA5D-SB-4.0-5.0 (TOT)	SL-804-SA5D-SB-4.0-5.0 (TOT)			
ALUMINUM	32000	28600	11	50.00	
ARSENIC	7.48	7.15	5	50.00	
BARIUM	111	127	13	50.00	
BERYLLIUM	1.04	0.862	19	50.00	
BORON	8.90	10.5	16	50.00	
CHROMIUM	35.6	33.4	6	50.00	
COBALT	8.09	8.27	2	50.00	
COPPER	16.0	16.5	3	50.00	
IRON	32700	29400	11	50.00	
LEAD	9.51	9.49	0	50.00	
LITHIUM	26.7	25.9	3	50.00	
MAGNESIUM	6260	6460	3	50.00	No Qualifiers Applied
MANGANESE	291	368	23	50.00	
NICKEL	20.8	16.8	21	50.00	
PHOSPHORUS	176	271	43	50.00	
POTASSIUM	2780	3190	14	50.00	
SODIUM	700	610	14	50.00	
TIN	3.39	2.78	20	50.00	
TITANIUM	1260	1360	8	50.00	
VANADIUM	65.0	63.6	2	50.00	
ZINC	59.2	60.8	3	50.00	
Zirconium	3.53	3.33	6	50.00	
CALCIUM	36200	65200	57	50.00	J(all detects)
MOLYBDENUM	0.344	2.23 U	200	50.00	UJ(all non-detects)

Method: 6020A
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-504-SA5D-SB-4.0-5.0 (TOT)	SL-804-SA5D-SB-4.0-5.0 (TOT)			
SILVER	0.0832	0.0665	22	50.00	
STRONTIUM	55.8	83.7	40	50.00	No Qualifiers Applied
THALLIUM	0.333	0.467	34	50.00	
SELENIUM	0.445 U	0.127	200	50.00	J(all detects) UJ(all non-detects)

Method: 7471B
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-504-SA5D-SB-4.0-5.0 (TOT)	SL-804-SA5D-SB-4.0-5.0 (TOT)			
MERCURY	0.0133	0.0180 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: PH109 **Laboratory: LL**

EDD Filename: PrepPH109 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 9045M
Matrix: SO

Analyte	*Concentration (pH unit)*		*Sample RPD*	*eQAPP RPD*	*Flag*
	SL-504-SA5D-SB-4.0-5.0	SL-804-SA5D-SB-4.0-5.0			
PH	8.17	8.38	3	50.00	No Qualifiers Applied

Reporting Limit Outliers

Lab Reporting Batch ID: PH109 **Laboratory: LL**

EDD Filename: PH109 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: **1613B**

Matrix: **SO**

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-501-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	0.858	5.44	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JB	0.171	5.44	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.102	5.44	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0670	5.44	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0857	5.44	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.418	5.44	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0791	5.44	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.687	5.44	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.887	5.44	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.114	5.44	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.353	5.44	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0871	5.44	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0823	5.44	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.0649	1.09	PQL	ng/Kg	
	OCDD	JB	7.60	10.9	PQL	ng/Kg	
	OCDF	JBQ	0.504	10.9	PQL	ng/Kg	
SL-501-SA5D-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JB	0.530	5.61	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JB	0.170	5.61	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0788	5.61	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.0730	5.61	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.134	5.61	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0550	5.61	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.169	5.61	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.232	5.61	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.0580	5.61	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.111	5.61	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0726	5.61	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0684	5.61	PQL	ng/Kg	
	OCDD	JB	5.87	11.2	PQL	ng/Kg	
	OCDF	JB	0.375	11.2	PQL	ng/Kg	
SL-503-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	0.691	5.44	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JB	0.148	5.44	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.120	5.44	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0734	5.44	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.154	5.44	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.353	5.44	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.102	5.44	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.503	5.44	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.674	5.44	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.137	5.44	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.360	5.44	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0802	5.44	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.102	5.44	PQL	ng/Kg	
	2,3,7,8-TCDD	JBQ	0.0679	1.09	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0763	1.09	PQL	ng/Kg	
	OCDD	JB	5.01	10.9	PQL	ng/Kg	
	OCDF	JB	0.369	10.9	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH109 **Laboratory: LL**

EDD Filename: PH109 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-504-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	0.463	5.46	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JBQ	0.154	5.46	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.150	5.46	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.217	5.46	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.223	5.46	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.113	5.46	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.397	5.46	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.569	5.46	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	2.65	5.46	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.0962	5.46	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.125	5.46	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.162	1.09	PQL	ng/Kg	
	OCDD	JB	4.64	10.9	PQL	ng/Kg	
	OCDF	JBQ	0.344	10.9	PQL	ng/Kg	

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-501-SA5D-SB-0.0-0.5	BERYLLIUM	J	1.03	1.05	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.208	2.10	PQL	mg/Kg	
	SODIUM	J	97.6	105	PQL	mg/Kg	
	TIN	J	3.11	10.5	PQL	mg/Kg	
	Zirconium	J	4.36	5.24	PQL	mg/Kg	
SL-501-SA5D-SB-14.0-15.0	BERYLLIUM	J	0.703	1.06	PQL	mg/Kg	J (all detects)
	BORON	J	6.38	10.6	PQL	mg/Kg	
	TIN	J	3.05	10.6	PQL	mg/Kg	
	Zirconium	J	2.81	5.32	PQL	mg/Kg	
SL-501-SA5D-SB-19.0-20.0	BERYLLIUM	J	0.512	1.10	PQL	mg/Kg	J (all detects)
	BORON	J	4.84	11.0	PQL	mg/Kg	
	TIN	J	2.94	11.0	PQL	mg/Kg	
	Zirconium	J	1.52	5.49	PQL	mg/Kg	
SL-501-SA5D-SB-24.0-25.0	BERYLLIUM	J	0.472	1.07	PQL	mg/Kg	J (all detects)
	BORON	J	4.04	10.7	PQL	mg/Kg	
	TIN	J	2.86	10.7	PQL	mg/Kg	
	Zirconium	J	1.46	5.35	PQL	mg/Kg	
SL-501-SA5D-SB-28.0-29.0	BERYLLIUM	J	0.546	1.06	PQL	mg/Kg	J (all detects)
	BORON	J	4.09	10.6	PQL	mg/Kg	
	TIN	J	2.84	10.6	PQL	mg/Kg	
	Zirconium	J	1.38	5.28	PQL	mg/Kg	
SL-501-SA5D-SB-4.0-5.0	BERYLLIUM	J	1.03	1.14	PQL	mg/Kg	J (all detects)
	TIN	J	3.46	11.4	PQL	mg/Kg	
	Zirconium	J	3.70	5.70	PQL	mg/Kg	
SL-501-SA5D-SB-9.0-10.0	BERYLLIUM	J	0.862	1.10	PQL	mg/Kg	J (all detects)
	BORON	J	7.28	11.0	PQL	mg/Kg	
	TIN	J	3.07	11.0	PQL	mg/Kg	
	Zirconium	J	2.82	5.48	PQL	mg/Kg	
SL-503-SA5D-SB-0.0-0.5	BERYLLIUM	J	1.04	1.07	PQL	mg/Kg	J (all detects)
	TIN	J	3.41	10.7	PQL	mg/Kg	
	Zirconium	J	4.71	5.37	PQL	mg/Kg	

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

Reporting Limit Outliers

Lab Reporting Batch ID: PH109 **Laboratory: LL**

EDD Filename: PH109 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-503-SA5D-SB-4.0-5.0	BERYLLIUM	J	0.942	1.16	PQL	mg/Kg	J (all detects)
	BORON	J	10.2	11.6	PQL	mg/Kg	
	CADMIUM	J	0.210	1.16	PQL	mg/Kg	
	TIN	J	2.89	11.6	PQL	mg/Kg	
	Zirconium	J	3.63	5.78	PQL	mg/Kg	
SL-504-SA5D-SB-0.0-0.5	BERYLLIUM	J	1.03	1.09	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.239	2.18	PQL	mg/Kg	
	TIN	J	3.03	10.9	PQL	mg/Kg	
	Zirconium	J	3.86	5.44	PQL	mg/Kg	
SL-504-SA5D-SB-16.0-17.0	BERYLLIUM	J	0.559	1.04	PQL	mg/Kg	J (all detects)
	BORON	J	4.74	10.4	PQL	mg/Kg	
	TIN	J	2.97	10.4	PQL	mg/Kg	
	Zirconium	J	2.27	5.22	PQL	mg/Kg	
SL-504-SA5D-SB-4.0-5.0	BERYLLIUM	J	1.04	1.11	PQL	mg/Kg	J (all detects)
	BORON	J	8.90	11.1	PQL	mg/Kg	
	MOLYBDENUM	J	0.344	2.22	PQL	mg/Kg	
	TIN	J	3.39	11.1	PQL	mg/Kg	
	Zirconium	J	3.53	5.56	PQL	mg/Kg	
SL-504-SA5D-SB-9.0-10.0	BERYLLIUM	J	0.817	1.08	PQL	mg/Kg	J (all detects)
	BORON	J	6.57	10.8	PQL	mg/Kg	
	TIN	J	3.26	10.8	PQL	mg/Kg	
	Zirconium	J	3.19	5.42	PQL	mg/Kg	
SL-804-SA5D-SB-4.0-5.0	BERYLLIUM	J	0.862	1.11	PQL	mg/Kg	J (all detects)
	BORON	J	10.5	11.1	PQL	mg/Kg	
	TIN	J	2.78	11.1	PQL	mg/Kg	
	Zirconium	J	3.33	5.57	PQL	mg/Kg	

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-501-SA5D-SB-0.0-0.5	SELENIUM	J	0.292	0.419	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0600	0.210	PQL	mg/Kg	
SL-501-SA5D-SB-14.0-15.0	SILVER	J	0.0442	0.213	PQL	mg/Kg	J (all detects)
SL-501-SA5D-SB-19.0-20.0	SILVER	J	0.0321	0.220	PQL	mg/Kg	J (all detects)
SL-501-SA5D-SB-28.0-29.0	SILVER	J	0.0661	0.211	PQL	mg/Kg	J (all detects)
SL-501-SA5D-SB-4.0-5.0	SELENIUM	J	0.154	0.456	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0541	0.228	PQL	mg/Kg	
SL-501-SA5D-SB-9.0-10.0	SILVER	J	0.0397	0.219	PQL	mg/Kg	J (all detects)
SL-503-SA5D-SB-0.0-0.5	SELENIUM	J	0.283	0.430	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0623	0.215	PQL	mg/Kg	
SL-503-SA5D-SB-4.0-5.0	SILVER	J	0.0687	0.231	PQL	mg/Kg	J (all detects)
SL-504-SA5D-SB-0.0-0.5	SELENIUM	J	0.304	0.435	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0479	0.218	PQL	mg/Kg	
SL-504-SA5D-SB-16.0-17.0	SILVER	J	0.0276	0.209	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: PH109 **Laboratory: LL**

EDD Filename: PH109 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-504-SA5D-SB-4.0-5.0	SILVER	J	0.0832	0.222	PQL	mg/Kg	J (all detects)
SL-504-SA5D-SB-9.0-10.0	SILVER	J	0.0433	0.217	PQL	mg/Kg	J (all detects)
SL-804-SA5D-SB-4.0-5.0	SELENIUM SILVER	J J	0.127 0.0665	0.446 0.223	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-501-SA5D-SB-14.0-15.0	MERCURY	J	0.0168	0.0182	PQL	mg/Kg	J (all detects)
SL-504-SA5D-SB-4.0-5.0	MERCURY	J	0.0133	0.0189	PQL	mg/Kg	J (all detects)

Method: 8015M

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-501-SA5D-SB-0.0-0.5	EFH (C21-C30) EFH (C30-C40)	J J	3.9 6.5	5.4 11	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-503-SA5D-SB-0.0-0.5	EFH (C21-C30) EFH (C30-C40)	J J	3.5 6.7	5.5 11	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-504-SA5D-SB-0.0-0.5	EFH (C21-C30) EFH (C30-C40)	J J	4.8 5.8	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-501-SA5D-SB-0.0-0.5	CHRYSENE NAPHTHALENE	J J	0.97 1.0	1.8 1.8	PQL PQL	ug/Kg ug/Kg	J (all detects)
SL-503-SA5D-SB-0.0-0.5	CHRYSENE NAPHTHALENE	J J	0.62 1.0	1.8 1.8	PQL PQL	ug/Kg ug/Kg	J (all detects)
SL-503-SA5D-SB-4.0-5.0	NAPHTHALENE	J	0.78	1.9	PQL	ug/Kg	J (all detects)
SL-504-SA5D-SB-0.0-0.5	BENZO(B)FLUORANTHENE CHRYSENE FLUORANTHENE NAPHTHALENE PYRENE	J J J J J	0.76 0.91 0.76 0.81 0.92	1.8 1.8 1.8 1.8 1.8	PQL PQL PQL PQL PQL	ug/Kg ug/Kg ug/Kg ug/Kg ug/Kg	J (all detects)

LDC #: 30695L4
SDG #: PH109
Laboratory: Eurofins Lancaster Laboratories

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 11/11/13
Page: 1 of 1
Reviewer:
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: 9/17/13
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	—	(4,5)
XV	Field Blanks	SW	EB= EB1-041813 (PH110) FB= FB-041113 (PH026) 041613 32

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	SL-503-SA5D-SB-0.0-0.5	11	SL-501-SA5D-SB-14.0-15.0	21		31	
2	SL-503-SA5D-SB-4.0-5.0	12	SL-501-SA5D-SB-19.0-20.0	22		32	
3	SL-504-SA5D-SB-0.0-0.5	13	SL-501-SA5D-SB-24.0-25.0	23		33	
4	SL-504-SA5D-SB-4.0-5.0	14	SL-501-SA5D-SB-28.0-29.0	24		34	
5	SL-804-SA5D-SB-4.0-5.0	15	SL-504-SA5D-SB-4.0-5.0MS	25		35	
6	SL-504-SA5D-SB-9.0-10.0	16	SL-504-SA5D-SB-4.0-5.0MSD	26		36	
7	SL-504-SA5D-SB-16.0-17.0	17	SL-504-SA5D-SB-4.0-5.0DUP	27		37	
8	SL-501-SA5D-SB-0.0-0.5	18		28		38	
9	SL-501-SA5D-SB-4.0-5.0	19		29		39	
10	SL-501-SA5D-SB-9.0-10.0	20		30		40	

Notes:

LDC #: 30695L4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: AL
2nd Reviewer: LM

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

Blank units: mg/L **Associated sample units:** mg/Kg Reason: F
Sampling date: 4/16/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All Soil

Analyte	Blank ID	Sample Identification													
	FB-041613 (SDG: PH032)	Action Limit	3	4	8										
Sn	0.0029	1.45													
Mo	0.0132	6.6 or 0.24	0.239	0.344	0.208										

Sampling date: 9/18/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All Soil

Analyte	Blank ID	Sample Identification													
	EB1-091813 (SDG: PH110)	Action Limit	3, 4, 8												
Ca	0.0464	23.2													
Mo	0.0083	4.15	See FB												

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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RPD out
qual 5/15/14

QUALITY ASSURANCE SUMMARY
FORM 5A(MS/MSD)
MATRIX SPIKE/MATRIX SPIKE DUPLICATE
SDG No.: PH109
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7201708BKG Matrix Spike Lab Sample ID: 7201709MS Matrix Spike Duplicate Lab Sample ID: 7201710MSD
Batch Id(s): P26137B, P26138B

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		27948.0777		28109.9767		33791.5767		194.1748	194.1748	MG/KG	83		3009	*	18			20	P
Antimony		0.7184	U	35.1563		34.9398		48.5437	48.5437	MG/KG	72	N	72	N	1		75 - 125	20	P
Arsenic		6.5262		20.2680		20.4097		14.5631	14.5631	MG/KG	94		95		1		75 - 125	20	P
Barium		97.1728		267.5718		294.9845		194.1748	194.1748	MG/KG	88		102		10		75 - 125	20	P
Beryllium		0.9078	B	5.3786		5.7573		4.8544	4.8544	MG/KG	92		100		7		75 - 125	20	P
Boron		7.7728	B	190.3709		194.8505		194.1748	194.1748	MG/KG	94		96		2		75 - 125	20	P
Cadmium		0.0738	U	4.4252		4.2631		4.8544	4.8544	MG/KG	91		88		4		75 - 125	20	P
Calcium		31573.7058		79717.6777		23983.1738		388.3495	388.3495	MG/KG	12397		-1955	*	107			20	P
Chromium		31.0951		45.8350		53.3233		19.4175	19.4175	MG/KG	76		114		15		75 - 125	20	P
Cobalt		7.0631		48.9243		53.1330		48.5437	48.5437	MG/KG	86		95		8		75 - 125	20	P
Copper		13.9447		36.3748		40.2243		24.2718	24.2718	MG/KG	92		108		10		75 - 125	20	P
Iron		28579.8777		23710.9544		30065.5184		97.0874	97.0874	MG/KG	-5015		1530	*	24			20	P
Lead		8.3049		20.2379		22.1893		14.5631	14.5631	MG/KG	82		95		9		75 - 125	20	P
Lithium		23.3204		114.3728		121.8602		97.0874	97.0874	MG/KG	94		101		6		75 - 125	20	P
Magnesium		5466.0252		5189.6505		6208.0748		194.1748	194.1748	MG/KG	-142		382		18			20	P
Manganese		254.4466		342.2689		368.5505		48.5437	48.5437	MG/KG	181		235		7			20	P
Mercury		0.0116	B	0.1829		0.1818		0.1652	0.1580	MG/KG	104		108		1		65 - 135	20	CV
Molybdenum		0.3000	B	171.1680		176.4854		194.1748	194.1748	MG/KG	88		91		3		75 - 125	20	P
Nickel		18.1544		60.2816		64.9330		48.5437	48.5437	MG/KG	87		96		7		75 - 125	20	P
Phosphorus		153.4825		274.3466		264.5340		97.0874	97.0874	MG/KG	124		114		4		75 - 125	20	P
Potassium		2430.5155		3410.5932		3860.7252		970.8738	970.8738	MG/KG	101		147	N	12		75 - 125	20	P
Selenium	78	0.0971	U	2.1670		2.0272		1.9417	1.9417	MG/KG	112		104		7		75 - 125	20	MS
Silver	107	0.0726	B	12.4485		11.9553		9.7087	9.7087	MG/KG	127	N	122		4		75 - 125	20	MS
Sodium		610.7883		1422.4388		1551.4845		970.8738	970.8738	MG/KG	84		97		9		75 - 125	20	P
Strontium	88	48.6990		72.0194		70.4078		7.7670	7.7670	MG/KG	300		280		2			20	MS
Thallium	203	0.2909		0.9078		0.8450		0.3883	0.3883	MG/KG	159	N	143	N	7		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.: PH109
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7201708BKG Matrix Spike Lab Sample ID: 7201709MS Matrix Spike Duplicate Lab Sample ID: 7201710MSD
Batch Id(s): P26137B, P26138B

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		2.9573	B	332.5796		347.3058		388.3495	388.3495	MG/KG	85		89		4		75 - 125	20	P
Titanium		1102.8641		1244.5165		1428.0816		97.0874	97.0874	MG/KG	146		335		14			20	P
Vanadium		56.7330		99.8039		111.0718		48.5437	48.5437	MG/KG	89		112		11		75 - 125	20	P
Zinc		51.6806		92.7058		101.6971		48.5437	48.5437	MG/KG	85		103		9		75 - 125	20	P
Zirconium		3.0835	B	93.9777		97.9505		97.0874	97.0874	MG/KG	94		98		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.: PH109
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7201708BKG Duplicate Lab Sample ID: 7201711DUP
Batch ID(s): P26137B, P26138B
Concentration Units: MG/KG

Analyte	Mass	Control Limit	Samples (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum			27948.0777		24971.9078		11		P
Antimony			0.7184	U	0.7184	U			P
Arsenic		3.9	6.5262		5.3019		21		P
Barium			97.1728		91.4068		6		P
Beryllium			0.9078	B	0.8641	B	5		P
Boron			7.7728	B	6.8602	B	12		P
Cadmium			0.0738	U	0.1427	B	200		P
Calcium			31573.7058		47636.1515		41	*	P
Chromium			31.0951		28.5854		8		P
Cobalt			7.0631		6.1524		14		P
Copper			13.9447		12.5291		11		P
Iron			28579.8777		25321.6612		12		P
Lead		2.9	8.3049		7.5214		10		P
Lithium			23.3204		21.3243		9		P
Magnesium			5466.0252		5132.4272		6		P
Manganese			254.4466		219.9757		15		P
Mercury			0.0116	B	0.0125	B	7		CV
Molybdenum			0.3000	B	0.1650	U	200		P
Nickel			18.1544		16.5068		10		P
Phosphorus			153.4825		162.1097		5		P
Potassium			2430.5155		2277.8854		6		P
Selenium	78		0.0971	U	0.0971	U			MS
Silver	107		0.0726	B	0.0653	B	11		MS
Sodium			610.7883		579.6524		5		P
Strontium	88		48.6990		57.5728		17		MS
Thallium	203	0.2	0.2909		0.3291		12		MS
Tin			2.9573	B	2.6029	B	13		P
Titanium			1102.8641		939.6214		16		P
Vanadium			56.7330		50.6893		11		P
Zinc			51.6806		49.6670		4		P
Zirconium			3.0835	B	4.4369	B	36		P

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

ok by difference

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

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below MDL
B= Below LOQ

FLAGS:
* = Duplicate Out of Spec

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QUALITY ASSURANCE SUMMARY
FORM 9
SERIAL DILUTIONS
SDG No.: PH109
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7201708BKG Serial Dilution Lab Sample ID: 7201708L
Batch ID(s): P26137B
Concentration Units: UG/L

Analyte	Mass	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Diff.	Q	M
Aluminum		287865.2000		319362.1000		11	E	P
Antimony		7.4000	U	37.0000	U			P
Arsenic		67.2200		65.8500	B	2		P
Barium		1000.8800		1109.4500		11	E	P
Beryllium		9.3500	B	10.3000	B	10		P
Boron		80.0600	B	113.5500	B	42		P
Cadmium		0.7600	U	3.8000	U			P
Calcium		325209.1700		356327.6500		10		P
Chromium		320.2800		357.5000		12	E	P
Cobalt		72.7500		85.2000		17	E	P
Copper		143.6300		151.1000		5		P
Iron		147186.3700		152264.9000		3		P
Lead		85.5400		98.5500	B	15		P
Lithium		240.2000		250.8000		4		P
Magnesium		56300.0600		62217.4500		11	E	P
Manganese		2620.8000		2898.8000		11	E	P
Molybdenum		3.0900	B	15.3000	B	395		P
Nickel		186.9900		218.9500		17	E	P
Phosphorus		1580.8700		1688.0000		7		P
Potassium		25034.3100		26730.2500		7		P
Selenium	78	0.5000	U	2.5000	U			MS
Silver	107	0.3740	B	0.6500	U	100		MS
Sodium		6291.1200		6829.6500		9		P
Strontium	88	250.8000		237.5500		5		MS
Thallium	203	1.4980		1.5315	B	2		MS
Tin		30.4600	B	29.1000	B	4		P
Titanium		11359.5000		12395.6000		9		P
Vanadium		584.3500		636.7000		9		P
Zinc		532.3100		570.0500		7		P
Zirconium		31.7600	B	55.5500	B	75		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.

5/10/A (A)

METHODS:	CONCENTRATION QUALIFIERS:
P = ICP Atomic Emission Spectrometer	U= Below MDL
MS = ICP Mass Spectrometry	B= Below LOQ
	FLAGS:
	E = Matrix Effects exist as proven by Serial Dilution or Spiked Dilution

Data Validation Report
Santa Susana Field Laboratory

Subarea 5D

SDG: PH110

Prepared for

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December 11, 2013

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on September 18, 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 8081A
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
Perchlorate by EPA Method 6850
Total Petroleum Hydrocarbons (TPH) as Gasoline by EPA SW 846 Method 8015M
TPH as Extractables by EPA SW 846 Method 8015M
Dioxins and Dibenzofurans by EPA Method 1613B

Wet Chemistry:
Hexavalent Chromium by EPA Method 7199
Fluoride by EPA Method 300.0

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 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 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 several blanks for 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
PH110/ 6010C	ICB/CCB	Molybdenum	2.1 ug/L	EB1-091813 EB2-091813
PH110/ 6010C	ICB/CCB	Molybdenum	1.7 ug/L	SL-510-SA5D-SB-0.0-0.5 SL-510-SA5D-SB-4.0-5.0 SL-513-SA5D-SB-0.0-0.5 SL-513-SA5D-SB-4.0-5.0 SL-513-SA5D-SB-9.0-10.0 SL-513-SA5D-SB-16.0-17.0 SL-514-SA5D-SB-0.0-0.5 SL-514-SA5D-SB-4.0-5.0 SL-509-SA5D-SB-0.0-0.5 SL-509-SA5D-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
PH110/ 6010C	EB1-091813	Molybdenum	8.3 ug/L	8.3U ug/L

SDG/Method	Sample	Compound	Reported Concentration	Modified Final Concentration
PH110/ 6010C	EB2-091813	Molybdenum	2.5 ug/L	2.5U ug/L
PH110/ 6010C	SL-510-SA5D-SB-0.0-0.5	Molybdenum	0.329 mg/kg	0.329U mg/kg
PH110/ 6010C	SL-510-SA5D-SB-4.0-5.0	Molybdenum	0.216 mg/kg	0.216U mg/kg
PH110/ 6010C	SL-513-SA5D-SB-4.0-5.0	Molybdenum	0.435 mg/kg	0.435U mg/kg
PH110/ 6010C	SL-509-SA5D-SB-0.0-0.5	Molybdenum	0.232 mg/kg	0.232U mg/kg

V. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the exception of several samples for PCBs and TPH as extractables. 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 two MS/MSD pairs for metals, TPH as extractables and fluoride. The associated sample results were qualified as non-detected estimated (UJ). 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 SVOCs, PCBs and TPH as extractables. The associated sample results were qualified as non-detected estimated (UJ). The details regarding the qualification of data are provided in Enclosure I.

X. Internal Standards

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

XI. ICP Serial Dilution

ICP serial dilution analysis was performed by the laboratory. The analysis criteria were met.

XII. Compound Quantitation

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

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

Sample	Finding	Flag	A or P
All samples in SDG PH110	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 volatile contaminants were found in the trip blank.

Two equipment blanks were collected and analyzed for SVOCs, pesticides, PCBs, metals, herbicides, perchlorate, TPH as gasoline, TPH as extractables, dioxins, hexavalent chromium and fluoride. The equipment blanks had 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 PH032) was collected and analyzed for SVOCs, pesticides, PCBs, metals, herbicides, perchlorate, TPH as gasoline, TPH as extractables, dioxins, hexavalent chromium and fluoride. The field blank had detections for 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
18-Sep-2013	SL-513-SA5D-SB-0.0-0.5	7203251	N	3050B	6010C	III
18-Sep-2013	SL-513-SA5D-SB-0.0-0.5	7203251	N	3050B	6020A	III
18-Sep-2013	SL-513-SA5D-SB-0.0-0.5	7203251	N	3546	8015M	III
18-Sep-2013	SL-513-SA5D-SB-0.0-0.5	7203251	N	3546	8082A	III
18-Sep-2013	SL-513-SA5D-SB-0.0-0.5	7203251	N	3546	8270D SIM	III
18-Sep-2013	SL-513-SA5D-SB-0.0-0.5	7203251	N	3550B	8151A	III
18-Sep-2013	SL-513-SA5D-SB-0.0-0.5	7203251	N	METHOD	1613B	III
18-Sep-2013	SL-513-SA5D-SB-0.0-0.5	7203251	N	METHOD	300.0	III
18-Sep-2013	SL-513-SA5D-SB-0.0-0.5	7203251	N	METHOD	6850	III
18-Sep-2013	SL-513-SA5D-SB-0.0-0.5	7203251	N	METHOD	7471B	III
18-Sep-2013	SL-513-SA5D-SB-4.0-5.0	7203252	N	3050B	6010C	III
18-Sep-2013	SL-513-SA5D-SB-4.0-5.0	7203252	N	3050B	6020A	III
18-Sep-2013	SL-513-SA5D-SB-4.0-5.0	7203252	N	3546	8015M	III
18-Sep-2013	SL-513-SA5D-SB-4.0-5.0	7203252	N	3546	8082A	III
18-Sep-2013	SL-513-SA5D-SB-4.0-5.0	7203252	N	3546	8270D SIM	III
18-Sep-2013	SL-513-SA5D-SB-4.0-5.0	7203252	N	3550B	8151A	III
18-Sep-2013	SL-513-SA5D-SB-4.0-5.0	7203252	N	5035A	8015M	III
18-Sep-2013	SL-513-SA5D-SB-4.0-5.0	7203252	N	METHOD	300.0	III
18-Sep-2013	SL-513-SA5D-SB-4.0-5.0	7203252	N	METHOD	6850	III
18-Sep-2013	SL-513-SA5D-SB-4.0-5.0	7203252	N	METHOD	7471B	III
18-Sep-2013	SL-513-SA5D-SB-4.0-5.0DUP	P203252D220723	DUP	3050B	6010C	III
18-Sep-2013	SL-513-SA5D-SB-4.0-5.0DUP	P203252D220730A	DUP	3050B	6020A	III
18-Sep-2013	SL-513-SA5D-SB-4.0-5.0DUP	P203252D220730B	DUP	3050B	6020A	III
18-Sep-2013	SL-513-SA5D-SB-4.0-5.0DUP	P203252D271810A	DUP	METHOD	300.0	III
18-Sep-2013	SL-513-SA5D-SB-4.0-5.0MSD	P203252M220730	MSD	3050B	6010C	III
18-Sep-2013	SL-513-SA5D-SB-4.0-5.0MSD	P203252M220735A	MSD	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-Sep-2013	SL-513-SA5D-SB-4.0-5.0MSD	P203252M220735B	MSD	3050B	6020A	III
18-Sep-2013	SL-513-SA5D-SB-4.0-5.0MS	P203252R220726	MS	3050B	6010C	III
18-Sep-2013	SL-513-SA5D-SB-4.0-5.0MS	P203252R220733A	MS	3050B	6020A	III
18-Sep-2013	SL-513-SA5D-SB-4.0-5.0MS	P203252R220733B	MS	3050B	6020A	III
18-Sep-2013	SL-513-SA5D-SB-4.0-5.0MS	P203252R271827A	MS	METHOD	300.0	III
18-Sep-2013	SL-513-SA5D-SB-9.0-10.0	7203253	N	3050B	6010C	III
18-Sep-2013	SL-513-SA5D-SB-9.0-10.0	7203253	N	3050B	6020A	III
18-Sep-2013	SL-513-SA5D-SB-9.0-10.0	7203253	N	3546	8015M	III
18-Sep-2013	SL-513-SA5D-SB-9.0-10.0	7203253	N	3546	8082A	III
18-Sep-2013	SL-513-SA5D-SB-9.0-10.0	7203253	N	3546	8270D SIM	III
18-Sep-2013	SL-513-SA5D-SB-9.0-10.0	7203253	N	3550B	8151A	III
18-Sep-2013	SL-513-SA5D-SB-9.0-10.0	7203253	N	5035A	8015M	III
18-Sep-2013	SL-513-SA5D-SB-9.0-10.0	7203253	N	METHOD	300.0	III
18-Sep-2013	SL-513-SA5D-SB-9.0-10.0	7203253	N	METHOD	6850	III
18-Sep-2013	SL-513-SA5D-SB-9.0-10.0	7203253	N	METHOD	7471B	III
18-Sep-2013	SL-513-SA5D-SB-9.0-10.0DU	P203253D220505	DUP	METHOD	7471B	III
18-Sep-2013	SL-513-SA5D-SB-9.0-10.0MS	P203253R220508	MS	METHOD	7471B	III
18-Sep-2013	TB-091813	7203248	TB	5030B	8015M	III
18-Sep-2013	SL-513-SA5D-SB-16.0-17.0	7203254	N	3050B	6010C	III
18-Sep-2013	SL-513-SA5D-SB-16.0-17.0	7203254	N	3050B	6020A	III
18-Sep-2013	SL-513-SA5D-SB-16.0-17.0	7203254	N	3546	8015M	III
18-Sep-2013	SL-513-SA5D-SB-16.0-17.0	7203254	N	3546	8082A	III
18-Sep-2013	SL-513-SA5D-SB-16.0-17.0	7203254	N	3546	8270D SIM	III
18-Sep-2013	SL-513-SA5D-SB-16.0-17.0	7203254	N	3550B	8151A	III
18-Sep-2013	SL-513-SA5D-SB-16.0-17.0	7203254	N	5035A	8015M	III
18-Sep-2013	SL-513-SA5D-SB-16.0-17.0	7203254	N	METHOD	300.0	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-Sep-2013	SL-513-SA5D-SB-16.0-17.0	7203254	N	METHOD	6850	III
18-Sep-2013	SL-513-SA5D-SB-16.0-17.0	7203254	N	METHOD	7471B	III
18-Sep-2013	SL-514-SA5D-SB-0.0-0.5	7203255	N	3050B	6010C	III
18-Sep-2013	SL-514-SA5D-SB-0.0-0.5	7203255	N	3050B	6020A	III
18-Sep-2013	SL-514-SA5D-SB-0.0-0.5	7203255	N	3546	8015M	III
18-Sep-2013	SL-514-SA5D-SB-0.0-0.5	7203255	N	3546	8082A	III
18-Sep-2013	SL-514-SA5D-SB-0.0-0.5	7203255	N	3546	8270D SIM	III
18-Sep-2013	SL-514-SA5D-SB-0.0-0.5	7203255	N	METHOD	1613B	III
18-Sep-2013	SL-514-SA5D-SB-0.0-0.5	7203255	N	METHOD	7471B	III
18-Sep-2013	SL-514-SA5D-SB-4.0-5.0	7203256	N	3050B	6010C	III
18-Sep-2013	SL-514-SA5D-SB-4.0-5.0	7203256	N	3050B	6020A	III
18-Sep-2013	SL-514-SA5D-SB-4.0-5.0	7203256	N	3546	8015M	III
18-Sep-2013	SL-514-SA5D-SB-4.0-5.0	7203256	N	3546	8082A	III
18-Sep-2013	SL-514-SA5D-SB-4.0-5.0	7203256	N	3546	8270D SIM	III
18-Sep-2013	SL-514-SA5D-SB-4.0-5.0	7203256	N	5035A	8015M	III
18-Sep-2013	SL-514-SA5D-SB-4.0-5.0	7203256	N	METHOD	7471B	III
18-Sep-2013	SL-510-SA5D-SB-0.0-0.5	7203249	N	3050B	6010C	III
18-Sep-2013	SL-510-SA5D-SB-0.0-0.5	7203249	N	3050B	6020A	III
18-Sep-2013	SL-510-SA5D-SB-0.0-0.5	7203249	N	3546	8015M	III
18-Sep-2013	SL-510-SA5D-SB-0.0-0.5	7203249	N	3546	8081B	III
18-Sep-2013	SL-510-SA5D-SB-0.0-0.5	7203249	N	3546	8082A	III
18-Sep-2013	SL-510-SA5D-SB-0.0-0.5	7203249	N	3546	8270D SIM	III
18-Sep-2013	SL-510-SA5D-SB-0.0-0.5	7203249	N	METHOD	1613B	III
18-Sep-2013	SL-510-SA5D-SB-0.0-0.5	7203249	N	METHOD	7471B	III
18-Sep-2013	SL-510-SA5D-SB-0.0-0.5MSD	P203249M260608	MSD	3546	8270D SIM	III
18-Sep-2013	SL-510-SA5D-SB-0.0-0.5MSD	P203249M320128A	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
18-Sep-2013	SL-510-SA5D-SB-0.0-0.5MS	P203249R260536	MS	3546	8270D SIM	III
18-Sep-2013	SL-510-SA5D-SB-0.0-0.5MS	P203249R320107A	MS	3546	8015M	III
18-Sep-2013	SL-510-SA5D-SB-4.0-5.0	7203250	N	3050B	6010C	III
18-Sep-2013	SL-510-SA5D-SB-4.0-5.0	7203250	N	3050B	6020A	III
18-Sep-2013	SL-510-SA5D-SB-4.0-5.0	7203250	N	3546	8015M	III
18-Sep-2013	SL-510-SA5D-SB-4.0-5.0	7203250	N	3546	8081B	III
18-Sep-2013	SL-510-SA5D-SB-4.0-5.0	7203250	N	3546	8082A	III
18-Sep-2013	SL-510-SA5D-SB-4.0-5.0	7203250	N	3546	8270D SIM	III
18-Sep-2013	SL-510-SA5D-SB-4.0-5.0	7203250	N	5035A	8015M	III
18-Sep-2013	SL-510-SA5D-SB-4.0-5.0	7203250	N	METHOD	7471B	III
18-Sep-2013	SL-509-SA5D-SB-0.0-0.5	7203257	N	3050B	6010C	III
18-Sep-2013	SL-509-SA5D-SB-0.0-0.5	7203257	N	3050B	6020A	III
18-Sep-2013	SL-509-SA5D-SB-0.0-0.5	7203257	N	3546	8015M	III
18-Sep-2013	SL-509-SA5D-SB-0.0-0.5	7203257	N	3546	8082A	III
18-Sep-2013	SL-509-SA5D-SB-0.0-0.5	7203257	N	3546	8270D SIM	III
18-Sep-2013	SL-509-SA5D-SB-0.0-0.5	7203257	N	METHOD	1613B	III
18-Sep-2013	SL-509-SA5D-SB-0.0-0.5	7203257	N	METHOD	7471B	III
18-Sep-2013	SL-509-SA5D-SB-4.0-5.0	7203258	N	3050B	6010C	III
18-Sep-2013	SL-509-SA5D-SB-4.0-5.0	7203258	N	3050B	6020A	III
18-Sep-2013	SL-509-SA5D-SB-4.0-5.0	7203258	N	3546	8015M	III
18-Sep-2013	SL-509-SA5D-SB-4.0-5.0	7203258	N	3546	8082A	III
18-Sep-2013	SL-509-SA5D-SB-4.0-5.0	7203258	N	3546	8270D SIM	III
18-Sep-2013	SL-509-SA5D-SB-4.0-5.0	7203258	N	5035A	8015M	III
18-Sep-2013	SL-509-SA5D-SB-4.0-5.0	7203258	N	METHOD	7471B	III
18-Sep-2013	EB1-091813	7203246	EB	3005A	6010C	III
18-Sep-2013	EB1-091813	7203246	EB	3510C	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-Sep-2013	EB1-091813	7203246	EB	3510C	8081B	III
18-Sep-2013	EB1-091813	7203246	EB	3510C	8082A	III
18-Sep-2013	EB1-091813	7203246	EB	3510C	8270D SIM	III
18-Sep-2013	EB1-091813	7203246	EB	5030B	8015M	III
18-Sep-2013	EB1-091813	7203246	EB	Gen Prep	300.0	III
18-Sep-2013	EB1-091813	7203246	EB	Gen Prep	6850	III
18-Sep-2013	EB1-091813	7203246	EB	Gen Prep	7199	III
18-Sep-2013	EB1-091813	7203246	EB	M3010A	6020A	III
18-Sep-2013	EB1-091813	7203246	EB	METHOD	1613B	III
18-Sep-2013	EB1-091813	7203246	EB	METHOD	7470A	III
18-Sep-2013	EB1-091813	7203246	EB	METHOD	8151A	III
18-Sep-2013	EB1-091813MSD	P203246M241747A	MSD	Gen Prep	6850	III
18-Sep-2013	EB1-091813MS	P203246R241734A	MS	Gen Prep	6850	III
18-Sep-2013	EB2-091813	7203247	EB	3005A	6010C	III
18-Sep-2013	EB2-091813	7203247	EB	3510C	8015M	III
18-Sep-2013	EB2-091813	7203247	EB	3510C	8081B	III
18-Sep-2013	EB2-091813	7203247	EB	3510C	8082A	III
18-Sep-2013	EB2-091813	7203247	EB	3510C	8270D SIM	III
18-Sep-2013	EB2-091813	7203247	EB	5030B	8015M	III
18-Sep-2013	EB2-091813	7203247	EB	Gen Prep	300.0	III
18-Sep-2013	EB2-091813	7203247	EB	Gen Prep	6850	III
18-Sep-2013	EB2-091813	7203247	EB	Gen Prep	7199	III
18-Sep-2013	EB2-091813	7203247	EB	M3010A	6020A	III
18-Sep-2013	EB2-091813	7203247	EB	METHOD	1613B	III
18-Sep-2013	EB2-091813	7203247	EB	METHOD	7470A	III
18-Sep-2013	EB2-091813	7203247	EB	METHOD	8151A	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: PH110 **Laboratory: LL**

EDD Filename: PrepPH110 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: GENCHEM

Method: 300.0 **Matrix: SO**

Sample ID: SL-513-SA5D-SB-0.0-0.5 *Collected:* 9/18/2013 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
FLUORIDE	1.8		0.45	MDL	1.1	PQL	mg/Kg	J	Q

Sample ID: SL-513-SA5D-SB-16.0-17.0 *Collected:* 9/18/2013 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
FLUORIDE	1.2		0.43	MDL	1.1	PQL	mg/Kg	J	Q

Sample ID: SL-513-SA5D-SB-4.0-5.0 *Collected:* 9/18/2013 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
FLUORIDE	2.0		0.47	MDL	1.2	PQL	mg/Kg	J	Q

Sample ID: SL-513-SA5D-SB-9.0-10.0 *Collected:* 9/18/2013 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
FLUORIDE	1.4		0.45	MDL	1.1	PQL	mg/Kg	J	Q

Method Category: METALS

Method: 6010C **Matrix: AQ**

Sample ID: EB1-091813 *Collected:* 9/18/2013 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
CALCIUM	0.0464	J	0.0334	MDL	0.400	PQL	mg/L	U	B
MOLYBDENUM	0.0083	J	0.0017	MDL	0.0200	PQL	mg/L	U	B

Sample ID: EB2-091813 *Collected:* 9/18/2013 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
CALCIUM	0.0550	J	0.0334	MDL	0.400	PQL	mg/L	U	B
MOLYBDENUM	0.0025	J	0.0017	MDL	0.0200	PQL	mg/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: PH110 **Laboratory: LL**

EDD Filename: PrepPH110 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: GENCHEM

Method: 300.0 **Matrix: SO**

Sample ID: SL-513-SA5D-SB-0.0-0.5 *Collected:* 9/18/2013 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
FLUORIDE	1.8		0.45	MDL	1.1	PQL	mg/Kg	J	Q

Sample ID: SL-513-SA5D-SB-16.0-17.0 *Collected:* 9/18/2013 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
FLUORIDE	1.2		0.43	MDL	1.1	PQL	mg/Kg	J	Q

Sample ID: SL-513-SA5D-SB-4.0-5.0 *Collected:* 9/18/2013 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
FLUORIDE	2.0		0.47	MDL	1.2	PQL	mg/Kg	J	Q

Sample ID: SL-513-SA5D-SB-9.0-10.0 *Collected:* 9/18/2013 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
FLUORIDE	1.4		0.45	MDL	1.1	PQL	mg/Kg	J	Q

Method Category: METALS

Method: 6010C **Matrix: AQ**

Sample ID: EB1-091813 *Collected:* 9/18/2013 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
CALCIUM	0.0464	J	0.0334	MDL	0.400	PQL	mg/L	U	B
MOLYBDENUM	0.0083	J	0.0017	MDL	0.0200	PQL	mg/L	U	B

Sample ID: EB2-091813 *Collected:* 9/18/2013 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
CALCIUM	0.0550	J	0.0334	MDL	0.400	PQL	mg/L	U	B
MOLYBDENUM	0.0025	J	0.0017	MDL	0.0200	PQL	mg/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: PH110 **Laboratory: LL**

EDD Filename: PrepPH110 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-509-SA5D-SB-0.0-0.5 *Collected:* 9/18/2013 1:00:00 *Analysis Type:* REA *Dilution:* 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	33600		19.4	MDL	215	PQL	mg/Kg	J	E

Sample ID: SL-509-SA5D-SB-0.0-0.5 *Collected:* 9/18/2013 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
ANTIMONY	4.30	U	0.795	MDL	4.30	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.946	J	0.0720	MDL	1.07	PQL	mg/Kg	J	Z
BORON	10.3	J	0.902	MDL	10.7	PQL	mg/Kg	J	Z
MOLYBDENUM	0.232	J	0.183	MDL	2.15	PQL	mg/Kg	U	B, F, F
PHOSPHORUS	332		3.10	MDL	10.7	PQL	mg/Kg	J	Q
SODIUM	89.8	J	17.9	MDL	107	PQL	mg/Kg	J	Z
TIN	2.76	J	0.236	MDL	10.7	PQL	mg/Kg	U	B
VANADIUM	65.9		0.140	MDL	1.07	PQL	mg/Kg	J	Q
Zirconium	3.79	J	0.902	MDL	5.37	PQL	mg/Kg	J	Z

Sample ID: SL-509-SA5D-SB-4.0-5.0 *Collected:* 9/18/2013 1:15:00 *Analysis Type:* REA *Dilution:* 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	38200		20.8	MDL	230	PQL	mg/Kg	J	E

Sample ID: SL-509-SA5D-SB-4.0-5.0 *Collected:* 9/18/2013 1:15:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.60	U	0.851	MDL	4.60	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.981	J	0.0770	MDL	1.15	PQL	mg/Kg	J	Z
BORON	11.0	J	0.966	MDL	11.5	PQL	mg/Kg	J	Z
PHOSPHORUS	321		3.32	MDL	11.5	PQL	mg/Kg	J	Q
TIN	3.30	J	0.253	MDL	11.5	PQL	mg/Kg	U	B
VANADIUM	69.6		0.149	MDL	1.15	PQL	mg/Kg	J	Q
Zirconium	3.27	J	0.966	MDL	5.75	PQL	mg/Kg	J	Z

Sample ID: SL-510-SA5D-SB-0.0-0.5 *Collected:* 9/18/2013 10:00:00 *Analysis Type:* REA *Dilution:* 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	34100		19.8	MDL	218	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: PH110 **Laboratory: LL**

EDD Filename: PrepPH110 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-510-SA5D-SB-0.0-0.5** *Collected:* **9/18/2013 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
ANTIMONY	4.37	U	0.808	MDL	4.37	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.964	J	0.0731	MDL	1.09	PQL	mg/Kg	J	Z
MOLYBDENUM	0.329	J	0.186	MDL	2.18	PQL	mg/Kg	U	B, F, F
PHOSPHORUS	433		3.15	MDL	10.9	PQL	mg/Kg	J	Q
SODIUM	85.1	J	18.2	MDL	109	PQL	mg/Kg	J	Z
TIN	3.12	J	0.240	MDL	10.9	PQL	mg/Kg	U	B
VANADIUM	69.4		0.142	MDL	1.09	PQL	mg/Kg	J	Q
Zirconium	4.32	J	0.917	MDL	5.46	PQL	mg/Kg	J	Z

Sample ID: **SL-510-SA5D-SB-4.0-5.0** *Collected:* **9/18/2013 10:10:00** *Analysis Type:* **REA** *Dilution:* **5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	35400		21.0	MDL	232	PQL	mg/Kg	J	E

Sample ID: **SL-510-SA5D-SB-4.0-5.0** *Collected:* **9/18/2013 10:10:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.64	U	0.858	MDL	4.64	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.955	J	0.0777	MDL	1.16	PQL	mg/Kg	J	Z
BORON	10.9	J	0.974	MDL	11.6	PQL	mg/Kg	J	Z
MOLYBDENUM	0.216	J	0.197	MDL	2.32	PQL	mg/Kg	U	B, F, F
PHOSPHORUS	347		3.35	MDL	11.6	PQL	mg/Kg	J	Q
TIN	3.25	J	0.255	MDL	11.6	PQL	mg/Kg	U	B
VANADIUM	67.2		0.151	MDL	1.16	PQL	mg/Kg	J	Q
Zirconium	3.15	J	0.974	MDL	5.80	PQL	mg/Kg	J	Z

Sample ID: **SL-513-SA5D-SB-0.0-0.5** *Collected:* **9/18/2013 7:30:00** *Analysis Type:* **REA** *Dilution:* **5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	35300		20.3	MDL	224	PQL	mg/Kg	J	E

Sample ID: **SL-513-SA5D-SB-0.0-0.5** *Collected:* **9/18/2013 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	4.49	U	0.830	MDL	4.49	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: PH110 **Laboratory: LL**

EDD Filename: PrepPH110 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-513-SA5D-SB-0.0-0.5 *Collected:* 9/18/2013 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
BERYLLIUM	0.983	J	0.0751	MDL	1.12	PQL	mg/Kg	J	Z
BORON	8.61	J	0.942	MDL	11.2	PQL	mg/Kg	J	Z
PHOSPHORUS	317		3.24	MDL	11.2	PQL	mg/Kg	J	Q
SODIUM	102	J	18.7	MDL	112	PQL	mg/Kg	J	Z
TIN	2.93	J	0.247	MDL	11.2	PQL	mg/Kg	U	B
VANADIUM	61.4		0.146	MDL	1.12	PQL	mg/Kg	J	Q
Zirconium	1.81	J	0.942	MDL	5.61	PQL	mg/Kg	J	Z

Sample ID: SL-513-SA5D-SB-16.0-17.0 *Collected:* 9/18/2013 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
ANTIMONY	4.32	U	0.800	MDL	4.32	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.638	J	0.0724	MDL	1.08	PQL	mg/Kg	J	Z
BORON	3.44	J	0.908	MDL	10.8	PQL	mg/Kg	J	Z
IRON	21200		3.91	MDL	43.2	PQL	mg/Kg	J	E
PHOSPHORUS	448		3.12	MDL	10.8	PQL	mg/Kg	J	Q
SODIUM	92.5	J	18.1	MDL	108	PQL	mg/Kg	J	Z
TIN	2.69	J	0.238	MDL	10.8	PQL	mg/Kg	U	B
VANADIUM	34.8		0.141	MDL	1.08	PQL	mg/Kg	J	Q
Zirconium	1.10	J	0.908	MDL	5.41	PQL	mg/Kg	J	Z

Sample ID: SL-513-SA5D-SB-4.0-5.0 *Collected:* 9/18/2013 7:40:00 *Analysis Type:* REA *Dilution:* 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	37700		21.0	MDL	232	PQL	mg/Kg	J	E

Sample ID: SL-513-SA5D-SB-4.0-5.0 *Collected:* 9/18/2013 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
ANTIMONY	4.65	U	0.860	MDL	4.65	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.953	J	0.0779	MDL	1.16	PQL	mg/Kg	J	Z
MOLYBDENUM	0.435	J	0.198	MDL	2.32	PQL	mg/Kg	U	B, F, F
PHOSPHORUS	346		3.36	MDL	11.6	PQL	mg/Kg	J	Q
SODIUM	106	J	19.4	MDL	116	PQL	mg/Kg	J	Z
TIN	3.44	J	0.256	MDL	11.6	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: PH110 **Laboratory: LL**

EDD Filename: PrepPH110 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-513-SA5D-SB-4.0-5.0 *Collected:* 9/18/2013 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
VANADIUM	71.7		0.151	MDL	1.16	PQL	mg/Kg	J	Q
Zirconium	3.52	J	0.976	MDL	5.81	PQL	mg/Kg	J	Z

Sample ID: SL-513-SA5D-SB-9.0-10.0 *Collected:* 9/18/2013 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
ANTIMONY	4.41	U	0.816	MDL	4.41	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.556	J	0.0739	MDL	1.10	PQL	mg/Kg	J	Z
BORON	9.71	J	0.927	MDL	11.0	PQL	mg/Kg	J	Z
CADMIUM	0.289	J	0.0838	MDL	1.10	PQL	mg/Kg	J	Z
IRON	23600		3.99	MDL	44.1	PQL	mg/Kg	J	E
PHOSPHORUS	482		3.19	MDL	11.0	PQL	mg/Kg	J	Q
TIN	2.68	J	0.243	MDL	11.0	PQL	mg/Kg	U	B
VANADIUM	46.5		0.143	MDL	1.10	PQL	mg/Kg	J	Q
Zirconium	2.61	J	0.927	MDL	5.52	PQL	mg/Kg	J	Z

Sample ID: SL-514-SA5D-SB-0.0-0.5 *Collected:* 9/18/2013 8:50:00 *Analysis Type:* REA *Dilution:* 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	36600		20.3	MDL	224	PQL	mg/Kg	J	E

Sample ID: SL-514-SA5D-SB-0.0-0.5 *Collected:* 9/18/2013 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
ANTIMONY	4.48	U	0.828	MDL	4.48	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.979	J	0.0750	MDL	1.12	PQL	mg/Kg	J	Z
BORON	9.56	J	0.940	MDL	11.2	PQL	mg/Kg	J	Z
PHOSPHORUS	300		3.23	MDL	11.2	PQL	mg/Kg	J	Q
TIN	3.14	J	0.246	MDL	11.2	PQL	mg/Kg	U	B
VANADIUM	68.9		0.145	MDL	1.12	PQL	mg/Kg	J	Q
Zirconium	4.19	J	0.940	MDL	5.60	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: PH110 **Laboratory: LL**

EDD Filename: PrepPH110 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-514-SA5D-SB-4.0-5.0 *Collected:* 9/18/2013 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
IRON	32100		20.3	MDL	224	PQL	mg/Kg	J	E

Sample ID: SL-514-SA5D-SB-4.0-5.0 *Collected:* 9/18/2013 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
ANTIMONY	4.48	U	0.829	MDL	4.48	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.810	J	0.0751	MDL	1.12	PQL	mg/Kg	J	Z
BORON	10.6	J	0.941	MDL	11.2	PQL	mg/Kg	J	Z
CADMIUM	0.149	J	0.0852	MDL	1.12	PQL	mg/Kg	J	Z
PHOSPHORUS	474		3.24	MDL	11.2	PQL	mg/Kg	J	Q
TIN	2.98	J	0.247	MDL	11.2	PQL	mg/Kg	U	B
VANADIUM	59.3		0.146	MDL	1.12	PQL	mg/Kg	J	Q
Zirconium	3.34	J	0.941	MDL	5.60	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-509-SA5D-SB-0.0-0.5 *Collected:* 9/18/2013 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	0.268	J	0.107	MDL	0.430	PQL	mg/Kg	J	Z

Sample ID: SL-509-SA5D-SB-0.0-0.5 *Collected:* 9/18/2013 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	0.0515	J	0.0279	MDL	0.215	PQL	mg/Kg	J	Z

Sample ID: SL-509-SA5D-SB-4.0-5.0 *Collected:* 9/18/2013 1:15:00 *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.146	J	0.115	MDL	0.460	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: PH110 **Laboratory: LL**

EDD Filename: PrepPH110 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: **METALS**

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

Sample ID: **SL-509-SA5D-SB-4.0-5.0** ***Collected:*** **9/18/2013 1:15:00** ***Analysis Type:*** **RES** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0371	J	0.0299	MDL	0.230	PQL	mg/Kg	J	Z

Sample ID: **SL-510-SA5D-SB-0.0-0.5** ***Collected:*** **9/18/2013 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	0.298	J	0.109	MDL	0.437	PQL	mg/Kg	J	Z

Sample ID: **SL-510-SA5D-SB-0.0-0.5** ***Collected:*** **9/18/2013 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	0.0452	J	0.0284	MDL	0.218	PQL	mg/Kg	J	Z

Sample ID: **SL-510-SA5D-SB-4.0-5.0** ***Collected:*** **9/18/2013 10:10:00** ***Analysis Type:*** **REA2** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.165	J	0.116	MDL	0.464	PQL	mg/Kg	J	Z

Sample ID: **SL-510-SA5D-SB-4.0-5.0** ***Collected:*** **9/18/2013 10:10:00** ***Analysis Type:*** **RES** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0380	J	0.0301	MDL	0.232	PQL	mg/Kg	J	Z

Sample ID: **SL-513-SA5D-SB-0.0-0.5** ***Collected:*** **9/18/2013 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	0.157	J	0.112	MDL	0.449	PQL	mg/Kg	J	Z

Sample ID: **SL-513-SA5D-SB-0.0-0.5** ***Collected:*** **9/18/2013 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	0.0537	J	0.0292	MDL	0.224	PQL	mg/Kg	J	Z

Sample ID: **SL-513-SA5D-SB-4.0-5.0** ***Collected:*** **9/18/2013 7:40:00** ***Analysis Type:*** **REA2** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.176	J	0.116	MDL	0.465	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: PH110 **Laboratory: LL**

EDD Filename: PrepPH110 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-513-SA5D-SB-4.0-5.0 *Collected:* 9/18/2013 7:40:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0439	J	0.0302	MDL	0.232	PQL	mg/Kg	J	Z

Sample ID: SL-513-SA5D-SB-9.0-10.0 *Collected:* 9/18/2013 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	0.208	J	0.110	MDL	0.441	PQL	mg/Kg	J	Z

Sample ID: SL-514-SA5D-SB-0.0-0.5 *Collected:* 9/18/2013 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	0.187	J	0.112	MDL	0.448	PQL	mg/Kg	J	Z

Sample ID: SL-514-SA5D-SB-0.0-0.5 *Collected:* 9/18/2013 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	0.0455	J	0.0291	MDL	0.224	PQL	mg/Kg	J	Z

Sample ID: SL-514-SA5D-SB-4.0-5.0 *Collected:* 9/18/2013 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	0.0401	J	0.0291	MDL	0.224	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: SL-509-SA5D-SB-0.0-0.5 *Collected:* 9/18/2013 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
MERCURY	0.0129	J	0.0105	MDL	0.0174	PQL	mg/Kg	J	Z

Sample ID: SL-509-SA5D-SB-4.0-5.0 *Collected:* 9/18/2013 1:15:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0134	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: PH110 **Laboratory: LL**

EDD Filename: PrepPH110 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: SL-510-SA5D-SB-0.0-0.5 *Collected:* 9/18/2013 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
MERCURY	0.0114	J	0.0106	MDL	0.0176	PQL	mg/Kg	J	Z

Sample ID: SL-510-SA5D-SB-4.0-5.0 *Collected:* 9/18/2013 10:10:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0124	J	0.0110	MDL	0.0183	PQL	mg/Kg	J	Z

Sample ID: SL-513-SA5D-SB-16.0-17.0 *Collected:* 9/18/2013 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
MERCURY	0.0103	J	0.0102	MDL	0.0170	PQL	mg/Kg	J	Z

Sample ID: SL-513-SA5D-SB-4.0-5.0 *Collected:* 9/18/2013 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
MERCURY	0.0149	J	0.0116	MDL	0.0193	PQL	mg/Kg	J	Z

Sample ID: SL-513-SA5D-SB-9.0-10.0 *Collected:* 9/18/2013 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
MERCURY	0.0125	J	0.0112	MDL	0.0187	PQL	mg/Kg	J	Z

Sample ID: SL-514-SA5D-SB-4.0-5.0 *Collected:* 9/18/2013 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
MERCURY	0.0124	J	0.0108	MDL	0.0180	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 1613B **Matrix: AQ**

Sample ID: EB1-091813 *Collected:* 9/18/2013 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	0.924	JB	0.222	MDL	9.65	PQL	pg/L	U	B
1,2,3,4,6,7,8-HPCDF	0.629	JB	0.0973	MDL	9.65	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: PH110 **Laboratory: LL**

EDD Filename: PrepPH110 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 1613B **Matrix: AQ**

Sample ID: EB1-091813 *Collected:* 9/18/2013 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
1,2,3,4,7,8,9-HPCDF	0.472	JBQ	0.107	MDL	9.65	PQL	pg/L	U	B
1,2,3,4,7,8-HxCDD	0.357	JBQ	0.185	MDL	9.65	PQL	pg/L	U	B
1,2,3,4,7,8-HXCDF	0.392	JBQ	0.190	MDL	9.65	PQL	pg/L	U	B
1,2,3,6,7,8-HXCDD	0.204	JBQ	0.191	MDL	9.65	PQL	pg/L	U	B
1,2,3,6,7,8-HXCDF	0.628	JB	0.189	MDL	9.65	PQL	pg/L	U	B
1,2,3,7,8,9-HXCDD	0.488	JBQ	0.184	MDL	9.65	PQL	pg/L	U	B
1,2,3,7,8,9-HXCDF	0.608	JBQ	0.186	MDL	9.65	PQL	pg/L	U	B
1,2,3,7,8-PECDF	0.712	JBQ	0.178	MDL	9.65	PQL	pg/L	U	B
2,3,4,6,7,8-HXCDF	0.400	JBQ	0.192	MDL	9.65	PQL	pg/L	U	B
OCDD	1.48	JBQ	0.210	MDL	19.3	PQL	pg/L	U	B
OCDF	1.66	JB	0.295	MDL	19.3	PQL	pg/L	U	B

Sample ID: EB2-091813 *Collected:* 9/18/2013 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	0.798	JBQ	0.225	MDL	9.57	PQL	pg/L	U	B
1,2,3,4,6,7,8-HPCDF	0.430	JB	0.0871	MDL	9.57	PQL	pg/L	U	B
1,2,3,4,7,8,9-HPCDF	0.280	JBQ	0.0991	MDL	9.57	PQL	pg/L	U	B
1,2,3,4,7,8-HXCDF	0.490	JB	0.164	MDL	9.57	PQL	pg/L	U	B
1,2,3,6,7,8-HXCDD	0.317	JBQ	0.159	MDL	9.57	PQL	pg/L	U	B
1,2,3,6,7,8-HXCDF	0.558	JB	0.162	MDL	9.57	PQL	pg/L	U	B
1,2,3,7,8,9-HXCDF	0.760	JB	0.146	MDL	9.57	PQL	pg/L	U	B
1,2,3,7,8-PECDD	0.385	JBQ	0.270	MDL	9.57	PQL	pg/L	U	B
1,2,3,7,8-PECDF	0.513	JBQ	0.162	MDL	9.57	PQL	pg/L	U	B
2,3,4,6,7,8-HXCDF	0.324	JBQ	0.158	MDL	9.57	PQL	pg/L	U	B
2,3,7,8-TCDD	0.511	JBQ	0.473	MDL	1.91	PQL	pg/L	U	B
OCDD	1.03	JB	0.185	MDL	19.1	PQL	pg/L	U	B
OCDF	0.949	JB	0.271	MDL	19.1	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: PH110 **Laboratory: LL**

EDD Filename: PrepPH110 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-509-SA5D-SB-0.0-0.5 *Collected:* 9/18/2013 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	0.639	JBQ	0.0267	MDL	5.35	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.194	JB	0.0108	MDL	5.35	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0828	JBQ	0.0175	MDL	5.35	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0708	JBQ	0.0247	MDL	5.35	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.108	JB	0.0217	MDL	5.35	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.352	JB	0.0260	MDL	5.35	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0822	JB	0.0190	MDL	5.35	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.501	JB	0.0240	MDL	5.35	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.891	JB	0.0211	MDL	5.35	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.210	JBQ	0.0334	MDL	5.35	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.447	JB	0.0191	MDL	5.35	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.0808	JBQ	0.0192	MDL	5.35	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.182	JBQ	0.0191	MDL	5.35	PQL	ng/Kg	U	B
2,3,7,8-TCDD	0.0485	JB	0.0445	MDL	1.07	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.116	J	0.0415	MDL	1.07	PQL	ng/Kg	J	Z
OCDD	4.32	JB	0.0168	MDL	10.7	PQL	ng/Kg	J	Z
OCDF	0.538	JB	0.0319	MDL	10.7	PQL	ng/Kg	U	B

Sample ID: SL-510-SA5D-SB-0.0-0.5 *Collected:* 9/18/2013 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	0.249	JB	0.0301	MDL	5.30	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0788	JBQ	0.0104	MDL	5.30	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.114	JB	0.0185	MDL	5.30	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0350	JBQ	0.0310	MDL	5.30	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.114	JB	0.0292	MDL	5.30	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.191	JBQ	0.0334	MDL	5.30	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0800	JBQ	0.0257	MDL	5.30	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.302	JBQ	0.0297	MDL	5.30	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.470	JB	0.0286	MDL	5.30	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.0739	JBQ	0.0364	MDL	5.30	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.330	JB	0.0272	MDL	5.30	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0797	JBQ	0.0262	MDL	5.30	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.113	JBQ	0.0280	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: PH110 **Laboratory: LL**

EDD Filename: PrepPH110 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-510-SA5D-SB-0.0-0.5 *Collected:* 9/18/2013 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
2,3,7,8-TCDD	0.0631	JBQ	0.0509	MDL	1.06	PQL	ng/Kg	U	B
OCDD	0.924	JB	0.0286	MDL	10.6	PQL	ng/Kg	U	B
OCDF	0.163	JB	0.0415	MDL	10.6	PQL	ng/Kg	U	B

Sample ID: SL-513-SA5D-SB-0.0-0.5 *Collected:* 9/18/2013 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	0.193	JBQ	0.0233	MDL	5.49	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0945	JBQ	0.00895	MDL	5.49	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.139	JBQ	0.0182	MDL	5.49	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.104	JBQ	0.0254	MDL	5.49	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.158	JB	0.0281	MDL	5.49	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.191	JBQ	0.0266	MDL	5.49	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.141	JB	0.0237	MDL	5.49	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.288	JBQ	0.0254	MDL	5.49	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.455	JBQ	0.0272	MDL	5.49	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.263	JBQ	0.0353	MDL	5.49	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.350	JBQ	0.0199	MDL	5.49	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.118	JB	0.0276	MDL	5.49	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.218	JB	0.0202	MDL	5.49	PQL	ng/Kg	U	B
2,3,7,8-TCDD	0.0600	JBQ	0.0510	MDL	1.10	PQL	ng/Kg	U	B
OCDD	0.370	JB	0.0225	MDL	11.0	PQL	ng/Kg	U	B
OCDF	0.204	JB	0.0499	MDL	11.0	PQL	ng/Kg	U	B

Sample ID: SL-514-SA5D-SB-0.0-0.5 *Collected:* 9/18/2013 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	0.281	JB	0.0261	MDL	5.51	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.135	JB	0.00982	MDL	5.51	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0947	JBQ	0.0184	MDL	5.51	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.166	JBQ	0.0288	MDL	5.51	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.223	JBQ	0.0265	MDL	5.51	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.300	JB	0.0311	MDL	5.51	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.214	JB	0.0231	MDL	5.51	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.384	JB	0.0288	MDL	5.51	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: PH110 **Laboratory: LL**

EDD Filename: PrepPH110 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-514-SA5D-SB-0.0-0.5 *Collected:* 9/18/2013 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
1,2,3,7,8,9-HXCDF	0.566	JB	0.0272	MDL	5.51	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.335	JBQ	0.0337	MDL	5.51	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.352	JB	0.0207	MDL	5.51	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.147	JB	0.0257	MDL	5.51	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.276	JBQ	0.0216	MDL	5.51	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.0756	JBQ	0.0513	MDL	1.10	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.0607	JQ	0.0443	MDL	1.10	PQL	ng/Kg	J	Z
OCDD	0.748	JB	0.0276	MDL	11.0	PQL	ng/Kg	U	B
OCDF	0.308	JBQ	0.0398	MDL	11.0	PQL	ng/Kg	U	B

Method Category: SVOA

Method: 6850 **Matrix: AQ**

Sample ID: EB2-091813 *Collected:* 9/18/2013 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
PERCHLORATE	0.25	J	0.20	MDL	1.0	PQL	ug/L	J	Z

Method Category: SVOA

Method: 8015M **Matrix: AQ**

Sample ID: EB1-091813 *Collected:* 9/18/2013 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 (C30-C40)	0.49	U	0.098	MDL	0.49	PQL	mg/L	UJ	L

Sample ID: EB2-091813 *Collected:* 9/18/2013 3:30:00 *Analysis Type:* REA *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C30-C40)	0.47	U	0.095	MDL	0.47	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: PH110 **Laboratory: LL**

EDD Filename: PrepPH110 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: SL-509-SA5D-SB-4.0-5.0 *Collected:* 9/18/2013 1:15:00 *Analysis Type:* REA *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C12-C14)	5.7	U	2.3	MDL	5.7	PQL	mg/Kg	UJ	S
EFH (C15-C20)	5.7	U	2.3	MDL	5.7	PQL	mg/Kg	UJ	S
EFH (C21-C30)	5.7	U	2.3	MDL	5.7	PQL	mg/Kg	UJ	S
EFH (C30-C40)	11	U	4.6	MDL	11	PQL	mg/Kg	UJ	S
EFH (C8-C11)	5.7	U	2.3	MDL	5.7	PQL	mg/Kg	UJ	S

Sample ID: SL-510-SA5D-SB-0.0-0.5 *Collected:* 9/18/2013 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
EFH (C30-C40)	12		4.4	MDL	11	PQL	mg/Kg	J	Q

Method Category: SVOA

Method: 8081B **Matrix: SO**

Sample ID: SL-510-SA5D-SB-0.0-0.5 *Collected:* 9/18/2013 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
4,4'-DDT	0.47	J	0.38	MDL	1.9	PQL	ug/Kg	J	Z

Method Category: SVOA

Method: 8082A **Matrix: AQ**

Sample ID: EB1-091813 *Collected:* 9/18/2013 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
AROCLOR 1016	0.41	U	0.082	MDL	0.41	PQL	ug/L	UJ	S
AROCLOR 1221	0.41	U	0.082	MDL	0.41	PQL	ug/L	UJ	S
AROCLOR 1232	0.41	U	0.16	MDL	0.41	PQL	ug/L	UJ	S
AROCLOR 1242	0.41	U	0.082	MDL	0.41	PQL	ug/L	UJ	S
AROCLOR 1248	0.41	U	0.082	MDL	0.41	PQL	ug/L	UJ	S
AROCLOR 1254	0.41	U	0.082	MDL	0.41	PQL	ug/L	UJ	S
AROCLOR 1260	0.41	U	0.12	MDL	0.41	PQL	ug/L	UJ	S
Aroclor 1262	0.41	U	0.16	MDL	0.41	PQL	ug/L	UJ	S
Aroclor 1268	0.41	U	0.13	MDL	0.41	PQL	ug/L	UJ	S

* denotes a non-reportable result

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

Data Qualifier Summary

Lab Reporting Batch ID: PH110 **Laboratory: LL**

EDD Filename: PrepPH110 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 8082A **Matrix: AQ**

Sample ID: EB1-091813 *Collected:* 9/18/2013 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
Aroclor 5432	0.41	U	0.082	MDL	0.41	PQL	ug/L	UJ	S
Aroclor 5442	0.41	U	0.082	MDL	0.41	PQL	ug/L	UJ	S
Aroclor 5460	0.41	U	0.091	MDL	0.41	PQL	ug/L	UJ	S

Sample ID: EB2-091813 *Collected:* 9/18/2013 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
AROCLOR 1016	0.42	U	0.083	MDL	0.42	PQL	ug/L	UJ	S
AROCLOR 1221	0.42	U	0.083	MDL	0.42	PQL	ug/L	UJ	S
AROCLOR 1232	0.42	U	0.17	MDL	0.42	PQL	ug/L	UJ	S
AROCLOR 1242	0.42	U	0.083	MDL	0.42	PQL	ug/L	UJ	S
AROCLOR 1248	0.42	U	0.083	MDL	0.42	PQL	ug/L	UJ	S
AROCLOR 1254	0.42	U	0.083	MDL	0.42	PQL	ug/L	UJ	S
AROCLOR 1260	0.42	U	0.13	MDL	0.42	PQL	ug/L	UJ	S
Aroclor 1262	0.42	U	0.17	MDL	0.42	PQL	ug/L	UJ	S
Aroclor 1268	0.42	U	0.13	MDL	0.42	PQL	ug/L	UJ	S
Aroclor 5432	0.42	U	0.083	MDL	0.42	PQL	ug/L	UJ	S
Aroclor 5442	0.42	U	0.083	MDL	0.42	PQL	ug/L	UJ	S
Aroclor 5460	0.42	U	0.092	MDL	0.42	PQL	ug/L	UJ	S

Method Category: SVOA

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

Sample ID: EB1-091813 *Collected:* 9/18/2013 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	0.30	J	0.050	MDL	1.0	PQL	ug/L	J	Z
Di-n-butylphthalate	0.20	J	0.050	MDL	1.0	PQL	ug/L	J	Z

Sample ID: EB2-091813 *Collected:* 9/18/2013 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
Diethylphthalate	0.30	J	0.050	MDL	1.0	PQL	ug/L	J	Z
Di-n-butylphthalate	0.19	J	0.050	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: PH110 **Laboratory: LL**

EDD Filename: PrepPH110 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

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

Sample ID: **SL-509-SA5D-SB-0.0-0.5** *Collected:* **9/18/2013 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
2-METHYLNAPHTHALENE	0.89	J	0.74	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(B)FLUORANTHENE	1.6	J	0.74	MDL	1.8	PQL	ug/Kg	J	Z
FLUORANTHENE	1.3	J	0.74	MDL	1.8	PQL	ug/Kg	J	Z
NAPHTHALENE	1.6	J	0.74	MDL	1.8	PQL	ug/Kg	J	Z
PHENANTHRENE	1.1	J	0.74	MDL	1.8	PQL	ug/Kg	J	Z
PYRENE	0.90	J	0.74	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: **SL-509-SA5D-SB-4.0-5.0** *Collected:* **9/18/2013 1:15:00** *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	1.0	J	0.77	MDL	1.9	PQL	ug/Kg	J	Z
PHENANTHRENE	1.0	J	0.77	MDL	1.9	PQL	ug/Kg	J	Z

Sample ID: **SL-510-SA5D-SB-0.0-0.5** *Collected:* **9/18/2013 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
ANTHRACENE	0.80	J	0.37	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(B)FLUORANTHENE	1.4	J	0.73	MDL	1.8	PQL	ug/Kg	J	Z
FLUORANTHENE	1.1	J	0.73	MDL	1.8	PQL	ug/Kg	J	Z
FLUORENE	0.85	J	0.73	MDL	1.8	PQL	ug/Kg	J	Z
NAPHTHALENE	1.3	J	0.73	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: **SL-510-SA5D-SB-4.0-5.0** *Collected:* **9/18/2013 10:10:00** *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	0.92	J	0.77	MDL	1.9	PQL	ug/Kg	J	Z
NAPHTHALENE	1.4	J	0.77	MDL	1.9	PQL	ug/Kg	J	Z

Sample ID: **SL-513-SA5D-SB-0.0-0.5** *Collected:* **9/18/2013 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
ANTHRACENE	0.45	J	0.37	MDL	1.9	PQL	ug/Kg	J	Z
NAPHTHALENE	0.86	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: PH110 **Laboratory: LL**

EDD Filename: PrepPH110 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

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

Sample ID: **SL-513-SA5D-SB-4.0-5.0** *Collected:* **9/18/2013 7:40:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NAPHTHALENE	1.1	J	0.77	MDL	1.9	PQL	ug/Kg	J	Z

Sample ID: **SL-514-SA5D-SB-4.0-5.0** *Collected:* **9/18/2013 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
2-METHYLNAPHTHALENE	0.85	J	0.78	MDL	1.9	PQL	ug/Kg	J	Z
PHENANTHRENE	1.0	J	0.78	MDL	1.9	PQL	ug/Kg	J	Z

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: PH110 **Laboratory: LL**

EDD Filename: PrepPH110 **eQAPP Name: CDM_SSFL_131101_Lan**

Reason Code Legend

Reason Code	*Description*
B	Calibration Blank Contamination
B	Method Blank Contamination
E	Laboratory Duplicate Precision
E	Matrix Spike Precision
F	Equipment Blank Contamination
F	Field Blank Contamination
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
S	Surrogate/Tracer Recovery Lower 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

PH110

Method Blank Outlier Report

Lab Reporting Batch ID: PH110 **Laboratory: LL**

EDD Filename: PH110 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: **1613B**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2670B371524	9/26/2013 3:24:00 PM	1,2,3,4,6,7,8-HPCDD	0.963 pg/L	EB1-091813
		1,2,3,4,6,7,8-HPCDF	0.862 pg/L	EB2-091813
		1,2,3,4,7,8,9-HPCDF	0.625 pg/L	
		1,2,3,4,7,8-HxCDD	0.300 pg/L	
		1,2,3,4,7,8-HXCDF	0.389 pg/L	
		1,2,3,6,7,8-HXCDD	0.518 pg/L	
		1,2,3,6,7,8-HXCDF	0.407 pg/L	
		1,2,3,7,8,9-HXCDD	0.348 pg/L	
		1,2,3,7,8,9-HXCDF	0.534 pg/L	
		1,2,3,7,8-PECDD	0.685 pg/L	
		1,2,3,7,8-PECDF	0.645 pg/L	
		2,3,4,6,7,8-HXCDF	0.311 pg/L	
		2,3,4,7,8-PECDF	0.240 pg/L	
		2,3,7,8-TCDD	0.904 pg/L	
		OCDD	1.39 pg/L	
		OCDF	1.37 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
EB1-091813(RES)	1,2,3,4,6,7,8-HPCDD	0.924 pg/L	0.924U pg/L
EB1-091813(RES)	1,2,3,4,6,7,8-HPCDF	0.629 pg/L	0.629U pg/L
EB1-091813(RES)	1,2,3,4,7,8,9-HPCDF	0.472 pg/L	0.472U pg/L
EB1-091813(RES)	1,2,3,4,7,8-HxCDD	0.357 pg/L	0.357U pg/L
EB1-091813(RES)	1,2,3,4,7,8-HXCDF	0.392 pg/L	0.392U pg/L
EB1-091813(RES)	1,2,3,6,7,8-HXCDD	0.204 pg/L	0.204U pg/L
EB1-091813(RES)	1,2,3,6,7,8-HXCDF	0.628 pg/L	0.628U pg/L
EB1-091813(RES)	1,2,3,7,8,9-HXCDD	0.488 pg/L	0.488U pg/L
EB1-091813(RES)	1,2,3,7,8,9-HXCDF	0.608 pg/L	0.608U pg/L
EB1-091813(RES)	1,2,3,7,8-PECDF	0.712 pg/L	0.712U pg/L
EB1-091813(RES)	2,3,4,6,7,8-HXCDF	0.400 pg/L	0.400U pg/L
EB1-091813(RES)	OCDD	1.48 pg/L	1.48U pg/L
EB1-091813(RES)	OCDF	1.66 pg/L	1.66U pg/L
EB2-091813(RES)	1,2,3,4,6,7,8-HPCDD	0.798 pg/L	0.798U pg/L
EB2-091813(RES)	1,2,3,4,6,7,8-HPCDF	0.430 pg/L	0.430U pg/L
EB2-091813(RES)	1,2,3,4,7,8,9-HPCDF	0.280 pg/L	0.280U pg/L
EB2-091813(RES)	1,2,3,4,7,8-HXCDF	0.490 pg/L	0.490U pg/L
EB2-091813(RES)	1,2,3,6,7,8-HXCDD	0.317 pg/L	0.317U pg/L
EB2-091813(RES)	1,2,3,6,7,8-HXCDF	0.558 pg/L	0.558U pg/L
EB2-091813(RES)	1,2,3,7,8,9-HXCDF	0.760 pg/L	0.760U pg/L
EB2-091813(RES)	1,2,3,7,8-PECDD	0.385 pg/L	0.385U pg/L
EB2-091813(RES)	1,2,3,7,8-PECDF	0.513 pg/L	0.513U pg/L
EB2-091813(RES)	2,3,4,6,7,8-HXCDF	0.324 pg/L	0.324U pg/L
EB2-091813(RES)	2,3,7,8-TCDD	0.511 pg/L	0.511U pg/L
EB2-091813(RES)	OCDD	1.03 pg/L	1.03U pg/L
EB2-091813(RES)	OCDF	0.949 pg/L	0.949U pg/L

Method Blank Outlier Report

Lab Reporting Batch ID: PH110 **Laboratory: LL**

EDD Filename: PH110 **eQAPP Name: CDM_SSFL_131101_Lan**

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2680B370155	9/27/2013 1:55:00 AM	1,2,3,4,6,7,8-HPCDD	0.127 ng/Kg	SL-509-SA5D-SB-0.0-0.5
		1,2,3,4,6,7,8-HPCDF	0.0505 ng/Kg	SL-510-SA5D-SB-0.0-0.5
		1,2,3,4,7,8,9-HPCDF	0.0860 ng/Kg	SL-513-SA5D-SB-0.0-0.5
		1,2,3,4,7,8-HxCDD	0.0483 ng/Kg	SL-514-SA5D-SB-0.0-0.5
		1,2,3,4,7,8-HXCDF	0.0573 ng/Kg	
		1,2,3,6,7,8-HXCDD	0.0406 ng/Kg	
		1,2,3,6,7,8-HXCDF	0.0517 ng/Kg	
		1,2,3,7,8,9-HXCDD	0.0644 ng/Kg	
		1,2,3,7,8,9-HXCDF	0.0692 ng/Kg	
		1,2,3,7,8-PECDD	0.103 ng/Kg	
		1,2,3,7,8-PECDF	0.0673 ng/Kg	
		2,3,4,6,7,8-HXCDF	0.0444 ng/Kg	
		2,3,4,7,8-PECDF	0.0538 ng/Kg	
		2,3,7,8-TCDD	0.104 ng/Kg	
		OCDD	0.212 ng/Kg	
		OCDF	0.223 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-509-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDF	0.194 ng/Kg	0.194U ng/Kg
SL-509-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0828 ng/Kg	0.0828U ng/Kg
SL-509-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.0708 ng/Kg	0.0708U ng/Kg
SL-509-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.108 ng/Kg	0.108U ng/Kg
SL-509-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.0822 ng/Kg	0.0822U ng/Kg
SL-509-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.210 ng/Kg	0.210U ng/Kg
SL-509-SA5D-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0808 ng/Kg	0.0808U ng/Kg
SL-509-SA5D-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.182 ng/Kg	0.182U ng/Kg
SL-509-SA5D-SB-0.0-0.5(RES)	2,3,7,8-TCDD	0.0485 ng/Kg	0.0485U ng/Kg
SL-509-SA5D-SB-0.0-0.5(RES)	OCDF	0.538 ng/Kg	0.538U ng/Kg
SL-510-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDD	0.249 ng/Kg	0.249U ng/Kg
SL-510-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDF	0.0788 ng/Kg	0.0788U ng/Kg
SL-510-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.114 ng/Kg	0.114U ng/Kg
SL-510-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.0350 ng/Kg	0.0350U ng/Kg
SL-510-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.114 ng/Kg	0.114U ng/Kg
SL-510-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDD	0.191 ng/Kg	0.191U ng/Kg
SL-510-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.0800 ng/Kg	0.0800U ng/Kg
SL-510-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDD	0.302 ng/Kg	0.302U ng/Kg
SL-510-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.0739 ng/Kg	0.0739U ng/Kg
SL-510-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.330 ng/Kg	0.330U ng/Kg
SL-510-SA5D-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0797 ng/Kg	0.0797U ng/Kg
SL-510-SA5D-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.113 ng/Kg	0.113U ng/Kg
SL-510-SA5D-SB-0.0-0.5(RES)	2,3,7,8-TCDD	0.0631 ng/Kg	0.0631U ng/Kg
SL-510-SA5D-SB-0.0-0.5(RES)	OCDD	0.924 ng/Kg	0.924U ng/Kg
SL-510-SA5D-SB-0.0-0.5(RES)	OCDF	0.163 ng/Kg	0.163U ng/Kg
SL-513-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDD	0.193 ng/Kg	0.193U ng/Kg
SL-513-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDF	0.0945 ng/Kg	0.0945U ng/Kg
SL-513-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.139 ng/Kg	0.139U ng/Kg
SL-513-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.104 ng/Kg	0.104U ng/Kg

Method Blank Outlier Report

Lab Reporting Batch ID: PH110 **Laboratory: LL**

EDD Filename: PH110 **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-513-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.158 ng/Kg	0.158U ng/Kg
SL-513-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDD	0.191 ng/Kg	0.191U ng/Kg
SL-513-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.141 ng/Kg	0.141U ng/Kg
SL-513-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDD	0.288 ng/Kg	0.288U ng/Kg
SL-513-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.263 ng/Kg	0.263U ng/Kg
SL-513-SA5D-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.118 ng/Kg	0.118U ng/Kg
SL-513-SA5D-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.218 ng/Kg	0.218U ng/Kg
SL-513-SA5D-SB-0.0-0.5(RES)	2,3,7,8-TCDD	0.0600 ng/Kg	0.0600U ng/Kg
SL-513-SA5D-SB-0.0-0.5(RES)	OCDD	0.370 ng/Kg	0.370U ng/Kg
SL-513-SA5D-SB-0.0-0.5(RES)	OCDF	0.204 ng/Kg	0.204U ng/Kg
SL-514-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDD	0.281 ng/Kg	0.281U ng/Kg
SL-514-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDF	0.135 ng/Kg	0.135U ng/Kg
SL-514-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0947 ng/Kg	0.0947U ng/Kg
SL-514-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.166 ng/Kg	0.166U ng/Kg
SL-514-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.223 ng/Kg	0.223U ng/Kg
SL-514-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.214 ng/Kg	0.214U ng/Kg
SL-514-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.335 ng/Kg	0.335U ng/Kg
SL-514-SA5D-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.147 ng/Kg	0.147U ng/Kg
SL-514-SA5D-SB-0.0-0.5(RES)	2,3,7,8-TCDD	0.0756 ng/Kg	0.0756U ng/Kg
SL-514-SA5D-SB-0.0-0.5(RES)	OCDD	0.748 ng/Kg	0.748U ng/Kg
SL-514-SA5D-SB-0.0-0.5(RES)	OCDF	0.308 ng/Kg	0.308U ng/Kg

Method: 6010C
Matrix: AQ

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P27035BB221457	9/30/2013 2:57:00 PM	CALCIUM	0.0618 mg/L	EB1-091813 EB2-091813

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
EB1-091813(REA2)	CALCIUM	0.0464 mg/L	0.0464U mg/L
EB2-091813(REA2)	CALCIUM	0.0550 mg/L	0.0550U mg/L

Method Blank Outlier Report

Lab Reporting Batch ID: PH110 **Laboratory: LL**

EDD Filename: PH110 **eQAPP Name: CDM_SSFL_131101_Lan**

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P26337AB222319	9/22/2013 11:19:00 PM	CALCIUM	8.73 mg/Kg	SL-509-SA5D-SB-0.0-0.5
		TIN	1.49 mg/Kg	SL-509-SA5D-SB-4.0-5.0
		ZINC	0.340 mg/Kg	SL-510-SA5D-SB-0.0-0.5
				SL-510-SA5D-SB-4.0-5.0
				SL-513-SA5D-SB-0.0-0.5
				SL-513-SA5D-SB-16.0-17.0
				SL-513-SA5D-SB-4.0-5.0
				SL-513-SA5D-SB-9.0-10.0
				SL-514-SA5D-SB-0.0-0.5
				SL-514-SA5D-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-509-SA5D-SB-0.0-0.5(RES)	TIN	2.76 mg/Kg	2.76U mg/Kg
SL-509-SA5D-SB-4.0-5.0(RES)	TIN	3.30 mg/Kg	3.30U mg/Kg
SL-510-SA5D-SB-0.0-0.5(RES)	TIN	3.12 mg/Kg	3.12U mg/Kg
SL-510-SA5D-SB-4.0-5.0(RES)	TIN	3.25 mg/Kg	3.25U mg/Kg
SL-513-SA5D-SB-0.0-0.5(RES)	TIN	2.93 mg/Kg	2.93U mg/Kg
SL-513-SA5D-SB-16.0-17.0(RES)	TIN	2.69 mg/Kg	2.69U mg/Kg
SL-513-SA5D-SB-4.0-5.0(RES)	TIN	3.44 mg/Kg	3.44U mg/Kg
SL-513-SA5D-SB-9.0-10.0(RES)	TIN	2.68 mg/Kg	2.68U mg/Kg
SL-514-SA5D-SB-0.0-0.5(RES)	TIN	3.14 mg/Kg	3.14U mg/Kg
SL-514-SA5D-SB-4.0-5.0(RES)	TIN	2.98 mg/Kg	2.98U mg/Kg

Equipment Rinsate Blank Outlier Report

Lab Reporting Batch ID: PH110 **Laboratory: LL**

EDD Filename: PH110 **eQAPP Name: CDM_SSFL_131101_Lan**

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

Equipment Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
EB1-091813(REA2)	9/18/2013 3:00:00 PM	CALCIUM MOLYBDENUM	0.0464 mg/L 0.0083 mg/L	SL-509-SA5D-SB-0.0-0.5 SL-509-SA5D-SB-4.0-5.0 SL-510-SA5D-SB-0.0-0.5 SL-510-SA5D-SB-4.0-5.0 SL-513-SA5D-SB-0.0-0.5 SL-513-SA5D-SB-16.0-17.0 SL-513-SA5D-SB-4.0-5.0 SL-513-SA5D-SB-9.0-10.0 SL-514-SA5D-SB-0.0-0.5 SL-514-SA5D-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-509-SA5D-SB-0.0-0.5(RES)	MOLYBDENUM	0.232 mg/Kg	0.232U mg/Kg
SL-510-SA5D-SB-0.0-0.5(RES)	MOLYBDENUM	0.329 mg/Kg	0.329U mg/Kg
SL-510-SA5D-SB-4.0-5.0(RES)	MOLYBDENUM	0.216 mg/Kg	0.216U mg/Kg
SL-513-SA5D-SB-4.0-5.0(RES)	MOLYBDENUM	0.435 mg/Kg	0.435U mg/Kg

Field Blank Outlier Report

Lab Reporting Batch ID: PH110 **Laboratory: LL**

EDD Filename: PH110 **eQAPP Name: CDM_SSFL_131101_Lan**

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

Field Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
FB-041613(REA2/TOT)	4/16/2013 3:15:00 PM	MOLYBDENUM TIN	0.0132 mg/L 0.0029 mg/L	SL-509-SA5D-SB-0.0-0.5 SL-509-SA5D-SB-4.0-5.0 SL-510-SA5D-SB-0.0-0.5 SL-510-SA5D-SB-4.0-5.0 SL-513-SA5D-SB-0.0-0.5 SL-513-SA5D-SB-16.0-17.0 SL-513-SA5D-SB-4.0-5.0 SL-513-SA5D-SB-9.0-10.0 SL-514-SA5D-SB-0.0-0.5 SL-514-SA5D-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-509-SA5D-SB-0.0-0.5(RES)	MOLYBDENUM	0.232 mg/Kg	0.232U mg/Kg
SL-510-SA5D-SB-0.0-0.5(RES)	MOLYBDENUM	0.329 mg/Kg	0.329U mg/Kg
SL-510-SA5D-SB-4.0-5.0(RES)	MOLYBDENUM	0.216 mg/Kg	0.216U mg/Kg
SL-513-SA5D-SB-4.0-5.0(RES)	MOLYBDENUM	0.435 mg/Kg	0.435U mg/Kg

Surrogate Outlier Report

Lab Reporting Batch ID: PH110 **Laboratory: LL**

EDD Filename: PH110 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 8015M
Matrix: SO

Sample ID (Analysis Type)	Surrogate	Sample % Recovery	% Recovery Limits	Affected Compounds	Flag
SL-509-SA5D-SB-4.0-5.0 (REA)	O-TERPHENYL	47	66.00-123.00	All Target Analytes	J(all detects) UJ(all non-detects)

Method: 8082A
Matrix: AQ

Sample ID (Analysis Type)	Surrogate	Sample % Recovery	% Recovery Limits	Affected Compounds	Flag
EB1-091813	DECACHLOROBIPHENYL	41	45.00-120.00	All Target Analytes	J (all detects) UJ (all non-detects)
EB2-091813	DECACHLOROBIPHENYL	38	45.00-120.00	All Target Analytes	J(all detects) UJ(all non-detects)

Method: 8082A
Matrix: SO

Sample ID (Analysis Type)	Surrogate	Sample % Recovery	% Recovery Limits	Affected Compounds	Flag
SL-509-SA5D-SB-0.0-0.5	DECACHLOROBIPHENYL TETRACHLORO-M-XYLENE	123 122	45.00-120.00 45.00-120.00	All Target Analytes	J(all detects)
SL-509-SA5D-SB-4.0-5.0	DECACHLOROBIPHENYL	122	45.00-120.00	All Target Analytes	J(all detects)
SL-510-SA5D-SB-4.0-5.0	DECACHLOROBIPHENYL TETRACHLORO-M-XYLENE	131 125	45.00-120.00 45.00-120.00	All Target Analytes	J(all detects)
SL-513-SA5D-SB-0.0-0.5	DECACHLOROBIPHENYL	122	45.00-120.00	All Target Analytes	J(all detects)
SL-513-SA5D-SB-16.0-17.0	DECACHLOROBIPHENYL TETRACHLORO-M-XYLENE	130 123	45.00-120.00 45.00-120.00	All Target Analytes	J(all detects)
SL-513-SA5D-SB-4.0-5.0	DECACHLOROBIPHENYL TETRACHLORO-M-XYLENE	137 128	45.00-120.00 45.00-120.00	All Target Analytes	J(all detects)
SL-513-SA5D-SB-9.0-10.0	DECACHLOROBIPHENYL TETRACHLORO-M-XYLENE	135 123	45.00-120.00 45.00-120.00	All Target Analytes	J(all detects)
SL-514-SA5D-SB-0.0-0.5	DECACHLOROBIPHENYL TETRACHLORO-M-XYLENE	133 126	45.00-120.00 45.00-120.00	All Target Analytes	J(all detects)
SL-514-SA5D-SB-4.0-5.0	DECACHLOROBIPHENYL TETRACHLORO-M-XYLENE	134 129	45.00-120.00 45.00-120.00	All Target Analytes	J(all detects)

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH110 **Laboratory: LL**

EDD Filename: PH110 **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-510-SA5D-SB-0.0-0.5MS	EFH (C15-C20)	174	187	49.00-123.00	-	EFH (C15-C20)	
SL-510-SA5D-SB-0.0-0.5MSD	EFH (C30-C40)	-	165	49.00-123.00	-	EFH (C30-C40)	J (all detects)
(SL-510-SA5D-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-513-SA5D-SB-4.0-5.0MS	ALUMINUM	3787	4234	75.00-125.00	-	ALUMINUM	
(TOT)	CALCIUM	256	264	75.00-125.00	-	CALCIUM	
SL-513-SA5D-SB-4.0-5.0MSD	MAGNESIUM	376	537	75.00-125.00	-	MAGNESIUM	
(TOT)	MANGANESE	228	169	75.00-125.00	-	MANGANESE	J(all detects)
(SL-509-SA5D-SB-0.0-0.5	PHOSPHORUS	150	-	75.00-125.00	-	PHOSPHORUS	
SL-509-SA5D-SB-4.0-5.0	POTASSIUM	143	153	75.00-125.00	-	POTASSIUM	Al, Ca, Mg, Mn, K, Ti,
SL-510-SA5D-SB-0.0-0.5	TITANIUM	643	655	75.00-125.00	-	TITANIUM	No Qual, >4x
SL-510-SA5D-SB-4.0-5.0	VANADIUM	142	-	75.00-125.00	-	VANADIUM	
SL-513-SA5D-SB-0.0-0.5							
SL-513-SA5D-SB-16.0-17.0							
SL-513-SA5D-SB-4.0-5.0							
SL-513-SA5D-SB-9.0-10.0							
SL-514-SA5D-SB-0.0-0.5							
SL-514-SA5D-SB-4.0-5.0)							
SL-513-SA5D-SB-4.0-5.0MS	ANTIMONY	63	64	75.00-125.00	-	ANTIMONY	
(TOT)	IRON	13196	1049	75.00-125.00	31 (20.00)	IRON	
SL-513-SA5D-SB-4.0-5.0MSD							
(TOT)							J(all detects)
(SL-509-SA5D-SB-0.0-0.5							UJ(all non-detects)
SL-509-SA5D-SB-4.0-5.0							
SL-510-SA5D-SB-0.0-0.5							
SL-510-SA5D-SB-4.0-5.0							Fe,
SL-513-SA5D-SB-0.0-0.5							No Qual %R >4x
SL-513-SA5D-SB-16.0-17.0							
SL-513-SA5D-SB-4.0-5.0							
SL-513-SA5D-SB-9.0-10.0							
SL-514-SA5D-SB-0.0-0.5							
SL-514-SA5D-SB-4.0-5.0)							

Method: 6020A
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-513-SA5D-SB-4.0-5.0MSD	STRONTIUM	-	151	75.00-125.00	-	STRONTIUM	
(TOT)							
(SL-509-SA5D-SB-0.0-0.5							
SL-509-SA5D-SB-4.0-5.0							
SL-510-SA5D-SB-0.0-0.5							
SL-510-SA5D-SB-4.0-5.0							
SL-513-SA5D-SB-0.0-0.5							No Qual, >4x
SL-513-SA5D-SB-16.0-17.0							
SL-513-SA5D-SB-4.0-5.0							
SL-513-SA5D-SB-9.0-10.0							
SL-514-SA5D-SB-0.0-0.5							
SL-514-SA5D-SB-4.0-5.0)							

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH110 **Laboratory: LL**

EDD Filename: PH110 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: **300.0**
Matrix: **SO**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
SL-513-SA5D-SB-4.0-5.0MS (SL-513-SA5D-SB-0.0-0.5 SL -513-SA5D-SB-16.0-17.0 SL -513-SA5D-SB-4.0-5.0 SL -513-SA5D-SB-9.0-10.0)	FLUORIDE	43	-	80.00-120.00	-	FLUORIDE	J(all detects) UJ(all non-detects)

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

Lab Duplicate Outlier Report

Lab Reporting Batch ID: PH110 **Laboratory: LL**

EDD Filename: PH110 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 300.0
Matrix: SO

QC Sample ID (Associated Sample ID)	Analyte	Sample RPD	eQAPP RPD	Flag
SL-513-SA5D-SB-4.0-5.0DUP (SL-513-SA5D-SB-0.0-0.5 SL -513-SA5D-SB-16.0-17.0 SL -513-SA5D-SB-4.0-5.0 SL -513-SA5D-SB-9.0-10.0)	FLUORIDE	25	20.00	No Qual, OK by Difference

Method: 6010C
Matrix: SO

QC Sample ID (Associated Sample ID)	Analyte	Sample RPD	eQAPP RPD	Flag
SL-513-SA5D-SB-4.0-5.0DUP (TOT) (SL-509-SA5D-SB-0.0-0.5 SL -509-SA5D-SB-4.0-5.0 SL -510-SA5D-SB-0.0-0.5 SL -510-SA5D-SB-4.0-5.0 SL -513-SA5D-SB-0.0-0.5 SL -513-SA5D-SB-16.0-17.0 SL -513-SA5D-SB-4.0-5.0 SL -513-SA5D-SB-9.0-10.0 SL -514-SA5D-SB-0.0-0.5 SL -514-SA5D-SB-4.0-5.0)	MOLYBDENUM Zirconium	200 45	20.00 20.00	No Qual, OK by Difference

Method: 7471B
Matrix: SO

QC Sample ID (Associated Sample ID)	Analyte	Sample RPD	eQAPP RPD	Flag
SL-513-SA5D-SB-9.0-10.0DUP (TOT) (SL-509-SA5D-SB-0.0-0.5 SL -509-SA5D-SB-4.0-5.0 SL -510-SA5D-SB-0.0-0.5 SL -510-SA5D-SB-4.0-5.0 SL -513-SA5D-SB-0.0-0.5 SL -513-SA5D-SB-16.0-17.0 SL -513-SA5D-SB-4.0-5.0 SL -513-SA5D-SB-9.0-10.0 SL -514-SA5D-SB-0.0-0.5 SL -514-SA5D-SB-4.0-5.0)	MERCURY	200	20.00	No Qual, OK by Difference

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH110 **Laboratory: LL**

EDD Filename: PH110 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 8015M
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
P32677AY320522A (EB1-091813 EB2 -091813)	EFH (C30-C40)	-	69	70.00-130.00	-	EFH (C30-C40)	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
P6WCLCSY261333 (EB1-091813 EB2 -091813)	BENZO(A)ANTHRACENE	-	128	73.00-127.00	-	BENZO(A)ANTHRACENE	J(all detects)

Method: 8082A
Matrix: SO

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
P32699AQ241313A P32699AY241254A (SL-509-SA5D-SB-0.0-0.5 SL -509-SA5D-SB-4.0-5.0 SL -510-SA5D-SB-0.0-0.5 SL -510-SA5D-SB-4.0-5.0 SL -513-SA5D-SB-0.0-0.5 SL -513-SA5D-SB-16.0-17.0 SL -513-SA5D-SB-4.0-5.0 SL -513-SA5D-SB-9.0-10.0 SL -514-SA5D-SB-0.0-0.5 SL -514-SA5D-SB-4.0-5.0)	Aroclor 5442	96	94	62.00-87.00	-	Aroclor 5432 Aroclor 5442 Aroclor 5460	J(all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH110 **Laboratory: LL**

EDD Filename: PH110 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 1613B

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB1-091813	1,2,3,4,6,7,8-HPCDD	JB	0.924	9.65	PQL	pg/L	
	1,2,3,4,6,7,8-HPCDF	JB	0.629	9.65	PQL	pg/L	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.472	9.65	PQL	pg/L	
	1,2,3,4,7,8-HxCDD	JBQ	0.357	9.65	PQL	pg/L	
	1,2,3,4,7,8-HXCDF	JBQ	0.392	9.65	PQL	pg/L	
	1,2,3,6,7,8-HXCDD	JBQ	0.204	9.65	PQL	pg/L	
	1,2,3,6,7,8-HXCDF	JB	0.628	9.65	PQL	pg/L	J (all detects)
	1,2,3,7,8,9-HXCDD	JBQ	0.488	9.65	PQL	pg/L	
	1,2,3,7,8,9-HXCDF	JBQ	0.608	9.65	PQL	pg/L	
	1,2,3,7,8-PECDF	JBQ	0.712	9.65	PQL	pg/L	
	2,3,4,6,7,8-HXCDF	JBQ	0.400	9.65	PQL	pg/L	
	OCDD	JBQ	1.48	19.3	PQL	pg/L	
	OCDF	JB	1.66	19.3	PQL	pg/L	
EB2-091813	1,2,3,4,6,7,8-HPCDD	JBQ	0.798	9.57	PQL	pg/L	
	1,2,3,4,6,7,8-HPCDF	JB	0.430	9.57	PQL	pg/L	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.280	9.57	PQL	pg/L	
	1,2,3,4,7,8-HXCDF	JB	0.490	9.57	PQL	pg/L	
	1,2,3,6,7,8-HXCDD	JBQ	0.317	9.57	PQL	pg/L	
	1,2,3,6,7,8-HXCDF	JB	0.558	9.57	PQL	pg/L	
	1,2,3,7,8,9-HXCDF	JB	0.760	9.57	PQL	pg/L	J (all detects)
	1,2,3,7,8-PECDD	JBQ	0.385	9.57	PQL	pg/L	
	1,2,3,7,8-PECDF	JBQ	0.513	9.57	PQL	pg/L	
	2,3,4,6,7,8-HXCDF	JBQ	0.324	9.57	PQL	pg/L	
	2,3,7,8-TCDD	JBQ	0.511	1.91	PQL	pg/L	
	OCDD	JB	1.03	19.1	PQL	pg/L	
	OCDF	JB	0.949	19.1	PQL	pg/L	

Method: 6010C

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB1-091813	CALCIUM	J	0.0464	0.400	PQL	mg/L	J (all detects)
	MOLYBDENUM	J	0.0083	0.0200	PQL	mg/L	
EB2-091813	CALCIUM	J	0.0550	0.400	PQL	mg/L	J (all detects)
	MOLYBDENUM	J	0.0025	0.0200	PQL	mg/L	

Method: 6850

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB2-091813	PERCHLORATE	J	0.25	1.0	PQL	ug/L	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH110 **Laboratory: LL**

EDD Filename: PH110 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 8270D SIM

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB1-091813	Diethylphthalate	J	0.30	1.0	PQL	ug/L	J (all detects)
	Di-n-butylphthalate	J	0.20	1.0	PQL	ug/L	
EB2-091813	Diethylphthalate	J	0.30	1.0	PQL	ug/L	J (all detects)
	Di-n-butylphthalate	J	0.19	1.0	PQL	ug/L	

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-509-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JBQ	0.639	5.35	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.194	5.35	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0828	5.35	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0708	5.35	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.108	5.35	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.352	5.35	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.0822	5.35	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.501	5.35	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.891	5.35	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JBQ	0.210	5.35	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.447	5.35	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0808	5.35	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.182	5.35	PQL	ng/Kg	
	2,3,7,8-TCDD	JB	0.0485	1.07	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.116	1.07	PQL	ng/Kg	
	OCDD	JB	4.32	10.7	PQL	ng/Kg	
	OCDF	JB	0.538	10.7	PQL	ng/Kg	
SL-510-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	0.249	5.30	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0788	5.30	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.114	5.30	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0350	5.30	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.114	5.30	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.191	5.30	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0800	5.30	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.302	5.30	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	0.470	5.30	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.0739	5.30	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.330	5.30	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0797	5.30	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.113	5.30	PQL	ng/Kg	
	2,3,7,8-TCDD	JBQ	0.0631	1.06	PQL	ng/Kg	
	OCDD	JB	0.924	10.6	PQL	ng/Kg	
	OCDF	JB	0.163	10.6	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH110 **Laboratory: LL**

EDD Filename: PH110 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-513-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JBQ	0.193	5.49	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0945	5.49	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.139	5.49	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.104	5.49	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.158	5.49	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.191	5.49	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.141	5.49	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.288	5.49	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.455	5.49	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.263	5.49	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.350	5.49	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.118	5.49	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.218	5.49	PQL	ng/Kg	
	2,3,7,8-TCDD	JBQ	0.0600	1.10	PQL	ng/Kg	
	OCDD	JB	0.370	11.0	PQL	ng/Kg	
	OCDF	JB	0.204	11.0	PQL	ng/Kg	
SL-514-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	0.281	5.51	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JB	0.135	5.51	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0947	5.51	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.166	5.51	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.223	5.51	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.300	5.51	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.214	5.51	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.384	5.51	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.566	5.51	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.335	5.51	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.352	5.51	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.147	5.51	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.276	5.51	PQL	ng/Kg	
	2,3,7,8-TCDD	JBQ	0.0756	1.10	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0607	1.10	PQL	ng/Kg	
	OCDD	JB	0.748	11.0	PQL	ng/Kg	
	OCDF	JBQ	0.308	11.0	PQL	ng/Kg	

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-509-SA5D-SB-0.0-0.5	BERYLLIUM	J	0.946	1.07	PQL	mg/Kg	J (all detects)
	BORON	J	10.3	10.7	PQL	mg/Kg	
	MOLYBDENUM	J	0.232	2.15	PQL	mg/Kg	
	SODIUM	J	89.8	107	PQL	mg/Kg	
	TIN	J	2.76	10.7	PQL	mg/Kg	
	Zirconium	J	3.79	5.37	PQL	mg/Kg	
SL-509-SA5D-SB-4.0-5.0	BERYLLIUM	J	0.981	1.15	PQL	mg/Kg	J (all detects)
	BORON	J	11.0	11.5	PQL	mg/Kg	
	TIN	J	3.30	11.5	PQL	mg/Kg	
	Zirconium	J	3.27	5.75	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH110 **Laboratory: LL**

EDD Filename: PH110 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-510-SA5D-SB-0.0-0.5	BERYLLIUM	J	0.964	1.09	PQL	mg/Kg	
	MOLYBDENUM	J	0.329	2.18	PQL	mg/Kg	
	SODIUM	J	85.1	109	PQL	mg/Kg	J (all detects)
	TIN	J	3.12	10.9	PQL	mg/Kg	
	Zirconium	J	4.32	5.46	PQL	mg/Kg	
SL-510-SA5D-SB-4.0-5.0	BERYLLIUM	J	0.955	1.16	PQL	mg/Kg	
	BORON	J	10.9	11.6	PQL	mg/Kg	
	MOLYBDENUM	J	0.216	2.32	PQL	mg/Kg	J (all detects)
	TIN	J	3.25	11.6	PQL	mg/Kg	
	Zirconium	J	3.15	5.80	PQL	mg/Kg	
SL-513-SA5D-SB-0.0-0.5	BERYLLIUM	J	0.983	1.12	PQL	mg/Kg	
	BORON	J	8.61	11.2	PQL	mg/Kg	
	SODIUM	J	102	112	PQL	mg/Kg	J (all detects)
	TIN	J	2.93	11.2	PQL	mg/Kg	
	Zirconium	J	1.81	5.61	PQL	mg/Kg	
SL-513-SA5D-SB-16.0-17.0	BERYLLIUM	J	0.638	1.08	PQL	mg/Kg	
	BORON	J	3.44	10.8	PQL	mg/Kg	
	SODIUM	J	92.5	108	PQL	mg/Kg	J (all detects)
	TIN	J	2.69	10.8	PQL	mg/Kg	
	Zirconium	J	1.10	5.41	PQL	mg/Kg	
SL-513-SA5D-SB-4.0-5.0	BERYLLIUM	J	0.953	1.16	PQL	mg/Kg	
	MOLYBDENUM	J	0.435	2.32	PQL	mg/Kg	
	SODIUM	J	106	116	PQL	mg/Kg	J (all detects)
	TIN	J	3.44	11.6	PQL	mg/Kg	
	Zirconium	J	3.52	5.81	PQL	mg/Kg	
SL-513-SA5D-SB-9.0-10.0	BERYLLIUM	J	0.556	1.10	PQL	mg/Kg	
	BORON	J	9.71	11.0	PQL	mg/Kg	
	CADMIUM	J	0.289	1.10	PQL	mg/Kg	J (all detects)
	TIN	J	2.68	11.0	PQL	mg/Kg	
	Zirconium	J	2.61	5.52	PQL	mg/Kg	
SL-514-SA5D-SB-0.0-0.5	BERYLLIUM	J	0.979	1.12	PQL	mg/Kg	
	BORON	J	9.56	11.2	PQL	mg/Kg	J (all detects)
	TIN	J	3.14	11.2	PQL	mg/Kg	
	Zirconium	J	4.19	5.60	PQL	mg/Kg	
SL-514-SA5D-SB-4.0-5.0	BERYLLIUM	J	0.810	1.12	PQL	mg/Kg	
	BORON	J	10.6	11.2	PQL	mg/Kg	
	CADMIUM	J	0.149	1.12	PQL	mg/Kg	J (all detects)
	TIN	J	2.98	11.2	PQL	mg/Kg	
	Zirconium	J	3.34	5.60	PQL	mg/Kg	

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-509-SA5D-SB-0.0-0.5	SELENIUM	J	0.268	0.430	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0515	0.215	PQL	mg/Kg	
SL-509-SA5D-SB-4.0-5.0	SELENIUM	J	0.146	0.460	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0371	0.230	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH110 **Laboratory: LL**

EDD Filename: PH110 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-510-SA5D-SB-0.0-0.5	SELENIUM SILVER	J J	0.298 0.0452	0.437 0.218	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-510-SA5D-SB-4.0-5.0	SELENIUM SILVER	J J	0.165 0.0380	0.464 0.232	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-513-SA5D-SB-0.0-0.5	SELENIUM SILVER	J J	0.157 0.0537	0.449 0.224	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-513-SA5D-SB-4.0-5.0	SELENIUM SILVER	J J	0.176 0.0439	0.465 0.232	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-513-SA5D-SB-9.0-10.0	SELENIUM	J	0.208	0.441	PQL	mg/Kg	J (all detects)
SL-514-SA5D-SB-0.0-0.5	SELENIUM SILVER	J J	0.187 0.0455	0.448 0.224	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-514-SA5D-SB-4.0-5.0	SILVER	J	0.0401	0.224	PQL	mg/Kg	J (all detects)

Method: 7471B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-509-SA5D-SB-0.0-0.5	MERCURY	J	0.0129	0.0174	PQL	mg/Kg	J (all detects)
SL-509-SA5D-SB-4.0-5.0	MERCURY	J	0.0134	0.0182	PQL	mg/Kg	J (all detects)
SL-510-SA5D-SB-0.0-0.5	MERCURY	J	0.0114	0.0176	PQL	mg/Kg	J (all detects)
SL-510-SA5D-SB-4.0-5.0	MERCURY	J	0.0124	0.0183	PQL	mg/Kg	J (all detects)
SL-513-SA5D-SB-16.0-17.0	MERCURY	J	0.0103	0.0170	PQL	mg/Kg	J (all detects)
SL-513-SA5D-SB-4.0-5.0	MERCURY	J	0.0149	0.0193	PQL	mg/Kg	J (all detects)
SL-513-SA5D-SB-9.0-10.0	MERCURY	J	0.0125	0.0187	PQL	mg/Kg	J (all detects)
SL-514-SA5D-SB-4.0-5.0	MERCURY	J	0.0124	0.0180	PQL	mg/Kg	J (all detects)

Method: 8081B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-510-SA5D-SB-0.0-0.5	4,4'-DDT	J	0.47	1.9	PQL	ug/Kg	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH110 **Laboratory: LL**

EDD Filename: PH110 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: **8270D SIM**

Matrix: **SO**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
SL-509-SA5D-SB-0.0-0.5	2-METHYLNAPHTHALENE	J	0.89	1.8	PQL	ug/Kg	J (all detects)
	BENZO(B)FLUORANTHENE	J	1.6	1.8	PQL	ug/Kg	
	FLUORANTHENE	J	1.3	1.8	PQL	ug/Kg	
	NAPHTHALENE	J	1.6	1.8	PQL	ug/Kg	
	PHENANTHRENE	J	1.1	1.8	PQL	ug/Kg	
	PYRENE	J	0.90	1.8	PQL	ug/Kg	
SL-509-SA5D-SB-4.0-5.0	NAPHTHALENE	J	1.0	1.9	PQL	ug/Kg	J (all detects)
	PHENANTHRENE	J	1.0	1.9	PQL	ug/Kg	
SL-510-SA5D-SB-0.0-0.5	ANTHRACENE	J	0.80	1.8	PQL	ug/Kg	J (all detects)
	BENZO(B)FLUORANTHENE	J	1.4	1.8	PQL	ug/Kg	
	FLUORANTHENE	J	1.1	1.8	PQL	ug/Kg	
	FLUORENE	J	0.85	1.8	PQL	ug/Kg	
	NAPHTHALENE	J	1.3	1.8	PQL	ug/Kg	
SL-510-SA5D-SB-4.0-5.0	2-METHYLNAPHTHALENE	J	0.92	1.9	PQL	ug/Kg	J (all detects)
	NAPHTHALENE	J	1.4	1.9	PQL	ug/Kg	
SL-513-SA5D-SB-0.0-0.5	ANTHRACENE	J	0.45	1.9	PQL	ug/Kg	J (all detects)
	NAPHTHALENE	J	0.86	1.9	PQL	ug/Kg	
SL-513-SA5D-SB-4.0-5.0	NAPHTHALENE	J	1.1	1.9	PQL	ug/Kg	J (all detects)
SL-514-SA5D-SB-4.0-5.0	2-METHYLNAPHTHALENE	J	0.85	1.9	PQL	ug/Kg	J (all detects)
	PHENANTHRENE	J	1.0	1.9	PQL	ug/Kg	

LDC #: 30695M4
SDG #: PH110
Laboratory: Eurofins Lancaster Laboratories

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 11/11/13
Page: 1 of 1
Reviewer: CC
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: 9/18/13
II.	ICP/MS Tune	—	
III.	Calibration	—	
IV.	Blanks	SW	
V.	ICP Interference Check Sample (ICS) Analysis	—	
VI.	Matrix Spike Analysis	SW	MS/D
VII.	Duplicate Sample Analysis	SW	DUP
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	A	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	N	
XIV.	Field Duplicates	N	
XV	Field Blanks	SW	EB=1,2 FB=FB-041113 041613

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

(PH024) 3-2

Validated Samples:

1	EB1-091813	11	SL-509-SA5D-SB-0.0-0.5	21		31	
2	EB2-091813	12	SL-509-SA5D-SB-4.0-5.0	22		32	
3	SL-510-SA5D-SB-0.0-0.5	13	(X6) MS	23		33	
4	SL-510-SA5D-SB-4.0-5.0	14	↓ MSD	24		34	
5	SL-513-SA5D-SB-0.0-0.5	15	↓ DUP	25		35	
6	SL-513-SA5D-SB-4.0-5.0	16	(X7) MS (PH8)	26		36	
7	SL-513-SA5D-SB-9.0-10.0	17	↓ DUP	27		37	
8	SL-513-SA5D-SB-16.0-17.0	18	↓ MSD	28		38	
9	SL-514-SA5D-SB-0.0-0.5	19		29		39	
10	SL-514-SA5D-SB-4.0-5.0	20		30		40	

Notes: _____

LDC #: 30695M4

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: 4/16/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: All Soil

Analyte	Blank ID	Sample Identification												
	FB-041613 (SDG: PH032)	Action Limit	3	4	6	11								
Sn	0.0029	1.45												
Mo	0.0132	~~0.33~~ 6.6 m	0.329	0.216	0.435	0.232								

Sampling date: 9/18/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: All Soil

Analyte	Blank ID	Sample Identification											
	EB1-091813 (SDG: PH110)	Action Limit	3, 4, 6, 11										
Ca	0.0464	23.2											
Mo	0.0083	4.15	See FB										

Sampling date: 9/18/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: None

Analyte	Blank ID	Sample Identification											
	EB2-091813 (SDG: PH110)	Action Limit											
Ca	0.055	27.5											
Mo	0.0025	1.25											

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 #: 30695M4

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: a
2nd Reviewer: a

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			2.1	10.5	8.3	2.5									

Sample Concentration units, unless otherwise noted: mg/Kg Associated Samples: All Soil

					Sample Identification										
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/l)	Maximum ICB/CCB[a] (ug/l)	Action Level	3	4	6	11							
Mo			1.7	0.85	0.329 ~~0.33~~	0.216 ~~0.22~~	0.435	0.232							

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.

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RPD 064 -qual J/UJ/A

QUALITY ASSURANCE SUMMARY
FORM 5A(MS/MSD)
MATRIX SPIKE/MATRIX SPIKE DUPLICATE
SDG No.: PH110
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7203252BKG Matrix Spike Lab Sample ID: 7203252MS Matrix Spike Duplicate Lab Sample ID: 7203252MSD
Batch Id(s): P26337A

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		24851.9020		32350.9663		33236.1277		198.0198	198.0198	MG/KG	3787		4234		3			20	P
Antimony		0.7327	U	31.1495		31.4426		49.5050	49.5050	MG/KG	63	N	64	N	1		75 - 125	20	P
Arsenic		5.8079		20.0901		18.9624		14.8515	14.8515	MG/KG	96		89		6		75 - 125	20	P
Barium		110.4802		303.4079		300.1743		198.0198	198.0198	MG/KG	97		96		1		75 - 125	20	P
Beryllium		0.8119	B	5.5921		5.5188		4.9505	4.9505	MG/KG	97		95		1		75 - 125	20	P
Boron		10.3851		194.1594		194.7238		198.0198	198.0198	MG/KG	93		93		0		75 - 125	20	P
Cadmium		0.0752	U	4.2050		4.3020		4.9505	4.9505	MG/KG	85		87		2		75 - 125	20	P
Calcium		8926.2168		9941.3040		9970.0673		396.0396	396.0396	MG/KG	256		264		0			20	P
Chromium		33.5525		57.4574		57.5119		19.8020	19.8020	MG/KG	121		121		0		75 - 125	20	P
Cobalt		9.1129		53.3663		52.3594		49.5050	49.5050	MG/KG	89		87		2		75 - 125	20	P
Copper		15.6782		41.0703		40.9337		24.7525	24.7525	MG/KG	103		102		0		75 - 125	20	P
Iron		32089.5149		45155.2079		33127.9703		99.0099	99.0099	MG/KG	13196		1049	[redacted]	3	[redacted]		20	P
Lead		9.6069		24.2891		22.1782		14.8515	14.8515	MG/KG	99		85		9		75 - 125	20	P
Lithium		23.9564		121.5129		123.3465		99.0099	99.0099	MG/KG	99		100		1		75 - 125	20	P
Magnesium		6882.4693		7626.0891		7945.1446		198.0198	198.0198	MG/KG	376		537		4			20	P
Manganese		382.9515		495.7980		466.6663		49.5050	49.5050	MG/KG	228		169	*	6			20	P
Molybdenum		0.3703	B	179.7970		177.6564		198.0198	198.0198	MG/KG	91		90		1		75 - 125	20	P
Nickel		18.5683		65.2851		63.0475		49.5050	49.5050	MG/KG	94		90		3		75 - 125	20	P
Phosphorus		294.6485		443.5297		406.6030		99.0099	99.0099	MG/KG	150	N	113		9		75 - 125	20	P
Potassium		4029.8099		5445.7604		5548.3386		990.0990	990.0990	MG/KG	143		153		2			20	P
Selenium	78	0.1501	B	2.0119		2.2515		1.9802	1.9802	MG/KG	94		106		11		75 - 125	20	MS
Silver	107	0.0374	B	9.6059		10.2772		9.9010	9.9010	MG/KG	97		103		7		75 - 125	20	MS
Sodium		90.2663	B	1018.0267		1021.6970		990.0990	990.0990	MG/KG	94		94		0		75 - 125	20	P
Strontium	88	39.1089		45.6436		51.0693		7.9208	7.9208	MG/KG	83		151		11			20	MS
Thallium	203	0.3430		0.7028		0.7762		0.3960	0.3960	MG/KG	91		109		10		75 - 125	20	MS
Tin		2.9277	B	346.9327		344.9475		396.0396	396.0396	MG/KG	87		86		1		75 - 125	20	P
Titanium		978.8832		1615.1752		1627.6079		99.0099	99.0099	MG/KG	643		655		1			20	P
Vanadium		61.0861		131.5851		122.4139		49.5050	49.5050	MG/KG	142	N	124		7		75 - 125	20	P
Zinc		71.1584		117.9396		116.4752		49.5050	49.5050	MG/KG	94		92		1		75 - 125	20	P
Zirconium		2.9960	B	100.8327		100.8327		99.0099	99.0099	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.: PH110
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7203252BKG Duplicate Lab Sample ID: 7203252DUP
Batch ID(s): P26337A
Concentration Units: MG/KG

Analyte	Mass	Control Limit	Samples (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum			24851.9020		23242.3040		7		P
Antimony			0.7327	U	0.7327	U			P
Arsenic		4.0	5.8079		5.8168		0		P
Barium			110.4802		108.8653		1		P
Beryllium			0.8119	B	0.7941	B	2		P
Boron		9.9	10.3851		9.3248	B	11		P
Cadmium			0.0752	U	0.0752	U			P
Calcium			8926.2168		10329.4079		15		P
Chromium			33.5525		32.1129		4		P
Cobalt			9.1129		9.3366		2		P
Copper			15.6782		15.4515		1		P
Iron			32089.5149		31253.7228		3		P
Lead		3.0	9.6069		9.6238		0		P
Lithium			23.9564		22.9158		4		P
Magnesium			6882.4693		6682.5129		3		P
Manganese			382.9515		392.3455		2		P
Molybdenum			0.3703	B	0.1683	U	200		P
Nickel			18.5683		18.4733		1		P
Phosphorus			294.6485		302.1416		3		P
Potassium			4029.8099		3856.3515		4		P
Selenium	78		0.1501	B	0.1318	B	13		MS
Silver	107		0.0374	B	0.0319	B	16		MS
Sodium			90.2663	B	90.6040	B	0		P
Strontium	88		39.1089		39.5644		1		MS
Thallium	203	0.2	0.3430		0.3178		8		MS
Tin			2.9277	B	2.6743	B	9		P
Titanium			978.8832		876.5604		11		P
Vanadium			61.0861		58.1010		5		P
Zinc			71.1584		69.0267		3		P
Zirconium			2.9960	B	4.7554	B	45		P

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

ok by difference

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

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below MDL
B= Below LOQ

FLAGS:
* = Duplicate Out of Spec

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QUALITY ASSURANCE SUMMARY
FORM 6
DUPLICATES
SDG No.: PH110
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7203253BKG Duplicate Lab Sample ID: 7203253DUP
Batch ID(s): P26238B
Concentration Units: MG/KG

Analyte	Mass	Control Limit	Samples (S)	C	Duplicate (D)	C	RPD	Q	M
Mercury			0.0110	B	0.0099	U	200		CV

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:	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

Data Validation Report
Santa Susana Field Laboratory

Subarea 5D

SDG: PH111

Prepared for

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

Prepared by

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

December 11, 2013

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on September 19, 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 8081A
Polychlorinated Biphenyls (PCBs) by EPA SW 846 Method 8082A
Metals by EPA SW 846 Method 6010C, 6020A and 7471B
Herbicides by EPA SW 846 Method 8151A
Perchlorate by EPA Method 6850
Total Petroleum Hydrocarbons (TPH) as Gasoline by EPA SW 846 Method 8015M
TPH as Extractables by EPA SW 846 Method 8015M
Dioxins and Dibenzofurans by EPA Method 1613B

Wet Chemistry:
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 control sample/laboratory control sample duplicates (LCS/LCSD), method blanks, trip blanks, equipment blanks, field blanks and field duplicates. No samples in this SDG were subjected to Level IV evaluation.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of ICB/CCBs, 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 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.

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 PCBs. No data were qualified due to high %Rs since the associated results were non-detected.

VI. ICP Interference Check Sample (ICS) Analysis

ICP interference check data were not reviewed for level III.

VII. Matrix Spike/Matrix Spike Duplicates

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

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 PCBs. No data were qualified due to high %Rs since the associated results were non-detected. 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 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 PH111	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 pesticides, perchlorate and dioxins. All RPDs were within QC limits with the exception of several dioxins. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The field duplicate result comparisons are provided in Enclosure I.

XIV. Field Blank Samples

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

One equipment blank (from SDG PH110) was collected and analyzed for SVOCs, pesticides, PCBs, metals, herbicides, perchlorate, TPH as gasoline, TPH as extractables, dioxins and hexavalent chromium. The equipment blank had detections for SVOCs, metals and dioxins. The associated sample results were not detected or were significantly greater than the concentrations found in the equipment blank, therefore no data were qualified.

One field blank (from SDG PH032) was collected and analyzed for SVOCs, pesticides, PCBs, metals, herbicides, perchlorate, TPH as gasoline, TPH as extractables, dioxins and hexavalent chromium. The field blank had detections for SVOCs, metals and dioxins. The associated sample results were not detected or were significantly greater than the concentrations found in the field blank, therefore 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
19-Sep-2013	TB-091913	7204675	TB	5030B	8015M	III
19-Sep-2013	SL-580-SA5D-SB-0.0-0.5	7204681	N	3060A	7199	III
19-Sep-2013	SL-580-SA5D-SB-0.0-0.5	7204681	N	METHOD	6850	III
19-Sep-2013	SL-579-SA5D-SB-0.0-0.5	7204677	N	3546	8081B	III
19-Sep-2013	SL-579-SA5D-SB-0.0-0.5	7204677	N	METHOD	1613B	III
19-Sep-2013	SL-579-SA5D-SB-0.0-0.5	7204677	N	METHOD	6850	III
19-Sep-2013	SL-579-SA5D-SB-0.0-0.5MS	7204678	MS	3546	8081B	III
19-Sep-2013	SL-579-SA5D-SB-0.0-0.5MS	7204678	MS	METHOD	1613B	III
19-Sep-2013	SL-579-SA5D-SB-0.0-0.5MS	7204678	MS	METHOD	6850	III
19-Sep-2013	SL-579-SA5D-SB-0.0-0.5MSD	7204679	MSD	3546	8081B	III
19-Sep-2013	SL-579-SA5D-SB-0.0-0.5MSD	7204679	MSD	METHOD	1613B	III
19-Sep-2013	SL-579-SA5D-SB-0.0-0.5MSD	7204679	MSD	METHOD	6850	III
19-Sep-2013	SL-879-SA5D-SB-0.0-0.5	7204680	FD	3546	8081B	III
19-Sep-2013	SL-879-SA5D-SB-0.0-0.5	7204680	FD	METHOD	1613B	III
19-Sep-2013	SL-879-SA5D-SB-0.0-0.5	7204680	FD	METHOD	6850	III
19-Sep-2013	SL-581-SA5D-SB-0.0-0.5	7204682	N	3060A	7199	III
19-Sep-2013	SL-581-SA5D-SB-0.0-0.5	7204682	N	3546	8270D SIM	III
19-Sep-2013	SL-581-SA5D-SB-2.5-3.5	7204683	N	3060A	7199	III
19-Sep-2013	SL-581-SA5D-SB-2.5-3.5	7204683	N	3546	8270D SIM	III
19-Sep-2013	SL-577-SA5D-SB-0.0-0.5	7204676	N	3050B	6010C	III
19-Sep-2013	SL-577-SA5D-SB-0.0-0.5	7204676	N	3050B	6020A	III
19-Sep-2013	SL-577-SA5D-SB-0.0-0.5	7204676	N	3546	8015M	III
19-Sep-2013	SL-577-SA5D-SB-0.0-0.5	7204676	N	3546	8082A	III
19-Sep-2013	SL-577-SA5D-SB-0.0-0.5	7204676	N	3546	8270D SIM	III
19-Sep-2013	SL-577-SA5D-SB-0.0-0.5	7204676	N	METHOD	1613B	III
19-Sep-2013	SL-577-SA5D-SB-0.0-0.5	7204676	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
19-Sep-2013	SL-578-SA5D-SB-0.0-0.5	7204686	N	3546	8015M	III
19-Sep-2013	SL-578-SA5D-SB-0.0-0.5	7204686	N	3546	8270D SIM	III
19-Sep-2013	SL-578-SA5D-SB-0.0-0.5	7204686	N	3550B	8151A	III
19-Sep-2013	SL-578-SA5D-SB-0.0-0.5	7204686	N	METHOD	1613B	III
19-Sep-2013	SL-576-SA5D-SB-0.0-0.5	7204684	N	3546	8015M	III
19-Sep-2013	SL-576-SA5D-SB-0.0-0.5	7204684	N	3546	8081B	III
19-Sep-2013	SL-576-SA5D-SB-0.0-0.5	7204684	N	3550B	8151A	III
19-Sep-2013	SL-576-SA5D-SB-0.0-0.5	7204684	N	METHOD	1613B	III
19-Sep-2013	SL-576-SA5D-SB-3.5-4.5	7204685	N	3546	8015M	III
19-Sep-2013	SL-576-SA5D-SB-3.5-4.5	7204685	N	3546	8081B	III
19-Sep-2013	SL-576-SA5D-SB-3.5-4.5	7204685	N	3550B	8151A	III
19-Sep-2013	SL-576-SA5D-SB-3.5-4.5	7204685	N	5035A	8015M	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: PH111 **Laboratory: LL**

EDD Filename: PH111 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-577-SA5D-SB-0.0-0.5 *Collected:* 9/19/2013 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
ARSENIC	1.81	J	0.687	MDL	3.93	PQL	mg/Kg	J	Z
BERYLLIUM	0.544	J	0.0658	MDL	0.982	PQL	mg/Kg	J	Z
CADMIUM	0.799	J	0.0746	MDL	0.982	PQL	mg/Kg	J	Z
TIN	2.37	J	0.216	MDL	9.82	PQL	mg/Kg	U	B

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-577-SA5D-SB-0.0-0.5 *Collected:* 9/19/2013 10:40:00 *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.253	J	0.0982	MDL	0.393	PQL	mg/Kg	J	Z

Sample ID: SL-577-SA5D-SB-0.0-0.5 *Collected:* 9/19/2013 10:40:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
THALLIUM	0.187	J	0.0295	MDL	0.196	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-576-SA5D-SB-0.0-0.5 *Collected:* 9/19/2013 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	3.44	JB	0.0169	MDL	4.91	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.748	JB	0.0120	MDL	4.91	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.104	JB	0.0172	MDL	4.91	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0940	JB	0.0264	MDL	4.91	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.156	JB	0.0229	MDL	4.91	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.377	JB	0.0285	MDL	4.91	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.149	JB	0.0214	MDL	4.91	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.397	JB	0.0254	MDL	4.91	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.294	JB	0.0218	MDL	4.91	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0919	JBQ	0.0227	MDL	4.91	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: PH111 **Laboratory: LL**

EDD Filename: PH111 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-576-SA5D-SB-0.0-0.5** *Collected:* **9/19/2013 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
1,2,3,7,8-PECDF	0.366	JB	0.0226	MDL	4.91	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.160	JB	0.0207	MDL	4.91	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.475	JB	0.0220	MDL	4.91	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.278	JQ	0.0493	MDL	0.982	PQL	ng/Kg	J	Z
OCDF	1.34	JB	0.0162	MDL	9.82	PQL	ng/Kg	J	Z

Sample ID: **SL-577-SA5D-SB-0.0-0.5** *Collected:* **9/19/2013 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	0.148	JBQ	0.0219	MDL	4.98	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0872	JB	0.0102	MDL	4.98	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0451	JB	0.0151	MDL	4.98	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0610	JBQ	0.0172	MDL	4.98	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0751	JBQ	0.0174	MDL	4.98	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0773	JBQ	0.0183	MDL	4.98	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0551	JBQ	0.0153	MDL	4.98	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0378	JBQ	0.0174	MDL	4.98	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0745	JB	0.0198	MDL	4.98	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0627	JBQ	0.0267	MDL	4.98	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.107	JBQ	0.0199	MDL	4.98	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0553	JBQ	0.0167	MDL	4.98	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0442	JBQ	0.0199	MDL	4.98	PQL	ng/Kg	U	B
2,3,7,8-TCDD	0.0714	JBQ	0.0514	MDL	0.996	PQL	ng/Kg	U	B
OCDD	0.620	JB	0.0221	MDL	9.96	PQL	ng/Kg	U	B
OCDF	0.181	JBQ	0.0353	MDL	9.96	PQL	ng/Kg	U	B

Sample ID: **SL-578-SA5D-SB-0.0-0.5** *Collected:* **9/19/2013 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	2.40	JB	0.0182	MDL	5.08	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.597	JB	0.0142	MDL	5.08	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0881	JBQ	0.0200	MDL	5.08	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0716	JB	0.0242	MDL	5.08	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.113	JBQ	0.0183	MDL	5.08	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.320	JB	0.0249	MDL	5.08	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: PH111 **Laboratory: LL**

EDD Filename: PH111 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-578-SA5D-SB-0.0-0.5** *Collected:* **9/19/2013 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
1,2,3,6,7,8-HXCDF	0.143	JB	0.0173	MDL	5.08	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.348	JB	0.0228	MDL	5.08	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.504	JB	0.0209	MDL	5.08	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.0832	JBQ	0.0247	MDL	5.08	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.234	JB	0.0203	MDL	5.08	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.150	JB	0.0172	MDL	5.08	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.364	JBQ	0.0196	MDL	5.08	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.175	J	0.0451	MDL	1.02	PQL	ng/Kg	J	Z
OCDF	1.32	JB	0.0131	MDL	10.2	PQL	ng/Kg	J	Z

Sample ID: **SL-579-SA5D-SB-0.0-0.5** *Collected:* **9/19/2013 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	1.36	JB	0.0230	MDL	4.98	PQL	ng/Kg	J	Z, FD
1,2,3,4,6,7,8-HPCDF	0.422	JB	0.0137	MDL	4.98	PQL	ng/Kg	J	Z, FD
1,2,3,4,7,8,9-HPCDF	0.0917	JB	0.0196	MDL	4.98	PQL	ng/Kg	UJ	B, FD
1,2,3,4,7,8-HxCDD	0.0742	JB	0.0255	MDL	4.98	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.125	JBQ	0.0259	MDL	4.98	PQL	ng/Kg	UJ	B, FD
1,2,3,6,7,8-HXCDD	0.316	JB	0.0272	MDL	4.98	PQL	ng/Kg	J	Z, FD
1,2,3,6,7,8-HXCDF	0.121	JB	0.0236	MDL	4.98	PQL	ng/Kg	UJ	B, FD
1,2,3,7,8,9-HXCDD	0.390	JB	0.0255	MDL	4.98	PQL	ng/Kg	J	Z, FD
1,2,3,7,8,9-HXCDF	0.506	JB	0.0257	MDL	4.98	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	4.98	U	0.0281	MDL	4.98	PQL	ng/Kg	UJ	FD
1,2,3,7,8-PECDF	0.226	JBQ	0.0222	MDL	4.98	PQL	ng/Kg	UJ	B, FD
2,3,4,6,7,8-HXCDF	0.139	JBQ	0.0253	MDL	4.98	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.235	JB	0.0217	MDL	4.98	PQL	ng/Kg	UJ	B, FD
2,3,7,8-TCDD	0.996	U	0.0491	MDL	0.996	PQL	ng/Kg	UJ	FD
2,3,7,8-TCDF	0.113	JQ	0.0482	MDL	0.996	PQL	ng/Kg	J	Z, FD
OCDD	12.9	B	0.0166	MDL	9.96	PQL	ng/Kg	J	Q, Q, FD
OCDF	0.803	JB	0.0250	MDL	9.96	PQL	ng/Kg	UJ	B, FD

Sample ID: **SL-879-SA5D-SB-0.0-0.5** *Collected:* **9/19/2013 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	5.30	B	0.0297	MDL	4.90	PQL	ng/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: PH111 **Laboratory: LL**

EDD Filename: PH111 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-879-SA5D-SB-0.0-0.5** *Collected:* **9/19/2013 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-HPCDF	1.05	JB	0.0184	MDL	4.90	PQL	ng/Kg	J	Z, FD
1,2,3,4,7,8,9-HPCDF	0.170	JBQ	0.0277	MDL	4.90	PQL	ng/Kg	UJ	B, FD
1,2,3,4,7,8-HxCDD	0.121	JBQ	0.0310	MDL	4.90	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.212	JB	0.0337	MDL	4.90	PQL	ng/Kg	UJ	B, FD
1,2,3,6,7,8-HXCDD	0.697	JB	0.0321	MDL	4.90	PQL	ng/Kg	J	Z, FD
1,2,3,6,7,8-HXCDF	0.220	JB	0.0291	MDL	4.90	PQL	ng/Kg	UJ	B, FD
1,2,3,7,8,9-HXCDD	0.882	JB	0.0293	MDL	4.90	PQL	ng/Kg	J	Z, FD
1,2,3,7,8,9-HXCDF	0.745	JB	0.0353	MDL	4.90	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.166	JBQ	0.0370	MDL	4.90	PQL	ng/Kg	UJ	B, FD
1,2,3,7,8-PECDF	0.588	JB	0.0323	MDL	4.90	PQL	ng/Kg	J	Z, FD
2,3,4,6,7,8-HXCDF	0.208	JB	0.0299	MDL	4.90	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.664	JB	0.0316	MDL	4.90	PQL	ng/Kg	J	Z, FD
2,3,7,8-TCDD	0.0995	JBQ	0.0405	MDL	0.980	PQL	ng/Kg	UJ	B, FD
2,3,7,8-TCDF	0.307	JQ	0.0778	MDL	0.980	PQL	ng/Kg	J	Z, FD
OCDD	54.4	B	0.0278	MDL	9.80	PQL	ng/Kg	J	FD
OCDF	2.82	JB	0.0270	MDL	9.80	PQL	ng/Kg	J	Z, FD

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: **SL-576-SA5D-SB-3.5-4.5** *Collected:* **9/19/2013 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)	5.1	J	2.1	MDL	5.3	PQL	mg/Kg	J	Z

Sample ID: **SL-578-SA5D-SB-0.0-0.5** *Collected:* **9/19/2013 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
EFH (C15-C20)	2.6	J	2.1	MDL	5.3	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: PH111 **Laboratory: LL**

EDD Filename: PH111 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 8081B **Matrix: SO**

Sample ID: SL-576-SA5D-SB-0.0-0.5 *Collected:* 9/19/2013 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
4,4'-DDT	0.40	J	0.35	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: SL-579-SA5D-SB-0.0-0.5 *Collected:* 9/19/2013 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
4,4'-DDE	0.86	J	0.34	MDL	1.7	PQL	ug/Kg	J	Z
4,4'-DDT	0.98	J	0.36	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: SL-879-SA5D-SB-0.0-0.5 *Collected:* 9/19/2013 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
4,4'-DDE	0.82	J	0.33	MDL	1.7	PQL	ug/Kg	J	Z
4,4'-DDT	1.0	J	0.35	MDL	1.7	PQL	ug/Kg	J	Z

Method Category: SVOA

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

Sample ID: SL-578-SA5D-SB-0.0-0.5 *Collected:* 9/19/2013 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-METHYLNAPHTHALENE	1.4	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: SL-578-SA5D-SB-0.0-0.5 *Collected:* 9/19/2013 12:35:00 *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(A)ANTHRACENE	1.2	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(A)PYRENE	1.2	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(G,H,I)PERYLENE	1.1	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(K)FLUORANTHENE	0.89	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
INDENO(1,2,3-CD)PYRENE	0.86	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: SL-581-SA5D-SB-0.0-0.5 *Collected:* 9/19/2013 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
2-METHYLNAPHTHALENE	1.6	J	0.67	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: PH111 **Laboratory: LL**

EDD Filename: PH111 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: **SVOA**

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

Sample ID: **SL-581-SA5D-SB-0.0-0.5** ***Collected:*** **9/19/2013 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	0.98	J	0.67	MDL	1.7	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	12	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	1.1	J	0.67	MDL	1.7	PQL	ug/Kg	J	Z
PHENANTHRENE	0.87	J	0.67	MDL	1.7	PQL	ug/Kg	J	Z
PYRENE	0.90	J	0.67	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: **SL-581-SA5D-SB-2.5-3.5** ***Collected:*** **9/19/2013 9:40:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
NAPHTHALENE	0.74	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: PH111 **Laboratory: LL**

EDD Filename: PH111 **eQAPP Name: CDM_SSFL_131101_Lan**

Reason Code Legend

Reason Code	*Description*
B	Method Blank Contamination
E	Matrix Spike Precision
FD	Field Duplicate Precision
L	Laboratory Control Spike Upper Estimation
Q	Matrix Spike Precision
Q	Matrix Spike Upper Estimation
S	Surrogate/Tracer Recovery Upper Estimation
Z	Reporting Limit Trace Value

* denotes a non-reportable result

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

Enclosure I

EPA Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control
Outlier Reports

PH111

Method Blank Outlier Report

Lab Reporting Batch ID: PH111 **Laboratory: LL**

EDD Filename: PH111 **eQAPP Name: CDM_SSFL_131101_Lan**

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2680B370155	9/27/2013 1:55:00 AM	1,2,3,4,6,7,8-HPCDD	0.127 ng/Kg	SL-576-SA5D-SB-0.0-0.5
		1,2,3,4,6,7,8-HPCDF	0.0505 ng/Kg	SL-577-SA5D-SB-0.0-0.5
		1,2,3,4,7,8,9-HPCDF	0.0860 ng/Kg	SL-578-SA5D-SB-0.0-0.5
		1,2,3,4,7,8-HxCDD	0.0483 ng/Kg	SL-579-SA5D-SB-0.0-0.5
		1,2,3,4,7,8-HXCDF	0.0573 ng/Kg	SL-879-SA5D-SB-0.0-0.5
		1,2,3,6,7,8-HXCDD	0.0406 ng/Kg	
		1,2,3,6,7,8-HXCDF	0.0517 ng/Kg	
		1,2,3,7,8,9-HXCDD	0.0644 ng/Kg	
		1,2,3,7,8,9-HXCDF	0.0692 ng/Kg	
		1,2,3,7,8-PECDD	0.103 ng/Kg	
		1,2,3,7,8-PECDF	0.0673 ng/Kg	
		2,3,4,6,7,8-HXCDF	0.0444 ng/Kg	
		2,3,4,7,8-PECDF	0.0538 ng/Kg	
		2,3,7,8-TCDD	0.104 ng/Kg	
		OCDD	0.212 ng/Kg	
		OCDF	0.223 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-576-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.104 ng/Kg	0.104U ng/Kg
SL-576-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.0940 ng/Kg	0.0940U ng/Kg
SL-576-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.156 ng/Kg	0.156U ng/Kg
SL-576-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.149 ng/Kg	0.149U ng/Kg
SL-576-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.294 ng/Kg	0.294U ng/Kg
SL-576-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.0919 ng/Kg	0.0919U ng/Kg
SL-576-SA5D-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.160 ng/Kg	0.160U ng/Kg
SL-577-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDD	0.148 ng/Kg	0.148U ng/Kg
SL-577-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDF	0.0872 ng/Kg	0.0872U ng/Kg
SL-577-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0451 ng/Kg	0.0451U ng/Kg
SL-577-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.0610 ng/Kg	0.0610U ng/Kg
SL-577-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.0751 ng/Kg	0.0751U ng/Kg
SL-577-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDD	0.0773 ng/Kg	0.0773U ng/Kg
SL-577-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.0551 ng/Kg	0.0551U ng/Kg
SL-577-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDD	0.0378 ng/Kg	0.0378U ng/Kg
SL-577-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.0745 ng/Kg	0.0745U ng/Kg
SL-577-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.0627 ng/Kg	0.0627U ng/Kg
SL-577-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.107 ng/Kg	0.107U ng/Kg
SL-577-SA5D-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0553 ng/Kg	0.0553U ng/Kg
SL-577-SA5D-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.0442 ng/Kg	0.0442U ng/Kg
SL-577-SA5D-SB-0.0-0.5(RES)	2,3,7,8-TCDD	0.0714 ng/Kg	0.0714U ng/Kg
SL-577-SA5D-SB-0.0-0.5(RES)	OCDD	0.620 ng/Kg	0.620U ng/Kg
SL-577-SA5D-SB-0.0-0.5(RES)	OCDF	0.181 ng/Kg	0.181U ng/Kg
SL-578-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0881 ng/Kg	0.0881U ng/Kg
SL-578-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.0716 ng/Kg	0.0716U ng/Kg
SL-578-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.113 ng/Kg	0.113U ng/Kg
SL-578-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.143 ng/Kg	0.143U ng/Kg
SL-578-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.0832 ng/Kg	0.0832U ng/Kg
SL-578-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.234 ng/Kg	0.234U ng/Kg

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

Method Blank Outlier Report

Lab Reporting Batch ID: PH111 **Laboratory: LL**

EDD Filename: PH111 **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-578-SA5D-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.150 ng/Kg	0.150U ng/Kg
SL-579-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0917 ng/Kg	0.0917U ng/Kg
SL-579-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.0742 ng/Kg	0.0742U ng/Kg
SL-579-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.125 ng/Kg	0.125U ng/Kg
SL-579-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.121 ng/Kg	0.121U ng/Kg
SL-579-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.226 ng/Kg	0.226U ng/Kg
SL-579-SA5D-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.139 ng/Kg	0.139U ng/Kg
SL-579-SA5D-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.235 ng/Kg	0.235U ng/Kg
SL-579-SA5D-SB-0.0-0.5(RES)	OCDF	0.803 ng/Kg	0.803U ng/Kg
SL-879-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.170 ng/Kg	0.170U ng/Kg
SL-879-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.121 ng/Kg	0.121U ng/Kg
SL-879-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.212 ng/Kg	0.212U ng/Kg
SL-879-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.220 ng/Kg	0.220U ng/Kg
SL-879-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.166 ng/Kg	0.166U ng/Kg
SL-879-SA5D-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.208 ng/Kg	0.208U ng/Kg
SL-879-SA5D-SB-0.0-0.5(RES)	2,3,7,8-TCDD	0.0995 ng/Kg	0.0995U ng/Kg

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P26837AB221826	9/27/2013 6:26:00 PM	CALCIUM TIN ZINC	7.61 mg/Kg 1.45 mg/Kg 0.570 mg/Kg	SL-577-SA5D-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-577-SA5D-SB-0.0-0.5(RES)	TIN	2.37 mg/Kg	2.37U mg/Kg

Surrogate Outlier Report

Lab Reporting Batch ID: PH111 **Laboratory: LL**

EDD Filename: PH111 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: **8082A**
Matrix: **SO**

Sample ID (Analysis Type)	*Surrogate*	*Sample % Recovery*	*% Recovery Limits*	*Affected Compounds*	*Flag*
SL-577-SA5D-SB-0.0-0.5	DECACHLOROBIPHENYL	121	45.00-120.00	All Target Analytes	J (all detects)

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH111 **Laboratory: LL**

EDD Filename: PH111 **eQAPP Name: CDM_SSFL_131101_Lan**

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

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
SL-579-SA5D-SB-0.0-0.5MSD (SL-579-SA5D-SB-0.0-0.5)	OCDD	-	230	40.00-135.00	73 (20.00)	OCDD	J (all detects)

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH111 **Laboratory: LL**

EDD Filename: PH111 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: **8082A**
Matrix: **SO**

QC Sample ID (Associated Samples)	*Compound*	*LCS %R*	*LCSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
P32699AQ241313A **P32699AY241254A** (SL-577-SA5D-SB-0.0-0.5)	Aroclor 5442	96	94	62.00-87.00	-	Aroclor 5432 Aroclor 5442 Aroclor 5460	J (all detects)

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

Field Duplicate RPD Report

Lab Reporting Batch ID: PH111 **Laboratory: LL**

EDD Filename: PH111 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 160.3M
Matrix: SO

Analyte	Concentration (%)		Sample RPD	eQAPP RPD	Flag
	SL-579-SA5D-SB-0.0-0.5	SL-879-SA5D-SB-0.0-0.5			
MOISTURE	1.7	1.7	0		No Qualifiers Applied

Method: 1613B
Matrix: SO

Analyte	Concentration (ng/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-579-SA5D-SB-0.0-0.5	SL-879-SA5D-SB-0.0-0.5			
1,2,3,4,7,8-HxCDD	0.0742	0.121	48	50.00	No Qualifiers Applied
1,2,3,7,8,9-HXCDF	0.506	0.745	38	50.00	
2,3,4,6,7,8-HXCDF	0.139	0.208	40	50.00	
1,2,3,4,6,7,8-HPCDD	1.36	5.30	118	50.00	J(all detects) UJ(all non-detects)
1,2,3,4,6,7,8-HPCDF	0.422	1.05	85	50.00	
1,2,3,4,7,8,9-HPCDF	0.0917	0.170	60	50.00	
1,2,3,4,7,8-HXCDF	0.125	0.212	52	50.00	
1,2,3,6,7,8-HXCDD	0.316	0.697	75	50.00	
1,2,3,6,7,8-HXCDF	0.121	0.220	58	50.00	
1,2,3,7,8,9-HXCDD	0.390	0.882	77	50.00	
1,2,3,7,8-PECDD	4.98 U	0.166	200	50.00	
1,2,3,7,8-PECDF	0.226	0.588	89	50.00	
2,3,4,7,8-PECDF	0.235	0.664	95	50.00	
2,3,7,8-TCDD	0.996 U	0.0995	200	50.00	
2,3,7,8-TCDF	0.113	0.307	92	50.00	
OCDD	12.9	54.4	123	50.00	
OCDF	0.803	2.82	111	50.00	

Method: 8081B
Matrix: SO

Analyte	Concentration (ug/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-579-SA5D-SB-0.0-0.5	SL-879-SA5D-SB-0.0-0.5			
4,4'-DDE	0.86	0.82	5	50.00	No Qualifiers Applied
4,4'-DDT	0.98	1.0	2	50.00	

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

Reporting Limit Outliers

Lab Reporting Batch ID: PH111 **Laboratory: LL**

EDD Filename: PH111 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: **1613B**

Matrix: **SO**

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-576-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	3.44	4.91	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.748	4.91	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.104	4.91	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.0940	4.91	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.156	4.91	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.377	4.91	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.149	4.91	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.397	4.91	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	0.294	4.91	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.0919	4.91	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.366	4.91	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.160	4.91	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.475	4.91	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.278	0.982	PQL	ng/Kg	
	OCDF	JB	1.34	9.82	PQL	ng/Kg	
SL-577-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JBQ	0.148	4.98	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.0872	4.98	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.0451	4.98	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0610	4.98	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0751	4.98	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.0773	4.98	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0551	4.98	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.0378	4.98	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	0.0745	4.98	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.0627	4.98	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.107	4.98	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0553	4.98	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0442	4.98	PQL	ng/Kg	
	2,3,7,8-TCDD	JBQ	0.0714	0.996	PQL	ng/Kg	
	OCDD	JB	0.620	9.96	PQL	ng/Kg	
	OCDF	JBQ	0.181	9.96	PQL	ng/Kg	
SL-578-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	2.40	5.08	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.597	5.08	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0881	5.08	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.0716	5.08	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.113	5.08	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.320	5.08	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.143	5.08	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.348	5.08	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	0.504	5.08	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.0832	5.08	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.234	5.08	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.150	5.08	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.364	5.08	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.175	1.02	PQL	ng/Kg	
	OCDF	JB	1.32	10.2	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH111 **Laboratory: LL**

EDD Filename: PH111 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-579-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	1.36	4.98	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JB	0.422	4.98	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.0917	4.98	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.0742	4.98	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.125	4.98	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.316	4.98	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.121	4.98	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.390	4.98	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.506	4.98	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.226	4.98	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.139	4.98	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.235	4.98	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.113	0.996	PQL	ng/Kg	
	OCDF	JB	0.803	9.96	PQL	ng/Kg	
SL-879-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDF	JB	1.05	4.90	PQL	ng/Kg	J (all detects)
	1,2,3,4,7,8,9-HPCDF	JBQ	0.170	4.90	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.121	4.90	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.212	4.90	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.697	4.90	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.220	4.90	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.882	4.90	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.745	4.90	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.166	4.90	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.588	4.90	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.208	4.90	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.664	4.90	PQL	ng/Kg	
	2,3,7,8-TCDD	JBQ	0.0995	0.980	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.307	0.980	PQL	ng/Kg	
	OCDF	JB	2.82	9.80	PQL	ng/Kg	

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-577-SA5D-SB-0.0-0.5	ARSENIC	J	1.81	3.93	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.544	0.982	PQL	mg/Kg	
	CADMIUM	J	0.799	0.982	PQL	mg/Kg	
	TIN	J	2.37	9.82	PQL	mg/Kg	

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-577-SA5D-SB-0.0-0.5	SELENIUM	J	0.253	0.393	PQL	mg/Kg	J (all detects)
	THALLIUM	J	0.187	0.196	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH111 **Laboratory: LL**

EDD Filename: PH111 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 8015M

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-576-SA5D-SB-3.5-4.5	EFH (C21-C30)	J	5.1	5.3	PQL	mg/Kg	J (all detects)
SL-578-SA5D-SB-0.0-0.5	EFH (C15-C20)	J	2.6	5.3	PQL	mg/Kg	J (all detects)

Method: 8081B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-576-SA5D-SB-0.0-0.5	4,4'-DDT	J	0.40	1.7	PQL	ug/Kg	J (all detects)
SL-579-SA5D-SB-0.0-0.5	4,4'-DDE	J	0.86	1.7	PQL	ug/Kg	J (all detects)
	4,4'-DDT	J	0.98	1.7	PQL	ug/Kg	
SL-879-SA5D-SB-0.0-0.5	4,4'-DDE	J	0.82	1.7	PQL	ug/Kg	J (all detects)
	4,4'-DDT	J	1.0	1.7	PQL	ug/Kg	

Method: 8270D SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-578-SA5D-SB-0.0-0.5	1-METHYLNAPHTHALENE	J	1.4	1.8	PQL	ug/Kg	J (all detects)
	BENZO(A)ANTHRACENE	J	1.2	1.8	PQL	ug/Kg	
	BENZO(A)PYRENE	J	1.2	1.8	PQL	ug/Kg	
	BENZO(G,H,I)PERYLENE	J	1.1	1.8	PQL	ug/Kg	
	BENZO(K)FLUORANTHENE	J	0.89	1.8	PQL	ug/Kg	
	INDENO(1,2,3-CD)PYRENE	J	0.86	1.8	PQL	ug/Kg	
SL-581-SA5D-SB-0.0-0.5	2-METHYLNAPHTHALENE	J	1.6	1.7	PQL	ug/Kg	J (all detects)
	BENZO(B)FLUORANTHENE	J	0.98	1.7	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	12	18	PQL	ug/Kg	
	CHRYSENE	J	1.1	1.7	PQL	ug/Kg	
	FLUORANTHENE	J	1.1	1.7	PQL	ug/Kg	
	PHENANTHRENE	J	0.87	1.7	PQL	ug/Kg	
	PYRENE	J	0.90	1.7	PQL	ug/Kg	
SL-581-SA5D-SB-2.5-3.5	NAPHTHALENE	J	0.74	1.8	PQL	ug/Kg	J (all detects)

LDC #: 30695N4 **VALIDATION COMPLETENESS WORKSHEET** Date: 11/11/13
SDG #: PH111 ADR Page: 1 of 1
Laboratory: Eurofins Lancaster Laboratories Reviewer: AL
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: 9/19/13
II.	ICP/MS Tune	—	
III.	Calibration	—	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	—	
VI.	Matrix Spike Analysis	N	CS
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	NA	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 = EB1-091813 (PH116) FB = FB-041113 (PH0029) 041613 32

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-577-SA5D-SB-0.0-0.5	11		21		31	
2		12		22		32	
3		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	

Notes: _____

LDC #: 30695N4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: dc
2nd Reviewer: lw

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

Blank units: mg/L **Associated sample units:** mg/Kg Reason: F
Sampling date: 4/16/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All Soil

Analyte	Blank ID	Sample Identification												
	FB-041613 (SDG: PH032)	Action Limit	No Qualifiers											
Sn	0.0029	1.45												
Mo	0.0132	6.6												

Sampling date: 9/18/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All Soil

Analyte	Blank ID	Sample Identification												
	EB1-091813 (SDG: PH110)	Action Limit	No Qualifiers											
Ca	0.0464	23.2												
Mo	0.0083	4.15												

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 5D

SDG: PH112

Prepared for

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Prepared by

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December 11, 2013

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on September 23, 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 8081A
Polychlorinated Biphenyls (PCBs) by EPA SW 846 Method 8082A
Metals by EPA SW 846 Method 6010C, 6020A and 7471B
Herbicides by EPA SW 846 Method 8151A
Perchlorate by EPA Method 6850
Total Petroleum Hydrocarbons (TPH) as Gasoline by EPA SW 846 Method 8015M
TPH as Extractables by EPA SW 846 Method 8015M
Dioxins and Dibenzofurans by EPA Method 1613B

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

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

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

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

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 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.

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 several samples for PCBs. The associated sample results were qualified as detected estimated (J) as applicable. The details regarding the qualification of data are provided in Enclosure I.

VI. ICP Interference Check Sample (ICS) Analysis

ICP interference check data were not reviewed for level III.

VII. Matrix Spike/Matrix Spike Duplicates

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

X. Internal Standards

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

XI. ICP Serial Dilution

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

Diluted Sample	Analyte	%D (Limits)	Associated Samples	Flag	A or P
SL-568-SA5D-SB-2.5-3.5	Zinc	16 (≤10)	All soil samples in SDG PH112	J (all detects) UJ (all non-detects)	A

The associated sample results were qualified as detected estimated (J).

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 PH112	All compounds reported as detected below the RL.	J (all detects)	A

XIII. Field Duplicate Samples

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

XIV. Field Blank Samples

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

One equipment blank (from SDG PH114) was collected and analyzed for SVOCs, pesticides, PCBs, metals, herbicides, perchlorate, TPH as gasoline, TPH as extractables and dioxins. The

equipment blank had detections for SVOCs, metals and dioxins. The associated sample results were not detected or were significantly greater than the concentrations found in the equipment blank, therefore no data were qualified.

One field blank (from SDG PH032) was collected and analyzed for SVOCs, pesticides, PCBs, metals, herbicides, perchlorate, TPH as gasoline, TPH as extractables and dioxins. The field blank had detections for 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

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-Sep-2013	SL-568-SA5D-SB-0.0-0.5	7208981	N	3050B	6010C	III
23-Sep-2013	SL-568-SA5D-SB-0.0-0.5	7208981	N	3050B	6020A	III
23-Sep-2013	SL-568-SA5D-SB-0.0-0.5	7208981	N	3546	8015M	III
23-Sep-2013	SL-568-SA5D-SB-0.0-0.5	7208981	N	3546	8081B	III
23-Sep-2013	SL-568-SA5D-SB-0.0-0.5	7208981	N	3546	8082A	III
23-Sep-2013	SL-568-SA5D-SB-0.0-0.5	7208981	N	3546	8270D SIM	III
23-Sep-2013	SL-568-SA5D-SB-0.0-0.5	7208981	N	3550B	8151A	III
23-Sep-2013	SL-568-SA5D-SB-0.0-0.5	7208981	N	METHOD	1613B	III
23-Sep-2013	SL-568-SA5D-SB-0.0-0.5	7208981	N	METHOD	7471B	III
23-Sep-2013	TB-092313	7208980	TB	5030B	8015M	III
23-Sep-2013	SL-568-SA5D-SB-2.5-3.5	7208982	N	3050B	6010C	III
23-Sep-2013	SL-568-SA5D-SB-2.5-3.5	7208982	N	3050B	6020A	III
23-Sep-2013	SL-568-SA5D-SB-2.5-3.5	7208982	N	3546	8015M	III
23-Sep-2013	SL-568-SA5D-SB-2.5-3.5	7208982	N	3546	8081B	III
23-Sep-2013	SL-568-SA5D-SB-2.5-3.5	7208982	N	3546	8082A	III
23-Sep-2013	SL-568-SA5D-SB-2.5-3.5	7208982	N	3546	8270D SIM	III
23-Sep-2013	SL-568-SA5D-SB-2.5-3.5	7208982	N	3550B	8151A	III
23-Sep-2013	SL-568-SA5D-SB-2.5-3.5	7208982	N	5035A	8015M	III
23-Sep-2013	SL-568-SA5D-SB-2.5-3.5	7208982	N	METHOD	7471B	III
23-Sep-2013	SL-568-SA5D-SB-2.5-3.5MS	7208983	MS	3050B	6010C	III
23-Sep-2013	SL-568-SA5D-SB-2.5-3.5MS	7208983	MS	3050B	6020A	III
23-Sep-2013	SL-568-SA5D-SB-2.5-3.5MS	7208983	MS	3546	8015M	III
23-Sep-2013	SL-568-SA5D-SB-2.5-3.5MS	7208983	MS	3546	8081B	III
23-Sep-2013	SL-568-SA5D-SB-2.5-3.5MS	7208983	MS	3546	8082A	III
23-Sep-2013	SL-568-SA5D-SB-2.5-3.5MS	7208983	MS	3546	8270D SIM	III
23-Sep-2013	SL-568-SA5D-SB-2.5-3.5MS	7208983	MS	3550B	8151A	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-Sep-2013	SL-568-SA5D-SB-2.5-3.5MS	7208983	MS	5035A	8015M	III
23-Sep-2013	SL-568-SA5D-SB-2.5-3.5MS	7208983	MS	METHOD	7471B	III
23-Sep-2013	SL-568-SA5D-SB-2.5-3.5MSD	7208984	MSD	3050B	6010C	III
23-Sep-2013	SL-568-SA5D-SB-2.5-3.5MSD	7208984	MSD	3050B	6020A	III
23-Sep-2013	SL-568-SA5D-SB-2.5-3.5MSD	7208984	MSD	3546	8015M	III
23-Sep-2013	SL-568-SA5D-SB-2.5-3.5MSD	7208984	MSD	3546	8081B	III
23-Sep-2013	SL-568-SA5D-SB-2.5-3.5MSD	7208984	MSD	3546	8082A	III
23-Sep-2013	SL-568-SA5D-SB-2.5-3.5MSD	7208984	MSD	3546	8270D SIM	III
23-Sep-2013	SL-568-SA5D-SB-2.5-3.5MSD	7208984	MSD	3550B	8151A	III
23-Sep-2013	SL-568-SA5D-SB-2.5-3.5MSD	7208984	MSD	5035A	8015M	III
23-Sep-2013	SL-568-SA5D-SB-2.5-3.5MSD	7208984	MSD	METHOD	7471B	III
23-Sep-2013	SL-568-SA5D-SB-2.5-3.5DUP	7208985	DUP	3050B	6010C	III
23-Sep-2013	SL-568-SA5D-SB-2.5-3.5DUP	7208985	DUP	3050B	6020A	III
23-Sep-2013	SL-568-SA5D-SB-2.5-3.5DUP	7208985	DUP	METHOD	7471B	III
23-Sep-2013	SL-868-SA5D-SB-2.5-3.5	7208986	FD	3050B	6010C	III
23-Sep-2013	SL-868-SA5D-SB-2.5-3.5	7208986	FD	3050B	6020A	III
23-Sep-2013	SL-868-SA5D-SB-2.5-3.5	7208986	FD	3546	8015M	III
23-Sep-2013	SL-868-SA5D-SB-2.5-3.5	7208986	FD	3546	8081B	III
23-Sep-2013	SL-868-SA5D-SB-2.5-3.5	7208986	FD	3546	8082A	III
23-Sep-2013	SL-868-SA5D-SB-2.5-3.5	7208986	FD	3546	8270D SIM	III
23-Sep-2013	SL-868-SA5D-SB-2.5-3.5	7208986	FD	3550B	8151A	III
23-Sep-2013	SL-868-SA5D-SB-2.5-3.5	7208986	FD	5035A	8015M	III
23-Sep-2013	SL-868-SA5D-SB-2.5-3.5	7208986	FD	METHOD	7471B	III
23-Sep-2013	SL-574-SA5D-SB-0.0-0.5	7208989	N	3546	8081B	III
23-Sep-2013	SL-574-SA5D-SB-0.0-0.5	7208989	N	3546	8270D SIM	III
23-Sep-2013	SL-574-SA5D-SB-0.0-0.5	7208989	N	3550B	8151A	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-Sep-2013	SL-574-SA5D-SB-0.0-0.5	7208989	N	METHOD	1613B	III
23-Sep-2013	SL-572-SA5D-SB-0.0-0.5	7208988	N	3546	8081B	III
23-Sep-2013	SL-572-SA5D-SB-0.0-0.5	7208988	N	3550B	8151A	III
23-Sep-2013	SL-572-SA5D-SB-0.0-0.5	7208988	N	METHOD	1613B	III
23-Sep-2013	SL-571-SA5D-SB-0.0-0.5	7208987	N	3050B	6010C	III
23-Sep-2013	SL-571-SA5D-SB-0.0-0.5	7208987	N	3050B	6020A	III
23-Sep-2013	SL-571-SA5D-SB-0.0-0.5	7208987	N	3546	8015M	III
23-Sep-2013	SL-571-SA5D-SB-0.0-0.5	7208987	N	3546	8081B	III
23-Sep-2013	SL-571-SA5D-SB-0.0-0.5	7208987	N	3546	8082A	III
23-Sep-2013	SL-571-SA5D-SB-0.0-0.5	7208987	N	3546	8270D SIM	III
23-Sep-2013	SL-571-SA5D-SB-0.0-0.5	7208987	N	3550B	8151A	III
23-Sep-2013	SL-571-SA5D-SB-0.0-0.5	7208987	N	METHOD	1613B	III
23-Sep-2013	SL-571-SA5D-SB-0.0-0.5	7208987	N	METHOD	6850	III
23-Sep-2013	SL-571-SA5D-SB-0.0-0.5	7208987	N	METHOD	7471B	III
23-Sep-2013	SL-571-SA5D-SB-0.0-0.5MSD	P208987M241750A	MSD	METHOD	6850	III
23-Sep-2013	SL-571-SA5D-SB-0.0-0.5MS	P208987R241737A	MS	METHOD	6850	III
23-Sep-2013	SL-583-SA5D-SB-0.0-0.5	7208990	N	3050B	6010C	III
23-Sep-2013	SL-583-SA5D-SB-0.0-0.5	7208990	N	3050B	6020A	III
23-Sep-2013	SL-583-SA5D-SB-0.0-0.5	7208990	N	3546	8015M	III
23-Sep-2013	SL-583-SA5D-SB-0.0-0.5	7208990	N	3546	8082A	III
23-Sep-2013	SL-583-SA5D-SB-0.0-0.5	7208990	N	3546	8270D SIM	III
23-Sep-2013	SL-583-SA5D-SB-0.0-0.5	7208990	N	METHOD	1613B	III
23-Sep-2013	SL-583-SA5D-SB-0.0-0.5	7208990	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: PH112 **Laboratory: LL**

EDD Filename: PrepPH112 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-568-SA5D-SB-0.0-0.5** ***Collected:*** **9/23/2013 7:30:00** ***Analysis Type:*** **REA** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
VANADIUM	50.1		0.131	MDL	1.01	PQL	mg/Kg	J	E
TITANIUM	790		0.171	MDL	1.01	PQL	mg/Kg	J	E

Sample ID: **SL-568-SA5D-SB-0.0-0.5** ***Collected:*** **9/23/2013 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
ALUMINUM	14800		7.27	MDL	40.3	PQL	mg/Kg	J	E
ANTIMONY	4.03	U	0.746	MDL	4.03	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.458	J	0.0676	MDL	1.01	PQL	mg/Kg	J	Z
BORON	7.90	J	0.847	MDL	10.1	PQL	mg/Kg	J	Z
CADMIUM	0.868	J	0.0767	MDL	1.01	PQL	mg/Kg	J	Z
COBALT	7.00		0.0999	MDL	1.01	PQL	mg/Kg	J	E
IRON	22500		3.65	MDL	40.3	PQL	mg/Kg	J	E
LITHIUM	16.0		0.34	MDL	4.0	PQL	mg/Kg	J	E
MAGNESIUM	6990		1.68	MDL	10.1	PQL	mg/Kg	J	E
MANGANESE	287		0.0837	MDL	1.01	PQL	mg/Kg	J	E
MOLYBDENUM	1.44	J	0.171	MDL	2.02	PQL	mg/Kg	U	F
POTASSIUM	3520		8.41	MDL	101	PQL	mg/Kg	J	Q, E
TIN	2.54	J	0.222	MDL	10.1	PQL	mg/Kg	U	B
ZINC	68.8		0.202	MDL	4.03	PQL	mg/Kg	J	Q, E, A

Sample ID: **SL-568-SA5D-SB-2.5-3.5** ***Collected:*** **9/23/2013 8:00:00** ***Analysis Type:*** **REA** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
VANADIUM	60.1		0.139	MDL	1.07	PQL	mg/Kg	J	E

Sample ID: **SL-568-SA5D-SB-2.5-3.5** ***Collected:*** **9/23/2013 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
TITANIUM	1170		0.362	MDL	2.13	PQL	mg/Kg	J	E

Sample ID: **SL-568-SA5D-SB-2.5-3.5** ***Collected:*** **9/23/2013 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
ALUMINUM	21900		7.69	MDL	42.6	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: PH112 **Laboratory: LL**

EDD Filename: PrepPH112 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-568-SA5D-SB-2.5-3.5** ***Collected:*** **9/23/2013 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	4.26	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	10.1	J	0.896	MDL	10.7	PQL	mg/Kg	J	Z
CADMIUM	0.342	J	0.0810	MDL	1.07	PQL	mg/Kg	J	Z
COBALT	8.49		0.106	MDL	1.07	PQL	mg/Kg	J	E
IRON	27700		3.86	MDL	42.6	PQL	mg/Kg	J	E
LITHIUM	35.1		0.36	MDL	4.3	PQL	mg/Kg	J	E
MAGNESIUM	7660		1.78	MDL	10.7	PQL	mg/Kg	J	E
MANGANESE	283		0.0885	MDL	1.07	PQL	mg/Kg	J	E
POTASSIUM	3590		8.89	MDL	107	PQL	mg/Kg	J	Q, E
TIN	3.30	J	0.235	MDL	10.7	PQL	mg/Kg	U	B
ZINC	83.4		0.213	MDL	4.26	PQL	mg/Kg	J	Q, E, A
Zirconium	4.53	J	0.896	MDL	5.33	PQL	mg/Kg	J	Z

Sample ID: **SL-571-SA5D-SB-0.0-0.5** ***Collected:*** **9/23/2013 10:25:00** ***Analysis Type:*** **REA** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
VANADIUM	58.0		0.132	MDL	1.01	PQL	mg/Kg	J	E

Sample ID: **SL-571-SA5D-SB-0.0-0.5** ***Collected:*** **9/23/2013 10:25:00** ***Analysis Type:*** **REA2** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	35500		7.34	MDL	81.1	PQL	mg/Kg	J	E
TITANIUM	1090		0.345	MDL	2.03	PQL	mg/Kg	J	E

Sample ID: **SL-571-SA5D-SB-0.0-0.5** ***Collected:*** **9/23/2013 10:25:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	18900		7.31	MDL	40.6	PQL	mg/Kg	J	E
ANTIMONY	4.06	U	0.750	MDL	4.06	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.611	J	0.0679	MDL	1.01	PQL	mg/Kg	J	Z
BORON	6.99	J	0.852	MDL	10.1	PQL	mg/Kg	J	Z
CADMIUM	0.251	J	0.0771	MDL	1.01	PQL	mg/Kg	J	Z
COBALT	7.78		0.100	MDL	1.01	PQL	mg/Kg	J	E
LITHIUM	38.6		0.34	MDL	4.1	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: PH112 **Laboratory: LL**

EDD Filename: PrepPH112 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-571-SA5D-SB-0.0-0.5** ***Collected:*** **9/23/2013 10:25:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MAGNESIUM	8190		1.69	MDL	10.1	PQL	mg/Kg	J	E
MANGANESE	270		0.0841	MDL	1.01	PQL	mg/Kg	J	E
POTASSIUM	4370		8.46	MDL	101	PQL	mg/Kg	J	Q, E
TIN	2.83	J	0.223	MDL	10.1	PQL	mg/Kg	U	B
ZINC	76.7		0.203	MDL	4.06	PQL	mg/Kg	J	Q, E, A
Zirconium	2.62	J	0.852	MDL	5.07	PQL	mg/Kg	J	Z

Sample ID: **SL-583-SA5D-SB-0.0-0.5** ***Collected:*** **9/23/2013 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
VANADIUM	61.0		0.135	MDL	1.04	PQL	mg/Kg	J	E

Sample ID: **SL-583-SA5D-SB-0.0-0.5** ***Collected:*** **9/23/2013 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
IRON	31200		7.53	MDL	83.2	PQL	mg/Kg	J	E
TITANIUM	1010		0.354	MDL	2.08	PQL	mg/Kg	J	E

Sample ID: **SL-583-SA5D-SB-0.0-0.5** ***Collected:*** **9/23/2013 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
ALUMINUM	22600		7.50	MDL	41.6	PQL	mg/Kg	J	E
ANTIMONY	4.16	U	0.770	MDL	4.16	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.758	J	0.0697	MDL	1.04	PQL	mg/Kg	J	Z
CADMIUM	0.341	J	0.0791	MDL	1.04	PQL	mg/Kg	J	Z
COBALT	8.40		0.103	MDL	1.04	PQL	mg/Kg	J	E
LITHIUM	25.4		0.35	MDL	4.2	PQL	mg/Kg	J	E
MAGNESIUM	7570		1.74	MDL	10.4	PQL	mg/Kg	J	E
MANGANESE	408		0.0864	MDL	1.04	PQL	mg/Kg	J	E
POTASSIUM	7160		8.68	MDL	104	PQL	mg/Kg	J	Q, E
SODIUM	84.7	J	17.4	MDL	104	PQL	mg/Kg	J	Z
TIN	3.21	J	0.229	MDL	10.4	PQL	mg/Kg	U	B
ZINC	80.0		0.208	MDL	4.16	PQL	mg/Kg	J	Q, E, A
Zirconium	5.17	J	0.874	MDL	5.20	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: PH112 **Laboratory: LL**

EDD Filename: PrepPH112 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-868-SA5D-SB-2.5-3.5** *Collected:* **9/23/2013 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
TITANIUM	891		0.169	MDL	0.995	PQL	mg/Kg	J	E
VANADIUM	53.7		0.129	MDL	0.995	PQL	mg/Kg	J	E

Sample ID: **SL-868-SA5D-SB-2.5-3.5** *Collected:* **9/23/2013 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
ALUMINUM	18100		7.18	MDL	39.8	PQL	mg/Kg	J	E
ANTIMONY	3.98	U	0.737	MDL	3.98	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.534	J	0.0667	MDL	0.995	PQL	mg/Kg	J	Z
BORON	8.73	J	0.836	MDL	9.95	PQL	mg/Kg	J	Z
CADMIUM	0.390	J	0.0756	MDL	0.995	PQL	mg/Kg	J	Z
COBALT	7.63		0.0985	MDL	0.995	PQL	mg/Kg	J	E
IRON	23800		3.60	MDL	39.8	PQL	mg/Kg	J	E
LITHIUM	28.5		0.34	MDL	4.0	PQL	mg/Kg	J	E
MAGNESIUM	6710		1.66	MDL	9.95	PQL	mg/Kg	J	E
MANGANESE	307		0.0826	MDL	0.995	PQL	mg/Kg	J	E
POTASSIUM	3020		8.30	MDL	99.5	PQL	mg/Kg	J	Q, E
TIN	2.66	J	0.219	MDL	9.95	PQL	mg/Kg	U	B
ZINC	66.1		0.199	MDL	3.98	PQL	mg/Kg	J	Q, E, A
Zirconium	3.82	J	0.836	MDL	4.98	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: **SL-568-SA5D-SB-0.0-0.5** *Collected:* **9/23/2013 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	0.324	J	0.101	MDL	0.403	PQL	mg/Kg	J	Z

Sample ID: **SL-568-SA5D-SB-0.0-0.5** *Collected:* **9/23/2013 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	0.110	J	0.0262	MDL	0.202	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: PH112 **Laboratory: LL**

EDD Filename: PrepPH112 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: **SL-568-SA5D-SB-2.5-3.5** ***Collected:*** **9/23/2013 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	0.195	J	0.107	MDL	0.426	PQL	mg/Kg	J	Z

Sample ID: **SL-568-SA5D-SB-2.5-3.5** ***Collected:*** **9/23/2013 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	0.0348	J	0.0277	MDL	0.213	PQL	mg/Kg	J	Z

Sample ID: **SL-571-SA5D-SB-0.0-0.5** ***Collected:*** **9/23/2013 10:25:00** ***Analysis Type:*** **REA2** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.178	J	0.101	MDL	0.406	PQL	mg/Kg	J	Z

Sample ID: **SL-583-SA5D-SB-0.0-0.5** ***Collected:*** **9/23/2013 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	0.332	J	0.104	MDL	0.416	PQL	mg/Kg	J	Z

Sample ID: **SL-583-SA5D-SB-0.0-0.5** ***Collected:*** **9/23/2013 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	0.0487	J	0.0271	MDL	0.208	PQL	mg/Kg	J	Z

Sample ID: **SL-868-SA5D-SB-2.5-3.5** ***Collected:*** **9/23/2013 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	0.168	J	0.0995	MDL	0.398	PQL	mg/Kg	J	Z

Sample ID: **SL-868-SA5D-SB-2.5-3.5** ***Collected:*** **9/23/2013 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	0.0294	J	0.0259	MDL	0.199	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: PH112 **Laboratory: LL**

EDD Filename: PrepPH112 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: SL-568-SA5D-SB-2.5-3.5 *Collected:* 9/23/2013 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
MERCURY	0.0123	J	0.0099	MDL	0.0165	PQL	mg/Kg	J	Z, FD

Sample ID: SL-571-SA5D-SB-0.0-0.5 *Collected:* 9/23/2013 10:25:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0160	J	0.0098	MDL	0.0163	PQL	mg/Kg	J	Z

Sample ID: SL-868-SA5D-SB-2.5-3.5 *Collected:* 9/23/2013 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
MERCURY	0.0158	U	0.0095	MDL	0.0158	PQL	mg/Kg	UJ	FD

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-568-SA5D-SB-0.0-0.5 *Collected:* 9/23/2013 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
1,2,3,4,7,8,9-HPCDF	0.444	JB	0.0280	MDL	5.00	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.713	JB	0.0476	MDL	5.00	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.679	JB	0.0396	MDL	5.00	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	1.53	JB	0.0515	MDL	5.00	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.649	JB	0.0392	MDL	5.00	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	1.25	JB	0.0492	MDL	5.00	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.566	JB	0.0402	MDL	5.00	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	2.73	JB	0.0580	MDL	5.00	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.653	JB	0.0376	MDL	5.00	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	1.34	JB	0.0531	MDL	5.00	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.102	JQ	0.0378	MDL	1.00	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.702	JQ	0.114	MDL	1.00	PQL	ng/Kg	J	Z

Sample ID: SL-571-SA5D-SB-0.0-0.5 *Collected:* 9/23/2013 10:25:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.275	JB	0.0353	MDL	5.04	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: PH112 **Laboratory: LL**

EDD Filename: PrepPH112 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-571-SA5D-SB-0.0-0.5** *Collected:* **9/23/2013 10:25:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDF	0.0964	JB	0.0111	MDL	5.04	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0500	JBQ	0.0185	MDL	5.04	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0351	JBQ	0.0205	MDL	5.04	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0551	JBQ	0.0235	MDL	5.04	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0837	JBQ	0.0216	MDL	5.04	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0686	JB	0.0203	MDL	5.04	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0616	JBQ	0.0212	MDL	5.04	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.111	JB	0.0251	MDL	5.04	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0867	JBQ	0.0329	MDL	5.04	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.138	JBQ	0.0176	MDL	5.04	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0734	JBQ	0.0221	MDL	5.04	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0575	JBQ	0.0186	MDL	5.04	PQL	ng/Kg	U	B
OCDD	1.19	JB	0.0512	MDL	10.1	PQL	ng/Kg	U	B
OCDF	0.305	JBQ	0.0540	MDL	10.1	PQL	ng/Kg	U	B

Sample ID: **SL-572-SA5D-SB-0.0-0.5** *Collected:* **9/23/2013 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	3.11	JB	0.0343	MDL	4.88	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.744	JB	0.0148	MDL	4.88	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.143	JBQ	0.0234	MDL	4.88	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.152	JB	0.0311	MDL	4.88	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.249	JBQ	0.0286	MDL	4.88	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.539	JB	0.0340	MDL	4.88	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.274	JB	0.0253	MDL	4.88	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.659	JB	0.0308	MDL	4.88	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.534	JB	0.0303	MDL	4.88	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.322	JBQ	0.0377	MDL	4.88	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.511	JB	0.0307	MDL	4.88	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.207	JB	0.0274	MDL	4.88	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.460	JBQ	0.0311	MDL	4.88	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.111	JQ	0.0538	MDL	0.975	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.288	JQ	0.0709	MDL	0.975	PQL	ng/Kg	J	Z
OCDF	1.52	JB	0.0376	MDL	9.75	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: PH112 **Laboratory: LL**

EDD Filename: PrepPH112 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-574-SA5D-SB-0.0-0.5** ***Collected:*** **9/23/2013 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	0.175	JB	0.0260	MDL	5.00	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0910	JBQ	0.0121	MDL	5.00	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0767	JBQ	0.0188	MDL	5.00	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0708	JBQ	0.0254	MDL	5.00	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.144	JBQ	0.0232	MDL	5.00	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.138	JB	0.0269	MDL	5.00	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.110	JBQ	0.0210	MDL	5.00	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.150	JB	0.0261	MDL	5.00	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.138	JB	0.0257	MDL	5.00	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.127	JBQ	0.0338	MDL	5.00	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.163	JBQ	0.0193	MDL	5.00	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0790	JBQ	0.0223	MDL	5.00	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.146	JB	0.0192	MDL	5.00	PQL	ng/Kg	U	B
2,3,7,8-TCDD	0.0625	JQ	0.0572	MDL	1.00	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.0615	JQ	0.0431	MDL	1.00	PQL	ng/Kg	J	Z
OCDD	0.428	JB	0.0306	MDL	10.0	PQL	ng/Kg	U	B
OCDF	0.246	JBQ	0.0495	MDL	10.0	PQL	ng/Kg	U	B

Sample ID: **SL-583-SA5D-SB-0.0-0.5** ***Collected:*** **9/23/2013 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	4.83	JB	0.0754	MDL	5.18	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	1.07	JB	0.0541	MDL	5.18	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.285	JBQ	0.0966	MDL	5.18	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.300	JBQ	0.0699	MDL	5.18	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.693	JB	0.0656	MDL	5.18	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.470	JB	0.0744	MDL	5.18	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.491	JB	0.0588	MDL	5.18	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.588	JB	0.0737	MDL	5.18	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.615	JB	0.0892	MDL	5.18	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.303	JBQ	0.0599	MDL	5.18	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.614	JBQ	0.0580	MDL	5.18	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.0878	JQ	0.0682	MDL	1.04	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.582	JQ	0.119	MDL	1.04	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: PH112 **Laboratory: LL**

EDD Filename: PrepPH112 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-583-SA5D-SB-0.0-0.5** *Collected:* **9/23/2013 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
OCDF	2.79	JBQ	0.222	MDL	10.4	PQL	ng/Kg	J	Z

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: **SL-568-SA5D-SB-2.5-3.5** *Collected:* **9/23/2013 8:00:00** *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)	22		2.1	MDL	5.3	PQL	mg/Kg	J	Q, Q, Q, FD
EFH (C30-C40)	26		4.3	MDL	11	PQL	mg/Kg	J	Q, Q, FD

Sample ID: **SL-583-SA5D-SB-0.0-0.5** *Collected:* **9/23/2013 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
EFH (C15-C20)	3.6	J	2.1	MDL	5.2	PQL	mg/Kg	J	Z

Sample ID: **SL-868-SA5D-SB-2.5-3.5** *Collected:* **9/23/2013 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
EFH (C21-C30)	12		2.0	MDL	5.1	PQL	mg/Kg	J	FD
EFH (C30-C40)	45		4.1	MDL	10	PQL	mg/Kg	J	FD

Method Category: SVOA

Method: 8081B **Matrix: SO**

Sample ID: **SL-568-SA5D-SB-0.0-0.5** *Collected:* **9/23/2013 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
DELTA-BHC	0.51	J	0.46	MDL	0.85	PQL	ug/Kg	J	Z
METHOXYCHLOR	4.1	J	1.7	MDL	6.8	PQL	ug/Kg	J	Z

Sample ID: **SL-572-SA5D-SB-0.0-0.5** *Collected:* **9/23/2013 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
4,4'-DDE	0.60	J	0.33	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: PH112 **Laboratory: LL**

EDD Filename: PrepPH112 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 8081B **Matrix: SO**

Sample ID: SL-572-SA5D-SB-0.0-0.5 *Collected:* 9/23/2013 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
4,4'-DDT	1.4	J	0.35	MDL	1.7	PQL	ug/Kg	J	Z
gamma-BHC (Lindane)	0.24	J	0.17	MDL	0.83	PQL	ug/Kg	J	Z

Method Category: SVOA

Method: 8082A **Matrix: SO**

Sample ID: SL-568-SA5D-SB-0.0-0.5 *Collected:* 9/23/2013 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
Aroclor 5460	15	J	10	MDL	34	PQL	ug/Kg	J	Z, L

Sample ID: SL-568-SA5D-SB-2.5-3.5 *Collected:* 9/23/2013 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
AROCLOR 1254	7.3	J	4.7	MDL	18	PQL	ug/Kg	J	Z, S, FD

Sample ID: SL-571-SA5D-SB-0.0-0.5 *Collected:* 9/23/2013 10:25:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1254	12	J	4.5	MDL	17	PQL	ug/Kg	J	Z, S

Sample ID: SL-868-SA5D-SB-2.5-3.5 *Collected:* 9/23/2013 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
AROCLOR 1254	17	U	4.5	MDL	17	PQL	ug/Kg	UJ	FD

Method Category: SVOA

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

Sample ID: SL-568-SA5D-SB-0.0-0.5 *Collected:* 9/23/2013 7:30:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)ANTHRACENE	16	J	6.8	MDL	17	PQL	ug/Kg	J	Z
BENZO(E)PYRENE	39	J	34	MDL	170	PQL	ug/Kg	J	Z
Butylbenzylphthalate	110	J	61	MDL	180	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: PH112 **Laboratory: LL**

EDD Filename: PrepPH112 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

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

Sample ID: **SL-568-SA5D-SB-0.0-0.5** *Collected:* **9/23/2013 7:30:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **10**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
INDENO(1,2,3-CD)PYRENE	11	J	6.8	MDL	17	PQL	ug/Kg	J	Z

Sample ID: **SL-568-SA5D-SB-2.5-3.5** *Collected:* **9/23/2013 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
BENZO(A)ANTHRACENE	0.94	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(A)PYRENE	1.2	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(G,H,I)PERYLENE	0.87	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(K)FLUORANTHENE	1.2	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z, FD
Butylbenzylphthalate	19	U	6.3	MDL	19	PQL	ug/Kg	UJ	FD
CHRYSENE	1.5	J	0.35	MDL	1.8	PQL	ug/Kg	J	Z
Diethylphthalate	19	U	6.3	MDL	19	PQL	ug/Kg	UJ	Q
INDENO(1,2,3-CD)PYRENE	1.8	U	0.70	MDL	1.8	PQL	ug/Kg	UJ	FD
PHENANTHRENE	0.93	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: **SL-571-SA5D-SB-0.0-0.5** *Collected:* **9/23/2013 10:25:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NAPHTHALENE	0.79	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: **SL-574-SA5D-SB-0.0-0.5** *Collected:* **9/23/2013 9:20:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NAPHTHALENE	0.69	J	0.67	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: **SL-583-SA5D-SB-0.0-0.5** *Collected:* **9/23/2013 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	0.92	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: **SL-583-SA5D-SB-0.0-0.5** *Collected:* **9/23/2013 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
2-METHYLNAPHTHALENE	1.5	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(A)ANTHRACENE	0.95	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z

* denotes a non-reportable result

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

Data Qualifier Summary

Lab Reporting Batch ID: PH112 **Laboratory: LL**

EDD Filename: PrepPH112 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

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

Sample ID: SL-583-SA5D-SB-0.0-0.5 **Collected: 9/23/2013 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(A)PYRENE	1.0	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(G,H,I)PERYLENE	1.2	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(K)FLUORANTHENE	0.84	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	12	J	6.2	MDL	19	PQL	ug/Kg	J	Z
INDENO(1,2,3-CD)PYRENE	0.89	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: SL-868-SA5D-SB-2.5-3.5 **Collected: 9/23/2013 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	0.82	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(A)PYRENE	0.98	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(B)FLUORANTHENE	1.4	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(G,H,I)PERYLENE	1.2	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(K)FLUORANTHENE	1.7	U	0.68	MDL	1.7	PQL	ug/Kg	UJ	FD
Butylbenzylphthalate	7.5	J	6.1	MDL	18	PQL	ug/Kg	J	Z, FD
CHRYSENE	1.1	J	0.34	MDL	1.7	PQL	ug/Kg	J	Z
FLUORANTHENE	1.4	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
INDENO(1,2,3-CD)PYRENE	0.76	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z, FD
PHENANTHRENE	0.86	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
PYRENE	1.4	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: PH112 **Laboratory: LL**

EDD Filename: PrepPH112 **eQAPP Name: CDM_SSFL_131101_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

PH112

Method Blank Outlier Report

Lab Reporting Batch ID: PH112 **Laboratory: LL**

EDD Filename: PH112 **eQAPP Name: CDM_SSFL_131101_Lan**

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2730B371140	10/2/2013 11:40:00 AM	1,2,3,4,6,7,8-HPCDD	0.0965 ng/Kg	SL-568-SA5D-SB-0.0-0.5
		1,2,3,4,6,7,8-HPCDF	0.0595 ng/Kg	SL-571-SA5D-SB-0.0-0.5
		1,2,3,4,7,8,9-HPCDF	0.0657 ng/Kg	SL-572-SA5D-SB-0.0-0.5
		1,2,3,4,7,8-HxCDD	0.0334 ng/Kg	SL-574-SA5D-SB-0.0-0.5
		1,2,3,4,7,8-HXCDF	0.0515 ng/Kg	SL-583-SA5D-SB-0.0-0.5
		1,2,3,6,7,8-HXCDD	0.0256 ng/Kg	
		1,2,3,6,7,8-HXCDF	0.0453 ng/Kg	
		1,2,3,7,8,9-HXCDD	0.0369 ng/Kg	
		1,2,3,7,8,9-HXCDF	0.0754 ng/Kg	
		1,2,3,7,8-PECDD	0.0738 ng/Kg	
		1,2,3,7,8-PECDF	0.0876 ng/Kg	
		2,3,4,6,7,8-HXCDF	0.0332 ng/Kg	
		2,3,4,7,8-PECDF	0.0646 ng/Kg	
		OCDD	0.249 ng/Kg	
		OCDF	0.137 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-571-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDD	0.275 ng/Kg	0.275U ng/Kg
SL-571-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDF	0.0964 ng/Kg	0.0964U ng/Kg
SL-571-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0500 ng/Kg	0.0500U ng/Kg
SL-571-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.0351 ng/Kg	0.0351U ng/Kg
SL-571-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.0551 ng/Kg	0.0551U ng/Kg
SL-571-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDD	0.0837 ng/Kg	0.0837U ng/Kg
SL-571-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.0686 ng/Kg	0.0686U ng/Kg
SL-571-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDD	0.0616 ng/Kg	0.0616U ng/Kg
SL-571-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.111 ng/Kg	0.111U ng/Kg
SL-571-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.0867 ng/Kg	0.0867U ng/Kg
SL-571-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.138 ng/Kg	0.138U ng/Kg
SL-571-SA5D-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0734 ng/Kg	0.0734U ng/Kg
SL-571-SA5D-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.0575 ng/Kg	0.0575U ng/Kg
SL-571-SA5D-SB-0.0-0.5(RES)	OCDD	1.19 ng/Kg	1.19U ng/Kg
SL-571-SA5D-SB-0.0-0.5(RES)	OCDF	0.305 ng/Kg	0.305U ng/Kg
SL-572-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.143 ng/Kg	0.143U ng/Kg
SL-572-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.152 ng/Kg	0.152U ng/Kg
SL-572-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.249 ng/Kg	0.249U ng/Kg
SL-572-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.322 ng/Kg	0.322U ng/Kg
SL-574-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDD	0.175 ng/Kg	0.175U ng/Kg
SL-574-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDF	0.0910 ng/Kg	0.0910U ng/Kg
SL-574-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0767 ng/Kg	0.0767U ng/Kg
SL-574-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.0708 ng/Kg	0.0708U ng/Kg
SL-574-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.144 ng/Kg	0.144U ng/Kg
SL-574-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.110 ng/Kg	0.110U ng/Kg
SL-574-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDD	0.150 ng/Kg	0.150U ng/Kg
SL-574-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.138 ng/Kg	0.138U ng/Kg
SL-574-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.127 ng/Kg	0.127U ng/Kg
SL-574-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.163 ng/Kg	0.163U ng/Kg

Method Blank Outlier Report

Lab Reporting Batch ID: PH112 **Laboratory: LL**

EDD Filename: PH112 **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-574-SA5D-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0790 ng/Kg	0.0790U ng/Kg
SL-574-SA5D-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.146 ng/Kg	0.146U ng/Kg
SL-574-SA5D-SB-0.0-0.5(RES)	OCDD	0.428 ng/Kg	0.428U ng/Kg
SL-574-SA5D-SB-0.0-0.5(RES)	OCDF	0.246 ng/Kg	0.246U ng/Kg
SL-583-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.285 ng/Kg	0.285U ng/Kg

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P27437AB221412	10/3/2013 2:12:00 PM	CALCIUM TIN ZINC	9.48 mg/Kg 1.46 mg/Kg 0.850 mg/Kg	SL-568-SA5D-SB-0.0-0.5 SL-568-SA5D-SB-2.5-3.5 SL-571-SA5D-SB-0.0-0.5 SL-583-SA5D-SB-0.0-0.5 SL-868-SA5D-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-568-SA5D-SB-0.0-0.5(RES)	TIN	2.54 mg/Kg	2.54U mg/Kg
SL-568-SA5D-SB-2.5-3.5(RES)	TIN	3.30 mg/Kg	3.30U mg/Kg
SL-571-SA5D-SB-0.0-0.5(RES)	TIN	2.83 mg/Kg	2.83U mg/Kg
SL-583-SA5D-SB-0.0-0.5(RES)	TIN	3.21 mg/Kg	3.21U mg/Kg
SL-868-SA5D-SB-2.5-3.5(RES)	TIN	2.66 mg/Kg	2.66U mg/Kg

Field Blank Outlier Report

Lab Reporting Batch ID: PH112 **Laboratory: LL**

EDD Filename: PH112 **eQAPP Name: CDM_SSFL_131101_Lan**

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

Field Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
FB-041613(REA2/TOT)	4/16/2013 3:15:00 PM	MOLYBDENUM TIN	0.0132 mg/L 0.0029 mg/L	SL-568-SA5D-SB-0.0-0.5 SL-568-SA5D-SB-2.5-3.5 SL-571-SA5D-SB-0.0-0.5 SL-572-SA5D-SB-0.0-0.5 SL-574-SA5D-SB-0.0-0.5 SL-583-SA5D-SB-0.0-0.5 SL-868-SA5D-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-568-SA5D-SB-0.0-0.5(RES)	MOLYBDENUM	1.44 mg/Kg	1.44U mg/Kg

Surrogate Outlier Report

Lab Reporting Batch ID: PH112 **Laboratory: LL**

EDD Filename: PH112 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: **8082A**
Matrix: **SO**

Sample ID (Analysis Type)	*Surrogate*	*Sample % Recovery*	*% Recovery Limits*	*Affected Compounds*	*Flag*
SL-568-SA5D-SB-2.5-3.5	DECACHLOROBIPHENYL TETRACHLORO-M-XYLENE	138 145	45.00-120.00 45.00-120.00	All Target Analytes	J (all detects)
SL-571-SA5D-SB-0.0-0.5	DECACHLOROBIPHENYL TETRACHLORO-M-XYLENE	137 132	45.00-120.00 45.00-120.00	All Target Analytes	J(all detects)
SL-868-SA5D-SB-2.5-3.5	DECACHLOROBIPHENYL TETRACHLORO-M-XYLENE	130 121	45.00-120.00 45.00-120.00	All Target Analytes	J(all detects)

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH112 **Laboratory: LL**

EDD Filename: PH112 **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-568-SA5D-SB-2.5-3.5MS **SL-568-SA5D-SB-2.5-3.5MSD** (SL-568-SA5D-SB-2.5-3.5)	EFH (C30-C40)	144	526	49.00-123.00	76 (20.00)	EFH (C30-C40)	J (all detects)
SL-568-SA5D-SB-2.5-3.5MS **SL-568-SA5D-SB-2.5-3.5MSD** (SL-568-SA5D-SB-2.5-3.5)	EFH (C21-C30)	29	193	49.00-123.00	59 (20.00)	EFH (C21-C30)	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-568-SA5D-SB-2.5-3.5MS (SL-568-SA5D-SB-2.5-3.5)	Diethylphthalate	73	-	76.00-127.00	-	Diethylphthalate	J(all detects) UJ(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-568-SA5D-SB-2.5-3.5MS **(TOT)** **SL-568-SA5D-SB-2.5-3.5MSD** **(TOT)** (SL-568-SA5D-SB-0.0-0.5 SL-568-SA5D-SB-2.5-3.5 SL-571-SA5D-SB-0.0-0.5 SL-583-SA5D-SB-0.0-0.5 SL-868-SA5D-SB-2.5-3.5)	CALCIUM MANGANESE PHOSPHORUS TITANIUM	1949 230 173 177	2450 342 168 236	75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00	- - - -	CALCIUM MANGANESE PHOSPHORUS TITANIUM	No Qual, >4x
SL-568-SA5D-SB-2.5-3.5MS **(TOT)** **SL-568-SA5D-SB-2.5-3.5MSD** **(TOT)** (SL-568-SA5D-SB-0.0-0.5 SL-568-SA5D-SB-2.5-3.5 SL-571-SA5D-SB-0.0-0.5 SL-583-SA5D-SB-0.0-0.5 SL-868-SA5D-SB-2.5-3.5)	ALUMINUM IRON MAGNESIUM	-136 -5142 -455	-131 -6500 -524	75.00-125.00 75.00-125.00 75.00-125.00	- - -	ALUMINUM IRON MAGNESIUM	No Qual, >4x
SL-568-SA5D-SB-2.5-3.5MS **(TOT)** **SL-568-SA5D-SB-2.5-3.5MSD** **(TOT)** (SL-568-SA5D-SB-0.0-0.5 SL-568-SA5D-SB-2.5-3.5 SL-571-SA5D-SB-0.0-0.5 SL-583-SA5D-SB-0.0-0.5 SL-868-SA5D-SB-2.5-3.5)	ANTIMONY POTASSIUM ZINC	44 48 57	42 64 66	75.00-125.00 75.00-125.00 75.00-125.00	- - -	ANTIMONY POTASSIUM ZINC	J(all detects) UJ(all non-detects)

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH112 **Laboratory: LL**

EDD Filename: PH112 **eQAPP Name: CDM_SSFL_131101_Lan**

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

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
SL-568-SA5D-SB-2.5-3.5MS (TOT) (SL-568-SA5D-SB-0.0-0.5 SL -568-SA5D-SB-2.5-3.5 SL -571-SA5D-SB-0.0-0.5 SL -583-SA5D-SB-0.0-0.5 SL -868-SA5D-SB-2.5-3.5)	STRONTIUM	145	-	75.00-125.00	-	STRONTIUM	No Qual, >4x

Lab Duplicate Outlier Report

Lab Reporting Batch ID: PH112 **Laboratory: LL**

EDD Filename: PH112 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 6010C
Matrix: SO

QC Sample ID (Associated Sample ID)	Analyte	Sample RPD	eQAPP RPD	Flag
SL-568-SA5D-SB-2.5-3.5DUP (TOT) (SL-568-SA5D-SB-0.0-0.5 SL -568-SA5D-SB-2.5-3.5 SL -571-SA5D-SB-0.0-0.5 SL -583-SA5D-SB-0.0-0.5 SL -868-SA5D-SB-2.5-3.5)	ALUMINUM	43	20.00	
	ARSENIC	21	20.00	
	BERYLLIUM	31	20.00	
	BORON	30	20.00	J (all detects) UJ (all non-detects)
	CADMIUM	32	20.00	
	COBALT	30	20.00	
	IRON	39	20.00	
	LITHIUM	56	20.00	
	MAGNESIUM	33	20.00	
	MANGANESE	29	20.00	
	MOLYBDENUM	200	20.00	
	POTASSIUM	31	20.00	As, Be, B, Cd, Mo, Na, Zr No Qual, OK by Difference
	SODIUM	25	20.00	
	TITANIUM	51	20.00	
	VANADIUM	30	20.00	
	ZINC	35	20.00	
	Zirconium	28	20.00	

Method: 6020A
Matrix: SO

QC Sample ID (Associated Sample ID)	Analyte	Sample RPD	eQAPP RPD	Flag
SL-568-SA5D-SB-2.5-3.5DUP (TOT) (SL-568-SA5D-SB-0.0-0.5 SL -568-SA5D-SB-2.5-3.5 SL -571-SA5D-SB-0.0-0.5 SL -583-SA5D-SB-0.0-0.5 SL -868-SA5D-SB-2.5-3.5)	SELENIUM	26	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: PH112 **Laboratory: LL**

EDD Filename: PH112 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: **8082A**
Matrix: **SO**

QC Sample ID (Associated Samples)	*Compound*	*LCS %R*	*LCSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
P32699AQ241313A **P32699AY241254A** (SL-568-SA5D-SB-0.0-0.5 SL -568-SA5D-SB-2.5-3.5 SL -571-SA5D-SB-0.0-0.5 SL -583-SA5D-SB-0.0-0.5 SL -868-SA5D-SB-2.5-3.5)	Aroclor 5442	96	94	62.00-87.00	-	Aroclor 5432, Aroclor 5442, Aroclor 5460,	J (all detects)

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

Field Duplicate RPD Report

Lab Reporting Batch ID: PH112 **Laboratory: LL**

EDD Filename: PH112 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 160.3M
Matrix: SO

Analyte	Concentration (%)		Sample RPD	eQAPP RPD	Flag
	SL-568-SA5D-SB-2.5-3.5	SL-868-SA5D-SB-2.5-3.5			
MOISTURE	6.2	1.5	122		No Qualifiers Applied

Method: 6010C
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-568-SA5D-SB-2.5-3.5 (TOT)	SL-868-SA5D-SB-2.5-3.5 (TOT)			
ALUMINUM	21900	18100	19	50.00	No Qualifiers Applied
ARSENIC	4.32	4.83	11	50.00	
BARIUM	102	91.9	10	50.00	
BERYLLIUM	0.602	0.534	12	50.00	
BORON	10.1	8.73	15	50.00	
CADMIUM	0.342	0.390	13	50.00	
CALCIUM	39600	43500	9	50.00	
CHROMIUM	33.3	32.7	2	50.00	
COBALT	8.49	7.63	11	50.00	
COPPER	17.1	15.8	8	50.00	
IRON	27700	23800	15	50.00	
LEAD	7.55	6.79	11	50.00	
LITHIUM	35.1	28.5	21	50.00	
MAGNESIUM	7660	6710	13	50.00	
MANGANESE	283	307	8	50.00	
NICKEL	18.6	16.6	11	50.00	
PHOSPHORUS	468	487	4	50.00	
POTASSIUM	3590	3020	17	50.00	
SODIUM	200	176	13	50.00	
TIN	3.30	2.66	21	50.00	
TITANIUM	1170	891	27	50.00	
VANADIUM	60.1	53.7	11	50.00	
ZINC	83.4	66.1	23	50.00	
Zirconium	4.53	3.82	17	50.00	

Method: 6020A
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-568-SA5D-SB-2.5-3.5 (TOT)	SL-868-SA5D-SB-2.5-3.5 (TOT)			
SELENIUM	0.195	0.168	15	50.00	No Qualifiers Applied
SILVER	0.0348	0.0294	17	50.00	
STRONTIUM	95.6	97.0	1	50.00	
THALLIUM	0.302	0.269	12	50.00	

Method: 7471B
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-568-SA5D-SB-2.5-3.5 (TOT)	SL-868-SA5D-SB-2.5-3.5 (TOT)			
MERCURY	0.0123	0.0158 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: PH112 **Laboratory: LL**

EDD Filename: PH112 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 8015M
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-568-SA5D-SB-2.5-3.5	SL-868-SA5D-SB-2.5-3.5			
EFH (C21-C30)	22	12	59	50.00	J(all detects)
EFH (C30-C40)	26	45	54	50.00	

Method: 8082A
Matrix: SO

Analyte	Concentration (ug/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-568-SA5D-SB-2.5-3.5	SL-868-SA5D-SB-2.5-3.5			
AROCLOR 1254	7.3	17 U	200	50.00	J(all detects) UJ(all non-detects)

Method: 8270D SIM
Matrix: SO

Analyte	Concentration (ug/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-568-SA5D-SB-2.5-3.5	SL-868-SA5D-SB-2.5-3.5			
BENZO(A)ANTHRACENE	0.94	0.82	14	50.00	No Qualifiers Applied
BENZO(A)PYRENE	1.2	0.98	20	50.00	
BENZO(B)FLUORANTHENE	2.1	1.4	40	50.00	
BENZO(G,H,I)PERYLENE	0.87	1.2	32	50.00	
CHRYSENE	1.5	1.1	31	50.00	
FLUORANTHENE	2.1	1.4	40	50.00	
PHENANTHRENE	0.93	0.86	8	50.00	
PYRENE	1.9	1.4	30	50.00	
BENZO(K)FLUORANTHENE	1.2	1.7 U	200	50.00	J(all detects) UJ(all non-detects)
Butylbenzylphthalate	19 U	7.5	200	50.00	
INDENO(1,2,3-CD)PYRENE	1.8 U	0.76	200	50.00	

Method: 9045M
Matrix: SO

Analyte	Concentration (pH unit)		Sample RPD	eQAPP RPD	Flag
	SL-568-SA5D-SB-2.5-3.5	SL-868-SA5D-SB-2.5-3.5			
PH	7.99	8.14	2	50.00	No Qualifiers Applied

Reporting Limit Outliers

Lab Reporting Batch ID: PH112 **Laboratory: LL**

EDD Filename: PH112 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: **1613B**

Matrix: **SO**

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-568-SA5D-SB-0.0-0.5	1,2,3,4,7,8,9-HPCDF	JB	0.444	5.00	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.713	5.00	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.679	5.00	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	1.53	5.00	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.649	5.00	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	1.25	5.00	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	0.566	5.00	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	2.73	5.00	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.653	5.00	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	1.34	5.00	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.102	1.00	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.702	1.00	PQL	ng/Kg	
SL-571-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	0.275	5.04	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.0964	5.04	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0500	5.04	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0351	5.04	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0551	5.04	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.0837	5.04	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.0686	5.04	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.0616	5.04	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	0.111	5.04	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.0867	5.04	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.138	5.04	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0734	5.04	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0575	5.04	PQL	ng/Kg	
	OCDD	JB	1.19	10.1	PQL	ng/Kg	
	OCDF	JBQ	0.305	10.1	PQL	ng/Kg	
SL-572-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	3.11	4.88	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.744	4.88	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.143	4.88	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.152	4.88	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.249	4.88	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.539	4.88	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.274	4.88	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.659	4.88	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	0.534	4.88	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.322	4.88	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.511	4.88	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.207	4.88	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.460	4.88	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.111	0.975	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.288	0.975	PQL	ng/Kg	
	OCDF	JB	1.52	9.75	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH112 **Laboratory: LL**

EDD Filename: PH112 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-574-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	0.175	5.00	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0910	5.00	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0767	5.00	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0708	5.00	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.144	5.00	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.138	5.00	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.110	5.00	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.150	5.00	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.138	5.00	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JBQ	0.127	5.00	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.163	5.00	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0790	5.00	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.146	5.00	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.0625	1.00	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0615	1.00	PQL	ng/Kg	
	OCDD	JB	0.428	10.0	PQL	ng/Kg	
	OCDF	JBQ	0.246	10.0	PQL	ng/Kg	
SL-583-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	4.83	5.18	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	1.07	5.18	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.285	5.18	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.300	5.18	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.693	5.18	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.470	5.18	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.491	5.18	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDD	JB	0.588	5.18	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.615	5.18	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.303	5.18	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.614	5.18	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.0878	1.04	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.582	1.04	PQL	ng/Kg	
	OCDF	JBQ	2.79	10.4	PQL	ng/Kg	

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-568-SA5D-SB-0.0-0.5	BERYLLIUM	J	0.458	1.01	PQL	mg/Kg	
	BORON	J	7.90	10.1	PQL	mg/Kg	
	CADMIUM	J	0.868	1.01	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	1.44	2.02	PQL	mg/Kg	
	TIN	J	2.54	10.1	PQL	mg/Kg	
SL-568-SA5D-SB-2.5-3.5	BERYLLIUM	J	0.602	1.07	PQL	mg/Kg	
	BORON	J	10.1	10.7	PQL	mg/Kg	
	CADMIUM	J	0.342	1.07	PQL	mg/Kg	J (all detects)
	TIN	J	3.30	10.7	PQL	mg/Kg	
	Zirconium	J	4.53	5.33	PQL	mg/Kg	
SL-571-SA5D-SB-0.0-0.5	BERYLLIUM	J	0.611	1.01	PQL	mg/Kg	
	BORON	J	6.99	10.1	PQL	mg/Kg	
	CADMIUM	J	0.251	1.01	PQL	mg/Kg	J (all detects)
	TIN	J	2.83	10.1	PQL	mg/Kg	
	Zirconium	J	2.62	5.07	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH112 **Laboratory: LL**

EDD Filename: PH112 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-583-SA5D-SB-0.0-0.5	BERYLLIUM	J	0.758	1.04	PQL	mg/Kg	J (all detects)
	CADMIUM	J	0.341	1.04	PQL	mg/Kg	
	SODIUM	J	84.7	104	PQL	mg/Kg	
	TIN	J	3.21	10.4	PQL	mg/Kg	
	Zirconium	J	5.17	5.20	PQL	mg/Kg	
SL-868-SA5D-SB-2.5-3.5	BERYLLIUM	J	0.534	0.995	PQL	mg/Kg	J (all detects)
	BORON	J	8.73	9.95	PQL	mg/Kg	
	CADMIUM	J	0.390	0.995	PQL	mg/Kg	
	TIN	J	2.66	9.95	PQL	mg/Kg	
	Zirconium	J	3.82	4.98	PQL	mg/Kg	

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-568-SA5D-SB-0.0-0.5	SELENIUM	J	0.324	0.403	PQL	mg/Kg	J (all detects)
	SILVER	J	0.110	0.202	PQL	mg/Kg	
SL-568-SA5D-SB-2.5-3.5	SELENIUM	J	0.195	0.426	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0348	0.213	PQL	mg/Kg	
SL-571-SA5D-SB-0.0-0.5	SELENIUM	J	0.178	0.406	PQL	mg/Kg	J (all detects)
SL-583-SA5D-SB-0.0-0.5	SELENIUM	J	0.332	0.416	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0487	0.208	PQL	mg/Kg	
SL-868-SA5D-SB-2.5-3.5	SELENIUM	J	0.168	0.398	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0294	0.199	PQL	mg/Kg	

Method: 7471B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-568-SA5D-SB-2.5-3.5	MERCURY	J	0.0123	0.0165	PQL	mg/Kg	J (all detects)
SL-571-SA5D-SB-0.0-0.5	MERCURY	J	0.0160	0.0163	PQL	mg/Kg	J (all detects)

Method: 8015M

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-583-SA5D-SB-0.0-0.5	EFH (C15-C20)	J	3.6	5.2	PQL	mg/Kg	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH112 **Laboratory: LL**

EDD Filename: PH112 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 8081B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-568-SA5D-SB-0.0-0.5	DELTA-BHC	J	0.51	0.85	PQL	ug/Kg	J (all detects)
	METHOXYCHLOR	J	4.1	6.8	PQL	ug/Kg	
SL-572-SA5D-SB-0.0-0.5	4,4'-DDE	J	0.60	1.7	PQL	ug/Kg	J (all detects)
	4,4'-DDT	J	1.4	1.7	PQL	ug/Kg	
	gamma-BHC (Lindane)	J	0.24	0.83	PQL	ug/Kg	

Method: 8082A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-568-SA5D-SB-0.0-0.5	Aroclor 5460	J	15	34	PQL	ug/Kg	J (all detects)
SL-568-SA5D-SB-2.5-3.5	AROCLOR 1254	J	7.3	18	PQL	ug/Kg	J (all detects)
SL-571-SA5D-SB-0.0-0.5	AROCLOR 1254	J	12	17	PQL	ug/Kg	J (all detects)

Method: 8270D SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-568-SA5D-SB-0.0-0.5	BENZO(A)ANTHRACENE	J	16	17	PQL	ug/Kg	J (all detects)
	BENZO(E)PYRENE	J	39	170	PQL	ug/Kg	
	Butylbenzylphthalate	J	110	180	PQL	ug/Kg	
	INDENO(1,2,3-CD)PYRENE	J	11	17	PQL	ug/Kg	
SL-568-SA5D-SB-2.5-3.5	BENZO(A)ANTHRACENE	J	0.94	1.8	PQL	ug/Kg	J (all detects)
	BENZO(A)PYRENE	J	1.2	1.8	PQL	ug/Kg	
	BENZO(G,H,I)PERYLENE	J	0.87	1.8	PQL	ug/Kg	
	BENZO(K)FLUORANTHENE	J	1.2	1.8	PQL	ug/Kg	
	CHRYSENE	J	1.5	1.8	PQL	ug/Kg	
	PHENANTHRENE	J	0.93	1.8	PQL	ug/Kg	
SL-571-SA5D-SB-0.0-0.5	NAPHTHALENE	J	0.79	1.7	PQL	ug/Kg	J (all detects)
SL-574-SA5D-SB-0.0-0.5	NAPHTHALENE	J	0.69	1.7	PQL	ug/Kg	J (all detects)
SL-583-SA5D-SB-0.0-0.5	1-METHYLNAPHTHALENE	J	0.92	1.7	PQL	ug/Kg	J (all detects)
	2-METHYLNAPHTHALENE	J	1.5	1.7	PQL	ug/Kg	
	BENZO(A)ANTHRACENE	J	0.95	1.7	PQL	ug/Kg	
	BENZO(A)PYRENE	J	1.0	1.7	PQL	ug/Kg	
	BENZO(G,H,I)PERYLENE	J	1.2	1.7	PQL	ug/Kg	
	BENZO(K)FLUORANTHENE	J	0.84	1.7	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	12	19	PQL	ug/Kg	
	INDENO(1,2,3-CD)PYRENE	J	0.89	1.7	PQL	ug/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH112 **Laboratory: LL**

EDD Filename: PH112 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: **8270D SIM**

Matrix: **SO**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
SL-868-SA5D-SB-2.5-3.5	BENZO(A)ANTHRACENE	J	0.82	1.7	PQL	ug/Kg	
	BENZO(A)PYRENE	J	0.98	1.7	PQL	ug/Kg	
	BENZO(B)FLUORANTHENE	J	1.4	1.7	PQL	ug/Kg	
	BENZO(G,H,I)PERYLENE	J	1.2	1.7	PQL	ug/Kg	
	Butylbenzylphthalate	J	7.5	18	PQL	ug/Kg	J (all detects)
	CHRYSENE	J	1.1	1.7	PQL	ug/Kg	
	FLUORANTHENE	J	1.4	1.7	PQL	ug/Kg	
	INDENO(1,2,3-CD)PYRENE	J	0.76	1.7	PQL	ug/Kg	
	PHENANTHRENE	J	0.86	1.7	PQL	ug/Kg	
	PYRENE	J	1.4	1.7	PQL	ug/Kg	

LDC #: 30695O4

VALIDATION COMPLETENESS WORKSHEET

ADR

Date: 11/11/13

SDG #: PH112

Page: 1 of 1

Laboratory: Eurofins Lancaster Laboratories

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: 9/23/13
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	Zn: 16% (All Soil - J/UJ/A (A1))
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	N	
XIV.	Field Duplicates	=	(2,3)
XV	Field Blanks	SW	EB: EB1-091213 FB: FB-011613 (PH032)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate (PH114); TB = Trip blank; EB = Equipment blank

Validated Samples:

1	SL-568-SA5D-SB-0.0-0.5	11		21		31	
2	SL-568-SA5D-SB-2.5-3.5	12		22		32	
3	SL-868-SA5D-SB-2.5-3.5	13		23		33	
4	SL-571-SA5D-SB-0.0-0.5	14		24		34	
5	SL-583-SA5D-SB-0.0-0.5	15		25		35	
6	SL-568-SA5D-SB-2.5-3.5MS	16		26		36	
7	SL-568-SA5D-SB-2.5-3.5MSD	17		27		37	
8	SL-568-SA5D-SB-2.5-3.5DUP	18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

LDC #: 30695O4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: AR
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

Analyte	Blank ID	Sample Identification												
	FB-041613 (SDG: PH032)	Action Limit	1	2 gm										
Mo	0.0132	6.60	1.44	0.388										
Sn	0.0029	1.45												

Sampling date: 9/25/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All

Analyte	Blank ID	Sample Identification												
	EB1-092513 (SDG: PH114)	Action Limit	No Qualifiers											
Ca	0.0498	24.9												

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.: PH112
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7208982BKG Matrix Spike Lab Sample ID: 7208983MS Matrix Spike Duplicate Lab Sample ID: 7208984MSD
Batch Id(s): P27437A, P27438A

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		20503.4170		20234.2723		20248.9573		198.0198	194.1748	MG/KG	-136		-131	*	0			20	P
Antimony		0.7400	U	21.5891		20.3621		49.5050	48.5437	MG/KG	44	N	42	N	6		75 - 125	20	P
Arsenic		4.0560		18.3941		19.2252		14.8515	14.5631	MG/KG	97		104		4		75 - 125	20	P
Barium		95.6450		281.0584		273.8534		198.0198	194.1748	MG/KG	94		92		3		75 - 125	20	P
Beryllium		0.5650	B	5.3426		5.3204		4.9505	4.8544	MG/KG	97		98		0		75 - 125	20	P
Boron		9.4400	B	200.6564		203.6835		198.0198	194.1748	MG/KG	97		100		1		75 - 125	20	P
Cadmium		0.3210	B	4.9574		5.0456		4.9505	4.8544	MG/KG	94		97		2		75 - 125	20	P
Calcium		37146.4410		44866.6911		46661.0204		396.0396	388.3495	MG/KG	1949		2450		4			20	P
Chromium		31.2820		55.6653		52.4748		19.8020	19.4175	MG/KG	123		109		6		75 - 125	20	P
Cobalt		7.9630		51.7772		51.8155		49.5050	48.5437	MG/KG	89		90		0		75 - 125	20	P
Copper		16.0030		40.0436		39.8757		24.7525	24.2718	MG/KG	97		98		0		75 - 125	20	P
Iron		25969.1730		20878.0931		19658.7447		99.0099	97.0874	MG/KG	-5142		-6500		6			20	P
Lead		7.0820		20.2119		20.3718		14.8515	14.5631	MG/KG	88		91		1		75 - 125	20	P
Lithium		32.9190		122.9356		122.3932		99.0099	97.0874	MG/KG	91		92		0		75 - 125	20	P
Magnesium		7184.0330		6282.9455		6167.3728		198.0198	194.1748	MG/KG	-455		-524		2			20	P
Manganese		265.7460		379.4307		431.6019		49.5050	48.5437	MG/KG	230		342		13			20	P
Mercury		0.0115	B	0.1903		0.1711		0.1555	0.1554	MG/KG	115		103		11		65 - 135	20	CV
Molybdenum		0.1700	U	184.2960		182.8087		198.0198	194.1748	MG/KG	93		94		1		75 - 125	20	P
Nickel		17.4050		61.6040		59.7816		49.5050	48.5437	MG/KG	89		87		3		75 - 125	20	P
Phosphorus		439.1830		610.4188		602.5252		99.0099	97.0874	MG/KG	173		168		1			20	P
Potassium		3366.5940		3843.9644		3983.5971		990.0990	970.8738	MG/KG	48	N	64	N	4		75 - 125	20	P
Selenium	78	0.1832	B	2.2752		2.3786		1.9802	1.9417	MG/KG	106		113		4		75 - 125	20	MS
Silver	107	0.0327	B	11.0396		11.0718		9.9010	9.7087	MG/KG	111		114		0		75 - 125	20	MS
Sodium		187.3580		1115.4762		1097.0592		990.0990	970.8738	MG/KG	94		94		2		75 - 125	20	P
Strontium	88	89.7000		101.1881		97.2816		7.9208	7.7670	MG/KG	145		98		4			20	MS
Thallium	203	0.2830		0.7689		0.7363		0.3960	0.3883	MG/KG	123		117		4		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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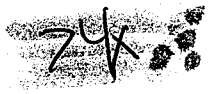

QUALITY ASSURANCE SUMMARY
FORM 5A(MS/MSD)
MATRIX SPIKE/MATRIX SPIKE DUPLICATE
SDG No.: PH112
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7208982BKG Matrix Spike Lab Sample ID: 7208983MS Matrix Spike Duplicate Lab Sample ID: 7208984MSD
Batch Id(s): P27437A, P27438A

		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		3.0930	B	335.6079		337.5825		396.0396	388.3495	MG/KG	84		86		1		75 - 125	20	P
Titanium		1095.0880		1270.0455		1323.9398		99.0099	97.0874	MG/KG	177		236		4			20	P
Vanadium		56.3670		107.3485		110.4146		49.5050	48.5437	MG/KG	103		111		3		75 - 125	20	P
Zinc		78.1960		106.6188		110.4631		49.5050	48.5437	MG/KG	57	N	66	N	4		75 - 125	20	P
Zirconium		4.2450	B	98.3792		100.4874		99.0099	97.0874	MG/KG	95		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.: PH112
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7208982BKG Duplicate Lab Sample ID: 7208985DUP
Batch ID(s): P27437A, P27438A
Concentration Units: MG/KG

Analyte	Mass	Control Limit	Samples (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum			20503.4170		13205.6703		43	*	P
Antimony			0.7400	U	0.7327	U			P
Arsenic		4.0	4.0560		3.2822	B	21		P
Barium			95.6450		88.6614		8		P
Beryllium			0.5650	B	0.4119	B	31		P
Boron			9.4400	B	6.9733	B	30		P
Cadmium			0.3210	B	0.4416	B	32		P
Calcium			37146.4410		42777.6000		14		P
Chromium			31.2820		27.8752		12		P
Cobalt			7.9630		5.8970		30	*	P
Copper			16.0030		13.1168		20		P
Iron			25969.1730		17476.5436		39	*	P
Lead		3.0	7.0820		6.8614		3		P
Lithium		4.0	32.9190		18.4238		56	*	P
Magnesium			7184.0330		5124.0703		33	*	P
Manganese			265.7460		354.7842		29	*	P
Mercury			0.0115	B	0.0111	B	4		CV
Molybdenum			0.1700	U	0.3881	B	200		P
Nickel			17.4050		14.8426		16		P
Phosphorus			439.1830		503.4861		14		P
Potassium			3366.5940		2468.9218		31	*	P
Selenium	78		0.1832	B	0.2380	B	26		MS
Silver	107		0.0327	B	0.0359	B	9		MS
Sodium		100.0	187.3580		146.4515		25		P
Strontium	88		89.7000		84.5050		6		MS
Thallium	203	0.2	0.2830		0.2509		12		MS
Tin			3.0930	B	2.5505	B	19		P
Titanium			1095.0880		652.4723		51	*	P
Vanadium			56.3670		41.7030		30	*	P
Zinc			78.1960		54.7109		35	*	P
Zirconium		5.0	4.2450	B	5.6347		28		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 5D

SDG: PH113

Prepared for

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December 11, 2013

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on September 24, 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 (TPH) as Gasoline by EPA SW 846 Method 8015M
TPH as Extractables by EPA SW 846 Method 8015M
Dioxins and Dibenzofurans by EPA Method 1613B

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

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

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

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

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 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.

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 (in SDG PH109) at the required frequency. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of one MS/MSD pairs for metals and TPH as extractables. 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). The details regarding the qualification of data are provided in Enclosure I.

IX. Laboratory Control Samples (LCS)

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

X. Internal Standards

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

XI. ICP Serial Dilution

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

Diluted Sample	Analyte	%D (Limits)	Associated Samples	Flag	A or P
SL-565-SA5D-SB-0.0-0.5	Strontium	24 (≤10)	All soil samples in SDG PH113	J (all detects) UJ (all non-detects)	A

The associated sample results were qualified as detected estimated (J).

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 PH113	All compounds reported as detected below the RL.	J (all detects)	A

XIII. Field Duplicate Samples

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

XIV. Field Blank Samples

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

One equipment blank (from SDG PH114) was collected and analyzed for SVOCs, PCBs, metals, TPH as gasoline, TPH as extractables and dioxins. The equipment blank had detections for SVOCs, metals and dioxins. The associated sample results were not detected or were

significantly greater than the concentrations found in the equipment blanks, therefore no data were qualified.

One field blank (from SDG PH032) was collected and analyzed for SVOCs, PCBs, metals, TPH as gasoline, TPH as extractables and dioxins. The field blank had detections for 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
24-Sep-2013	SL-565-SA5D-SB-0.0-0.5	7211497	N	3050B	6010C	III
24-Sep-2013	SL-565-SA5D-SB-0.0-0.5	7211497	N	3050B	6020A	III
24-Sep-2013	SL-565-SA5D-SB-0.0-0.5	7211497	N	3546	8015M	III
24-Sep-2013	SL-565-SA5D-SB-0.0-0.5	7211497	N	3546	8082A	III
24-Sep-2013	SL-565-SA5D-SB-0.0-0.5	7211497	N	3546	8270D SIM	III
24-Sep-2013	SL-565-SA5D-SB-0.0-0.5	7211497	N	METHOD	1613B	III
24-Sep-2013	SL-565-SA5D-SB-0.0-0.5	7211497	N	METHOD	7471B	III
24-Sep-2013	SL-565-SA5D-SB-0.0-0.5MS	7211498	MS	3050B	6010C	III
24-Sep-2013	SL-565-SA5D-SB-0.0-0.5MS	7211498	MS	3050B	6020A	III
24-Sep-2013	SL-565-SA5D-SB-0.0-0.5MS	7211498	MS	3546	8015M	III
24-Sep-2013	SL-565-SA5D-SB-0.0-0.5MS	7211498	MS	3546	8082A	III
24-Sep-2013	SL-565-SA5D-SB-0.0-0.5MS	7211498	MS	3546	8270D SIM	III
24-Sep-2013	SL-565-SA5D-SB-0.0-0.5MS	7211498	MS	METHOD	1613B	III
24-Sep-2013	SL-565-SA5D-SB-0.0-0.5MS	7211498	MS	METHOD	7471B	III
24-Sep-2013	SL-565-SA5D-SB-0.0-0.5MSD	7211499	MSD	3050B	6010C	III
24-Sep-2013	SL-565-SA5D-SB-0.0-0.5MSD	7211499	MSD	3050B	6020A	III
24-Sep-2013	SL-565-SA5D-SB-0.0-0.5MSD	7211499	MSD	3546	8015M	III
24-Sep-2013	SL-565-SA5D-SB-0.0-0.5MSD	7211499	MSD	3546	8082A	III
24-Sep-2013	SL-565-SA5D-SB-0.0-0.5MSD	7211499	MSD	3546	8270D SIM	III
24-Sep-2013	SL-565-SA5D-SB-0.0-0.5MSD	7211499	MSD	METHOD	1613B	III
24-Sep-2013	SL-565-SA5D-SB-0.0-0.5MSD	7211499	MSD	METHOD	7471B	III
24-Sep-2013	SL-565-SA5D-SB-0.0-0.5DUP	7211500	DUP	3050B	6010C	III
24-Sep-2013	SL-565-SA5D-SB-0.0-0.5DUP	7211500	DUP	3050B	6020A	III
24-Sep-2013	SL-565-SA5D-SB-0.0-0.5DUP	7211500	DUP	METHOD	7471B	III
24-Sep-2013	SL-865-SA5D-SB-0.0-0.5	7211501	FD	3050B	6010C	III
24-Sep-2013	SL-865-SA5D-SB-0.0-0.5	7211501	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
24-Sep-2013	SL-865-SA5D-SB-0.0-0.5	7211501	FD	3546	8015M	III
24-Sep-2013	SL-865-SA5D-SB-0.0-0.5	7211501	FD	3546	8082A	III
24-Sep-2013	SL-865-SA5D-SB-0.0-0.5	7211501	FD	3546	8270D SIM	III
24-Sep-2013	SL-865-SA5D-SB-0.0-0.5	7211501	FD	METHOD	1613B	III
24-Sep-2013	SL-865-SA5D-SB-0.0-0.5	7211501	FD	METHOD	7471B	III
24-Sep-2013	TB-092413	7211494	TB	5030B	8015M	III
24-Sep-2013	SL-558-SA5D-SB-0.0-0.5	7211495	N	3050B	6010C	III
24-Sep-2013	SL-558-SA5D-SB-0.0-0.5	7211495	N	3050B	6020A	III
24-Sep-2013	SL-558-SA5D-SB-0.0-0.5	7211495	N	3546	8015M	III
24-Sep-2013	SL-558-SA5D-SB-0.0-0.5	7211495	N	3546	8082A	III
24-Sep-2013	SL-558-SA5D-SB-0.0-0.5	7211495	N	3546	8270D SIM	III
24-Sep-2013	SL-558-SA5D-SB-0.0-0.5	7211495	N	METHOD	1613B	III
24-Sep-2013	SL-558-SA5D-SB-0.0-0.5	7211495	N	METHOD	7471B	III
24-Sep-2013	SL-558-SA5D-SB-4.0-5.0	7211496	N	3050B	6010C	III
24-Sep-2013	SL-558-SA5D-SB-4.0-5.0	7211496	N	3050B	6020A	III
24-Sep-2013	SL-558-SA5D-SB-4.0-5.0	7211496	N	3546	8015M	III
24-Sep-2013	SL-558-SA5D-SB-4.0-5.0	7211496	N	3546	8082A	III
24-Sep-2013	SL-558-SA5D-SB-4.0-5.0	7211496	N	3546	8270D SIM	III
24-Sep-2013	SL-558-SA5D-SB-4.0-5.0	7211496	N	5035A	8015M	III
24-Sep-2013	SL-558-SA5D-SB-4.0-5.0	7211496	N	METHOD	7471B	III
24-Sep-2013	SL-557-SA5D-SB-0.0-0.5	7211502	N	3050B	6010C	III
24-Sep-2013	SL-557-SA5D-SB-0.0-0.5	7211502	N	3050B	6020A	III
24-Sep-2013	SL-557-SA5D-SB-0.0-0.5	7211502	N	3546	8015M	III
24-Sep-2013	SL-557-SA5D-SB-0.0-0.5	7211502	N	3546	8082A	III
24-Sep-2013	SL-557-SA5D-SB-0.0-0.5	7211502	N	3546	8270D SIM	III
24-Sep-2013	SL-557-SA5D-SB-0.0-0.5	7211502	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
24-Sep-2013	SL-557-SA5D-SB-0.0-0.5	7211502	N	METHOD	7471B	III
24-Sep-2013	SL-566-SA5D-SB-0.0-0.5	7211503	N	3050B	6010C	III
24-Sep-2013	SL-566-SA5D-SB-0.0-0.5	7211503	N	3050B	6020A	III
24-Sep-2013	SL-566-SA5D-SB-0.0-0.5	7211503	N	3546	8015M	III
24-Sep-2013	SL-566-SA5D-SB-0.0-0.5	7211503	N	3546	8082A	III
24-Sep-2013	SL-566-SA5D-SB-0.0-0.5	7211503	N	3546	8270D SIM	III
24-Sep-2013	SL-566-SA5D-SB-0.0-0.5	7211503	N	METHOD	1613B	III
24-Sep-2013	SL-566-SA5D-SB-0.0-0.5	7211503	N	METHOD	7471B	III
24-Sep-2013	SL-566-SA5D-SB-4.0-5.0	7211504	N	3050B	6010C	III
24-Sep-2013	SL-566-SA5D-SB-4.0-5.0	7211504	N	3050B	6020A	III
24-Sep-2013	SL-566-SA5D-SB-4.0-5.0	7211504	N	3546	8015M	III
24-Sep-2013	SL-566-SA5D-SB-4.0-5.0	7211504	N	3546	8082A	III
24-Sep-2013	SL-566-SA5D-SB-4.0-5.0	7211504	N	3546	8270D SIM	III
24-Sep-2013	SL-566-SA5D-SB-4.0-5.0	7211504	N	5035A	8015M	III
24-Sep-2013	SL-566-SA5D-SB-4.0-5.0	7211504	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: PH113 **Laboratory: LL**

EDD Filename: PH113 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-557-SA5D-SB-0.0-0.5** ***Collected:*** **9/24/2013 9:35:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.17	U	0.771	MDL	4.17	PQL	mg/Kg	UJ	Q
ARSENIC	2.79	J	0.729	MDL	4.17	PQL	mg/Kg	J	Z
BERYLLIUM	0.843	J	0.0698	MDL	1.04	PQL	mg/Kg	J	Z
CADMIUM	0.965	J	0.0792	MDL	1.04	PQL	mg/Kg	J	Z
COBALT	10.3		0.103	MDL	1.04	PQL	mg/Kg	J	E
TIN	2.91	J	0.229	MDL	10.4	PQL	mg/Kg	U	B
POTASSIUM	4870		8.69	MDL	104	PQL	mg/Kg	J	Q

Sample ID: **SL-558-SA5D-SB-0.0-0.5** ***Collected:*** **9/24/2013 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	4.17	U	0.772	MDL	4.17	PQL	mg/Kg	UJ	Q
ARSENIC	3.27	J	0.730	MDL	4.17	PQL	mg/Kg	J	Z
BERYLLIUM	0.686	J	0.0699	MDL	1.04	PQL	mg/Kg	J	Z
COBALT	8.29		0.103	MDL	1.04	PQL	mg/Kg	J	E
MOLYBDENUM	0.198	J	0.177	MDL	2.09	PQL	mg/Kg	U	F
POTASSIUM	6280		8.70	MDL	104	PQL	mg/Kg	J	Q
SODIUM	92.0	J	17.4	MDL	104	PQL	mg/Kg	J	Z
TIN	2.34	J	0.230	MDL	10.4	PQL	mg/Kg	U	B
Zirconium	5.19	J	0.876	MDL	5.22	PQL	mg/Kg	J	Z

Sample ID: **SL-558-SA5D-SB-4.0-5.0** ***Collected:*** **9/24/2013 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	4.27	U	0.790	MDL	4.27	PQL	mg/Kg	UJ	Q
ARSENIC	1.72	J	0.747	MDL	4.27	PQL	mg/Kg	J	Z
BERYLLIUM	0.476	J	0.0715	MDL	1.07	PQL	mg/Kg	J	Z
CADMIUM	0.847	J	0.0811	MDL	1.07	PQL	mg/Kg	J	Z
COBALT	4.95		0.106	MDL	1.07	PQL	mg/Kg	J	E
POTASSIUM	2740		8.90	MDL	107	PQL	mg/Kg	J	Q
SODIUM	102	J	17.8	MDL	107	PQL	mg/Kg	J	Z
TIN	2.08	J	0.235	MDL	10.7	PQL	mg/Kg	U	B
Zirconium	4.44	J	0.896	MDL	5.34	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: PH113 **Laboratory: LL**

EDD Filename: PH113 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-565-SA5D-SB-0.0-0.5 **Collected: 9/24/2013 7:40:00** **Analysis Type: REA** **Dilution: 5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	55000		19.0	MDL	210	PQL	mg/Kg	J	FD

Sample ID: SL-565-SA5D-SB-0.0-0.5 **Collected: 9/24/2013 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
ANTIMONY	4.21	U	0.779	MDL	4.21	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.858	J	0.0705	MDL	1.05	PQL	mg/Kg	J	Z
BORON	3.09	J	0.884	MDL	10.5	PQL	mg/Kg	J	Z, FD
CADMIUM	0.840	J	0.0800	MDL	1.05	PQL	mg/Kg	J	Z
COBALT	9.18		0.104	MDL	1.05	PQL	mg/Kg	J	E
POTASSIUM	4120		8.78	MDL	105	PQL	mg/Kg	J	Q
TIN	2.63	J	0.231	MDL	10.5	PQL	mg/Kg	U	B

Sample ID: SL-566-SA5D-SB-0.0-0.5 **Collected: 9/24/2013 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	4.08	U	0.755	MDL	4.08	PQL	mg/Kg	UJ	Q
ARSENIC	2.79	J	0.714	MDL	4.08	PQL	mg/Kg	J	Z
BERYLLIUM	0.913	J	0.0683	MDL	1.02	PQL	mg/Kg	J	Z
COBALT	10.5		0.101	MDL	1.02	PQL	mg/Kg	J	E
POTASSIUM	4780		8.50	MDL	102	PQL	mg/Kg	J	Q
TIN	2.88	J	0.224	MDL	10.2	PQL	mg/Kg	U	B

Sample ID: SL-566-SA5D-SB-4.0-5.0 **Collected: 9/24/2013 1:15:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.21	U	0.779	MDL	4.21	PQL	mg/Kg	UJ	Q
ARSENIC	3.14	J	0.737	MDL	4.21	PQL	mg/Kg	J	Z
BERYLLIUM	0.642	J	0.0706	MDL	1.05	PQL	mg/Kg	J	Z
CADMIUM	0.947	J	0.0800	MDL	1.05	PQL	mg/Kg	J	Z
COBALT	8.80		0.104	MDL	1.05	PQL	mg/Kg	J	E
POTASSIUM	4610		8.78	MDL	105	PQL	mg/Kg	J	Q
TIN	3.07	J	0.232	MDL	10.5	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: PH113 **Laboratory: LL**

EDD Filename: PH113 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-865-SA5D-SB-0.0-0.5 **Collected: 9/24/2013 7:50:00** **Analysis Type: REA2** **Dilution: 5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	32700		18.9	MDL	209	PQL	mg/Kg	J	FD

Sample ID: SL-865-SA5D-SB-0.0-0.5 **Collected: 9/24/2013 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
ANTIMONY	4.18	U	0.773	MDL	4.18	PQL	mg/Kg	UJ	Q
ARSENIC	4.16	J	0.731	MDL	4.18	PQL	mg/Kg	J	Z
BERYLLIUM	0.692	J	0.0700	MDL	1.04	PQL	mg/Kg	J	Z
BORON	23.9		0.877	MDL	10.4	PQL	mg/Kg	J	FD
COBALT	7.91		0.103	MDL	1.04	PQL	mg/Kg	J	E
POTASSIUM	4490		8.71	MDL	104	PQL	mg/Kg	J	Q
TIN	2.63	J	0.230	MDL	10.4	PQL	mg/Kg	U	B

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-557-SA5D-SB-0.0-0.5 **Collected: 9/24/2013 9:35:00** **Analysis Type: REA2** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.261	J	0.104	MDL	0.417	PQL	mg/Kg	J	Z

Sample ID: SL-557-SA5D-SB-0.0-0.5 **Collected: 9/24/2013 9:35:00** **Analysis Type: RES** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0358	J	0.0271	MDL	0.208	PQL	mg/Kg	J	Z
STRONTIUM	40.8		0.0708	MDL	0.417	PQL	mg/Kg	J	E, A

Sample ID: SL-558-SA5D-SB-0.0-0.5 **Collected: 9/24/2013 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	0.354	J	0.104	MDL	0.417	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: PH113 **Laboratory: LL**

EDD Filename: PH113 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

***Sample ID:* SL-558-SA5D-SB-0.0-0.5** ***Collected:* 9/24/2013 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	0.0392	J	0.0271	MDL	0.209	PQL	mg/Kg	J	Z
STRONTIUM	75.9		0.0709	MDL	0.417	PQL	mg/Kg	J	E, A

***Sample ID:* SL-558-SA5D-SB-4.0-5.0** ***Collected:* 9/24/2013 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	98.5		0.181	MDL	1.07	PQL	mg/Kg	J	E, A

***Sample ID:* SL-558-SA5D-SB-4.0-5.0** ***Collected:* 9/24/2013 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	0.251	J	0.107	MDL	0.427	PQL	mg/Kg	J	Z

***Sample ID:* SL-558-SA5D-SB-4.0-5.0** ***Collected:* 9/24/2013 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
THALLIUM	0.183	J	0.0320	MDL	0.213	PQL	mg/Kg	J	Z

***Sample ID:* SL-565-SA5D-SB-0.0-0.5** ***Collected:* 9/24/2013 7:40:00** ***Analysis Type:* REA** ***Dilution:* 5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	114		0.179	MDL	1.05	PQL	mg/Kg	J	E, A

***Sample ID:* SL-565-SA5D-SB-0.0-0.5** ***Collected:* 9/24/2013 7:40:00** ***Analysis Type:* REA2** ***Dilution:* 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.166	J	0.105	MDL	0.421	PQL	mg/Kg	J	Z

***Sample ID:* SL-566-SA5D-SB-0.0-0.5** ***Collected:* 9/24/2013 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	0.386	J	0.102	MDL	0.408	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: PH113 **Laboratory: LL**

EDD Filename: PH113 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: **SL-566-SA5D-SB-0.0-0.5** *Collected:* **9/24/2013 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	0.0384	J	0.0265	MDL	0.204	PQL	mg/Kg	J	Z
STRONTIUM	38.9		0.0693	MDL	0.408	PQL	mg/Kg	J	E, A

Sample ID: **SL-566-SA5D-SB-4.0-5.0** *Collected:* **9/24/2013 1:15:00** *Analysis Type:* **REA2** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.116	J	0.105	MDL	0.421	PQL	mg/Kg	J	Z

Sample ID: **SL-566-SA5D-SB-4.0-5.0** *Collected:* **9/24/2013 1:15:00** *Analysis Type:* **RES** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0311	J	0.0274	MDL	0.211	PQL	mg/Kg	J	Z
STRONTIUM	30.0		0.0716	MDL	0.421	PQL	mg/Kg	J	E, A

Sample ID: **SL-865-SA5D-SB-0.0-0.5** *Collected:* **9/24/2013 7:50:00** *Analysis Type:* **REA** *Dilution:* **5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	169		0.178	MDL	1.04	PQL	mg/Kg	J	E, A

Sample ID: **SL-865-SA5D-SB-0.0-0.5** *Collected:* **9/24/2013 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	0.266	J	0.104	MDL	0.418	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: **SL-565-SA5D-SB-0.0-0.5** *Collected:* **9/24/2013 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
MERCURY	0.0140	J	0.0103	MDL	0.0171	PQL	mg/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: PH113 **Laboratory: LL**

EDD Filename: PH113 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: SL-566-SA5D-SB-4.0-5.0 **Collected: 9/24/2013 1:15:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0132	J	0.0104	MDL	0.0174	PQL	mg/Kg	J	Z

Sample ID: SL-865-SA5D-SB-0.0-0.5 **Collected: 9/24/2013 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
MERCURY	0.0292		0.0101	MDL	0.0168	PQL	mg/Kg	J	FD

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-557-SA5D-SB-0.0-0.5 **Collected: 9/24/2013 9:35:00** **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	0.844	JB	0.0142	MDL	5.11	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.120	JBQ	0.0227	MDL	5.11	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.155	JB	0.0377	MDL	5.11	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.180	JBQ	0.0345	MDL	5.11	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.464	JBQ	0.0396	MDL	5.11	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.192	JB	0.0327	MDL	5.11	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.505	JBQ	0.0356	MDL	5.11	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.345	JB	0.0392	MDL	5.11	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.166	JBQ	0.0408	MDL	5.11	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.413	JB	0.0352	MDL	5.11	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.181	JB	0.0333	MDL	5.11	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.461	JBQ	0.0365	MDL	5.11	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.442	J	0.0831	MDL	1.02	PQL	ng/Kg	J	Z
OCDF	1.86	JB	0.0413	MDL	10.2	PQL	ng/Kg	J	Z

Sample ID: SL-558-SA5D-SB-0.0-0.5 **Collected: 9/24/2013 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	2.62	JB	0.0235	MDL	5.20	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.239	JBQ	0.0341	MDL	5.20	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.267	JBQ	0.0483	MDL	5.20	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.261	JBQ	0.0352	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: PH113 **Laboratory: LL**

EDD Filename: PH113 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-558-SA5D-SB-0.0-0.5** *Collected:* **9/24/2013 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	0.555	JB	0.0501	MDL	5.20	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.195	JBQ	0.0333	MDL	5.20	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.324	JB	0.0470	MDL	5.20	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.178	JB	0.0376	MDL	5.20	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.248	JBQ	0.0381	MDL	5.20	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.320	JB	0.0290	MDL	5.20	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.250	JB	0.0334	MDL	5.20	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.224	JBQ	0.0274	MDL	5.20	PQL	ng/Kg	U	B
2,3,7,8-TCDD	0.0701	JQ	0.0554	MDL	1.04	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.197	JQ	0.0501	MDL	1.04	PQL	ng/Kg	J	Z

Sample ID: **SL-565-SA5D-SB-0.0-0.5** *Collected:* **9/24/2013 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	0.477	JBQ	0.0292	MDL	5.25	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.219	JBQ	0.0136	MDL	5.25	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.124	JBQ	0.0236	MDL	5.25	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.136	JBQ	0.0264	MDL	5.25	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.212	JB	0.0226	MDL	5.25	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.114	JB	0.0277	MDL	5.25	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.206	JB	0.0203	MDL	5.25	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.134	JBQ	0.0255	MDL	5.25	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.153	JBQ	0.0243	MDL	5.25	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.254	JBQ	0.0335	MDL	5.25	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.379	JBQ	0.0202	MDL	5.25	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.155	JBQ	0.0200	MDL	5.25	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.223	JB	0.0200	MDL	5.25	PQL	ng/Kg	U	B
2,3,7,8-TCDD	0.0976	J	0.0523	MDL	1.05	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.0682	JQ	0.0439	MDL	1.05	PQL	ng/Kg	J	Z
OCDD	2.22	JB	0.0373	MDL	10.5	PQL	ng/Kg	J	Z, FD
OCDF	0.385	JB	0.0465	MDL	10.5	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: PH113 **Laboratory: LL**

EDD Filename: PH113 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-566-SA5D-SB-0.0-0.5** ***Collected:*** **9/24/2013 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	2.02	JB	0.0236	MDL	5.06	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.360	JBQ	0.0117	MDL	5.06	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.102	JBQ	0.0240	MDL	5.06	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0826	JBQ	0.0260	MDL	5.06	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.128	JB	0.0220	MDL	5.06	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.276	JBQ	0.0277	MDL	5.06	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.100	JBQ	0.0187	MDL	5.06	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.306	JB	0.0271	MDL	5.06	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.356	JB	0.0252	MDL	5.06	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0695	JBQ	0.0303	MDL	5.06	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.256	JB	0.0185	MDL	5.06	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.135	JBQ	0.0214	MDL	5.06	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.218	JBQ	0.0183	MDL	5.06	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.116	JQ	0.0417	MDL	1.01	PQL	ng/Kg	J	Z
OCDF	0.857	JB	0.0367	MDL	10.1	PQL	ng/Kg	J	Z

Sample ID: **SL-865-SA5D-SB-0.0-0.5** ***Collected:*** **9/24/2013 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	0.722	JB	0.0295	MDL	5.03	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.267	JB	0.0137	MDL	5.03	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.147	JB	0.0197	MDL	5.03	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0869	JBQ	0.0280	MDL	5.03	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.146	JB	0.0237	MDL	5.03	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.144	JBQ	0.0304	MDL	5.03	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.143	JB	0.0223	MDL	5.03	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.146	JBQ	0.0284	MDL	5.03	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.175	JB	0.0235	MDL	5.03	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.157	JBQ	0.0371	MDL	5.03	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.275	JBQ	0.0235	MDL	5.03	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.159	JB	0.0237	MDL	5.03	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.241	JB	0.0229	MDL	5.03	PQL	ng/Kg	U	B
2,3,7,8-TCDD	0.105	JQ	0.0633	MDL	1.01	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.0816	JQ	0.0522	MDL	1.01	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: PH113 **Laboratory: LL**

EDD Filename: PH113 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-865-SA5D-SB-0.0-0.5** *Collected:* **9/24/2013 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
OCDD	4.69	JB	0.0276	MDL	10.1	PQL	ng/Kg	J	Z, FD
OCDF	0.582	JBQ	0.0391	MDL	10.1	PQL	ng/Kg	U	B

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: **SL-565-SA5D-SB-0.0-0.5** *Collected:* **9/24/2013 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
EFH (C21-C30)	4.3	J	2.1	MDL	5.3	PQL	mg/Kg	J	Z, Q, Q, Q, FD
EFH (C30-C40)	13		4.2	MDL	11	PQL	mg/Kg	J	Q, Q, Q, FD

Sample ID: **SL-566-SA5D-SB-0.0-0.5** *Collected:* **9/24/2013 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
EFH (C15-C20)	4.9	J	2.1	MDL	5.1	PQL	mg/Kg	J	Z

Sample ID: **SL-865-SA5D-SB-0.0-0.5** *Collected:* **9/24/2013 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
EFH (C21-C30)	8.7		2.1	MDL	5.2	PQL	mg/Kg	J	FD
EFH (C30-C40)	29		4.2	MDL	10	PQL	mg/Kg	J	FD

Method Category: SVOA

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

Sample ID: **SL-557-SA5D-SB-0.0-0.5** *Collected:* **9/24/2013 9:35:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-METHYLNAPHTHALENE	0.73	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	1.1	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
PHENANTHRENE	1.1	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
PYRENE	1.3	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z

* denotes a non-reportable result

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

Data Qualifier Summary

Lab Reporting Batch ID: PH113 **Laboratory: LL**

EDD Filename: PH113 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

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

Sample ID: **SL-558-SA5D-SB-0.0-0.5** ***Collected:*** **9/24/2013 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
2-METHYLNAPHTHALENE	1.2	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(B)FLUORANTHENE	1.7	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(G,H,I)PERYLENE	0.86	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(K)FLUORANTHENE	0.79	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	7.1	J	6.3	MDL	19	PQL	ug/Kg	J	Z
Butylbenzylphthalate	10	J	6.3	MDL	19	PQL	ug/Kg	J	Z
CHRYSENE	1.7	J	0.35	MDL	1.8	PQL	ug/Kg	J	Z
FLUORANTHENE	1.4	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
NAPHTHALENE	1.6	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
PHENANTHRENE	1.2	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
PYRENE	1.3	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: **SL-565-SA5D-SB-0.0-0.5** ***Collected:*** **9/24/2013 7:40:00** ***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	U	6.3	MDL	19	PQL	ug/Kg	UJ	FD
NAPHTHALENE	1.7	U	0.70	MDL	1.7	PQL	ug/Kg	UJ	FD

Sample ID: **SL-566-SA5D-SB-0.0-0.5** ***Collected:*** **9/24/2013 12:30:00** ***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	0.68	MDL	1.7	PQL	ug/Kg	J	Z
2-METHYLNAPHTHALENE	1.5	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
ACENAPHTHYLENE	0.45	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(B)FLUORANTHENE	1.3	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	9.1	J	6.1	MDL	18	PQL	ug/Kg	J	Z
Butylbenzylphthalate	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	1.1	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
FLUORENE	0.70	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
PHENANTHRENE	1.2	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
PYRENE	1.1	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: PH113 **Laboratory: LL**

EDD Filename: PH113 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

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

Sample ID: SL-566-SA5D-SB-4.0-5.0 **Collected: 9/24/2013 1:15:00** **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	0.70	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: SL-865-SA5D-SB-0.0-0.5 **Collected: 9/24/2013 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
BIS(2-ETHYLHEXYL)PHTHALATE	11	J	6.3	MDL	19	PQL	ug/Kg	J	Z, FD
NAPHTHALENE	0.71	J	0.70	MDL	1.7	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: PH113 **Laboratory: LL**

EDD Filename: PH113 **eQAPP Name: CDM_SSFL_131101_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
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

PH113

Method Blank Outlier Report

Lab Reporting Batch ID: PH113 **Laboratory: LL**

EDD Filename: PH113 **eQAPP Name: CDM_SSFL_131101_Lan**

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2730B371140	10/2/2013 11:40:00 AM	1,2,3,4,6,7,8-HPCDD	0.0965 ng/Kg	SL-557-SA5D-SB-0.0-0.5
		1,2,3,4,6,7,8-HPCDF	0.0595 ng/Kg	SL-558-SA5D-SB-0.0-0.5
		1,2,3,4,7,8,9-HPCDF	0.0657 ng/Kg	SL-565-SA5D-SB-0.0-0.5
		1,2,3,4,7,8-HxCDD	0.0334 ng/Kg	SL-566-SA5D-SB-0.0-0.5
		1,2,3,4,7,8-HXCDF	0.0515 ng/Kg	SL-865-SA5D-SB-0.0-0.5
		1,2,3,6,7,8-HXCDD	0.0256 ng/Kg	
		1,2,3,6,7,8-HXCDF	0.0453 ng/Kg	
		1,2,3,7,8,9-HXCDD	0.0369 ng/Kg	
		1,2,3,7,8,9-HXCDF	0.0754 ng/Kg	
		1,2,3,7,8-PECDD	0.0738 ng/Kg	
		1,2,3,7,8-PECDF	0.0876 ng/Kg	
		2,3,4,6,7,8-HXCDF	0.0332 ng/Kg	
		2,3,4,7,8-PECDF	0.0646 ng/Kg	
		OCDD	0.249 ng/Kg	
		OCDF	0.137 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-557-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.120 ng/Kg	0.120U ng/Kg
SL-557-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.155 ng/Kg	0.155U ng/Kg
SL-557-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.180 ng/Kg	0.180U ng/Kg
SL-557-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.192 ng/Kg	0.192U ng/Kg
SL-557-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.345 ng/Kg	0.345U ng/Kg
SL-557-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.166 ng/Kg	0.166U ng/Kg
SL-557-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.413 ng/Kg	0.413U ng/Kg
SL-558-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.239 ng/Kg	0.239U ng/Kg
SL-558-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.195 ng/Kg	0.195U ng/Kg
SL-558-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.178 ng/Kg	0.178U ng/Kg
SL-558-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.248 ng/Kg	0.248U ng/Kg
SL-558-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.320 ng/Kg	0.320U ng/Kg
SL-558-SA5D-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.224 ng/Kg	0.224U ng/Kg
SL-565-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDD	0.477 ng/Kg	0.477U ng/Kg
SL-565-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDF	0.219 ng/Kg	0.219U ng/Kg
SL-565-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.124 ng/Kg	0.124U ng/Kg
SL-565-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.136 ng/Kg	0.136U ng/Kg
SL-565-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.212 ng/Kg	0.212U ng/Kg
SL-565-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDD	0.114 ng/Kg	0.114U ng/Kg
SL-565-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.206 ng/Kg	0.206U ng/Kg
SL-565-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDD	0.134 ng/Kg	0.134U ng/Kg
SL-565-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.153 ng/Kg	0.153U ng/Kg
SL-565-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.254 ng/Kg	0.254U ng/Kg
SL-565-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.379 ng/Kg	0.379U ng/Kg
SL-565-SA5D-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.155 ng/Kg	0.155U ng/Kg
SL-565-SA5D-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.223 ng/Kg	0.223U ng/Kg
SL-565-SA5D-SB-0.0-0.5(RES)	OCDF	0.385 ng/Kg	0.385U ng/Kg
SL-566-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.102 ng/Kg	0.102U ng/Kg
SL-566-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.0826 ng/Kg	0.0826U ng/Kg

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

Method Blank Outlier Report

Lab Reporting Batch ID: PH113 **Laboratory: LL**

EDD Filename: PH113 **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-566-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.128 ng/Kg	0.128U ng/Kg
SL-566-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.100 ng/Kg	0.100U ng/Kg
SL-566-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.356 ng/Kg	0.356U ng/Kg
SL-566-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.0695 ng/Kg	0.0695U ng/Kg
SL-566-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.256 ng/Kg	0.256U ng/Kg
SL-566-SA5D-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.135 ng/Kg	0.135U ng/Kg
SL-566-SA5D-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.218 ng/Kg	0.218U ng/Kg
SL-865-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDF	0.267 ng/Kg	0.267U ng/Kg
SL-865-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.147 ng/Kg	0.147U ng/Kg
SL-865-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.0869 ng/Kg	0.0869U ng/Kg
SL-865-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.146 ng/Kg	0.146U ng/Kg
SL-865-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.143 ng/Kg	0.143U ng/Kg
SL-865-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDD	0.146 ng/Kg	0.146U ng/Kg
SL-865-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.175 ng/Kg	0.175U ng/Kg
SL-865-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.157 ng/Kg	0.157U ng/Kg
SL-865-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.275 ng/Kg	0.275U ng/Kg
SL-865-SA5D-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.159 ng/Kg	0.159U ng/Kg
SL-865-SA5D-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.241 ng/Kg	0.241U ng/Kg
SL-865-SA5D-SB-0.0-0.5(RES)	OCDF	0.582 ng/Kg	0.582U ng/Kg

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P26837AB221826	9/27/2013 6:26:00 PM	CALCIUM TIN ZINC	7.61 mg/Kg 1.45 mg/Kg 0.570 mg/Kg	SL-557-SA5D-SB-0.0-0.5 SL-558-SA5D-SB-0.0-0.5 SL-558-SA5D-SB-4.0-5.0 SL-565-SA5D-SB-0.0-0.5 SL-566-SA5D-SB-0.0-0.5 SL-566-SA5D-SB-4.0-5.0 SL-865-SA5D-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-557-SA5D-SB-0.0-0.5(RES)	TIN	2.91 mg/Kg	2.91U mg/Kg
SL-558-SA5D-SB-0.0-0.5(RES)	TIN	2.34 mg/Kg	2.34U mg/Kg
SL-558-SA5D-SB-4.0-5.0(RES)	TIN	2.08 mg/Kg	2.08U mg/Kg
SL-565-SA5D-SB-0.0-0.5(RES)	TIN	2.63 mg/Kg	2.63U mg/Kg
SL-566-SA5D-SB-0.0-0.5(RES)	TIN	2.88 mg/Kg	2.88U mg/Kg
SL-566-SA5D-SB-4.0-5.0(RES)	TIN	3.07 mg/Kg	3.07U mg/Kg
SL-865-SA5D-SB-0.0-0.5(RES)	TIN	2.63 mg/Kg	2.63U mg/Kg

Field Blank Outlier Report

Lab Reporting Batch ID: PH113 **Laboratory: LL**

EDD Filename: PH113 **eQAPP Name: CDM_SSFL_131101_Lan**

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

Field Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
FB-041613(REA2/TOT)	4/16/2013 3:15:00 PM	MOLYBDENUM TIN	0.0132 mg/L 0.0029 mg/L	SL-557-SA5D-SB-0.0-0.5 SL-558-SA5D-SB-0.0-0.5 SL-558-SA5D-SB-4.0-5.0 SL-565-SA5D-SB-0.0-0.5 SL-566-SA5D-SB-0.0-0.5 SL-566-SA5D-SB-4.0-5.0 SL-865-SA5D-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-558-SA5D-SB-0.0-0.5(RES)	MOLYBDENUM	0.198 mg/Kg	0.198U mg/Kg

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH113 **Laboratory: LL**

EDD Filename: PH113 **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-565-SA5D-SB-0.0-0.5MSD (SL-565-SA5D-SB-0.0-0.5)	EFH (C12-C14) EFH (C15-C20) EFH (C8-C11)	- - -	- 124 -	49.00-123.00 49.00-123.00 49.00-123.00	30 (20.00) 86 (20.00) 32 (20.00)	EFH (C12-C14) EFH (C15-C20) EFH (C8-C11)	J (all detects)
SL-565-SA5D-SB-0.0-0.5MS **SL-565-SA5D-SB-0.0-0.5MSD** (SL-565-SA5D-SB-0.0-0.5)	EFH (C30-C40)	-39	354	49.00-123.00	167 (20.00)	EFH (C30-C40)	J(all detects) R(all non-detects)
SL-565-SA5D-SB-0.0-0.5MS **SL-565-SA5D-SB-0.0-0.5MSD** (SL-565-SA5D-SB-0.0-0.5)	EFH (C21-C30)	11	170	49.00-123.00	130 (20.00)	EFH (C21-C30)	J(all detects) UJ(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-565-SA5D-SB-0.0-0.5MS **(TOT)** **SL-565-SA5D-SB-0.0-0.5MSD** **(TOT)** (SL-557-SA5D-SB-0.0-0.5 SL -558-SA5D-SB-0.0-0.5 SL -558-SA5D-SB-4.0-5.0 SL -565-SA5D-SB-0.0-0.5 SL -566-SA5D-SB-0.0-0.5 SL -566-SA5D-SB-4.0-5.0 SL -865-SA5D-SB-0.0-0.5)	ALUMINUM CALCIUM MAGNESIUM PHOSPHORUS POTASSIUM TITANIUM	3790 5761 266 165 207 790	4255 2417 312 173 193 747	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 MAGNESIUM PHOSPHORUS POTASSIUM TITANIUM	J(all detects) Al, Ca, Mg, P, Ti, No Qual, >4x
SL-565-SA5D-SB-0.0-0.5MS **(TOT)** **SL-565-SA5D-SB-0.0-0.5MSD** **(TOT)** (SL-557-SA5D-SB-0.0-0.5 SL -558-SA5D-SB-0.0-0.5 SL -558-SA5D-SB-4.0-5.0 SL -565-SA5D-SB-0.0-0.5 SL -566-SA5D-SB-0.0-0.5 SL -566-SA5D-SB-4.0-5.0 SL -865-SA5D-SB-0.0-0.5)	ANTIMONY IRON	26 -20245	28 -21138	75.00-125.00 75.00-125.00	- -	ANTIMONY IRON	 J(all detects) UJ(all non-detects) Fe, No Qual, >4x Sb, Post Spike = 95%
SL-565-SA5D-SB-0.0-0.5MS **(TOT)** **SL-565-SA5D-SB-0.0-0.5MSD** **(TOT)** (SL-557-SA5D-SB-0.0-0.5 SL -558-SA5D-SB-0.0-0.5 SL -558-SA5D-SB-4.0-5.0 SL -565-SA5D-SB-0.0-0.5 SL -566-SA5D-SB-0.0-0.5 SL -566-SA5D-SB-4.0-5.0 SL -865-SA5D-SB-0.0-0.5)	MANGANESE	150	68	75.00-125.00	-	MANGANESE	 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: PH113 **Laboratory: LL**

EDD Filename: PH113 **eQAPP Name: CDM_SSFL_131101_Lan**

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

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
SL-565-SA5D-SB-0.0-0.5MS (TOT) **SL-565-SA5D-SB-0.0-0.5MSD (TOT)** (SL-557-SA5D-SB-0.0-0.5 SL-558-SA5D-SB-0.0-0.5 SL-558-SA5D-SB-4.0-5.0 SL-565-SA5D-SB-0.0-0.5 SL-566-SA5D-SB-0.0-0.5 SL-566-SA5D-SB-4.0-5.0 SL-865-SA5D-SB-0.0-0.5)	STRONTIUM	1026	638	75.00-125.00	-	STRONTIUM	No Qual, >4x

Lab Duplicate Outlier Report

Lab Reporting Batch ID: PH113 **Laboratory: LL**

EDD Filename: PH113 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 6010C
Matrix: SO

QC Sample ID (Associated Sample ID)	Analyte	Sample RPD	eQAPP RPD	Flag
SL-565-SA5D-SB-0.0-0.5DUP (TOT) (SL-557-SA5D-SB-0.0-0.5 SL-558-SA5D-SB-0.0-0.5 SL-558-SA5D-SB-4.0-5.0 SL-565-SA5D-SB-0.0-0.5 SL-566-SA5D-SB-0.0-0.5 SL-566-SA5D-SB-4.0-5.0 SL-865-SA5D-SB-0.0-0.5)	ARSENIC	26	20.00	As, B, No Qual, OK by Difference
	BORON	116	20.00	J (all detects) UJ (all non-detects)
	COBALT	23	20.00	

Method: 6020A
Matrix: SO

QC Sample ID (Associated Sample ID)	Analyte	Sample RPD	eQAPP RPD	Flag
SL-565-SA5D-SB-0.0-0.5DUP (TOT) (SL-557-SA5D-SB-0.0-0.5 SL-558-SA5D-SB-0.0-0.5 SL-558-SA5D-SB-4.0-5.0 SL-565-SA5D-SB-0.0-0.5 SL-566-SA5D-SB-0.0-0.5 SL-566-SA5D-SB-4.0-5.0 SL-865-SA5D-SB-0.0-0.5)	SELENIUM	26	20.00	Se, No Qual, OK by Difference
	STRONTIUM	23	20.00	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: PH113 **Laboratory: LL**

EDD Filename: PH113 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 160.3M
Matrix: SO

Analyte	Concentration (%)		Sample RPD	eQAPP RPD	Flag
	SL-565-SA5D-SB-0.0-0.5	SL-865-SA5D-SB-0.0-0.5			
MOISTURE	5.9	5.2	13		No Qualifiers Applied

Method: 1613B
Matrix: SO

Analyte	Concentration (ng/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-565-SA5D-SB-0.0-0.5	SL-865-SA5D-SB-0.0-0.5			
1,2,3,4,6,7,8-HPCDD	0.477	0.722	41	50.00	
1,2,3,4,6,7,8-HPCDF	0.219	0.267	20	50.00	
1,2,3,4,7,8,9-HPCDF	0.124	0.147	17	50.00	
1,2,3,4,7,8-HxCDD	0.136	0.0869	44	50.00	
1,2,3,4,7,8-HXCDF	0.212	0.146	37	50.00	
1,2,3,6,7,8-HXCDD	0.114	0.144	23	50.00	
1,2,3,6,7,8-HXCDF	0.206	0.143	36	50.00	
1,2,3,7,8,9-HXCDD	0.134	0.146	9	50.00	
1,2,3,7,8,9-HXCDF	0.153	0.175	13	50.00	No Qualifiers Applied
1,2,3,7,8-PECDD	0.254	0.157	47	50.00	
1,2,3,7,8-PECDF	0.379	0.275	32	50.00	
2,3,4,6,7,8-HXCDF	0.155	0.159	3	50.00	
2,3,4,7,8-PECDF	0.223	0.241	8	50.00	
2,3,7,8-TCDD	0.0976	0.105	7	50.00	
2,3,7,8-TCDF	0.0682	0.0816	18	50.00	
OCDF	0.385	0.582	41	50.00	
OCDD	2.22	4.69	71	50.00	J(all detects)

Method: 6010C
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-565-SA5D-SB-0.0-0.5 (TOT)	SL-865-SA5D-SB-0.0-0.5 (TOT)			
ALUMINUM	22700	20400	11	50.00	
ARSENIC	4.92	4.16	17	50.00	
BARIUM	149	151	1	50.00	
BERYLLIUM	0.858	0.692	21	50.00	
CADMIUM	0.840	1.19	34	50.00	
CALCIUM	52200	61000	16	50.00	
CHROMIUM	30.9	29.6	4	50.00	
COBALT	9.18	7.91	15	50.00	
COPPER	30.5	25.7	17	50.00	
LEAD	11.2	16.3	37	50.00	
LITHIUM	25.5	22.5	12	50.00	
MAGNESIUM	8530	7520	13	50.00	No Qualifiers Applied
MANGANESE	275	263	4	50.00	
NICKEL	22.2	18.8	17	50.00	
PHOSPHORUS	427	533	22	50.00	
POTASSIUM	4120	4490	9	50.00	
SODIUM	134	131	2	50.00	
TIN	2.63	2.63	0	50.00	
TITANIUM	924	914	1	50.00	
VANADIUM	65.0	59.1	10	50.00	
ZINC	85.3	83.0	3	50.00	
Zirconium	6.59	6.15	7	50.00	
BORON	3.09	23.9	154	50.00	J(all detects)
IRON	55000	32700	51	50.00	

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

Field Duplicate RPD Report

Lab Reporting Batch ID: PH113 **Laboratory: LL**

EDD Filename: PH113 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 6020A
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-565-SA5D-SB-0.0-0.5 (TOT)	SL-865-SA5D-SB-0.0-0.5 (TOT)			
SELENIUM	0.166	0.266	46	50.00	
STRONTIUM	114	169	39	50.00	No Qualifiers Applied
THALLIUM	0.341	0.319	7	50.00	

Method: 7471B
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-565-SA5D-SB-0.0-0.5 (TOT)	SL-865-SA5D-SB-0.0-0.5 (TOT)			
MERCURY	0.0140	0.0292	70	50.00	J(all detects)

Method: 8015M
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-565-SA5D-SB-0.0-0.5	SL-865-SA5D-SB-0.0-0.5			
EFH (C21-C30)	4.3	8.7	68	50.00	J(all detects)
EFH (C30-C40)	13	29	76	50.00	

Method: 8270D SIM
Matrix: SO

Analyte	Concentration (ug/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-565-SA5D-SB-0.0-0.5	SL-865-SA5D-SB-0.0-0.5			
BIS(2-ETHYLHEXYL)PHTHALATE	19 U	11	200	50.00	J(all detects)
NAPHTHALENE	1.7 U	0.71	200	50.00	UJ(all non-detects)

Method: 9045M
Matrix: SO

Analyte	Concentration (pH unit)		Sample RPD	eQAPP RPD	Flag
	SL-565-SA5D-SB-0.0-0.5	SL-865-SA5D-SB-0.0-0.5			
PH	7.54	7.72	2	50.00	No Qualifiers Applied

Reporting Limit Outliers

Lab Reporting Batch ID: PH113 **Laboratory: LL**

EDD Filename: PH113 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: **1613B**

Matrix: **SO**

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-557-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDF	JB	0.844	5.11	PQL	ng/Kg	J (all detects)
	1,2,3,4,7,8,9-HPCDF	JBQ	0.120	5.11	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.155	5.11	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.180	5.11	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.464	5.11	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.192	5.11	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.505	5.11	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.345	5.11	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.166	5.11	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.413	5.11	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.181	5.11	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.461	5.11	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.442	1.02	PQL	ng/Kg	
	OCDF	JB	1.86	10.2	PQL	ng/Kg	
SL-558-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDF	JB	2.62	5.20	PQL	ng/Kg	J (all detects)
	1,2,3,4,7,8,9-HPCDF	JBQ	0.239	5.20	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.267	5.20	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.261	5.20	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.555	5.20	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.195	5.20	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.324	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-PECDD	JBQ	0.248	5.20	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.320	5.20	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.250	5.20	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.224	5.20	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.0701	1.04	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.197	1.04	PQL	ng/Kg	
SL-565-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JBQ	0.477	5.25	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JBQ	0.219	5.25	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.124	5.25	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.136	5.25	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.212	5.25	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.114	5.25	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.206	5.25	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.134	5.25	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.153	5.25	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.254	5.25	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.379	5.25	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.155	5.25	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.223	5.25	PQL	ng/Kg	
	2,3,7,8-TCDD	J	0.0976	1.05	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0682	1.05	PQL	ng/Kg	
	OCDD	JB	2.22	10.5	PQL	ng/Kg	
	OCDF	JB	0.385	10.5	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH113 **Laboratory: LL**

EDD Filename: PH113 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-566-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	2.02	5.06	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.360	5.06	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.102	5.06	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0826	5.06	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.128	5.06	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.276	5.06	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.100	5.06	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.306	5.06	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	0.356	5.06	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.0695	5.06	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.256	5.06	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.135	5.06	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.218	5.06	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.116	1.01	PQL	ng/Kg	
	OCDF	JB	0.857	10.1	PQL	ng/Kg	
SL-865-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	0.722	5.03	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.267	5.03	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.147	5.03	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0869	5.03	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.146	5.03	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.144	5.03	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.143	5.03	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.146	5.03	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.175	5.03	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JBQ	0.157	5.03	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.275	5.03	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.159	5.03	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.241	5.03	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.105	1.01	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0816	1.01	PQL	ng/Kg	
	OCDD	JB	4.69	10.1	PQL	ng/Kg	
	OCDF	JBQ	0.582	10.1	PQL	ng/Kg	

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-557-SA5D-SB-0.0-0.5	ARSENIC	J	2.79	4.17	PQL	mg/Kg	
	BERYLLIUM	J	0.843	1.04	PQL	mg/Kg	J (all detects)
	CADMIUM	J	0.965	1.04	PQL	mg/Kg	
	TIN	J	2.91	10.4	PQL	mg/Kg	
SL-558-SA5D-SB-0.0-0.5	ARSENIC	J	3.27	4.17	PQL	mg/Kg	
	BERYLLIUM	J	0.686	1.04	PQL	mg/Kg	
	MOLYBDENUM	J	0.198	2.09	PQL	mg/Kg	J (all detects)
	SODIUM	J	92.0	104	PQL	mg/Kg	
	TIN	J	2.34	10.4	PQL	mg/Kg	
	Zirconium	J	5.19	5.22	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH113 **Laboratory: LL**

EDD Filename: PH113 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-558-SA5D-SB-4.0-5.0	ARSENIC	J	1.72	4.27	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.476	1.07	PQL	mg/Kg	
	CADMIUM	J	0.847	1.07	PQL	mg/Kg	
	SODIUM	J	102	107	PQL	mg/Kg	
	TIN	J	2.08	10.7	PQL	mg/Kg	
	Zirconium	J	4.44	5.34	PQL	mg/Kg	
SL-565-SA5D-SB-0.0-0.5	BERYLLIUM	J	0.858	1.05	PQL	mg/Kg	J (all detects)
	BORON	J	3.09	10.5	PQL	mg/Kg	
	CADMIUM	J	0.840	1.05	PQL	mg/Kg	
	TIN	J	2.63	10.5	PQL	mg/Kg	
SL-566-SA5D-SB-0.0-0.5	ARSENIC	J	2.79	4.08	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.913	1.02	PQL	mg/Kg	
	TIN	J	2.88	10.2	PQL	mg/Kg	
SL-566-SA5D-SB-4.0-5.0	ARSENIC	J	3.14	4.21	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.642	1.05	PQL	mg/Kg	
	CADMIUM	J	0.947	1.05	PQL	mg/Kg	
	TIN	J	3.07	10.5	PQL	mg/Kg	
SL-865-SA5D-SB-0.0-0.5	ARSENIC	J	4.16	4.18	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.692	1.04	PQL	mg/Kg	
	TIN	J	2.63	10.4	PQL	mg/Kg	

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-557-SA5D-SB-0.0-0.5	SELENIUM	J	0.261	0.417	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0358	0.208	PQL	mg/Kg	
SL-558-SA5D-SB-0.0-0.5	SELENIUM	J	0.354	0.417	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0392	0.209	PQL	mg/Kg	
SL-558-SA5D-SB-4.0-5.0	SELENIUM	J	0.251	0.427	PQL	mg/Kg	J (all detects)
	THALLIUM	J	0.183	0.213	PQL	mg/Kg	
SL-565-SA5D-SB-0.0-0.5	SELENIUM	J	0.166	0.421	PQL	mg/Kg	J (all detects)
SL-566-SA5D-SB-0.0-0.5	SELENIUM	J	0.386	0.408	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0384	0.204	PQL	mg/Kg	
SL-566-SA5D-SB-4.0-5.0	SELENIUM	J	0.116	0.421	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0311	0.211	PQL	mg/Kg	
SL-865-SA5D-SB-0.0-0.5	SELENIUM	J	0.266	0.418	PQL	mg/Kg	J (all detects)

Method: 7471B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-565-SA5D-SB-0.0-0.5	MERCURY	J	0.0140	0.0171	PQL	mg/Kg	J (all detects)
SL-566-SA5D-SB-4.0-5.0	MERCURY	J	0.0132	0.0174	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: PH113 **Laboratory: LL**

EDD Filename: PH113 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 8015M

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-565-SA5D-SB-0.0-0.5	EFH (C21-C30)	J	4.3	5.3	PQL	mg/Kg	J (all detects)
SL-566-SA5D-SB-0.0-0.5	EFH (C15-C20)	J	4.9	5.1	PQL	mg/Kg	J (all detects)

Method: 8270D SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-557-SA5D-SB-0.0-0.5	2-METHYLNAPHTHALENE	J	0.73	1.7	PQL	ug/Kg	J (all detects)
	CHRYSENE	J	1.5	1.7	PQL	ug/Kg	
	FLUORANTHENE	J	1.3	1.7	PQL	ug/Kg	
	NAPHTHALENE	J	1.1	1.7	PQL	ug/Kg	
	PHENANTHRENE	J	1.1	1.7	PQL	ug/Kg	
	PYRENE	J	1.3	1.7	PQL	ug/Kg	
SL-558-SA5D-SB-0.0-0.5	2-METHYLNAPHTHALENE	J	1.2	1.8	PQL	ug/Kg	J (all detects)
	BENZO(B)FLUORANTHENE	J	1.7	1.8	PQL	ug/Kg	
	BENZO(G,H,I)PERYLENE	J	0.86	1.8	PQL	ug/Kg	
	BENZO(K)FLUORANTHENE	J	0.79	1.8	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	7.1	19	PQL	ug/Kg	
	Butylbenzylphthalate	J	10	19	PQL	ug/Kg	
	CHRYSENE	J	1.7	1.8	PQL	ug/Kg	
	FLUORANTHENE	J	1.4	1.8	PQL	ug/Kg	
	NAPHTHALENE	J	1.6	1.8	PQL	ug/Kg	
	PHENANTHRENE	J	1.2	1.8	PQL	ug/Kg	
	PYRENE	J	1.3	1.8	PQL	ug/Kg	
SL-566-SA5D-SB-0.0-0.5	1-METHYLNAPHTHALENE	J	1.1	1.7	PQL	ug/Kg	J (all detects)
	2-METHYLNAPHTHALENE	J	1.5	1.7	PQL	ug/Kg	
	ACENAPHTHYLENE	J	0.45	1.7	PQL	ug/Kg	
	ANTHRACENE	J	0.70	1.7	PQL	ug/Kg	
	BENZO(B)FLUORANTHENE	J	1.3	1.7	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	9.1	18	PQL	ug/Kg	
	Butylbenzylphthalate	J	10	18	PQL	ug/Kg	
	CHRYSENE	J	1.1	1.7	PQL	ug/Kg	
	FLUORANTHENE	J	1.1	1.7	PQL	ug/Kg	
	FLUORENE	J	0.70	1.7	PQL	ug/Kg	
	PHENANTHRENE	J	1.2	1.7	PQL	ug/Kg	
	PYRENE	J	1.1	1.7	PQL	ug/Kg	
SL-566-SA5D-SB-4.0-5.0	NAPHTHALENE	J	0.91	1.8	PQL	ug/Kg	J (all detects)
SL-865-SA5D-SB-0.0-0.5	BIS(2-ETHYLHEXYL)PHTHALATE	J	11	19	PQL	ug/Kg	J (all detects)
	NAPHTHALENE	J	0.71	1.7	PQL	ug/Kg	

LDC #: 30695P4
SDG #: PH113
Laboratory: Eurofins Lancaster Laboratories

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 11/11/13
Page: 1 of 1
Reviewer:
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: 9/24/13
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	Ss: 24%: J/UJ/A(A): All
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	N	
XIV.	Field Duplicates	A	(3,4)
XV	Field Blanks	SW	EB=EB1-061213 FB=FB-061613 (PH114) (PH032)

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	SL-558-SA5D-SB-0.0-0.5	11		21		31	
2	SL-558-SA5D-SB-4.0-5.0	12		22		32	
3	SL-565-SA5D-SB-0.0-0.5	13		23		33	
4	SL-865-SA5D-SB-0.0-0.5	14		24		34	
5	SL-557-SA5D-SB-0.0-0.5	15		25		35	
6	SL-566-SA5D-SB-0.0-0.5	16		26		36	
7	SL-566-SA5D-SB-4.0-5.0	17		27		37	
8	SL-565-SA5D-SB-0.0-0.5MS	18		28		38	
9	SL-565-SA5D-SB-0.0-0.5MSD	19		29		39	
10	SL-565-SA5D-SB-0.0-0.5DUP	20		30		40	

Notes:

LDC #: 30695P4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: QR
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-041613 (SDG: PH032)	Action Limit	1											
Mo	0.0132	6.60	0.198											
Sn	0.0029	1.45												

Sampling date: 9/25/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All

Analyte	Blank ID	Sample Identification												
	EB1-092513 (SDG: PH114)	Action Limit	No Qualifiers											
Ca	0.0498	24.9												

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.: PH113
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7211497BKG Matrix Spike Lab Sample ID: 7211498MS Matrix Spike Duplicate Lab Sample ID: 7211499MSD
Batch Id(s): P26837A, P26838A

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		21361.9673		28720.2845		29871.7210		194.1748	200.0000	MG/KG	3790		4255	*	4			20	P
Antimony		0.7327	U	12.7068		14.1710		48.5437	50.0000	MG/KG	26	N	28	N	11		75 - 125	20	P
Arsenic		4.6297		17.8670		19.0360		14.5631	15.0000	MG/KG	91		96		6		75 - 125	20	P
Barium		140.4020		318.7709		312.3290		194.1748	200.0000	MG/KG	92		86		2		75 - 125	20	P
Beryllium		0.8069	B	5.3981		5.3760		4.8544	5.0000	MG/KG	95		91		0		75 - 125	20	P
Boron		2.9069	B	196.4427		195.4540		194.1748	200.0000	MG/KG	100		96		1		75 - 125	20	P
Cadmium		0.7901	B	5.1738		5.2120		4.8544	5.0000	MG/KG	90		88		1		75 - 125	20	P
Calcium		49111.1168		71483.1961		58778.1980		388.3495	400.0000	MG/KG	5761		2417		20			20	P
Chromium		29.0634		52.3447		53.5080		19.4175	20.0000	MG/KG	120		122		2		75 - 125	20	P
Cobalt		8.6347		51.0437		49.1410		48.5437	50.0000	MG/KG	87		81		4		75 - 125	20	P
Copper		28.7158		50.3903		52.0280		24.2718	25.0000	MG/KG	89		93		3		75 - 125	20	P
Iron		51717.3416		32061.9922		30579.6320		97.0874	100.0000	MG/KG	-20245		-21138		5			20	P
Lead		10.5119		23.1388		24.1080		14.5631	15.0000	MG/KG	87		91		4		75 - 125	20	P
Lithium		23.9812		118.8757		121.8050		97.0874	100.0000	MG/KG	98		98		2		75 - 125	20	P
Magnesium		8024.4119		8541.3621		8648.7740		194.1748	200.0000	MG/KG	266		312		1			20	P
Manganese		258.9208		331.9068		293.0770		48.5437	50.0000	MG/KG	150		68	*	12			20	P
Mercury		0.0131	B	0.2093		0.2027		0.1657	0.1650	MG/KG	118		115		3		65 - 135	20	CV
Molybdenum		0.1683	U	168.6126		171.2500		194.1748	200.0000	MG/KG	87		86		2		75 - 125	20	P
Nickel		20.8743		59.4194		58.8690		48.5437	50.0000	MG/KG	79		76		1		75 - 125	20	P
Phosphorus		401.7644		561.7699		574.5650		97.0874	100.0000	MG/KG	165		173		2			20	P
Potassium		3878.0040		5889.9835		5806.5610		970.8738	1000.0000	MG/KG	207	N	193	N	1		75 - 125	20	P
Selenium	78	0.1566	B	2.0951		2.2600		1.9417	2.0000	MG/KG	100		105		8		75 - 125	20	MS
Silver	107	0.0257	U	10.0039		9.5780		9.7087	10.0000	MG/KG	103		96		4		75 - 125	20	MS
Sodium		125.8812		1038.5990		1057.5930		970.8738	1000.0000	MG/KG	94		93		2		75 - 125	20	P
Strontium	88	106.8317		186.5534		157.8500		7.7670	8.0000	MG/KG	1026		638		17			20	MS
Thallium	203	0.3210		0.6586		0.7008		0.3883	0.4000	MG/KG	87		95		6		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.: PH113
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7211497BKG Matrix Spike Lab Sample ID: 7211498MS Matrix Spike Duplicate Lab Sample ID: 7211499MSD
Batch Id(s): P26837A, P26838A

		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		2.4772	B	296.3835		301.9100		388.3495	400.0000	MG/KG	76		75		2		75 - 125	20	P
Titanium		869.4851		1636.4621		1616.3240		97.0874	100.0000	MG/KG	790		747		1			20	P
Vanadium		61.2079		121.1320		122.3520		48.5437	50.0000	MG/KG	123		122		1		75 - 125	20	P
Zinc		80.2406		120.0718		123.4260		48.5437	50.0000	MG/KG	82		86		3		75 - 125	20	P
Zirconium		6.2020		92.9175		94.6960		97.0874	100.0000	MG/KG	89		88		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.: PH113
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7211497BKG Duplicate Lab Sample ID: 7211500DUP
Batch ID(s): P26837A, P26838A
Concentration Units: MG/KG

Analyte	Mass	Control Limit	Samples (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum			21361.9673		21564.8456		1		P
Antimony			-3.6020	B	-2.8456	B	-23		P
Arsenic		4.0	4.6297		3.5641	B	26		P
Barium			140.4020		147.6029		5		P
Beryllium			0.8069	B	0.7728	B	4		P
Boron		9.9	2.9069	B	10.9786		116	*	P
Cadmium			0.7901	B	0.9194	B	15		P
Calcium			49111.1168		49676.3602		1		P
Chromium			29.0634		29.7068		2		P
Cobalt			8.6347		10.8262		23	*	P
Copper			28.7158		26.8039		7		P
Iron			51717.3416		42604.5534		19		P
Lead		3.0	10.5119		9.7718		7		P
Lithium			23.9812		24.1932		1		P
Magnesium			8024.4119		8193.6563		2		P
Manganese			258.9208		307.5728		17		P
Mercury			0.0131	B	0.0160	B	20		CV
Molybdenum			0.1683	U	0.1650	U			P
Nickel			20.8743		22.1631		6		P
Phosphorus			401.7644		405.6204		1		P
Potassium			3878.0040		3971.0660		2		P
Selenium	78		0.1566	B	0.1202	B	26		MS
Silver	107		0.0257	U	0.0252	U			MS
Sodium		99.0	125.8812		127.4194		1		P
Strontium	88		106.8317		134.0777		23	*	MS
Thallium	203	0.2	0.3210		0.3412		6		MS
Tin			2.4772	B	2.5087	B	1		P
Titanium			869.4851		892.2961		3		P
Vanadium			61.2079		61.6272		1		P
Zinc			80.2406		77.2447		4		P
Zirconium		5.0	6.2020		6.1835		0		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 5D

SDG: PH114

Prepared for

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Prepared by

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December 11, 2013

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on September 25, 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 8081A
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
Perchlorate by Method 6850
Total Petroleum Hydrocarbons (TPH) as Gasoline by EPA SW 846 Method 8015M
TPH as Extractables by EPA SW 846 Method 8015M
Dioxins and Dibenzofurans by EPA Method 1613B

Wet Chemistry:
Fluoride by EPA Method 300.0

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 duplicates. No samples in this SDG were subjected to Level IV evaluation.

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

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

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 blanks for 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.

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 TPH as extractables. No data were qualified due to high %Rs since the associated results were non-detected.

VI. ICP Interference Check Sample (ICS) Analysis

ICP interference check data were not reviewed for level III.

VII. Matrix Spike/Matrix Spike Duplicates

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

X. Internal Standards

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

XI. ICP Serial Dilution

ICP serial dilution analysis was performed by the laboratory. The analysis criteria were met.

XII. Compound Quantitation

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

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

Sample	Finding	Flag	A or P
All samples in SDG PH114	All compounds reported as detected below the RL.	J (all detects)	A

XIII. Field Duplicate Samples

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

XIV. Field Blank Samples

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

One equipment blank was collected and analyzed for SVOCs, pesticides, PCBs, metals, herbicides, perchlorate, TPH as gasoline, TPH as extractables, dioxins and fluoride. The equipment blank had detections for SVOCs, metals and dioxins. The associated sample results were not detected or were significantly greater than the concentrations found in the equipment blanks, therefore no data were qualified. The equipment blank outlier reports are presented in Enclosure I.

One field blank (from SDG PH032) was collected and analyzed for SVOCs, pesticides, PCBs, metals, herbicides, perchlorate, TPH as gasoline, TPH as extractables, dioxins and fluoride. The field blank had detections for 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
25-Sep-2013	SL-573-SA5D-SB-0.0-0.5	7213407	N	3546	8081B	III
25-Sep-2013	SL-573-SA5D-SB-0.0-0.5	7213407	N	3546	8270D SIM	III
25-Sep-2013	TB-092513	7213405	TB	5030B	8015M	III
25-Sep-2013	SL-573-SA5D-SB-4.0-5.0	7213408	N	3546	8081B	III
25-Sep-2013	SL-569-SA5D-SB-0.0-0.5	7213406	N	3050B	6010C	III
25-Sep-2013	SL-569-SA5D-SB-0.0-0.5	7213406	N	3050B	6020A	III
25-Sep-2013	SL-569-SA5D-SB-0.0-0.5	7213406	N	3546	8015M	III
25-Sep-2013	SL-569-SA5D-SB-0.0-0.5	7213406	N	3546	8082A	III
25-Sep-2013	SL-569-SA5D-SB-0.0-0.5	7213406	N	3546	8270D SIM	III
25-Sep-2013	SL-569-SA5D-SB-0.0-0.5	7213406	N	METHOD	1613B	III
25-Sep-2013	SL-569-SA5D-SB-0.0-0.5	7213406	N	METHOD	7471B	III
25-Sep-2013	SL-563-SA5D-SB-0.0-0.5	7213411	N	3050B	6010C	III
25-Sep-2013	SL-563-SA5D-SB-0.0-0.5	7213411	N	3050B	6020A	III
25-Sep-2013	SL-563-SA5D-SB-0.0-0.5	7213411	N	3546	8015M	III
25-Sep-2013	SL-563-SA5D-SB-0.0-0.5	7213411	N	3546	8082A	III
25-Sep-2013	SL-563-SA5D-SB-0.0-0.5	7213411	N	3546	8270D SIM	III
25-Sep-2013	SL-563-SA5D-SB-0.0-0.5	7213411	N	METHOD	1613B	III
25-Sep-2013	SL-563-SA5D-SB-0.0-0.5	7213411	N	METHOD	7471B	III
25-Sep-2013	SL-563-SA5D-SB-4.0-5.0	7213412	N	3050B	6010C	III
25-Sep-2013	SL-563-SA5D-SB-4.0-5.0	7213412	N	3050B	6020A	III
25-Sep-2013	SL-563-SA5D-SB-4.0-5.0	7213412	N	3546	8015M	III
25-Sep-2013	SL-563-SA5D-SB-4.0-5.0	7213412	N	3546	8082A	III
25-Sep-2013	SL-563-SA5D-SB-4.0-5.0	7213412	N	3546	8270D SIM	III
25-Sep-2013	SL-563-SA5D-SB-4.0-5.0	7213412	N	5035A	8015M	III
25-Sep-2013	SL-563-SA5D-SB-4.0-5.0	7213412	N	METHOD	7471B	III
25-Sep-2013	SL-563-SA5D-SB-4.0-5.0MS	7213413	MS	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
25-Sep-2013	SL-563-SA5D-SB-4.0-5.0MS	7213413	MS	3050B	6020A	III
25-Sep-2013	SL-563-SA5D-SB-4.0-5.0MS	7213413	MS	3546	8015M	III
25-Sep-2013	SL-563-SA5D-SB-4.0-5.0MS	7213413	MS	3546	8082A	III
25-Sep-2013	SL-563-SA5D-SB-4.0-5.0MS	7213413	MS	3546	8270D SIM	III
25-Sep-2013	SL-563-SA5D-SB-4.0-5.0MS	7213413	MS	5035A	8015M	III
25-Sep-2013	SL-563-SA5D-SB-4.0-5.0MS	7213413	MS	METHOD	7471B	III
25-Sep-2013	SL-563-SA5D-SB-4.0-5.0MSD	7213414	MSD	3050B	6010C	III
25-Sep-2013	SL-563-SA5D-SB-4.0-5.0MSD	7213414	MSD	3050B	6020A	III
25-Sep-2013	SL-563-SA5D-SB-4.0-5.0MSD	7213414	MSD	3546	8015M	III
25-Sep-2013	SL-563-SA5D-SB-4.0-5.0MSD	7213414	MSD	3546	8082A	III
25-Sep-2013	SL-563-SA5D-SB-4.0-5.0MSD	7213414	MSD	3546	8270D SIM	III
25-Sep-2013	SL-563-SA5D-SB-4.0-5.0MSD	7213414	MSD	5035A	8015M	III
25-Sep-2013	SL-563-SA5D-SB-4.0-5.0MSD	7213414	MSD	METHOD	7471B	III
25-Sep-2013	SL-563-SA5D-SB-4.0-5.0DUP	7213415	DUP	3050B	6010C	III
25-Sep-2013	SL-563-SA5D-SB-4.0-5.0DUP	7213415	DUP	3050B	6020A	III
25-Sep-2013	SL-563-SA5D-SB-4.0-5.0DUP	7213415	DUP	METHOD	7471B	III
25-Sep-2013	SL-863-SA5D-SB-4.0-5.0	7213416	FD	3050B	6010C	III
25-Sep-2013	SL-863-SA5D-SB-4.0-5.0	7213416	FD	3050B	6020A	III
25-Sep-2013	SL-863-SA5D-SB-4.0-5.0	7213416	FD	3546	8015M	III
25-Sep-2013	SL-863-SA5D-SB-4.0-5.0	7213416	FD	3546	8082A	III
25-Sep-2013	SL-863-SA5D-SB-4.0-5.0	7213416	FD	3546	8270D SIM	III
25-Sep-2013	SL-863-SA5D-SB-4.0-5.0	7213416	FD	5035A	8015M	III
25-Sep-2013	SL-863-SA5D-SB-4.0-5.0	7213416	FD	METHOD	7471B	III
25-Sep-2013	SL-562-SA5D-SB-0.0-0.5	7213409	N	3050B	6010C	III
25-Sep-2013	SL-562-SA5D-SB-0.0-0.5	7213409	N	3050B	6020A	III
25-Sep-2013	SL-562-SA5D-SB-0.0-0.5	7213409	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
25-Sep-2013	SL-562-SA5D-SB-0.0-0.5	7213409	N	3546	8082A	III
25-Sep-2013	SL-562-SA5D-SB-0.0-0.5	7213409	N	3546	8270D SIM	III
25-Sep-2013	SL-562-SA5D-SB-0.0-0.5	7213409	N	METHOD	1613B	III
25-Sep-2013	SL-562-SA5D-SB-0.0-0.5	7213409	N	METHOD	7471B	III
25-Sep-2013	SL-562-SA5D-SB-4.0-5.0	7213410	N	3050B	6010C	III
25-Sep-2013	SL-562-SA5D-SB-4.0-5.0	7213410	N	3050B	6020A	III
25-Sep-2013	SL-562-SA5D-SB-4.0-5.0	7213410	N	3546	8015M	III
25-Sep-2013	SL-562-SA5D-SB-4.0-5.0	7213410	N	3546	8082A	III
25-Sep-2013	SL-562-SA5D-SB-4.0-5.0	7213410	N	3546	8270D SIM	III
25-Sep-2013	SL-562-SA5D-SB-4.0-5.0	7213410	N	5035A	8015M	III
25-Sep-2013	SL-562-SA5D-SB-4.0-5.0	7213410	N	METHOD	7471B	III
25-Sep-2013	EB1-092513	7213403	EB	3005A	6010C	III
25-Sep-2013	EB1-092513	7213403	EB	3510C	8015M	III
25-Sep-2013	EB1-092513	7213403	EB	3510C	8081B	III
25-Sep-2013	EB1-092513	7213403	EB	3510C	8082A	III
25-Sep-2013	EB1-092513	7213403	EB	3510C	8270D SIM	III
25-Sep-2013	EB1-092513	7213403	EB	5030B	8015M	III
25-Sep-2013	EB1-092513	7213403	EB	Gen Prep	300.0	III
25-Sep-2013	EB1-092513	7213403	EB	Gen Prep	6850	III
25-Sep-2013	EB1-092513	7213403	EB	M3010A	6020A	III
25-Sep-2013	EB1-092513	7213403	EB	METHOD	1613B	III
25-Sep-2013	EB1-092513	7213403	EB	METHOD	7470A	III
25-Sep-2013	EB1-092513	7213403	EB	METHOD	8151A	III
25-Sep-2013	EB1-092513MSD	P213403M241621A	MSD	Gen Prep	6850	III
25-Sep-2013	EB1-092513MS	P213403R241608A	MS	Gen Prep	6850	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: PH114 **Laboratory: LL**

EDD Filename: PH114 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: **METALS**

Method: **6010C** ***Matrix:*** **AQ**

Sample ID: **EB1-092513** ***Collected:*** **9/25/2013 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
CALCIUM	0.0498	J	0.0334	MDL	0.400	PQL	mg/L	U	B

Method Category: **METALS**

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

Sample ID: **SL-562-SA5D-SB-0.0-0.5** ***Collected:*** **9/25/2013 1:35:00** ***Analysis Type:*** **REA** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	25300		7.47	MDL	41.5	PQL	mg/Kg	J	E
ANTIMONY	4.15	U	0.767	MDL	4.15	PQL	mg/Kg	UJ	Q
ARSENIC	2.93	J	0.725	MDL	4.15	PQL	mg/Kg	J	Z
BERYLLIUM	0.886	J	0.0694	MDL	1.04	PQL	mg/Kg	J	Z
CADMIUM	0.315	J	0.0788	MDL	1.04	PQL	mg/Kg	J	Z
CALCIUM	18600		3.46	MDL	20.7	PQL	mg/Kg	J	E
MAGNESIUM	8040		1.73	MDL	10.4	PQL	mg/Kg	J	E
MANGANESE	417		0.0860	MDL	1.04	PQL	mg/Kg	J	E
MOLYBDENUM	0.184	J	0.176	MDL	2.07	PQL	mg/Kg	U	F
PHOSPHORUS	661		3.00	MDL	10.4	PQL	mg/Kg	J	E
POTASSIUM	6840		8.64	MDL	104	PQL	mg/Kg	J	Q
SODIUM	102	J	17.3	MDL	104	PQL	mg/Kg	J	Z
TIN	2.69	J	0.228	MDL	10.4	PQL	mg/Kg	U	B
VANADIUM	62.4		0.135	MDL	1.04	PQL	mg/Kg	J	Q
ZINC	83.7		0.207	MDL	4.15	PQL	mg/Kg	J	Q

Sample ID: **SL-562-SA5D-SB-0.0-0.5** ***Collected:*** **9/25/2013 1:35:00** ***Analysis Type:*** **REA2** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	32900		7.50	MDL	82.9	PQL	mg/Kg	J	E

Sample ID: **SL-562-SA5D-SB-4.0-5.0** ***Collected:*** **9/25/2013 1:50:00** ***Analysis Type:*** **REA** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	28500		8.05	MDL	44.6	PQL	mg/Kg	J	E
ANTIMONY	4.46	U	0.826	MDL	4.46	PQL	mg/Kg	UJ	Q
ARSENIC	3.59	J	0.781	MDL	4.46	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: PH114 **Laboratory: LL**

EDD Filename: PH114 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: **METALS**

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

Sample ID: **SL-562-SA5D-SB-4.0-5.0** ***Collected:*** **9/25/2013 1:50:00** ***Analysis Type:*** **REA** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	0.955	J	0.0748	MDL	1.12	PQL	mg/Kg	J	Z
BORON	7.21	J	0.938	MDL	11.2	PQL	mg/Kg	J	Z
CADMIUM	0.105	J	0.0848	MDL	1.12	PQL	mg/Kg	J	Z
CALCIUM	20500		3.73	MDL	22.3	PQL	mg/Kg	J	E
MAGNESIUM	6590		1.86	MDL	11.2	PQL	mg/Kg	J	E
MANGANESE	435		0.0926	MDL	1.12	PQL	mg/Kg	J	E
MOLYBDENUM	0.213	J	0.190	MDL	2.23	PQL	mg/Kg	U	F
PHOSPHORUS	160		3.23	MDL	11.2	PQL	mg/Kg	J	E
POTASSIUM	3370		9.31	MDL	112	PQL	mg/Kg	J	Q
TIN	2.84	J	0.246	MDL	11.2	PQL	mg/Kg	U	B
VANADIUM	66.0		0.145	MDL	1.12	PQL	mg/Kg	J	Q
ZINC	58.3		0.223	MDL	4.46	PQL	mg/Kg	J	Q

Sample ID: **SL-562-SA5D-SB-4.0-5.0** ***Collected:*** **9/25/2013 1:50:00** ***Analysis Type:*** **REA2** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	34300		8.08	MDL	89.3	PQL	mg/Kg	J	E

Sample ID: **SL-563-SA5D-SB-0.0-0.5** ***Collected:*** **9/25/2013 12:15:00** ***Analysis Type:*** **REA** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	24600		7.39	MDL	41.0	PQL	mg/Kg	J	E
ANTIMONY	4.10	U	0.759	MDL	4.10	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.766	J	0.0687	MDL	1.03	PQL	mg/Kg	J	Z
CADMIUM	0.372	J	0.0779	MDL	1.03	PQL	mg/Kg	J	Z
MAGNESIUM	7730		1.71	MDL	10.3	PQL	mg/Kg	J	E
MANGANESE	390		0.0851	MDL	1.03	PQL	mg/Kg	J	E
PHOSPHORUS	550		2.96	MDL	10.3	PQL	mg/Kg	J	E
POTASSIUM	4470		8.55	MDL	103	PQL	mg/Kg	J	Q
TIN	2.44	J	0.226	MDL	10.3	PQL	mg/Kg	U	B
VANADIUM	60.8		0.133	MDL	1.03	PQL	mg/Kg	J	Q
ZINC	71.8		0.205	MDL	4.10	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: PH114 **Laboratory: LL**

EDD Filename: PH114 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: **METALS**

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

Sample ID: **SL-563-SA5D-SB-0.0-0.5** ***Collected:*** **9/25/2013 12:15:00** ***Analysis Type:*** **REA2** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CALCIUM	71700		6.85	MDL	41.0	PQL	mg/Kg	J	E
IRON	29800		7.42	MDL	82.0	PQL	mg/Kg	J	E

Sample ID: **SL-563-SA5D-SB-4.0-5.0** ***Collected:*** **9/25/2013 12:45:00** ***Analysis Type:*** **REA** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	19300		7.56	MDL	41.9	PQL	mg/Kg	J	E
ANTIMONY	4.19	U	0.776	MDL	4.19	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.655	J	0.0702	MDL	1.05	PQL	mg/Kg	J	Z
CADMIUM	0.439	J	0.0797	MDL	1.05	PQL	mg/Kg	J	Z
IRON	26900		3.80	MDL	41.9	PQL	mg/Kg	J	E
MAGNESIUM	6980		1.75	MDL	10.5	PQL	mg/Kg	J	E
MANGANESE	303		0.0870	MDL	1.05	PQL	mg/Kg	J	E
PHOSPHORUS	521		3.03	MDL	10.5	PQL	mg/Kg	J	E
POTASSIUM	3280		8.74	MDL	105	PQL	mg/Kg	J	Q
TIN	2.39	J	0.231	MDL	10.5	PQL	mg/Kg	U	B
VANADIUM	45.0		0.136	MDL	1.05	PQL	mg/Kg	J	Q
ZINC	70.3		0.210	MDL	4.19	PQL	mg/Kg	J	Q

Sample ID: **SL-563-SA5D-SB-4.0-5.0** ***Collected:*** **9/25/2013 12:45:00** ***Analysis Type:*** **REA2** ***Dilution:*** **5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CALCIUM	112000		17.5	MDL	105	PQL	mg/Kg	J	E

Sample ID: **SL-569-SA5D-SB-0.0-0.5** ***Collected:*** **9/25/2013 10:00:00** ***Analysis Type:*** **REA** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	18000		7.33	MDL	40.7	PQL	mg/Kg	J	E
ANTIMONY	4.07	U	0.752	MDL	4.07	PQL	mg/Kg	UJ	Q
ARSENIC	3.80	J	0.712	MDL	4.07	PQL	mg/Kg	J	Z
BERYLLIUM	0.593	J	0.0681	MDL	1.02	PQL	mg/Kg	J	Z
CADMIUM	0.114	J	0.0773	MDL	1.02	PQL	mg/Kg	J	Z
CALCIUM	5800		3.40	MDL	20.3	PQL	mg/Kg	J	E
MAGNESIUM	7310		1.70	MDL	10.2	PQL	mg/Kg	J	E
MANGANESE	241		0.0844	MDL	1.02	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: PH114 **Laboratory: LL**

EDD Filename: PH114 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: **METALS**

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

Sample ID: **SL-569-SA5D-SB-0.0-0.5** ***Collected:*** **9/25/2013 10:00:00** ***Analysis Type:*** **REA** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PHOSPHORUS	632		2.94	MDL	10.2	PQL	mg/Kg	J	E
POTASSIUM	3830		8.48	MDL	102	PQL	mg/Kg	J	Q
TIN	2.56	J	0.224	MDL	10.2	PQL	mg/Kg	U	B
VANADIUM	63.7		0.132	MDL	1.02	PQL	mg/Kg	J	Q
ZINC	57.5		0.203	MDL	4.07	PQL	mg/Kg	J	Q

Sample ID: **SL-569-SA5D-SB-0.0-0.5** ***Collected:*** **9/25/2013 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
IRON	25800		7.36	MDL	81.3	PQL	mg/Kg	J	E

Sample ID: **SL-863-SA5D-SB-4.0-5.0** ***Collected:*** **9/25/2013 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
ALUMINUM	16800		7.63	MDL	42.4	PQL	mg/Kg	J	E
ANTIMONY	4.24	U	0.784	MDL	4.24	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.560	J	0.0709	MDL	1.06	PQL	mg/Kg	J	Z
BORON	8.83	J	0.890	MDL	10.6	PQL	mg/Kg	J	Z
CADMIUM	0.402	J	0.0805	MDL	1.06	PQL	mg/Kg	J	Z
IRON	25000		3.83	MDL	42.4	PQL	mg/Kg	J	E
MAGNESIUM	6440		1.77	MDL	10.6	PQL	mg/Kg	J	E
MANGANESE	296		0.0879	MDL	1.06	PQL	mg/Kg	J	E
PHOSPHORUS	505		3.06	MDL	10.6	PQL	mg/Kg	J	E
POTASSIUM	2860		8.83	MDL	106	PQL	mg/Kg	J	Q
TIN	2.35	J	0.233	MDL	10.6	PQL	mg/Kg	U	B
VANADIUM	40.1		0.138	MDL	1.06	PQL	mg/Kg	J	Q
ZINC	63.0		0.212	MDL	4.24	PQL	mg/Kg	J	Q

Sample ID: **SL-863-SA5D-SB-4.0-5.0** ***Collected:*** **9/25/2013 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
CALCIUM	127000		17.7	MDL	106	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: PH114 **Laboratory: LL**

EDD Filename: PH114 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: **METALS**

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

Sample ID: **SL-562-SA5D-SB-0.0-0.5** ***Collected:*** **9/25/2013 1:35:00** ***Analysis Type:*** **REA2** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0479	J	0.0269	MDL	0.207	PQL	mg/Kg	J	Z, Q, E
STRONTIUM	69.6		0.0705	MDL	0.415	PQL	mg/Kg	J	E
THALLIUM	0.417		0.0311	MDL	0.207	PQL	mg/Kg	J	Q, E

Sample ID: **SL-562-SA5D-SB-0.0-0.5** ***Collected:*** **9/25/2013 1:35:00** ***Analysis Type:*** **REA4** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.296	J	0.104	MDL	0.415	PQL	mg/Kg	J	Z

Sample ID: **SL-562-SA5D-SB-4.0-5.0** ***Collected:*** **9/25/2013 1:50:00** ***Analysis Type:*** **REA2** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0655	J	0.0290	MDL	0.223	PQL	mg/Kg	J	Z, Q, E
STRONTIUM	82.7		0.0759	MDL	0.446	PQL	mg/Kg	J	E
THALLIUM	0.466		0.0335	MDL	0.223	PQL	mg/Kg	J	Q, E

Sample ID: **SL-562-SA5D-SB-4.0-5.0** ***Collected:*** **9/25/2013 1:50:00** ***Analysis Type:*** **REA4** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.222	J	0.112	MDL	0.446	PQL	mg/Kg	J	Z

Sample ID: **SL-563-SA5D-SB-0.0-0.5** ***Collected:*** **9/25/2013 12:15:00** ***Analysis Type:*** **REA2** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0487	J	0.0267	MDL	0.205	PQL	mg/Kg	J	Z, Q, E
THALLIUM	0.378		0.0308	MDL	0.205	PQL	mg/Kg	J	Q, E

Sample ID: **SL-563-SA5D-SB-0.0-0.5** ***Collected:*** **9/25/2013 12:15:00** ***Analysis Type:*** **REA3** ***Dilution:*** **5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	128		0.174	MDL	1.03	PQL	mg/Kg	J	E

Sample ID: **SL-563-SA5D-SB-0.0-0.5** ***Collected:*** **9/25/2013 12:15:00** ***Analysis Type:*** **REA4** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.327	J	0.103	MDL	0.410	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: PH114 **Laboratory: LL**

EDD Filename: PH114 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: **METALS**

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

Sample ID: **SL-563-SA5D-SB-4.0-5.0** ***Collected:*** **9/25/2013 12:45:00** ***Analysis Type:*** **REA2** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0378	J	0.0273	MDL	0.210	PQL	mg/Kg	J	Z, Q, E
THALLIUM	0.289		0.0315	MDL	0.210	PQL	mg/Kg	J	Q, E

Sample ID: **SL-563-SA5D-SB-4.0-5.0** ***Collected:*** **9/25/2013 12:45:00** ***Analysis Type:*** **REA3** ***Dilution:*** **10**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	206		0.356	MDL	2.10	PQL	mg/Kg	J	E

Sample ID: **SL-563-SA5D-SB-4.0-5.0** ***Collected:*** **9/25/2013 12:45:00** ***Analysis Type:*** **REA4** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.239	J	0.105	MDL	0.419	PQL	mg/Kg	J	Z

Sample ID: **SL-569-SA5D-SB-0.0-0.5** ***Collected:*** **9/25/2013 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
SILVER	0.203	U	0.0264	MDL	0.203	PQL	mg/Kg	UJ	E
STRONTIUM	23.7		0.0691	MDL	0.407	PQL	mg/Kg	J	E
THALLIUM	0.223		0.0305	MDL	0.203	PQL	mg/Kg	J	Q, E

Sample ID: **SL-569-SA5D-SB-0.0-0.5** ***Collected:*** **9/25/2013 10:00:00** ***Analysis Type:*** **REA4** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.257	J	0.102	MDL	0.407	PQL	mg/Kg	J	Z

Sample ID: **SL-863-SA5D-SB-4.0-5.0** ***Collected:*** **9/25/2013 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
SILVER	0.0392	J	0.0275	MDL	0.212	PQL	mg/Kg	J	Z, Q, E
THALLIUM	0.332		0.0318	MDL	0.212	PQL	mg/Kg	J	Q, E

Sample ID: **SL-863-SA5D-SB-4.0-5.0** ***Collected:*** **9/25/2013 1:00:00** ***Analysis Type:*** **REA3** ***Dilution:*** **10**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	235		0.360	MDL	2.12	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: PH114 **Laboratory: LL**

EDD Filename: PH114 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-863-SA5D-SB-4.0-5.0 *Collected:* 9/25/2013 1:00:00 *Analysis Type:* REA4 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.207	J	0.106	MDL	0.424	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: SL-562-SA5D-SB-4.0-5.0 *Collected:* 9/25/2013 1:50:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0159	J	0.0105	MDL	0.0175	PQL	mg/Kg	J	Z

Sample ID: SL-563-SA5D-SB-4.0-5.0 *Collected:* 9/25/2013 12:45:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0130	J	0.0103	MDL	0.0172	PQL	mg/Kg	J	Z

Sample ID: SL-863-SA5D-SB-4.0-5.0 *Collected:* 9/25/2013 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
MERCURY	0.0126	J	0.0106	MDL	0.0176	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 1613B **Matrix: AQ**

Sample ID: EB1-092513 *Collected:* 9/25/2013 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	0.426	JBQ	0.151	MDL	9.78	PQL	pg/L	U	B
1,2,3,4,6,7,8-HPCDF	0.207	JB	0.0772	MDL	9.78	PQL	pg/L	U	B
1,2,3,4,7,8,9-HPCDF	0.276	JB	0.0916	MDL	9.78	PQL	pg/L	U	B
1,2,3,4,7,8-HxCDD	0.202	JB	0.139	MDL	9.78	PQL	pg/L	U	B
1,2,3,4,7,8-HXCDF	0.196	JB	0.0719	MDL	9.78	PQL	pg/L	U	B
1,2,3,6,7,8-HXCDD	0.353	JBQ	0.148	MDL	9.78	PQL	pg/L	U	B
1,2,3,7,8,9-HXCDD	0.256	JBQ	0.141	MDL	9.78	PQL	pg/L	U	B
1,2,3,7,8,9-HXCDF	0.217	JBQ	0.0732	MDL	9.78	PQL	pg/L	U	B
1,2,3,7,8-PECDD	0.293	JBQ	0.194	MDL	9.78	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: PH114 **Laboratory: LL**

EDD Filename: PH114 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 1613B **Matrix: AQ**

Sample ID: EB1-092513 *Collected:* 9/25/2013 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
1,2,3,7,8-PECDF	0.638	JBQ	0.0873	MDL	9.78	PQL	pg/L	U	B
2,3,4,6,7,8-HXCDF	0.174	JBQ	0.0691	MDL	9.78	PQL	pg/L	U	B
2,3,4,7,8-PECDF	0.274	JBQ	0.0782	MDL	9.78	PQL	pg/L	U	B
OCDD	2.39	JB	0.200	MDL	19.6	PQL	pg/L	U	B
OCDF	1.30	JBQ	0.188	MDL	19.6	PQL	pg/L	U	B

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-562-SA5D-SB-0.0-0.5 *Collected:* 9/25/2013 1:35:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	1.95	JB	0.0284	MDL	5.08	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.495	JB	0.0171	MDL	5.08	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0976	JBQ	0.0245	MDL	5.08	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0832	JBQ	0.0294	MDL	5.08	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.149	JBQ	0.0242	MDL	5.08	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.138	JB	0.0315	MDL	5.08	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.130	JBQ	0.0226	MDL	5.08	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.194	JB	0.0283	MDL	5.08	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.0658	JBQ	0.0233	MDL	5.08	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.117	JBQ	0.0355	MDL	5.08	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.276	JB	0.0242	MDL	5.08	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.162	JBQ	0.0216	MDL	5.08	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.259	JB	0.0238	MDL	5.08	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.159	JQ	0.0502	MDL	1.02	PQL	ng/Kg	J	Z
OCDF	0.770	JB	0.0299	MDL	10.2	PQL	ng/Kg	J	Z

Sample ID: SL-563-SA5D-SB-0.0-0.5 *Collected:* 9/25/2013 12:15:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.283	JBQ	0.0216	MDL	5.31	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0983	JB	0.00682	MDL	5.31	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0571	JBQ	0.00991	MDL	5.31	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: PH114 **Laboratory: LL**

EDD Filename: PH114 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-563-SA5D-SB-0.0-0.5 *Collected:* 9/25/2013 12:15:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,7,8-HxCDD	0.0678	JBQ	0.0187	MDL	5.31	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0797	JBQ	0.0148	MDL	5.31	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0823	JBQ	0.0203	MDL	5.31	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.101	JB	0.0138	MDL	5.31	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0651	JBQ	0.0181	MDL	5.31	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0760	JB	0.0155	MDL	5.31	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.140	JB	0.0265	MDL	5.31	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.173	JBQ	0.0154	MDL	5.31	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0911	JB	0.0133	MDL	5.31	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.126	JBQ	0.0144	MDL	5.31	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.0419	JQ	0.0307	MDL	1.06	PQL	ng/Kg	J	Z
OCDD	1.10	JB	0.0180	MDL	10.6	PQL	ng/Kg	U	B
OCDF	0.253	JBQ	0.0278	MDL	10.6	PQL	ng/Kg	U	B

Sample ID: SL-569-SA5D-SB-0.0-0.5 *Collected:* 9/25/2013 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	1.70	JB	0.0246	MDL	5.05	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.491	JB	0.0155	MDL	5.05	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0876	JBQ	0.0240	MDL	5.05	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0701	JBQ	0.0229	MDL	5.05	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.104	JB	0.0234	MDL	5.05	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.128	JBQ	0.0241	MDL	5.05	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0850	JBQ	0.0216	MDL	5.05	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.108	JBQ	0.0231	MDL	5.05	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0751	JB	0.0243	MDL	5.05	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.309	JB	0.0221	MDL	5.05	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.104	JBQ	0.0226	MDL	5.05	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.112	J	0.0487	MDL	1.01	PQL	ng/Kg	J	Z
OCDF	1.04	JB	0.0298	MDL	10.1	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: PH114 **Laboratory: LL**

EDD Filename: PH114 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 8015M **Matrix: AQ**

Sample ID: EB1-092513 *Collected:* 9/25/2013 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 (C30-C40)	0.49	U	0.097	MDL	0.49	PQL	mg/L	UJ	L
EFH (C8-C11)	0.097	U	0.049	MDL	0.097	PQL	mg/L	UJ	L

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: SL-562-SA5D-SB-0.0-0.5 *Collected:* 9/25/2013 1:35:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C15-C20)	4.1	J	2.1	MDL	5.2	PQL	mg/Kg	J	Z

Sample ID: SL-562-SA5D-SB-4.0-5.0 *Collected:* 9/25/2013 1:50:00 *Analysis Type:* REA *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C15-C20)	2.2	J	2.2	MDL	5.5	PQL	mg/Kg	J	Z

Sample ID: SL-563-SA5D-SB-0.0-0.5 *Collected:* 9/25/2013 12:15:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C15-C20)	2.9	J	2.1	MDL	5.3	PQL	mg/Kg	J	Z

Sample ID: SL-563-SA5D-SB-4.0-5.0 *Collected:* 9/25/2013 12:45:00 *Analysis Type:* REA *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C21-C30)	5.4	U	2.2	MDL	5.4	PQL	mg/Kg	UJ	FD
EFH (C30-C40)	11	U	4.3	MDL	11	PQL	mg/Kg	UJ	FD

Sample ID: SL-569-SA5D-SB-0.0-0.5 *Collected:* 9/25/2013 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
EFH (C8-C11)	3.8	J	2.0	MDL	5.1	PQL	mg/Kg	J	Z

* denotes a non-reportable result

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

Data Qualifier Summary

Lab Reporting Batch ID: PH114 **Laboratory: LL**

EDD Filename: PH114 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: SL-863-SA5D-SB-4.0-5.0 *Collected:* 9/25/2013 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)	5.0	J	2.1	MDL	5.3	PQL	mg/Kg	J	Z, FD
EFH (C30-C40)	8.5	J	4.3	MDL	11	PQL	mg/Kg	J	Z, FD

Method Category: SVOA

Method: 8081B **Matrix: AQ**

Sample ID: EB1-092513 *Collected:* 9/25/2013 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
ENDRIN	0.016	U	0.0066	MDL	0.016	PQL	ug/L	UJ	L, E
ENDRIN KETONE	0.016	U	0.0041	MDL	0.016	PQL	ug/L	UJ	E

Method Category: SVOA

Method: 8081B **Matrix: SO**

Sample ID: SL-573-SA5D-SB-0.0-0.5 *Collected:* 9/25/2013 7:45:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALPHA-BHC	0.28	J	0.17	MDL	0.84	PQL	ug/Kg	J	Z
HEPTACHLOR	0.19	J	0.17	MDL	0.84	PQL	ug/Kg	J	Z
HEPTACHLOR EPOXIDE	0.22	J	0.17	MDL	0.84	PQL	ug/Kg	J	Z

Method Category: SVOA

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

Sample ID: EB1-092513 *Collected:* 9/25/2013 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
BIS(2-ETHYLHEXYL)PHTHALATE	1.0	U	0.052	MDL	1.0	PQL	ug/L	UJ	E
Diethylphthalate	0.83	J	0.052	MDL	1.0	PQL	ug/L	J	Z
Di-n-butylphthalate	0.22	J	0.052	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: PH114 **Laboratory: LL**

EDD Filename: PH114 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

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

Sample ID: **SL-562-SA5D-SB-0.0-0.5** *Collected:* **9/25/2013 1:35:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1-METHYLNAPHTHALENE	0.92	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
2-METHYLNAPHTHALENE	1.6	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(G,H,I)PERYLENE	0.95	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	8.1	J	6.3	MDL	19	PQL	ug/Kg	J	Z
FLUORANTHENE	1.5	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
INDENO(1,2,3-CD)PYRENE	0.71	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
PYRENE	1.7	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: **SL-562-SA5D-SB-4.0-5.0** *Collected:* **9/25/2013 1:50:00** *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(A)ANTHRACENE	1.0	J	0.73	MDL	1.8	PQL	ug/Kg	J	Z
CHRYSENE	1.5	J	0.37	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: **SL-563-SA5D-SB-0.0-0.5** *Collected:* **9/25/2013 12:15:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NAPHTHALENE	1.2	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: **SL-563-SA5D-SB-4.0-5.0** *Collected:* **9/25/2013 12:45:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1-METHYLNAPHTHALENE	5.6		0.72	MDL	1.8	PQL	ug/Kg	J	FD
2-METHYLNAPHTHALENE	12		0.72	MDL	1.8	PQL	ug/Kg	J	FD
NAPHTHALENE	7.8		0.72	MDL	1.8	PQL	ug/Kg	J	FD

Sample ID: **SL-569-SA5D-SB-0.0-0.5** *Collected:* **9/25/2013 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	0.99	J	0.34	MDL	1.7	PQL	ug/Kg	J	Z
NAPHTHALENE	0.79	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: PH114 **Laboratory: LL**

EDD Filename: PH114 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: **SVOA**

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

Sample ID: **SL-573-SA5D-SB-0.0-0.5** ***Collected:*** **9/25/2013 7:45:00** ***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	0.77	J	0.67	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(B)FLUORANTHENE	1.3	J	0.67	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(G,H,I)PERYLENE	0.69	J	0.67	MDL	1.7	PQL	ug/Kg	J	Z
CHRYSENE	1.2	J	0.34	MDL	1.7	PQL	ug/Kg	J	Z
FLUORANTHENE	1.1	J	0.67	MDL	1.7	PQL	ug/Kg	J	Z
PHENANTHRENE	1.1	J	0.67	MDL	1.7	PQL	ug/Kg	J	Z
PYRENE	0.98	J	0.67	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: **SL-863-SA5D-SB-4.0-5.0** ***Collected:*** **9/25/2013 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	1.8	U	0.71	MDL	1.8	PQL	ug/Kg	UJ	FD
2-METHYLNAPHTHALENE	1.8	U	0.71	MDL	1.8	PQL	ug/Kg	UJ	FD
NAPHTHALENE	1.8	U	0.71	MDL	1.8	PQL	ug/Kg	UJ	FD

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: PH114 **Laboratory: LL**

EDD Filename: PH114 **eQAPP Name: CDM_SSFL_131101_Lan**

Reason Code Legend

Reason Code	*Description*
B	Method Blank Contamination
E	Laboratory Control Precision
E	Laboratory Duplicate Precision
E	Matrix Spike Precision
F	Field Blank Contamination
FD	Field Duplicate Precision
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
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

PH114

Method Blank Outlier Report

Lab Reporting Batch ID: PH114 **Laboratory: LL**

EDD Filename: PH114 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: **1613B**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2760B371524	10/6/2013 3:24:00 PM	1,2,3,4,6,7,8-HPCDD	0.518 pg/L	EB1-092513
		1,2,3,4,6,7,8-HPCDF	0.528 pg/L	
		1,2,3,4,7,8,9-HPCDF	0.306 pg/L	
		1,2,3,4,7,8-HxCDD	0.207 pg/L	
		1,2,3,4,7,8-HXCDF	0.225 pg/L	
		1,2,3,6,7,8-HXCDD	0.126 pg/L	
		1,2,3,6,7,8-HXCDF	0.268 pg/L	
		1,2,3,7,8,9-HXCDD	0.369 pg/L	
		1,2,3,7,8,9-HXCDF	0.383 pg/L	
		1,2,3,7,8-PECDD	0.345 pg/L	
		1,2,3,7,8-PECDF	0.494 pg/L	
		2,3,4,6,7,8-HXCDF	0.369 pg/L	
		2,3,4,7,8-PECDF	0.155 pg/L	
		2,3,7,8-TCDD	0.346 pg/L	
		OCDD	2.28 pg/L	
		OCDF	0.989 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
EB1-092513(RES)	1,2,3,4,6,7,8-HPCDD	0.426 pg/L	0.426U pg/L
EB1-092513(RES)	1,2,3,4,6,7,8-HPCDF	0.207 pg/L	0.207U pg/L
EB1-092513(RES)	1,2,3,4,7,8,9-HPCDF	0.276 pg/L	0.276U pg/L
EB1-092513(RES)	1,2,3,4,7,8-HxCDD	0.202 pg/L	0.202U pg/L
EB1-092513(RES)	1,2,3,4,7,8-HXCDF	0.196 pg/L	0.196U pg/L
EB1-092513(RES)	1,2,3,6,7,8-HXCDD	0.353 pg/L	0.353U pg/L
EB1-092513(RES)	1,2,3,7,8,9-HXCDD	0.256 pg/L	0.256U pg/L
EB1-092513(RES)	1,2,3,7,8,9-HXCDF	0.217 pg/L	0.217U pg/L
EB1-092513(RES)	1,2,3,7,8-PECDD	0.293 pg/L	0.293U pg/L
EB1-092513(RES)	1,2,3,7,8-PECDF	0.638 pg/L	0.638U pg/L
EB1-092513(RES)	2,3,4,6,7,8-HXCDF	0.174 pg/L	0.174U pg/L
EB1-092513(RES)	2,3,4,7,8-PECDF	0.274 pg/L	0.274U pg/L
EB1-092513(RES)	OCDD	2.39 pg/L	2.39U pg/L
EB1-092513(RES)	OCDF	1.30 pg/L	1.30U pg/L

Method Blank Outlier Report

Lab Reporting Batch ID: PH114 **Laboratory: LL**

EDD Filename: PH114 **eQAPP Name: CDM_SSFL_131101_Lan**

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2730B371140	10/2/2013 11:40:00 AM	1,2,3,4,6,7,8-HPCDD	0.0965 ng/Kg	SL-562-SA5D-SB-0.0-0.5
		1,2,3,4,6,7,8-HPCDF	0.0595 ng/Kg	SL-563-SA5D-SB-0.0-0.5
		1,2,3,4,7,8,9-HPCDF	0.0657 ng/Kg	SL-569-SA5D-SB-0.0-0.5
		1,2,3,4,7,8-HxCDD	0.0334 ng/Kg	
		1,2,3,4,7,8-HXCDF	0.0515 ng/Kg	
		1,2,3,6,7,8-HXCDD	0.0256 ng/Kg	
		1,2,3,6,7,8-HXCDF	0.0453 ng/Kg	
		1,2,3,7,8,9-HXCDD	0.0369 ng/Kg	
		1,2,3,7,8,9-HXCDF	0.0754 ng/Kg	
		1,2,3,7,8-PECDD	0.0738 ng/Kg	
		1,2,3,7,8-PECDF	0.0876 ng/Kg	
		2,3,4,6,7,8-HXCDF	0.0332 ng/Kg	
		2,3,4,7,8-PECDF	0.0646 ng/Kg	
		OCDD	0.249 ng/Kg	
		OCDF	0.137 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-562-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0976 ng/Kg	0.0976U ng/Kg
SL-562-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.0832 ng/Kg	0.0832U ng/Kg
SL-562-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.149 ng/Kg	0.149U ng/Kg
SL-562-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.130 ng/Kg	0.130U ng/Kg
SL-562-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.0658 ng/Kg	0.0658U ng/Kg
SL-562-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.117 ng/Kg	0.117U ng/Kg
SL-562-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.276 ng/Kg	0.276U ng/Kg
SL-562-SA5D-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.162 ng/Kg	0.162U ng/Kg
SL-562-SA5D-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.259 ng/Kg	0.259U ng/Kg
SL-563-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDD	0.283 ng/Kg	0.283U ng/Kg
SL-563-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDF	0.0983 ng/Kg	0.0983U ng/Kg
SL-563-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0571 ng/Kg	0.0571U ng/Kg
SL-563-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.0678 ng/Kg	0.0678U ng/Kg
SL-563-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.0797 ng/Kg	0.0797U ng/Kg
SL-563-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDD	0.0823 ng/Kg	0.0823U ng/Kg
SL-563-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.101 ng/Kg	0.101U ng/Kg
SL-563-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDD	0.0651 ng/Kg	0.0651U ng/Kg
SL-563-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.0760 ng/Kg	0.0760U ng/Kg
SL-563-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.140 ng/Kg	0.140U ng/Kg
SL-563-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.173 ng/Kg	0.173U ng/Kg
SL-563-SA5D-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0911 ng/Kg	0.0911U ng/Kg
SL-563-SA5D-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.126 ng/Kg	0.126U ng/Kg
SL-563-SA5D-SB-0.0-0.5(RES)	OCDD	1.10 ng/Kg	1.10U ng/Kg
SL-563-SA5D-SB-0.0-0.5(RES)	OCDF	0.253 ng/Kg	0.253U ng/Kg
SL-569-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0876 ng/Kg	0.0876U ng/Kg
SL-569-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.0701 ng/Kg	0.0701U ng/Kg
SL-569-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.104 ng/Kg	0.104U ng/Kg
SL-569-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDD	0.128 ng/Kg	0.128U ng/Kg
SL-569-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.0850 ng/Kg	0.0850U ng/Kg

Method Blank Outlier Report

Lab Reporting Batch ID: PH114 **Laboratory: LL**

EDD Filename: PH114 **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-569-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDD	0.108 ng/Kg	0.108U ng/Kg
SL-569-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.0751 ng/Kg	0.0751U ng/Kg
SL-569-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.309 ng/Kg	0.309U ng/Kg
SL-569-SA5D-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.104 ng/Kg	0.104U ng/Kg

Method: 6010C
Matrix: AQ

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P27035BB221457	9/30/2013 2:57:00 PM	CALCIUM	0.0618 mg/L	EB1-092513

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
EB1-092513(RES)	CALCIUM	0.0498 mg/L	0.0498U mg/L

Method: 6010C
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P27437BB220610	10/4/2013 6:10:00 AM	CALCIUM LITHIUM TIN ZINC	8.09 mg/Kg 0.37 mg/Kg 1.38 mg/Kg 0.535 mg/Kg	SL-562-SA5D-SB-0.0-0.5 SL-562-SA5D-SB-4.0-5.0 SL-563-SA5D-SB-0.0-0.5 SL-563-SA5D-SB-4.0-5.0 SL-569-SA5D-SB-0.0-0.5 SL-863-SA5D-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-562-SA5D-SB-0.0-0.5(REA)	TIN	2.69 mg/Kg	2.69U mg/Kg
SL-562-SA5D-SB-4.0-5.0(REA)	TIN	2.84 mg/Kg	2.84U mg/Kg
SL-563-SA5D-SB-0.0-0.5(REA)	TIN	2.44 mg/Kg	2.44U mg/Kg
SL-563-SA5D-SB-4.0-5.0(REA)	TIN	2.39 mg/Kg	2.39U mg/Kg
SL-569-SA5D-SB-0.0-0.5(REA)	TIN	2.56 mg/Kg	2.56U mg/Kg
SL-863-SA5D-SB-4.0-5.0(REA)	TIN	2.35 mg/Kg	2.35U mg/Kg

Field Blank Outlier Report

Lab Reporting Batch ID: PH114 **Laboratory: LL**

EDD Filename: PH114 **eQAPP Name: CDM_SSFL_131101_Lan**

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

Field Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
FB-041613(REA2/TOT)	4/16/2013 3:15:00 PM	MOLYBDENUM TIN	0.0132 mg/L 0.0029 mg/L	SL-562-SA5D-SB-0.0-0.5 SL-562-SA5D-SB-4.0-5.0 SL-563-SA5D-SB-0.0-0.5 SL-563-SA5D-SB-4.0-5.0 SL-569-SA5D-SB-0.0-0.5 SL-573-SA5D-SB-0.0-0.5 SL-573-SA5D-SB-4.0-5.0 SL-863-SA5D-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-562-SA5D-SB-0.0-0.5(REA)	MOLYBDENUM	0.184 mg/Kg	0.184U mg/Kg
SL-562-SA5D-SB-4.0-5.0(REA)	MOLYBDENUM	0.213 mg/Kg	0.213U mg/Kg

Surrogate Outlier Report

Lab Reporting Batch ID: PH114 **Laboratory: LL**

EDD Filename: PH114 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: **8015M**
Matrix: **AQ**

Sample ID (Analysis Type)	*Surrogate*	*Sample % Recovery*	*% Recovery Limits*	*Affected Compounds*	*Flag*
EB1-092513 (REA)	CHLOROBENZENE	126	37.00-125.00	All Target Analytes	J (all detects)

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH114 **Laboratory: LL**

EDD Filename: PH114 **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-563-SA5D-SB-4.0-5.0MS (TOT) **SL-563-SA5D-SB-4.0-5.0MSD (TOT)** (SL-562-SA5D-SB-0.0-0.5 SL -562-SA5D-SB-4.0-5.0 SL -563-SA5D-SB-0.0-0.5 SL -563-SA5D-SB-4.0-5.0 SL -569-SA5D-SB-0.0-0.5 SL -863-SA5D-SB-4.0-5.0)	POTASSIUM TITANIUM VANADIUM	192 652 127	128 412 -	75.00-125.00 75.00-125.00 75.00-125.00	- - -	POTASSIUM TITANIUM VANADIUM	J (all detects) Ti, No Qual, >4x
SL-563-SA5D-SB-4.0-5.0MS (TOT) **SL-563-SA5D-SB-4.0-5.0MSD (TOT)** (SL-562-SA5D-SB-0.0-0.5 SL -562-SA5D-SB-4.0-5.0 SL -563-SA5D-SB-0.0-0.5 SL -563-SA5D-SB-4.0-5.0 SL -569-SA5D-SB-0.0-0.5 SL -863-SA5D-SB-4.0-5.0)	CALCIUM IRON MAGNESIUM	-1269 2744 726	12670 -6195 -89	75.00-125.00 75.00-125.00 75.00-125.00	44 (20.00) 38 (20.00) 23 (20.00)	CALCIUM IRON MAGNESIUM	J(all detects) UJ(all non-detects) No Qual %R, >4x
SL-563-SA5D-SB-4.0-5.0MS (TOT) **SL-563-SA5D-SB-4.0-5.0MSD (TOT)** (SL-562-SA5D-SB-0.0-0.5 SL -562-SA5D-SB-4.0-5.0 SL -563-SA5D-SB-0.0-0.5 SL -563-SA5D-SB-4.0-5.0 SL -569-SA5D-SB-0.0-0.5 SL -863-SA5D-SB-4.0-5.0)	ALUMINUM ANTIMONY MANGANESE PHOSPHORUS ZINC	4770 47 56 - -	2132 48 219 293 69	75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00	21 (20.00) - 24 (20.00) 26 (20.00) -	ALUMINUM ANTIMONY MANGANESE PHOSPHORUS ZINC	J(all detects) UJ(all non-detects) Al, Mn, P, No Qual %R, >4x

Method: 6020A
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-563-SA5D-SB-4.0-5.0MS (TOT) **SL-563-SA5D-SB-4.0-5.0MSD (TOT)** (SL-562-SA5D-SB-0.0-0.5 SL -562-SA5D-SB-4.0-5.0 SL -563-SA5D-SB-0.0-0.5 SL -563-SA5D-SB-4.0-5.0 SL -569-SA5D-SB-0.0-0.5 SL -863-SA5D-SB-4.0-5.0)	SILVER STRONTIUM THALLIUM	145 318 174	- 950 -	75.00-125.00 75.00-125.00 75.00-125.00	27 (20.00) 21 (20.00) 33 (20.00)	SILVER STRONTIUM THALLIUM	J(all detects) UJ(all non-detects) Sr, No Qual %R, >4x

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

Lab Duplicate Outlier Report

Lab Reporting Batch ID: PH114 **Laboratory: LL**

EDD Filename: PH114 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 6020A
Matrix: SO

QC Sample ID (Associated Sample ID)	*Analyte*	*Sample RPD*	*eQAPP RPD*	*Flag*
SL-563-SA5D-SB-4.0-5.0DUP	SELENIUM	41	20.00	
(TOT)	SILVER	28	20.00	
(SL-562-SA5D-SB-0.0-0.5	THALLIUM	31	20.00	
SL-562-SA5D-SB-4.0-5.0				No Qual, OK by Difference
SL -563-SA5D-SB-0.0-0.5				
SL -563-SA5D-SB-4.0-5.0				
SL -569-SA5D-SB-0.0-0.5				
SL -863-SA5D-SB-4.0-5.0)				

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH114 **Laboratory: LL**

EDD Filename: PH114 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 8081B
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
P32730AQ241157A P32730AY241212A (EB1-092513)	ENDRIN ENDRIN KETONE	24 136	- -	43.00-139.00 51.00-133.00	107 (30.00) 38 (30.00)	ENDRIN ENDRIN KETONE	J (all detects) UJ (all non-detects)

Method: 8015M
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
P32732AQ320750A P32732AY320811A (EB1-092513)	EFH (C30-C40) EFH (C8-C11)	67 64	69 61	70.00-130.00 70.00-130.00	- -	EFH (C30-C40) EFH (C8-C11)	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
P4WKLCSQ261241 P4WKLCSY261310 (EB1-092513)	BENZO(B)FLUORANTHENE	136	133	74.00-130.00	-	BENZO(B)FLUORANTHENE	J(all detects)
P4WKLCSQ261241 P4WKLCSY261310 (EB1-092513)	BIS(2-ETHYLHEXYL)PHTHALAT	185	-	70.00-143.00	87 (30.00)	BIS(2-ETHYLHEXYL)PHTHALA	J(all detects) UJ(all non-detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: PH114 **Laboratory: LL**

EDD Filename: PH114 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 160.3M
Matrix: SO

Analyte	Concentration (%)		Sample RPD	eQAPP RPD	Flag
	SL-563-SA5D-SB-4.0-5.0	SL-863-SA5D-SB-4.0-5.0			
MOISTURE	7.4	6.5	13		No Qualifiers Applied

Method: 6010C
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-563-SA5D-SB-4.0-5.0 (TOT)	SL-863-SA5D-SB-4.0-5.0 (TOT)			
ALUMINUM	19300	16800	14	50.00	No Qualifiers Applied
ARSENIC	4.38	4.49	2	50.00	
BARIUM	75.0	67.1	11	50.00	
BERYLLIUM	0.655	0.560	16	50.00	
BORON	10.5	8.83	17	50.00	
CADMIUM	0.439	0.402	9	50.00	
CALCIUM	112000	127000	13	50.00	
CHROMIUM	24.7	23.0	7	50.00	
COBALT	9.99	7.40	30	50.00	
COPPER	14.7	12.6	15	50.00	
IRON	26900	25000	7	50.00	
LEAD	10.0	8.55	16	50.00	
LITHIUM	26.2	24.0	9	50.00	
MAGNESIUM	6980	6440	8	50.00	
MANGANESE	303	296	2	50.00	
NICKEL	15.9	14.5	9	50.00	
PHOSPHORUS	521	505	3	50.00	
POTASSIUM	3280	2860	14	50.00	
SODIUM	146	144	1	50.00	
TIN	2.39	2.35	2	50.00	
TITANIUM	873	734	17	50.00	
VANADIUM	45.0	40.1	12	50.00	
ZINC	70.3	63.0	11	50.00	
Zirconium	7.13	6.31	12	50.00	

Method: 6020A
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-563-SA5D-SB-4.0-5.0 (TOT)	SL-863-SA5D-SB-4.0-5.0 (TOT)			
SELENIUM	0.239	0.207	14	50.00	No Qualifiers Applied
SILVER	0.0378	0.0392	4	50.00	
STRONTIUM	206	235	13	50.00	
THALLIUM	0.289	0.332	14	50.00	

Method: 7471B
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-563-SA5D-SB-4.0-5.0 (TOT)	SL-863-SA5D-SB-4.0-5.0 (TOT)			
MERCURY	0.0130	0.0126	3	50.00	No Qualifiers Applied

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

Field Duplicate RPD Report

Lab Reporting Batch ID: PH114 **Laboratory: LL**

EDD Filename: PH114 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 8015M
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-563-SA5D-SB-4.0-5.0	SL-863-SA5D-SB-4.0-5.0			
EFH (C21-C30)	5.4 U	5.0	200	50.00	J(all detects)
EFH (C30-C40)	11 U	8.5	200	50.00	UJ(all non-detects)

Method: 8270D SIM
Matrix: SO

Analyte	Concentration (ug/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-563-SA5D-SB-4.0-5.0	SL-863-SA5D-SB-4.0-5.0			
1-METHYLNAPHTHALENE	5.6	1.8 U	200	50.00	J(all detects)
2-METHYLNAPHTHALENE	12	1.8 U	200	50.00	UJ(all non-detects)
NAPHTHALENE	7.8	1.8 U	200	50.00	

Method: 9045M
Matrix: SO

Analyte	Concentration (pH unit)		Sample RPD	eQAPP RPD	Flag
	SL-563-SA5D-SB-4.0-5.0	SL-863-SA5D-SB-4.0-5.0			
PH	8.29	8.35	1	50.00	No Qualifiers Applied

Reporting Limit Outliers

Lab Reporting Batch ID: PH114 **Laboratory: LL**

EDD Filename: PH114 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 1613B

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB1-092513	1,2,3,4,6,7,8-HPCDD	JBQ	0.426	9.78	PQL	pg/L	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JB	0.207	9.78	PQL	pg/L	
	1,2,3,4,7,8,9-HPCDF	JB	0.276	9.78	PQL	pg/L	
	1,2,3,4,7,8-HxCDD	JB	0.202	9.78	PQL	pg/L	
	1,2,3,4,7,8-HXCDF	JB	0.196	9.78	PQL	pg/L	
	1,2,3,6,7,8-HXCDD	JBQ	0.353	9.78	PQL	pg/L	
	1,2,3,7,8,9-HXCDD	JBQ	0.256	9.78	PQL	pg/L	
	1,2,3,7,8,9-HXCDF	JBQ	0.217	9.78	PQL	pg/L	
	1,2,3,7,8-PECDD	JBQ	0.293	9.78	PQL	pg/L	
	1,2,3,7,8-PECDF	JBQ	0.638	9.78	PQL	pg/L	
	2,3,4,6,7,8-HXCDF	JBQ	0.174	9.78	PQL	pg/L	
	2,3,4,7,8-PECDF	JBQ	0.274	9.78	PQL	pg/L	
	OCDD	JB	2.39	19.6	PQL	pg/L	
	OCDF	JBQ	1.30	19.6	PQL	pg/L	

Method: 6010C

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB1-092513	CALCIUM	J	0.0498	0.400	PQL	mg/L	J (all detects)

Method: 8270D SIM

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB1-092513	Diethylphthalate	J	0.83	1.0	PQL	ug/L	J (all detects)
	Di-n-butylphthalate	J	0.22	1.0	PQL	ug/L	

Reporting Limit Outliers

Lab Reporting Batch ID: PH114 **Laboratory: LL**

EDD Filename: PH114 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-562-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	1.95	5.08	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.495	5.08	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0976	5.08	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0832	5.08	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.149	5.08	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.138	5.08	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.130	5.08	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.194	5.08	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JBQ	0.0658	5.08	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.117	5.08	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.276	5.08	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.162	5.08	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.259	5.08	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.159	1.02	PQL	ng/Kg	
	OCDF	JB	0.770	10.2	PQL	ng/Kg	
SL-563-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JBQ	0.283	5.31	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.0983	5.31	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0571	5.31	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0678	5.31	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0797	5.31	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.0823	5.31	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.101	5.31	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.0651	5.31	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.0760	5.31	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JB	0.140	5.31	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.173	5.31	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.0911	5.31	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.126	5.31	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0419	1.06	PQL	ng/Kg	
	OCDD	JB	1.10	10.6	PQL	ng/Kg	
	OCDF	JBQ	0.253	10.6	PQL	ng/Kg	
SL-569-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	1.70	5.05	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.491	5.05	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0876	5.05	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0701	5.05	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.104	5.05	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.128	5.05	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0850	5.05	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDD	JBQ	0.108	5.05	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.0751	5.05	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.309	5.05	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.104	5.05	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.112	1.01	PQL	ng/Kg	
	OCDF	JB	1.04	10.1	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH114 **Laboratory: LL**

EDD Filename: PH114 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-562-SA5D-SB-0.0-0.5	ARSENIC	J	2.93	4.15	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.886	1.04	PQL	mg/Kg	
	CADMIUM	J	0.315	1.04	PQL	mg/Kg	
	MOLYBDENUM	J	0.184	2.07	PQL	mg/Kg	
	SODIUM	J	102	104	PQL	mg/Kg	
	TIN	J	2.69	10.4	PQL	mg/Kg	
SL-562-SA5D-SB-4.0-5.0	ARSENIC	J	3.59	4.46	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.955	1.12	PQL	mg/Kg	
	BORON	J	7.21	11.2	PQL	mg/Kg	
	CADMIUM	J	0.105	1.12	PQL	mg/Kg	
	MOLYBDENUM	J	0.213	2.23	PQL	mg/Kg	
	TIN	J	2.84	11.2	PQL	mg/Kg	
SL-563-SA5D-SB-0.0-0.5	BERYLLIUM	J	0.766	1.03	PQL	mg/Kg	J (all detects)
	CADMIUM	J	0.372	1.03	PQL	mg/Kg	
	TIN	J	2.44	10.3	PQL	mg/Kg	
SL-563-SA5D-SB-4.0-5.0	BERYLLIUM	J	0.655	1.05	PQL	mg/Kg	J (all detects)
	CADMIUM	J	0.439	1.05	PQL	mg/Kg	
	TIN	J	2.39	10.5	PQL	mg/Kg	
SL-569-SA5D-SB-0.0-0.5	ARSENIC	J	3.80	4.07	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.593	1.02	PQL	mg/Kg	
	CADMIUM	J	0.114	1.02	PQL	mg/Kg	
	TIN	J	2.56	10.2	PQL	mg/Kg	
SL-863-SA5D-SB-4.0-5.0	BERYLLIUM	J	0.560	1.06	PQL	mg/Kg	J (all detects)
	BORON	J	8.83	10.6	PQL	mg/Kg	
	CADMIUM	J	0.402	1.06	PQL	mg/Kg	
	TIN	J	2.35	10.6	PQL	mg/Kg	

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-562-SA5D-SB-0.0-0.5	SELENIUM	J	0.296	0.415	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0479	0.207	PQL	mg/Kg	
SL-562-SA5D-SB-4.0-5.0	SELENIUM	J	0.222	0.446	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0655	0.223	PQL	mg/Kg	
SL-563-SA5D-SB-0.0-0.5	SELENIUM	J	0.327	0.410	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0487	0.205	PQL	mg/Kg	
SL-563-SA5D-SB-4.0-5.0	SELENIUM	J	0.239	0.419	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0378	0.210	PQL	mg/Kg	
SL-569-SA5D-SB-0.0-0.5	SELENIUM	J	0.257	0.407	PQL	mg/Kg	J (all detects)
SL-863-SA5D-SB-4.0-5.0	SELENIUM	J	0.207	0.424	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0392	0.212	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH114 **Laboratory: LL**

EDD Filename: PH114 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 7471B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-562-SA5D-SB-4.0-5.0	MERCURY	J	0.0159	0.0175	PQL	mg/Kg	J (all detects)
SL-563-SA5D-SB-4.0-5.0	MERCURY	J	0.0130	0.0172	PQL	mg/Kg	J (all detects)
SL-863-SA5D-SB-4.0-5.0	MERCURY	J	0.0126	0.0176	PQL	mg/Kg	J (all detects)

Method: 8015M

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-562-SA5D-SB-0.0-0.5	EFH (C15-C20)	J	4.1	5.2	PQL	mg/Kg	J (all detects)
SL-562-SA5D-SB-4.0-5.0	EFH (C15-C20)	J	2.2	5.5	PQL	mg/Kg	J (all detects)
SL-563-SA5D-SB-0.0-0.5	EFH (C15-C20)	J	2.9	5.3	PQL	mg/Kg	J (all detects)
SL-569-SA5D-SB-0.0-0.5	EFH (C8-C11)	J	3.8	5.1	PQL	mg/Kg	J (all detects)
SL-863-SA5D-SB-4.0-5.0	EFH (C21-C30) EFH (C30-C40)	J J	5.0 8.5	5.3 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-573-SA5D-SB-0.0-0.5	ALPHA-BHC HEPTACHLOR HEPTACHLOR EPOXIDE	J J J	0.28 0.19 0.22	0.84 0.84 0.84	PQL PQL PQL	ug/Kg ug/Kg ug/Kg	J (all detects)

Method: 8270D SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-562-SA5D-SB-0.0-0.5	1-METHYLNAPHTHALENE 2-METHYLNAPHTHALENE BENZO(G,H,I)PERYLENE BIS(2-ETHYLHEXYL)PHTHALATE FLUORANTHENE INDENO(1,2,3-CD)PYRENE PYRENE	J J J J J J J	0.92 1.6 0.95 8.1 1.5 0.71 1.7	1.8 1.8 1.8 19 1.8 1.8 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-562-SA5D-SB-4.0-5.0	BENZO(A)ANTHRACENE CHRYSENE	J J	1.0 1.5	1.8 1.8	PQL PQL	ug/Kg ug/Kg	J (all detects)
SL-563-SA5D-SB-0.0-0.5	NAPHTHALENE	J	1.2	1.8	PQL	ug/Kg	J (all detects)
SL-569-SA5D-SB-0.0-0.5	CHRYSENE NAPHTHALENE	J J	0.99 0.79	1.7 1.7	PQL PQL	ug/Kg ug/Kg	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH114 **Laboratory: LL**

EDD Filename: PH114 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: **8270D SIM**

Matrix: **SO**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
SL-573-SA5D-SB-0.0-0.5	2-METHYLNAPHTHALENE	J	0.77	1.7	PQL	ug/Kg	
	BENZO(B)FLUORANTHENE	J	1.3	1.7	PQL	ug/Kg	
	BENZO(G,H,I)PERYLENE	J	0.69	1.7	PQL	ug/Kg	
	CHRYSENE	J	1.2	1.7	PQL	ug/Kg	J (all detects)
	FLUORANTHENE	J	1.1	1.7	PQL	ug/Kg	
	PHENANTHRENE	J	1.1	1.7	PQL	ug/Kg	
	PYRENE	J	0.98	1.7	PQL	ug/Kg	

LDC #: 30695Q4
SDG #: PH114
Laboratory: Eurofins Lancaster Laboratories

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 11/11/13
Page: 1 of 1
Reviewer: CR
2nd Reviewer: VV

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: 9/25/13
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	SA	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	N	
XIV.	Field Duplicates	N	
XV	Field Blanks	SW	EB=1 FB=~~FB~~ PH1613 (PH032)

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	EB1-092513	11		21		31	
2	SL-569-SA5D-SB-0.0-0.5	12		22		32	
3	SL-562-SA5D-SB-0.0-0.5	13		23		33	
4	SL-562-SA5D-SB-4.0-5.0	14		24		34	
5	SL-563-SA5D-SB-0.0-0.5	15		25		35	
6	SL-563-SA5D-SB-4.0-5.0	16		26		36	
7	SL-863-SA5D-SB-4.0-5.0	17		27		37	
8	SL-563-SA5D-SB-4.0-5.0MS	18		28		38	
9	SL-563-SA5D-SB-4.0-5.0MSD	19		29		39	
10	SL-563-SA5D-SB-4.0-5.0DUP	20		30		40	

Notes: _____

LDC #: 30695Q4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: CR
2nd Reviewer: SM

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-041613 (SDG: PH032)	Action Limit	3	4										
Mo	0.0132	6.60	0.184	0.213										
Sn	0.0029	1.45												

Sampling date: 9/25/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All Soil

Analyte	Blank ID	Sample Identification											
	EB1-092513 (SDG: PH114)	Action Limit	No Qualifiers										
Ca	0.0498	24.9											

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.: PH114
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7213412BKG Matrix Spike Lab Sample ID: 7213413MS Matrix Spike Duplicate Lab Sample ID: 7213414MSD
Batch Id(s): P27437B, P27438B

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	RPD	M
Aluminum		17878.5447		27231.1314		22142.2410		196.0784	200.0000	MG/KG	4770		2132		21			20	P
Antimony		0.7184	U	23.2598		24.0140		49.0196	50.0000	MG/KG	47	N	48	N	3		75 - 125	20	P
Arsenic		4.0563		18.1157		20.2310		14.7059	15.0000	MG/KG	96		108		11		75 - 125	20	P
Barium		69.4544		274.0500		262.8070		196.0784	200.0000	MG/KG	104		97		4		75 - 125	20	P
Beryllium		0.6068	B	5.4039		5.2930		4.9020	5.0000	MG/KG	98		94		2		75 - 125	20	P
Boron		9.7126		202.7608		209.2510		196.0784	200.0000	MG/KG	98		100		3		75 - 125	20	P
Cadmium		0.4068	B	4.7637		4.9160		4.9020	5.0000	MG/KG	89		90		3		75 - 125	20	P
Calcium		103698.6214		98722.0608		154379.6500		392.1569	400.0000	MG/KG	-1269		12670		74			20	P
Chromium		22.8583		46.0098		46.2520		19.6078	20.0000	MG/KG	118		117		1		75 - 125	20	P
Cobalt		9.2485		52.5167		52.3060		49.0196	50.0000	MG/KG	88		86		0		75 - 125	20	P
Copper		13.6282		39.8294		34.2550		24.5098	25.0000	MG/KG	107		83		15		75 - 125	20	P
Iron		24877.7913		27568.1686		18683.2090		98.0392	100.0000	MG/KG	2744		-6195		38			20	P
Lead		9.2612		22.7373		20.7950		14.7059	15.0000	MG/KG	92		77		9		75 - 125	20	P
Lithium		24.2932		127.4765		124.0170		98.0392	100.0000	MG/KG	105		100		3		75 - 125	20	P
Magnesium		6459.1845		7882.1588		6281.0860		196.0784	200.0000	MG/KG	726		-89		23			20	P
Manganese		280.4961		307.9814		390.0880		49.0196	50.0000	MG/KG	56		219		24			20	P
Mercury		0.0120	B	0.1861		0.1780		0.1582	0.1579	MG/KG	110		105		4		65 - 135	20	CV
Molybdenum		0.1650	U	183.9118		192.3370		196.0784	200.0000	MG/KG	94		96		4		75 - 125	20	P
Nickel		14.7039		60.1461		57.0660		49.0196	50.0000	MG/KG	93		85		5		75 - 125	20	P
Phosphorus		482.6728		595.0990		775.3080		98.0392	100.0000	MG/KG	115		293		26	*		20	P
Potassium		3039.9311		4926.9382		4317.3800		980.3922	1000.0000	MG/KG	192	N	128	N	13		75 - 125	20	P
Selenium	78	0.2210	B	2.5706		2.2160		1.9608	2.0000	MG/KG	120		100		15		75 - 125	20	MS
Silver	107	0.0350	B	14.2294		10.8400		9.8039	10.0000	MG/KG	145	N	108		27	*	75 - 125	20	MS
Sodium		135.6126		1104.5265		1159.6700		980.3922	1000.0000	MG/KG	99		102		5		75 - 125	20	P
Strontium	88	190.3883		215.2941		266.4000		7.8431	8.0000	MG/KG	318		950		21			20	MS
Thallium	203	0.2680		0.9514		0.6850		0.3922	0.4000	MG/KG	174	N	104		33	*	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.: PH114
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7213412BKG Matrix Spike Lab Sample ID: 7213413MS Matrix Spike Duplicate Lab Sample ID: 7213414MSD
Batch Id(s): P27437B, P27438B

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		2.2155	B	350.3735		363.5780		392.1569	400.0000	MG/KG	89		90		4		75 - 125	20	P
Titanium		808.8485		1447.6000		1220.7000		98.0392	100.0000	MG/KG	652		412		17			20	P
Vanadium		41.7117		103.8686		99.4470		49.0196	50.0000	MG/KG	127	N	115		4		75 - 125	20	P
Zinc		65.0524		115.5784		99.4290		49.0196	50.0000	MG/KG	103		69	N	15		75 - 125	20	P
Zirconium		6.6010		100.9382		103.2720		98.0392	100.0000	MG/KG	96		97		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.: PH114
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7213412BKG
Batch ID(s): P27437B, P27438B
Concentration Units: MG/KG

Duplicate Lab Sample ID: 7213415DUP

Analyte	Mass	Control Limit	Samples (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum			17878.5447		19147.7243		7		P
Antimony			0.7184	U	0.7184	U			P
Arsenic		3.9	4.0563		3.7330	B	8		P
Barium			69.4544		68.7670		1		P
Beryllium			0.6068	B	0.6252	B	3		P
Boron		9.7	9.7126		10.4825		8		P
Cadmium			0.4068	B	0.3951	B	3		P
Calcium			103698.6214		106029.2816		2		P
Chromium			22.8583		23.9330		5		P
Cobalt			9.2485		8.1777		12		P
Copper			13.6282		13.8417		2		P
Iron			24877.7913		26053.1476		5		P
Lead		2.9	9.2612		9.3175		1		P
Lithium			24.2932		24.9107		3		P
Magnesium			6459.1845		6621.6670		2		P
Manganese			280.4961		274.6301		2		P
Mercury			0.0120	B	0.0104	B	14		CV
Molybdenum			0.1650	U	0.1650	U			P
Nickel			14.7039		15.0544		2		P
Phosphorus			482.6728		481.7631		0		P
Potassium			3039.9311		3135.3010		3		P
Selenium	78		0.2210	B	0.3340	B	41		MS
Silver	107		0.0350	B	0.0466	B	28	*	MS
Sodium		97.1	135.6126		138.8379		2		P
Strontium	88		190.3883		202.2330		6		MS
Thallium	203	0.2	0.2680		0.3656		31	*	MS
Tin			2.2155	B	2.3301	B	5		P
Titanium			808.8485		969.5320		18		P
Vanadium			41.7117		45.0845		8		P
Zinc			65.0524		65.7515		1		P
Zirconium		4.9	6.6010		6.9291		5		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

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

December 23, 2013

SUBJECT: Santa Susana Field Laboratory, Subarea 5D Data Validation

Dear Mrs. Zakowski,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on November 13, 2013. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 30842:

SDG #	Fraction
PH116, PH118 PH119, PH120 PH122, PH123	Semivolatiles, Chlorinated Pesticides, Polychlorinated Biphenyls, Metals, Herbicides, Wet Chemistry, Total Petroleum Hydrocarbons as Gasoline, Total Petroleum Hydrocarbons as Extractables, Dioxins/Dibenzofurans, Hexavalent Chromium, Fluoride

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

2,548 pages-CD

Attachment 1

90/10 ADR/IV

LDC #30842 (CDM Federal Programs-Chantilly VA / Santa Susana Field Laboratory, Subarea 5D)

LDC	SDG#	DATE REC'D	(4) DATE DUE	SVOA (8270D -SIM)		Pest. (8081B)		PCBs (8082A)		Metals & Hg (SW846)		Herbs. (8151A)		TPH-G (8015M)		TPH-E (8015M)		Dioxins (1613B)		Cr(VI) (7199)		F (300.0)															
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	PH116	11/13/13	12/13/13	0	2	0	2	0	2	0	2	-	-	1	1	0	2	0	1	-	-	-	-													
B	PH118	11/13/13	12/13/13	0	4	-	-	0	4	0	4	0	4	1	3	0	4	0	1	-	-	0	13													
C	PH119	11/13/13	12/13/13	0	6	0	2	0	6	0	6	0	2	1	3	0	6	0	3	-	-	0	5													
D	PH120	11/13/13	12/13/13	1	2	1	2	1	2	1	2	1	0	2	1	1	2	1	1	1	0	1	9													
E	PH122	11/13/13	12/13/13	0	13	-	-	0	13	0	13	-	-	1	9	0	13	0	4	-	-	-	-													
F	PH123	11/13/13	12/13/13	0	4	0	2	0	2	0	2	0	4	1	1	0	2	0	1	-	-	0	2													
Total	T/SM			1	31	1	8	1	29	1	29	1	10	7	18	1	29	1	11	1	0	1	29	0	0	0	0	0	0	0	0	0	0	0	0	210

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

30842ST-SA5D.wpd

Data Validation Report
Santa Susana Field Laboratory

Subarea 5D

SDG: PH116

Prepared for

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

Prepared by

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

December 19, 2013

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on September 26, 2013. Data validation was performed in accordance with the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008), Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005) and for Inorganic Data Review (January 2010). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

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

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment II. 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 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 ICB/CCBs, 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 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.

V. Surrogate Spikes

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

VI. ICP Interference Check Sample (ICS) Analysis

ICP interference check data were not reviewed for level III.

VII. Matrix Spike/Matrix Spike Duplicates

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

VIII. Laboratory Duplicates Sample

The laboratory has indicated that there were no laboratory duplicate (DUP) analyses specified for the samples in this SDG, 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.

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 PH116	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 volatile contaminants were found in the trip blank.

One equipment blank (from SDG PH114) was collected and analyzed for SVOCs, pesticides, PCBs, metals, TPH as gasoline, TPH as extractables and dioxins. The equipment blank had detections for SVOCs, metals and dioxins. The associated sample results were not detected or were significantly greater than the concentrations found in the equipment blank, therefore no data were qualified.

One field blank (from SDG PH032) was collected and analyzed for SVOCs, pesticides, PCBs, metals, TPH as gasoline, TPH as extractables and dioxins. The field blank had detections for SVOCs, metals and dioxins. The associated sample results were not detected or were significantly greater than the concentrations found in the field blank, therefore 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-Sep-2013	SL-512-SA5D-SB-0.0-0.5	7215511	N	3050B	6010C	III
26-Sep-2013	SL-512-SA5D-SB-0.0-0.5	7215511	N	3050B	6020A	III
26-Sep-2013	SL-512-SA5D-SB-0.0-0.5	7215511	N	3546	8015M	III
26-Sep-2013	SL-512-SA5D-SB-0.0-0.5	7215511	N	3546	8081B	III
26-Sep-2013	SL-512-SA5D-SB-0.0-0.5	7215511	N	3546	8082A	III
26-Sep-2013	SL-512-SA5D-SB-0.0-0.5	7215511	N	3546	8270D SIM	III
26-Sep-2013	SL-512-SA5D-SB-0.0-0.5	7215511	N	METHOD	1613B	III
26-Sep-2013	SL-512-SA5D-SB-0.0-0.5	7215511	N	METHOD	7471B	III
26-Sep-2013	SL-512-SA5D-SB-0.0-0.5MSD	P215511M241040A	MSD	3546	8081B	III
26-Sep-2013	SL-512-SA5D-SB-0.0-0.5MS	P215511R241025A	MS	3546	8081B	III
26-Sep-2013	TB1-092613	7215510	TB	5030B	8015M	III
26-Sep-2013	SL-512-SA5D-SB-4.0-5.0	7215512	N	3050B	6010C	III
26-Sep-2013	SL-512-SA5D-SB-4.0-5.0	7215512	N	3050B	6020A	III
26-Sep-2013	SL-512-SA5D-SB-4.0-5.0	7215512	N	3546	8015M	III
26-Sep-2013	SL-512-SA5D-SB-4.0-5.0	7215512	N	3546	8081B	III
26-Sep-2013	SL-512-SA5D-SB-4.0-5.0	7215512	N	3546	8082A	III
26-Sep-2013	SL-512-SA5D-SB-4.0-5.0	7215512	N	3546	8270D SIM	III
26-Sep-2013	SL-512-SA5D-SB-4.0-5.0	7215512	N	5035A	8015M	III
26-Sep-2013	SL-512-SA5D-SB-4.0-5.0	7215512	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: PH116 **Laboratory: LL**

EDD Filename: PrepPH116_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-512-SA5D-SB-0.0-0.5 *Collected:* 9/26/2013 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	0.948	J	0.0689	MDL	1.03	PQL	mg/Kg	J	Z
BORON	5.74	J	0.864	MDL	10.3	PQL	mg/Kg	J	Z
CADMIUM	0.347	J	0.0782	MDL	1.03	PQL	mg/Kg	J	Z
Zirconium	3.68	J	0.864	MDL	5.14	PQL	mg/Kg	J	Z
TIN	2.97	J	0.226	MDL	10.3	PQL	mg/Kg	U	B

Sample ID: SL-512-SA5D-SB-4.0-5.0 *Collected:* 9/26/2013 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
BERYLLIUM	1.03	J	0.0750	MDL	1.12	PQL	mg/Kg	J	Z
BORON	7.63	J	0.940	MDL	11.2	PQL	mg/Kg	J	Z
CADMIUM	0.270	J	0.0851	MDL	1.12	PQL	mg/Kg	J	Z
TIN	3.61	J	0.246	MDL	11.2	PQL	mg/Kg	U	B
Zirconium	4.72	J	0.940	MDL	5.60	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-512-SA5D-SB-0.0-0.5 *Collected:* 9/26/2013 7:35:00 *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.198	J	0.103	MDL	0.411	PQL	mg/Kg	J	Z

Sample ID: SL-512-SA5D-SB-0.0-0.5 *Collected:* 9/26/2013 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	0.0482	J	0.0267	MDL	0.206	PQL	mg/Kg	J	Z

Sample ID: SL-512-SA5D-SB-4.0-5.0 *Collected:* 9/26/2013 8:00:00 *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.148	J	0.112	MDL	0.448	PQL	mg/Kg	J	Z

* denotes a non-reportable result

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

Data Qualifier Summary

Lab Reporting Batch ID: PH116 **Laboratory: LL**

EDD Filename: PrepPH116_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-512-SA5D-SB-4.0-5.0 *Collected:* 9/26/2013 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	0.0436	J	0.0291	MDL	0.224	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-512-SA5D-SB-0.0-0.5 *Collected:* 9/26/2013 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-HPCDD	0.273	JB	0.0203	MDL	5.12	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0996	JBQ	0.00731	MDL	5.12	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0440	JB	0.0106	MDL	5.12	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0321	JBQ	0.0213	MDL	5.12	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0538	JBQ	0.0142	MDL	5.12	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.143	JB	0.0230	MDL	5.12	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0675	JBQ	0.0128	MDL	5.12	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.307	JBQ	0.0206	MDL	5.12	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.367	JB	0.0133	MDL	5.12	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0551	JB	0.0288	MDL	5.12	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.215	JBQ	0.0163	MDL	5.12	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0367	JBQ	0.0127	MDL	5.12	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0925	JBQ	0.0161	MDL	5.12	PQL	ng/Kg	U	B
OCDD	1.70	JB	0.0195	MDL	10.2	PQL	ng/Kg	J	Z
OCDF	0.201	JB	0.0273	MDL	10.2	PQL	ng/Kg	U	B

Method Category: SVOA

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

Sample ID: SL-512-SA5D-SB-0.0-0.5 *Collected:* 9/26/2013 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
2-METHYLNAPHTHALENE	0.76	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(A)ANTHRACENE	0.76	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: PH116 **Laboratory: LL**

EDD Filename: PrepPH116_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: **SVOA**

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

Sample ID: **SL-512-SA5D-SB-0.0-0.5** ***Collected:*** **9/26/2013 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(B)FLUORANTHENE	1.2	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
CHRYSENE	0.99	J	0.35	MDL	1.8	PQL	ug/Kg	J	Z
FLUORANTHENE	1.2	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
NAPHTHALENE	0.84	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
PYRENE	1.2	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: **SL-512-SA5D-SB-4.0-5.0** ***Collected:*** **9/26/2013 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*
NAPHTHALENE	1.0	J	0.76	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: PH116 **Laboratory: LL**

EDD Filename: PrepPH116_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Reason Code Legend

Reason Code	*Description*
B	Method Blank Contamination
S	Surrogate/Tracer Recovery Upper Estimation
Z	Reporting Limit Trace Value

* denotes a non-reportable result

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

Enclosure I

EPA Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control
Outlier Reports

PH116

Method Blank Outlier Report

Lab Reporting Batch ID: PH116 **Laboratory: LL**

EDD Filename: PrepPH116_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2730B371140	10/2/2013 11:40:00 AM	1,2,3,4,6,7,8-HPCDD	0.0965 ng/Kg	SL-512-SA5D-SB-0.0-0.5
		1,2,3,4,6,7,8-HPCDF	0.0595 ng/Kg	
		1,2,3,4,7,8,9-HPCDF	0.0657 ng/Kg	
		1,2,3,4,7,8-HxCDD	0.0334 ng/Kg	
		1,2,3,4,7,8-HXCDF	0.0515 ng/Kg	
		1,2,3,6,7,8-HXCDD	0.0256 ng/Kg	
		1,2,3,6,7,8-HXCDF	0.0453 ng/Kg	
		1,2,3,7,8,9-HXCDD	0.0369 ng/Kg	
		1,2,3,7,8,9-HXCDF	0.0754 ng/Kg	
		1,2,3,7,8-PECDD	0.0738 ng/Kg	
		1,2,3,7,8-PECDF	0.0876 ng/Kg	
		2,3,4,6,7,8-HXCDF	0.0332 ng/Kg	
		2,3,4,7,8-PECDF	0.0646 ng/Kg	
		OCDD	0.249 ng/Kg	
		OCDF	0.137 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-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDD	0.273 ng/Kg	0.273U ng/Kg
SL-512-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDF	0.0996 ng/Kg	0.0996U ng/Kg
SL-512-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0440 ng/Kg	0.0440U ng/Kg
SL-512-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.0321 ng/Kg	0.0321U ng/Kg
SL-512-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.0538 ng/Kg	0.0538U ng/Kg
SL-512-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.0675 ng/Kg	0.0675U ng/Kg
SL-512-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.367 ng/Kg	0.367U ng/Kg
SL-512-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.0551 ng/Kg	0.0551U ng/Kg
SL-512-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.215 ng/Kg	0.215U ng/Kg
SL-512-SA5D-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0367 ng/Kg	0.0367U ng/Kg
SL-512-SA5D-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.0925 ng/Kg	0.0925U ng/Kg
SL-512-SA5D-SB-0.0-0.5(RES)	OCDF	0.201 ng/Kg	0.201U ng/Kg

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P27437AB221412	10/3/2013 2:12:00 PM	CALCIUM	9.48 mg/Kg	SL-512-SA5D-SB-0.0-0.5
		TIN	1.46 mg/Kg	SL-512-SA5D-SB-4.0-5.0
		ZINC	0.850 mg/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-SA5D-SB-0.0-0.5(RES)	TIN	2.97 mg/Kg	2.97U mg/Kg
SL-512-SA5D-SB-4.0-5.0(RES)	TIN	3.61 mg/Kg	3.61U mg/Kg

Reporting Limit Outliers

Lab Reporting Batch ID: PH116 **Laboratory: LL**

EDD Filename: PrepPH116_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-512-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	0.273	5.12	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0996	5.12	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.0440	5.12	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0321	5.12	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0538	5.12	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.143	5.12	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0675	5.12	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.307	5.12	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	0.367	5.12	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JB	0.0551	5.12	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.215	5.12	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0367	5.12	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0925	5.12	PQL	ng/Kg	
	OCDD	JB	1.70	10.2	PQL	ng/Kg	
	OCDF	JB	0.201	10.2	PQL	ng/Kg	

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-512-SA5D-SB-0.0-0.5	BERYLLIUM	J	0.948	1.03	PQL	mg/Kg	
	BORON	J	5.74	10.3	PQL	mg/Kg	
	CADMIUM	J	0.347	1.03	PQL	mg/Kg	J (all detects)
	TIN	J	2.97	10.3	PQL	mg/Kg	
	Zirconium	J	3.68	5.14	PQL	mg/Kg	
SL-512-SA5D-SB-4.0-5.0	BERYLLIUM	J	1.03	1.12	PQL	mg/Kg	
	BORON	J	7.63	11.2	PQL	mg/Kg	
	CADMIUM	J	0.270	1.12	PQL	mg/Kg	J (all detects)
	TIN	J	3.61	11.2	PQL	mg/Kg	
	Zirconium	J	4.72	5.60	PQL	mg/Kg	

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-512-SA5D-SB-0.0-0.5	SELENIUM	J	0.198	0.411	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0482	0.206	PQL	mg/Kg	
SL-512-SA5D-SB-4.0-5.0	SELENIUM	J	0.148	0.448	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0436	0.224	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH116 **Laboratory: LL**

EDD Filename: PrepPH116_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: **8270D SIM**

Matrix: **SO**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
SL-512-SA5D-SB-0.0-0.5	2-METHYLNAPHTHALENE	J	0.76	1.8	PQL	ug/Kg	
	BENZO(A)ANTHRACENE	J	0.76	1.8	PQL	ug/Kg	
	BENZO(B)FLUORANTHENE	J	1.2	1.8	PQL	ug/Kg	
	CHRYSENE	J	0.99	1.8	PQL	ug/Kg	J (all detects)
	FLUORANTHENE	J	1.2	1.8	PQL	ug/Kg	
	NAPHTHALENE	J	0.84	1.8	PQL	ug/Kg	
	PYRENE	J	1.2	1.8	PQL	ug/Kg	
SL-512-SA5D-SB-4.0-5.0	NAPHTHALENE	J	1.0	1.9	PQL	ug/Kg	J (all detects)

LDC #: 30842A4 **VALIDATION COMPLETENESS WORKSHEET** Date: 12/4/13
SDG #: PH116 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: 9/26/13
II.	ICP/MS Tune	—	
III.	Calibration	—	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	—	
VI.	Matrix Spike Analysis	N	CS
VII.	Duplicate Sample Analysis	N	↓
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	N	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	N	
XIV.	Field Duplicates	—	
XV	Field Blanks	SW	FB= FB-041613 (PH032) EB= EB1-092513 (PH114)

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: SO.1

1	SL-512-SA5D-SB-0.0-0.5	11		21		31	
2	SL-512-SA5D-SB-4.0-5.0	12		22		32	
3		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	

Notes: _____

LDC #: 30842A4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: A
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-041613 (SDG: PH032)	Action Limit	No Qualifiers											
Mo	0.0132	6.60												
Sn	0.0029	1.45												

Sampling date: 9/25/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: All

Analyte	Blank ID	Sample Identification										
	EB1-092513 (SDG: PH114)	Action Limit	No Qualifiers									
Ca	0.0498	24.9										

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 5D

SDG: PH118

Prepared for

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Denver, CO 80202

Prepared by

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2701 Loker Ave West, Suite 220
Carlsbad, California 92010

December 23, 2013

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on September 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 Environmental Protection Agency (EPA) SW 846 Method 8270D utilizing Selective Ion Monitoring (SIM)
Polychlorinated Biphenyls (PCBs) by EPA SW 846 Method 8082A
Metals by EPA SW 846 Method 6010C, 6020A and 7471B
Herbicides by EPA SW 846 Method 8151A
Total Petroleum Hydrocarbons (TPH) as Gasoline by EPA SW 846 Method 8015M
TPH as Extractables by EPA SW 846 Method 8015M
Dioxins and Dibenzofurans by EPA Method 1613B

Wet Chemistry:
Fluoride by EPA Method 300.0

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 duplicates. No samples in this SDG were subjected to Level IV evaluation.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of 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 with the exception of one sample for TPH as gasoline. The associated sample result was qualified as non-detected estimated (UJ). The details regarding the qualification of data are provided in Enclosure I.

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 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.

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 several MS/MSD pairs for metals and fluoride. 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 herbicides. The dinoseb result in samples SL-582-SA5D-SB-0.0-0.5, SL-582-SA5D-SB-10.0-11.0, SL-582-SA5D-SB-4.0-5.0 and SL-882-SA5D-SB-4.0-5.0 were qualified as rejected (R) due to LCS/LCSD %Rs grossly outside QC limits (i.e., ≤ 10%). The details regarding the qualification of data are provided in Enclosure I.

X. Internal Standards

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

XI. ICP Serial Dilution

ICP serial dilution analysis was performed by the laboratory. The analysis criteria were met.

XII. Compound Quantitation

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

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

Sample	Finding	Flag	A or P
All samples in SDG PH118	All compounds reported as detected below the RL.	J (all detects)	A

XIII. Field Duplicate Samples

One field duplicate pair was collected and analyzed for SVOCs, PCBs, metals, herbicides, TPH as gasoline and TPH as extractables. All RPDs were within 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 volatile contaminants were found in the trip blank.

One equipment blank (from SDG PH120) was collected and analyzed for SVOCs, PCBs, metals, herbicides, TPH as gasoline, TPH as extractables, dioxins and fluoride. The equipment blank had detections for SVOCs, metals and dioxins. The associated sample results were not detected or were significantly greater than the concentrations found in the equipment blank, therefore no data were qualified.

One field blank (from SDG PH032) was collected and analyzed for SVOCs, PCBs, metals, herbicides, TPH as gasoline, TPH as extractables, dioxins and fluoride. The field blank had detections for SVOCs, metals and dioxins. The associated sample results were not detected or were significantly greater than the concentrations found in the field blank, therefore no data were qualified.

XV. Overall Assessment of Data

The dinoseb results in four samples were rejected due to LCS/LCSD %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
30-Sep-2013	TB-093013	7218893	TB	5030B	8015M	III
30-Sep-2013	SL-582-SA5D-SB-0.0-0.5	7218894	N	3050B	6010C	III
30-Sep-2013	SL-582-SA5D-SB-0.0-0.5	7218894	N	3050B	6020A	III
30-Sep-2013	SL-582-SA5D-SB-0.0-0.5	7218894	N	3546	8015M	III
30-Sep-2013	SL-582-SA5D-SB-0.0-0.5	7218894	N	3546	8082A	III
30-Sep-2013	SL-582-SA5D-SB-0.0-0.5	7218894	N	3546	8270D SIM	III
30-Sep-2013	SL-582-SA5D-SB-0.0-0.5	7218894	N	3550B	8151A	III
30-Sep-2013	SL-582-SA5D-SB-0.0-0.5	7218894	N	METHOD	1613B	III
30-Sep-2013	SL-582-SA5D-SB-0.0-0.5	7218894	N	METHOD	7471B	III
30-Sep-2013	SL-582-SA5D-SB-4.0-5.0	7218895	N	3050B	6010C	III
30-Sep-2013	SL-582-SA5D-SB-4.0-5.0	7218895	N	3050B	6020A	III
30-Sep-2013	SL-582-SA5D-SB-4.0-5.0	7218895	N	3546	8015M	III
30-Sep-2013	SL-582-SA5D-SB-4.0-5.0	7218895	N	3546	8082A	III
30-Sep-2013	SL-582-SA5D-SB-4.0-5.0	7218895	N	3546	8270D SIM	III
30-Sep-2013	SL-582-SA5D-SB-4.0-5.0	7218895	N	3550B	8151A	III
30-Sep-2013	SL-582-SA5D-SB-4.0-5.0	7218895	N	5035A	8015M	III
30-Sep-2013	SL-582-SA5D-SB-4.0-5.0	7218895	N	METHOD	7471B	III
30-Sep-2013	SL-582-SA5D-SB-4.0-5.0MS	7218896	MS	3050B	6010C	III
30-Sep-2013	SL-582-SA5D-SB-4.0-5.0MS	7218896	MS	3050B	6020A	III
30-Sep-2013	SL-582-SA5D-SB-4.0-5.0MS	7218896	MS	3546	8015M	III
30-Sep-2013	SL-582-SA5D-SB-4.0-5.0MS	7218896	MS	3546	8082A	III
30-Sep-2013	SL-582-SA5D-SB-4.0-5.0MS	7218896	MS	3546	8270D SIM	III
30-Sep-2013	SL-582-SA5D-SB-4.0-5.0MS	7218896	MS	3550B	8151A	III
30-Sep-2013	SL-582-SA5D-SB-4.0-5.0MS	7218896	MS	5035A	8015M	III
30-Sep-2013	SL-582-SA5D-SB-4.0-5.0MS	7218896	MS	METHOD	7471B	III
30-Sep-2013	SL-582-SA5D-SB-4.0-5.0MSD	7218897	MSD	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-Sep-2013	SL-582-SA5D-SB-4.0-5.0MSD	7218897	MSD	3050B	6020A	III
30-Sep-2013	SL-582-SA5D-SB-4.0-5.0MSD	7218897	MSD	3546	8015M	III
30-Sep-2013	SL-582-SA5D-SB-4.0-5.0MSD	7218897	MSD	3546	8082A	III
30-Sep-2013	SL-582-SA5D-SB-4.0-5.0MSD	7218897	MSD	3546	8270D SIM	III
30-Sep-2013	SL-582-SA5D-SB-4.0-5.0MSD	7218897	MSD	3550B	8151A	III
30-Sep-2013	SL-582-SA5D-SB-4.0-5.0MSD	7218897	MSD	5035A	8015M	III
30-Sep-2013	SL-582-SA5D-SB-4.0-5.0MSD	7218897	MSD	METHOD	7471B	III
30-Sep-2013	SL-582-SA5D-SB-4.0-5.0DUP	7218898	DUP	3050B	6010C	III
30-Sep-2013	SL-582-SA5D-SB-4.0-5.0DUP	7218898	DUP	3050B	6020A	III
30-Sep-2013	SL-582-SA5D-SB-4.0-5.0DUP	7218898	DUP	METHOD	7471B	III
30-Sep-2013	SL-882-SA5D-SB-4.0-5.0	7218899	FD	3050B	6010C	III
30-Sep-2013	SL-882-SA5D-SB-4.0-5.0	7218899	FD	3050B	6020A	III
30-Sep-2013	SL-882-SA5D-SB-4.0-5.0	7218899	FD	3546	8015M	III
30-Sep-2013	SL-882-SA5D-SB-4.0-5.0	7218899	FD	3546	8082A	III
30-Sep-2013	SL-882-SA5D-SB-4.0-5.0	7218899	FD	3546	8270D SIM	III
30-Sep-2013	SL-882-SA5D-SB-4.0-5.0	7218899	FD	3550B	8151A	III
30-Sep-2013	SL-882-SA5D-SB-4.0-5.0	7218899	FD	5035A	8015M	III
30-Sep-2013	SL-882-SA5D-SB-4.0-5.0	7218899	FD	METHOD	7471B	III
30-Sep-2013	SL-582-SA5D-SB-10.0-11.0	7218900	N	3050B	6010C	III
30-Sep-2013	SL-582-SA5D-SB-10.0-11.0	7218900	N	3050B	6020A	III
30-Sep-2013	SL-582-SA5D-SB-10.0-11.0	7218900	N	3546	8015M	III
30-Sep-2013	SL-582-SA5D-SB-10.0-11.0	7218900	N	3546	8082A	III
30-Sep-2013	SL-582-SA5D-SB-10.0-11.0	7218900	N	3546	8270D SIM	III
30-Sep-2013	SL-582-SA5D-SB-10.0-11.0	7218900	N	3550B	8151A	III
30-Sep-2013	SL-582-SA5D-SB-10.0-11.0	7218900	N	5035A	8015M	III
30-Sep-2013	SL-582-SA5D-SB-10.0-11.0	7218900	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
30-Sep-2013	SL-595-SA5D-SB-0.0-0.5	7218901	N	METHOD	300.0	III
30-Sep-2013	SL-595-SA5D-SB-0.0-0.5DUP	P218901D271803A	DUP	METHOD	300.0	III
30-Sep-2013	SL-595-SA5D-SB-0.0-0.5MS	P218901R272125A	MS	METHOD	300.0	III
30-Sep-2013	SL-595-SA5D-SB-4.0-5.0	7218902	N	METHOD	300.0	III
30-Sep-2013	SL-595-SA5D-SB-9.0-10.0	7218903	N	METHOD	300.0	III
30-Sep-2013	SL-595-SA5D-SB-14.0-15.0	7218904	N	METHOD	300.0	III
30-Sep-2013	SL-595-SA5D-SB-17.0-18.0	7218905	N	METHOD	300.0	III
30-Sep-2013	SL-596-SA5D-SB-0.0-0.5	7218906	N	METHOD	300.0	III
30-Sep-2013	SL-596-SA5D-SB-4.0-5.0	7218907	N	METHOD	300.0	III
30-Sep-2013	SL-596-SA5D-SB-11.5-12.5	7218908	N	METHOD	300.0	III
30-Sep-2013	SL-597-SA5D-SB-0.0-0.5	7218909	N	METHOD	300.0	III
30-Sep-2013	SL-597-SA5D-SB-4.0-5.0	7218910	N	METHOD	300.0	III
30-Sep-2013	SL-597-SA5D-SB-9.0-10.0	7218911	N	METHOD	300.0	III
30-Sep-2013	SL-597-SA5D-SB-9.0-10.0DU	P218911D272045B	DUP	METHOD	300.0	III
30-Sep-2013	SL-597-SA5D-SB-9.0-10.0MS	P218911R270121B	MS	METHOD	300.0	III
30-Sep-2013	SL-597-SA5D-SB-14.0-15.0	7218912	N	METHOD	300.0	III
30-Sep-2013	SL-597-SA5D-SB-17.0-18.0	7218913	N	METHOD	300.0	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: PH118 **Laboratory: LL**

EDD Filename: PrepPH118_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: GENCHEM

Method: 300.0 **Matrix: SO**

Sample ID: SL-595-SA5D-SB-0.0-0.5 *Collected:* 9/30/2013 9:50:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORIDE	2.0		0.44	MDL	1.1	PQL	mg/Kg	J	Q

Sample ID: SL-595-SA5D-SB-14.0-15.0 *Collected:* 9/30/2013 10:20:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORIDE	8.9		0.46	MDL	1.2	PQL	mg/Kg	J	Q

Sample ID: SL-595-SA5D-SB-17.0-18.0 *Collected:* 9/30/2013 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
FLUORIDE	5.3		0.92	MDL	2.3	PQL	mg/Kg	J	Q

Sample ID: SL-595-SA5D-SB-4.0-5.0 *Collected:* 9/30/2013 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
FLUORIDE	2.2		0.44	MDL	1.1	PQL	mg/Kg	J	Q

Sample ID: SL-595-SA5D-SB-9.0-10.0 *Collected:* 9/30/2013 10:10:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORIDE	6.1		0.93	MDL	2.3	PQL	mg/Kg	J	Q

Sample ID: SL-596-SA5D-SB-0.0-0.5 *Collected:* 9/30/2013 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
FLUORIDE	2.1		0.43	MDL	1.1	PQL	mg/Kg	J	Q

Sample ID: SL-596-SA5D-SB-11.5-12.5 *Collected:* 9/30/2013 12:55:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORIDE	2.5		0.90	MDL	2.2	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: PH118 **Laboratory: LL**

EDD Filename: PrepPH118_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: GENCHEM

Method: 300.0 **Matrix: SO**

Sample ID: SL-596-SA5D-SB-4.0-5.0 *Collected:* 9/30/2013 12:45:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORIDE	1.9	J	0.89	MDL	2.2	PQL	mg/Kg	J	Z, Q

Sample ID: SL-597-SA5D-SB-0.0-0.5 *Collected:* 9/30/2013 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
FLUORIDE	2.7		0.88	MDL	2.2	PQL	mg/Kg	J	Q

Sample ID: SL-597-SA5D-SB-14.0-15.0 *Collected:* 9/30/2013 2:10:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORIDE	2.9		0.89	MDL	2.2	PQL	mg/Kg	J	Q

Sample ID: SL-597-SA5D-SB-17.0-18.0 *Collected:* 9/30/2013 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
FLUORIDE	3.5		0.44	MDL	1.1	PQL	mg/Kg	J	Q

Sample ID: SL-597-SA5D-SB-4.0-5.0 *Collected:* 9/30/2013 1:50:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORIDE	2.8		0.89	MDL	2.2	PQL	mg/Kg	J	Q

Sample ID: SL-597-SA5D-SB-9.0-10.0 *Collected:* 9/30/2013 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
FLUORIDE	4.2		0.90	MDL	2.3	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: PH118 **Laboratory: LL**

EDD Filename: PrepPH118_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-582-SA5D-SB-0.0-0.5 *Collected:* 9/30/2013 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	4.15	U	0.767	MDL	4.15	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.816	J	0.0694	MDL	1.04	PQL	mg/Kg	J	Z
BORON	6.31	J	0.871	MDL	10.4	PQL	mg/Kg	J	Z
POTASSIUM	5110		8.64	MDL	104	PQL	mg/Kg	J	Q
SODIUM	98.2	J	17.3	MDL	104	PQL	mg/Kg	J	Z
TIN	2.86	J	0.228	MDL	10.4	PQL	mg/Kg	U	B

Sample ID: SL-582-SA5D-SB-10.0-11.0 *Collected:* 9/30/2013 9:10:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.43	U	0.820	MDL	4.43	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.765	J	0.0742	MDL	1.11	PQL	mg/Kg	J	Z
BORON	5.51	J	0.930	MDL	11.1	PQL	mg/Kg	J	Z
POTASSIUM	3380		9.24	MDL	111	PQL	mg/Kg	J	Q
TIN	2.93	J	0.244	MDL	11.1	PQL	mg/Kg	U	B

Sample ID: SL-582-SA5D-SB-4.0-5.0 *Collected:* 9/30/2013 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	4.49	U	0.830	MDL	4.49	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.771	J	0.0751	MDL	1.12	PQL	mg/Kg	J	Z
BORON	5.70	J	0.942	MDL	11.2	PQL	mg/Kg	J	Z
POTASSIUM	3880		9.35	MDL	112	PQL	mg/Kg	J	Q
TIN	2.98	J	0.247	MDL	11.2	PQL	mg/Kg	U	B

Sample ID: SL-882-SA5D-SB-4.0-5.0 *Collected:* 9/30/2013 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
ANTIMONY	4.39	U	0.813	MDL	4.39	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.789	J	0.0736	MDL	1.10	PQL	mg/Kg	J	Z
BORON	6.43	J	0.923	MDL	11.0	PQL	mg/Kg	J	Z
POTASSIUM	4170		9.16	MDL	110	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: PH118 **Laboratory: LL**

EDD Filename: PrepPH118_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-882-SA5D-SB-4.0-5.0 *Collected:* 9/30/2013 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
TIN	2.85	J	0.242	MDL	11.0	PQL	mg/Kg	U	B

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-582-SA5D-SB-0.0-0.5 *Collected:* 9/30/2013 8:45:00 *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.277	J	0.104	MDL	0.415	PQL	mg/Kg	J	Z

Sample ID: SL-582-SA5D-SB-0.0-0.5 *Collected:* 9/30/2013 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	0.0311	J	0.0269	MDL	0.207	PQL	mg/Kg	J	Z

Sample ID: SL-582-SA5D-SB-10.0-11.0 *Collected:* 9/30/2013 9:10:00 *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.150	J	0.111	MDL	0.443	PQL	mg/Kg	J	Z

Sample ID: SL-582-SA5D-SB-4.0-5.0 *Collected:* 9/30/2013 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	0.220	J	0.112	MDL	0.449	PQL	mg/Kg	J	Z

Sample ID: SL-882-SA5D-SB-4.0-5.0 *Collected:* 9/30/2013 9:00:00 *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.184	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: PH118 **Laboratory: LL**

EDD Filename: PrepPH118_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-582-SA5D-SB-0.0-0.5 *Collected:* 9/30/2013 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
1,2,3,4,6,7,8-HPCDF	0.0334	JBQ	0.0167	MDL	5.29	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0673	JB	0.0375	MDL	5.29	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0836	JB	0.0349	MDL	5.29	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0554	JQ	0.0392	MDL	5.29	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0566	JBQ	0.0325	MDL	5.29	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.118	JB	0.0379	MDL	5.29	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.141	JQ	0.0320	MDL	5.29	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.0935	JBQ	0.0370	MDL	5.29	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0497	JBQ	0.0333	MDL	5.29	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0515	J	0.0364	MDL	5.29	PQL	ng/Kg	J	Z
OCDD	0.839	JB	0.0376	MDL	10.6	PQL	ng/Kg	U	B
OCDF	0.203	JBQ	0.0611	MDL	10.6	PQL	ng/Kg	U	B

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: SL-582-SA5D-SB-4.0-5.0 *Collected:* 9/30/2013 8:55:00 *Analysis Type:* REA *Dilution:* 23.28

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
GASOLINE RANGE ORGANICS (C5-C12)	1.1	U	0.2	MDL	1.1	PQL	mg/Kg	UJ	H

Method Category: SVOA

Method: 8151A **Matrix: SO**

Sample ID: SL-582-SA5D-SB-0.0-0.5 *Collected:* 9/30/2013 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
DINOSEB	25	U	9.4	MDL	25	PQL	ug/Kg	R	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: PH118 **Laboratory: LL**

EDD Filename: PrepPH118_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 8151A **Matrix: SO**

Sample ID: SL-582-SA5D-SB-10.0-11.0 *Collected:* 9/30/2013 9:10:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
DINOSEB	27	U	10	MDL	27	PQL	ug/Kg	R	L

Sample ID: SL-582-SA5D-SB-4.0-5.0 *Collected:* 9/30/2013 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
DINOSEB	27	U	10	MDL	27	PQL	ug/Kg	R	L

Sample ID: SL-882-SA5D-SB-4.0-5.0 *Collected:* 9/30/2013 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
DINOSEB	27	U	10	MDL	27	PQL	ug/Kg	R	L

Method Category: SVOA

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

Sample ID: SL-582-SA5D-SB-0.0-0.5 *Collected:* 9/30/2013 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
NAPHTHALENE	0.91	J	0.70	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: SL-582-SA5D-SB-10.0-11.0 *Collected:* 9/30/2013 9:10:00 *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	0.82	J	0.74	MDL	1.9	PQL	ug/Kg	J	Z
2-METHYLNAPHTHALENE	1.0	J	0.74	MDL	1.9	PQL	ug/Kg	J	Z
NAPHTHALENE	0.99	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: PH118 **Laboratory: LL**

EDD Filename: PrepPH118_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Reason Code Legend

Reason Code	*Description*
B	Method Blank Contamination
H	Extraction to Analysis Estimation
L	Laboratory Control Spike Lower Rejection
Q	Matrix Spike Lower Estimation
Q	Matrix Spike Lower Rejection
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

PH118

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: PH118 **Laboratory: LL**

EDD Filename: PrepPH118_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 8015M **Preparation Method: 3546**

Matrix: SO

Sample ID	*Type*	*Actual*	*Criteria*	*Units*	*Flag*
SL-582-SA5D-SB-4.0-5.0 (REA)	Extraction To Analysis	8.00	7.00	DAYS	J(all detects)
SL-582-SA5D-SB-4.0-5.0MS (REA)		8.00	7.00	DAYS	UJ(all non-detects)
SL-582-SA5D-SB-4.0-5.0MSD (REA)		8.00	7.00	DAYS	

Method Blank Outlier Report

Lab Reporting Batch ID: PH118 **Laboratory: LL**

EDD Filename: PrepPH118_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2770B371443	10/9/2013 2:43:00 PM	1,2,3,4,6,7,8-HPCDF	0.0524 ng/Kg	SL-582-SA5D-SB-0.0-0.5
		1,2,3,4,7,8,9-HPCDF	0.0495 ng/Kg	
		1,2,3,4,7,8-HxCDD	0.0584 ng/Kg	
		1,2,3,4,7,8-HXCDF	0.0979 ng/Kg	
		1,2,3,6,7,8-HXCDF	0.0632 ng/Kg	
		1,2,3,7,8,9-HXCDD	0.0594 ng/Kg	
		1,2,3,7,8-PECDF	0.0547 ng/Kg	
		2,3,4,6,7,8-HXCDF	0.104 ng/Kg	
		OCDD	0.386 ng/Kg	
		OCDF	0.187 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-582-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDF	0.0334 ng/Kg	0.0334U ng/Kg
SL-582-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.0673 ng/Kg	0.0673U ng/Kg
SL-582-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.0836 ng/Kg	0.0836U ng/Kg
SL-582-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.0566 ng/Kg	0.0566U ng/Kg
SL-582-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDD	0.118 ng/Kg	0.118U ng/Kg
SL-582-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.0935 ng/Kg	0.0935U ng/Kg
SL-582-SA5D-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0497 ng/Kg	0.0497U ng/Kg
SL-582-SA5D-SB-0.0-0.5(RES)	OCDD	0.839 ng/Kg	0.839U ng/Kg
SL-582-SA5D-SB-0.0-0.5(RES)	OCDF	0.203 ng/Kg	0.203U ng/Kg

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P27537CB221359	10/10/2013 1:59:00 PM	ALUMINUM	8.51 mg/Kg	SL-582-SA5D-SB-0.0-0.5
		CALCIUM	15.2 mg/Kg	SL-582-SA5D-SB-10.0-11.0
		TIN	1.39 mg/Kg	SL-582-SA5D-SB-4.0-5.0
		ZINC	1.38 mg/Kg	SL-882-SA5D-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-582-SA5D-SB-0.0-0.5(RES)	TIN	2.86 mg/Kg	2.86U mg/Kg
SL-582-SA5D-SB-10.0-11.0(RES)	TIN	2.93 mg/Kg	2.93U mg/Kg
SL-582-SA5D-SB-4.0-5.0(RES)	TIN	2.98 mg/Kg	2.98U mg/Kg
SL-882-SA5D-SB-4.0-5.0(RES)	TIN	2.85 mg/Kg	2.85U mg/Kg

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH118 **Laboratory: LL**

EDD Filename: PH118_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-582-SA5D-SB-4.0-5.0MS (TOT) **SL-582-SA5D-SB-4.0-5.0MSD (TOT)** (SL-582-SA5D-SB-0.0-0.5 SL -582-SA5D-SB-10.0-11.0 SL -582-SA5D-SB-4.0-5.0 SL -882-SA5D-SB-4.0-5.0)	ALUMINUM IRON MAGNESIUM MANGANESE POTASSIUM TITANIUM	3336 1811 396 133 173 499	3044 975 332 148 167 469	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 IRON MAGNESIUM MANGANESE POTASSIUM TITANIUM	J (all detects) Al, Fe, Mg, Mn, Ti No Qual, >4X
SL-582-SA5D-SB-4.0-5.0MS (TOT) **SL-582-SA5D-SB-4.0-5.0MSD (TOT)** (SL-582-SA5D-SB-0.0-0.5 SL -582-SA5D-SB-10.0-11.0 SL -582-SA5D-SB-4.0-5.0 SL -882-SA5D-SB-4.0-5.0)	CALCIUM	-261	57	75.00-125.00	-	CALCIUM	No Qual, >4X
SL-582-SA5D-SB-4.0-5.0MS (TOT) **SL-582-SA5D-SB-4.0-5.0MSD (TOT)** (SL-582-SA5D-SB-0.0-0.5 SL -582-SA5D-SB-10.0-11.0 SL -582-SA5D-SB-4.0-5.0 SL -882-SA5D-SB-4.0-5.0)	ANTIMONY	41	43	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-582-SA5D-SB-4.0-5.0MSD (TOT) (SL-582-SA5D-SB-0.0-0.5 SL -582-SA5D-SB-10.0-11.0 SL -582-SA5D-SB-4.0-5.0 SL -882-SA5D-SB-4.0-5.0)	STRONTIUM	-	145	75.00-125.00	-	STRONTIUM	No Qual, >4X

Method: 300.0
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-595-SA5D-SB-0.0-0.5MS (SL-595-SA5D-SB-0.0-0.5 SL -595-SA5D-SB-14.0-15.0 SL -595-SA5D-SB-17.0-18.0 SL -595-SA5D-SB-4.0-5.0 SL -595-SA5D-SB-9.0-10.0 SL -596-SA5D-SB-0.0-0.5 SL -596-SA5D-SB-11.5-12.5 SL -596-SA5D-SB-4.0-5.0 SL -597-SA5D-SB-0.0-0.5 SL -597-SA5D-SB-4.0-5.0)	FLUORIDE	65	-	80.00-120.00	-	FLUORIDE	J(all detects) UJ(all non-detects)
SL-597-SA5D-SB-9.0-10.0MS (SL-597-SA5D-SB-14.0-15.0 SL -597-SA5D-SB-17.0-18.0 SL -597-SA5D-SB-9.0-10.0)	FLUORIDE	23	-	80.00-120.00	-	FLUORIDE	J(all detects) R(all non-detects)

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: PH118 **Laboratory: LL**

EDD Filename: PrepPH118_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: **8151A**
Matrix: **SO**

QC Sample ID (Associated Samples)	*Compound*	*LCS %R*	*LCSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
P32767AQ241601A (SL-582-SA5D-SB-0.0-0.5 SL-582-SA5D-SB-10.0-11.0 SL-582-SA5D-SB-4.0-5.0 SL-882-SA5D-SB-4.0-5.0)	DINOSEB	9	-	10.00-56.00	-	DINOSEB	J (all detects) R (all non-detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: PH118 **Laboratory: LL**

EDD Filename: PrepPH118_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 160.3M
Matrix: SO

Analyte	Concentration (%)		Sample RPD	eQAPP RPD	Flag
	SL-582-SA5D-SB-4.0-5.0	SL-882-SA5D-SB-4.0-5.0			
MOISTURE	11.7	11.6	1		No Qualifiers Applied

Method: 6010C
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-582-SA5D-SB-4.0-5.0 (TOT)	SL-882-SA5D-SB-4.0-5.0 (TOT)			
ALUMINUM	23800	25200	6	50.00	No Qualifiers Applied
ARSENIC	6.58	6.42	2	50.00	
BARIUM	95.3	108	12	50.00	
BERYLLIUM	0.771	0.789	2	50.00	
BORON	5.70	6.43	12	50.00	
CALCIUM	26200	30200	14	50.00	
CHROMIUM	34.1	34.8	2	50.00	
COBALT	8.11	8.59	6	50.00	
IRON	30200	31200	3	50.00	
LEAD	5.23	5.50	5	50.00	
LITHIUM	29.5	30.8	4	50.00	
MAGNESIUM	7620	7760	2	50.00	
MANGANESE	326	396	19	50.00	
NICKEL	14.0	15.2	8	50.00	
PHOSPHORUS	433	462	6	50.00	
POTASSIUM	3880	4170	7	50.00	
SODIUM	146	144	1	50.00	
TIN	2.98	2.85	4	50.00	
TITANIUM	1360	1460	7	50.00	
VANADIUM	67.8	69.2	2	50.00	
ZINC	69.4	69.5	0	50.00	
Zirconium	8.23	7.78	6	50.00	

Method: 6020A
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-582-SA5D-SB-4.0-5.0 (TOT)	SL-882-SA5D-SB-4.0-5.0 (TOT)			
SELENIUM	0.220	0.184	18	50.00	No Qualifiers Applied
STRONTIUM	61.4	62.7	2	50.00	
THALLIUM	0.297	0.318	7	50.00	

Method: 9045M
Matrix: SO

Analyte	Concentration (pH unit)		Sample RPD	eQAPP RPD	Flag
	SL-582-SA5D-SB-4.0-5.0	SL-882-SA5D-SB-4.0-5.0			
PH	8.18	8.26	1	50.00	No Qualifiers Applied

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

Reporting Limit Outliers

Lab Reporting Batch ID: PH118 **Laboratory: LL**

EDD Filename: PrepPH118_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-582-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDF	JBQ	0.0334	5.29	PQL	ng/Kg	J (all detects)
	1,2,3,4,7,8-HxCDD	JB	0.0673	5.29	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.0836	5.29	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JQ	0.0554	5.29	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0566	5.29	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.118	5.29	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JQ	0.141	5.29	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.0935	5.29	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0497	5.29	PQL	ng/Kg	
	2,3,4,7,8-PECDF	J	0.0515	5.29	PQL	ng/Kg	
	OCDD	JB	0.839	10.6	PQL	ng/Kg	
	OCDF	JBQ	0.203	10.6	PQL	ng/Kg	

Method: 300.0

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-596-SA5D-SB-4.0-5.0	FLUORIDE	J	1.9	2.2	PQL	mg/Kg	J (all detects)

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-582-SA5D-SB-0.0-0.5	BERYLLIUM	J	0.816	1.04	PQL	mg/Kg	J (all detects)
	BORON	J	6.31	10.4	PQL	mg/Kg	
	SODIUM	J	98.2	104	PQL	mg/Kg	
	TIN	J	2.86	10.4	PQL	mg/Kg	
SL-582-SA5D-SB-10.0-11.0	BERYLLIUM	J	0.765	1.11	PQL	mg/Kg	J (all detects)
	BORON	J	5.51	11.1	PQL	mg/Kg	
	TIN	J	2.93	11.1	PQL	mg/Kg	
SL-582-SA5D-SB-4.0-5.0	BERYLLIUM	J	0.771	1.12	PQL	mg/Kg	J (all detects)
	BORON	J	5.70	11.2	PQL	mg/Kg	
	TIN	J	2.98	11.2	PQL	mg/Kg	
SL-882-SA5D-SB-4.0-5.0	BERYLLIUM	J	0.789	1.10	PQL	mg/Kg	J (all detects)
	BORON	J	6.43	11.0	PQL	mg/Kg	
	TIN	J	2.85	11.0	PQL	mg/Kg	

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-582-SA5D-SB-0.0-0.5	SELENIUM	J	0.277	0.415	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0311	0.207	PQL	mg/Kg	
SL-582-SA5D-SB-10.0-11.0	SELENIUM	J	0.150	0.443	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: PH118 **Laboratory: LL**

EDD Filename: PrepPH118_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-582-SA5D-SB-4.0-5.0	SELENIUM	J	0.220	0.449	PQL	mg/Kg	J (all detects)
SL-882-SA5D-SB-4.0-5.0	SELENIUM	J	0.184	0.439	PQL	mg/Kg	J (all detects)

Method: 8270D SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-582-SA5D-SB-0.0-0.5	NAPHTHALENE	J	0.91	1.7	PQL	ug/Kg	J (all detects)
SL-582-SA5D-SB-10.0-11.0	1-METHYLNAPHTHALENE	J	0.82	1.9	PQL	ug/Kg	J (all detects)
	2-METHYLNAPHTHALENE	J	1.0	1.9	PQL	ug/Kg	
	NAPHTHALENE	J	0.99	1.9	PQL	ug/Kg	

LDC #: 30842B4

SDG #: PH118

Laboratory: Eurofins Lancaster Laboratories

VALIDATION COMPLETENESS WORKSHEET

ADR

Date: 12/4/13

Page: 1 of 1

Reviewer: CR

2nd Reviewer: V

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: 9/30/13
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	A	Dup
VIII.	Laboratory Control Samples (LCS)	N	
IX.	Internal Standard (ICP-MS)	N	
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	A	Dup
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	N	
XIV.	Field Duplicates	—	(2,3)
XV	Field Blanks	SW	FB=FB-041613 (PH032) EB=EB1-100213 (PH120)

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-582-SA5D-SB-0.0-0.5	11		21		31	
2	SL-582-SA5D-SB-4.0-5.0	12		22		32	
3	SL-882-SA5D-SB-4.0-5.0	13		23		33	
4	SL-582-SA5D-SB-10.0-11.0	14		24		34	
5	SL-582-SA5D-SB-4.0-5.0MS	15		25		35	
6	SL-582-SA5D-SB-4.0-5.0MSD	16		26		36	
7	SL-582-SA5D-SB-4.0-5.0DUP	17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

LDC #: 30842B4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: AL
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

Analyte	Blank ID	Sample Identification												
	FB-041613 (SDG: PH032)	Action Limit	No Qualifiers											
Mo	0.0132	6.60												
Sn	0.0029	1.45												

Sampling date: 10/2/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All

Analyte	Blank ID	Sample Identification										
	EB1-100213 (SDG: PH120)	Action Limit	No Qualifiers									
Ba	0.00058	0.29										
B	0.0098	4.9										
Ca	0.0427	21.35										
Cu	0.0028	1.4										
Mo	0.0086	4.3										

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

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QUALITY ASSURANCE SUMMARY
FORM 5A(MS/MSD)
MATRIX SPIKE/MATRIX SPIKE DUPLICATE
SDG No.: PH118
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7218895BKG Matrix Spike Lab Sample ID: 7218896MS Matrix Spike Duplicate Lab Sample ID: 7218897MSD
Batch Id(s): P27537C, P27538C

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		21028.9604		27635.5040		27056.3208		198.0198	198.0198	MG/KG	3336		3044		2			20	P
Antimony		0.7327	U	20.3356		21.3129		49.5050	49.5050	MG/KG	41	N	43	N	5		75 - 125	20	P
Arsenic		5.8129		20.9980		22.0158		14.8515	14.8515	MG/KG	102		109		5		75 - 125	20	P
Barium		84.1475		286.5891		284.4525		198.0198	198.0198	MG/KG	102		101		1		75 - 125	20	P
Beryllium		0.6812	B	5.5525		5.5356		4.9505	4.9505	MG/KG	98		98		0		75 - 125	20	P
Boron		5.0366	B	197.8356		196.5158		198.0198	198.0198	MG/KG	97		97		1		75 - 125	20	P
Cadmium		0.0752	U	4.6901		4.6911		4.9505	4.9505	MG/KG	95		95		0		75 - 125	20	P
Calcium		23163.8347		22131.7158		23390.9634		396.0396	396.0396	MG/KG	-261		57		6			20	P
Chromium		30.1436		52.9337		53.0931		19.8020	19.8020	MG/KG	115		116		0		75 - 125	20	P
Cobalt		7.1653		53.6525		55.1604		49.5050	49.5050	MG/KG	94		97		3		75 - 125	20	P
Copper		1.4356	U	19.0248		19.0792		24.7525	24.7525	MG/KG	77		77		0		75 - 125	20	P
Iron		26645.2277		28438.2723		27610.3663		99.0099	99.0099	MG/KG	1811		975		3			20	P
Lead		4.6198		18.7762		19.6535		14.8515	14.8515	MG/KG	95		101		5		75 - 125	20	P
Lithium		26.0406		127.3188		126.4257		99.0099	99.0099	MG/KG	102		101		1		75 - 125	20	P
Magnesium		6724.4861		7508.5713		7382.1129		198.0198	198.0198	MG/KG	396		332		2			20	P
Manganese		287.7614		353.4455		360.8505		49.5050	49.5050	MG/KG	133		148	*	2			20	P
Mercury		0.0099	U	0.1915		0.1855		0.1626	0.1621	MG/KG	118		114		3		65 - 135	20	CV
Molybdenum		0.1683	U	182.0455		181.1455		198.0198	198.0198	MG/KG	92		91		0		75 - 125	20	P
Nickel		12.3673		59.3059		59.5733		49.5050	49.5050	MG/KG	95		95		0		75 - 125	20	P
Phosphorus		382.6109		491.6386		483.5663		99.0099	99.0099	MG/KG	110		102		2		75 - 125	20	P
Potassium		3426.0297		5140.4109		5078.1644		990.0990	990.0990	MG/KG	173	N	167	N	1		75 - 125	20	P
Selenium	78	0.1939	B	2.0382		2.0457		1.9802	1.9802	MG/KG	93		94		0		75 - 125	20	MS
Silver	107	0.0257	U	10.0069		10.3459		9.9010	9.9010	MG/KG	101		104		3		75 - 125	20	MS
Sodium		128.6416		1117.9545		1103.8050		990.0990	990.0990	MG/KG	100		98		1		75 - 125	20	P
Strontium	88	54.2519		62.7556		65.7139		7.9208	7.9208	MG/KG	107		145		5			20	MS
Thallium	203	0.2624		0.6840		0.6626		0.3960	0.3960	MG/KG	106		101		3		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.: PH118
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7218895BKG Matrix Spike Lab Sample ID: 7218896MS Matrix Spike Duplicate Lab Sample ID: 7218897MSD
Batch Id(s): P27537C, P27538C

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		2.6356	B	339.9950		340.1089		396.0396	396.0396	MG/KG	85		85		0		75 - 125	20	P
Titanium		1201.8515		1695.5218		1666.4851		99.0099	99.0099	MG/KG	499		469		2			20	P
Vanadium		59.8436		117.2040		117.4287		49.5050	49.5050	MG/KG	116		116		0		75 - 125	20	P
Zinc		61.2614		112.4723		112.5584		49.5050	49.5050	MG/KG	103		104		0		75 - 125	20	P
Zirconium		7.2713		102.9337		101.8772		99.0099	99.0099	MG/KG	97		96		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

Data Validation Report
Santa Susana Field Laboratory

Subarea 5D

SDG: PH119

Prepared for

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December 23, 2013

INTRODUCTION

This Data Validation Report (DVR) presents Level IV data validation results for samples collected on October 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 Environmental Protection Agency (EPA) SW 846 Method 8270D utilizing Selective Ion Monitoring (SIM)
Pesticides by EPA SW 846 Method 8081B
Polychlorinated Biphenyls (PCBs) by EPA SW 846 Method 8082A
Metals by EPA SW 846 Method 6010C, 6020A, and 7471B
Herbicides by EPA SW 846 Method 8151A
Total Petroleum Hydrocarbons (TPH) as Gasoline by EPA SW 846 Method 8015M
TPH as Extractables by EPA SW 846 Method 8015M
Dioxins and Dibenzofurans by EPA Method 1613B

Wet Chemistry:
Fluoride by EPA Method 300.0

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

All sample results were subjected to Level IV data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibrations, initial and continuing calibration blanks (ICB/CCBs), surrogates, internal standards, interference check (ICSA and ICSAB) samples, matrix spike/matrix spike duplicates (MS/MSD), laboratory duplicates (DUP), laboratory control sample/laboratory control sample duplicates (LCS/LCSD), method blanks, trip blanks, equipment blanks, field blanks, and the raw data to confirm sample quantitation and identification.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of the initial and continuing calibrations, ICB/CCBs, interference check samples and internal standards (except dioxins) 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

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 herbicides. The associated sample results were qualified as non-detected estimated (UJ). The details regarding the qualification of data are provided in Enclosures 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 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 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 two MS/MSD pairs for metals and fluoride. 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 one LCS/LCSD pairs for PCBs. No data were qualified due to high %Rs since the associated results were non-detected.

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 PH119	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 volatile contaminants were found in the trip blank.

One equipment blank (from SDG PH120) was collected and analyzed for SVOCs, pesticides, PCBs, metals, herbicides, TPH as gasoline, TPH as extractables, dioxins and fluoride. The equipment blank had detections for SVOCs, metals and dioxins. The associated sample results were not detected or were significantly greater than the concentrations found in the equipment blank, therefore no data were qualified.

One field blank (from SDG PH032) was collected and analyzed for SVOCs, PCBs, metals, herbicides, TPH as gasoline, TPH as extractables, dioxins and fluoride. The field blank had 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 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
01-Oct-2013	TB-100113	7220652	TB	5030B	8015M	IV
01-Oct-2013	SL-598-SA5D-SB-0.0-0.5	7220655	N	METHOD	300.0	IV
01-Oct-2013	SL-598-SA5D-SB-0.0-0.5DUP	P220655D272153A	DUP	METHOD	300.0	IV
01-Oct-2013	SL-598-SA5D-SB-0.0-0.5MS	P220655R272209A	MS	METHOD	300.0	IV
01-Oct-2013	SL-598-SA5D-SB-4.0-5.0	7220656	N	METHOD	300.0	IV
01-Oct-2013	SL-598-SA5D-SB-9.0-10.0	7220657	N	METHOD	300.0	IV
01-Oct-2013	SL-598-SA5D-SB-14.0-15.0	7220658	N	METHOD	300.0	IV
01-Oct-2013	SL-598-SA5D-SB-18.0-19.0	7220659	N	METHOD	300.0	IV
01-Oct-2013	SL-570-SA5D-SB-0.0-0.5	7220653	N	3050B	6010C	IV
01-Oct-2013	SL-570-SA5D-SB-0.0-0.5	7220653	N	3050B	6020A	IV
01-Oct-2013	SL-570-SA5D-SB-0.0-0.5	7220653	N	3546	8015M	IV
01-Oct-2013	SL-570-SA5D-SB-0.0-0.5	7220653	N	3546	8081B	IV
01-Oct-2013	SL-570-SA5D-SB-0.0-0.5	7220653	N	3546	8082A	IV
01-Oct-2013	SL-570-SA5D-SB-0.0-0.5	7220653	N	3546	8270D SIM	IV
01-Oct-2013	SL-570-SA5D-SB-0.0-0.5	7220653	N	3550B	8151A	IV
01-Oct-2013	SL-570-SA5D-SB-0.0-0.5	7220653	N	METHOD	1613B	IV
01-Oct-2013	SL-570-SA5D-SB-0.0-0.5	7220653	N	METHOD	7471B	IV
01-Oct-2013	SL-570-SA5D-SB-0.0-0.5MSD	P220653M241917A	MSD	3550B	8151A	IV
01-Oct-2013	SL-570-SA5D-SB-0.0-0.5MSD	P220653M322257A	MSD	3546	8015M	IV
01-Oct-2013	SL-570-SA5D-SB-0.0-0.5MS	P220653R241850A	MS	3550B	8151A	IV
01-Oct-2013	SL-570-SA5D-SB-0.0-0.5MS	P220653R322236A	MS	3546	8015M	IV
01-Oct-2013	SL-570-SA5D-SB-4.0-5.0	7220654	N	3050B	6010C	IV
01-Oct-2013	SL-570-SA5D-SB-4.0-5.0	7220654	N	3050B	6020A	IV
01-Oct-2013	SL-570-SA5D-SB-4.0-5.0	7220654	N	3546	8015M	IV
01-Oct-2013	SL-570-SA5D-SB-4.0-5.0	7220654	N	3546	8081B	IV
01-Oct-2013	SL-570-SA5D-SB-4.0-5.0	7220654	N	3546	8082A	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
01-Oct-2013	SL-570-SA5D-SB-4.0-5.0	7220654	N	3546	8270D SIM	IV
01-Oct-2013	SL-570-SA5D-SB-4.0-5.0	7220654	N	3550B	8151A	IV
01-Oct-2013	SL-570-SA5D-SB-4.0-5.0	7220654	N	5035A	8015M	IV
01-Oct-2013	SL-570-SA5D-SB-4.0-5.0	7220654	N	METHOD	7471B	IV
01-Oct-2013	SL-564-SA5D-SB-0.0-0.5	7220660	N	3050B	6010C	IV
01-Oct-2013	SL-564-SA5D-SB-0.0-0.5	7220660	N	3050B	6020A	IV
01-Oct-2013	SL-564-SA5D-SB-0.0-0.5	7220660	N	3546	8015M	IV
01-Oct-2013	SL-564-SA5D-SB-0.0-0.5	7220660	N	3546	8082A	IV
01-Oct-2013	SL-564-SA5D-SB-0.0-0.5	7220660	N	3546	8270D SIM	IV
01-Oct-2013	SL-564-SA5D-SB-0.0-0.5	7220660	N	METHOD	1613B	IV
01-Oct-2013	SL-564-SA5D-SB-0.0-0.5	7220660	N	METHOD	7471B	IV
01-Oct-2013	SL-564-SA5D-SB-4.0-5.0	7220661	N	3050B	6010C	IV
01-Oct-2013	SL-564-SA5D-SB-4.0-5.0	7220661	N	3050B	6020A	IV
01-Oct-2013	SL-564-SA5D-SB-4.0-5.0	7220661	N	3546	8015M	IV
01-Oct-2013	SL-564-SA5D-SB-4.0-5.0	7220661	N	3546	8082A	IV
01-Oct-2013	SL-564-SA5D-SB-4.0-5.0	7220661	N	3546	8270D SIM	IV
01-Oct-2013	SL-564-SA5D-SB-4.0-5.0	7220661	N	5035A	8015M	IV
01-Oct-2013	SL-564-SA5D-SB-4.0-5.0	7220661	N	METHOD	7471B	IV
01-Oct-2013	SL-607-SA5D-SB-0.0-0.5	7220662	N	3050B	6010C	IV
01-Oct-2013	SL-607-SA5D-SB-0.0-0.5	7220662	N	3050B	6020A	IV
01-Oct-2013	SL-607-SA5D-SB-0.0-0.5	7220662	N	3546	8015M	IV
01-Oct-2013	SL-607-SA5D-SB-0.0-0.5	7220662	N	3546	8082A	IV
01-Oct-2013	SL-607-SA5D-SB-0.0-0.5	7220662	N	3546	8270D SIM	IV
01-Oct-2013	SL-607-SA5D-SB-0.0-0.5	7220662	N	METHOD	1613B	IV
01-Oct-2013	SL-607-SA5D-SB-0.0-0.5	7220662	N	METHOD	7471B	IV
01-Oct-2013	SL-607-SA5D-SB-4.0-5.0	7220663	N	3050B	6010C	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
01-Oct-2013	SL-607-SA5D-SB-4.0-5.0	7220663	N	3050B	6020A	IV
01-Oct-2013	SL-607-SA5D-SB-4.0-5.0	7220663	N	3546	8015M	IV
01-Oct-2013	SL-607-SA5D-SB-4.0-5.0	7220663	N	3546	8082A	IV
01-Oct-2013	SL-607-SA5D-SB-4.0-5.0	7220663	N	3546	8270D SIM	IV
01-Oct-2013	SL-607-SA5D-SB-4.0-5.0	7220663	N	5035A	8015M	IV
01-Oct-2013	SL-607-SA5D-SB-4.0-5.0	7220663	N	METHOD	7471B	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: PH119 **Laboratory: LL**

EDD Filename: PrepPH119_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: GENCHEM

Method: 300.0 **Matrix: SO**

Sample ID: SL-598-SA5D-SB-0.0-0.5 *Collected:* 10/1/2013 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
FLUORIDE	2.2		0.42	MDL	1.1	PQL	mg/Kg	J	Q

Sample ID: SL-598-SA5D-SB-14.0-15.0 *Collected:* 10/1/2013 9:05:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORIDE	3.1		0.47	MDL	1.2	PQL	mg/Kg	J	Q

Sample ID: SL-598-SA5D-SB-18.0-19.0 *Collected:* 10/1/2013 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
FLUORIDE	3.8		0.47	MDL	1.2	PQL	mg/Kg	J	Q

Sample ID: SL-598-SA5D-SB-4.0-5.0 *Collected:* 10/1/2013 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
FLUORIDE	2.9		0.45	MDL	1.1	PQL	mg/Kg	J	Q

Sample ID: SL-598-SA5D-SB-9.0-10.0 *Collected:* 10/1/2013 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
FLUORIDE	2.5		0.46	MDL	1.1	PQL	mg/Kg	J	Q

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-564-SA5D-SB-0.0-0.5 *Collected:* 10/1/2013 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	4.27	U	0.790	MDL	4.27	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.974	J	0.0715	MDL	1.07	PQL	mg/Kg	J	Z
BORON	7.13	J	0.896	MDL	10.7	PQL	mg/Kg	J	Z
POTASSIUM	3920		8.90	MDL	107	PQL	mg/Kg	J	Q
TIN	2.75	J	0.235	MDL	10.7	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: PH119 **Laboratory: LL**

EDD Filename: PrepPH119_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix:** SO

Sample ID: SL-564-SA5D-SB-4.0-5.0 *Collected:* 10/1/2013 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	4.42	U	0.818	MDL	4.42	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.864	J	0.0740	MDL	1.11	PQL	mg/Kg	J	Z
BORON	9.38	J	0.928	MDL	11.1	PQL	mg/Kg	J	Z
POTASSIUM	4150		9.22	MDL	111	PQL	mg/Kg	J	Q
TIN	2.73	J	0.243	MDL	11.1	PQL	mg/Kg	U	B

Sample ID: SL-570-SA5D-SB-0.0-0.5 *Collected:* 10/1/2013 10:10:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.28	U	0.791	MDL	4.28	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.667	J	0.0716	MDL	1.07	PQL	mg/Kg	J	Z
BORON	6.97	J	0.898	MDL	10.7	PQL	mg/Kg	J	Z
POTASSIUM	4350		8.92	MDL	107	PQL	mg/Kg	J	Q
TIN	2.90	J	0.235	MDL	10.7	PQL	mg/Kg	U	B

Sample ID: SL-570-SA5D-SB-4.0-5.0 *Collected:* 10/1/2013 10:20:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.43	U	0.819	MDL	4.43	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.556	J	0.0741	MDL	1.11	PQL	mg/Kg	J	Z
BORON	6.60	J	0.929	MDL	11.1	PQL	mg/Kg	J	Z
CADMIUM	0.218	J	0.0841	MDL	1.11	PQL	mg/Kg	J	Z
LEAD	3.05	J	0.553	MDL	3.32	PQL	mg/Kg	J	Z
POTASSIUM	3520		9.23	MDL	111	PQL	mg/Kg	J	Q
TIN	0.977	J	0.243	MDL	11.1	PQL	mg/Kg	U	B, F

Sample ID: SL-607-SA5D-SB-0.0-0.5 *Collected:* 10/1/2013 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	4.25	U	0.787	MDL	4.25	PQL	mg/Kg	UJ	Q
BORON	4.64	J	0.893	MDL	10.6	PQL	mg/Kg	J	Z
MOLYBDENUM	0.190	J	0.181	MDL	2.13	PQL	mg/Kg	J	Z
POTASSIUM	4870		8.87	MDL	106	PQL	mg/Kg	J	Q
TIN	3.04	J	0.234	MDL	10.6	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: PH119 **Laboratory: LL**

EDD Filename: PrepPH119_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-607-SA5D-SB-4.0-5.0 *Collected:* 10/1/2013 2:05:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.61	U	0.852	MDL	4.61	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.937	J	0.0771	MDL	1.15	PQL	mg/Kg	J	Z
BORON	4.47	J	0.967	MDL	11.5	PQL	mg/Kg	J	Z
CADMIUM	0.0979	J	0.0875	MDL	1.15	PQL	mg/Kg	J	Z
POTASSIUM	3590		9.60	MDL	115	PQL	mg/Kg	J	Q
TIN	3.11	J	0.253	MDL	11.5	PQL	mg/Kg	U	B

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-564-SA5D-SB-0.0-0.5 *Collected:* 10/1/2013 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	0.227	J	0.107	MDL	0.427	PQL	mg/Kg	J	Z

Sample ID: SL-564-SA5D-SB-0.0-0.5 *Collected:* 10/1/2013 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	0.0504	J	0.0277	MDL	0.213	PQL	mg/Kg	J	Z

Sample ID: SL-564-SA5D-SB-4.0-5.0 *Collected:* 10/1/2013 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	0.195	J	0.111	MDL	0.442	PQL	mg/Kg	J	Z

Sample ID: SL-570-SA5D-SB-0.0-0.5 *Collected:* 10/1/2013 10:10:00 *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.177	J	0.107	MDL	0.428	PQL	mg/Kg	J	Z

Sample ID: SL-570-SA5D-SB-4.0-5.0 *Collected:* 10/1/2013 10:20:00 *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.177	J	0.111	MDL	0.443	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: PH119 **Laboratory: LL**

EDD Filename: PrepPH119_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-607-SA5D-SB-0.0-0.5 *Collected:* 10/1/2013 1:55:00 *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.177	J	0.106	MDL	0.425	PQL	mg/Kg	J	Z

Sample ID: SL-607-SA5D-SB-0.0-0.5 *Collected:* 10/1/2013 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	0.0545	J	0.0277	MDL	0.213	PQL	mg/Kg	J	Z

Sample ID: SL-607-SA5D-SB-4.0-5.0 *Collected:* 10/1/2013 2:05:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0456	J	0.0299	MDL	0.230	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: SL-607-SA5D-SB-0.0-0.5 *Collected:* 10/1/2013 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
MERCURY	0.0121	J	0.0107	MDL	0.0178	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-564-SA5D-SB-0.0-0.5 *Collected:* 10/1/2013 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	0.0954	JBQ	0.0175	MDL	5.22	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0856	JBQ	0.00744	MDL	5.22	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0361	JBQ	0.0115	MDL	5.22	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0308	JQ	0.0164	MDL	5.22	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.0209	JBQ	0.0152	MDL	5.22	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0273	JBQ	0.0137	MDL	5.22	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0569	JBQ	0.0156	MDL	5.22	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0890	JBQ	0.0154	MDL	5.22	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.0728	JB	0.0158	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: PH119 **Laboratory: LL**

EDD Filename: PrepPH119_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-564-SA5D-SB-0.0-0.5 *Collected:* 10/1/2013 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
2,3,4,6,7,8-HXCDF	0.0550	JBQ	0.0134	MDL	5.22	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0515	JBQ	0.0164	MDL	5.22	PQL	ng/Kg	U	B
2,3,7,8-TCDD	0.0495	JBQ	0.0383	MDL	1.04	PQL	ng/Kg	U	B
OCDD	0.289	JBQ	0.0230	MDL	10.4	PQL	ng/Kg	U	B
OCDF	0.188	JB	0.0263	MDL	10.4	PQL	ng/Kg	U	B

Sample ID: SL-570-SA5D-SB-0.0-0.5 *Collected:* 10/1/2013 10:10:00 *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	0.235	JBQ	0.0215	MDL	5.32	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0877	JBQ	0.00698	MDL	5.32	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0742	JBQ	0.00992	MDL	5.32	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0355	JQ	0.0180	MDL	5.32	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.0512	JBQ	0.0113	MDL	5.32	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0568	JBQ	0.0192	MDL	5.32	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0321	JBQ	0.0105	MDL	5.32	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0504	JB	0.0178	MDL	5.32	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0565	JBQ	0.0121	MDL	5.32	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0532	JB	0.0253	MDL	5.32	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.0599	JBQ	0.0133	MDL	5.32	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0544	JB	0.0112	MDL	5.32	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0432	JBQ	0.0131	MDL	5.32	PQL	ng/Kg	U	B
OCDD	1.53	JB	0.0222	MDL	10.6	PQL	ng/Kg	U	B
OCDF	0.167	JBQ	0.0230	MDL	10.6	PQL	ng/Kg	U	B

Sample ID: SL-607-SA5D-SB-0.0-0.5 *Collected:* 10/1/2013 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	0.239	JB	0.0205	MDL	5.25	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0307	JB	0.00698	MDL	5.25	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0229	JBQ	0.00934	MDL	5.25	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0561	J	0.0230	MDL	5.25	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.0311	JBQ	0.0131	MDL	5.25	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.108	JBQ	0.0242	MDL	5.25	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0334	JBQ	0.0122	MDL	5.25	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: PH119 **Laboratory: LL**

EDD Filename: PrepPH119_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-607-SA5D-SB-0.0-0.5 *Collected:* 10/1/2013 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
1,2,3,7,8,9-HXCDD	0.256	JBQ	0.0219	MDL	5.25	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.411	JB	0.0134	MDL	5.25	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.0276	JBQ	0.0228	MDL	5.25	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.0885	JBQ	0.0131	MDL	5.25	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0348	JBQ	0.0119	MDL	5.25	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0442	JB	0.0129	MDL	5.25	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.0277	JQ	0.0252	MDL	1.05	PQL	ng/Kg	J	Z
OCDD	0.701	JBQ	0.0226	MDL	10.5	PQL	ng/Kg	U	B
OCDF	0.125	JBQ	0.0214	MDL	10.5	PQL	ng/Kg	U	B

Method Category: SVOA

Method: 8151A **Matrix: SO**

Sample ID: SL-570-SA5D-SB-0.0-0.5 *Collected:* 10/1/2013 10:10:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
DINOSEB	26	U	9.8	MDL	26	PQL	ug/Kg	UJ	C

Sample ID: SL-570-SA5D-SB-4.0-5.0 *Collected:* 10/1/2013 10:20:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
DINOSEB	27	U	10	MDL	27	PQL	ug/Kg	UJ	C

Method Category: SVOA

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

Sample ID: SL-570-SA5D-SB-4.0-5.0 *Collected:* 10/1/2013 10:20:00 *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	1.1	J	0.74	MDL	1.8	PQL	ug/Kg	J	Z
ANTHRACENE	0.41	J	0.37	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(A)PYRENE	1.5	J	0.74	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(K)FLUORANTHENE	1.0	J	0.74	MDL	1.8	PQL	ug/Kg	J	Z
NAPHTHALENE	1.1	J	0.74	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: PH119 **Laboratory: LL**

EDD Filename: PrepPH119_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

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

Sample ID: SL-607-SA5D-SB-0.0-0.5 *Collected:* 10/1/2013 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
NAPHTHALENE	0.82	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: SL-607-SA5D-SB-4.0-5.0 *Collected:* 10/1/2013 2:05:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NAPHTHALENE	1.2	J	0.77	MDL	1.9	PQL	ug/Kg	J	Z

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: PH119 **Laboratory: LL**

EDD Filename: PrepPH119_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Reason Code Legend

Reason Code	*Description*
B	Method Blank Contamination
C	Continuing Calibration Verification Percent Difference Lower Estimation
F	Field Blank Contamination
Q	Matrix Spike Lower Estimation
Q	Matrix Spike Upper Estimation
S	Surrogate/Tracer Recovery Upper Estimation
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Enclosure I

EPA Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control
Outlier Reports

PH119

Method Blank Outlier Report

Lab Reporting Batch ID: PH119 **Laboratory: LL**

EDD Filename: PrepPH119_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2810B372320	10/10/2013 11:20:00 PM	1,2,3,4,6,7,8-HPCDD	0.0871 ng/Kg	SL-564-SA5D-SB-0.0-0.5
		1,2,3,4,6,7,8-HPCDF	0.0654 ng/Kg	SL-570-SA5D-SB-0.0-0.5
		1,2,3,4,7,8,9-HPCDF	0.0445 ng/Kg	SL-607-SA5D-SB-0.0-0.5
		1,2,3,4,7,8-HXCDF	0.0397 ng/Kg	
		1,2,3,6,7,8-HXCDD	0.0350 ng/Kg	
		1,2,3,6,7,8-HXCDF	0.0378 ng/Kg	
		1,2,3,7,8,9-HXCDD	0.0212 ng/Kg	
		1,2,3,7,8,9-HXCDF	0.0565 ng/Kg	
		1,2,3,7,8-PECDD	0.0514 ng/Kg	
		1,2,3,7,8-PECDF	0.0743 ng/Kg	
		2,3,4,6,7,8-HXCDF	0.0495 ng/Kg	
		2,3,4,7,8-PECDF	0.0383 ng/Kg	
		2,3,7,8-TCDD	0.0417 ng/Kg	
		OCDD	0.306 ng/Kg	
		OCDF	0.161 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-564-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDD	0.0954 ng/Kg	0.0954U ng/Kg
SL-564-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDF	0.0856 ng/Kg	0.0856U ng/Kg
SL-564-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0361 ng/Kg	0.0361U ng/Kg
SL-564-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.0209 ng/Kg	0.0209U ng/Kg
SL-564-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.0273 ng/Kg	0.0273U ng/Kg
SL-564-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDD	0.0569 ng/Kg	0.0569U ng/Kg
SL-564-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.0890 ng/Kg	0.0890U ng/Kg
SL-564-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.0728 ng/Kg	0.0728U ng/Kg
SL-564-SA5D-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0550 ng/Kg	0.0550U ng/Kg
SL-564-SA5D-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.0515 ng/Kg	0.0515U ng/Kg
SL-564-SA5D-SB-0.0-0.5(RES)	2,3,7,8-TCDD	0.0495 ng/Kg	0.0495U ng/Kg
SL-564-SA5D-SB-0.0-0.5(RES)	OCDD	0.289 ng/Kg	0.289U ng/Kg
SL-564-SA5D-SB-0.0-0.5(RES)	OCDF	0.188 ng/Kg	0.188U ng/Kg
SL-570-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDD	0.235 ng/Kg	0.235U ng/Kg
SL-570-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDF	0.0877 ng/Kg	0.0877U ng/Kg
SL-570-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0742 ng/Kg	0.0742U ng/Kg
SL-570-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.0512 ng/Kg	0.0512U ng/Kg
SL-570-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDD	0.0568 ng/Kg	0.0568U ng/Kg
SL-570-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.0321 ng/Kg	0.0321U ng/Kg
SL-570-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDD	0.0504 ng/Kg	0.0504U ng/Kg
SL-570-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.0565 ng/Kg	0.0565U ng/Kg
SL-570-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.0532 ng/Kg	0.0532U ng/Kg
SL-570-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.0599 ng/Kg	0.0599U ng/Kg
SL-570-SA5D-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0544 ng/Kg	0.0544U ng/Kg
SL-570-SA5D-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.0432 ng/Kg	0.0432U ng/Kg
SL-570-SA5D-SB-0.0-0.5(RES)	OCDD	1.53 ng/Kg	1.53U ng/Kg
SL-570-SA5D-SB-0.0-0.5(RES)	OCDF	0.167 ng/Kg	0.167U ng/Kg
SL-607-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDD	0.239 ng/Kg	0.239U ng/Kg
SL-607-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDF	0.0307 ng/Kg	0.0307U ng/Kg

Method Blank Outlier Report

Lab Reporting Batch ID: PH119 **Laboratory: LL**

EDD Filename: PrepPH119_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-607-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0229 ng/Kg	0.0229U ng/Kg
SL-607-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.0311 ng/Kg	0.0311U ng/Kg
SL-607-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDD	0.108 ng/Kg	0.108U ng/Kg
SL-607-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.0334 ng/Kg	0.0334U ng/Kg
SL-607-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.0276 ng/Kg	0.0276U ng/Kg
SL-607-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.0885 ng/Kg	0.0885U ng/Kg
SL-607-SA5D-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0348 ng/Kg	0.0348U ng/Kg
SL-607-SA5D-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.0442 ng/Kg	0.0442U ng/Kg
SL-607-SA5D-SB-0.0-0.5(RES)	OCDD	0.701 ng/Kg	0.701U ng/Kg
SL-607-SA5D-SB-0.0-0.5(RES)	OCDF	0.125 ng/Kg	0.125U ng/Kg

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P27537CB221359	10/10/2013 1:59:00 PM	ALUMINUM CALCIUM TIN ZINC	8.51 mg/Kg 15.2 mg/Kg 1.39 mg/Kg 1.38 mg/Kg	SL-564-SA5D-SB-0.0-0.5 SL-564-SA5D-SB-4.0-5.0 SL-570-SA5D-SB-0.0-0.5 SL-570-SA5D-SB-4.0-5.0 SL-607-SA5D-SB-0.0-0.5 SL-607-SA5D-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-564-SA5D-SB-0.0-0.5(RES)	TIN	2.75 mg/Kg	2.75U mg/Kg
SL-564-SA5D-SB-4.0-5.0(RES)	TIN	2.73 mg/Kg	2.73U mg/Kg
SL-570-SA5D-SB-0.0-0.5(RES)	TIN	2.90 mg/Kg	2.90U mg/Kg
SL-570-SA5D-SB-4.0-5.0(RES)	TIN	0.977 mg/Kg	0.977U mg/Kg
SL-607-SA5D-SB-0.0-0.5(RES)	TIN	3.04 mg/Kg	3.04U mg/Kg
SL-607-SA5D-SB-4.0-5.0(RES)	TIN	3.11 mg/Kg	3.11U mg/Kg

Field Blank Outlier Report

Lab Reporting Batch ID: PH119 **Laboratory: LL**

EDD Filename: PrepPH119_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

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

Field Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
FB-041613(REA2/TOT)	4/16/2013 3:15:00 PM	MOLYBDENUM TIN	0.0132 mg/L 0.0029 mg/L	SL-564-SA5D-SB-0.0-0.5 SL-564-SA5D-SB-4.0-5.0 SL-570-SA5D-SB-0.0-0.5 SL-570-SA5D-SB-4.0-5.0 SL-598-SA5D-SB-0.0-0.5 SL-598-SA5D-SB-14.0-15.0 SL-598-SA5D-SB-18.0-19.0 SL-598-SA5D-SB-4.0-5.0 SL-598-SA5D-SB-9.0-10.0 SL-607-SA5D-SB-0.0-0.5 SL-607-SA5D-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-570-SA5D-SB-4.0-5.0(RES)	TIN	0.977 mg/Kg	0.977U mg/Kg

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH119 **Laboratory: LL**

EDD Filename: PrepPH119_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 300.0
Matrix: SO

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
SL-598-SA5D-SB-0.0-0.5MS (SL-598-SA5D-SB-0.0-0.5 SL-598-SA5D-SB-14.0-15.0 SL-598-SA5D-SB-18.0-19.0 SL-598-SA5D-SB-4.0-5.0 SL-598-SA5D-SB-9.0-10.0)	FLUORIDE	49	-	80.00-120.00	-	FLUORIDE	J (all detects) UJ (all non-detects)

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

Reporting Limit Outliers

Lab Reporting Batch ID: PH119 **Laboratory: LL**

EDD Filename: PrepPH119_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: **1613B**

Matrix: **SO**

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-564-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JBQ	0.0954	5.22	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0856	5.22	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0361	5.22	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.0308	5.22	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0209	5.22	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0273	5.22	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.0569	5.22	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.0890	5.22	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDF	JB	0.0728	5.22	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0550	5.22	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0515	5.22	PQL	ng/Kg	
	2,3,7,8-TCDD	JBQ	0.0495	1.04	PQL	ng/Kg	
	OCDD	JBQ	0.289	10.4	PQL	ng/Kg	
	OCDF	JB	0.188	10.4	PQL	ng/Kg	
SL-570-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JBQ	0.235	5.32	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0877	5.32	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0742	5.32	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.0355	5.32	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0512	5.32	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.0568	5.32	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0321	5.32	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.0504	5.32	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JBQ	0.0565	5.32	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JB	0.0532	5.32	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.0599	5.32	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.0544	5.32	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0432	5.32	PQL	ng/Kg	
	OCDD	JB	1.53	10.6	PQL	ng/Kg	
	OCDF	JBQ	0.167	10.6	PQL	ng/Kg	
SL-607-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	0.239	5.25	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.0307	5.25	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0229	5.25	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	J	0.0561	5.25	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0311	5.25	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.108	5.25	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0334	5.25	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.256	5.25	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.411	5.25	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JBQ	0.0276	5.25	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.0885	5.25	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0348	5.25	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.0442	5.25	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0277	1.05	PQL	ng/Kg	
	OCDD	JBQ	0.701	10.5	PQL	ng/Kg	
	OCDF	JBQ	0.125	10.5	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH119 **Laboratory: LL**

EDD Filename: PrepPH119_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-564-SA5D-SB-0.0-0.5	BERYLLIUM	J	0.974	1.07	PQL	mg/Kg	J (all detects)
	BORON	J	7.13	10.7	PQL	mg/Kg	
	TIN	J	2.75	10.7	PQL	mg/Kg	
SL-564-SA5D-SB-4.0-5.0	BERYLLIUM	J	0.864	1.11	PQL	mg/Kg	J (all detects)
	BORON	J	9.38	11.1	PQL	mg/Kg	
	TIN	J	2.73	11.1	PQL	mg/Kg	
SL-570-SA5D-SB-0.0-0.5	BERYLLIUM	J	0.667	1.07	PQL	mg/Kg	J (all detects)
	BORON	J	6.97	10.7	PQL	mg/Kg	
	TIN	J	2.90	10.7	PQL	mg/Kg	
SL-570-SA5D-SB-4.0-5.0	BERYLLIUM	J	0.556	1.11	PQL	mg/Kg	J (all detects)
	BORON	J	6.60	11.1	PQL	mg/Kg	
	CADMIUM	J	0.218	1.11	PQL	mg/Kg	
	LEAD	J	3.05	3.32	PQL	mg/Kg	
	TIN	J	0.977	11.1	PQL	mg/Kg	
SL-607-SA5D-SB-0.0-0.5	BORON	J	4.64	10.6	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.190	2.13	PQL	mg/Kg	
	TIN	J	3.04	10.6	PQL	mg/Kg	
SL-607-SA5D-SB-4.0-5.0	BERYLLIUM	J	0.937	1.15	PQL	mg/Kg	J (all detects)
	BORON	J	4.47	11.5	PQL	mg/Kg	
	CADMIUM	J	0.0979	1.15	PQL	mg/Kg	
	TIN	J	3.11	11.5	PQL	mg/Kg	

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-564-SA5D-SB-0.0-0.5	SELENIUM	J	0.227	0.427	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0504	0.213	PQL	mg/Kg	
SL-564-SA5D-SB-4.0-5.0	SELENIUM	J	0.195	0.442	PQL	mg/Kg	J (all detects)
SL-570-SA5D-SB-0.0-0.5	SELENIUM	J	0.177	0.428	PQL	mg/Kg	J (all detects)
SL-570-SA5D-SB-4.0-5.0	SELENIUM	J	0.177	0.443	PQL	mg/Kg	J (all detects)
SL-607-SA5D-SB-0.0-0.5	SELENIUM	J	0.177	0.425	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0545	0.213	PQL	mg/Kg	
SL-607-SA5D-SB-4.0-5.0	SILVER	J	0.0456	0.230	PQL	mg/Kg	J (all detects)

Method: 7471B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-607-SA5D-SB-0.0-0.5	MERCURY	J	0.0121	0.0178	PQL	mg/Kg	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH119 **Laboratory: LL**

EDD Filename: PrepPH119_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: **8270D SIM**

Matrix: **SO**

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-570-SA5D-SB-4.0-5.0	2-METHYLNAPHTHALENE	J	1.1	1.8	PQL	ug/Kg	
	ANTHRACENE	J	0.41	1.8	PQL	ug/Kg	
	BENZO(A)PYRENE	J	1.5	1.8	PQL	ug/Kg	J (all detects)
	BENZO(K)FLUORANTHENE	J	1.0	1.8	PQL	ug/Kg	
	NAPHTHALENE	J	1.1	1.8	PQL	ug/Kg	
SL-607-SA5D-SB-0.0-0.5	NAPHTHALENE	J	0.82	1.8	PQL	ug/Kg	J (all detects)
SL-607-SA5D-SB-4.0-5.0	NAPHTHALENE	J	1.2	1.9	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: October 1, 2013

LDC Report Date: December 18, 2013

Matrix: Soil

Parameters: Semivolatiles

Validation Level: Level IV

Laboratory: Eurofins Lancaster Laboratories

Sample Delivery Group (SDG): PH119

Sample Identification

SL-570-SA5D-SB-0.0-0.5
SL-570-SA5D-SB-4.0-5.0
SL-564-SA5D-SB-0.0-0.5
SL-564-SA5D-SB-4.0-5.0
SL-607-SA5D-SB-0.0-0.5
SL-607-SA5D-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 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 EB1-100213 (from SDG PH120) was identified as an equipment blank. No semivolatile contaminants were found with the following exceptions:

Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB1-100213	10/2/13	Di-n-butylphthalate Diethylphthalate Bis(2-ethylhexyl)phthalate	0.18 ug/L 0.27 ug/L 0.059 ug/L	All samples in SDG PH119

Sample FB-041613 (from SDG PH032) was identified as a field blank. No semivolatile contaminants were found with the following exceptions:

Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB-041613	4/16/13	2-Methylnaphthalene Bis(2-ethylhexyl)phthalate Di-n-butylphthalate	0.012 ug/L 1.0 ug/L 0.11 ug/L	All samples in SDG PH119

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) 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 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 PH119	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 PH119

SDG	Sample	Compound	Flag	A or P	Reason (Code)
PH119	SL-570-SA5D-SB-0.0-0.5 SL-570-SA5D-SB-4.0-5.0 SL-564-SA5D-SB-0.0-0.5 SL-564-SA5D-SB-4.0-5.0 SL-607-SA5D-SB-0.0-0.5 SL-607-SA5D-SB-4.0-5.0	All compounds reported below the RL.	J (all detects)	A	Compound quantitation (Z)

Santa Susana Field Laboratory
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG PH119

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Semivolatiles - Field Blank Data Qualification Summary - SDG PH119

No Sample Data Qualified in this SDG

LDC #: 30842C2b **VALIDATION COMPLETENESS WORKSHEET** Date: 12/3/13

SDG #: PH119 Level IV Page: 1 of 1

Laboratory: Eurofins Lancaster Laboratories Reviewer: BR

2nd Reviewer: SW

METHOD: GC/MS ~~Polynuclear Aromatic Hydrocarbons~~ SVOCs (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: 10/1/13
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	RSD ≤ 30%
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 25%
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client spec.
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
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 = EB1-100213 (PH120) FB = FB-04143 (PA032)

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-570-SA5D-SB-0.0-0.5	11		21		31	SB2KLA271
2	SL-570-SA5D-SB-4.0-5.0	12		22		32	
3	SL-564-SA5D-SB-0.0-0.5	13		23		33	
4	SL-564-SA5D-SB-4.0-5.0	14		24		34	
5	SL-607-SA5D-SB-0.0-0.5	15		25		35	
6	SL-607-SA5D-SB-4.0-5.0	16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

LDC #: 30842C26

VALIDATION FINDINGS CHECKLIST

Reviewer: BK
2nd Reviewer: SM

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 $\geq$ 0.990?			✓	
Were all percent relative standard deviations (%RSD) $\leq$ 30% 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 #: 30842C2b

VALIDATION FINDINGS CHECKLIST

Reviewer: BK
2nd Reviewer: SM

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/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.	✓			

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 #: 30842C26

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: BR
2nd Reviewer: SM

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

FB = FB-041613
SDG # PH032

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: ~~to~~ 4/16/13
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: All (ND + 75X)

Compound	Blank ID		Sample Identification							
	FB	5X								
W	0.012	0.06								
EEE	1.0	~~5~~ 10								
XX	0.11	1.1								

Blank units: ug/L **Associated sample units:** ug/kg
Sampling date: 10/2/13
Field blank type: (circle one) Field Blank / Rinsate / (Other:) EB Associated Samples: All (ND + 75X)

EB = EB1-100213
SDG # PH120

Compound	Blank ID		Sample Identification							
	EB	5X								
XX	0.18	1.8								
LL	0.27	2.7								
EEE	0.059	0.59								

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 #: 30842C2b

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer BR
2nd Reviewer SM

METHOD: GC/MS SVOA (EPA SW 846 Method 8270DSIM)

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 (IS)	Reported RRF (1 std)	Recalculated RRF (1 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	HP10976	9/19/2013	N-Nitrosodimethylamine (IS1)	1.432	1.432	1.536	1.536	8	8
			Naphthalene (IS2)	1.030	1.030	1.042	1.042	2	2
			Fluorene (IS3)	1.335	1.335	1.312	1.312	2	2
			Anthracene (IS4)	1.125	1.125	1.113	1.1135	4	4
			Chrysene (IS5)	1.224	1.224	1.234	1.234	2	2
			Benzo(a)pyrene (IS6)	1.198	1.198	1.154	1.1545	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# 30842C2b

VALIDATION FINDINGS WORSHEET
Continuing Calibration Results Verification

Reviewer: BR
2nd Reviewer: SM

METHOD: GC/MS SVOA (EPA SW 846 Method 8270DSIM)

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 = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound
Cx = Concentration of compound
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial RRF)	Reported (CC RRF)	Recalculated (CC RRF)	Reported %D	Recalculated %D
1	ij0091	10/04/13	N-Nitrosodimethylamine (IS1)	1.536	1.553	1.553	1	1
			Naphthalene (IS2)	1.042	1.035	1.035	1	1
			Fluorene (IS3)	1.312	1.299	1.299	1	1
			Anthracene (IS4)	1.113	1.122	1.122	1	1
			Chrysene (IS5)	1.234	1.235	1.235	0	0
			Benzo(a)pyrene (IS6)	1.154	1.165	1.165	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# 30842C2b

VALIDATION FINDINGS WORSHEET
Continuing Calibration Results Verification

Reviewer: BR
2nd Reviewer: SG

METHOD: GC/MS SVOA (EPA SW 846 Method 8270DSIM)

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 = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound
Cx = Concentration of compound
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial RRF)	Reported (CC RRF)	Recalculated (CC RRF)	Reported %D	Recalculated %D
1	ij0121	10/08/13	N-Nitrosodimethylamine (IS1)	1.536	1.248	1.248	19	19
			Naphthalene (IS2)	1.042	1.061	1.061	2	2
			Fluorene (IS3)	1.312	1.291	1.291	2	2
			Anthracene (IS4)	1.113	1.108	1.108	0	0
			Chrysene (IS5)	1.234	1.151	1.151	7	7
			Benzo(a)pyrene (IS6)	1.154	1.139	1.139	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 #: 30842C26

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Page: 1 of 1
Reviewer: BR
2nd reviewer: SM

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: 1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
~~Nitrobenzene-d5~~ Fluoranthene-d10	1.00	0.891	89	89	0
2-Fluorobiphenyl Benzo(a)pyrene-d12		0.940	94	94	0
~~Terphenyl-d14~~ 1-Methylnaphthalene-d10		1.017	102	102	0
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 #: 30842C22

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: BR
2nd Reviewer: SG

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 = | LCS - LCSD | * 2/(LCS + LCSD) LCS = Laboratory control sample percent recovery LCSD = Laboratory control sample duplicate percent recovery

LCS/LCSD samples: 276LALCS

Compound	Spike Added (µg/kg)		Spike Concentration (µg/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										
Acenaphthene	33.33	—	32-78	—	98	98	—	—	—	—
Pentachlorophenol										
Pyrene	33.33	—	33.67	—	101	101	—	—	—	—

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 #: 30842C26

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: BR
2nd reviewer: SM

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:

DDD = 3 ug/kg

Sample I.D. 2, DDD:

Conc. = $\frac{(31534)(1)(1000)(\quad)(\quad)}{(3643481.234)(35.2)(0.89)}$

= 2.60945152 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: October 1, 2013

LDC Report Date: December 18, 2013

Matrix: Soil

Parameters: Chlorinated Pesticides

Validation Level: Level IV

Laboratory: Eurofins Lancaster Laboratories

Sample Delivery Group (SDG): PH119

Sample Identification

SL-570-SA5D-SB-0.0-0.5
SL-570-SA5D-SB-4.0-5.0

Introduction

This data review covers 2 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8081B 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.

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 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.

Sample EB1-100213 (from SDG PH120) was identified as an equipment blank. No chlorinated pesticide contaminants were found.

Sample FB-041613 (from SDG PH032) was identified as 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) 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 PH119	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 PH119

SDG	Sample	Compound	Flag	A or P	Reason (Code)
PH119	SL-570-SA5D-SB-0.0-0.5 SL-570-SA5D-SB-4.0-5.0	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 PH119

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Chlorinated Pesticides - Field Blank Data Qualification Summary - SDG PH119

No Sample Data Qualified in this SDG

LDC #: 30842C3a **VALIDATION COMPLETENESS WORKSHEET** Date: 12/3/13
SDG #: PH119 Level IV Page: 1 of 1
Laboratory: Eurofins Lancaster Laboratories Reviewer: BR
2nd Reviewer: SM

METHOD: GC Chlorinated Pesticides (EPA SW846 Method 8081~~A~~B)

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: 10/1/13
II.	GC/ECD Instrument Performance Check	A	
III.	Initial calibration	A	RSD ≤ 20?
IV.	Continuing calibration/ICV	A	1 CCV ≤ 20?
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client spec.
VIII.	Laboratory control samples	A	LCS
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	N	

XVI.	Field blanks	ND	FB = FB041613 (SDG # PH032)
			ER = EB1-100213 (SDG # PH120)

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-570-SA5D-SB-0.0-0.5	11		21		31	PBLK 0627
2	SL-570-SA5D-SB-4.0-5.0	12		22		32	
3		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	

Notes:

LDC #: 30842C3a

VALIDATION FINDINGS CHECKLIST

Reviewer: SR
2nd Reviewer: SM

Method: Pesticides/PCBs (EPA SW 846 Method 8081/8082)

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%.0 for individual breakdown in the Evaluation mix standards?	✓			
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20%.0 or percent recovieries 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?	✓			
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?			✓	

Validation Area	Yes	No	NA	Findings/Comments
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?	✓			
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. Chlordane
B. beta-BHC	J. 4,4'-DDE	R. Endrin aldehyde	Z. Aroclor-1248	HH. Chlordane (Technical)
C. delta-BHC	K. Endrin	S. alpha-Chlordane	AA. Aroclor-1254	II. Aroclor 1262
D. gamma-BHC	L. Endosulfan II	T. gamma-Chlordane	BB. Aroclor-1260	JJ. Aroclor 1268
E. Heptachlor	M. 4,4'-DDD	U. Toxaphene	CC. 2,4'-DDD	KK. Oxychlordane
F. Aldrin	N. Endosulfan sulfate	V. Aroclor-1016	DD. 2,4'-DDE	LL. trans-Nonachlor
G. Heptachlor epoxide	O. 4,4'-DDT	W. Aroclor-1221	EE. 2,4'-DDT	MM. cis-Nonachlor
H. Endosulfan I	P. Methoxychlor	X. Aroclor-1232	FF. Hexachlorobenzene	NN.

Notes:_____

LDC#: 30842C3a

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: BR
2nd Reviewer: SM

METHOD: GC Pesticides (EPA SW 846 Method 8081B)

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)

Where

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	Reported RRF (10 std)	Recalculated RRF (10 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	10/3/2013	Endosulfan I (RTX-CLP)	568000	567954	571000	571000	4	4
	H9191A		Methoxychlor (RTX-CLP)	240000	240156	236400	236400	5	5
			Endosulfan I (RTX-CLPII)	101000	100605	101000	100980	3	3
			Methoxychlor (RTX-CLPII)	59700	59742	59200	59160	2	2

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#: 30842C3a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: BR
2nd Reviewer: SM

METHOD: GC Pesticides (EPA SW 846 Method 8081B)

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 = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound,
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound	Average CF/ Conc	Reported Conc/CF (CC)	Recalculated Conc/CF (CC)	Reported % D	Recalculated %D
1	MIXA3IX	10/7/2013	Endosulfan I (RTX-CLP)	10.00	10.05	10.05	0	0.5
		8:53	Methoxychlor (RTX-CLP)	100.0	97.69	97.71	2	2
			Endosulfan I (RTX-CLPII)	10.00	10.01	10.01	0	0
			Methoxychlor (RTX-CLPII)	100.0	97.59	97.55	2	2
2								

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 #: 36842C3a

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Page: 1 of 1
Reviewer: BR
2nd reviewer: SM

METHOD: GC Pesticides/PCBs (EPA SW 846 Method 8081/8082)

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	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
Tetrachloro-m-xylene						
Tetrachloro-m-xylene	RTX-CLP	10.1	7.86353	78	78	0
Decachlorobiphenyl	↓	10.2	9.06509	89	89	0
Decachlorobiphenyl						

Sample ID:

Surrogate	Column	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
Tetrachloro-m-xylene						
Tetrachloro-m-xylene						
Decachlorobiphenyl						
Decachlorobiphenyl						

Sample ID:

Surrogate	Column	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
Tetrachloro-m-xylene						
Tetrachloro-m-xylene						
Decachlorobiphenyl						
Decachlorobiphenyl						

Sample ID:

Surrogate	Column	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
Tetrachloro-m-xylene						
Tetrachloro-m-xylene						
Decachlorobiphenyl						
Decachlorobiphenyl						

Notes:

LDC #: 30942C3a

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicate Results Verification

Reviewer: BR
2nd Reviewer: SM

METHOD: GC Pesticides/PCBs (EPA SW 846 Method 8081/8082)

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* (SSC-SC)/SA

Where: SSC = Spiked sample concentration
SA = Spike added
SC = Concentration

RPD = | LCS - LCSD | * 2/(LCS + LCSD)

LCS = Laboratory control sample percent recovery

LCSD = Laboratory control sample duplicate percent recovery

LCS/LCSD samples: LCS 062774

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	Recalc.
gamma-BHC	3.42	-	3.26	-	95	95	-	-	-	-
4,4'-DDT	7.15	-	7.34	-	103	103	-	-	-	-
Aroclor 1260										

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 #: 30842C3a

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: BR
2nd reviewer: SM

METHOD: GC Pesticides/PCBs (EPA SW 846 Method 8081/8082)

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?

Example:

Sample I.D. All ND:

Conc. =

LCS 06276 RTX-CLP BR

=

Endosulfan I = 3.5 ug/kg

$$= \frac{(5996100)(10)}{(571093)(30)}$$

= 3.499780246 ug/kg

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Note:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Santa Susana Field Laboratory
Collection Date:	October 1, 2013
LDC Report Date:	December 19, 2013
Matrix:	Soil
Parameters:	Polychlorinated Biphenyls
Validation Level:	Level IV
Laboratory:	Eurofins Lancaster Laboratories
Sample Delivery Group (SDG):	PH119

Sample Identification

SL-570-SA5D-SB-0.0-0.5
SL-570-SA5D-SB-4.0-5.0
SL-564-SA5D-SB-0.0-0.5
SL-564-SA5D-SB-4.0-5.0
SL-607-SA5D-SB-0.0-0.5
SL-607-SA5D-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 SW 846 Method 8082A for Polychlorinated Biphenyls.

This review follows the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

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

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of multicomponent compounds was performed for the primary (quantitation) column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Retention time windows were evaluated and considered technically acceptable.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 20.0% QC limits.

The percent difference (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

Retention times (RT) of all compounds in the calibration standards were within QC limits.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

Sample EB-100213 (from SDG PH120) was identified as an equipment blank. No polychlorinated biphenyl contaminants were found.

Sample FB-041613 (from SDG PH032) 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 with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Affected Compound	Flag	A or P
LCS08278 (All samples in SDG PH119)	Aroclor-5442	-	90 (62-87)	-	Aroclor-5442 Aroclor-5432 Aroclor-5460	J (all detects) J (all detects) J (all 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 PH119	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 PH119

SDG	Sample	Compound	Flag	A or P	Reason (Code)
PH119	SL-570-SA5D-SB-0.0-0.5 SL-570-SA5D-SB-4.0-5.0 SL-564-SA5D-SB-0.0-0.5 SL-564-SA5D-SB-4.0-5.0 SL-607-SA5D-SB-0.0-0.5 SL-607-SA5D-SB-4.0-5.0	Aroclor-5442 Aroclor-5432 Aroclor-5460	J (all detects) J (all detects) J (all detects)	P	Laboratory control samples (%R) (L)
PH119	SL-570-SA5D-SB-0.0-0.5 SL-570-SA5D-SB-4.0-5.0 SL-564-SA5D-SB-0.0-0.5 SL-564-SA5D-SB-4.0-5.0 SL-607-SA5D-SB-0.0-0.5 SL-607-SA5D-SB-4.0-5.0	All compounds reported below the RL.	J (all detects)	A	Compound quantitation (Z)

Santa Susana Field Laboratory
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG PH119

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG PH119

No Sample Data Qualified in this SDG

LDC #: 30842C3b **VALIDATION COMPLETENESS WORKSHEET** Date: 12/3/13
SDG #: PH119 Level IV Page: 1 of 1
Laboratory: Eurofins Lancaster Laboratories Reviewer: BK
2nd Reviewer: SM

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: 10/1/13
II.	GC/ECD Instrument Performance Check	N	
III.	Initial calibration	A	RSD≤20)
IV.	Continuing calibration/ICV	A	1CV/CCV≤20)
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client spec
VIII.	Laboratory control samples	SW	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	A	
XIV.	Overall assessment of data	A	
XV.	Field duplicates	N	
XVI.	Field blanks	ND	FB=FB041613(SDG#PA032) EB=EB1-100213(SDG#PH120)

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-570-SA5D-SB-0.0-0.5	11		21		31	PBLK08278
2	SL-570-SA5D-SB-4.0-5.0	12		22		32	
3	SL-564-SA5D-SB-0.0-0.5	13		23		33	
4	SL-564-SA5D-SB-4.0-5.0	14		24		34	
5	SL-607-SA5D-SB-0.0-0.5	15		25		35	
6	SL-607-SA5D-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 #: 30942C36

VALIDATION FINDINGS CHECKLIST

Reviewer: KR
2nd Reviewer: SM

Method: Pesticides/PCBs (EPA SW 846 Method 8081/8082)

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? X %D or ___%R	✓			
Were Evaluation mix standards analyzed prior to the initial calibration and sample analysis?			✓	
Were endrin and 4,4'-DDT breakdowns ≤ 15%.0 for individual breakdown in the Evaluation mix standards?			✓	
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20%.0 or percent recovieries 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?	✓			
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?			✓	

Validation Area	Yes	No	NA	Findings/Comments
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?	✓			
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. Chlordane
B. beta-BHC	J. 4,4'-DDE	R. Endrin aldehyde	Z. Aroclor-1248	HH. Chlordane (Technical)
C. delta-BHC	K. Endrin	S. alpha-Chlordane	AA. Aroclor-1254	II. Aroclor 1262
D. gamma-BHC	L. Endosulfan II	T. gamma-Chlordane	BB. Aroclor-1260	JJ. Aroclor 1268
E. Heptachlor	M. 4,4'-DDD	U. Toxaphene	CC. 2,4'-DDD	KK. Oxychlordane
F. Aldrin	N. Endosulfan sulfate	V. Aroclor-1016	DD. 2,4'-DDE	LL. trans-Nonachlor
G. Heptachlor epoxide	O. 4,4'-DDT	W. Aroclor-1221	EE. 2,4'-DDT	MM. cis-Nonachlor
H. Endosulfan I	P. Methoxychlor	X. Aroclor-1232	FF. Hexachlorobenzene	NN.

Notes:_____

LDC #: 30842C2b

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples

Reviewer: BR
2nd Reviewer: BR

METHOD: GC Pesticides/PCBs (EPA SW 846 Method 8081/8082)

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 a LCS analyzed every 20 samples for each matrix or whenever a sample extraction was performed?

#	Date	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Code: L Qualifications
		LCS08278	Aroclor 5442	( )	90 (62-87)	( )	All	J det/p (Qual PCB-5442 PCB-5432 PCB-5460)
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
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LDC#: 30842C3b

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: BR
2nd Reviewer: [signature]

METHOD: GC PCBs (EPA SW 846 Method 8082A)

The calibration factors (CF), average CF, and relative standard deviation (%RSD) were recalculated for compounds identified below 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 (500 std)	Recalculated CF (500 std)	Reported Average CF (Initial)	Recalculated Average CF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL 19843A	10/1/2013	PCB1260-1 (ZB-MultiR1)	2112	2112	2199	2199	5	5
			PCB1260-1 (ZB-MultiR2l)	2439	2439	2633	2633	10	10

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#: 30842C3b

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: BR
2nd Reviewer:

METHOD: GC PCBs (EPA SW 846 Method 8082)

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

Percent difference (%D) = 100 * (N - C)/N

Where: N = Initial Calibration Factor or Nominal Amount
C = Calibration Factor from Continuing Calibration Standard or Calculated Amount

#	Standard ID	Calibration Date	Compound	Conc	Reported Conc (CCV)	Recalculated Conc (CCV)	Reported % D	Recalculated %D
1	AR163PU	10/7/2013	PCB1260 (ZB-MultiR1)	200	214.20	214.19	7	7
		21:31	PCB1260 (ZB-MultiR2)	200	205.96	205.97	3	3

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 #: 30842C36

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Page: 1 of 1
Reviewer: BR
2nd reviewer: SM

METHOD: GC Pesticides/PCBs (EPA SW 846 Method 8081/8082)

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	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
Tetrachloro-m-xylene						
Tetrachloro-m-xylene	ZB Multiresidue-1	10.1	10.782764	107	107	D
Decachlorobiphenyl	1	10.2	11.460549	113		
Decachlorobiphenyl						

Sample ID:

Surrogate	Column	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
Tetrachloro-m-xylene						
Tetrachloro-m-xylene						
Decachlorobiphenyl						
Decachlorobiphenyl						

Sample ID:

Surrogate	Column	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
Tetrachloro-m-xylene						
Tetrachloro-m-xylene						
Decachlorobiphenyl						
Decachlorobiphenyl						

Sample ID:

Surrogate	Column	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
Tetrachloro-m-xylene						
Tetrachloro-m-xylene						
Decachlorobiphenyl						
Decachlorobiphenyl						

Notes:

LDC #: 30842C36

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicate Results Verification

Reviewer: BR
2nd Reviewer: SG

METHOD: GC Pesticides/PCBs (EPA SW 846 Method 8081/8082)

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* (SSC-SC)/SA

Where: SSC = Spiked sample concentration
SA = Spike added
SC = Concentration

RPD = I LCS - LCSD I * 2/(LCS + LCSD)

LCS = Laboratory control sample percent recovery

LCSD = Laboratory control sample duplicate percent recovery

LCS/LCSD samples: LCS68278 / LCSD68278

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	Recalc.
gamma-BHC										
4,4'-DDT										
Aroclor 1260	167	-	193.6	-	116	116	-	-	-	-

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 #: 30642C3b

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: BR
2nd reviewer: SM

METHOD: GC Pesticides/PCBs (EPA SW 846 Method 8081/8082)

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?

2B - MultiR1

PCB-1260-1 = $\frac{117316}{2199} = 532.6$

1260-2 = 570.62
-3 = 592.14
-4 = 561.26
-5 = 629.12
-6 = 599.91

Average = 580.95

Example:

Sample I.D. All NB:

Conc. = _____

LCS 08278
BB = 193.66 ug/kg

BB = $\frac{580.95 \times 10}{30}$

= 193.65 ug/kg

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Note: _____

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Santa Susana Field Laboratory

Collection Date: October 1, 2013

LDC Report Date: December 4, 2013

Matrix: Soil

Parameters: Metals

Validation Level: Level IV

Laboratory: Eurofins Lancaster Laboratories

Sample Delivery Group (SDG): PH119

Sample Identification

SL-570-SA5D-SB-0.0-0.5
SL-570-SA5D-SB-4.0-5.0
SL-564-SA5D-SB-0.0-0.5
SL-564-SA5D-SB-4.0-5.0
SL-607-SA5D-SB-0.0-0.5
SL-607-SA5D-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 SW 846 Methods 6010C, 6020A, and 7471B for Metals. The metals analyzed were Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc, and Zirconium.

This review follows the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

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

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Calibration

The initial and continuing calibrations were performed at the required frequency.

The calibration standards criteria were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No metal contaminants were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Aluminum Calcium Tin Zinc	8.512 mg/Kg 15.220 mg/Kg 1.394 mg/Kg 1.376 mg/Kg	All samples in SDG PH119
ICB/CCB	Aluminum Copper Lead	47.7 ug/L 1.9 ug/L 2.2 ug/L	All samples in SDG PH119

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-570-SA5D-SB-0.0-0.5	Tin	2.90 mg/Kg	2.90U mg/Kg
SL-570-SA5D-SB-4.0-5.0	Tin	0.977 mg/Kg	0.977U mg/Kg

Sample	Analyte	Reported Concentration	Modified Final Concentration
SL-564-SA5D-SB-0.0-0.5	Tin	2.75 mg/Kg	2.75U mg/Kg
SL-564-SA5D-SB-4.0-5.0	Tin	2.73 mg/Kg	2.73U mg/Kg
SL-607-SA5D-SB-0.0-0.5	Tin	3.04 mg/Kg	3.04U mg/Kg
SL-607-SA5D-SB-4.0-5.0	Tin	3.11 mg/Kg	3.11U mg/Kg

Sample EB1-100213 (from SDG PH120) was identified as an equipment blank. No metal contaminants were found with the following exceptions:

Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
EB1-100213	10/2/13	Barium Boron Calcium Copper Molybdenum	0.00058 mg/L 0.0098 mg/L 0.0427 mg/L 0.0028 mg/L 0.0086 mg/L	All samples in SDG PH119

Sample FB-041613 (from SDG PH032) was identified as a field blank. No metal contaminants were found with the following exceptions:

Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
FB-041613	4/11/13	Molybdenum Tin	0.0132 mg/L 0.0029 mg/L	All samples in SDG PH119

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-570-SA5D-SB-4.0-5.0	Tin	0.977 mg/Kg	0.977U 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-582-SA5D-SB-4.0-5.0MS/MSD (All samples in SDG PH119)	Antimony	41 (75-125)	43 (75-125)	-	J (all detects) UJ (all non-detects)	A
SL-582-SA5D-SB-4.0-5.0MS/MSD (All samples in SDG PH119)	Potassium	173 (75-125)	167 (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) 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 PH119	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 PH119

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
PH119	SL-570-SA5D-SB-0.0-0.5 SL-570-SA5D-SB-4.0-5.0 SL-564-SA5D-SB-0.0-0.5 SL-564-SA5D-SB-4.0-5.0 SL-607-SA5D-SB-0.0-0.5 SL-607-SA5D-SB-4.0-5.0	Antimony	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (%R) (Q)
PH119	SL-570-SA5D-SB-0.0-0.5 SL-570-SA5D-SB-4.0-5.0 SL-564-SA5D-SB-0.0-0.5 SL-564-SA5D-SB-4.0-5.0 SL-607-SA5D-SB-0.0-0.5 SL-607-SA5D-SB-4.0-5.0	Potassium	J (all detects)	A	Matrix spike/Matrix spike duplicate (%R) (Q)
PH119	SL-570-SA5D-SB-0.0-0.5 SL-570-SA5D-SB-4.0-5.0 SL-564-SA5D-SB-0.0-0.5 SL-564-SA5D-SB-4.0-5.0 SL-607-SA5D-SB-0.0-0.5 SL-607-SA5D-SB-4.0-5.0	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (Z)

Santa Susana Field Laboratory
Metals - Laboratory Blank Data Qualification Summary - SDG PH119

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
PH119	SL-570-SA5D-SB-0.0-0.5	Tin	2.90U mg/Kg	A	B
PH119	SL-570-SA5D-SB-4.0-5.0	Tin	0.977U mg/Kg	A	B
PH119	SL-564-SA5D-SB-0.0-0.5	Tin	2.75U mg/Kg	A	B
PH119	SL-564-SA5D-SB-4.0-5.0	Tin	2.73U mg/Kg	A	B
PH119	SL-607-SA5D-SB-0.0-0.5	Tin	3.04U mg/Kg	A	B
PH119	SL-607-SA5D-SB-4.0-5.0	Tin	3.11U mg/Kg	A	B

Santa Susana Field Laboratory
Metals - Field Blank Data Qualification Summary - SDG PH119

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
PH119	SL-570-SA5D-SB-4.0-5.0	Tin	0.977U mg/Kg	A	F

LDC #: 30842C4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: AL
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-041613 (SDG: PH032)	Action Limit	2											
Mo	0.0132	6.60												
Sn	0.0029	1.45	0.977											

Sampling date: 10/2/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All

Analyte	Blank ID	Sample Identification											
	EB1-100213 (SDG: PH120)	Action Limit	No Qualifiers										
Ba	0.00058	0.29											
B	0.0098	4.9											
Ca	0.0427	21.35											
Cu	0.0028	1.4											
Mo	0.0086	4.3											

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

LDC #: 30842C4

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: CR
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
	SL582-SA5D-SB-4.0-5.0MS/MSD		Sb	41	43		All	J/UJ/A (Q)
	(QH118)		K	173	167		↓	Jdet/A ↓

LDC #: 30842C9

VALIDATION FINDINGS WORKSHEET
Initial and Continuing Calibration Calculation Verification

Reviewer: 9R
2nd Reviewer:

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)	Li	609.56	600	101.6	101.6	Y
ICV	ICP/MS (Initial calibration)	Sr	52.022	50	104.4	104.4	
ICV	CVAA (Initial calibration)	Hg	2.54	2.5		101.6	
CCV (15:32)	ICP (Continuing calibration)	V	522.22	500	104.4	104.4	
CCV (23:26)	ICP/MS (Continuing calibration)	Tl	25.51	25	102	102.0	
CCV (06:34)	CVAA (Continuing calibration)	Hg	1.03	1.0	103.0	103.0	
	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 #: 30842C9

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Page: 1 of 1
Reviewer: 9R
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	Mn	486.5	500	97.3	97.3	Y
LCS	Laboratory control sample	P	106325	100000	106	106	
SL-582-SA50-SB-4.0-5.0	Matrix spike	Mo	(SSR-SR) 182.04555	198.01918	92	92	
	Duplicate	Cr	30.1436	30.41535	1	1	
	ICP serial dilution	Ca	233954.73	2393787	2	2	

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 #: 30842C4

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: OR
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 Ba 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:

$$\frac{1.1839\ mg/L(50mL)(2)}{1.02g(0.917)} = 126.57\ mg/kg$$

#	Sample ID	Analyte	Reported Concentration (mg/kg)	Calculated Concentration (mg/kg)	Acceptable (Y/N)
	1	Ba	127	127	Y
	2	Mn	297	297	
	3	Hg	0.026	0.026	
	4	Se	0.20	0.20	
	5	Ti	1570	1570	
	6	Co	9.3	9.3	
	7				

Note:

LDC #: 30842C4 **VALIDATION COMPLETENESS WORKSHEET** Date: 12/4/13

SDG #: PH119 Level IV Page: 1 of 1

Laboratory: Eurofins Lancaster Laboratories Reviewer: CL

2nd Reviewer: ✓

METHOD: Metals (EPA SW 846 Method 6010C/6020A/~~7000~~ 7471B)

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: 10/1/13
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 (from PH118)
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	FB= FB-041613 (PH032) EB= EB1-100213 (PH120)

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-570-SA5D-SB-0.0-0.5	11		21		31	
2	SL-570-SA5D-SB-4.0-5.0	12		22		32	
3	SL-564-SA5D-SB-0.0-0.5	13		23		33	
4	SL-564-SA5D-SB-4.0-5.0	14		24		34	
5	SL-607-SA5D-SB-0.0-0.5	15		25		35	
6	SL-607-SA5D-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 #: 30842C4

VALIDATION FINDINGS CHECKLIST

Reviewer: CR
2nd Reviewer: LV

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?	✓			

LDC #: 30842C4

VALIDATION FINDINGS CHECKLIST

Reviewer: CR
2nd Reviewer: [illegible]

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 #: 30842C4

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)
1-6		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 #: 30842C4

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000) Soil preparation factor applied: 100x x 2xdil Reason: B
Sample Concentration units, unless otherwise noted: mg/Kg Associated Samples: All

					Sample Identification										
Analyte	**Maximum PB[a] (mg/Kg)**	**Maximum PB[a] (ug/l)**	**Maximum ICB/CCB[a] (ug/l)**	**Action Level**	1	2	3	4	5	6					
Al	8.512		47.7	47.7											
Ca	15.220			76.1											
Cu			1.9	1.9											
Pb			2.2	2.2											
Sn	1.394			6.97	2.90	0.977	2.75	2.73	3.04	3.11					
Zn	1.376			6.88											

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.

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Santa Susana Field Laboratory
Collection Date:	October 1, 2013
LDC Report Date:	December 18, 2013
Matrix:	Soil
Parameters:	Herbicides
Validation Level:	Level IV
Laboratory:	Eurofins Lancaster Laboratories
Sample Delivery Group (SDG):	PH119

Sample Identification

SL-570-SA5D-SB-0.0-0.5
SL-570-SA5D-SB-4.0-5.0
SL-570-SA5D-SB-0.0-0.5MS
SL-570-SA5D-SB-0.0-0.5MSD

Introduction

This data review covers 4 soil 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 was performed 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.

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
10/11/13	HERB3SY	MR-1	Dinoseb	26	PBLK19282	J (all detects) UJ (all non-detects)	A
10/11/13	HERB3SY	MR-2	Dinoseb	22	PBLK19282	J (all detects) UJ (all non-detects)	A
10/11/13	HERB3SZ	MR-1	Dinoseb	21	SL-570-SA5D-SB-0.0-0.5 SL-570-SA5D-SB-4.0-5.0 SL-570-SA5D-SB-0.0-0.5MS SL-570-SA5D-SB-0.0-0.5MSD	J (all detects) UJ (all non-detects)	A
10/11/13	HERB3SZ	MR-2	Dinoseb	34	SL-570-SA5D-SB-0.0-0.5 SL-570-SA5D-SB-4.0-5.0 SL-570-SA5D-SB-0.0-0.5MS SL-570-SA5D-SB-0.0-0.5MSD	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.

Sample EB1-100213 (from SDG PH120) was identified as an equipment blank. No herbicide contaminants were found.

Sample FB-041613 (from SDG PH032) 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.

VII. Laboratory Control Samples (LCS)

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 PH119	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 PH119

SDG	Sample	Compound	Flag	A or P	Reason (Code)
PH119	SL-570-SA5D-SB-0.0-0.5 SL-570-SA5D-SB-4.0-5.0	Dinoseb	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D) (C)
PH119	SL-570-SA5D-SB-0.0-0.5 SL-570-SA5D-SB-4.0-5.0	All compounds reported below the RL.	J (all detects)	A	Compound quantitation (Z)

Santa Susana Field Laboratory
Herbicides - Laboratory Blank Data Qualification Summary - SDG PH119

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Herbicides - Field Blank Data Qualification Summary - SDG PH119

No Sample Data Qualified in this SDG

LDC #: 30842C5 **VALIDATION COMPLETENESS WORKSHEET** Date: 12/3/13
SDG #: PH119 Level IV Page: 1 of 1
Laboratory: Eurofins Lancaster Laboratories Reviewer: KA
2nd Reviewer: SM

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: 10/1/13
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	A	
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	ND	FB = FB-041613 (SDG # PH032)
			EB = EB1-100213 (SDG # PH120)

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-570-SA5D-SB-0.0-0.5	11		21		31	PBLK192B2
2	SL-570-SA5D-SB-4.0-5.0	12		22		32	
3	#1MS	13		23		33	
4	#1MSD	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 #: 30842C5

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: SM

Method: X 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?	✓			
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?	✓			
IV. Continuing calibration				
What type of continuing calibration calculation was performed? X %D or __ %R	✓			
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) 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?			✓	
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?	✓			

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. 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: X 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. Ethylbenzene
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. m,p-Xylenes
F. Benzo(b)fluoranthene	F. Nitrobenzene	F. Dichlorprop	F. Naled	AA. Parathion	GG. Total xylenes
G. Benzo(g,h,i)perylene	G. 2.4.6-Trinitrotoluene	G. Dicamba	G. Sulfotepp	BB. Famphur	
H. Benzo(k)fluoranthene	H. 4-Amino-2,6-dinitrotoluene	H. Dalapon	H. Phorate	CC. Phosmet	
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	HH. Tetrachlorvinphos	
N. Naphthalene	N. 4-Nitrotoluene		N. Malathion	II. Sulprofos	
O. Phenanthrene	O.		O. Chlorpyrifos		
P. Pyrene	P.		P. Fenthion		
Q.	Q		Q. Parathion-ethyl		
R.			R. Trichloronate		
S.			S. Merphos		
			T. Stirophos		
			U. Tokuthion		

Notes:_____

LDC #: 30842C5

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: BR
2nd Reviewer: DZ

METHOD: X GC ___ HPLC

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

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 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 (Limit)	RT (limit)	Associated Samples	Col: C Qualifications
	10/11/13	CCV-HERB35Y	MR-1	E	~~26~~ 26	( )	PBLK19282	J/UJ/A
			MR-2	E	22	( )		J
						( )		
						( )		
						( )		
	10/11/13	CCV-HERB35Z	MR-1	E	21	( )	1-4	J/UJ/A
			MR-2	E	34	( )		J
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
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						( )		
						( )		

LDC#: 30842C5

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: BR
2nd Reviewer: [signature]

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

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$ A_x = Area of Compound A_{is} = Area of associated internal standard

average RRF = sum of the RRFs/number of standards C_x = Concentration of compound, C_{is} = Concentration of internal standard

%RSD = 100 * (S/X) S= Standard deviation of the RRF X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound	Reported RRF (RRF 176 std)	Recalculated RRF (RRF 176 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	10/7/2013	2,4-D (MR-1)	1.38E-03	1.04E-03	1.34E-03	1.34E-03	5	5
	18273A		Dinoseb (MR-1)	2.74E-04	1.26E-03	3.16E-04	3.16E-04	9	9
			2,4-D (MR-2)	1.30E-03	1.21E-03	1.35E-03	1.35E-03	5	5
			Dinoseb (MR-2)	2.56E-04	1.07E-03	3.13E-04	3.13E-04	15	15

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#: 30842C5

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: BR
2nd Reviewer: SG

METHOD: GC Pesticides (EPA SW 846 Method 8081)

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 = (Ax)(Cis)/(Ais)(Cx)

Where: ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound,
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound	Average RRF (Initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported % D	Recalculated %D
1	HERB3SY	10/11/2013 14:32	2,4-D (MR-1)	176.00	179.10	179.10	2	2
			Dinoseb (MR-1)	100.70	127.33	127.41	26	26
			2,4-D (MR-2)	176.00	171.76	171.76	2	2
			Dinoseb (MR-2)	100.70	123.01	122.91	22	22
2	HERB3SZ	10/11/2013 17:31	2,4-D (MR-1)	176.00	180.10	180.10	2	2
			Dinoseb (MR-1)	100.70	121.85	121.93	21	21
			2,4-D (MR-2)	176.00	176.27	176.27	0	0
			Dinoseb (MR-2)	100.70	134.98	134.87	34	34

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 #: 38425

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: BR
2nd reviewer: SH

METHOD: X 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	
2,4-Dichlorophenylacetic acid	MR-1	669	58.048141	87	87	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 #: 30842C5

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: BR
2nd Reviewer: SY

METHOD: X **GC** __ **HPLC**

The percent recoveries (%R) and relative percent differences (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC - SC)/SA

Where SSC = Spiked sample concentration; SC = Sample concentration; SA = Spike added; MS = Matrix spike; MSD = Matrix spike duplicate

RPD =(({SSCMS - SSCMSD} * 2) / (SSCMS + SSCMSD))*100

MS/MSD samples: 3/4

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)	83.7	83.7	0	82.92	84.39	99	99	101	101	~~3~~ 2	1.8
Dinoseb (8151)	~~+~~ 142	~~+~~ 142	↓	48.32	62.01	34	34	44	44	25	25
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 #: 38842C5

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: BR

2nd Reviewer:

METHOD: X 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 19282

Compound	Spike Added (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)	83.7	—	87.17	—	104	104	—	—	—	—
Dinoseb (8151)	142	—	48.82	—	34	34	—	—	—	—
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 #: 30842C5

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: BR
2nd Reviewer: SY

METHOD: X 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. All LCS 19282 Compound Name ND MR-1

2,4-D = 87.17

Concentration = $\frac{(1635666)(1)(10)}{(4664453)(0.00134084)(30)}$

= 87.17418172 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: October 1, 2013

LDC Report Date: December 4, 2013

Matrix: Soil

Parameters: Wet Chemistry

Validation Level: Level IV

Laboratory: Eurofins Lancaster Laboratories

Sample Delivery Group (SDG): PH119

Sample Identification

SL-598-SA5D-SB-0.0-0.5
SL-598-SA5D-SB-4.0-5.0
SL-598-SA5D-SB-9.0-10.0
SL-598-SA5D-SB-14.0-15.0
SL-598-SA5D-SB-18.0-19.0
SL-598-SA5D-SB-0.0-0.5MS
SL-598-SA5D-SB-0.0-0.5DUP

Introduction

This data review covers 7 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 300.0 for Fluoride.

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 of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

Sample EB1-100213 (from SDG PH120) was identified as an equipment blank. No contaminant concentrations were found.

Sample FB-041613 (from SDG PH032) was identified as a field blank. No contaminant concentrations were found.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	%R (Limits)	Flag	A or P
SL-598-SA5D-SB-0.0-0.5MS (All samples in SDG PH119)	Fluoride	49 (80-120)	J (all detects) UJ (all non-detects)	A

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) were within QC limits.

VIII. Sample Result Verification

All sample result verifications were acceptable.

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG PH119	All analytes reported below the RL and above the MDL.	J (all detects)	A

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
Wet Chemistry - Data Qualification Summary - SDG PH119

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
PH119	SL-598-SA5D-SB-0.0-0.5 SL-598-SA5D-SB-4.0-5.0 SL-598-SA5D-SB-9.0-10.0 SL-598-SA5D-SB-14.0-15.0 SL-598-SA5D-SB-18.0-19.0	Fluoride	J (all detects) U (all non-detects)	A	Matrix spike (%R) (Q)
PH119	SL-598-SA5D-SB-0.0-0.5 SL-598-SA5D-SB-4.0-5.0 SL-598-SA5D-SB-9.0-10.0 SL-598-SA5D-SB-14.0-15.0 SL-598-SA5D-SB-18.0-19.0	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (Z)

Santa Susana Field Laboratory
Wet Chemistry – Laboratory Blank Data Qualification Summary - SDG PH119

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Wet Chemistry - Field Blank Data Qualification Summary - SDG PH119

No Sample Data Qualified in this SDG

LDC #: 30842C6 **VALIDATION COMPLETENESS WORKSHEET** Date: 12/4/13

SDG #: PH119 Level IV Page: 1 of 1

Laboratory: Eurofins Lancaster Laboratories Reviewer: 9L

2nd Reviewer: 1

METHOD: (Analyte) Fluoride (EPA Method 300.0)

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: 10/1/13
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	A	
IV	Matrix Spike/Matrix Spike Duplicates	SW	6 MS
V	Duplicates	A	DUP
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	A	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	N	
X	Field blanks	ND	FB= FB-041613 (PH032) EB= EB1-100213 (PH120)

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-598-SA5D-SB-0.0-0.5	11		21		31	
2	SL-598-SA5D-SB-4.0-5.0	12		22		32	
3	SL-598-SA5D-SB-9.0-10.0	13		23		33	
4	SL-598-SA5D-SB-14.0-15.0	14		24		34	
5	SL-598-SA5D-SB-18.0-19.0	15		25		35	
6	(X 1) MS	16		26		36	
7	↓ DUP	17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 30842C6

VALIDATION FINDINGS CHECKLIST

Reviewer: CR
2nd Reviewer:

Method: Inorganics (EPA Method See 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?			✓	

LDC #: 3084266

VALIDATION FINDINGS CHECKLIST

Reviewer: [illegible]
2nd Reviewer: [illegible]

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 #: 30812C6

VALIDATION FINDINGS WORKSHEET
Matrix Spike Analysis

Page: 1 of 1
Reviewer: 9
2nd Reviewer: [illegible]

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 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 (85-115% for Method 300.0)? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

LEVEL IV ONLY:

(Y) N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Date	Matrix Spike ID	Matrix	Analyte	%R	Associated Samples	Qualifications
		6	S	F	49 (80-120)	All	J (all detects) / A (all)

Comments: _____

MS.6

LDC #: 30842C6

Validation Findings Worksheet
Initial and Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: a
2nd Reviewer: [illegible]

Method: Inorganics, Method See Cover

The correlation coefficient (r) for the calibration of F was recalculated. Calibration date: 9/18/13

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	F	s1	0.0	0	*0.999575*	0.999603	Y
		s2	0.1	0.017			
		s3	0.4	0.071			
		s4	1	0.188			
		s5	2	0.377			
		s6	3	0.584			
Calibration verification		ICV	1.5	1.515993	101	101	
Calibration verification		CCV		1.517236	101	101	
Calibration verification				1.505556	100	100	

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 #: 3884266

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Reviewer: QR
2nd Reviewer: M

METHOD: Inorganics, Method Secover

Percent recoveries (%R) for a laboratory control sample and a matrix spike sample were recalculated using the following formula:

%R = Found / True x 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 = |S-D| / (S+D)/2 x 100 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	F	5.16	5	103	103	Y
MS 6	Matrix spike sample	↓	(SSR-SR) 2.44	4.98	49	49	↓
DUP 7	Duplicate sample	↓	2.01	1.96	4	4	↓

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 #: 30842C6

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: QR
2nd reviewer: [illegible]

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 F reported with a positive detect were recalculated and verified using the following equation:

Concentration = $y = 0.195x - 0.0062$

Recalculation: $\frac{0.097 + 0.0062}{0.195} \times \frac{50\,mL}{0.89(10.04\,g)} = 2.96\,mg/kg$

#	Sample ID	Analyte	Reported Concentration (mg/kg)	Calculated Concentration (mg/kg)	Acceptable (Y/N)
0.934	1	F	2.0	2.0	Y
0.89	2		2.9	3.0	↓
0.872	3		2.5	2.5	↓
0.845	4		3.1	3.1	↓
0.852	5		3.8	3.9	↓

Note: _____

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Santa Susana Field Laboratory
Collection Date:	October 1, 2013
LDC Report Date:	December 18, 2013
Matrix:	Soil/Water
Parameters:	Total Petroleum Hydrocarbons as Gasoline
Validation Level:	Level IV
Laboratory:	Eurofins Lancaster Laboratories
Sample Delivery Group (SDG):	PH119

Sample Identification

TB-100113
SL-570-SA5D-SB-4.0-5.0
SL-564-SA5D-SB-4.0-5.0
SL-607-SA5D-SB-4.0-5.0

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 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. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts 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.

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-100113 was identified as a trip blank. No total petroleum hydrocarbons as gasoline contaminants were found.

Sample EB1-100213 (from SDG PH120) was identified as an equipment blank. No total petroleum hydrocarbons as gasoline contaminants were found.

Sample FB-041613 (from SDG PH032) 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 PH119	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 PH119

SDG	Sample	Compound	Flag	A or P	Reason (Code)
PH119	TB-100113 SL-570-SA5D-SB-4.0-5.0 SL-564-SA5D-SB-4.0-5.0 SL-607-SA5D-SB-4.0-5.0	All compounds reported below the RL.	J (all detects)	A	Compound quantitation (Z)

Santa Susana Field Laboratory
Total Petroleum Hydrocarbons as Gasoline - Laboratory Blank Data Qualification Summary - SDG PH119

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Total Petroleum Hydrocarbons as Gasoline - Field Blank Data Qualification Summary - SDG PH119

No Sample Data Qualified in this SDG

LDC #: 30842C7 **VALIDATION COMPLETENESS WORKSHEET** Date: 12/3/13

SDG #: PH119 Level IV Page: 1 of 1

Laboratory: Eurofins Lancaster Laboratories Reviewer: BR

2nd Reviewer: SM

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: 10/1/13
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 Spec.
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	TB = 1 FB = FB-041613 (SDG # PH032) EB = EB1-100213 (SDG # PH120)

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	TB-100113 W	11		21		31	BLKYE
2	SL-570-SA5D-SB-4.0-5.0	12		22		32	BLKYU
3	SL-564-SA5D-SB-4.0-5.0	13		23		33	
4	SL-607-SA5D-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 #: 30842C7

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: SM

Method: X 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?	✓			
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?	✓			
IV. Continuing calibration				
What type of continuing calibration calculation was performed? X %D or __ %R	✓			
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) 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?			✓	
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?	✓			

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. 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 #: 30842C7

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: BR
2nd Reviewer: PR

METHOD: GC X HPLC _____

The calibration factors (CF), average CF, and relative standard deviation (%RSD) were recalculated for compounds identified below 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 Average CF (Initial)	Recalculated Average CF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL 11379F J&W DB-MTB	9/27/2013	GRO	53902	53902	55635	55635	4	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 #: 30842C7

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: BR
2nd Reviewer: SU

METHOD: GC X HPLC _____

The calibration factors (CF), average CF, and relative standard deviation (%RSD) were recalculated for compounds identified below 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 Average CF (Initial)	Recalculated Average CF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL 11002F J&W DB-VRX	9/16/2013	GRO	4534	4534	4650	4650	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 #: 30842C7

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: BR
2nd Reviewer: SM

METHOD: GC_____HPLC_____

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

Percent difference (%D) = 100 * (N - C)/N

Where: N = Initial Calibration Factor or Nominal Amount
C = Calibration Factor from Continuing Calibration Standard or Calculated Amount

#	Standard ID	Calibration Date	Compound	CCV Conc/CF	Reported Conc/CF	Recalculated Conc/CF	Reported % D	Recalculated %D
1	16281B.0002	10/8/2013	GRO	220.00	216.88	216.88	1	1
	11379F	16:16						
2	20277.0002	10/7/2013	GRO	550.00	600.40	600.40	9	9
	11002F	10:13						
3								

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 #: 3084207

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: BR
2nd reviewer: SK

METHOD: X **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: 2

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
Trifluorotoluene-F	J&W DB MTBE	0.7455	0.691347	93	93	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 #: 3084267

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: BR

2nd Reviewer: SG

METHOD: X 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: LCSFT / LCSDFK

Compound	Spike Added (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)	1180	1160	1184.36	1208.3	108	108	110	110	2	1.6
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 #: 36842C7

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: BR
2nd Reviewer: SG

METHOD: X **GC** ___ **HPLC**

X 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. All Compound Name ND

LCSFT
GRO

Concentration = 1189.36 ug/L

$= \frac{(553023)(1000)}{(4650)(1)(1ml)} = 1,189.359785$ ug/L

#	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: October 1, 2013

LDC Report Date: December 18, 2013

Matrix: Soil

Parameters: Total Petroleum Hydrocarbons as Extractables

Validation Level: Level IV

Laboratory: Eurofins Lancaster Laboratories

Sample Delivery Group (SDG): PH119

Sample Identification

SL-570-SA5D-SB-0.0-0.5
SL-570-SA5D-SB-4.0-5.0
SL-564-SA5D-SB-0.0-0.5
SL-564-SA5D-SB-4.0-5.0
SL-607-SA5D-SB-0.0-0.5
SL-607-SA5D-SB-4.0-5.0
SL-570-SA5D-SB-0.0-0.5MS
SL-570-SA5D-SB-0.0-0.5MSD

Introduction

This data review covers 8 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. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts 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.

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 EB1-100213 (from SDG PH120) was identified as an equipment blank. No total petroleum hydrocarbons as extractable contaminants were found.

Sample FB-041613 (from SDG PH032) was identified as a field blank. No total petroleum hydrocarbons as extractable 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.

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 PH119	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 PH119

SDG	Sample	Compound	Flag	A or P	Reason (Code)
PH119	SL-570-SA5D-SB-0.0-0.5 SL-570-SA5D-SB-4.0-5.0 SL-564-SA5D-SB-0.0-0.5 SL-564-SA5D-SB-4.0-5.0 SL-607-SA5D-SB-0.0-0.5 SL-607-SA5D-SB-4.0-5.0	All compounds reported below the RL.	J (all detects)	A	Compound quantitation (Z)

Santa Susana Field Laboratory
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG PH119

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG PH119

No Sample Data Qualified in this SDG

LDC #: 30842C8 **VALIDATION COMPLETENESS WORKSHEET** Date: 12/3/13
SDG #: PH119 Level IV Page: 1 of 1
Laboratory: Eurofins Lancaster Laboratories Reviewer: BR
2nd Reviewer: SM

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: 10/1/13
II	Initial calibration	A	RSD≤20%
III.	Calibration verification/ICV	D	1 ICV ≤ 20%
IV.	Blanks	A	
V	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	A	
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	ND	FB = FB-041613 (SDG # PH032)
			EB = EB1-100213 (SDG # PH126)

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-570-SA5D-SB-0.0-0.5	11		21		31	PB2K38280
2	SL-570-SA5D-SB-4.0-5.0	12		22		32	
3	SL-564-SA5D-SB-0.0-0.5	13		23		33	
4	SL-564-SA5D-SB-4.0-5.0	14		24		34	
5	SL-607-SA5D-SB-0.0-0.5	15		25		35	
6	SL-607-SA5D-SB-4.0-5.0	16		26		36	
7	#1 MS	17		27		37	
8	#1 MSD	18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 30842C8

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: SW

Method: X 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?	✓			
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?	✓			
IV. Continuing calibration				
What type of continuing calibration calculation was performed? X %D or __ %R	✓			
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) 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?			✓	
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?	✓			

VALIDATION FINDINGS CHECKLIST

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. 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 #: 30842C8

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: BR
2nd Reviewer: [signature]

METHOD: GC X HPLC _____

The calibration factors (CF), average CF, and relative standard deviation (%RSD) were recalculated for compounds identified below 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 (144 std)	Recalculated CF (144 std)	Reported Average CF (Initial)	Recalculated Average CF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL CP23-19879A ZB-5	8/19/2013	C8-C40	22576	22576	22983	22983	7	7

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 #: 30842C8

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: BR
2nd Reviewer: SM

METHOD: GC X HPLC____

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

Percent difference (%D) = 100 * (N - C)/N

Where: N = Initial Calibration Factor or Nominal Amount
C = Calibration Factor from Continuing Calibration Standard or Calculated Amount

#	Standard ID	Calibration Date	Compound	CCV Conc/CF	Reported Conc/CF	Recalculated Conc/CF	Reported % D	Recalculated %D
1	J277.0093	10/8/2013	C8-C40	288.01	278.02	278.02	3	3
2								
3								

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 #: 30842C8

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: BR
2nd reviewer: SM

METHOD: X **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	ZB-5	2	1.680579	85	84	1
Orthoterphenyl	↓	2	1.476762	74	74	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 #: 30842C8

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: BR
2nd Reviewer: SM

METHOD: X GC ___HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC - SC)/SA

Where SSC = Spiked sample concentration; SC = Sample concentration; SA = Spike added; MS = Matrix spike; MSD = Matrix spike duplicate

RPD =(({SSCMS - SSCMSD} * 2) / (SSCMS + SSCMSD))*100

MS/MSD samples: 7/8

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)											
EFH (C30-C40)	15	15	0	8.8	8.33	59	59	54	54	5	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 #: 38842C8

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: BR

2nd Reviewer: SM

METHOD: X 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: LCS38280

Compound	Spike Added (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)										
~~EPH~~ (C30-C40)	15	-	9.81	-	65	65	-	-	-	-

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 #: 30842C8

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: BR
2nd Reviewer: SK

METHOD: X 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. A11 Compound Name ND

LCS38280 : C30-C40 = 9.8 mg/kg

Concentration = $\frac{(676873)(1000)}{(22983)(30.1)(1000)}$

$= 9.775928561$ 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:	October 1, 2013
LDC Report Date:	December 10, 2013
Matrix:	Soil
Parameters:	Dioxins/Dibenzofurans
Validation Level:	Level IV
Laboratory:	Eurofins Lancaster Laboratories
Sample Delivery Group (SDG):	PH119

Sample Identification

SL-570-SA5D-SB-0.0-0.5
SL-564-SA5D-SB-0.0-0.5
SL-607-SA5D-SB-0.0-0.5

Introduction

This data review covers 3 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
BLK281002	10/8/13	2,3,7,8-TCDD	0.0417 ng/Kg	All samples in SDG PH119
		1,2,3,7,8-PeCDD	0.0514 ng/Kg	
		1,2,3,6,7,8-HxCDD	0.0350 ng/Kg	
		1,2,3,7,8,9-HxCDD	0.0212 ng/Kg	
		1,2,3,4,6,7,8-HpCDD	0.0871 ng/Kg	
		OCDD	0.306 ng/Kg	
		1,2,3,7,8-PeCDF	0.0743 ng/Kg	
		2,3,4,7,8-PeCDF	0.0383 ng/Kg	
		1,2,3,4,7,8-HxCDF	0.0397 ng/Kg	
		1,2,3,6,7,8-HxCDF	0.0378 ng/Kg	
		2,3,4,6,7,8-HxCDF	0.0495 ng/Kg	
		1,2,3,7,8,9-HxCDF	0.0565 ng/Kg	
		1,2,3,4,6,7,8-HpCDF	0.0654 ng/Kg	
		1,2,3,4,7,8,9-HpCDF	0.0445 ng/Kg	
		OCDF	0.161 ng/Kg	

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-570-SA5D-SB-0.0-0.5	1,2,3,7,8-PeCDD	0.0532 ng/Kg	0.0532U ng/Kg
	1,2,3,6,7,8-HxCDD	0.0568 ng/Kg	0.0568U ng/Kg
	1,2,3,7,8,9-HxCDD	0.0504 ng/Kg	0.0504U ng/Kg
	1,2,3,4,6,7,8-HpCDD	0.235 ng/Kg	0.235U ng/Kg
	OCDD	1.53 ng/Kg	1.53U ng/Kg
	1,2,3,7,8-PeCDF	0.0599 ng/Kg	0.0599U ng/Kg
	2,3,4,7,8-PeCDF	0.0432 ng/Kg	0.0432U ng/Kg
	1,2,3,4,7,8-HxCDF	0.0512 ng/Kg	0.0512U ng/Kg
	1,2,3,6,7,8-HxCDF	0.0321 ng/Kg	0.0321U ng/Kg
	2,3,4,6,7,8-HxCDF	0.0544 ng/Kg	0.0544U ng/Kg
	1,2,3,7,8,9-HxCDF	0.0565 ng/Kg	0.0565U ng/Kg
	1,2,3,4,6,7,8-HpCDF	0.0877 ng/Kg	0.0877U ng/Kg
	1,2,3,4,7,8,9-HpCDF	0.0742 ng/Kg	0.0742U ng/Kg
	OCDF	0.167 ng/Kg	0.167U ng/Kg
SL-564-SA5D-SB-0.0-0.5	2,3,7,8-TCDD	0.0495 ng/Kg	0.0495U ng/Kg
	1,2,3,7,8,9-HxCDD	0.0569 ng/Kg	0.0569U ng/Kg
	1,2,3,4,6,7,8-HpCDD	0.0954 ng/Kg	0.0954U ng/Kg
	OCDD	0.289 ng/Kg	0.289U ng/Kg
	1,2,3,7,8-PeCDF	0.0728 ng/Kg	0.0728U ng/Kg
	2,3,4,7,8-PeCDF	0.0515 ng/Kg	0.0515U ng/Kg
	1,2,3,4,7,8-HxCDF	0.0209 ng/Kg	0.0209U ng/Kg
	1,2,3,6,7,8-HxCDF	0.0273 ng/Kg	0.0273U ng/Kg
	2,3,4,6,7,8-HxCDF	0.0550 ng/Kg	0.0550U ng/Kg
	1,2,3,7,8,9-HxCDF	0.0890 ng/Kg	0.0890U ng/Kg
	1,2,3,4,6,7,8-HpCDF	0.0856 ng/Kg	0.0856U ng/Kg
	1,2,3,4,7,8,9-HpCDF	0.0361 ng/Kg	0.0361U ng/Kg
	OCDF	0.188 ng/Kg	0.188U ng/Kg

Sample	Compound	Reported Concentration	Modified Final Concentration
SL-607-SA5D-SB-0.0-0.5	1,2,3,7,8-PeCDD	0.0276 ng/Kg	0.0276U ng/Kg
	1,2,3,6,7,8-HxCDD	0.108 ng/Kg	0.108U ng/Kg
	1,2,3,4,6,7,8-HpCDD	0.239 ng/Kg	0.239U ng/Kg
	OCDD	0.701 ng/Kg	0.701U ng/Kg
	1,2,3,7,8-PeCDF	0.0885 ng/Kg	0.0885U ng/Kg
	2,3,4,7,8-PeCDF	0.0442 ng/Kg	0.0442U ng/Kg
	1,2,3,4,7,8-HxCDF	0.0311 ng/Kg	0.0311U ng/Kg
	1,2,3,6,7,8-HxCDF	0.0334 ng/Kg	0.0334U ng/Kg
	2,3,4,6,7,8-HxCDF	0.0348 ng/Kg	0.0348U ng/Kg
	1,2,3,4,6,7,8-HpCDF	0.0307 ng/Kg	0.0307U ng/Kg
	1,2,3,4,7,8,9-HpCDF	0.0229 ng/Kg	0.0229U ng/Kg
	OCDF	0.125 ng/Kg	0.125U ng/Kg

Sample EB1-100213 (from SDG PH120) 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
EB1-100213	10/2/13	1,2,3,7,8-PeCDD	0.338 pg/L	All samples in SDG PH119
		1,2,3,6,7,8-HxCDD	0.227 pg/L	
		1,2,3,4,6,7,8-HpCDD	0.368 pg/L	
		OCDD	1.49 pg/L	
		2,3,7,8-TCDF	0.237 pg/L	
		1,2,3,7,8-PeCDF	0.348 pg/L	
		2,3,4,7,8-PeCDF	0.247 pg/L	
		1,2,3,4,7,8-HxCDF	0.201 pg/L	
		1,2,3,6,7,8-HxCDF	0.207 pg/L	
		1,2,3,7,8,9-HxCDF	0.334 pg/L	
		2,3,4,6,7,8-HxCDF	0.255 pg/L	
		1,2,3,4,6,7,8-HpCDF	0.288 pg/L	
		1,2,3,4,7,8,9-HpCDF	0.363 pg/L	
		OCDF	1.43 pg/L	

Sample FB-041613 (from SDG PH032) was identified as a field blank. No perchlorate was found with the following exceptions:

Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB-041613	4/16/13	1,2,3,7,8-PeCDD	0.434 pg/L	All samples in SDG PH119
		1,2,3,4,6,7,8-HpCDD	0.309 pg/L	
		OCDD	0.838 pg/L	
		1,2,3,7,8-PeCDF	0.324 pg/L	
		2,3,4,7,8-PeCDF	0.429 pg/L	
		1,2,3,4,7,8-HxCDF	0.257 pg/L	
		1,2,3,7,8,9-HxCDF	0.241 pg/L	
		2,3,4,6,7,8-HxCDF	0.284 pg/L	
		1,2,3,4,6,7,8-HpCDF	0.314 pg/L	
		OCDF	0.357 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 with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
SL-607-SA5D-SB-0.0-0.5	2,3,7,8-TCDF	2nd column confirmation was not performed for this compound.	This compound 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 PH119	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 PH119

SDG	Sample	Compound	Flag	A or P	Reason (Code)
PH119	SL-607-SA5D-SB-0.0-0.5	2,3,7,8-TCDF	None	P	Compound quantitation (column confirmation) (*XI)
PH119	SL-570-SA5D-SB-0.0-0.5 SL-564-SA5D-SB-0.0-0.5 SL-607-SA5D-SB-0.0-0.5	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 PH119

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
PH119	SL-570-SA5D-SB-0.0-0.5	1,2,3,7,8-PeCDD 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	0.0532U ng/Kg 0.0568U ng/Kg 0.0504U ng/Kg 0.235U ng/Kg 1.53U ng/Kg 0.0599U ng/Kg 0.0432U ng/Kg 0.0512U ng/Kg 0.0321U ng/Kg 0.0544U ng/Kg 0.0565U ng/Kg 0.0877U ng/Kg 0.0742U ng/Kg 0.167U ng/Kg	A	B
PH119	SL-564-SA5D-SB-0.0-0.5	2,3,7,8-TCDD 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	0.0495U ng/Kg 0.0569U ng/Kg 0.0954U ng/Kg 0.289U ng/Kg 0.0728U ng/Kg 0.0515U ng/Kg 0.0209U ng/Kg 0.0273U ng/Kg 0.0550U ng/Kg 0.0890U ng/Kg 0.0856U ng/Kg 0.0361U ng/Kg 0.188U ng/Kg	A	B
PH119	SL-607-SA5D-SB-0.0-0.5	1,2,3,7,8-PeCDD 1,2,3,6,7,8-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 1,2,3,4,6,7,8-HpCDF 1,2,3,4,7,8,9-HpCDF OCDF	0.0276U ng/Kg 0.108U ng/Kg 0.239U ng/Kg 0.701U ng/Kg 0.0885U ng/Kg 0.0442U ng/Kg 0.0311U ng/Kg 0.0334U ng/Kg 0.0348U ng/Kg 0.0307U ng/Kg 0.0229U ng/Kg 0.125U ng/Kg	A	B

Santa Susana Field Laboratory
Dioxins/Dibenzofurans - Field Blank Data Qualification Summary - SDG PH119

No Sample Data Qualified in this SDG

LDC #: 30842C21 **VALIDATION COMPLETENESS WORKSHEET** Date: 12-6-13
SDG #: PH119 Level IV Page: 1 of 1
Laboratory: Eurofins Lancaster Laboratories Reviewer: CM
2nd Reviewer: SM

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: 10/1/13
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=EB1-100213(PH120); FB=FB-041613(PH032)

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: Soils

1	SL-570-SA5D-SB-0.0-0.5	11		21		31	
2	SL-564-SA5D-SB-0.0-0.5	12		22		32	
3	SL-607-SA5D-SB-0.0-0.5	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	BLK281002	30		40	

Notes: _____

LDC #: 30842C21

VALIDATION FINDINGS CHECKLIST

Page: 1 of 2
Reviewer: JM
2nd Reviewer: SM

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 #: 30842C21

VALIDATION FINDINGS CHECKLIST

Reviewer: JM
2nd Reviewer: SM

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 #: 30842C21

VALIDATION FINDINGS WORKSHEET
Blanks

Reviewer: JM
2nd Reviewer: SG

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: 10/08/13 **Blank analysis date:** 10/10/13 **Associated samples:** All ~~>5x~~ Qual U (B)

Conc. units: ng/kg

Compound	Blank ID	Sample Identification								
	BLK281002	5x	1	2	3					
A	0.0417	0.209		0.0495*						
B	0.0514*	0.257	0.0532		0.0276*					
D	0.0350*	0.175	0.0568*		0.108*					
E	0.0212*	0.106	0.0504	0.0569*						
F	0.0871*	0.436	0.235*	0.0954*	0.239					
G	0.306	1.53	1.53	0.289*	0.701*					
I	0.0743*	0.372	0.0599*	0.0728	0.0885*					
J	0.0383*	0.192	0.0432*	0.0515*	0.0442					
K	0.0397*	0.199	0.0512*	0.0209*	0.0311*					
L	0.0378	0.189	0.0321*	0.0273*	0.0334*					
M	0.0495*	0.248	0.0544	0.0550*	0.0348*					
N	0.0565*	0.283	0.0565*	0.0890*						
O	0.0654*	0.327	0.0877*	0.0856*	0.0307					
P	0.0445*	0.223	0.0742*	0.0361*	0.0229*					
Q	0.161*	0.805	0.167*	0.188	0.125*					

*EMPC

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

LDC #: 30842C21

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: JM
2nd Reviewer: SM

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

Blank units: pg/L **Associated sample units:** ng/kg
Sampling date: 10/02/13
Field blank type: (circle one) Field Blank / Rinsate / Other: EB Associated Samples: All >5x

Compound	Blank ID	Sample Identification								
	EB1-100213	5X								
B	0.338*	0.00169								
D	0.227*	0.00114								
F	0.368*	0.00184								
G	1.49	0.00745								
H	0.237*	0.00119								
I	0.348*	0.00174								
J	0.247*	0.00124								
K	0.201*	0.00101								
L	0.207*	0.00104								
N	0.334*	0.00167								
M	0.255*	0.00128								
O	0.288*	0.00144								
P	0.363*	0.001815								
Q	1.43*	0.00715								

* EMPC

EB1-100213 (PH120)

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\30842C21_EB1-100213.wpd

LDC #: 30842C21

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: 04/16/13
Field blank type: (circle one) Field Blank / Rinsate / Other: FB Associated Samples: All >5x

Compound	Blank ID	Sample Identification								
	FB-041613	5X								
B	0.434*	0.00217								
F	0.309*	0.00155								
G	0.838*	0.00419								
I	0.324	0.00162								
J	0.429*	0.00215								
K	0.257	0.00129								
N	0.241*	0.00121								
M	0.284*	0.00142								
O	0.314*	0.00157								
Q	0.357*	0.00179								

* EMPC

FB-041613 (PH032)

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\30842C21_FB-041613.wpd

LDC #: 30844C21

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and Reported CRQLs

Reviewer: [illegible]
2nd Reviewer: [illegible]

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".

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 CRQLs were adjusted to reflect all sample dilutions and dry weight factors (if necessary).

#	Date	Compound	Finding	Associated Samples	Qualifications
			no 2,3,7,8-TCDF confirmation	3	None / P

Comments: See sample calculation verification worksheet for recalculations

LDC #: 30804202 1

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: VM
2nd Reviewer: SM

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	09/23/2013	2,3,7,8-TCDF (^{13}C-2,3,7,8-TCDF)	1.008	1.008	1.043	1.043	4.15	4.14
			2,3,7,8-TCDD (^{13}C-2,3,7,8-TCDD)	1.109	1.109	1.125	1.125	1.62	1.60
			1,2,3,6,7,8-HxCDD (^{13}C-1,2,3,6,7,8-HxCDD)	0.949	0.949	0.995	0.995	4.48	4.48
			1,2,3,4,6,7,8-HpCDD (^{13}C-1,2,4,6,7,8,-HpCDD)	1.056	1.056	1.079	1.079	1.66	1.66
			OCDF (^{13}C-OCDF)	0.963	0.963	0.998	0.998	2.75	2.75
2			2,3,7,8-TCDF (^{13}C-2,3,7,8-TCDF)						
			2,3,7,8-TCDD (^{13}C-2,3,7,8-TCDD)						
			1,2,3,6,7,8-HxCDD (^{13}C-1,2,3,6,7,8-HxCDD)						
			1,2,3,4,6,7,8-HpCDD (^{13}C-1,2,4,6,7,8,-HpCDD)						
			OCDF (^{13}C-OCDF)						
3			2,3,7,8-TCDF (^{13}C-2,3,7,8-TCDF)						
			2,3,7,8-TCDD (^{13}C-2,3,7,8-TCDD)						
			1,2,3,6,7,8-HxCDD (^{13}C-1,2,3,6,7,8-HxCDD)						
			1,2,3,4,6,7,8-HpCDD (^{13}C-1,2,4,6,7,8,-HpCDD)						
			OCDF (^{13}C-OCDF)						

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

LDC #: 30804C21

VALIDATION FINDINGS WORKSHEET
Routine Calibration Results Verification

Reviewer: JM
2nd Reviewer: SY

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	10-10-13	2,3,7,8-TCDF (^{13}C-2,3,7,8-TCDF)	10	9.82	9.82	98	98
			2,3,7,8-TCDD (^{13}C-2,3,7,8-TCDD)	10	10.27	10.27	103	103
			1,2,3,6,7,8-HxCDD (^{13}C-1,2,3,6,7,8-HxCDD)	50	52.49	52.49	105	105
			1,2,3,4,6,7,8-HpCDD (^{13}C-1,2,4,6,7,8,-HpCDD)	50	51.80	51.78	104	104
			OCDF (^{13}C-OCDF)	100	103.35	103.38	103	103
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 #: 30842C21

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

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 = I LCS - LCSD I * 2/(LCS + LCSD) LCS = Laboraotry control sample percent recovery LCSD = Laboratory control sample duplicate percent recovery

LCS ID: OPR281002

Compound	Spike Added (ng/Kg)		Spiked Sample Concentration (ng/Kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
2,3,7,8-TCDD	20	NA	19.1	NA	95	95				
1,2,3,7,8-PeCDD	100		97.9		98	98				
1,2,3,4,7,8-HxCDD	100		97.2		97	97				
1,2,3,4,7,8,9-HpCDF	100		95.8		96	96				
OCDF	200		192		96	96				

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 #: 30842C21

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

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. 1 , Q :

Conc. = $\frac{(302+227)(4000)(1)}{(739798+662127)(0.963)(10.25)(.917)}$

= 0.167ng/kg

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Data Validation Report
Santa Susana Field Laboratory

Subarea 5D

SDG: PH120

Prepared for

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Prepared by

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December 23, 2013

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on October 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 Environmental Protection Agency (EPA) SW 846 Method 8270D utilizing Selective Ion Monitoring (SIM)
Pesticides by EPA SW 846 8081B
Polychlorinated Biphenyls (PCBs) by EPA SW 846 Method 8082A
Metals by EPA SW 846 Method 6010C, 6020A, 7470A and 7471B
Herbicides by EPA SW 846 Method 8151A
Total Petroleum Hydrocarbons (TPH) as Gasoline by EPA SW 846 Method 8015M
TPH as Extractables by EPA SW 846 Method 8015M
Dioxins and Dibenzofurans by EPA Method 1613B

Wet Chemistry:
Hexavalent Chromium by EPA Method 7199
Fluoride by EPA Method 300.0

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, 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, 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 with the exception of one sample for hexavalent chromium. The associated sample results were qualified as non-detected estimated (UJ). The details regarding the qualification of data are provided in Enclosure I.

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 blanks for pesticides, 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
PH120/ 6010C	ICB/CCB	Molybdenum	3.3 ug/L	EB1-100213

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
PH120/ 6010C	EB1-100213	Molybdenum	8.6 ug/L	8.6U 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 pairs for fluoride. The associated sample results were qualified as detected estimated (J). 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 SVOCs, herbicides and TPH as extractables. 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 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 PH120	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 fluoride. RPDs were not within QC limits. The associated sample results were qualified as detected estimated (J). 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 volatile contaminants were found in the trip blank.

One equipment blank was collected and analyzed for SVOCs, pesticides, PCBs, metals, herbicides, TPH as gasoline, TPH as extractables, dioxins, hexavalent chromium and fluoride. The equipment blank had 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 PH032) was collected and analyzed for SVOCs, pesticides, PCBs, metals, herbicides, TPH as gasoline, TPH as extractables, dioxins, hexavalent chromium and fluoride. The field blank had detections for 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-Oct-2013	TB1-100213	7222768	TB	5030B	8015M	III
02-Oct-2013	SL-594-SA5D-SB-0.0-0.5	7222765	N	METHOD	300.0	III
02-Oct-2013	SL-594-SA5D-SB-4.0-5.0	7222766	N	METHOD	300.0	III
02-Oct-2013	SL-594-SA5D-SB-7.0-8.0	7222767	N	METHOD	300.0	III
02-Oct-2013	SL-589-SA5D-SB-0.0-0.5	7222763	N	3050B	6010C	III
02-Oct-2013	SL-589-SA5D-SB-0.0-0.5	7222763	N	3050B	6020A	III
02-Oct-2013	SL-589-SA5D-SB-0.0-0.5	7222763	N	3546	8015M	III
02-Oct-2013	SL-589-SA5D-SB-0.0-0.5	7222763	N	3546	8081B	III
02-Oct-2013	SL-589-SA5D-SB-0.0-0.5	7222763	N	3546	8082A	III
02-Oct-2013	SL-589-SA5D-SB-0.0-0.5	7222763	N	3546	8270D SIM	III
02-Oct-2013	SL-589-SA5D-SB-0.0-0.5	7222763	N	METHOD	1613B	III
02-Oct-2013	SL-589-SA5D-SB-0.0-0.5	7222763	N	METHOD	7471B	III
02-Oct-2013	SL-589-SA5D-SB-0.0-0.5MSD	P222763M242034A	MSD	3546	8081B	III
02-Oct-2013	SL-589-SA5D-SB-0.0-0.5MSD	P222763M260436	MSD	3546	8270D SIM	III
02-Oct-2013	SL-589-SA5D-SB-0.0-0.5MS	P222763R242019A	MS	3546	8081B	III
02-Oct-2013	SL-589-SA5D-SB-0.0-0.5MS	P222763R260403	MS	3546	8270D SIM	III
02-Oct-2013	SL-589-SA5D-SB-4.0-5.0	7222764	N	3050B	6010C	III
02-Oct-2013	SL-589-SA5D-SB-4.0-5.0	7222764	N	3050B	6020A	III
02-Oct-2013	SL-589-SA5D-SB-4.0-5.0	7222764	N	3546	8015M	III
02-Oct-2013	SL-589-SA5D-SB-4.0-5.0	7222764	N	3546	8081B	III
02-Oct-2013	SL-589-SA5D-SB-4.0-5.0	7222764	N	3546	8082A	III
02-Oct-2013	SL-589-SA5D-SB-4.0-5.0	7222764	N	3546	8270D SIM	III
02-Oct-2013	SL-589-SA5D-SB-4.0-5.0	7222764	N	5035A	8015M	III
02-Oct-2013	SL-589-SA5D-SB-4.0-5.0	7222764	N	METHOD	7471B	III
02-Oct-2013	SL-600-SA5D-SB-0.0-0.5	7222769	N	METHOD	300.0	III
02-Oct-2013	SL-600-SA5D-SB-0.0-0.5MS	7222770	MS	METHOD	300.0	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
02-Oct-2013	SL-600-SA5D-SB-0.0-0.5DUP	7222771	DUP	METHOD	300.0	III
02-Oct-2013	SL-900-SA5D-SB-0.0-0.5	7222772	FD	METHOD	300.0	III
02-Oct-2013	SL-600-SA5D-SB-4.0-5.0	7222773	N	METHOD	300.0	III
02-Oct-2013	SL-600-SA5D-SB-9.0-10.0	7222774	N	METHOD	300.0	III
02-Oct-2013	SL-600-SA5D-SB-14.0-15.0	7222775	N	METHOD	300.0	III
02-Oct-2013	EB1-100213	7222762	EB	3005A	6010C	III
02-Oct-2013	EB1-100213	7222762	EB	3510C	8015M	III
02-Oct-2013	EB1-100213	7222762	EB	3510C	8081B	III
02-Oct-2013	EB1-100213	7222762	EB	3510C	8082A	III
02-Oct-2013	EB1-100213	7222762	EB	3510C	8270D SIM	III
02-Oct-2013	EB1-100213	7222762	EB	5030B	8015M	III
02-Oct-2013	EB1-100213	7222762	EB	Gen Prep	300.0	III
02-Oct-2013	EB1-100213	7222762	EB	Gen Prep	7199	III
02-Oct-2013	EB1-100213	7222762	EB	M3010A	6020A	III
02-Oct-2013	EB1-100213	7222762	EB	METHOD	1613B	III
02-Oct-2013	EB1-100213	7222762	EB	METHOD	7470A	III
02-Oct-2013	EB1-100213	7222762	EB	METHOD	8151A	III
02-Oct-2013	SL-600-SA5D-SB-18.5-19.5	7222776	N	METHOD	300.0	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: PH120 **Laboratory: LL**

EDD Filename: PrepPH120_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: GENCHEM

Method: 300.0 **Matrix: SO**

Sample ID: SL-594-SA5D-SB-0.0-0.5 *Collected:* 10/2/2013 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
FLUORIDE	0.76	J	0.41	MDL	1.0	PQL	mg/Kg	J	Z

Sample ID: SL-600-SA5D-SB-0.0-0.5 *Collected:* 10/2/2013 1:25:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORIDE	0.93	J	0.42	MDL	1.0	PQL	mg/Kg	J	Z, Q, FD

Sample ID: SL-600-SA5D-SB-14.0-15.0 *Collected:* 10/2/2013 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
FLUORIDE	7.1		0.46	MDL	1.1	PQL	mg/Kg	J	Q

Sample ID: SL-600-SA5D-SB-18.5-19.5 *Collected:* 10/2/2013 2:05:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORIDE	4.1		0.45	MDL	1.1	PQL	mg/Kg	J	Q

Sample ID: SL-600-SA5D-SB-9.0-10.0 *Collected:* 10/2/2013 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
FLUORIDE	9.3		0.46	MDL	1.2	PQL	mg/Kg	J	Q

Sample ID: SL-900-SA5D-SB-0.0-0.5 *Collected:* 10/2/2013 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
FLUORIDE	2.5		0.44	MDL	1.1	PQL	mg/Kg	J	FD

Method Category: METALS

Method: 6010C **Matrix: AQ**

Sample ID: EB1-100213 *Collected:* 10/2/2013 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
BARIUM	0.00058	J	0.00033	MDL	0.0100	PQL	mg/L	J	Z
BORON	0.0098	J	0.0084	MDL	0.100	PQL	mg/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: PH120 **Laboratory: LL**

EDD Filename: PrepPH120_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: AQ**

Sample ID: EB1-100213 *Collected:* 10/2/2013 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
CALCIUM	0.0427	J	0.0334	MDL	0.400	PQL	mg/L	J	Z
COPPER	0.0028	J	0.0027	MDL	0.0200	PQL	mg/L	J	Z
MOLYBDENUM	0.0086	J	0.0017	MDL	0.0200	PQL	mg/L	U	B

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-589-SA5D-SB-0.0-0.5 *Collected:* 10/2/2013 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
CADMIUM	0.268	J	0.0810	MDL	1.07	PQL	mg/Kg	J	Z
TIN	3.05	J	0.235	MDL	10.7	PQL	mg/Kg	U	B

Sample ID: SL-589-SA5D-SB-4.0-5.0 *Collected:* 10/2/2013 10:40:00 *Analysis Type:* REA *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	0.932	J	0.0742	MDL	1.11	PQL	mg/Kg	J	Z
CADMIUM	0.372	J	0.0842	MDL	1.11	PQL	mg/Kg	J	Z
MOLYBDENUM	0.281	J	0.188	MDL	2.21	PQL	mg/Kg	U	F, F
TIN	2.86	J	0.244	MDL	11.1	PQL	mg/Kg	U	B

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-589-SA5D-SB-0.0-0.5 *Collected:* 10/2/2013 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	0.249	J	0.107	MDL	0.426	PQL	mg/Kg	J	Z

Sample ID: SL-589-SA5D-SB-0.0-0.5 *Collected:* 10/2/2013 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	0.0665	J	0.0277	MDL	0.213	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: PH120 **Laboratory: LL**

EDD Filename: PrepPH120_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-589-SA5D-SB-4.0-5.0 *Collected:* 10/2/2013 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	0.289	J	0.111	MDL	0.443	PQL	mg/Kg	J	Z

Sample ID: SL-589-SA5D-SB-4.0-5.0 *Collected:* 10/2/2013 10:40:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0485	J	0.0288	MDL	0.221	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 7199 **Matrix: AQ**

Sample ID: EB1-100213 *Collected:* 10/2/2013 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	10.0	U	5.0	MDL	10.0	PQL	ug/L	UJ	H

Method Category: SVOA

Method: 1613B **Matrix: AQ**

Sample ID: EB1-100213 *Collected:* 10/2/2013 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	0.368	JBQ	0.169	MDL	9.70	PQL	pg/L	U	B
1,2,3,4,6,7,8-HPCDF	0.288	JBQ	0.0778	MDL	9.70	PQL	pg/L	U	B
1,2,3,4,7,8,9-HPCDF	0.363	JBQ	0.0889	MDL	9.70	PQL	pg/L	U	B
1,2,3,4,7,8-HXCDF	0.201	JBQ	0.0844	MDL	9.70	PQL	pg/L	U	B
1,2,3,6,7,8-HXCDD	0.227	JBQ	0.183	MDL	9.70	PQL	pg/L	U	B
1,2,3,6,7,8-HXCDF	0.207	JBQ	0.0855	MDL	9.70	PQL	pg/L	U	B
1,2,3,7,8,9-HXCDF	0.334	JBQ	0.0871	MDL	9.70	PQL	pg/L	U	B
1,2,3,7,8-PECDD	0.338	JBQ	0.277	MDL	9.70	PQL	pg/L	U	B
1,2,3,7,8-PECDF	0.348	JBQ	0.135	MDL	9.70	PQL	pg/L	U	B
2,3,4,6,7,8-HXCDF	0.255	JBQ	0.0804	MDL	9.70	PQL	pg/L	U	B
2,3,4,7,8-PECDF	0.247	JBQ	0.119	MDL	9.70	PQL	pg/L	U	B
2,3,7,8-TCDF	0.237	JQ	0.228	MDL	1.94	PQL	pg/L	J	Z
OCDD	1.49	JB	0.343	MDL	19.4	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: PH120 **Laboratory: LL**

EDD Filename: PrepPH120_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 1613B **Matrix: AQ**

Sample ID: EB1-100213 *Collected:* 10/2/2013 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
OCDF	1.43	JBQ	0.285	MDL	19.4	PQL	pg/L	U	B

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-589-SA5D-SB-0.0-0.5 *Collected:* 10/2/2013 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	0.0854	JBQ	0.0596	MDL	5.22	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0915	JBQ	0.0258	MDL	5.22	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0707	JQ	0.0558	MDL	5.22	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.133	JQ	0.0600	MDL	5.22	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.0953	JQ	0.0619	MDL	5.22	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.139	JQ	0.0435	MDL	5.22	PQL	ng/Kg	J	Z
OCDD	0.858	JBQ	0.0576	MDL	10.4	PQL	ng/Kg	U	B
OCDF	0.219	JBQ	0.0764	MDL	10.4	PQL	ng/Kg	U	B

Method Category: SVOA

Method: 8015M **Matrix: AQ**

Sample ID: EB1-100213 *Collected:* 10/2/2013 2:00:00 *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)	0.097	U	0.048	MDL	0.097	PQL	mg/L	UJ	L

Method Category: SVOA

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

Sample ID: EB1-100213 *Collected:* 10/2/2013 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
1-METHYLNAPHTHALENE	0.051	U	0.010	MDL	0.051	PQL	ug/L	UJ	L, E
2-METHYLNAPHTHALENE	0.051	U	0.010	MDL	0.051	PQL	ug/L	UJ	L, E
ACENAPHTHENE	0.051	U	0.010	MDL	0.051	PQL	ug/L	UJ	L, 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: PH120 **Laboratory: LL**

EDD Filename: PrepPH120_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

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

Sample ID: EB1-100213 *Collected:* 10/2/2013 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
ACENAPHTHYLENE	0.051	U	0.010	MDL	0.051	PQL	ug/L	UJ	L, E
ANTHRACENE	0.051	U	0.010	MDL	0.051	PQL	ug/L	UJ	L, E
BENZO(A)ANTHRACENE	0.051	U	0.010	MDL	0.051	PQL	ug/L	UJ	L, E
BENZO(A)PYRENE	0.051	U	0.010	MDL	0.051	PQL	ug/L	UJ	L, E
BENZO(B)FLUORANTHENE	0.051	U	0.010	MDL	0.051	PQL	ug/L	UJ	L, E
BENZO(E)PYRENE	0.051	U	0.010	MDL	0.051	PQL	ug/L	UJ	L, E
BENZO(G,H,I)PERYLENE	0.051	U	0.010	MDL	0.051	PQL	ug/L	UJ	E
BENZO(K)FLUORANTHENE	0.051	U	0.010	MDL	0.051	PQL	ug/L	UJ	L, E
BIS(2-ETHYLHEXYL)PHTHALATE	0.059	J	0.051	MDL	1.0	PQL	ug/L	J	Z, E
Butylbenzylphthalate	1.0	U	0.051	MDL	1.0	PQL	ug/L	UJ	E
CHRYSENE	0.051	U	0.010	MDL	0.051	PQL	ug/L	UJ	L, E
Diethylphthalate	0.27	J	0.051	MDL	1.0	PQL	ug/L	J	Z, L, E
Dimethylphthalate	1.0	U	0.051	MDL	1.0	PQL	ug/L	UJ	E
Di-n-butylphthalate	0.18	J	0.051	MDL	1.0	PQL	ug/L	J	Z, L, E
FLUORANTHENE	0.051	U	0.010	MDL	0.051	PQL	ug/L	UJ	L, E
FLUORENE	0.051	U	0.010	MDL	0.051	PQL	ug/L	UJ	L, E
NAPHTHALENE	0.051	U	0.030	MDL	0.051	PQL	ug/L	UJ	L, E
PHENANTHRENE	0.051	U	0.030	MDL	0.051	PQL	ug/L	UJ	L, E
PYRENE	0.051	U	0.010	MDL	0.051	PQL	ug/L	UJ	L, E

Method Category: SVOA

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

Sample ID: SL-589-SA5D-SB-4.0-5.0 *Collected:* 10/2/2013 10:40:00 *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	1.0	J	0.74	MDL	1.8	PQL	ug/Kg	J	Z
CHRYSENE	1.0	J	0.37	MDL	1.8	PQL	ug/Kg	J	Z
FLUORANTHENE	1.4	J	0.74	MDL	1.8	PQL	ug/Kg	J	Z
PHENANTHRENE	1.1	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

* denotes a non-reportable result

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

Data Qualifier Summary

Lab Reporting Batch ID: PH120 **Laboratory: LL**

EDD Filename: PrepPH120_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Reason Code Legend

Reason Code	*Description*
B	Calibration Blank Contamination
B	Method Blank Contamination
E	Laboratory Control Precision
F	Equipment Blank Contamination
F	Field Blank Contamination
FD	Field Duplicate Precision
H	Sampling to Analysis Estimation
L	Laboratory Control Precision
L	Laboratory Control Spike Lower Estimation
L	Laboratory Control Spike Upper Estimation
Q	Matrix Spike Lower Estimation
S	Surrogate/Tracer Recovery Lower 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

PH120

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: PH120
EDD Filename: PrepPH120_v1

Laboratory: LL
eQAPP Name: CDM_SSFL_131101_Lan

Method: 7199 **Preparation Method: Gen Prep**
Matrix: AQ

Sample ID	Type	Actual	Criteria	Units	Flag
EB1-100213 (RES)	Sampling To Analysis	25.25	24.00	HOURS	J(all detects) UJ(all non-detects)

Method Blank Outlier Report

Lab Reporting Batch ID: PH120 **Laboratory: LL**

EDD Filename: PrepPH120_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: **1613B**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2810B371346	10/10/2013 1:46:00 PM	1,2,3,4,6,7,8-HPCDD	0.614 pg/L	EB1-100213
		1,2,3,4,6,7,8-HPCDF	0.745 pg/L	
		1,2,3,4,7,8,9-HPCDF	0.694 pg/L	
		1,2,3,4,7,8-HXCDF	0.571 pg/L	
		1,2,3,6,7,8-HXCDD	0.572 pg/L	
		1,2,3,6,7,8-HXCDF	0.559 pg/L	
		1,2,3,7,8,9-HXCDD	0.348 pg/L	
		1,2,3,7,8,9-HXCDF	0.600 pg/L	
		1,2,3,7,8-PECDD	0.427 pg/L	
		1,2,3,7,8-PECDF	0.502 pg/L	
		2,3,4,6,7,8-HXCDF	0.387 pg/L	
		2,3,4,7,8-PECDF	0.364 pg/L	
		OCDD	1.53 pg/L	
		OCDF	2.35 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
EB1-100213(RES)	1,2,3,4,6,7,8-HPCDD	0.368 pg/L	0.368U pg/L
EB1-100213(RES)	1,2,3,4,6,7,8-HPCDF	0.288 pg/L	0.288U pg/L
EB1-100213(RES)	1,2,3,4,7,8,9-HPCDF	0.363 pg/L	0.363U pg/L
EB1-100213(RES)	1,2,3,4,7,8-HXCDF	0.201 pg/L	0.201U pg/L
EB1-100213(RES)	1,2,3,6,7,8-HXCDD	0.227 pg/L	0.227U pg/L
EB1-100213(RES)	1,2,3,6,7,8-HXCDF	0.207 pg/L	0.207U pg/L
EB1-100213(RES)	1,2,3,7,8,9-HXCDF	0.334 pg/L	0.334U pg/L
EB1-100213(RES)	1,2,3,7,8-PECDD	0.338 pg/L	0.338U pg/L
EB1-100213(RES)	1,2,3,7,8-PECDF	0.348 pg/L	0.348U pg/L
EB1-100213(RES)	2,3,4,6,7,8-HXCDF	0.255 pg/L	0.255U pg/L
EB1-100213(RES)	2,3,4,7,8-PECDF	0.247 pg/L	0.247U pg/L
EB1-100213(RES)	OCDD	1.49 pg/L	1.49U pg/L
EB1-100213(RES)	OCDF	1.43 pg/L	1.43U pg/L

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2830B371446	10/14/2013 2:46:00 PM	1,2,3,4,6,7,8-HPCDD	0.0753 ng/Kg	SL-589-SA5D-SB-0.0-0.5
		1,2,3,4,6,7,8-HPCDF	0.0423 ng/Kg	
		1,2,3,6,7,8-HXCDF	0.0948 ng/Kg	
		1,2,3,7,8-PECDF	0.0800 ng/Kg	
		OCDD	0.215 ng/Kg	
		OCDF	0.137 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-589-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDD	0.0854 ng/Kg	0.0854U ng/Kg
SL-589-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDF	0.0915 ng/Kg	0.0915U ng/Kg
SL-589-SA5D-SB-0.0-0.5(RES)	OCDD	0.858 ng/Kg	0.858U ng/Kg
SL-589-SA5D-SB-0.0-0.5(RES)	OCDF	0.219 ng/Kg	0.219U ng/Kg

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

Method Blank Outlier Report

Lab Reporting Batch ID: PH120 **Laboratory: LL**

EDD Filename: PrepPH120_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: **6010C**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P28135AB221117	10/12/2013 11:17:00 AM	PHOSPHORUS POTASSIUM ZINC	0.0547 mg/L 0.203 mg/L 0.0059 mg/L	EB1-100213

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P28137AB221240	10/14/2013 12:40:00 PM	ALUMINUM CALCIUM IRON MAGNESIUM TIN ZINC	9.86 mg/Kg 12.9 mg/Kg 3.84 mg/Kg 2.49 mg/Kg 1.41 mg/Kg 0.656 mg/Kg	SL-589-SA5D-SB-0.0-0.5 SL-589-SA5D-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-589-SA5D-SB-0.0-0.5(REA)	TIN	3.05 mg/Kg	3.05U mg/Kg
SL-589-SA5D-SB-4.0-5.0(REA)	TIN	2.86 mg/Kg	2.86U mg/Kg

Method: **8081B**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P80803AB241052A	10/8/2013 10:52:00 AM	BETA-BHC	0.0046 ug/L	EB1-100213

Equipment Rinsate Blank Outlier Report

Lab Reporting Batch ID: PH120 **Laboratory: LL**

EDD Filename: PrepPH120_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

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

Equipment Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
EB1-100213(RES)	10/2/2013 2:00:00 PM	BARIUM	0.00058 mg/L	SL-589-SA5D-SB-0.0-0.5
		BORON	0.0098 mg/L	SL-589-SA5D-SB-4.0-5.0
		CALCIUM	0.0427 mg/L	SL-594-SA5D-SB-0.0-0.5
		COPPER	0.0028 mg/L	SL-594-SA5D-SB-4.0-5.0
		MOLYBDENUM	0.0086 mg/L	SL-594-SA5D-SB-7.0-8.0
				SL-600-SA5D-SB-0.0-0.5
				SL-600-SA5D-SB-14.0-15.0
				SL-600-SA5D-SB-18.5-19.5
				SL-600-SA5D-SB-4.0-5.0
				SL-600-SA5D-SB-9.0-10.0
				SL-900-SA5D-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-589-SA5D-SB-4.0-5.0(REA)	MOLYBDENUM	0.281 mg/Kg	0.281U mg/Kg

Field Blank Outlier Report

Lab Reporting Batch ID: PH120 **Laboratory: LL**

EDD Filename: PrepPH120_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

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

Field Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
FB-041613(REA2/TOT)	4/16/2013 3:15:00 PM	MOLYBDENUM TIN	0.0132 mg/L 0.0029 mg/L	SL-589-SA5D-SB-0.0-0.5 SL-589-SA5D-SB-4.0-5.0 SL-594-SA5D-SB-0.0-0.5 SL-594-SA5D-SB-4.0-5.0 SL-594-SA5D-SB-7.0-8.0 SL-600-SA5D-SB-0.0-0.5 SL-600-SA5D-SB-14.0-15.0 SL-600-SA5D-SB-18.5-19.5 SL-600-SA5D-SB-4.0-5.0 SL-600-SA5D-SB-9.0-10.0 SL-900-SA5D-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-589-SA5D-SB-4.0-5.0(REA)	MOLYBDENUM	0.281 mg/Kg	0.281U mg/Kg

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH120 **Laboratory: LL**

EDD Filename: PrepPH120_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: **300.0**
Matrix: **SO**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
SL-600-SA5D-SB-0.0-0.5MS (SL-600-SA5D-SB-0.0-0.5 SL-600-SA5D-SB-14.0-15.0 SL-600-SA5D-SB-18.5-19.5 SL-600-SA5D-SB-9.0-10.0)	FLUORIDE	36	-	80.00-120.00	-	FLUORIDE	J (all detects) UJ (all non-detects)

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: PH120 **Laboratory: LL**

EDD Filename: PrepPH120_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 8015M
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
P32808AQ321759A P32808AY321820A (EB1-100213)	EFH (C8-C11)	64	65	70.00-130.00	-	EFH (C8-C11)	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
P32827AQ241903A P32827AY241930A (EB1-100213)	DINOSEB	238	238	16.00-163.00	-	DINOSEB	J(all detects)

Method: 8270D SIM
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
P2WILCSQ262241 P2WILCSY262310 (EB1-100213)	1-METHYLNAPHTHALENE	60	-	80.00-126.00	55 (30.00)	1-METHYLNAPHTHALENE	
	2-METHYLNAPHTHALENE	58	-	81.00-124.00	56 (30.00)	2-METHYLNAPHTHALENE	
	ACENAPHTHENE	57	-	77.00-118.00	53 (30.00)	ACENAPHTHENE	
	ACENAPHTHYLENE	57	-	80.00-123.00	59 (30.00)	ACENAPHTHYLENE	
	ANTHRACENE	60	-	78.00-123.00	53 (30.00)	ANTHRACENE	
	BENZO(A)ANTHRACENE	62	-	73.00-127.00	50 (30.00)	BENZO(A)ANTHRACENE	
	BENZO(A)PYRENE	65	-	72.00-120.00	47 (30.00)	BENZO(A)PYRENE	
	BENZO(B)FLUORANTHENE	66	-	79.00-136.00	47 (30.00)	BENZO(B)FLUORANTHENE	
	BENZO(E)PYRENE	60	-	70.00-130.00	49 (30.00)	BENZO(E)PYRENE	
	BENZO(G,H,I)PERYLENE	-	-	64.00-130.00	33 (30.00)	BENZO(G,H,I)PERYLENE	
	BENZO(K)FLUORANTHENE	71	-	73.00-131.00	45 (30.00)	BENZO(K)FLUORANTHENE	J(all detects)
	BIS(2-ETHYLHEXYL)PHTHALAT	-	-	70.00-143.00	58 (30.00)	BIS(2-ETHYLHEXYL)PHTHALA	UJ(all non-detects)
	Butylbenzylphthalate	-	-	40.00-138.00	50 (30.00)	Butylbenzylphthalate	
	CHRYSENE	63	-	76.00-125.00	45 (30.00)	CHRYSENE	
	Diethylphthalate	63	-	64.00-128.00	49 (30.00)	Diethylphthalate	
	Dimethylphthalate	-	-	23.00-139.00	50 (30.00)	Dimethylphthalate	
	Di-n-butylphthalate	61	-	64.00-141.00	50 (30.00)	Di-n-butylphthalate	
	FLUORANTHENE	61	-	79.00-124.00	51 (30.00)	FLUORANTHENE	
	FLUORENE	55	-	74.00-115.00	55 (30.00)	FLUORENE	
	NAPHTHALENE	57	-	75.00-120.00	56 (30.00)	NAPHTHALENE	
	PHENANTHRENE	58	-	75.00-120.00	52 (30.00)	PHENANTHRENE	
	PYRENE	61	-	71.00-130.00	48 (30.00)	PYRENE	

Field Duplicate RPD Report

Lab Reporting Batch ID: PH120 **Laboratory: LL**

EDD Filename: PrepPH120_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 160.3M
Matrix: SO

Analyte	Concentration (%)		Sample RPD	eQAPP RPD	Flag
	SL-600-SA5D-SB-0.0-0.5	SL-900-SA5D-SB-0.0-0.5			
MOISTURE	5.0	8.6	53		No Qualifiers Applied

Method: 300.0
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-600-SA5D-SB-0.0-0.5	SL-900-SA5D-SB-0.0-0.5			
FLUORIDE	0.93	2.5	92	50.00	J(all detects) UJ(all non-detects)

Method: 9045M
Matrix: SO

Analyte	Concentration (pH unit)		Sample RPD	eQAPP RPD	Flag
	SL-600-SA5D-SB-0.0-0.5	SL-900-SA5D-SB-0.0-0.5			
PH	6.83	7.26	6	50.00	No Qualifiers Applied

Reporting Limit Outliers

Lab Reporting Batch ID: PH120 **Laboratory: LL**

EDD Filename: PrepPH120_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 1613B

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB1-100213	1,2,3,4,6,7,8-HPCDD	JBQ	0.368	9.70	PQL	pg/L	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JBQ	0.288	9.70	PQL	pg/L	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.363	9.70	PQL	pg/L	
	1,2,3,4,7,8-HXCDF	JBQ	0.201	9.70	PQL	pg/L	
	1,2,3,6,7,8-HXCDD	JBQ	0.227	9.70	PQL	pg/L	
	1,2,3,6,7,8-HXCDF	JBQ	0.207	9.70	PQL	pg/L	
	1,2,3,7,8,9-HXCDF	JBQ	0.334	9.70	PQL	pg/L	
	1,2,3,7,8-PECDD	JBQ	0.338	9.70	PQL	pg/L	
	1,2,3,7,8-PECDF	JBQ	0.348	9.70	PQL	pg/L	
	2,3,4,6,7,8-HXCDF	JBQ	0.255	9.70	PQL	pg/L	
	2,3,4,7,8-PECDF	JBQ	0.247	9.70	PQL	pg/L	
	2,3,7,8-TCDF	JQ	0.237	1.94	PQL	pg/L	
	OCDD	JB	1.49	19.4	PQL	pg/L	
	OCDF	JBQ	1.43	19.4	PQL	pg/L	

Method: 6010C

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB1-100213	BARIUM	J	0.00058	0.0100	PQL	mg/L	J (all detects)
	BORON	J	0.0098	0.100	PQL	mg/L	
	CALCIUM	J	0.0427	0.400	PQL	mg/L	
	COPPER	J	0.0028	0.0200	PQL	mg/L	
	MOLYBDENUM	J	0.0086	0.0200	PQL	mg/L	

Method: 8270D SIM

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB1-100213	BIS(2-ETHYLHEXYL)PHTHALATE	J	0.059	1.0	PQL	ug/L	J (all detects)
	Diethylphthalate	J	0.27	1.0	PQL	ug/L	
	Di-n-butylphthalate	J	0.18	1.0	PQL	ug/L	

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-589-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JBQ	0.0854	5.22	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0915	5.22	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.0707	5.22	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JQ	0.133	5.22	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JQ	0.0953	5.22	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JQ	0.139	5.22	PQL	ng/Kg	
	OCDD	JBQ	0.858	10.4	PQL	ng/Kg	
	OCDF	JBQ	0.219	10.4	PQL	ng/Kg	

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

Reporting Limit Outliers

Lab Reporting Batch ID: PH120 **Laboratory: LL**

EDD Filename: PrepPH120_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 300.0

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-594-SA5D-SB-0.0-0.5	FLUORIDE	J	0.76	1.0	PQL	mg/Kg	J (all detects)
SL-600-SA5D-SB-0.0-0.5	FLUORIDE	J	0.93	1.0	PQL	mg/Kg	J (all detects)

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-589-SA5D-SB-0.0-0.5	CADMIUM	J	0.268	1.07	PQL	mg/Kg	J (all detects)
	TIN	J	3.05	10.7	PQL	mg/Kg	
SL-589-SA5D-SB-4.0-5.0	BERYLLIUM	J	0.932	1.11	PQL	mg/Kg	J (all detects)
	CADMIUM	J	0.372	1.11	PQL	mg/Kg	
	MOLYBDENUM	J	0.281	2.21	PQL	mg/Kg	
	TIN	J	2.86	11.1	PQL	mg/Kg	

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-589-SA5D-SB-0.0-0.5	SELENIUM	J	0.249	0.426	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0665	0.213	PQL	mg/Kg	
SL-589-SA5D-SB-4.0-5.0	SELENIUM	J	0.289	0.443	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0485	0.221	PQL	mg/Kg	

Method: 8270D SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-589-SA5D-SB-4.0-5.0	BENZO(B)FLUORANTHENE	J	1.0	1.8	PQL	ug/Kg	J (all detects)
	CHRYSENE	J	1.0	1.8	PQL	ug/Kg	
	FLUORANTHENE	J	1.4	1.8	PQL	ug/Kg	
	PHENANTHRENE	J	1.1	1.8	PQL	ug/Kg	
	PYRENE	J	1.3	1.8	PQL	ug/Kg	

LDC #: 30842D4 **VALIDATION COMPLETENESS WORKSHEET** Date: 12/4/13
SDG #: PH120 ADR Page: 1 of 1
Laboratory: Eurofins Lancaster Laboratories Reviewer: CA
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: 10/2/13
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	CS
VIII.	Laboratory Control Samples (LCS)	N	LCS/D
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= FB-041613 (PH032) EB= ~~EB-100213~~ 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: soil/water

1	~~EB~~-100213 W (EB)	11		21		31	
2	SL-589-SA5D-SB-0.0-0.5 S	12		22		32	
3	SL-589-SA5D-SB-4.0-5.0 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	

Notes:

LDC #: 30842D4

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: 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										
Mo			3.3	16.5	8.6										

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 #: 30842D4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: CR
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-041613 (SDG: PH032)	Action Limit	2											
Mo	0.0132	6.60	0.28											
Sn	0.0029	1.45												

Sampling date: 10/2/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All Soil

Analyte	Blank ID	Sample Identification											
	EB1-100213 (SDG: PH120)	Action Limit	2										
Ba	0.00058	0.29											
B	0.0098	4.9											
Ca	0.0427	21.35											
Cu	0.0028	1.4											
Mo	0.0086	4.3	See FB										

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 5D

SDG: PH122

Prepared for

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Denver, CO 80202

Prepared by

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

December 23, 2013

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on October 3, 2013. Data validation was performed in accordance with the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008), Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005) and for Inorganic Data Review (January 2010). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

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

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment II. 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 control sample/laboratory control sample duplicates (LCS/LCSD), method blanks, trip blanks, equipment blanks, and field blanks 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, 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 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.

V. Surrogate Spikes

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

VI. ICP Interference Check Sample (ICS) Analysis

ICP interference check data were not reviewed for level III.

VII. Matrix Spike/Matrix Spike Duplicates

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

VIII. Laboratory Duplicates Sample

The laboratory has indicated that there were no laboratory duplicate (DUP) analyses specified for the samples in this SDG, 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.

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 PH122	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 volatile contaminants were found in the trip blank.

One equipment blank (from SDG PH120) was collected and analyzed for SVOCs, PCBs, metals, TPH as gasoline, TPH as extractables and dioxins. The equipment blank had 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 PH032) was collected and analyzed for SVOCs, PCBs, metals, TPH as gasoline, TPH as extractables and dioxins. The field blank had detections for 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
03-Oct-2013	TB-100313	7224842	TB	5030B	8015M	III
03-Oct-2013	SL-502-SA5D-SB-0.0-0.5	7224840	N	3050B	6010C	III
03-Oct-2013	SL-502-SA5D-SB-0.0-0.5	7224840	N	3050B	6020A	III
03-Oct-2013	SL-502-SA5D-SB-0.0-0.5	7224840	N	3546	8015M	III
03-Oct-2013	SL-502-SA5D-SB-0.0-0.5	7224840	N	3546	8082A	III
03-Oct-2013	SL-502-SA5D-SB-0.0-0.5	7224840	N	3546	8270D SIM	III
03-Oct-2013	SL-502-SA5D-SB-0.0-0.5	7224840	N	METHOD	1613B	III
03-Oct-2013	SL-502-SA5D-SB-0.0-0.5	7224840	N	METHOD	7471B	III
03-Oct-2013	SL-502-SA5D-SB-0.0-0.5MSD	P224840M242250A	MSD	3546	8082A	III
03-Oct-2013	SL-502-SA5D-SB-0.0-0.5MS	P224840R242231A	MS	3546	8082A	III
03-Oct-2013	SL-502-SA5D-SB-6.5-7.5	7224841	N	3050B	6010C	III
03-Oct-2013	SL-502-SA5D-SB-6.5-7.5	7224841	N	3050B	6020A	III
03-Oct-2013	SL-502-SA5D-SB-6.5-7.5	7224841	N	3546	8015M	III
03-Oct-2013	SL-502-SA5D-SB-6.5-7.5	7224841	N	3546	8082A	III
03-Oct-2013	SL-502-SA5D-SB-6.5-7.5	7224841	N	3546	8270D SIM	III
03-Oct-2013	SL-502-SA5D-SB-6.5-7.5	7224841	N	5035A	8015M	III
03-Oct-2013	SL-502-SA5D-SB-6.5-7.5	7224841	N	METHOD	7471B	III
03-Oct-2013	SL-508-SA5D-SB-0.0-0.5	7224843	N	3050B	6010C	III
03-Oct-2013	SL-508-SA5D-SB-0.0-0.5	7224843	N	3050B	6020A	III
03-Oct-2013	SL-508-SA5D-SB-0.0-0.5	7224843	N	3546	8015M	III
03-Oct-2013	SL-508-SA5D-SB-0.0-0.5	7224843	N	3546	8082A	III
03-Oct-2013	SL-508-SA5D-SB-0.0-0.5	7224843	N	3546	8270D SIM	III
03-Oct-2013	SL-508-SA5D-SB-0.0-0.5	7224843	N	METHOD	1613B	III
03-Oct-2013	SL-508-SA5D-SB-0.0-0.5	7224843	N	METHOD	7471B	III
03-Oct-2013	SL-508-SA5D-SB-4.0-5.0	7224844	N	3050B	6010C	III
03-Oct-2013	SL-508-SA5D-SB-4.0-5.0	7224844	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
03-Oct-2013	SL-508-SA5D-SB-4.0-5.0	7224844	N	3546	8015M	III
03-Oct-2013	SL-508-SA5D-SB-4.0-5.0	7224844	N	3546	8082A	III
03-Oct-2013	SL-508-SA5D-SB-4.0-5.0	7224844	N	3546	8270D SIM	III
03-Oct-2013	SL-508-SA5D-SB-4.0-5.0	7224844	N	5035A	8015M	III
03-Oct-2013	SL-508-SA5D-SB-4.0-5.0	7224844	N	METHOD	7471B	III
03-Oct-2013	SL-508-SA5D-SB-9.0-10.0	7224845	N	3050B	6010C	III
03-Oct-2013	SL-508-SA5D-SB-9.0-10.0	7224845	N	3050B	6020A	III
03-Oct-2013	SL-508-SA5D-SB-9.0-10.0	7224845	N	3546	8015M	III
03-Oct-2013	SL-508-SA5D-SB-9.0-10.0	7224845	N	3546	8082A	III
03-Oct-2013	SL-508-SA5D-SB-9.0-10.0	7224845	N	3546	8270D SIM	III
03-Oct-2013	SL-508-SA5D-SB-9.0-10.0	7224845	N	5035A	8015M	III
03-Oct-2013	SL-508-SA5D-SB-9.0-10.0	7224845	N	METHOD	7471B	III
03-Oct-2013	SL-508-SA5D-SB-14.0-15.0	7224846	N	3050B	6010C	III
03-Oct-2013	SL-508-SA5D-SB-14.0-15.0	7224846	N	3050B	6020A	III
03-Oct-2013	SL-508-SA5D-SB-14.0-15.0	7224846	N	3546	8015M	III
03-Oct-2013	SL-508-SA5D-SB-14.0-15.0	7224846	N	3546	8082A	III
03-Oct-2013	SL-508-SA5D-SB-14.0-15.0	7224846	N	3546	8270D SIM	III
03-Oct-2013	SL-508-SA5D-SB-14.0-15.0	7224846	N	5035A	8015M	III
03-Oct-2013	SL-508-SA5D-SB-14.0-15.0	7224846	N	METHOD	7471B	III
03-Oct-2013	SL-508-SA5D-SB-19.0-20.0	7224847	N	3050B	6010C	III
03-Oct-2013	SL-508-SA5D-SB-19.0-20.0	7224847	N	3050B	6020A	III
03-Oct-2013	SL-508-SA5D-SB-19.0-20.0	7224847	N	3546	8015M	III
03-Oct-2013	SL-508-SA5D-SB-19.0-20.0	7224847	N	3546	8082A	III
03-Oct-2013	SL-508-SA5D-SB-19.0-20.0	7224847	N	3546	8270D SIM	III
03-Oct-2013	SL-508-SA5D-SB-19.0-20.0	7224847	N	5035A	8015M	III
03-Oct-2013	SL-508-SA5D-SB-19.0-20.0	7224847	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
03-Oct-2013	SL-508-SA5D-SB-23.0-24.0	7224848	N	3050B	6010C	III
03-Oct-2013	SL-508-SA5D-SB-23.0-24.0	7224848	N	3050B	6020A	III
03-Oct-2013	SL-508-SA5D-SB-23.0-24.0	7224848	N	3546	8015M	III
03-Oct-2013	SL-508-SA5D-SB-23.0-24.0	7224848	N	3546	8082A	III
03-Oct-2013	SL-508-SA5D-SB-23.0-24.0	7224848	N	3546	8270D SIM	III
03-Oct-2013	SL-508-SA5D-SB-23.0-24.0	7224848	N	5035A	8015M	III
03-Oct-2013	SL-508-SA5D-SB-23.0-24.0	7224848	N	METHOD	7471B	III
03-Oct-2013	SL-507-SA5D-SB-0.0-0.5	7224849	N	3050B	6010C	III
03-Oct-2013	SL-507-SA5D-SB-0.0-0.5	7224849	N	3050B	6020A	III
03-Oct-2013	SL-507-SA5D-SB-0.0-0.5	7224849	N	3546	8015M	III
03-Oct-2013	SL-507-SA5D-SB-0.0-0.5	7224849	N	3546	8082A	III
03-Oct-2013	SL-507-SA5D-SB-0.0-0.5	7224849	N	3546	8270D SIM	III
03-Oct-2013	SL-507-SA5D-SB-0.0-0.5	7224849	N	METHOD	1613B	III
03-Oct-2013	SL-507-SA5D-SB-0.0-0.5	7224849	N	METHOD	7471B	III
03-Oct-2013	SL-507-SA5D-SB-4.0-5.0	7224850	N	3050B	6010C	III
03-Oct-2013	SL-507-SA5D-SB-4.0-5.0	7224850	N	3050B	6020A	III
03-Oct-2013	SL-507-SA5D-SB-4.0-5.0	7224850	N	3546	8015M	III
03-Oct-2013	SL-507-SA5D-SB-4.0-5.0	7224850	N	3546	8082A	III
03-Oct-2013	SL-507-SA5D-SB-4.0-5.0	7224850	N	3546	8270D SIM	III
03-Oct-2013	SL-507-SA5D-SB-4.0-5.0	7224850	N	5035A	8015M	III
03-Oct-2013	SL-507-SA5D-SB-4.0-5.0	7224850	N	METHOD	7471B	III
03-Oct-2013	SL-507-SA5D-SB-10.5-11.5	7224851	N	3050B	6010C	III
03-Oct-2013	SL-507-SA5D-SB-10.5-11.5	7224851	N	3050B	6020A	III
03-Oct-2013	SL-507-SA5D-SB-10.5-11.5	7224851	N	3546	8015M	III
03-Oct-2013	SL-507-SA5D-SB-10.5-11.5	7224851	N	3546	8082A	III
03-Oct-2013	SL-507-SA5D-SB-10.5-11.5	7224851	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
03-Oct-2013	SL-507-SA5D-SB-10.5-11.5	7224851	N	5035A	8015M	III
03-Oct-2013	SL-507-SA5D-SB-10.5-11.5	7224851	N	METHOD	7471B	III
03-Oct-2013	SL-608-SA5D-SB-0.0-0.5	7224852	N	3050B	6010C	III
03-Oct-2013	SL-608-SA5D-SB-0.0-0.5	7224852	N	3050B	6020A	III
03-Oct-2013	SL-608-SA5D-SB-0.0-0.5	7224852	N	3546	8015M	III
03-Oct-2013	SL-608-SA5D-SB-0.0-0.5	7224852	N	3546	8082A	III
03-Oct-2013	SL-608-SA5D-SB-0.0-0.5	7224852	N	3546	8270D SIM	III
03-Oct-2013	SL-608-SA5D-SB-0.0-0.5	7224852	N	METHOD	1613B	III
03-Oct-2013	SL-608-SA5D-SB-0.0-0.5	7224852	N	METHOD	7471B	III
03-Oct-2013	SL-608-SA5D-SB-4.0-5.0	7224853	N	3050B	6010C	III
03-Oct-2013	SL-608-SA5D-SB-4.0-5.0	7224853	N	3050B	6020A	III
03-Oct-2013	SL-608-SA5D-SB-4.0-5.0	7224853	N	3546	8015M	III
03-Oct-2013	SL-608-SA5D-SB-4.0-5.0	7224853	N	3546	8082A	III
03-Oct-2013	SL-608-SA5D-SB-4.0-5.0	7224853	N	3546	8270D SIM	III
03-Oct-2013	SL-608-SA5D-SB-4.0-5.0	7224853	N	5035A	8015M	III
03-Oct-2013	SL-608-SA5D-SB-4.0-5.0	7224853	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: PH122 **Laboratory: LL**

EDD Filename: PrepPH122_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: **METALS**

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

Sample ID: **SL-502-SA5D-SB-0.0-0.5** ***Collected:*** **10/3/2013 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
BERYLLIUM	0.849	J	0.0676	MDL	1.01	PQL	mg/Kg	J	Z
CADMIUM	0.518	J	0.0767	MDL	1.01	PQL	mg/Kg	J	Z
TIN	2.44	J	0.222	MDL	10.1	PQL	mg/Kg	U	B
MOLYBDENUM	4.55		0.172	MDL	2.02	PQL	mg/Kg	U	F

Sample ID: **SL-502-SA5D-SB-6.5-7.5** ***Collected:*** **10/3/2013 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
BORON	9.05	J	0.918	MDL	10.9	PQL	mg/Kg	J	Z
CADMIUM	0.343	J	0.0831	MDL	1.09	PQL	mg/Kg	J	Z
SODIUM	100	J	18.3	MDL	109	PQL	mg/Kg	J	Z
TIN	3.14	J	0.240	MDL	10.9	PQL	mg/Kg	U	B

Sample ID: **SL-507-SA5D-SB-0.0-0.5** ***Collected:*** **10/3/2013 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
ARSENIC	3.51	J	0.718	MDL	4.11	PQL	mg/Kg	J	Z
BERYLLIUM	0.785	J	0.0688	MDL	1.03	PQL	mg/Kg	J	Z
CADMIUM	0.690	J	0.0780	MDL	1.03	PQL	mg/Kg	J	Z
MOLYBDENUM	0.348	J	0.174	MDL	2.05	PQL	mg/Kg	U	F, F
SODIUM	84.3	J	17.1	MDL	103	PQL	mg/Kg	J	Z
TIN	2.71	J	0.226	MDL	10.3	PQL	mg/Kg	U	B

Sample ID: **SL-507-SA5D-SB-10.5-11.5** ***Collected:*** **10/3/2013 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
BERYLLIUM	0.546	J	0.0700	MDL	1.05	PQL	mg/Kg	J	Z
BORON	7.72	J	0.878	MDL	10.5	PQL	mg/Kg	J	Z
CADMIUM	0.224	J	0.0794	MDL	1.05	PQL	mg/Kg	J	Z
TIN	2.36	J	0.230	MDL	10.5	PQL	mg/Kg	U	B
Zirconium	3.82	J	0.878	MDL	5.23	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: PH122 **Laboratory: LL**

EDD Filename: PrepPH122_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-507-SA5D-SB-4.0-5.0 *Collected:* 10/3/2013 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	4.07	J	0.773	MDL	4.42	PQL	mg/Kg	J	Z
BERYLLIUM	1.01	J	0.0740	MDL	1.10	PQL	mg/Kg	J	Z
CADMIUM	0.423	J	0.0839	MDL	1.10	PQL	mg/Kg	J	Z
TIN	2.97	J	0.243	MDL	11.0	PQL	mg/Kg	U	B

Sample ID: SL-508-SA5D-SB-0.0-0.5 *Collected:* 10/3/2013 9:25:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	3.72	J	0.722	MDL	4.13	PQL	mg/Kg	J	Z
BERYLLIUM	0.959	J	0.0691	MDL	1.03	PQL	mg/Kg	J	Z
CADMIUM	0.474	J	0.0784	MDL	1.03	PQL	mg/Kg	J	Z
MOLYBDENUM	0.209	J	0.175	MDL	2.06	PQL	mg/Kg	U	F, F
SODIUM	82.0	J	17.2	MDL	103	PQL	mg/Kg	J	Z
TIN	2.66	J	0.227	MDL	10.3	PQL	mg/Kg	U	B

Sample ID: SL-508-SA5D-SB-14.0-15.0 *Collected:* 10/3/2013 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
BERYLLIUM	0.764	J	0.0735	MDL	1.10	PQL	mg/Kg	J	Z
BORON	8.07	J	0.921	MDL	11.0	PQL	mg/Kg	J	Z
CADMIUM	0.214	J	0.0833	MDL	1.10	PQL	mg/Kg	J	Z
TIN	2.77	J	0.241	MDL	11.0	PQL	mg/Kg	U	B

Sample ID: SL-508-SA5D-SB-19.0-20.0 *Collected:* 10/3/2013 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
ARSENIC	4.22	J	0.755	MDL	4.31	PQL	mg/Kg	J	Z
BERYLLIUM	0.722	J	0.0723	MDL	1.08	PQL	mg/Kg	J	Z
BORON	8.19	J	0.906	MDL	10.8	PQL	mg/Kg	J	Z
CADMIUM	0.302	J	0.0820	MDL	1.08	PQL	mg/Kg	J	Z
TIN	2.73	J	0.237	MDL	10.8	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: PH122 **Laboratory: LL**

EDD Filename: PrepPH122_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-508-SA5D-SB-23.0-24.0 *Collected:* 10/3/2013 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
ARSENIC	3.45	J	0.737	MDL	4.21	PQL	mg/Kg	J	Z
BERYLLIUM	0.574	J	0.0706	MDL	1.05	PQL	mg/Kg	J	Z
BORON	6.19	J	0.885	MDL	10.5	PQL	mg/Kg	J	Z
CADMIUM	0.272	J	0.0800	MDL	1.05	PQL	mg/Kg	J	Z
TIN	2.47	J	0.232	MDL	10.5	PQL	mg/Kg	U	B
Zirconium	3.76	J	0.885	MDL	5.27	PQL	mg/Kg	J	Z

Sample ID: SL-508-SA5D-SB-4.0-5.0 *Collected:* 10/3/2013 9:35:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	3.46	J	0.786	MDL	4.49	PQL	mg/Kg	J	Z
BERYLLIUM	0.957	J	0.0752	MDL	1.12	PQL	mg/Kg	J	Z
CADMIUM	0.395	J	0.0853	MDL	1.12	PQL	mg/Kg	J	Z
TIN	2.69	J	0.247	MDL	11.2	PQL	mg/Kg	U	B

Sample ID: SL-508-SA5D-SB-9.0-10.0 *Collected:* 10/3/2013 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
ARSENIC	4.26	J	0.781	MDL	4.46	PQL	mg/Kg	J	Z
BERYLLIUM	0.843	J	0.0747	MDL	1.12	PQL	mg/Kg	J	Z
BORON	10.7	J	0.937	MDL	11.2	PQL	mg/Kg	J	Z
CADMIUM	0.510	J	0.0848	MDL	1.12	PQL	mg/Kg	J	Z
TIN	2.60	J	0.245	MDL	11.2	PQL	mg/Kg	U	B

Sample ID: SL-608-SA5D-SB-0.0-0.5 *Collected:* 10/3/2013 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	3.44	J	0.737	MDL	4.21	PQL	mg/Kg	J	Z
BERYLLIUM	1.01	J	0.0705	MDL	1.05	PQL	mg/Kg	J	Z
CADMIUM	0.450	J	0.0800	MDL	1.05	PQL	mg/Kg	J	Z
MOLYBDENUM	0.184	J	0.179	MDL	2.10	PQL	mg/Kg	U	F, F
TIN	2.61	J	0.231	MDL	10.5	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: PH122 **Laboratory: LL**

EDD Filename: PrepPH122_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-608-SA5D-SB-4.0-5.0 *Collected:* 10/3/2013 1:50:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	4.10	J	0.760	MDL	4.34	PQL	mg/Kg	J	Z
BERYLLIUM	0.938	J	0.0728	MDL	1.09	PQL	mg/Kg	J	Z
CADMIUM	0.466	J	0.0825	MDL	1.09	PQL	mg/Kg	J	Z
TIN	2.75	J	0.239	MDL	10.9	PQL	mg/Kg	U	B

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-502-SA5D-SB-0.0-0.5 *Collected:* 10/3/2013 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	0.0591	J	0.0262	MDL	0.202	PQL	mg/Kg	J	Z

Sample ID: SL-502-SA5D-SB-6.5-7.5 *Collected:* 10/3/2013 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	0.188	J	0.109	MDL	0.437	PQL	mg/Kg	J	Z

Sample ID: SL-502-SA5D-SB-6.5-7.5 *Collected:* 10/3/2013 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	0.0566	J	0.0284	MDL	0.219	PQL	mg/Kg	J	Z

Sample ID: SL-507-SA5D-SB-0.0-0.5 *Collected:* 10/3/2013 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	0.260	J	0.103	MDL	0.411	PQL	mg/Kg	J	Z

Sample ID: SL-507-SA5D-SB-0.0-0.5 *Collected:* 10/3/2013 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	0.110	J	0.0267	MDL	0.205	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: PH122 **Laboratory: LL**

EDD Filename: PrepPH122_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: **METALS**

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

Sample ID: **SL-507-SA5D-SB-4.0-5.0** ***Collected:*** **10/3/2013 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	0.127	J	0.110	MDL	0.442	PQL	mg/Kg	J	Z

Sample ID: **SL-507-SA5D-SB-4.0-5.0** ***Collected:*** **10/3/2013 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	0.0418	J	0.0287	MDL	0.221	PQL	mg/Kg	J	Z

Sample ID: **SL-508-SA5D-SB-0.0-0.5** ***Collected:*** **10/3/2013 9:25:00** ***Analysis Type:*** **REA2** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.314	J	0.103	MDL	0.413	PQL	mg/Kg	J	Z

Sample ID: **SL-508-SA5D-SB-0.0-0.5** ***Collected:*** **10/3/2013 9:25:00** ***Analysis Type:*** **RES** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0578	J	0.0268	MDL	0.206	PQL	mg/Kg	J	Z

Sample ID: **SL-508-SA5D-SB-14.0-15.0** ***Collected:*** **10/3/2013 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	0.0300	J	0.0285	MDL	0.219	PQL	mg/Kg	J	Z

Sample ID: **SL-508-SA5D-SB-19.0-20.0** ***Collected:*** **10/3/2013 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	0.0399	J	0.0280	MDL	0.216	PQL	mg/Kg	J	Z

Sample ID: **SL-508-SA5D-SB-23.0-24.0** ***Collected:*** **10/3/2013 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	0.0406	J	0.0274	MDL	0.211	PQL	mg/Kg	J	Z

Sample ID: **SL-508-SA5D-SB-4.0-5.0** ***Collected:*** **10/3/2013 9:35:00** ***Analysis Type:*** **REA2** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.189	J	0.112	MDL	0.449	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: PH122 **Laboratory: LL**

EDD Filename: PrepPH122_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-508-SA5D-SB-4.0-5.0 *Collected:* 10/3/2013 9:35:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0664	J	0.0292	MDL	0.224	PQL	mg/Kg	J	Z

Sample ID: SL-508-SA5D-SB-9.0-10.0 *Collected:* 10/3/2013 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
SILVER	0.0426	J	0.0290	MDL	0.223	PQL	mg/Kg	J	Z

Sample ID: SL-608-SA5D-SB-0.0-0.5 *Collected:* 10/3/2013 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	0.240	J	0.105	MDL	0.421	PQL	mg/Kg	J	Z

Sample ID: SL-608-SA5D-SB-0.0-0.5 *Collected:* 10/3/2013 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	0.0572	J	0.0274	MDL	0.210	PQL	mg/Kg	J	Z

Sample ID: SL-608-SA5D-SB-4.0-5.0 *Collected:* 10/3/2013 1:50:00 *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.148	J	0.109	MDL	0.434	PQL	mg/Kg	J	Z

Sample ID: SL-608-SA5D-SB-4.0-5.0 *Collected:* 10/3/2013 1:50:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0465	J	0.0282	MDL	0.217	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: SL-507-SA5D-SB-10.5-11.5 *Collected:* 10/3/2013 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	0.0127	J	0.0104	MDL	0.0174	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: PH122 **Laboratory: LL**

EDD Filename: PrepPH122_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: **METALS**

Method: **7471B** ***Matrix:*** **SO**

Sample ID: **SL-507-SA5D-SB-4.0-5.0** ***Collected:*** **10/3/2013 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	0.0160	J	0.0111	MDL	0.0184	PQL	mg/Kg	J	Z

Sample ID: **SL-508-SA5D-SB-14.0-15.0** ***Collected:*** **10/3/2013 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
MERCURY	0.0133	J	0.0111	MDL	0.0186	PQL	mg/Kg	J	Z

Sample ID: **SL-508-SA5D-SB-19.0-20.0** ***Collected:*** **10/3/2013 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
MERCURY	0.0119	J	0.0110	MDL	0.0184	PQL	mg/Kg	J	Z

Sample ID: **SL-508-SA5D-SB-23.0-24.0** ***Collected:*** **10/3/2013 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	0.0111	J	0.0101	MDL	0.0169	PQL	mg/Kg	J	Z

Sample ID: **SL-508-SA5D-SB-4.0-5.0** ***Collected:*** **10/3/2013 9:35:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0148	J	0.0107	MDL	0.0179	PQL	mg/Kg	J	Z

Sample ID: **SL-508-SA5D-SB-9.0-10.0** ***Collected:*** **10/3/2013 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
MERCURY	0.0125	J	0.0107	MDL	0.0178	PQL	mg/Kg	J	Z

Sample ID: **SL-608-SA5D-SB-0.0-0.5** ***Collected:*** **10/3/2013 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	0.0102	J	0.0099	MDL	0.0165	PQL	mg/Kg	J	Z

Sample ID: **SL-608-SA5D-SB-4.0-5.0** ***Collected:*** **10/3/2013 1:50:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0123	J	0.0110	MDL	0.0184	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: PH122 **Laboratory: LL**

EDD Filename: PrepPH122_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 7471B **Matrix: SO**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-502-SA5D-SB-0.0-0.5 *Collected:* 10/3/2013 8:40:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDF	2.81	JB	0.0260	MDL	5.07	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.261	J	0.0269	MDL	5.07	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.361	J	0.0422	MDL	5.07	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.332	J	0.0293	MDL	5.07	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.970	J	0.0444	MDL	5.07	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.367	JB	0.0285	MDL	5.07	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.807	J	0.0417	MDL	5.07	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.524	J	0.0302	MDL	5.07	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.442	JQ	0.0331	MDL	5.07	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.846	JB	0.0262	MDL	5.07	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.356	J	0.0294	MDL	5.07	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.575	J	0.0236	MDL	5.07	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.150	J	0.0279	MDL	1.01	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.310	JQ	0.0598	MDL	1.01	PQL	ng/Kg	J	Z
OCDF	6.33	JB	0.0247	MDL	10.1	PQL	ng/Kg	J	Z

Sample ID: SL-507-SA5D-SB-0.0-0.5 *Collected:* 10/3/2013 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-HPCDF	4.31	JB	0.0723	MDL	5.20	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.196	J	0.0722	MDL	5.20	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.557	JQ	0.143	MDL	5.20	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.377	J	0.0988	MDL	5.20	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	1.60	J	0.150	MDL	5.20	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.398	JB	0.0940	MDL	5.20	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	1.41	J	0.133	MDL	5.20	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.920	J	0.0816	MDL	5.20	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.361	JQ	0.113	MDL	5.20	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	1.27	JBQ	0.100	MDL	5.20	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.380	J	0.0918	MDL	5.20	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.589	J	0.163	MDL	1.04	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: PH122 **Laboratory: LL**

EDD Filename: PrepPH122_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-508-SA5D-SB-0.0-0.5 *Collected:* 10/3/2013 9:25:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	2.04	JBQ	0.122	MDL	5.29	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.426	JB	0.0408	MDL	5.29	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.105	J	0.0555	MDL	5.29	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.0866	JQ	0.0756	MDL	5.29	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.146	JQ	0.0712	MDL	5.29	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.463	JQ	0.0773	MDL	5.29	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.305	JBQ	0.0644	MDL	5.29	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.733	J	0.0739	MDL	5.29	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	1.20	J	0.0694	MDL	5.29	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.272	JQ	0.132	MDL	5.29	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	3.31	JB	0.0922	MDL	5.29	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.0997	JQ	0.0631	MDL	5.29	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.136	JQ	0.0845	MDL	5.29	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.234	JQ	0.184	MDL	1.06	PQL	ng/Kg	J	Z
OCDF	0.947	JBQ	0.109	MDL	10.6	PQL	ng/Kg	J	Z

Sample ID: SL-608-SA5D-SB-0.0-0.5 *Collected:* 10/3/2013 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	0.228	JB	0.108	MDL	5.09	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0750	JBQ	0.0566	MDL	5.09	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.126	JQ	0.0886	MDL	5.09	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.175	JQ	0.105	MDL	5.09	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.285	J	0.103	MDL	5.09	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.590	J	0.108	MDL	5.09	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.0897	JQ	0.0885	MDL	5.09	PQL	ng/Kg	J	Z
OCDD	1.66	JBQ	0.114	MDL	10.2	PQL	ng/Kg	J	Z
OCDF	0.257	JBQ	0.143	MDL	10.2	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: PH122 **Laboratory: LL**

EDD Filename: PrepPH122_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: SL-502-SA5D-SB-0.0-0.5 *Collected:* 10/3/2013 8:40:00 *Analysis Type:* RES *Dilution:* 20

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C15-C20)	48	J	42	MDL	100	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 8082A **Matrix: SO**

Sample ID: SL-502-SA5D-SB-0.0-0.5 *Collected:* 10/3/2013 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
AROCLOR 1254	7.4	J	4.6	MDL	18	PQL	ug/Kg	J	Z

Sample ID: SL-507-SA5D-SB-0.0-0.5 *Collected:* 10/3/2013 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
AROCLOR 1254	10	J	4.6	MDL	18	PQL	ug/Kg	J	Z
AROCLOR 1260	7.2	J	4.1	MDL	18	PQL	ug/Kg	J	Z
Aroclor 5460	13	J	11	MDL	35	PQL	ug/Kg	J	Z

Sample ID: SL-508-SA5D-SB-19.0-20.0 *Collected:* 10/3/2013 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
AROCLOR 1254	8.9	J	4.8	MDL	19	PQL	ug/Kg	J	Z

Sample ID: SL-508-SA5D-SB-23.0-24.0 *Collected:* 10/3/2013 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 1254	7.8	J	4.7	MDL	18	PQL	ug/Kg	J	Z

Method Category: SVOA

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

Sample ID: SL-502-SA5D-SB-0.0-0.5 *Collected:* 10/3/2013 8:40:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(E)PYRENE	46	J	35	MDL	180	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: PH122 **Laboratory: LL**

EDD Filename: PrepPH122_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

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

Sample ID: **SL-502-SA5D-SB-6.5-7.5** *Collected:* **10/3/2013 8:50:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **10**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(B)FLUORANTHENE	8.8	J	7.4	MDL	19	PQL	ug/Kg	J	Z
BENZO(G,H,I)PERYLENE	9.0	J	7.4	MDL	19	PQL	ug/Kg	J	Z
CHRYSENE	12	J	3.7	MDL	19	PQL	ug/Kg	J	Z

Sample ID: **SL-507-SA5D-SB-0.0-0.5** *Collected:* **10/3/2013 12:30:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **10**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BIS(2-ETHYLHEXYL)PHTHALATE	68	J	63	MDL	190	PQL	ug/Kg	J	Z

Sample ID: **SL-508-SA5D-SB-0.0-0.5** *Collected:* **10/3/2013 9:25:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-METHYLNAPHTHALENE	0.81	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(B)FLUORANTHENE	1.3	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z
FLUORANTHENE	1.7	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z
NAPHTHALENE	1.3	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z
PHENANTHRENE	1.2	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z
PYRENE	1.1	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: **SL-508-SA5D-SB-14.0-15.0** *Collected:* **10/3/2013 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
ANTHRACENE	0.81	J	0.37	MDL	1.9	PQL	ug/Kg	J	Z
BENZO(E)PYRENE	6.9	J	3.7	MDL	19	PQL	ug/Kg	J	Z

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: PH122 **Laboratory: LL**

EDD Filename: PrepPH122_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Reason Code Legend

Reason Code	*Description*
B	Method Blank Contamination
E	Laboratory Duplicate Precision
F	Equipment Blank Contamination
F	Field Blank Contamination
Q	Laboratory Duplicate Precision
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

PH122

Method Blank Outlier Report

Lab Reporting Batch ID: PH122 **Laboratory: LL**

EDD Filename: PrepPH122_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2830B371446	10/14/2013 2:46:00 PM	1,2,3,4,6,7,8-HPCDD	0.0753 ng/Kg	SL-502-SA5D-SB-0.0-0.5
		1,2,3,4,6,7,8-HPCDF	0.0423 ng/Kg	SL-507-SA5D-SB-0.0-0.5
		1,2,3,6,7,8-HXCDF	0.0948 ng/Kg	SL-508-SA5D-SB-0.0-0.5
		1,2,3,7,8-PECDF	0.0800 ng/Kg	SL-608-SA5D-SB-0.0-0.5
		OCDD	0.215 ng/Kg	
		OCDF	0.137 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-502-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.367 ng/Kg	0.367U ng/Kg
SL-507-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.398 ng/Kg	0.398U ng/Kg
SL-508-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.305 ng/Kg	0.305U ng/Kg
SL-608-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDD	0.228 ng/Kg	0.228U ng/Kg
SL-608-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDF	0.0750 ng/Kg	0.0750U ng/Kg
SL-608-SA5D-SB-0.0-0.5(RES)	OCDF	0.257 ng/Kg	0.257U ng/Kg

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P28137AB221240	10/14/2013 12:40:00 PM	ALUMINUM	9.86 mg/Kg	SL-502-SA5D-SB-0.0-0.5
		CALCIUM	12.9 mg/Kg	SL-502-SA5D-SB-6.5-7.5
		IRON	3.84 mg/Kg	SL-507-SA5D-SB-0.0-0.5
		MAGNESIUM	2.49 mg/Kg	SL-507-SA5D-SB-10.5-11.5
		TIN	1.41 mg/Kg	SL-507-SA5D-SB-4.0-5.0
		ZINC	0.656 mg/Kg	SL-508-SA5D-SB-0.0-0.5
				SL-508-SA5D-SB-14.0-15.0
				SL-508-SA5D-SB-19.0-20.0
				SL-508-SA5D-SB-23.0-24.0
				SL-508-SA5D-SB-4.0-5.0
				SL-508-SA5D-SB-9.0-10.0
				SL-608-SA5D-SB-0.0-0.5
				SL-608-SA5D-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-502-SA5D-SB-0.0-0.5(RES)	TIN	2.44 mg/Kg	2.44U mg/Kg
SL-502-SA5D-SB-6.5-7.5(RES)	TIN	3.14 mg/Kg	3.14U mg/Kg
SL-507-SA5D-SB-0.0-0.5(RES)	TIN	2.71 mg/Kg	2.71U mg/Kg
SL-507-SA5D-SB-10.5-11.5(RES)	TIN	2.36 mg/Kg	2.36U mg/Kg
SL-507-SA5D-SB-4.0-5.0(RES)	TIN	2.97 mg/Kg	2.97U mg/Kg
SL-508-SA5D-SB-0.0-0.5(RES)	TIN	2.66 mg/Kg	2.66U mg/Kg
SL-508-SA5D-SB-14.0-15.0(RES)	TIN	2.77 mg/Kg	2.77U mg/Kg
SL-508-SA5D-SB-19.0-20.0(RES)	TIN	2.73 mg/Kg	2.73U mg/Kg
SL-508-SA5D-SB-23.0-24.0(RES)	TIN	2.47 mg/Kg	2.47U mg/Kg

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

Method Blank Outlier Report

Lab Reporting Batch ID: PH122 **Laboratory: LL**

EDD Filename: PrepPH122_v1 **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-508-SA5D-SB-4.0-5.0(RES)	TIN	2.69 mg/Kg	2.69U mg/Kg
SL-508-SA5D-SB-9.0-10.0(RES)	TIN	2.60 mg/Kg	2.60U mg/Kg
SL-608-SA5D-SB-0.0-0.5(RES)	TIN	2.61 mg/Kg	2.61U mg/Kg
SL-608-SA5D-SB-4.0-5.0(RES)	TIN	2.75 mg/Kg	2.75U mg/Kg

Equipment Rinsate Blank Outlier Report

Lab Reporting Batch ID: PH122 **Laboratory: LL**

EDD Filename: PrepPH122_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

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

Equipment Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
EB1-100213(RES)	10/2/2013 2:00:00 PM	BARIUM	0.00058 mg/L	SL-502-SA5D-SB-0.0-0.5
		BORON	0.0098 mg/L	SL-502-SA5D-SB-6.5-7.5
		CALCIUM	0.0427 mg/L	SL-507-SA5D-SB-0.0-0.5
		COPPER	0.0028 mg/L	SL-507-SA5D-SB-10.5-11.5
		MOLYBDENUM	0.0086 mg/L	SL-507-SA5D-SB-4.0-5.0
				SL-508-SA5D-SB-0.0-0.5
				SL-508-SA5D-SB-14.0-15.0
				SL-508-SA5D-SB-19.0-20.0
				SL-508-SA5D-SB-23.0-24.0
				SL-508-SA5D-SB-4.0-5.0
				SL-508-SA5D-SB-9.0-10.0
				SL-608-SA5D-SB-0.0-0.5
				SL-608-SA5D-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-507-SA5D-SB-0.0-0.5(RES)	MOLYBDENUM	0.348 mg/Kg	0.348U mg/Kg
SL-508-SA5D-SB-0.0-0.5(RES)	MOLYBDENUM	0.209 mg/Kg	0.209U mg/Kg
SL-608-SA5D-SB-0.0-0.5(RES)	MOLYBDENUM	0.184 mg/Kg	0.184U mg/Kg

Field Blank Outlier Report

Lab Reporting Batch ID: PH122 **Laboratory: LL**

EDD Filename: PrepPH122_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

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

Field Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
FB-041613(REA2/TOT)	4/16/2013 3:15:00 PM	MOLYBDENUM TIN	0.0132 mg/L 0.0029 mg/L	SL-502-SA5D-SB-0.0-0.5 SL-502-SA5D-SB-6.5-7.5 SL-507-SA5D-SB-0.0-0.5 SL-507-SA5D-SB-10.5-11.5 SL-507-SA5D-SB-4.0-5.0 SL-508-SA5D-SB-0.0-0.5 SL-508-SA5D-SB-14.0-15.0 SL-508-SA5D-SB-19.0-20.0 SL-508-SA5D-SB-23.0-24.0 SL-508-SA5D-SB-4.0-5.0 SL-508-SA5D-SB-9.0-10.0 SL-608-SA5D-SB-0.0-0.5 SL-608-SA5D-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-502-SA5D-SB-0.0-0.5(RES)	MOLYBDENUM	4.55 mg/Kg	4.55U mg/Kg
SL-507-SA5D-SB-0.0-0.5(RES)	MOLYBDENUM	0.348 mg/Kg	0.348U mg/Kg
SL-508-SA5D-SB-0.0-0.5(RES)	MOLYBDENUM	0.209 mg/Kg	0.209U mg/Kg
SL-608-SA5D-SB-0.0-0.5(RES)	MOLYBDENUM	0.184 mg/Kg	0.184U mg/Kg

Reporting Limit Outliers

Lab Reporting Batch ID: PH122 **Laboratory: LL**

EDD Filename: PrepPH122_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: **1613B**

Matrix: **SO**

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-502-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDF	JB	2.81	5.07	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	J	0.261	5.07	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	J	0.361	5.07	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	J	0.332	5.07	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	J	0.970	5.07	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.367	5.07	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	J	0.807	5.07	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	J	0.524	5.07	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JQ	0.442	5.07	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.846	5.07	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	J	0.356	5.07	PQL	ng/Kg	
	2,3,4,7,8-PECDF	J	0.575	5.07	PQL	ng/Kg	
	2,3,7,8-TCDD	J	0.150	1.01	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.310	1.01	PQL	ng/Kg	
	OCDF	JB	6.33	10.1	PQL	ng/Kg	
SL-507-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDF	JB	4.31	5.20	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	J	0.196	5.20	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.557	5.20	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	J	0.377	5.20	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	J	1.60	5.20	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.398	5.20	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDD	J	1.41	5.20	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	J	0.920	5.20	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.361	5.20	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	1.27	5.20	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	J	0.380	5.20	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.589	1.04	PQL	ng/Kg	
SL-508-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JBQ	2.04	5.29	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.426	5.29	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	J	0.105	5.29	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.0866	5.29	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JQ	0.146	5.29	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JQ	0.463	5.29	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.305	5.29	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	J	0.733	5.29	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	J	1.20	5.29	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.272	5.29	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	3.31	5.29	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JQ	0.0997	5.29	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.136	5.29	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.234	1.06	PQL	ng/Kg	
	OCDF	JBQ	0.947	10.6	PQL	ng/Kg	
SL-608-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	0.228	5.09	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0750	5.09	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JQ	0.126	5.09	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JQ	0.175	5.09	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	J	0.285	5.09	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	J	0.590	5.09	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JQ	0.0897	5.09	PQL	ng/Kg	
	OCDD	JBQ	1.66	10.2	PQL	ng/Kg	
	OCDF	JBQ	0.257	10.2	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH122 **Laboratory: LL**

EDD Filename: PrepPH122_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-502-SA5D-SB-0.0-0.5	BERYLLIUM	J	0.849	1.01	PQL	mg/Kg	J (all detects)
	CADMIUM	J	0.518	1.01	PQL	mg/Kg	
	TIN	J	2.44	10.1	PQL	mg/Kg	
SL-502-SA5D-SB-6.5-7.5	BORON	J	9.05	10.9	PQL	mg/Kg	J (all detects)
	CADMIUM	J	0.343	1.09	PQL	mg/Kg	
	SODIUM	J	100	109	PQL	mg/Kg	
	TIN	J	3.14	10.9	PQL	mg/Kg	
SL-507-SA5D-SB-0.0-0.5	ARSENIC	J	3.51	4.11	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.785	1.03	PQL	mg/Kg	
	CADMIUM	J	0.690	1.03	PQL	mg/Kg	
	MOLYBDENUM	J	0.348	2.05	PQL	mg/Kg	
	SODIUM	J	84.3	103	PQL	mg/Kg	
	TIN	J	2.71	10.3	PQL	mg/Kg	
SL-507-SA5D-SB-10.5-11.5	BERYLLIUM	J	0.546	1.05	PQL	mg/Kg	J (all detects)
	BORON	J	7.72	10.5	PQL	mg/Kg	
	CADMIUM	J	0.224	1.05	PQL	mg/Kg	
	TIN	J	2.36	10.5	PQL	mg/Kg	
	Zirconium	J	3.82	5.23	PQL	mg/Kg	
SL-507-SA5D-SB-4.0-5.0	ARSENIC	J	4.07	4.42	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	1.01	1.10	PQL	mg/Kg	
	CADMIUM	J	0.423	1.10	PQL	mg/Kg	
	TIN	J	2.97	11.0	PQL	mg/Kg	
SL-508-SA5D-SB-0.0-0.5	ARSENIC	J	3.72	4.13	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.959	1.03	PQL	mg/Kg	
	CADMIUM	J	0.474	1.03	PQL	mg/Kg	
	MOLYBDENUM	J	0.209	2.06	PQL	mg/Kg	
	SODIUM	J	82.0	103	PQL	mg/Kg	
	TIN	J	2.66	10.3	PQL	mg/Kg	
SL-508-SA5D-SB-14.0-15.0	BERYLLIUM	J	0.764	1.10	PQL	mg/Kg	J (all detects)
	BORON	J	8.07	11.0	PQL	mg/Kg	
	CADMIUM	J	0.214	1.10	PQL	mg/Kg	
	TIN	J	2.77	11.0	PQL	mg/Kg	
SL-508-SA5D-SB-19.0-20.0	ARSENIC	J	4.22	4.31	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.722	1.08	PQL	mg/Kg	
	BORON	J	8.19	10.8	PQL	mg/Kg	
	CADMIUM	J	0.302	1.08	PQL	mg/Kg	
	TIN	J	2.73	10.8	PQL	mg/Kg	
SL-508-SA5D-SB-23.0-24.0	ARSENIC	J	3.45	4.21	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.574	1.05	PQL	mg/Kg	
	BORON	J	6.19	10.5	PQL	mg/Kg	
	CADMIUM	J	0.272	1.05	PQL	mg/Kg	
	TIN	J	2.47	10.5	PQL	mg/Kg	
	Zirconium	J	3.76	5.27	PQL	mg/Kg	
SL-508-SA5D-SB-4.0-5.0	ARSENIC	J	3.46	4.49	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.957	1.12	PQL	mg/Kg	
	CADMIUM	J	0.395	1.12	PQL	mg/Kg	
	TIN	J	2.69	11.2	PQL	mg/Kg	
SL-508-SA5D-SB-9.0-10.0	ARSENIC	J	4.26	4.46	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.843	1.12	PQL	mg/Kg	
	BORON	J	10.7	11.2	PQL	mg/Kg	
	CADMIUM	J	0.510	1.12	PQL	mg/Kg	
	TIN	J	2.60	11.2	PQL	mg/Kg	

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

Reporting Limit Outliers

Lab Reporting Batch ID: PH122 **Laboratory: LL**

EDD Filename: PrepPH122_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-608-SA5D-SB-0.0-0.5	ARSENIC	J	3.44	4.21	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	1.01	1.05	PQL	mg/Kg	
	CADMIUM	J	0.450	1.05	PQL	mg/Kg	
	MOLYBDENUM	J	0.184	2.10	PQL	mg/Kg	
	TIN	J	2.61	10.5	PQL	mg/Kg	
SL-608-SA5D-SB-4.0-5.0	ARSENIC	J	4.10	4.34	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.938	1.09	PQL	mg/Kg	
	CADMIUM	J	0.466	1.09	PQL	mg/Kg	
	TIN	J	2.75	10.9	PQL	mg/Kg	

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-502-SA5D-SB-0.0-0.5	SILVER	J	0.0591	0.202	PQL	mg/Kg	J (all detects)
SL-502-SA5D-SB-6.5-7.5	SELENIUM	J	0.188	0.437	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0566	0.219	PQL	mg/Kg	
SL-507-SA5D-SB-0.0-0.5	SELENIUM	J	0.260	0.411	PQL	mg/Kg	J (all detects)
	SILVER	J	0.110	0.205	PQL	mg/Kg	
SL-507-SA5D-SB-4.0-5.0	SELENIUM	J	0.127	0.442	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0418	0.221	PQL	mg/Kg	
SL-508-SA5D-SB-0.0-0.5	SELENIUM	J	0.314	0.413	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0578	0.206	PQL	mg/Kg	
SL-508-SA5D-SB-14.0-15.0	SILVER	J	0.0300	0.219	PQL	mg/Kg	J (all detects)
SL-508-SA5D-SB-19.0-20.0	SILVER	J	0.0399	0.216	PQL	mg/Kg	J (all detects)
SL-508-SA5D-SB-23.0-24.0	SILVER	J	0.0406	0.211	PQL	mg/Kg	J (all detects)
SL-508-SA5D-SB-4.0-5.0	SELENIUM	J	0.189	0.449	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0664	0.224	PQL	mg/Kg	
SL-508-SA5D-SB-9.0-10.0	SILVER	J	0.0426	0.223	PQL	mg/Kg	J (all detects)
SL-608-SA5D-SB-0.0-0.5	SELENIUM	J	0.240	0.421	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0572	0.210	PQL	mg/Kg	
SL-608-SA5D-SB-4.0-5.0	SELENIUM	J	0.148	0.434	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0465	0.217	PQL	mg/Kg	

Method: 7471B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-507-SA5D-SB-10.5-11.5	MERCURY	J	0.0127	0.0174	PQL	mg/Kg	J (all detects)
SL-507-SA5D-SB-4.0-5.0	MERCURY	J	0.0160	0.0184	PQL	mg/Kg	J (all detects)
SL-508-SA5D-SB-14.0-15.0	MERCURY	J	0.0133	0.0186	PQL	mg/Kg	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH122 **Laboratory: LL**

EDD Filename: PrepPH122_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 7471B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-508-SA5D-SB-19.0-20.0	MERCURY	J	0.0119	0.0184	PQL	mg/Kg	J (all detects)
SL-508-SA5D-SB-23.0-24.0	MERCURY	J	0.0111	0.0169	PQL	mg/Kg	J (all detects)
SL-508-SA5D-SB-4.0-5.0	MERCURY	J	0.0148	0.0179	PQL	mg/Kg	J (all detects)
SL-508-SA5D-SB-9.0-10.0	MERCURY	J	0.0125	0.0178	PQL	mg/Kg	J (all detects)
SL-608-SA5D-SB-0.0-0.5	MERCURY	J	0.0102	0.0165	PQL	mg/Kg	J (all detects)
SL-608-SA5D-SB-4.0-5.0	MERCURY	J	0.0123	0.0184	PQL	mg/Kg	J (all detects)

Method: 8015M

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-502-SA5D-SB-0.0-0.5	EFH (C15-C20)	J	48	100	PQL	mg/Kg	J (all detects)

Method: 8082A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-502-SA5D-SB-0.0-0.5	AROCLOR 1254	J	7.4	18	PQL	ug/Kg	J (all detects)
SL-507-SA5D-SB-0.0-0.5	AROCLOR 1254	J	10	18	PQL	ug/Kg	J (all detects)
	AROCLOR 1260	J	7.2	18	PQL	ug/Kg	
	Aroclor 5460	J	13	35	PQL	ug/Kg	
SL-508-SA5D-SB-19.0-20.0	AROCLOR 1254	J	8.9	19	PQL	ug/Kg	J (all detects)
SL-508-SA5D-SB-23.0-24.0	AROCLOR 1254	J	7.8	18	PQL	ug/Kg	J (all detects)

Method: 8270D SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-502-SA5D-SB-0.0-0.5	BENZO(E)PYRENE	J	46	180	PQL	ug/Kg	J (all detects)
SL-502-SA5D-SB-6.5-7.5	BENZO(B)FLUORANTHENE	J	8.8	19	PQL	ug/Kg	J (all detects)
	BENZO(G,H,I)PERYLENE	J	9.0	19	PQL	ug/Kg	
	CHRYSENE	J	12	19	PQL	ug/Kg	
SL-507-SA5D-SB-0.0-0.5	BIS(2-ETHYLHEXYL)PHTHALATE	J	68	190	PQL	ug/Kg	J (all detects)
SL-508-SA5D-SB-0.0-0.5	2-METHYLNAPHTHALENE	J	0.81	1.8	PQL	ug/Kg	J (all detects)
	BENZO(B)FLUORANTHENE	J	1.3	1.8	PQL	ug/Kg	
	FLUORANTHENE	J	1.7	1.8	PQL	ug/Kg	
	NAPHTHALENE	J	1.3	1.8	PQL	ug/Kg	
	PHENANTHRENE	J	1.2	1.8	PQL	ug/Kg	
	PYRENE	J	1.1	1.8	PQL	ug/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH122 **Laboratory: LL**

EDD Filename: PrepPH122_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: **8270D SIM**

Matrix: **SO**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
SL-508-SA5D-SB-14.0-15.0	ANTHRACENE	J	0.81	1.9	PQL	ug/Kg	J (all detects)
	BENZO(E)PYRENE	J	6.9	19	PQL	ug/Kg	

LDC #: 30842E4 **VALIDATION COMPLETENESS WORKSHEET** Date: 12/4/13
SDG #: PH120 2 ADR Page: 1 of 1
Laboratory: Eurofins Lancaster Laboratories Reviewer: 02
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: 10/3/13
II.	ICP/MS Tune	—	
III.	Calibration	—	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	—	
VI.	Matrix Spike Analysis	N	CS
VII.	Duplicate Sample Analysis	N	CS
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= FB041613 (PH1052) EB= EB1-100213 (PH120)

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-502-SA5D-SB-0.0-0.5	11	SL-507-SA5D-SB-10.5-11.5	21		31	
2	SL-502-SA5D-SB-6.5-7.5	12	SL-608-SA5D-SB-0.0-0.5	22		32	
3	SL-508-SA5D-SB-0.0-0.5	13	SL-608-SA5D-SB-4.0-5.0	23		33	
4	SL-508-SA5D-SB-4.0-5.0	14		24		34	
5	SL-508-SA5D-SB-9.0-10.0	15		25		35	
6	SL-508-SA5D-SB-14.0-15.0	16		26		36	
7	SL-508-SA5D-SB-19.0-20.0	17		27		37	
8	SL-508-SA5D-SB-23.0-24.0	18		28		38	
9	SL-507-SA5D-SB-0.0-0.5	19		29		39	
10	SL-507-SA5D-SB-4.0-5.0	20		30		40	

Notes:

LDC #: 30842E4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
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-041613 (SDG: PH032)	Action Limit	1	3	9	12								
Mo	0.0132	6.60	4.5	0.21	0.35	0.18								
Sn	0.0029	1.45												

Sampling date: 10/2/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All

Analyte	Blank ID	Sample Identification										
	EB1-100213 (SDG: PH120)	Action Limit	3	9	12							
Ba	0.00058	0.29										
B	0.0098	4.9										
Ca	0.0427	21.35										
Cu	0.0028	1.4										
Mo	0.0086	4.3	See FB	See FB	See FB							

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 5D

SDG: PH123

Prepared for

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Denver, CO 80202

Prepared by

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2701 Loker Ave West, Suite 220
Carlsbad, California 92010

December 23, 2013

INTRODUCTION

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

The analyses were performed by the following methods:

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

Wet Chemistry:
Fluoride by EPA Method 300.0

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, 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 ICB/CCBs, 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 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.

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 fluoride. The associated sample results were qualified as detected estimated (J). 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.

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 PH123	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 volatile contaminants were found in the trip blank.

One equipment blank (from SDG PH124) was collected and analyzed for SVOCs, pesticides, PCBs, metals, herbicides, TPH as gasoline, TPH as extractables, dioxins and fluoride. The equipment blank had detections for SVOCs, metals and dioxins. The associated sample results were not detected or were significantly greater than the concentrations found in the equipment blanks, therefore no data were qualified.

One field blank (from SDG PH032) was collected and analyzed for SVOCs, pesticides, PCBs, metals, herbicides, TPH as gasoline, TPH as extractables, dioxins and fluoride. The field blank had detections for SVOCs, metals and dioxins. The associated sample results were qualified as non-detected (U) due to field blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the field blank were not qualified. The field blank outlier reports are presented in Enclosure I.

XV. Overall Assessment of Data

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

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
07-Oct-2013	TB-100713	7228020	TB	5030B	8015M	III
07-Oct-2013	SL-575-SA5D-SB-0.0-0.5	7228023	N	3546	8270D SIM	III
07-Oct-2013	SL-575-SA5D-SB-0.0-0.5	7228023	N	3550B	8151A	III
07-Oct-2013	SL-575-SA5D-SB-3.0-4.0	7228024	N	3546	8270D SIM	III
07-Oct-2013	SL-575-SA5D-SB-3.0-4.0	7228024	N	3550B	8151A	III
07-Oct-2013	SL-567-SA5D-SB-0.0-0.5	7228021	N	3050B	6010C	III
07-Oct-2013	SL-567-SA5D-SB-0.0-0.5	7228021	N	3050B	6020A	III
07-Oct-2013	SL-567-SA5D-SB-0.0-0.5	7228021	N	3546	8015M	III
07-Oct-2013	SL-567-SA5D-SB-0.0-0.5	7228021	N	3546	8081B	III
07-Oct-2013	SL-567-SA5D-SB-0.0-0.5	7228021	N	3546	8082A	III
07-Oct-2013	SL-567-SA5D-SB-0.0-0.5	7228021	N	3546	8270D SIM	III
07-Oct-2013	SL-567-SA5D-SB-0.0-0.5	7228021	N	3550B	8151A	III
07-Oct-2013	SL-567-SA5D-SB-0.0-0.5	7228021	N	METHOD	1613B	III
07-Oct-2013	SL-567-SA5D-SB-0.0-0.5	7228021	N	METHOD	7471B	III
07-Oct-2013	SL-567-SA5D-SB-3.5-4.5	7228022	N	3050B	6010C	III
07-Oct-2013	SL-567-SA5D-SB-3.5-4.5	7228022	N	3050B	6020A	III
07-Oct-2013	SL-567-SA5D-SB-3.5-4.5	7228022	N	3546	8015M	III
07-Oct-2013	SL-567-SA5D-SB-3.5-4.5	7228022	N	3546	8081B	III
07-Oct-2013	SL-567-SA5D-SB-3.5-4.5	7228022	N	3546	8082A	III
07-Oct-2013	SL-567-SA5D-SB-3.5-4.5	7228022	N	3546	8270D SIM	III
07-Oct-2013	SL-567-SA5D-SB-3.5-4.5	7228022	N	3550B	8151A	III
07-Oct-2013	SL-567-SA5D-SB-3.5-4.5	7228022	N	5035A	8015M	III
07-Oct-2013	SL-567-SA5D-SB-3.5-4.5	7228022	N	METHOD	7471B	III
07-Oct-2013	SL-567-SA5D-SB-3.5-4.5MSD	P228022M260559	MSD	3546	8270D SIM	III
07-Oct-2013	SL-567-SA5D-SB-3.5-4.5MS	P228022R260527	MS	3546	8270D SIM	III
07-Oct-2013	SL-593-SA5D-SB-0.0-0.5	7228025	N	METHOD	300.0	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
07-Oct-2013	SL-593-SA5D-SB-0.0-0.5DUP	P228025D272355A	DUP	METHOD	300.0	III
07-Oct-2013	SL-593-SA5D-SB-0.0-0.5MS	P228025R270011A	MS	METHOD	300.0	III
07-Oct-2013	SL-593-SA5D-SB-3.5-4.5	7228026	N	METHOD	300.0	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: PH123 **Laboratory: LL**

EDD Filename: PrepPH123_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: GENCHEM

Method: 300.0 **Matrix: SO**

Sample ID: SL-593-SA5D-SB-0.0-0.5 **Collected: 10/7/2013 12:40:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORIDE	0.74		0.41	MDL	0.51	PQL	mg/Kg	J	Q

Sample ID: SL-593-SA5D-SB-3.5-4.5 **Collected: 10/7/2013 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
FLUORIDE	3.4		0.43	MDL	0.54	PQL	mg/Kg	J	Q

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-567-SA5D-SB-0.0-0.5 **Collected: 10/7/2013 9:50:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	3.70	J	0.723	MDL	4.13	PQL	mg/Kg	J	Z
BERYLLIUM	0.665	J	0.0692	MDL	1.03	PQL	mg/Kg	J	Z
CADMIUM	0.701	J	0.0785	MDL	1.03	PQL	mg/Kg	J	Z
MOLYBDENUM	0.600	J	0.176	MDL	2.07	PQL	mg/Kg	U	F
TIN	2.34	J	0.227	MDL	10.3	PQL	mg/Kg	U	B

Sample ID: SL-567-SA5D-SB-3.5-4.5 **Collected: 10/7/2013 10:20:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	0.682	J	0.0712	MDL	1.06	PQL	mg/Kg	J	Z
CADMIUM	0.507	J	0.0807	MDL	1.06	PQL	mg/Kg	J	Z
TIN	2.39	J	0.234	MDL	10.6	PQL	mg/Kg	U	B

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-567-SA5D-SB-0.0-0.5 **Collected: 10/7/2013 9:50:00** **Analysis Type: REA2** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.401	J	0.103	MDL	0.413	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: PH123 **Laboratory: LL**

EDD Filename: PrepPH123_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-567-SA5D-SB-0.0-0.5 **Collected: 10/7/2013 9:50:00** **Analysis Type: RES** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0788	J	0.0269	MDL	0.207	PQL	mg/Kg	J	Z

Sample ID: SL-567-SA5D-SB-3.5-4.5 **Collected: 10/7/2013 10:20:00** **Analysis Type: RES** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0421	J	0.0276	MDL	0.212	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-567-SA5D-SB-0.0-0.5 **Collected: 10/7/2013 9:50:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDF	1.15	JB	0.0717	MDL	5.07	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.118	J	0.0910	MDL	5.07	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.151	JQ	0.0966	MDL	5.07	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.126	JQ	0.0998	MDL	5.07	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.248	J	0.0968	MDL	5.07	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.275	JBQ	0.0919	MDL	5.07	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0938	JQ	0.0908	MDL	5.07	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.357	J	0.102	MDL	5.07	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.260	JQ	0.154	MDL	5.07	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	1.54	JB	0.126	MDL	5.07	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.262	J	0.0937	MDL	5.07	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.237	JQ	0.117	MDL	5.07	PQL	ng/Kg	J	Z
OCDF	2.28	JB	0.104	MDL	10.1	PQL	ng/Kg	J	Z

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: SL-567-SA5D-SB-0.0-0.5 **Collected: 10/7/2013 9:50:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C15-C20)	2.9	J	2.1	MDL	5.2	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: PH123 **Laboratory: LL**

EDD Filename: PrepPH123_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 8081B **Matrix: SO**

Sample ID: **SL-567-SA5D-SB-0.0-0.5** *Collected:* **10/7/2013 9:50:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDE	0.86	J	0.34	MDL	1.8	PQL	ug/Kg	J	Z
4,4'-DDT	1.1	J	0.36	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: **SL-567-SA5D-SB-3.5-4.5** *Collected:* **10/7/2013 10:20:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDE	0.83	J	0.35	MDL	1.8	PQL	ug/Kg	J	Z

Method Category: SVOA

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

Sample ID: **SL-567-SA5D-SB-3.5-4.5** *Collected:* **10/7/2013 10:20:00** *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	0.88	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z
Butylbenzylphthalate	9.6	J	6.5	MDL	20	PQL	ug/Kg	J	Z
CHRYSENE	1.0	J	0.36	MDL	1.8	PQL	ug/Kg	J	Z
NAPHTHALENE	1.0	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: **SL-575-SA5D-SB-0.0-0.5** *Collected:* **10/7/2013 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
2-METHYLNAPHTHALENE	0.81	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(B)FLUORANTHENE	1.0	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
CHRYSENE	1.4	J	0.34	MDL	1.7	PQL	ug/Kg	J	Z
DIBENZO(A,H)ANTHRACENE	1.0	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
FLUORANTHENE	0.90	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
NAPHTHALENE	1.1	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
PHENANTHRENE	0.71	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
PYRENE	0.71	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: **SL-575-SA5D-SB-3.0-4.0** *Collected:* **10/7/2013 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
CHRYSENE	0.49	J	0.35	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: PH123 **Laboratory: LL**

EDD Filename: PrepPH123_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Reason Code Legend

Reason Code	*Description*
B	Method Blank Contamination
F	Field Blank Contamination
Q	Matrix Spike Lower Rejection
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

PH123

Method Blank Outlier Report

Lab Reporting Batch ID: PH123 **Laboratory: LL**

EDD Filename: PrepPH123_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2830B371446	10/14/2013 2:46:00 PM	1,2,3,4,6,7,8-HPCDD 1,2,3,4,6,7,8-HPCDF 1,2,3,6,7,8-HXCDF 1,2,3,7,8-PECDF OCDD OCDF	0.0753 ng/Kg 0.0423 ng/Kg 0.0948 ng/Kg 0.0800 ng/Kg 0.215 ng/Kg 0.137 ng/Kg	SL-567-SA5D-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-567-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.275 ng/Kg	0.275U ng/Kg

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P28137AB221240	10/14/2013 12:40:00 PM	ALUMINUM CALCIUM IRON MAGNESIUM TIN ZINC	9.86 mg/Kg 12.9 mg/Kg 3.84 mg/Kg 2.49 mg/Kg 1.41 mg/Kg 0.656 mg/Kg	SL-567-SA5D-SB-0.0-0.5 SL-567-SA5D-SB-3.5-4.5

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-567-SA5D-SB-0.0-0.5(RES)	TIN	2.34 mg/Kg	2.34U mg/Kg
SL-567-SA5D-SB-3.5-4.5(RES)	TIN	2.39 mg/Kg	2.39U mg/Kg

Field Blank Outlier Report

Lab Reporting Batch ID: PH123 **Laboratory: LL**

EDD Filename: PrepPH123_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

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

Field Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
FB-041613(REA2/TOT)	4/16/2013 3:15:00 PM	MOLYBDENUM TIN	0.0132 mg/L 0.0029 mg/L	SL-567-SA5D-SB-0.0-0.5 SL-567-SA5D-SB-3.5-4.5 SL-575-SA5D-SB-0.0-0.5 SL-575-SA5D-SB-3.0-4.0 SL-593-SA5D-SB-0.0-0.5 SL-593-SA5D-SB-3.5-4.5

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-567-SA5D-SB-0.0-0.5(RES)	MOLYBDENUM	0.600 mg/Kg	0.600U mg/Kg

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH123 **Laboratory: LL**

EDD Filename: PrepPH123_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: **300.0**
Matrix: **SO**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
SL-593-SA5D-SB-0.0-0.5MS (SL-593-SA5D-SB-0.0-0.5 SL-593-SA5D-SB-3.5-4.5)	FLUORIDE	14	-	80.00-120.00	-	FLUORIDE	J (all detects) R (all non-detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH123

Laboratory: LL

EDD Filename: PrepPH123_v1

eQAPP Name: CDM_SSFL_131101_Lan

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-567-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDF	JB	1.15	5.07	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	J	0.118	5.07	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.151	5.07	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JQ	0.126	5.07	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	J	0.248	5.07	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.275	5.07	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JQ	0.0938	5.07	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	J	0.357	5.07	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.260	5.07	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	1.54	5.07	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	J	0.262	5.07	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.237	5.07	PQL	ng/Kg	
	OCDF	JB	2.28	10.1	PQL	ng/Kg	

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-567-SA5D-SB-0.0-0.5	ARSENIC	J	3.70	4.13	PQL	mg/Kg	
	BERYLLIUM	J	0.665	1.03	PQL	mg/Kg	
	CADMIUM	J	0.701	1.03	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.600	2.07	PQL	mg/Kg	
	TIN	J	2.34	10.3	PQL	mg/Kg	
SL-567-SA5D-SB-3.5-4.5	BERYLLIUM	J	0.682	1.06	PQL	mg/Kg	
	CADMIUM	J	0.507	1.06	PQL	mg/Kg	J (all detects)
	TIN	J	2.39	10.6	PQL	mg/Kg	

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-567-SA5D-SB-0.0-0.5	SELENIUM	J	0.401	0.413	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0788	0.207	PQL	mg/Kg	
SL-567-SA5D-SB-3.5-4.5	SILVER	J	0.0421	0.212	PQL	mg/Kg	J (all detects)

Method: 8015M

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-567-SA5D-SB-0.0-0.5	EFH (C15-C20)	J	2.9	5.2	PQL	mg/Kg	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH123 **Laboratory: LL**

EDD Filename: PrepPH123_v1 **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 8081B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-567-SA5D-SB-0.0-0.5	4,4'-DDE	J	0.86	1.8	PQL	ug/Kg	J (all detects)
	4,4'-DDT	J	1.1	1.8	PQL	ug/Kg	
SL-567-SA5D-SB-3.5-4.5	4,4'-DDE	J	0.83	1.8	PQL	ug/Kg	J (all detects)

Method: 8270D SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-567-SA5D-SB-3.5-4.5	BENZO(B)FLUORANTHENE	J	0.88	1.8	PQL	ug/Kg	J (all detects)
	Butylbenzylphthalate	J	9.6	20	PQL	ug/Kg	
	CHRYSENE	J	1.0	1.8	PQL	ug/Kg	
	NAPHTHALENE	J	1.0	1.8	PQL	ug/Kg	
SL-575-SA5D-SB-0.0-0.5	2-METHYLNAPHTHALENE	J	0.81	1.7	PQL	ug/Kg	J (all detects)
	BENZO(B)FLUORANTHENE	J	1.0	1.7	PQL	ug/Kg	
	CHRYSENE	J	1.4	1.7	PQL	ug/Kg	
	DIBENZO(A,H)ANTHRACENE	J	1.0	1.7	PQL	ug/Kg	
	FLUORANTHENE	J	0.90	1.7	PQL	ug/Kg	
	NAPHTHALENE	J	1.1	1.7	PQL	ug/Kg	
	PHENANTHRENE	J	0.71	1.7	PQL	ug/Kg	
	PYRENE	J	0.71	1.7	PQL	ug/Kg	
SL-575-SA5D-SB-3.0-4.0	CHRYSENE	J	0.49	1.7	PQL	ug/Kg	J (all detects)

LDC #: 30842F4
SDG #: PH123
Laboratory: Eurofins Lancaster Laboratories

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 12/4/13
Page: 1 of 1
Reviewer: CA
2nd Reviewer: LW

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: 10/7/13
II.	ICP/MS Tune	-	
III.	Calibration	-	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	-	
VI.	Matrix Spike Analysis	N	CS
VII.	Duplicate Sample Analysis	N	CS
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= FB-04163 (PH032) EB= EB-100813 (PH124)

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-567-SA5D-SB-0.0-0.5	11		21		31	
2	SL-567-SA5D-SB-3.5-4.5	12		22		32	
3	~~SL-575-SA5D-SB-0.0-0.5~~	13		23		33	
4	~~SL-575-SA5D-SB-3.0-4.0~~	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 #: 30842F4

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-041613 (SDG: PH032)	Action Limit	1											
Mo	0.0132	6.60	0.60											
Sn	0.0029	1.45												

Sampling date: 10/8/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All

Analyte	Blank ID	Sample Identification												
	EB-100813 (SDG: PH124)	Action Limit	No Qualifiers											
B	0.0085	4.25												
Ca	0.0487	24.35												

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".

SAMPLE DELIVERY GROUP

PH124

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

December 18, 2013

SUBJECT: Santa Susana Field Laboratory, Subarea 5D Data Validation

Dear Mrs. Zakowski,

Enclosed is the final validation report for the fractions listed below. This SDG was received on November 19, 2013. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 30854:

SDG #	Fraction
PH124	Semivolatiles, Chlorinated Pesticides, Polychlorinated Biphenyls, Metals, Herbicides, Wet Chemistry, Total Petroleum Hydrocarbons as Gasoline, Total Petroleum Hydrocarbons as Extractables, Dioxins/Dibenzofurans

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

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

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

Sincerely,

Shauna McKellar
Project Manager/Chemist

54 pages-CD

Attachment 1

90/10 ADR/IV

LDC #30854 (CDM Federal Programs-Chantilly VA / Santa Susana Field Laboratory, Subarea 5D)

LDC	SDG#	DATE REC'D	(4) DATE DUE	SVOA (8270D -SIM)		Pest. (8081B)		PCBs (8082A)		Metals & Hg (SW846)		Herbs. (8151A)		TPH-G (8015M)		TPH-E (8015M)		Dioxins (1613B)		Cr(VI) (7199)		F (300.0)															
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	PH124	11/19/13	12/19/13	1	3	1	0	1	3	1	3	1	0	2	2	1	3	1	1	1	0	1	6														
Total	T/SM			1	3	1	0	1	3	1	3	1	0	2	2	1	3	1	1	1	0	1	6	0	0	0	0	0	0	0	0	0	0	0	0	0	32

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 5D

SDG: PH124

Prepared for

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

Prepared by

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

December 18, 2013

INTRODUCTION

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

The analyses were performed by the following methods:

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

Wet Chemistry:
Hexavalent Chromium by EPA Method 7199
Fluoride by EPA Method 300.0

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 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 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 several blanks for SVOCs, 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
PH124/ 6010C	ICB/CCB	Molybdenum	2.3 ug/L	SL-561-SA5D-SB-0.0-0.5 SL-561-SA5D-SB-4.0-5.0 SL-561-SA5D-SB-9.0-10.0

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

SDG/Method	Sample	Compound	Reported Concentration	Modified Final Concentration
PH124/ 6010C	SL-561-SA5D-SB-0.0-0.5	Molybdenum	1.2 mg/Kg	1.2U mg/Kg
PH124/ 6010C	SL-561-SA5D-SB-4.0-5.0	Molybdenum	0.27 mg/Kg	0.27U mg/Kg
PH124/ 6010C	SL-561-SA5D-SB-9.0-10.0	Molybdenum	0.35 mg/Kg	0.35U mg/Kg

V. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the exception of one sample for PCBs. No data were qualified due to high %Rs since the associated results were non-detected.

VI. ICP Interference Check Sample (ICS) Analysis

ICP interference check data were not reviewed for level III.

VII. Matrix Spike/Matrix Spike Duplicates

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

VIII. Laboratory Duplicates Sample

Laboratory duplicates (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

IX. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of two LCS/LCSD pairs for herbicides and TPH as extractables. The associated sample results were qualified as 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-561-SA5D-SB-0.0-0.5	Strontium	16 (≤10)	All soil samples in SDG PH124	J (all detects) UJ (all non-detects)	A

The associated sample results were qualified as detected estimated (J).

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 PH124	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 volatile contaminants were found in the trip blank.

One equipment blank was collected and analyzed for SVOCs, pesticides, PCBs, metals, herbicides, TPH as gasoline, TPH as extractables, dioxins, hexavalent chromium and fluoride. The equipment blank had 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 PH032) was collected and analyzed for SVOCs, pesticides, PCBs, metals, herbicides, TPH as gasoline, TPH as extractables, dioxins, hexavalent chromium and fluoride. The field blank had detections for SVOCs, metals and dioxins. The associated sample results were qualified as non-detected (U) due to field blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the field blank were not qualified. The field blank outlier reports are presented in Enclosure I.

XV. Overall Assessment of Data

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

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
08-Oct-2013	TB-100813	7229586	TB	5030B	8015M	III
08-Oct-2013	SL-561-SA5D-SB-0.0-0.5	7229587	N	3050B	6010C	III
08-Oct-2013	SL-561-SA5D-SB-0.0-0.5	7229587	N	3050B	6020A	III
08-Oct-2013	SL-561-SA5D-SB-0.0-0.5	7229587	N	3546	8015M	III
08-Oct-2013	SL-561-SA5D-SB-0.0-0.5	7229587	N	3546	8082A	III
08-Oct-2013	SL-561-SA5D-SB-0.0-0.5	7229587	N	3546	8270D SIM	III
08-Oct-2013	SL-561-SA5D-SB-0.0-0.5	7229587	N	METHOD	1613B	III
08-Oct-2013	SL-561-SA5D-SB-0.0-0.5	7229587	N	METHOD	300.0	III
08-Oct-2013	SL-561-SA5D-SB-0.0-0.5	7229587	N	METHOD	7471B	III
08-Oct-2013	SL-561-SA5D-SB-0.0-0.5DUP	P229587D220920	DUP	METHOD	7471B	III
08-Oct-2013	SL-561-SA5D-SB-0.0-0.5DUP	P229587D221415A	DUP	3050B	6020A	III
08-Oct-2013	SL-561-SA5D-SB-0.0-0.5DUP	P229587D221415B	DUP	3050B	6020A	III
08-Oct-2013	SL-561-SA5D-SB-0.0-0.5DUP	P229587D221942	DUP	3050B	6010C	III
08-Oct-2013	SL-561-SA5D-SB-0.0-0.5MSD	P229587M220507	MSD	3050B	6010C	III
08-Oct-2013	SL-561-SA5D-SB-0.0-0.5MSD	P229587M220924	MSD	METHOD	7471B	III
08-Oct-2013	SL-561-SA5D-SB-0.0-0.5MSD	P229587M221420A	MSD	3050B	6020A	III
08-Oct-2013	SL-561-SA5D-SB-0.0-0.5MSD	P229587M221420B	MSD	3050B	6020A	III
08-Oct-2013	SL-561-SA5D-SB-0.0-0.5MSD	P229587M240822A	MSD	3546	8082A	III
08-Oct-2013	SL-561-SA5D-SB-0.0-0.5MS	P229587R220922	MS	METHOD	7471B	III
08-Oct-2013	SL-561-SA5D-SB-0.0-0.5MS	P229587R221417A	MS	3050B	6020A	III
08-Oct-2013	SL-561-SA5D-SB-0.0-0.5MS	P229587R221417B	MS	3050B	6020A	III
08-Oct-2013	SL-561-SA5D-SB-0.0-0.5MS	P229587R221946	MS	3050B	6010C	III
08-Oct-2013	SL-561-SA5D-SB-0.0-0.5MS	P229587R240804A	MS	3546	8082A	III
08-Oct-2013	SL-561-SA5D-SB-4.0-5.0	7229588	N	3050B	6010C	III
08-Oct-2013	SL-561-SA5D-SB-4.0-5.0	7229588	N	3050B	6020A	III
08-Oct-2013	SL-561-SA5D-SB-4.0-5.0	7229588	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
08-Oct-2013	SL-561-SA5D-SB-4.0-5.0	7229588	N	3546	8082A	III
08-Oct-2013	SL-561-SA5D-SB-4.0-5.0	7229588	N	3546	8270D SIM	III
08-Oct-2013	SL-561-SA5D-SB-4.0-5.0	7229588	N	5035A	8015M	III
08-Oct-2013	SL-561-SA5D-SB-4.0-5.0	7229588	N	METHOD	300.0	III
08-Oct-2013	SL-561-SA5D-SB-4.0-5.0	7229588	N	METHOD	7471B	III
08-Oct-2013	SL-561-SA5D-SB-9.0-10.0	7229589	N	3050B	6010C	III
08-Oct-2013	SL-561-SA5D-SB-9.0-10.0	7229589	N	3050B	6020A	III
08-Oct-2013	SL-561-SA5D-SB-9.0-10.0	7229589	N	3546	8015M	III
08-Oct-2013	SL-561-SA5D-SB-9.0-10.0	7229589	N	3546	8082A	III
08-Oct-2013	SL-561-SA5D-SB-9.0-10.0	7229589	N	3546	8270D SIM	III
08-Oct-2013	SL-561-SA5D-SB-9.0-10.0	7229589	N	5035A	8015M	III
08-Oct-2013	SL-561-SA5D-SB-9.0-10.0	7229589	N	METHOD	300.0	III
08-Oct-2013	SL-561-SA5D-SB-9.0-10.0	7229589	N	METHOD	7471B	III
08-Oct-2013	SL-602-SA5D-SB-0.0-0.5	7229590	N	METHOD	300.0	III
08-Oct-2013	SL-602-SA5D-SB-4.0-5.0	7229591	N	METHOD	300.0	III
08-Oct-2013	SL-602-SA5D-SB-9.0-10.0	7229592	N	METHOD	300.0	III
08-Oct-2013	EB-100813	7229585	EB	3005A	6010C	III
08-Oct-2013	EB-100813	7229585	EB	3510C	8015M	III
08-Oct-2013	EB-100813	7229585	EB	3510C	8081B	III
08-Oct-2013	EB-100813	7229585	EB	3510C	8082A	III
08-Oct-2013	EB-100813	7229585	EB	3510C	8270D SIM	III
08-Oct-2013	EB-100813	7229585	EB	5030B	8015M	III
08-Oct-2013	EB-100813	7229585	EB	Gen Prep	300.0	III
08-Oct-2013	EB-100813	7229585	EB	Gen Prep	7199	III
08-Oct-2013	EB-100813	7229585	EB	M3010A	6020A	III
08-Oct-2013	EB-100813	7229585	EB	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
08-Oct-2013	EB-100813	7229585	EB	METHOD	7470A	III
08-Oct-2013	EB-100813	7229585	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: PH124 **Laboratory: LL**

EDD Filename: PH124_v1. **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: AQ**

Sample ID: **EB-100813** *Collected:* **10/8/2013 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
CALCIUM	0.0487	J	0.0334	MDL	0.400	PQL	mg/L	U	B
BORON	0.0085	J	0.0084	MDL	0.100	PQL	mg/L	U	B

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-561-SA5D-SB-0.0-0.5** *Collected:* **10/8/2013 8:40:00** *Analysis Type:* **REA** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.12	U	0.763	MDL	4.12	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.993	J	0.0691	MDL	1.03	PQL	mg/Kg	J	Z
BORON	5.60	J	0.866	MDL	10.3	PQL	mg/Kg	J	Z
CHROMIUM	39.0		0.165	MDL	3.09	PQL	mg/Kg	J	Q, E
MOLYBDENUM	1.21	J	0.175	MDL	2.06	PQL	mg/Kg	U	B, F
NICKEL	21.4		0.134	MDL	2.06	PQL	mg/Kg	J	E, Q
SODIUM	83.7	J	17.2	MDL	103	PQL	mg/Kg	J	Z
TIN	3.12	J	0.227	MDL	10.3	PQL	mg/Kg	U	B
Zirconium	3.09	J	0.866	MDL	5.15	PQL	mg/Kg	J	Z

Sample ID: **SL-561-SA5D-SB-0.0-0.5** *Collected:* **10/8/2013 8:40:00** *Analysis Type:* **REA3** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
VANADIUM	69.3		0.134	MDL	1.03	PQL	mg/Kg	J	Q

Sample ID: **SL-561-SA5D-SB-4.0-5.0** *Collected:* **10/8/2013 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
ANTIMONY	4.30	U	0.795	MDL	4.30	PQL	mg/Kg	UJ	Q
BERYLLIUM	1.02	J	0.0720	MDL	1.07	PQL	mg/Kg	J	Z
BORON	2.19	J	0.903	MDL	10.7	PQL	mg/Kg	U	F
CHROMIUM	38.1		0.172	MDL	3.22	PQL	mg/Kg	J	Q, E
MOLYBDENUM	0.270	J	0.183	MDL	2.15	PQL	mg/Kg	U	B, F
NICKEL	22.1		0.140	MDL	2.15	PQL	mg/Kg	J	E, Q
SODIUM	86.2	J	18.0	MDL	107	PQL	mg/Kg	J	Z
TIN	3.09	J	0.236	MDL	10.7	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: PH124 **Laboratory: LL**

EDD Filename: PH124_v1. **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-561-SA5D-SB-4.0-5.0 *Collected:* 10/8/2013 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
Zirconium	2.58	J	0.903	MDL	5.37	PQL	mg/Kg	J	Z

Sample ID: SL-561-SA5D-SB-4.0-5.0 *Collected:* 10/8/2013 9:00:00 *Analysis Type:* REA3 *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
VANADIUM	70.7		0.140	MDL	1.07	PQL	mg/Kg	J	Q

Sample ID: SL-561-SA5D-SB-9.0-10.0 *Collected:* 10/8/2013 10:10:00 *Analysis Type:* REA *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.26	U	0.788	MDL	4.26	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.910	J	0.0713	MDL	1.06	PQL	mg/Kg	J	Z
BORON	3.77	J	0.894	MDL	10.6	PQL	mg/Kg	U	F
CADMIUM	0.0979	J	0.0809	MDL	1.06	PQL	mg/Kg	J	Z
CHROMIUM	38.9		0.170	MDL	3.19	PQL	mg/Kg	J	Q, E
MOLYBDENUM	0.353	J	0.181	MDL	2.13	PQL	mg/Kg	U	B, F
NICKEL	22.2		0.138	MDL	2.13	PQL	mg/Kg	J	E, Q
TIN	2.94	J	0.234	MDL	10.6	PQL	mg/Kg	U	B
Zirconium	3.30	J	0.894	MDL	5.32	PQL	mg/Kg	J	Z

Sample ID: SL-561-SA5D-SB-9.0-10.0 *Collected:* 10/8/2013 10:10:00 *Analysis Type:* REA3 *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
VANADIUM	67.5		0.138	MDL	1.06	PQL	mg/Kg	J	Q

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-561-SA5D-SB-0.0-0.5 *Collected:* 10/8/2013 8:40:00 *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.401	J	0.103	MDL	0.412	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: PH124 **Laboratory: LL**

EDD Filename: PH124_v1. **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: **SL-561-SA5D-SB-0.0-0.5** *Collected:* **10/8/2013 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	0.0551	J	0.0268	MDL	0.206	PQL	mg/Kg	J	Z
STRONTIUM	35.1		0.0701	MDL	0.412	PQL	mg/Kg	J	A

Sample ID: **SL-561-SA5D-SB-4.0-5.0** *Collected:* **10/8/2013 9:00:00** *Analysis Type:* **REA** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.297	J	0.107	MDL	0.430	PQL	mg/Kg	J	Z

Sample ID: **SL-561-SA5D-SB-4.0-5.0** *Collected:* **10/8/2013 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	0.0563	J	0.0279	MDL	0.215	PQL	mg/Kg	J	Z
STRONTIUM	45.7		0.0731	MDL	0.430	PQL	mg/Kg	J	A

Sample ID: **SL-561-SA5D-SB-9.0-10.0** *Collected:* **10/8/2013 10:10:00** *Analysis Type:* **REA** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.257	J	0.106	MDL	0.426	PQL	mg/Kg	J	Z

Sample ID: **SL-561-SA5D-SB-9.0-10.0** *Collected:* **10/8/2013 10:10:00** *Analysis Type:* **RES** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0428	J	0.0277	MDL	0.213	PQL	mg/Kg	J	Z
STRONTIUM	52.3		0.0724	MDL	0.426	PQL	mg/Kg	J	A

Method Category: SVOA

Method: 1613B **Matrix: AQ**

Sample ID: **EB-100813** *Collected:* **10/8/2013 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	0.806	JBQ	0.170	MDL	9.67	PQL	pg/L	U	B
1,2,3,4,6,7,8-HPCDF	0.770	JB	0.0795	MDL	9.67	PQL	pg/L	U	B
1,2,3,4,7,8,9-HPCDF	0.514	JB	0.0880	MDL	9.67	PQL	pg/L	U	B
1,2,3,4,7,8-HxCDD	0.378	JBQ	0.161	MDL	9.67	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: PH124 **Laboratory: LL**

EDD Filename: PH124_v1. **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: **SVOA**

Method: **1613B** ***Matrix:*** **AQ**

Sample ID: **EB-100813** ***Collected:*** **10/8/2013 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*
1,2,3,4,7,8-HXCDF	0.564	JBQ	0.124	MDL	9.67	PQL	pg/L	U	B
1,2,3,6,7,8-HXCDD	0.472	JBQ	0.173	MDL	9.67	PQL	pg/L	U	B
1,2,3,6,7,8-HXCDF	0.596	JBQ	0.121	MDL	9.67	PQL	pg/L	U	B
1,2,3,7,8,9-HXCDD	0.382	JBQ	0.156	MDL	9.67	PQL	pg/L	U	B
1,2,3,7,8,9-HXCDF	0.575	JBQ	0.128	MDL	9.67	PQL	pg/L	U	B
1,2,3,7,8-PECDF	0.774	JBQ	0.138	MDL	9.67	PQL	pg/L	U	B
2,3,4,6,7,8-HXCDF	0.603	JBQ	0.120	MDL	9.67	PQL	pg/L	U	B
2,3,4,7,8-PECDF	0.455	JB	0.124	MDL	9.67	PQL	pg/L	U	B
OCDD	1.70	JB	0.201	MDL	19.3	PQL	pg/L	U	B
OCDF	1.54	JB	0.232	MDL	19.3	PQL	pg/L	U	B

Method Category: **SVOA**

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

Sample ID: **SL-561-SA5D-SB-0.0-0.5** ***Collected:*** **10/8/2013 8:40:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
1,2,3,4,6,7,8-HPCDD	3.81	JB	0.141	MDL	5.16	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.629	JB	0.0505	MDL	5.16	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.149	JBQ	0.0769	MDL	5.16	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.116	JQ	0.0799	MDL	5.16	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.116	JBQ	0.0762	MDL	5.16	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.163	JQ	0.0840	MDL	5.16	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0913	JQ	0.0688	MDL	5.16	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.219	JQ	0.0817	MDL	5.16	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.179	JB	0.0649	MDL	5.16	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.230	JQ	0.189	MDL	1.03	PQL	ng/Kg	J	Z
OCDF	1.28	JBQ	0.0939	MDL	10.3	PQL	ng/Kg	J	Z

* denotes a non-reportable result

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

Data Qualifier Summary

Lab Reporting Batch ID: PH124 **Laboratory: LL**

EDD Filename: PH124_v1. **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

Method: 8015M **Matrix: AQ**

Sample ID: **EB-100813** ***Collected:*** **10/8/2013 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
EFH (C8-C11)	0.096	U	0.048	MDL	0.096	PQL	mg/L	UJ	L

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: **SL-561-SA5D-SB-4.0-5.0** ***Collected:*** **10/8/2013 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
EFH (C21-C30)	5.1	J	2.2	MDL	5.5	PQL	mg/Kg	J	Z

Method Category: SVOA

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

Sample ID: **EB-100813** ***Collected:*** **10/8/2013 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
BIS(2-ETHYLHEXYL)PHTHALATE	0.13	J	0.052	MDL	1.0	PQL	ug/L	U	B
Diethylphthalate	0.29	J	0.052	MDL	1.0	PQL	ug/L	J	Z
Di-n-butylphthalate	0.17	J	0.052	MDL	1.0	PQL	ug/L	J	Z

Method Category: SVOA

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

Sample ID: **SL-561-SA5D-SB-0.0-0.5** ***Collected:*** **10/8/2013 8:40:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1-METHYLNAPHTHALENE	1.2	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: **SL-561-SA5D-SB-0.0-0.5** ***Collected:*** **10/8/2013 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
ACENAPHTHYLENE	0.42	J	0.35	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(A)ANTHRACENE	1.4	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(A)PYRENE	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: PH124 **Laboratory: LL**

EDD Filename: PH124_v1. **eQAPP Name: CDM_SSFL_131101_Lan**

Method Category: SVOA

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

Sample ID: **SL-561-SA5D-SB-0.0-0.5** ***Collected:*** **10/8/2013 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
BENZO(G,H,I)PERYLENE	1.4	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	9.4	J	6.3	MDL	19	PQL	ug/Kg	J	Z
INDENO(1,2,3-CD)PYRENE	1.2	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: **SL-561-SA5D-SB-4.0-5.0** ***Collected:*** **10/8/2013 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
2-METHYLNAPHTHALENE	0.75	J	0.73	MDL	1.8	PQL	ug/Kg	J	Z
CHRYSENE	0.54	J	0.37	MDL	1.8	PQL	ug/Kg	J	Z
NAPHTHALENE	0.93	J	0.73	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: **SL-561-SA5D-SB-9.0-10.0** ***Collected:*** **10/8/2013 10:10:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BIS(2-ETHYLHEXYL)PHTHALATE	11	J	6.5	MDL	19	PQL	ug/Kg	J	Z
CHRYSENE	0.45	J	0.36	MDL	1.8	PQL	ug/Kg	J	Z
NAPHTHALENE	1.0	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: PH124 **Laboratory: LL**

EDD Filename: PH124_v1. **eQAPP Name: CDM_SSFL_131101_Lan**

Reason Code Legend

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

PH124

Method Blank Outlier Report

Lab Reporting Batch ID: PH124 **Laboratory: LL**

EDD Filename: PH124_v1. **eQAPP Name: CDM_SSFL_131101_Lan**

Method: **1613B**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2870B372231	10/16/2013 10:31:00 PM	1,2,3,4,6,7,8-HPCDD	0.857 pg/L	EB-100813
		1,2,3,4,6,7,8-HPCDF	0.818 pg/L	
		1,2,3,4,7,8,9-HPCDF	0.760 pg/L	
		1,2,3,4,7,8-HxCDD	0.696 pg/L	
		1,2,3,4,7,8-HXCDF	0.643 pg/L	
		1,2,3,6,7,8-HXCDD	0.399 pg/L	
		1,2,3,6,7,8-HXCDF	0.462 pg/L	
		1,2,3,7,8,9-HXCDD	0.472 pg/L	
		1,2,3,7,8,9-HXCDF	0.653 pg/L	
		1,2,3,7,8-PECDD	0.426 pg/L	
		1,2,3,7,8-PECDF	0.841 pg/L	
		2,3,4,6,7,8-HXCDF	0.519 pg/L	
		2,3,4,7,8-PECDF	0.625 pg/L	
		2,3,7,8-TCDF	0.412 pg/L	
		OCDD	1.75 pg/L	
		OCDF	1.79 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
EB-100813(RES)	1,2,3,4,6,7,8-HPCDD	0.806 pg/L	0.806U pg/L
EB-100813(RES)	1,2,3,4,6,7,8-HPCDF	0.770 pg/L	0.770U pg/L
EB-100813(RES)	1,2,3,4,7,8,9-HPCDF	0.514 pg/L	0.514U pg/L
EB-100813(RES)	1,2,3,4,7,8-HxCDD	0.378 pg/L	0.378U pg/L
EB-100813(RES)	1,2,3,4,7,8-HXCDF	0.564 pg/L	0.564U pg/L
EB-100813(RES)	1,2,3,6,7,8-HXCDD	0.472 pg/L	0.472U pg/L
EB-100813(RES)	1,2,3,6,7,8-HXCDF	0.596 pg/L	0.596U pg/L
EB-100813(RES)	1,2,3,7,8,9-HXCDD	0.382 pg/L	0.382U pg/L
EB-100813(RES)	1,2,3,7,8,9-HXCDF	0.575 pg/L	0.575U pg/L
EB-100813(RES)	1,2,3,7,8-PECDF	0.774 pg/L	0.774U pg/L
EB-100813(RES)	2,3,4,6,7,8-HXCDF	0.603 pg/L	0.603U pg/L
EB-100813(RES)	2,3,4,7,8-PECDF	0.455 pg/L	0.455U pg/L
EB-100813(RES)	OCDD	1.70 pg/L	1.70U pg/L
EB-100813(RES)	OCDF	1.54 pg/L	1.54U pg/L

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK2870B371343	10/17/2013 1:43:00 PM	1,2,3,4,6,7,8-HPCDD	0.0612 ng/Kg	SL-561-SA5D-SB-0.0-0.5
		1,2,3,4,6,7,8-HPCDF	0.0498 ng/Kg	
		1,2,3,4,7,8,9-HPCDF	0.101 ng/Kg	
		1,2,3,4,7,8-HXCDF	0.0571 ng/Kg	
		2,3,4,6,7,8-HXCDF	0.0492 ng/Kg	
		OCDD	0.214 ng/Kg	
		OCDF	0.191 ng/Kg	

Method Blank Outlier Report

Lab Reporting Batch ID: PH124 **Laboratory: LL**

EDD Filename: PH124_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-561-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.149 ng/Kg	0.149U ng/Kg
SL-561-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.116 ng/Kg	0.116U ng/Kg
SL-561-SA5D-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.179 ng/Kg	0.179U ng/Kg

Method: 6010C
Matrix: AQ

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P29035AB222022	10/18/2013 8:22:00 PM	ALUMINUM BORON CALCIUM MAGNESIUM ZINC	0.0833 mg/L 0.0099 mg/L 0.175 mg/L 0.0196 mg/L 0.0086 mg/L	EB-100813

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

Sample ID	Analyte	Reported Result	Modified Final Result
EB-100813(RES)	BORON	0.0085 mg/L	0.0085U mg/L
EB-100813(RES)	CALCIUM	0.0487 mg/L	0.0487U mg/L

Method: 6010C
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P29037AB221926	10/19/2013 7:26:00 PM	CALCIUM POTASSIUM TIN	3.41 mg/Kg 10.0 mg/Kg 1.49 mg/Kg	SL-561-SA5D-SB-0.0-0.5 SL-561-SA5D-SB-4.0-5.0 SL-561-SA5D-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-561-SA5D-SB-0.0-0.5(REA)	TIN	3.12 mg/Kg	3.12U mg/Kg
SL-561-SA5D-SB-4.0-5.0(REA)	TIN	3.09 mg/Kg	3.09U mg/Kg
SL-561-SA5D-SB-9.0-10.0(REA)	TIN	2.94 mg/Kg	2.94U mg/Kg

Method: 8270D SIM
Matrix: AQ

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
PLKWB28B261827	10/14/2013 6:27:00 PM	BIS(2-ETHYLHEXYL)PHTHALATE	0.083 ug/L	EB-100813

Method Blank Outlier Report

Lab Reporting Batch ID: PH124 **Laboratory: LL**

EDD Filename: PH124_v1. **eQAPP Name: CDM_SSFL_131101_Lan**

Method: **8270D SIM**
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
EB-100813(RES)	BIS(2-ETHYLHEXYL)PHTHALATE	0.13 ug/L	1.0U ug/L

Equipment Rinsate Blank Outlier Report

Lab Reporting Batch ID: PH124 **Laboratory: LL**

EDD Filename: PH124_v1. **eQAPP Name: CDM_SSFL_131101_Lan**

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

Equipment Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
EB-100813(RES)	10/8/2013 2:00:00 PM	BORON CALCIUM	0.0085 mg/L 0.0487 mg/L	SL-561-SA5D-SB-0.0-0.5 SL-561-SA5D-SB-4.0-5.0 SL-561-SA5D-SB-9.0-10.0 SL-602-SA5D-SB-0.0-0.5 SL-602-SA5D-SB-4.0-5.0 SL-602-SA5D-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-561-SA5D-SB-4.0-5.0(REA)	BORON	2.19 mg/Kg	2.19U mg/Kg
SL-561-SA5D-SB-9.0-10.0(REA)	BORON	3.77 mg/Kg	3.77U mg/Kg

Field Blank Outlier Report

Lab Reporting Batch ID: PH124 **Laboratory: LL**

EDD Filename: PH124_v1. **eQAPP Name: CDM_SSFL_131101_Lan**

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

Field Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
FB-041613(REA2/TOT)	4/16/2013 3:15:00 PM	MOLYBDENUM TIN	0.0132 mg/L 0.0029 mg/L	SL-561-SA5D-SB-0.0-0.5 SL-561-SA5D-SB-4.0-5.0 SL-561-SA5D-SB-9.0-10.0 SL-602-SA5D-SB-0.0-0.5 SL-602-SA5D-SB-4.0-5.0 SL-602-SA5D-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-561-SA5D-SB-0.0-0.5(REA)	MOLYBDENUM	1.21 mg/Kg	1.21U mg/Kg
SL-561-SA5D-SB-4.0-5.0(REA)	MOLYBDENUM	0.270 mg/Kg	0.270U mg/Kg
SL-561-SA5D-SB-9.0-10.0(REA)	MOLYBDENUM	0.353 mg/Kg	0.353U mg/Kg

Surrogate Outlier Report

Lab Reporting Batch ID: PH124 **Laboratory: LL**

EDD Filename: PH124_v1. **eQAPP Name: CDM_SSFL_131101_Lan**

Method: **8082A**
Matrix: **SO**

Sample ID (Analysis Type)	*Surrogate*	*Sample % Recovery*	*% Recovery Limits*	*Affected Compounds*	*Flag*
SL-561-SA5D-SB-4.0-5.0	DECACHLOROBIPHENYL	123	45.00-120.00	All Target Analytes	J (all detects)

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH124 **Laboratory: LL**

EDD Filename: PH124_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-561-SA5D-SB-0.0-0.5MS (TOT) SL-561-SA5D-SB-0.0-0.5MSD (TOT) (SL-561-SA5D-SB-0.0-0.5 SL-561-SA5D-SB-4.0-5.0 SL-561-SA5D-SB-9.0-10.0)	ALUMINUM	4351	5460	75.00-125.00	-	ALUMINUM	J (all detects) Al, Ca, Fe, Mg, Mn, K, Ti, No Qual, >4x
	CALCIUM	-	149	75.00-125.00	-	CALCIUM	
	IRON	1046	2202	75.00-125.00	-	IRON	
	MAGNESIUM	404	534	75.00-125.00	-	MAGNESIUM	
	MANGANESE	-	157	75.00-125.00	-	MANGANESE	
	POTASSIUM	147	186	75.00-125.00	-	POTASSIUM	
	TITANIUM	488	698	75.00-125.00	-	TITANIUM	
	VANADIUM	-	136	75.00-125.00	-	VANADIUM	
SL-561-SA5D-SB-0.0-0.5MS (TOT) SL-561-SA5D-SB-0.0-0.5MSD (TOT) (SL-561-SA5D-SB-0.0-0.5 SL-561-SA5D-SB-4.0-5.0 SL-561-SA5D-SB-9.0-10.0)	ANTIMONY	57	60	75.00-125.00	-	ANTIMONY	J(all detects) UJ(all non-detects) P, No Qual, >4x
	CHROMIUM	673	134	75.00-125.00	91 (20.00)	CHROMIUM	
	NICKEL	188	-	75.00-125.00	49 (20.00)	NICKEL	
	PHOSPHORUS	40	57	75.00-125.00	-	PHOSPHORUS	

Method: 6020A
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-561-SA5D-SB-0.0-0.5MS (TOT) SL-561-SA5D-SB-0.0-0.5MSD (TOT) (SL-561-SA5D-SB-0.0-0.5 SL-561-SA5D-SB-4.0-5.0 SL-561-SA5D-SB-9.0-10.0)	STRONTIUM	62	72	75.00-125.00	-	STRONTIUM	No Qual, >4x

Lab Duplicate Outlier Report

Lab Reporting Batch ID: PH124 **Laboratory: LL**

EDD Filename: PH124_v1. **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 6010C
Matrix: SO

QC Sample ID (Associated Sample ID)	*Analyte*	*Sample RPD*	*eQAPP RPD*	*Flag*
SL-561-SA5D-SB-0.0-0.5DUP (TOT) (SL-561-SA5D-SB-0.0-0.5 SL-561-SA5D-SB-4.0-5.0 SL-561-SA5D-SB-9.0-10.0)	CADMIUM MOLYBDENUM	200 77	20.00 20.00	No Qual, OK by Difference

Method: 7471B
Matrix: SO

QC Sample ID (Associated Sample ID)	*Analyte*	*Sample RPD*	*eQAPP RPD*	*Flag*
SL-561-SA5D-SB-0.0-0.5DUP (TOT) (SL-561-SA5D-SB-0.0-0.5 SL-561-SA5D-SB-4.0-5.0 SL-561-SA5D-SB-9.0-10.0)	MERCURY	35	20.00	No Qual, OK by Difference

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH124 **Laboratory: LL**

EDD Filename: PH124_v1. **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 8151A
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
P32827AQ241903A P32827AY241930A (EB-100813)	DINOSEB	238	238	16.00-163.00	-	DINOSEB	J (all detects)

Method: 8015M
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
P32870AQ320635A (EB-100813)	EFH (C8-C11)	69	-	70.00-130.00	-	EFH (C8-C11)	J(all detects) UJ(all non-detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH124 **Laboratory: LL**

EDD Filename: PH124_v1. **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 1613B

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-100813	1,2,3,4,6,7,8-HPCDD	JBQ	0.806	9.67	PQL	pg/L	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JB	0.770	9.67	PQL	pg/L	
	1,2,3,4,7,8,9-HPCDF	JB	0.514	9.67	PQL	pg/L	
	1,2,3,4,7,8-HxCDD	JBQ	0.378	9.67	PQL	pg/L	
	1,2,3,4,7,8-HXCDF	JBQ	0.564	9.67	PQL	pg/L	
	1,2,3,6,7,8-HXCDD	JBQ	0.472	9.67	PQL	pg/L	
	1,2,3,6,7,8-HXCDF	JBQ	0.596	9.67	PQL	pg/L	
	1,2,3,7,8,9-HXCDD	JBQ	0.382	9.67	PQL	pg/L	
	1,2,3,7,8,9-HXCDF	JBQ	0.575	9.67	PQL	pg/L	
	1,2,3,7,8-PECDF	JBQ	0.774	9.67	PQL	pg/L	
	2,3,4,6,7,8-HXCDF	JBQ	0.603	9.67	PQL	pg/L	
	2,3,4,7,8-PECDF	JB	0.455	9.67	PQL	pg/L	
	OCDD	JB	1.70	19.3	PQL	pg/L	
	OCDF	JB	1.54	19.3	PQL	pg/L	

Method: 6010C

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-100813	BORON	J	0.0085	0.100	PQL	mg/L	J (all detects)
	CALCIUM	J	0.0487	0.400	PQL	mg/L	

Method: 8270D SIM

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-100813	BIS(2-ETHYLHEXYL)PHTHALATE	J	0.13	1.0	PQL	ug/L	J (all detects)
	Diethylphthalate	J	0.29	1.0	PQL	ug/L	
	Di-n-butylphthalate	J	0.17	1.0	PQL	ug/L	

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-561-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	3.81	5.16	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JB	0.629	5.16	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.149	5.16	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.116	5.16	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.116	5.16	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JQ	0.163	5.16	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JQ	0.0913	5.16	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JQ	0.219	5.16	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.179	5.16	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.230	1.03	PQL	ng/Kg	
	OCDF	JBQ	1.28	10.3	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH124 **Laboratory: LL**

EDD Filename: PH124_v1. **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-561-SA5D-SB-0.0-0.5	BERYLLIUM	J	0.993	1.03	PQL	mg/Kg	J (all detects)
	BORON	J	5.60	10.3	PQL	mg/Kg	
	MOLYBDENUM	J	1.21	2.06	PQL	mg/Kg	
	SODIUM	J	83.7	103	PQL	mg/Kg	
	TIN	J	3.12	10.3	PQL	mg/Kg	
	Zirconium	J	3.09	5.15	PQL	mg/Kg	
SL-561-SA5D-SB-4.0-5.0	BERYLLIUM	J	1.02	1.07	PQL	mg/Kg	J (all detects)
	BORON	J	2.19	10.7	PQL	mg/Kg	
	MOLYBDENUM	J	0.270	2.15	PQL	mg/Kg	
	SODIUM	J	86.2	107	PQL	mg/Kg	
	TIN	J	3.09	10.7	PQL	mg/Kg	
	Zirconium	J	2.58	5.37	PQL	mg/Kg	
SL-561-SA5D-SB-9.0-10.0	BERYLLIUM	J	0.910	1.06	PQL	mg/Kg	J (all detects)
	BORON	J	3.77	10.6	PQL	mg/Kg	
	CADMIUM	J	0.0979	1.06	PQL	mg/Kg	
	MOLYBDENUM	J	0.353	2.13	PQL	mg/Kg	
	TIN	J	2.94	10.6	PQL	mg/Kg	
	Zirconium	J	3.30	5.32	PQL	mg/Kg	

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-561-SA5D-SB-0.0-0.5	SELENIUM	J	0.401	0.412	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0551	0.206	PQL	mg/Kg	
SL-561-SA5D-SB-4.0-5.0	SELENIUM	J	0.297	0.430	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0563	0.215	PQL	mg/Kg	
SL-561-SA5D-SB-9.0-10.0	SELENIUM	J	0.257	0.426	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0428	0.213	PQL	mg/Kg	

Method: 8015M

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-561-SA5D-SB-4.0-5.0	EFH (C21-C30)	J	5.1	5.5	PQL	mg/Kg	J (all detects)

Method: 8270D SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-561-SA5D-SB-0.0-0.5	1-METHYLNAPHTHALENE	J	1.2	1.8	PQL	ug/Kg	J (all detects)
	ACENAPHTHYLENE	J	0.42	1.8	PQL	ug/Kg	
	BENZO(A)ANTHRACENE	J	1.4	1.8	PQL	ug/Kg	
	BENZO(A)PYRENE	J	1.4	1.8	PQL	ug/Kg	
	BENZO(G,H,I)PERYLENE	J	1.4	1.8	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	9.4	19	PQL	ug/Kg	
	INDENO(1,2,3-CD)PYRENE	J	1.2	1.8	PQL	ug/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH124 **Laboratory: LL**

EDD Filename: PH124_v1. **eQAPP Name: CDM_SSFL_131101_Lan**

Method: 8270D SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-561-SA5D-SB-4.0-5.0	2-METHYLNAPHTHALENE	J	0.75	1.8	PQL	ug/Kg	
	CHRYSENE	J	0.54	1.8	PQL	ug/Kg	J (all detects)
	NAPHTHALENE	J	0.93	1.8	PQL	ug/Kg	
SL-561-SA5D-SB-9.0-10.0	BIS(2-ETHYLHEXYL)PHTHALATE	J	11	19	PQL	ug/Kg	
	CHRYSENE	J	0.45	1.8	PQL	ug/Kg	J (all detects)
	NAPHTHALENE	J	1.0	1.8	PQL	ug/Kg	

LDC #: 30854A4

SDG #: PH124

Laboratory: Eurofins Lancaster Laboratories

VALIDATION COMPLETENESS WORKSHEET

ADR

Date: 12/4/13

Page: 1 of 1

Reviewer: CL

2nd Reviewer: V

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: 10/8/13
II.	ICP/MS Tune	—	
III.	Calibration	—	
IV.	Blanks	SW	
V.	ICP Interference Check Sample (ICS) Analysis	—	
VI.	Matrix Spike Analysis	SW	SW MS/P
VII.	Duplicate Sample Analysis	SW	DUP
VIII.	Laboratory Control Samples (LCS)	N	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	N	
XV	Field Blanks	SW	FB= FB-041613 EB=1

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected (PH032); R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

1	EB-100813	11		21		31	
2	SL-561-SA5D-SB-0.0-0.5	12		22		32	
3	SL-561-SA5D-SB-4.0-5.0	13		23		33	
4	SL-561-SA5D-SB-9.0-10.0	14		24		34	
5	(x2) 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 #: 30854A4

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: CA
2nd Reviewer: W

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 Soil

					Sample Identification										
Analyte	**Maximum PB[a] (mg/Kg)**	**Maximum PB[a] (ug/l)**	**Maximum ICB/CCB[a] (ug/l)**	**Action Level**	**2**	3	4								
Mo			2.3	2.3	1.21	0.270	0.353								

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 #: 30854A4

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 Soil

Analyte	Blank ID	Sample Identification													
	FB-041613 (SDG: PH032)	Action Limit	2	3	4										
Mo	0.0132	6.60	1.21	0.270	0.353										
Sn	0.0029	1.45													

Sampling date: 10/8/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All Soil

Analyte	Blank ID	Sample Identification											
	EB-100813 (SDG: PH124)	Action Limit	3	4									
B	0.0085	4.25	2.19	3.87									
Ca	0.0487	24.35											

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.: PH124
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7229587BKG Matrix Spike Lab Sample ID: 7229587MS Matrix Spike Duplicate Lab Sample ID: 7229587MSD
Batch Id(s): P29037A, P29038B

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		25591.2608		34121.9500		36296.3706		196.0784	196.0784	MG/KG	4351		5460		6			20	P
Antimony		0.7255	U	27.7324		29.2971		49.0196	49.0196	MG/KG	57	N	60	N	5		75 - 125	20	P
Arsenic		4.4794		19.1069		20.0843		14.7059	14.7059	MG/KG	99		106		5		75 - 125	20	P
Barium		110.1373		300.2284		307.0637		196.0784	196.0784	MG/KG	97		100		2		75 - 125	20	P
Beryllium		0.9441	B	5.9873		6.1382		4.9020	4.9020	MG/KG	103		106		2		75 - 125	20	P
Boron		5.3225	B	184.1667		189.5020		196.0784	196.0784	MG/KG	91		94		3		75 - 125	20	P
Cadmium		0.0745	U	4.6941		4.7314		4.9020	4.9020	MG/KG	96		97		1		75 - 125	20	P
Calcium		7956.3961		8279.1020		8539.4108		392.1569	392.1569	MG/KG	82		149	#	3			20	P
Chromium		37.0588		168.9833		63.3735		19.6078	19.6078	MG/KG	673	N	134	N	91	*	75 - 125	20	P
Cobalt		9.7833		57.0735		56.7245		49.0196	49.0196	MG/KG	96		96		1		75 - 125	20	P
Copper		26.9588		54.2196		56.2029		24.5098	24.5098	MG/KG	111		119		4		75 - 125	20	P
Iron		34653.5196		35679.2598		36812.0098		98.0392	98.0392	MG/KG	1046		2202	#	3			20	P
Lead		14.1608		27.5941		28.1637		14.7059	14.7059	MG/KG	91		95		2		75 - 125	20	P
Lithium		24.1980		125.2588		127.6196		98.0392	98.0392	MG/KG	103		105		2		75 - 125	20	P
Magnesium		7593.8775		8385.0941		8641.4755		196.0784	196.0784	MG/KG	404		534		3			20	P
Manganese		416.2735		468.7333		493.2176		49.0196	49.0196	MG/KG	107		157	#	5			20	P
Mercury		0.0210		0.1884		0.1910		0.1599	0.1638	MG/KG	105		104		1		65 - 135	20	CV
Molybdenum		1.1471	B	182.8078		186.4892		196.0784	196.0784	MG/KG	93		95		2		75 - 125	20	P
Nickel		20.3608		112.4941		68.2010		49.0196	49.0196	MG/KG	188	N	98		49	*	75 - 125	20	P
Phosphorus		717.0196		756.7137		772.6059		98.0392	98.0392	MG/KG	40		57	#	2			20	P
Potassium		6613.1824		8055.7598		8440.7647		980.3922	980.3922	MG/KG	147		186	#	5			20	P
Selenium	78	0.3810	B	2.3084		2.3759		1.9608	1.9608	MG/KG	98		102		3		75 - 125	20	MS
Silver	107	0.0524	B	10.6225		10.7278		9.8039	9.8039	MG/KG	108		109		1		75 - 125	20	MS
Sodium		79.5971	B	1034.1971		1048.2392		980.3922	980.3922	MG/KG	97		99		1		75 - 125	20	P
Strontium	88	33.3455		38.2090		38.9669		7.8431	7.8431	MG/KG	62		72		2			20	MS
Thallium	203	0.3982		0.7616		0.8090		0.3922	0.3922	MG/KG	93		105		6		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.: PH124
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7229587BKG Matrix Spike Lab Sample ID: 7229587MS Matrix Spike Duplicate Lab Sample ID: 7229587MSD
Batch Id(s): P29037A, P29038B

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		2.9696	B	357.6088		360.3108		392.1569	392.1569	MG/KG	90		91		1		75 - 125	20	P
Titanium		1178.6010		1657.3804		1862.8157		98.0392	98.0392	MG/KG	488		698		12			20	P
Vanadium		65.9098		126.9431		132.6049		49.0196	49.0196	MG/KG	125		136	N	4		75 - 125	20	P
Zinc		83.7510		132.7069		135.5176		49.0196	49.0196	MG/KG	100		106		2		75 - 125	20	P
Zirconium		2.9431	B	87.0853		86.4912		98.0392	98.0392	MG/KG	86		85		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.: PH124
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7229587BKG
Duplicate Lab Sample ID: 7229587DUP
Batch ID(s): P29037A, P29038B
Concentration Units: MG/KG

Analyte	Mass	Control Limit	Samples (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum			25591.2608		26309.8275		3		P
Antimony			-1.8167	B	-2.0225	B	-11		P
Arsenic		3.9	4.4794		5.1392		14		P
Barium			110.1373		110.6559		0		P
Beryllium			0.9441	B	0.9510	B	1		P
Boron			5.3225	B	5.3118	B	0		P
Cadmium			0.0745	U	0.1088	B	200	*	P
Calcium			7956.3961		7913.3667		1		P
Chromium			37.0588		37.8667		2		P
Cobalt			9.7833		10.0745		3		P
Copper			26.9588		27.1029		1		P
Iron			34653.5196		34449.1667		1		P
Lead		2.9	14.1608		13.3049		6		P
Lithium			24.1980		24.7441		2		P
Magnesium			7593.8775		7662.7618		1		P
Manganese			416.2735		421.9382		1		P
Mercury		0.0	0.0240		0.0147	B	35		CV
Molybdenum			1.1471	B	0.5108	B	77	*	P
Nickel			20.3608		20.8559		2		P
Phosphorus			717.0196		662.8794		8		P
Potassium			6613.1824		6597.1265		0		P
Selenium	78		0.3810	B	0.3894	B	2		MS
Silver	107		0.0524	B	0.0555	B	6		MS
Sodium			79.5971	B	78.8814	B	1		P
Strontium	88		33.3455		32.3031		3		MS
Thallium	203	0.2	0.3982		0.3659		8		MS
Tin			2.9696	B	2.9755	B	0		P
Titanium			1178.6010		1227.5245		4		P
Vanadium			65.9098		67.0647		2		P
Zinc			83.7510		83.2637		1		P
Zirconium			2.9431	B	3.5784	B	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.: PH124
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7229587BKG Serial Dilution Lab Sample ID: 7229587L
Batch ID(s): P29037A
SL-561-SA5D-SB-0.0-0.5
Concentration Units: UG/L

Analyte	Mass	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Diff.	Q	M
Aluminum		261030.8600		267886.3000		3		P
Antimony		7.4000	U	37.0000	U			P
Arsenic		45.6900		62.7000	B	37		P
Barium		1123.4000		1184.1500		5		P
Beryllium		9.6300	B	9.2500	B	4		P
Boron		54.2900	B	168.8000	B	211		P
Cadmium		0.7600	U	5.5500	B	100		P
Calcium		81155.2400		84618.3000		4		P
Chromium		378.0000		384.4500		2		P
Cobalt		99.7900		108.8000		9		P
Copper		274.9800		270.2000		2		P
Iron		70693.1800		72837.8500		3		P
Lead		144.4400		168.2000		16		P
Lithium		246.8200		254.2500		3		P
Magnesium		77457.5500		79468.4500		3		P
Manganese		4245.9900		4487.0500		6		P
Molybdenum		11.7000	B	29.3000	B	150		P
Nickel		207.6800		227.4500		10		P
Phosphorus		7313.6000		7355.7000		1		P
Potassium		67454.4600		70764.0500		5		P
Selenium	78	1.9430	B	2.5000	U	100		MS
Silver	107	0.2670	B	0.6500	U	100		MS
Sodium		811.8900	B	835.0000	U	100		P
Strontium	88	170.0620		142.7650		16	E	MS
Thallium	203	2.0310		2.0000	B	2		MS
Tin		30.2900	B	32.0000	B	6		P
Titanium		12021.7300		11814.7500		2		P
Vanadium		672.2800		685.7500		2		P
Zinc		854.2600		883.4000		3		P
Zirconium		30.0200	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:	CONCENTRATION QUALIFIERS:
P = ICP Atomic Emission Spectrometer	U= Below MDL
MS = ICP Mass Spectrometry	B= Below LOQ
	FLAGS:
	E = Matrix Effects exist as proven by Serial Dilution or Spiked Dilution

SAMPLE DELIVERY GROUP

PH127

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

January 24, 2014

SUBJECT: Santa Susana Field Laboratory, Subarea 5D Data Validation

Dear Mrs. Zakowski,

Enclosed is the final validation report for the fractions listed below. This SDG was received on December 31, 2013. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 31098:

SDG #	Fraction
PH127	Semivolatiles, Polynuclear Aromatic Hydrocarbons, Chlorinated Pesticides, Polychlorinated Biphenyls, Metals, Herbicides, Wet Chemistry, Total Petroleum Hydrocarbons as Gasoline, Total Petroleum Hydrocarbons as Extractables, Dioxins/Dibenzofurans

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

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

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

Sincerely,

Shauna McKellar
Project Manager/Chemist

119 pages-CD

Attachment 1

90/10 ADR/IV

LDC #31098 (CDM Federal Programs-Chantilly VA / Santa Susana Field Laboratory, Subarea 5D)

LDC	SDG#	DATE REC'D	(4) DATE DUE	SVOA (8270D)		PAHs (8270D -SIM)		Pest. (8081B)		PCBs (8082A)		Metals & Hg (SW846)		Herbs. (8151A)		TPH-G (8015M)		TPH-E (8015M)		Dioxins (1613B)		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	W	S
A	PH127	12/31/13	01/29/14	1	7	1	7	1	3	1	7	1	7	1	4	2	5	1	7	1	4	1	4																
Total	T/SM			1	7	1	7	1	3	1	7	1	7	1	4	2	5	1	7	1	4	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	66

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 5D

SDG: PH127

Prepared for

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

Prepared by

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

January 24, 2014

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on November 12, 2013. Data validation was performed in accordance with the Quality Assurance Project Plan (QAPP) for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008), Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005) and for Inorganic Data Review (January 2010). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Semivolatiles (SVOCs) by Environmental Protection Agency (EPA) SW 846 Method 8270D
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
Herbicides by EPA SW 846 Method 8151A
Metals by EPA SW 846 Method 6010C, 6020A, 7470A and 7471B
Total Petroleum Hydrocarbons (TPH) as Gasoline by EPA SW 846 Method 8015M
TPH as Extractables by EPA SW 846 Method 8015M
Dioxins and Dibenzofurans by EPA Method 1613B

Wet Chemistry:
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 several blanks for SVOCs, 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
PH127/ 6010C	ICB/CCB	Magnesium	34.0 ug/L	EB1-111213

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
PH127/ 6010C	EB1-111213	Magnesium	0.0168 mg/L	0.0168 mg/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 TPH as extractables. No data were qualified due to high %Rs since the associated results were non-detected.

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 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 several LCS/LCSD pairs for herbicides and TPH as extractables. The associated sample results were qualified as non-detected estimated (UJ). The details regarding the qualification of data are provided in Enclosure I.

The lab indicated that SVOC analytes 3,5-dimethlphenol and 2,6-dichlorophenol were not spiked in the LCS/LCSD samples in the preparation batch containing sample EB1-111213. Since any re-analysis would have occurred outside of the method holding time, these analytes were reported for the sample from the original run. The associated sample results were qualified as non-detected estimated (UJ).

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 PH127	All compounds reported as detected below the RL.	J (all detects)	A

XIII. Field Duplicate Samples

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

XIV. Field Blank Samples

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

One equipment blank was collected and analyzed for SVOCs, pesticides, PCBs, metals, herbicides, TPH as gasoline, TPH as extractables, dioxins and hexavalent chromium. The equipment blank had detections for SVOCs, dioxins, and metals. The sample results were not detected or were significantly greater than the concentrations found in the equipment blank, therefore no data were qualified.

One field blank (from SDG PH032) was collected and analyzed for SVOCs, pesticides, PCBs, herbicides, metals, TPH as gasoline, TPH as extractables, dioxins, and hexavalent chromium. The field blank had detections for SVOCs, metals and dioxins. The associated sample results were qualified as non-detected (U) due to field blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the field blank were not qualified. The field blank outlier reports are presented in Enclosure I.

XV. Overall Assessment of Data

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

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
12-Nov-2013	TB1-111213	7275675	TB	5030B	8015M	III
12-Nov-2013	SL-560-SA5D-SB-0.0-0.5	7275662	N	3050B	6010C	III
12-Nov-2013	SL-560-SA5D-SB-0.0-0.5	7275662	N	3050B	6020A	III
12-Nov-2013	SL-560-SA5D-SB-0.0-0.5	7275662	N	3060A	7199	III
12-Nov-2013	SL-560-SA5D-SB-0.0-0.5	7275662	N	3546	8015M	III
12-Nov-2013	SL-560-SA5D-SB-0.0-0.5	7275662	N	3546	8082A	III
12-Nov-2013	SL-560-SA5D-SB-0.0-0.5	7275662	N	3546	8270D	III
12-Nov-2013	SL-560-SA5D-SB-0.0-0.5	7275662	N	3546	8270D SIM	III
12-Nov-2013	SL-560-SA5D-SB-0.0-0.5	7275662	N	3550B	8151A	III
12-Nov-2013	SL-560-SA5D-SB-0.0-0.5	7275662	N	METHOD	1613B	III
12-Nov-2013	SL-560-SA5D-SB-0.0-0.5	7275662	N	METHOD	7471B	III
12-Nov-2013	SL-860-SA5D-SB-4.0-5.0	7275671	FD	3050B	6010C	III
12-Nov-2013	SL-860-SA5D-SB-4.0-5.0	7275671	FD	3050B	6020A	III
12-Nov-2013	SL-860-SA5D-SB-4.0-5.0	7275671	FD	3060A	7199	III
12-Nov-2013	SL-860-SA5D-SB-4.0-5.0	7275671	FD	3546	8015M	III
12-Nov-2013	SL-860-SA5D-SB-4.0-5.0	7275671	FD	3546	8082A	III
12-Nov-2013	SL-860-SA5D-SB-4.0-5.0	7275671	FD	3546	8270D	III
12-Nov-2013	SL-860-SA5D-SB-4.0-5.0	7275671	FD	3546	8270D SIM	III
12-Nov-2013	SL-860-SA5D-SB-4.0-5.0	7275671	FD	3550B	8151A	III
12-Nov-2013	SL-860-SA5D-SB-4.0-5.0	7275671	FD	5035A	8015M	III
12-Nov-2013	SL-860-SA5D-SB-4.0-5.0	7275671	FD	METHOD	7471B	III
12-Nov-2013	SL-560-SA5D-SB-4.0-5.0	7275663	N	3050B	6010C	III
12-Nov-2013	SL-560-SA5D-SB-4.0-5.0	7275663	N	3050B	6020A	III
12-Nov-2013	SL-560-SA5D-SB-4.0-5.0	7275663	N	3060A	7199	III
12-Nov-2013	SL-560-SA5D-SB-4.0-5.0	7275663	N	3546	8015M	III
12-Nov-2013	SL-560-SA5D-SB-4.0-5.0	7275663	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-Nov-2013	SL-560-SA5D-SB-4.0-5.0	7275663	N	3546	8270D	III
12-Nov-2013	SL-560-SA5D-SB-4.0-5.0	7275663	N	3546	8270D SIM	III
12-Nov-2013	SL-560-SA5D-SB-4.0-5.0	7275663	N	3550B	8151A	III
12-Nov-2013	SL-560-SA5D-SB-4.0-5.0	7275663	N	5035A	8015M	III
12-Nov-2013	SL-560-SA5D-SB-4.0-5.0	7275663	N	METHOD	7471B	III
12-Nov-2013	SL-560-SA5D-SB-4.0-5.0MS	7275664	MS	3050B	6010C	III
12-Nov-2013	SL-560-SA5D-SB-4.0-5.0MS	7275664	MS	3050B	6020A	III
12-Nov-2013	SL-560-SA5D-SB-4.0-5.0MS	7275664	MS	3546	8015M	III
12-Nov-2013	SL-560-SA5D-SB-4.0-5.0MS	7275664	MS	3546	8082A	III
12-Nov-2013	SL-560-SA5D-SB-4.0-5.0MS	7275664	MS	3546	8270D	III
12-Nov-2013	SL-560-SA5D-SB-4.0-5.0MS	7275664	MS	3546	8270D SIM	III
12-Nov-2013	SL-560-SA5D-SB-4.0-5.0MS	7275664	MS	3550B	8151A	III
12-Nov-2013	SL-560-SA5D-SB-4.0-5.0MS	7275664	MS	5035A	8015M	III
12-Nov-2013	SL-560-SA5D-SB-4.0-5.0MS	7275664	MS	METHOD	7471B	III
12-Nov-2013	SL-560-SA5D-SB-4.0-5.0MSD	7275665	MSD	3050B	6010C	III
12-Nov-2013	SL-560-SA5D-SB-4.0-5.0MSD	7275665	MSD	3050B	6020A	III
12-Nov-2013	SL-560-SA5D-SB-4.0-5.0MSD	7275665	MSD	3546	8015M	III
12-Nov-2013	SL-560-SA5D-SB-4.0-5.0MSD	7275665	MSD	3546	8082A	III
12-Nov-2013	SL-560-SA5D-SB-4.0-5.0MSD	7275665	MSD	3546	8270D	III
12-Nov-2013	SL-560-SA5D-SB-4.0-5.0MSD	7275665	MSD	3546	8270D SIM	III
12-Nov-2013	SL-560-SA5D-SB-4.0-5.0MSD	7275665	MSD	3550B	8151A	III
12-Nov-2013	SL-560-SA5D-SB-4.0-5.0MSD	7275665	MSD	5035A	8015M	III
12-Nov-2013	SL-560-SA5D-SB-4.0-5.0MSD	7275665	MSD	METHOD	7471B	III
12-Nov-2013	SL-560-SA5D-SB-4.0-5.0MS	7275666	MS	3060A	7199	III
12-Nov-2013	SL-560-SA5D-SB-4.0-5.0MS	7275667	MS	3060A	7199	III
12-Nov-2013	SL-560-SA5D-SB-4.0-5.0DUP	7275669	DUP	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
12-Nov-2013	SL-560-SA5D-SB-4.0-5.0DUP	7275669	DUP	3050B	6020A	III
12-Nov-2013	SL-560-SA5D-SB-4.0-5.0DUP	7275669	DUP	3060A	7199	III
12-Nov-2013	SL-560-SA5D-SB-4.0-5.0DUP	7275669	DUP	METHOD	7471B	III
12-Nov-2013	SL-560-SA5D-SB-7.0-8.0	7275670	N	3050B	6010C	III
12-Nov-2013	SL-560-SA5D-SB-7.0-8.0	7275670	N	3050B	6020A	III
12-Nov-2013	SL-560-SA5D-SB-7.0-8.0	7275670	N	3060A	7199	III
12-Nov-2013	SL-560-SA5D-SB-7.0-8.0	7275670	N	3546	8015M	III
12-Nov-2013	SL-560-SA5D-SB-7.0-8.0	7275670	N	3546	8082A	III
12-Nov-2013	SL-560-SA5D-SB-7.0-8.0	7275670	N	3546	8270D	III
12-Nov-2013	SL-560-SA5D-SB-7.0-8.0	7275670	N	3546	8270D SIM	III
12-Nov-2013	SL-560-SA5D-SB-7.0-8.0	7275670	N	3550B	8151A	III
12-Nov-2013	SL-560-SA5D-SB-7.0-8.0	7275670	N	5035A	8015M	III
12-Nov-2013	SL-560-SA5D-SB-7.0-8.0	7275670	N	METHOD	7471B	III
12-Nov-2013	SL-549-SA5D-SB-0.0-0.5	7275672	N	3050B	6010C	III
12-Nov-2013	SL-549-SA5D-SB-0.0-0.5	7275672	N	3050B	6020A	III
12-Nov-2013	SL-549-SA5D-SB-0.0-0.5	7275672	N	3546	8015M	III
12-Nov-2013	SL-549-SA5D-SB-0.0-0.5	7275672	N	3546	8081B	III
12-Nov-2013	SL-549-SA5D-SB-0.0-0.5	7275672	N	3546	8082A	III
12-Nov-2013	SL-549-SA5D-SB-0.0-0.5	7275672	N	3546	8270D	III
12-Nov-2013	SL-549-SA5D-SB-0.0-0.5	7275672	N	3546	8270D SIM	III
12-Nov-2013	SL-549-SA5D-SB-0.0-0.5	7275672	N	METHOD	1613B	III
12-Nov-2013	SL-549-SA5D-SB-0.0-0.5	7275672	N	METHOD	7471B	III
12-Nov-2013	SL-549-SA5D-SB-0.0-0.5MSD	P275672M241619A	MSD	3546	8081B	III
12-Nov-2013	SL-549-SA5D-SB-0.0-0.5MS	P275672R241604A	MS	3546	8081B	III
12-Nov-2013	SL-549-SA5D-SB-4.0-5.0	7275673	N	3050B	6010C	III
12-Nov-2013	SL-549-SA5D-SB-4.0-5.0	7275673	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
12-Nov-2013	SL-549-SA5D-SB-4.0-5.0	7275673	N	3546	8015M	III
12-Nov-2013	SL-549-SA5D-SB-4.0-5.0	7275673	N	3546	8081B	III
12-Nov-2013	SL-549-SA5D-SB-4.0-5.0	7275673	N	3546	8082A	III
12-Nov-2013	SL-549-SA5D-SB-4.0-5.0	7275673	N	3546	8270D	III
12-Nov-2013	SL-549-SA5D-SB-4.0-5.0	7275673	N	3546	8270D SIM	III
12-Nov-2013	SL-549-SA5D-SB-4.0-5.0	7275673	N	5035A	8015M	III
12-Nov-2013	SL-549-SA5D-SB-4.0-5.0	7275673	N	METHOD	1613B	III
12-Nov-2013	SL-549-SA5D-SB-4.0-5.0	7275673	N	METHOD	7471B	III
12-Nov-2013	SL-549-SA5D-SB-11.0-12.0	7275674	N	3050B	6010C	III
12-Nov-2013	SL-549-SA5D-SB-11.0-12.0	7275674	N	3050B	6020A	III
12-Nov-2013	SL-549-SA5D-SB-11.0-12.0	7275674	N	3546	8015M	III
12-Nov-2013	SL-549-SA5D-SB-11.0-12.0	7275674	N	3546	8081B	III
12-Nov-2013	SL-549-SA5D-SB-11.0-12.0	7275674	N	3546	8082A	III
12-Nov-2013	SL-549-SA5D-SB-11.0-12.0	7275674	N	3546	8270D	III
12-Nov-2013	SL-549-SA5D-SB-11.0-12.0	7275674	N	3546	8270D SIM	III
12-Nov-2013	SL-549-SA5D-SB-11.0-12.0	7275674	N	5035A	8015M	III
12-Nov-2013	SL-549-SA5D-SB-11.0-12.0	7275674	N	METHOD	1613B	III
12-Nov-2013	SL-549-SA5D-SB-11.0-12.0	7275674	N	METHOD	7471B	III
12-Nov-2013	EB1-111213	7275661	EB	3005A	6010C	III
12-Nov-2013	EB1-111213	7275661	EB	3510C	8015M	III
12-Nov-2013	EB1-111213	7275661	EB	3510C	8081B	III
12-Nov-2013	EB1-111213	7275661	EB	3510C	8082A	III
12-Nov-2013	EB1-111213	7275661	EB	3510C	8270D	III
12-Nov-2013	EB1-111213	7275661	EB	3510C	8270D SIM	III
12-Nov-2013	EB1-111213	7275661	EB	5030B	8015M	III
12-Nov-2013	EB1-111213	7275661	EB	Gen Prep	7199	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-Nov-2013	EB1-111213	7275661	EB	M3010A	6020A	III
12-Nov-2013	EB1-111213	7275661	EB	METHOD	1613B	III
12-Nov-2013	EB1-111213	7275661	EB	METHOD	7470A	III
12-Nov-2013	EB1-111213	7275661	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: PH127 **Laboratory: LL**

EDD Filename: PH127_v1. **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: METALS

Method: 6010C **Matrix: AQ**

Sample ID: EB1-111213 *Collected:* 11/12/2013 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
BARIUM	0.00034	J	0.00033	MDL	0.0100	PQL	mg/L	J	Z
CALCIUM	0.0349	J	0.0334	MDL	0.400	PQL	mg/L	J	Z
MAGNESIUM	0.0168	J	0.0167	MDL	0.200	PQL	mg/L	U	B

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-549-SA5D-SB-0.0-0.5 *Collected:* 11/12/2013 10:25:00 *Analysis Type:* REA *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	19000		7.58	MDL	42.1	PQL	mg/Kg	J	E
ANTIMONY	4.21	U	0.778	MDL	4.21	PQL	mg/Kg	UJ	Q, E
ARSENIC	11.8		0.736	MDL	4.21	PQL	mg/Kg	J	Q, E
BERYLLIUM	0.839	J	0.0705	MDL	1.05	PQL	mg/Kg	J	Z
BORON	3.76	J	0.884	MDL	10.5	PQL	mg/Kg	J	Z
CALCIUM	2800		3.51	MDL	21.0	PQL	mg/Kg	J	E
CHROMIUM	27.5		0.168	MDL	3.16	PQL	mg/Kg	J	Q, E
COPPER	12.5		0.305	MDL	2.10	PQL	mg/Kg	J	Q, E
IRON	25500		3.81	MDL	42.1	PQL	mg/Kg	J	E
LEAD	8.15		0.526	MDL	3.16	PQL	mg/Kg	J	Q, E
MAGNESIUM	5190		1.76	MDL	10.5	PQL	mg/Kg	J	E
MANGANESE	311		0.0873	MDL	1.05	PQL	mg/Kg	J	Q
MOLYBDENUM	0.429	J	0.179	MDL	2.10	PQL	mg/Kg	U	F
PHOSPHORUS	318		3.04	MDL	10.5	PQL	mg/Kg	J	Q, E
POTASSIUM	4140		8.77	MDL	105	PQL	mg/Kg	J	Q
SODIUM	88.5	J	17.6	MDL	105	PQL	mg/Kg	J	Z
TIN	2.91	J	0.231	MDL	10.5	PQL	mg/Kg	U	B
VANADIUM	47.4		0.137	MDL	1.05	PQL	mg/Kg	J	Q
ZINC	61.4		0.210	MDL	4.21	PQL	mg/Kg	J	Q

Sample ID: SL-549-SA5D-SB-11.0-12.0 *Collected:* 11/12/2013 11:05:00 *Analysis Type:* REA *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	14200		7.72	MDL	42.8	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: PH127 **Laboratory: LL**

EDD Filename: PH127_v1. **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: **METALS**

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

Sample ID: **SL-549-SA5D-SB-11.0-12.0** ***Collected:*** **11/12/2013 11:05:00** ***Analysis Type:*** **REA** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
ANTIMONY	4.28	U	0.792	MDL	4.28	PQL	mg/Kg	UJ	Q, E
ARSENIC	13.2		0.750	MDL	4.28	PQL	mg/Kg	J	Q, E
BERYLLIUM	0.793	J	0.0717	MDL	1.07	PQL	mg/Kg	J	Z
BORON	2.24	J	0.899	MDL	10.7	PQL	mg/Kg	J	Z
CALCIUM	2100		3.58	MDL	21.4	PQL	mg/Kg	J	E
CHROMIUM	20.6		0.171	MDL	3.21	PQL	mg/Kg	J	Q, E
COPPER	6.19		0.311	MDL	2.14	PQL	mg/Kg	J	Q, E
IRON	23300		3.88	MDL	42.8	PQL	mg/Kg	J	E
LEAD	7.15		0.535	MDL	3.21	PQL	mg/Kg	J	Q, E
MAGNESIUM	3810		1.79	MDL	10.7	PQL	mg/Kg	J	E
MANGANESE	127		0.0889	MDL	1.07	PQL	mg/Kg	J	Q
MOLYBDENUM	0.262	J	0.182	MDL	2.14	PQL	mg/Kg	U	F
PHOSPHORUS	101		3.09	MDL	10.7	PQL	mg/Kg	J	Q, E
POTASSIUM	1490		8.93	MDL	107	PQL	mg/Kg	J	Q
TIN	2.76	J	0.236	MDL	10.7	PQL	mg/Kg	U	B
VANADIUM	42.6		0.139	MDL	1.07	PQL	mg/Kg	J	Q
ZINC	38.4		0.214	MDL	4.28	PQL	mg/Kg	J	Q
Zirconium	4.10	J	0.899	MDL	5.35	PQL	mg/Kg	J	Z

Sample ID: **SL-549-SA5D-SB-4.0-5.0** ***Collected:*** **11/12/2013 10:40:00** ***Analysis Type:*** **REA** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
ALUMINUM	22000		7.88	MDL	43.7	PQL	mg/Kg	J	E
ANTIMONY	4.37	U	0.809	MDL	4.37	PQL	mg/Kg	UJ	Q, E
ARSENIC	13.3		0.765	MDL	4.37	PQL	mg/Kg	J	Q, E
BERYLLIUM	0.972	J	0.0733	MDL	1.09	PQL	mg/Kg	J	Z
BORON	3.24	J	0.918	MDL	10.9	PQL	mg/Kg	J	Z
CALCIUM	2520		3.65	MDL	21.9	PQL	mg/Kg	J	E
CHROMIUM	27.9		0.175	MDL	3.28	PQL	mg/Kg	J	Q, E
COPPER	11.0		0.317	MDL	2.19	PQL	mg/Kg	J	Q, E
IRON	26800		3.96	MDL	43.7	PQL	mg/Kg	J	E
LEAD	7.86		0.547	MDL	3.28	PQL	mg/Kg	J	Q, E
MAGNESIUM	5390		1.83	MDL	10.9	PQL	mg/Kg	J	E
MANGANESE	336		0.0907	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: PH127 **Laboratory: LL**

EDD Filename: PH127_v1. **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-549-SA5D-SB-4.0-5.0 *Collected:* 11/12/2013 10:40:00 *Analysis Type:* REA *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.314	J	0.186	MDL	2.19	PQL	mg/Kg	U	F
PHOSPHORUS	229		3.16	MDL	10.9	PQL	mg/Kg	J	Q, E
POTASSIUM	3450		9.12	MDL	109	PQL	mg/Kg	J	Q
TIN	3.16	J	0.241	MDL	10.9	PQL	mg/Kg	U	B
VANADIUM	50.1		0.142	MDL	1.09	PQL	mg/Kg	J	Q
ZINC	58.8		0.219	MDL	4.37	PQL	mg/Kg	J	Q

Sample ID: SL-560-SA5D-SB-0.0-0.5 *Collected:* 11/12/2013 8:35:00 *Analysis Type:* REA *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	35900		7.82	MDL	43.4	PQL	mg/Kg	J	E
ANTIMONY	4.34	U	0.803	MDL	4.34	PQL	mg/Kg	UJ	Q, E
ARSENIC	9.70		0.759	MDL	4.34	PQL	mg/Kg	J	Q, E
BORON	8.20	J	0.911	MDL	10.8	PQL	mg/Kg	J	Z
CALCIUM	6910		3.62	MDL	21.7	PQL	mg/Kg	J	E
CHROMIUM	42.4		0.174	MDL	3.25	PQL	mg/Kg	J	Q, E
COPPER	14.9		0.315	MDL	2.17	PQL	mg/Kg	J	Q, E
LEAD	12.2		0.542	MDL	3.25	PQL	mg/Kg	J	Q, E
MAGNESIUM	8150		1.81	MDL	10.8	PQL	mg/Kg	J	E
MANGANESE	487		0.0900	MDL	1.08	PQL	mg/Kg	J	Q
MOLYBDENUM	0.227	J	0.184	MDL	2.17	PQL	mg/Kg	U	F
PHOSPHORUS	308		3.14	MDL	10.8	PQL	mg/Kg	J	Q, E
POTASSIUM	4120		9.05	MDL	108	PQL	mg/Kg	J	Q
TIN	3.29	J	0.239	MDL	10.8	PQL	mg/Kg	U	B
VANADIUM	80.0		0.141	MDL	1.08	PQL	mg/Kg	J	Q
ZINC	81.7		0.217	MDL	4.34	PQL	mg/Kg	J	Q

Sample ID: SL-560-SA5D-SB-0.0-0.5 *Collected:* 11/12/2013 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
IRON	39300		7.85	MDL	86.8	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: PH127 **Laboratory: LL**

EDD Filename: PH127_v1. **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-560-SA5D-SB-4.0-5.0 *Collected:* 11/12/2013 9:20:00 *Analysis Type:* REA *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	14400		7.22	MDL	40.1	PQL	mg/Kg	J	E
ANTIMONY	4.01	U	0.741	MDL	4.01	PQL	mg/Kg	UJ	Q, E
ARSENIC	5.64		0.701	MDL	4.01	PQL	mg/Kg	J	Q, E
BERYLLIUM	0.668	J	0.0671	MDL	1.00	PQL	mg/Kg	J	Z
BORON	1.90	J	0.842	MDL	10.0	PQL	mg/Kg	J	Z
CALCIUM	2270		3.35	MDL	20.0	PQL	mg/Kg	J	E
CHROMIUM	16.4		0.160	MDL	3.01	PQL	mg/Kg	J	Q, E
COPPER	5.94		0.291	MDL	2.00	PQL	mg/Kg	J	Q, E
IRON	21200		3.63	MDL	40.1	PQL	mg/Kg	J	E
LEAD	6.33		0.501	MDL	3.01	PQL	mg/Kg	J	Q, E
MAGNESIUM	3520		1.67	MDL	10.0	PQL	mg/Kg	J	E
MANGANESE	148		0.0832	MDL	1.00	PQL	mg/Kg	J	Q
MOLYBDENUM	0.261	J	0.170	MDL	2.00	PQL	mg/Kg	UJ	FD, F
PHOSPHORUS	134		2.90	MDL	10.0	PQL	mg/Kg	J	Q, E
POTASSIUM	2100		8.36	MDL	100	PQL	mg/Kg	J	Q
TIN	2.97	J	0.220	MDL	10.0	PQL	mg/Kg	U	B
VANADIUM	33.1		0.130	MDL	1.00	PQL	mg/Kg	J	Q
ZINC	45.6		0.200	MDL	4.01	PQL	mg/Kg	J	Q
Zirconium	4.11	J	0.842	MDL	5.01	PQL	mg/Kg	J	Z

Sample ID: SL-560-SA5D-SB-7.0-8.0 *Collected:* 11/12/2013 9:35:00 *Analysis Type:* REA *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	10700		7.17	MDL	39.8	PQL	mg/Kg	J	E
ANTIMONY	3.98	U	0.736	MDL	3.98	PQL	mg/Kg	UJ	Q, E
ARSENIC	5.76		0.696	MDL	3.98	PQL	mg/Kg	J	Q, E
BERYLLIUM	0.601	J	0.0666	MDL	0.994	PQL	mg/Kg	J	Z
BORON	1.76	J	0.835	MDL	9.94	PQL	mg/Kg	J	Z
CALCIUM	2420		3.32	MDL	19.9	PQL	mg/Kg	J	E
CHROMIUM	19.4		0.159	MDL	2.98	PQL	mg/Kg	J	Q, E
COPPER	8.67		0.288	MDL	1.99	PQL	mg/Kg	J	Q, E
IRON	15700		3.60	MDL	39.8	PQL	mg/Kg	J	E
LEAD	6.10		0.497	MDL	2.98	PQL	mg/Kg	J	Q, E
MAGNESIUM	2770		1.66	MDL	9.94	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: PH127 **Laboratory: LL**

EDD Filename: PH127_v1. **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: **METALS**

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

Sample ID: **SL-560-SA5D-SB-7.0-8.0** ***Collected:*** **11/12/2013 9:35:00** ***Analysis Type:*** **REA** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MANGANESE	103		0.0825	MDL	0.994	PQL	mg/Kg	J	Q
MOLYBDENUM	0.213	J	0.169	MDL	1.99	PQL	mg/Kg	U	F
PHOSPHORUS	169		2.87	MDL	9.94	PQL	mg/Kg	J	Q, E
POTASSIUM	1400		8.29	MDL	99.4	PQL	mg/Kg	J	Q
TIN	2.36	J	0.219	MDL	9.94	PQL	mg/Kg	U	B
VANADIUM	28.1		0.129	MDL	0.994	PQL	mg/Kg	J	Q
ZINC	35.2		0.199	MDL	3.98	PQL	mg/Kg	J	Q
Zirconium	3.30	J	0.835	MDL	4.97	PQL	mg/Kg	J	Z

Sample ID: **SL-860-SA5D-SB-4.0-5.0** ***Collected:*** **11/12/2013 9:05:00** ***Analysis Type:*** **REA** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	13300		7.22	MDL	40.1	PQL	mg/Kg	J	E
ANTIMONY	4.01	U	0.741	MDL	4.01	PQL	mg/Kg	UJ	Q, E
ARSENIC	5.98		0.701	MDL	4.01	PQL	mg/Kg	J	Q, E
BERYLLIUM	0.618	J	0.0671	MDL	1.00	PQL	mg/Kg	J	Z
BORON	1.94	J	0.841	MDL	10.0	PQL	mg/Kg	J	Z
CALCIUM	2770		3.35	MDL	20.0	PQL	mg/Kg	J	E
CHROMIUM	18.2		0.160	MDL	3.00	PQL	mg/Kg	J	Q, E
COPPER	6.97		0.290	MDL	2.00	PQL	mg/Kg	J	Q, E
IRON	21400		3.63	MDL	40.1	PQL	mg/Kg	J	E
LEAD	6.82		0.501	MDL	3.00	PQL	mg/Kg	J	Q, E
MAGNESIUM	3760		1.67	MDL	10.0	PQL	mg/Kg	J	E
MANGANESE	160		0.0831	MDL	1.00	PQL	mg/Kg	J	Q
MOLYBDENUM	2.00	U	0.170	MDL	2.00	PQL	mg/Kg	UJ	FD
PHOSPHORUS	198		2.89	MDL	10.0	PQL	mg/Kg	J	Q, E
POTASSIUM	2510		8.35	MDL	100	PQL	mg/Kg	J	Q
TIN	2.85	J	0.220	MDL	10.0	PQL	mg/Kg	U	B
VANADIUM	32.7		0.130	MDL	1.00	PQL	mg/Kg	J	Q
ZINC	49.9		0.200	MDL	4.01	PQL	mg/Kg	J	Q
Zirconium	3.96	J	0.841	MDL	5.01	PQL	mg/Kg	J	Z

* denotes a non-reportable result

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

Data Qualifier Summary

Lab Reporting Batch ID: PH127 **Laboratory: LL**

EDD Filename: PH127_v1. **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: **METALS**

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

Sample ID: **SL-549-SA5D-SB-0.0-0.5** ***Collected:*** **11/12/2013 10:25:00** ***Analysis Type:*** **REA2** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0281	J	0.0274	MDL	0.210	PQL	mg/Kg	J	Z
STRONTIUM	28.4		0.0715	MDL	0.421	PQL	mg/Kg	J	Q, E
THALLIUM	0.372		0.0316	MDL	0.210	PQL	mg/Kg	J	Q

Sample ID: **SL-549-SA5D-SB-0.0-0.5** ***Collected:*** **11/12/2013 10:25:00** ***Analysis Type:*** **REA3** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.234	J	0.105	MDL	0.421	PQL	mg/Kg	J	Z

Sample ID: **SL-549-SA5D-SB-11.0-12.0** ***Collected:*** **11/12/2013 11:05:00** ***Analysis Type:*** **REA2** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0425	J	0.0278	MDL	0.214	PQL	mg/Kg	J	Z
STRONTIUM	19.9		0.0728	MDL	0.428	PQL	mg/Kg	J	Q, E
THALLIUM	0.251		0.0321	MDL	0.214	PQL	mg/Kg	J	Q

Sample ID: **SL-549-SA5D-SB-4.0-5.0** ***Collected:*** **11/12/2013 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
SILVER	0.0498	J	0.0284	MDL	0.219	PQL	mg/Kg	J	Z
STRONTIUM	27.3		0.0743	MDL	0.437	PQL	mg/Kg	J	Q, E
THALLIUM	0.368		0.0328	MDL	0.219	PQL	mg/Kg	J	Q

Sample ID: **SL-549-SA5D-SB-4.0-5.0** ***Collected:*** **11/12/2013 10:40:00** ***Analysis Type:*** **REA3** ***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

Sample ID: **SL-560-SA5D-SB-0.0-0.5** ***Collected:*** **11/12/2013 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
SILVER	0.0568	J	0.0282	MDL	0.217	PQL	mg/Kg	J	Z
STRONTIUM	36.4		0.0738	MDL	0.434	PQL	mg/Kg	J	Q, E
THALLIUM	0.421		0.0325	MDL	0.217	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: PH127 **Laboratory: LL**

EDD Filename: PH127_v1. **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-560-SA5D-SB-0.0-0.5 *Collected:* 11/12/2013 8:35:00 *Analysis Type:* REA3 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.231	J	0.108	MDL	0.434	PQL	mg/Kg	J	Z

Sample ID: SL-560-SA5D-SB-4.0-5.0 *Collected:* 11/12/2013 9:20:00 *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	13.2		0.0681	MDL	0.401	PQL	mg/Kg	J	Q, E
THALLIUM	0.224		0.0301	MDL	0.200	PQL	mg/Kg	J	Q

Sample ID: SL-560-SA5D-SB-7.0-8.0 *Collected:* 11/12/2013 9:35:00 *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	11.4		0.0676	MDL	0.398	PQL	mg/Kg	J	Q, E
THALLIUM	0.245		0.0298	MDL	0.199	PQL	mg/Kg	J	Q

Sample ID: SL-860-SA5D-SB-4.0-5.0 *Collected:* 11/12/2013 9:05:00 *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	14.4		0.0681	MDL	0.401	PQL	mg/Kg	J	Q, E
THALLIUM	0.291		0.0300	MDL	0.200	PQL	mg/Kg	J	Q

Method Category: METALS

Method: 7199 **Matrix: SO**

Sample ID: SL-560-SA5D-SB-4.0-5.0 *Collected:* 11/12/2013 9:20:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
HEXAVALENT CHROMIUM	0.33	J	0.15	MDL	0.42	PQL	mg/Kg	J	Z

Sample ID: SL-560-SA5D-SB-7.0-8.0 *Collected:* 11/12/2013 9:35:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
HEXAVALENT CHROMIUM	0.32	J	0.14	MDL	0.41	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: PH127 **Laboratory: LL**

EDD Filename: PH127_v1. **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: METALS

Method: 7199 **Matrix: SO**

Sample ID: SL-860-SA5D-SB-4.0-5.0 *Collected:* 11/12/2013 9:05:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
HEXAVALENT CHROMIUM	0.34	J	0.15	MDL	0.43	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: SL-549-SA5D-SB-11.0-12.0 *Collected:* 11/12/2013 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
MERCURY	0.0124	J	0.0106	MDL	0.0176	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 1613B **Matrix: AQ**

Sample ID: EB1-111213 *Collected:* 11/12/2013 3:00:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	1.00	JBQ	0.342	MDL	9.95	PQL	pg/L	U	B
1,2,3,4,6,7,8-HPCDF	0.885	JBQ	0.113	MDL	9.95	PQL	pg/L	U	B
1,2,3,4,7,8,9-HPCDF	0.846	JBQ	0.133	MDL	9.95	PQL	pg/L	U	B
1,2,3,4,7,8-HXCDF	0.641	JBQ	0.229	MDL	9.95	PQL	pg/L	U	B
1,2,3,6,7,8-HXCDD	0.661	JBQ	0.292	MDL	9.95	PQL	pg/L	U	B
1,2,3,6,7,8-HXCDF	0.622	JBQ	0.219	MDL	9.95	PQL	pg/L	U	B
1,2,3,7,8,9-HXCDF	0.756	JBQ	0.244	MDL	9.95	PQL	pg/L	U	B
1,2,3,7,8-PECDD	1.28	JB	0.390	MDL	9.95	PQL	pg/L	U	B
1,2,3,7,8-PECDF	0.895	JBQ	0.230	MDL	9.95	PQL	pg/L	U	B
2,3,4,6,7,8-HXCDF	0.664	JBQ	0.217	MDL	9.95	PQL	pg/L	U	B
2,3,4,7,8-PECDF	0.345	JBQ	0.211	MDL	9.95	PQL	pg/L	U	B
2,3,7,8-TCDD	0.717	JBQ	0.522	MDL	1.99	PQL	pg/L	U	B
OCDD	0.851	JBQ	0.366	MDL	19.9	PQL	pg/L	U	B
OCDF	1.81	JBQ	0.461	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: PH127 **Laboratory: LL**

EDD Filename: PH127_v1. **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-549-SA5D-SB-0.0-0.5 *Collected:* 11/12/2013 10:25:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	2.13	JB	0.0441	MDL	5.28	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.564	JBQ	0.0153	MDL	5.28	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.120	JBQ	0.0410	MDL	5.28	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0851	JB	0.0471	MDL	5.28	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0668	JBQ	0.0389	MDL	5.28	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.741	JBQ	0.0495	MDL	5.28	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.120	JB	0.0308	MDL	5.28	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	1.15	JB	0.0477	MDL	5.28	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	1.60	JB	0.0484	MDL	5.28	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.148	JBQ	0.0594	MDL	5.28	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.609	JB	0.0322	MDL	5.28	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.114	JBQ	0.0336	MDL	5.28	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.108	JBQ	0.0344	MDL	5.28	PQL	ng/Kg	U	B
OCDF	1.37	JBQ	0.0897	MDL	10.6	PQL	ng/Kg	J	Z

Sample ID: SL-549-SA5D-SB-11.0-12.0 *Collected:* 11/12/2013 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	0.0901	JBQ	0.0223	MDL	5.53	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0689	JBQ	0.00802	MDL	5.53	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0647	JBQ	0.0202	MDL	5.53	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0704	JB	0.0236	MDL	5.53	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.143	JBQ	0.0176	MDL	5.53	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0868	JB	0.0257	MDL	5.53	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.117	JBQ	0.0136	MDL	5.53	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0673	JBQ	0.0231	MDL	5.53	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.115	JBQ	0.0182	MDL	5.53	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.194	JBQ	0.0355	MDL	5.53	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.282	JB	0.0184	MDL	5.53	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0818	JB	0.0164	MDL	5.53	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.251	JBQ	0.0202	MDL	5.53	PQL	ng/Kg	U	B
2,3,7,8-TCDD	0.117	JBQ	0.0379	MDL	1.11	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.0622	JQ	0.0351	MDL	1.11	PQL	ng/Kg	J	Z
OCDD	0.326	JB	0.0314	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: PH127 **Laboratory: LL**

EDD Filename: PH127_v1. **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-549-SA5D-SB-11.0-12.0 *Collected:* 11/12/2013 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
OCDF	0.267	JBQ	0.0440	MDL	11.1	PQL	ng/Kg	U	B

Sample ID: SL-549-SA5D-SB-4.0-5.0 *Collected:* 11/12/2013 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	0.521	JB	0.0383	MDL	5.61	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.158	JBQ	0.0109	MDL	5.61	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0547	JBQ	0.0324	MDL	5.61	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0601	JB	0.0274	MDL	5.61	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.107	JBQ	0.0247	MDL	5.61	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.136	JBQ	0.0287	MDL	5.61	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.100	JB	0.0196	MDL	5.61	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0891	JBQ	0.0280	MDL	5.61	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.200	JBQ	0.0305	MDL	5.61	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.204	JBQ	0.0416	MDL	5.61	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.223	JBQ	0.0242	MDL	5.61	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0671	JB	0.0229	MDL	5.61	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.153	JBQ	0.0277	MDL	5.61	PQL	ng/Kg	U	B
2,3,7,8-TCDD	0.0685	JBQ	0.0422	MDL	1.12	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.0495	J	0.0471	MDL	1.12	PQL	ng/Kg	J	Z
OCDD	4.58	JB	0.0396	MDL	11.2	PQL	ng/Kg	J	Z
OCDF	0.660	JB	0.0734	MDL	11.2	PQL	ng/Kg	U	B

Sample ID: SL-560-SA5D-SB-0.0-0.5 *Collected:* 11/12/2013 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	0.230	JBQ	0.0342	MDL	5.34	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0577	JBQ	0.0125	MDL	5.34	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.136	JBQ	0.0364	MDL	5.34	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0548	JBQ	0.0265	MDL	5.34	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.129	JBQ	0.0344	MDL	5.34	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0729	JB	0.0209	MDL	5.34	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.145	JB	0.0330	MDL	5.34	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.298	JBQ	0.0316	MDL	5.34	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.0938	JBQ	0.0493	MDL	5.34	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: PH127 **Laboratory: LL**

EDD Filename: PH127_v1. **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-560-SA5D-SB-0.0-0.5 *Collected:* 11/12/2013 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
1,2,3,7,8-PECDF	0.129	JBQ	0.0287	MDL	5.34	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.102	JBQ	0.0241	MDL	5.34	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0461	JBQ	0.0322	MDL	5.34	PQL	ng/Kg	U	B
OCDD	0.895	JB	0.0447	MDL	10.7	PQL	ng/Kg	U	B
OCDF	0.413	JB	0.0826	MDL	10.7	PQL	ng/Kg	U	B

Method Category: SVOA

Method: 8015M **Matrix: AQ**

Sample ID: EB1-111213 *Collected:* 11/12/2013 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 (C30-C40)	0.49	U	0.097	MDL	0.49	PQL	mg/L	UJ	L
EFH (C8-C11)	0.097	U	0.049	MDL	0.097	PQL	mg/L	UJ	L

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: SL-560-SA5D-SB-4.0-5.0 *Collected:* 11/12/2013 9:20:00 *Analysis Type:* RES *Dilution:* 26.04

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
GASOLINE RANGE ORGANICS (C5-C12)	0.4	J	0.2	MDL	1.1	PQL	mg/Kg	J	Z, FD

Sample ID: SL-560-SA5D-SB-7.0-8.0 *Collected:* 11/12/2013 9:35:00 *Analysis Type:* RES *Dilution:* 23.72

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
GASOLINE RANGE ORGANICS (C5-C12)	0.3	J	0.2	MDL	1	PQL	mg/Kg	J	Z

Sample ID: SL-860-SA5D-SB-4.0-5.0 *Collected:* 11/12/2013 9:05:00 *Analysis Type:* RES *Dilution:* 24.7

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
GASOLINE RANGE ORGANICS (C5-C12)	1.0	U	0.2	MDL	1.0	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: PH127 **Laboratory: LL**

EDD Filename: PH127_v1. **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: SVOA

Method: 8081B **Matrix: SO**

Sample ID: SL-549-SA5D-SB-0.0-0.5 *Collected:* 11/12/2013 10:25:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDE	0.49	J	0.35	MDL	1.8	PQL	ug/Kg	J	Z
4,4'-DDT	1.3	J	0.38	MDL	1.8	PQL	ug/Kg	J	Z

Method Category: SVOA

Method: 8151A **Matrix: AQ**

Sample ID: EB1-111213 *Collected:* 11/12/2013 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
2,4,5-T	0.050	U	0.015	MDL	0.050	PQL	ug/L	UJ	E
2,4,5-TP (Silvex)	0.050	U	0.0099	MDL	0.050	PQL	ug/L	UJ	E
2,4-D	0.50	U	0.16	MDL	0.50	PQL	ug/L	UJ	E
2,4-DB	0.99	U	0.30	MDL	0.99	PQL	ug/L	UJ	E
DALAPON	1.2	U	0.25	MDL	1.2	PQL	ug/L	UJ	E
DICAMBA	0.30	U	0.079	MDL	0.30	PQL	ug/L	UJ	E
DICHLOROPROP	0.50	U	0.16	MDL	0.50	PQL	ug/L	UJ	E
MCPA	200	U	50	MDL	200	PQL	ug/L	UJ	E
MCPP	200	U	50	MDL	200	PQL	ug/L	UJ	E

Method Category: SVOA

Method: 8270D **Matrix: AQ**

Sample ID: EB1-111213 *Collected:* 11/12/2013 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
3,5-Dimethylphenol	10	U	3	MDL	10	PQL	ug/L	UJ	L

Sample ID: EB1-111213 *Collected:* 11/12/2013 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
2,6-DICHLOROPHENOL	1	U	0.5	MDL	1	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: PH127 **Laboratory: LL**

EDD Filename: PH127_v1. **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: SVOA

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

Sample ID: EB1-111213 *Collected:* 11/12/2013 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	0.37	J	0.051	MDL	1.0	PQL	ug/L	U	B
Di-n-butylphthalate	0.19	J	0.051	MDL	1.0	PQL	ug/L	U	B

Method Category: SVOA

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

Sample ID: SL-549-SA5D-SB-0.0-0.5 *Collected:* 11/12/2013 10:25:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(B)FLUORANTHENE	1.3	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z
CHRYSENE	1.1	J	0.36	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: PH127 **Laboratory: LL**

EDD Filename: PH127_v1. **eQAPP Name: CDM_SSFL_140113_Lan**

Reason Code Legend

Reason Code	*Description*
B	Calibration Blank Contamination
B	Method Blank Contamination
E	Laboratory Control Precision
E	Laboratory Duplicate Precision
E	Matrix Spike Precision
F	Field Blank Contamination
FD	Field Duplicate Precision
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
S	Surrogate/Tracer Recovery Lower 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

PH127

Method Blank Outlier Report

Lab Reporting Batch ID: PH127 **Laboratory: LL**

EDD Filename: PH127_v1. **eQAPP Name: CDM_SSFL_140113_Lan**

Method: **1613B**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK3230B370934	11/22/2013 9:34:00 AM	1,2,3,4,6,7,8-HPCDD	0.616 pg/L	EB1-111213
		1,2,3,4,6,7,8-HPCDF	0.958 pg/L	
		1,2,3,4,7,8,9-HPCDF	0.986 pg/L	
		1,2,3,4,7,8-HxCDD	0.655 pg/L	
		1,2,3,4,7,8-HXCDF	0.912 pg/L	
		1,2,3,6,7,8-HXCDD	0.743 pg/L	
		1,2,3,6,7,8-HXCDF	1.05 pg/L	
		1,2,3,7,8,9-HXCDD	0.571 pg/L	
		1,2,3,7,8,9-HXCDF	1.12 pg/L	
		1,2,3,7,8-PECDD	0.830 pg/L	
		1,2,3,7,8-PECDF	1.16 pg/L	
		2,3,4,6,7,8-HXCDF	1.11 pg/L	
		2,3,4,7,8-PECDF	0.618 pg/L	
		2,3,7,8-TCDD	0.726 pg/L	
		OCDD	2.62 pg/L	
		OCDF	2.54 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
EB1-111213(RES)	1,2,3,4,6,7,8-HPCDD	1.00 pg/L	1.00U pg/L
EB1-111213(RES)	1,2,3,4,6,7,8-HPCDF	0.885 pg/L	0.885U pg/L
EB1-111213(RES)	1,2,3,4,7,8,9-HPCDF	0.846 pg/L	0.846U pg/L
EB1-111213(RES)	1,2,3,4,7,8-HXCDF	0.641 pg/L	0.641U pg/L
EB1-111213(RES)	1,2,3,6,7,8-HXCDD	0.661 pg/L	0.661U pg/L
EB1-111213(RES)	1,2,3,6,7,8-HXCDF	0.622 pg/L	0.622U pg/L
EB1-111213(RES)	1,2,3,7,8,9-HXCDF	0.756 pg/L	0.756U pg/L
EB1-111213(RES)	1,2,3,7,8-PECDD	1.28 pg/L	1.28U pg/L
EB1-111213(RES)	1,2,3,7,8-PECDF	0.895 pg/L	0.895U pg/L
EB1-111213(RES)	2,3,4,6,7,8-HXCDF	0.664 pg/L	0.664U pg/L
EB1-111213(RES)	2,3,4,7,8-PECDF	0.345 pg/L	0.345U pg/L
EB1-111213(RES)	2,3,7,8-TCDD	0.717 pg/L	0.717U pg/L
EB1-111213(RES)	OCDD	0.851 pg/L	0.851U pg/L
EB1-111213(RES)	OCDF	1.81 pg/L	1.81U pg/L

Method Blank Outlier Report

Lab Reporting Batch ID: PH127 **Laboratory: LL**

EDD Filename: PH127_v1. **eQAPP Name: CDM_SSFL_140113_Lan**

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK3240B371252	11/24/2013 12:52:00 PM	1,2,3,4,6,7,8-HPCDD	0.0721 ng/Kg	SL-549-SA5D-SB-0.0-0.5
		1,2,3,4,6,7,8-HPCDF	0.0746 ng/Kg	SL-549-SA5D-SB-11.0-12.0
		1,2,3,4,7,8,9-HPCDF	0.0711 ng/Kg	SL-549-SA5D-SB-4.0-5.0
		1,2,3,4,7,8-HxCDD	0.0412 ng/Kg	SL-560-SA5D-SB-0.0-0.5
		1,2,3,4,7,8-HXCDF	0.0890 ng/Kg	
		1,2,3,6,7,8-HXCDD	0.0407 ng/Kg	
		1,2,3,6,7,8-HXCDF	0.0519 ng/Kg	
		1,2,3,7,8,9-HXCDD	0.0742 ng/Kg	
		1,2,3,7,8,9-HXCDF	0.0575 ng/Kg	
		1,2,3,7,8-PECDD	0.0804 ng/Kg	
		1,2,3,7,8-PECDF	0.121 ng/Kg	
		2,3,4,6,7,8-HXCDF	0.0893 ng/Kg	
		2,3,4,7,8-PECDF	0.0714 ng/Kg	
		2,3,7,8-TCDD	0.0670 ng/Kg	
		OCDD	0.213 ng/Kg	
		OCDF	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-549-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.120 ng/Kg	0.120U ng/Kg
SL-549-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.0851 ng/Kg	0.0851U ng/Kg
SL-549-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.0668 ng/Kg	0.0668U ng/Kg
SL-549-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.120 ng/Kg	0.120U ng/Kg
SL-549-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.148 ng/Kg	0.148U ng/Kg
SL-549-SA5D-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.114 ng/Kg	0.114U ng/Kg
SL-549-SA5D-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.108 ng/Kg	0.108U ng/Kg
SL-549-SA5D-SB-11.0-12.0(RES)	1,2,3,4,6,7,8-HPCDD	0.0901 ng/Kg	0.0901U ng/Kg
SL-549-SA5D-SB-11.0-12.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0689 ng/Kg	0.0689U ng/Kg
SL-549-SA5D-SB-11.0-12.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0647 ng/Kg	0.0647U ng/Kg
SL-549-SA5D-SB-11.0-12.0(RES)	1,2,3,4,7,8-HxCDD	0.0704 ng/Kg	0.0704U ng/Kg
SL-549-SA5D-SB-11.0-12.0(RES)	1,2,3,4,7,8-HXCDF	0.143 ng/Kg	0.143U ng/Kg
SL-549-SA5D-SB-11.0-12.0(RES)	1,2,3,6,7,8-HXCDD	0.0868 ng/Kg	0.0868U ng/Kg
SL-549-SA5D-SB-11.0-12.0(RES)	1,2,3,6,7,8-HXCDF	0.117 ng/Kg	0.117U ng/Kg
SL-549-SA5D-SB-11.0-12.0(RES)	1,2,3,7,8,9-HXCDD	0.0673 ng/Kg	0.0673U ng/Kg
SL-549-SA5D-SB-11.0-12.0(RES)	1,2,3,7,8,9-HXCDF	0.115 ng/Kg	0.115U ng/Kg
SL-549-SA5D-SB-11.0-12.0(RES)	1,2,3,7,8-PECDD	0.194 ng/Kg	0.194U ng/Kg
SL-549-SA5D-SB-11.0-12.0(RES)	1,2,3,7,8-PECDF	0.282 ng/Kg	0.282U ng/Kg
SL-549-SA5D-SB-11.0-12.0(RES)	2,3,4,6,7,8-HXCDF	0.0818 ng/Kg	0.0818U ng/Kg
SL-549-SA5D-SB-11.0-12.0(RES)	2,3,4,7,8-PECDF	0.251 ng/Kg	0.251U ng/Kg
SL-549-SA5D-SB-11.0-12.0(RES)	2,3,7,8-TCDD	0.117 ng/Kg	0.117U ng/Kg
SL-549-SA5D-SB-11.0-12.0(RES)	OCDD	0.326 ng/Kg	0.326U ng/Kg
SL-549-SA5D-SB-11.0-12.0(RES)	OCDF	0.267 ng/Kg	0.267U ng/Kg
SL-549-SA5D-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.158 ng/Kg	0.158U ng/Kg
SL-549-SA5D-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0547 ng/Kg	0.0547U ng/Kg
SL-549-SA5D-SB-4.0-5.0(RES)	1,2,3,4,7,8-HxCDD	0.0601 ng/Kg	0.0601U ng/Kg
SL-549-SA5D-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.107 ng/Kg	0.107U ng/Kg
SL-549-SA5D-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDD	0.136 ng/Kg	0.136U ng/Kg
SL-549-SA5D-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.100 ng/Kg	0.100U ng/Kg

Method Blank Outlier Report

Lab Reporting Batch ID: PH127 **Laboratory: LL**

EDD Filename: PH127_v1. **eQAPP Name: CDM_SSFL_140113_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-549-SA5D-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDD	0.0891 ng/Kg	0.0891U ng/Kg
SL-549-SA5D-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDF	0.200 ng/Kg	0.200U ng/Kg
SL-549-SA5D-SB-4.0-5.0(RES)	1,2,3,7,8-PECDD	0.204 ng/Kg	0.204U ng/Kg
SL-549-SA5D-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.223 ng/Kg	0.223U ng/Kg
SL-549-SA5D-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0671 ng/Kg	0.0671U ng/Kg
SL-549-SA5D-SB-4.0-5.0(RES)	2,3,4,7,8-PECDF	0.153 ng/Kg	0.153U ng/Kg
SL-549-SA5D-SB-4.0-5.0(RES)	2,3,7,8-TCDD	0.0685 ng/Kg	0.0685U ng/Kg
SL-549-SA5D-SB-4.0-5.0(RES)	OCDF	0.660 ng/Kg	0.660U ng/Kg
SL-560-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDD	0.230 ng/Kg	0.230U ng/Kg
SL-560-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDF	0.0577 ng/Kg	0.0577U ng/Kg
SL-560-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.136 ng/Kg	0.136U ng/Kg
SL-560-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.0548 ng/Kg	0.0548U ng/Kg
SL-560-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDD	0.129 ng/Kg	0.129U ng/Kg
SL-560-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.0729 ng/Kg	0.0729U ng/Kg
SL-560-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDD	0.145 ng/Kg	0.145U ng/Kg
SL-560-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.0938 ng/Kg	0.0938U ng/Kg
SL-560-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.129 ng/Kg	0.129U ng/Kg
SL-560-SA5D-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.102 ng/Kg	0.102U ng/Kg
SL-560-SA5D-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.0461 ng/Kg	0.0461U ng/Kg
SL-560-SA5D-SB-0.0-0.5(RES)	OCDD	0.895 ng/Kg	0.895U ng/Kg
SL-560-SA5D-SB-0.0-0.5(RES)	OCDF	0.413 ng/Kg	0.413U ng/Kg

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P32537CB222019	11/22/2013 8:19:00 PM	ALUMINUM CALCIUM IRON MAGNESIUM TIN	19.2 mg/Kg 22.5 mg/Kg 8.11 mg/Kg 19.6 mg/Kg 1.56 mg/Kg	SL-549-SA5D-SB-0.0-0.5 SL-549-SA5D-SB-11.0-12.0 SL-549-SA5D-SB-4.0-5.0 SL-560-SA5D-SB-0.0-0.5 SL-560-SA5D-SB-4.0-5.0 SL-560-SA5D-SB-7.0-8.0 SL-860-SA5D-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-SA5D-SB-0.0-0.5(REA)	TIN	2.91 mg/Kg	2.91U mg/Kg
SL-549-SA5D-SB-11.0-12.0(REA)	TIN	2.76 mg/Kg	2.76U mg/Kg
SL-549-SA5D-SB-4.0-5.0(REA)	TIN	3.16 mg/Kg	3.16U mg/Kg
SL-560-SA5D-SB-0.0-0.5(REA)	TIN	3.29 mg/Kg	3.29U mg/Kg
SL-560-SA5D-SB-4.0-5.0(REA)	TIN	2.97 mg/Kg	2.97U mg/Kg

Method Blank Outlier Report

Lab Reporting Batch ID: PH127 **Laboratory: LL**

EDD Filename: PH127_v1. **eQAPP Name: CDM_SSFL_140113_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-560-SA5D-SB-7.0-8.0(REA)	TIN	2.36 mg/Kg	2.36U mg/Kg
SL-860-SA5D-SB-4.0-5.0(REA)	TIN	2.85 mg/Kg	2.85U mg/Kg

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
PLKWA32B261437	11/23/2013 2:37:00 PM	BIS(2-ETHYLHEXYL)PHTHALATE Diethylphthalate Di-n-butylphthalate	0.096 ug/L 0.056 ug/L 0.057 ug/L	EB1-111213

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
EB1-111213(RES)	Diethylphthalate	0.37 ug/L	1.0U ug/L
EB1-111213(RES)	Di-n-butylphthalate	0.19 ug/L	1.0U ug/L

Field Blank Outlier Report

Lab Reporting Batch ID: PH127 **Laboratory: LL**

EDD Filename: PH127_v1. **eQAPP Name: CDM_SSFL_140113_Lan**

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

Field Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
FB-041613(REA2/TOT)	4/16/2013 3:15:00 PM	MOLYBDENUM TIN	0.0132 mg/L 0.0029 mg/L	SL-549-SA5D-SB-0.0-0.5 SL-549-SA5D-SB-11.0-12.0 SL-549-SA5D-SB-4.0-5.0 SL-560-SA5D-SB-0.0-0.5 SL-560-SA5D-SB-4.0-5.0 SL-560-SA5D-SB-7.0-8.0 SL-860-SA5D-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-SA5D-SB-0.0-0.5(REA)	MOLYBDENUM	0.429 mg/Kg	0.429U mg/Kg
SL-549-SA5D-SB-11.0-12.0(REA)	MOLYBDENUM	0.262 mg/Kg	0.262U mg/Kg
SL-549-SA5D-SB-4.0-5.0(REA)	MOLYBDENUM	0.314 mg/Kg	0.314U mg/Kg
SL-560-SA5D-SB-0.0-0.5(REA)	MOLYBDENUM	0.227 mg/Kg	0.227U mg/Kg
SL-560-SA5D-SB-4.0-5.0(REA)	MOLYBDENUM	0.261 mg/Kg	0.261U mg/Kg
SL-560-SA5D-SB-7.0-8.0(REA)	MOLYBDENUM	0.213 mg/Kg	0.213U mg/Kg

Surrogate Outlier Report

Lab Reporting Batch ID: PH127 **Laboratory: LL**

EDD Filename: PH127_v1. **eQAPP Name: CDM_SSFL_140113_Lan**

Method: **8015M**
Matrix: **SO**

Sample ID (Analysis Type)	*Surrogate*	*Sample % Recovery*	*% Recovery Limits*	*Affected Compounds*	*Flag*
SL-549-SA5D-SB-11.0-12.0 (REA)	CHLOROBENZENE	153	37.00-125.00	All Target Analytes	J (all detects)

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH127 **Laboratory: LL**

EDD Filename: PH127_v1. **eQAPP Name: CDM_SSFL_140113_Lan**

Method: 6010C
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-560-SA5D-SB-4.0-5.0MS (TOT) SL-560-SA5D-SB-4.0-5.0MSD (TOT) (SL-549-SA5D-SB-0.0-0.5 SL -549-SA5D-SB-11.0-12.0 SL -549-SA5D-SB-4.0-5.0 SL -560-SA5D-SB-0.0-0.5 SL -560-SA5D-SB-4.0-5.0 SL -560-SA5D-SB-7.0-8.0 SL -860-SA5D-SB-4.0-5.0)	MANGANESE POTASSIUM TITANIUM VANADIUM ZINC	- 161 260 - -	192 191 444 132 147	75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00	- - - - -	MANGANESE POTASSIUM TITANIUM VANADIUM ZINC	J (all detects) Ti, No Qual, >4x
SL-560-SA5D-SB-4.0-5.0MS (TOT) SL-560-SA5D-SB-4.0-5.0MSD (TOT) (SL-549-SA5D-SB-0.0-0.5 SL -549-SA5D-SB-11.0-12.0 SL -549-SA5D-SB-4.0-5.0 SL -560-SA5D-SB-0.0-0.5 SL -560-SA5D-SB-4.0-5.0 SL -560-SA5D-SB-7.0-8.0 SL -860-SA5D-SB-4.0-5.0)	ALUMINUM IRON	-117 -1719	2431 9674	75.00-125.00 75.00-125.00	30 (20.00) 45 (20.00)	ALUMINUM IRON	J(all detects) UJ(all non-detects) No Qual, %R >4x
SL-560-SA5D-SB-4.0-5.0MS (TOT) SL-560-SA5D-SB-4.0-5.0MSD (TOT) (SL-549-SA5D-SB-0.0-0.5 SL -549-SA5D-SB-11.0-12.0 SL -549-SA5D-SB-4.0-5.0 SL -560-SA5D-SB-4.0-5.0 SL -560-SA5D-SB-0.0-0.5 SL -560-SA5D-SB-4.0-5.0 SL -560-SA5D-SB-7.0-8.0 SL -860-SA5D-SB-4.0-5.0)	ANTIMONY ARSENIC CALCIUM CHROMIUM COPPER LEAD MAGNESIUM PHOSPHORUS	62 - 131 - - - 196 260	48 129 792 144 127 127 1134 137	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	30 (20.00) 22 (20.00) 63 (20.00) 26 (20.00) 23 (20.00) 24 (20.00) 38 (20.00) 39 (20.00)	ANTIMONY ARSENIC CALCIUM CHROMIUM COPPER LEAD MAGNESIUM PHOSPHORUS	J(all detects) UJ(all non-detects) Ca, Mg, No Qual, %R >4x

Method: 6020A
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-560-SA5D-SB-4.0-5.0MSD (TOT) (SL-549-SA5D-SB-0.0-0.5 SL -549-SA5D-SB-11.0-12.0 SL -549-SA5D-SB-4.0-5.0 SL -560-SA5D-SB-0.0-0.5 SL -560-SA5D-SB-4.0-5.0 SL -560-SA5D-SB-7.0-8.0 SL -860-SA5D-SB-4.0-5.0)	THALLIUM	-	141	75.00-125.00	-	THALLIUM	J(all detects)
SL-560-SA5D-SB-4.0-5.0MSD (TOT) (SL-549-SA5D-SB-0.0-0.5 SL -549-SA5D-SB-11.0-12.0 SL -549-SA5D-SB-4.0-5.0 SL -560-SA5D-SB-0.0-0.5 SL -560-SA5D-SB-4.0-5.0 SL -560-SA5D-SB-7.0-8.0 SL -860-SA5D-SB-4.0-5.0)	STRONTIUM	-	236	75.00-125.00	34 (20.00)	STRONTIUM	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: PH127 **Laboratory: LL**

EDD Filename: PH127_v1. **eQAPP Name: CDM_SSFL_140113_Lan**

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

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
SL-560-SA5D-SB-4.0-5.0MSD (SL-560-SA5D-SB-4.0-5.0)	3,3'-DICHLOROBENZIDINE	-	-	10.00-143.00	43 (30.00)	3,3'-DICHLOROBENZIDINE	J(all detects)

Lab Duplicate Outlier Report

Lab Reporting Batch ID: PH127 **Laboratory: LL**

EDD Filename: PH127_v1. **eQAPP Name: CDM_SSFL_140113_Lan**

Method: 6010C
Matrix: SO

QC Sample ID (Associated Sample ID)	*Analyte*	*Sample RPD*	*eQAPP RPD*	*Flag*
SL-560-SA5D-SB-4.0-5.0DUP (TOT) (SL-549-SA5D-SB-0.0-0.5 SL-549-SA5D-SB-11.0-12.0 SL -549-SA5D-SB-4.0-5.0 SL -560-SA5D-SB-0.0-0.5 SL -560-SA5D-SB-4.0-5.0 SL -560-SA5D-SB-7.0-8.0 SL -860-SA5D-SB-4.0-5.0)	MOLYBDENUM	200	20.00	No Qual, OK by Difference

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH127 **Laboratory: LL**

EDD Filename: PH127_v1. **eQAPP Name: CDM_SSFL_140113_Lan**

***Method:* 8151A**
***Matrix:* AQ**

QC Sample ID (Associated Samples)	*Compound*	*LCS %R*	*LCSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
P33203AQ241337A **P33203AY241404A** (EB1-111213)	DINOSEB	168	223	16.00-163.00	-	DINOSEB	J (all detects)
P33203AY241404A (EB1-111213)	2,4,5-T	-	-	55.00-169.00	34 (30.00)	2,4,5-T	J(all detects) UJ(all non-detects)
	2,4,5-TP (Silvex)	-	-	58.00-155.00	32 (30.00)	2,4,5-TP (Silvex)	
	2,4-D	-	-	68.00-155.00	35 (30.00)	2,4-D	
	2,4-DB	-	-	50.00-163.00	35 (30.00)	2,4-DB	
	DALAPON	-	-	39.00-115.00	48 (30.00)	DALAPON	
	DICAMBA	-	-	55.00-163.00	33 (30.00)	DICAMBA	
	DICHLOROPROP	-	-	89.00-162.00	31 (30.00)	DICHLOROPROP	
	MCPA	-	-	68.00-154.00	39 (30.00)	MCPA	
	MCPP	-	-	46.00-173.00	57 (30.00)	MCPP	

***Method:* 8015M**
***Matrix:* AQ**

QC Sample ID (Associated Samples)	*Compound*	*LCS %R*	*LCSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
P33228AQ321533A **P33228AY321554A** (EB1-111213)	EFH (C30-C40)	45	56	70.00-130.00	-	EFH (C30-C40)	J(all detects) UJ(all non-detects)
	EFH (C8-C11)	55	65	70.00-130.00	-	EFH (C8-C11)	

Field Duplicate RPD Report

Lab Reporting Batch ID: PH127 **Laboratory: LL**

EDD Filename: PH127_v1. **eQAPP Name: CDM_SSFL_140113_Lan**

Method: 160.3M
Matrix: SO

Analyte	Concentration (%)		Sample RPD	eQAPP RPD	Flag
	SL-560-SA5D-SB-4.0-5.0	SL-860-SA5D-SB-4.0-5.0			
MOISTURE	3.1	4.0	25		No Qualifiers Applied

Method: 6010C
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-560-SA5D-SB-4.0-5.0 (TOT)	SL-860-SA5D-SB-4.0-5.0 (TOT)			
ALUMINUM	14400	13300	8	50.00	
ARSENIC	5.64	5.98	6	50.00	
BARIUM	61.7	61.3	1	50.00	
BERYLLIUM	0.668	0.618	8	50.00	
BORON	1.90	1.94	2	50.00	
CALCIUM	2270	2770	20	50.00	
CHROMIUM	16.4	18.2	10	50.00	
COBALT	3.18	3.53	10	50.00	
COPPER	5.94	6.97	16	50.00	
IRON	21200	21400	1	50.00	
LEAD	6.33	6.82	7	50.00	
LITHIUM	12.7	12.5	2	50.00	No Qualifiers Applied
MAGNESIUM	3520	3760	7	50.00	
MANGANESE	148	160	8	50.00	
NICKEL	8.12	9.08	11	50.00	
PHOSPHORUS	134	198	39	50.00	
POTASSIUM	2100	2510	18	50.00	
SODIUM	132	136	3	50.00	
TIN	2.97	2.85	4	50.00	
TITANIUM	989	1070	8	50.00	
VANADIUM	33.1	32.7	1	50.00	
ZINC	45.6	49.9	9	50.00	
Zirconium	4.11	3.96	4	50.00	
MOLYBDENUM	0.261	2.00 U	200	50.00	J(all detects) UJ(all non-detects)

Method: 6020A
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-560-SA5D-SB-4.0-5.0 (TOT)	SL-860-SA5D-SB-4.0-5.0 (TOT)			
STRONTIUM	13.2	14.4	9	50.00	No Qualifiers Applied
THALLIUM	0.224	0.291	26	50.00	

Method: 7199
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-560-SA5D-SB-4.0-5.0 (TOT)	SL-860-SA5D-SB-4.0-5.0 (TOT)			
HEXAVALENT CHROMIUM	0.33	0.34	3	50.00	No Qualifiers Applied

Field Duplicate RPD Report

Lab Reporting Batch ID: PH127 **Laboratory: LL**

EDD Filename: PH127_v1. **eQAPP Name: CDM_SSFL_140113_Lan**

Method: 8015M
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-560-SA5D-SB-4.0-5.0	SL-860-SA5D-SB-4.0-5.0			
GASOLINE RANGE ORGANICS (C5-C12)	0.4	1.0 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-560-SA5D-SB-4.0-5.0	SL-860-SA5D-SB-4.0-5.0			
PH	7.40	8.50	14	50.00	No Qualifiers Applied

Reporting Limit Outliers

Lab Reporting Batch ID: PH127 **Laboratory: LL**

EDD Filename: PH127_v1. **eQAPP Name: CDM_SSFL_140113_Lan**

Method: 1613B

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB1-111213	1,2,3,4,6,7,8-HPCDD	JBQ	1.00	9.95	PQL	pg/L	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JBQ	0.885	9.95	PQL	pg/L	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.846	9.95	PQL	pg/L	
	1,2,3,4,7,8-HXCDF	JBQ	0.641	9.95	PQL	pg/L	
	1,2,3,6,7,8-HXCDD	JBQ	0.661	9.95	PQL	pg/L	
	1,2,3,6,7,8-HXCDF	JBQ	0.622	9.95	PQL	pg/L	
	1,2,3,7,8,9-HXCDF	JBQ	0.756	9.95	PQL	pg/L	
	1,2,3,7,8-PECDD	JB	1.28	9.95	PQL	pg/L	
	1,2,3,7,8-PECDF	JBQ	0.895	9.95	PQL	pg/L	
	2,3,4,6,7,8-HXCDF	JBQ	0.664	9.95	PQL	pg/L	
	2,3,4,7,8-PECDF	JBQ	0.345	9.95	PQL	pg/L	
	2,3,7,8-TCDD	JBQ	0.717	1.99	PQL	pg/L	
	OCDD	JBQ	0.851	19.9	PQL	pg/L	
	OCDF	JBQ	1.81	19.9	PQL	pg/L	

Method: 6010C

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB1-111213	BARIUM	J	0.00034	0.0100	PQL	mg/L	J (all detects)
	CALCIUM	J	0.0349	0.400	PQL	mg/L	
	MAGNESIUM	J	0.0168	0.200	PQL	mg/L	

Method: 8270D SIM

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB1-111213	Diethylphthalate	J	0.37	1.0	PQL	ug/L	J (all detects)
	Di-n-butylphthalate	J	0.19	1.0	PQL	ug/L	

Reporting Limit Outliers

Lab Reporting Batch ID: PH127 **Laboratory: LL**

EDD Filename: PH127_v1. **eQAPP Name: CDM_SSFL_140113_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-549-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	2.13	5.28	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.564	5.28	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.120	5.28	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.0851	5.28	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0668	5.28	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.741	5.28	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.120	5.28	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDD	JB	1.15	5.28	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	1.60	5.28	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.148	5.28	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.609	5.28	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.114	5.28	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.108	5.28	PQL	ng/Kg	
	OCDF	JBQ	1.37	10.6	PQL	ng/Kg	
SL-549-SA5D-SB-11.0-12.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.0901	5.53	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0689	5.53	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0647	5.53	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.0704	5.53	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.143	5.53	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.0868	5.53	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.117	5.53	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.0673	5.53	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.115	5.53	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JBQ	0.194	5.53	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.282	5.53	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.0818	5.53	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.251	5.53	PQL	ng/Kg	
	2,3,7,8-TCDD	JBQ	0.117	1.11	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0622	1.11	PQL	ng/Kg	
	OCDD	JB	0.326	11.1	PQL	ng/Kg	
	OCDF	JBQ	0.267	11.1	PQL	ng/Kg	
SL-549-SA5D-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JB	0.521	5.61	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.158	5.61	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0547	5.61	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.0601	5.61	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.107	5.61	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.136	5.61	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.100	5.61	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.0891	5.61	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.200	5.61	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JBQ	0.204	5.61	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.223	5.61	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.0671	5.61	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.153	5.61	PQL	ng/Kg	
	2,3,7,8-TCDD	JBQ	0.0685	1.12	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.0495	1.12	PQL	ng/Kg	
	OCDD	JB	4.58	11.2	PQL	ng/Kg	
	OCDF	JB	0.660	11.2	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH127 **Laboratory: LL**

EDD Filename: PH127_v1. **eQAPP Name: CDM_SSFL_140113_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-560-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JBQ	0.230	5.34	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0577	5.34	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.136	5.34	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0548	5.34	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.129	5.34	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.0729	5.34	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.145	5.34	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.298	5.34	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.0938	5.34	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.129	5.34	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.102	5.34	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0461	5.34	PQL	ng/Kg	
	OCDD	JB	0.895	10.7	PQL	ng/Kg	
	OCDF	JB	0.413	10.7	PQL	ng/Kg	

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-549-SA5D-SB-0.0-0.5	BERYLLIUM	J	0.839	1.05	PQL	mg/Kg	J (all detects)
	BORON	J	3.76	10.5	PQL	mg/Kg	
	MOLYBDENUM	J	0.429	2.10	PQL	mg/Kg	
	SODIUM	J	88.5	105	PQL	mg/Kg	
	TIN	J	2.91	10.5	PQL	mg/Kg	
SL-549-SA5D-SB-11.0-12.0	BERYLLIUM	J	0.793	1.07	PQL	mg/Kg	J (all detects)
	BORON	J	2.24	10.7	PQL	mg/Kg	
	MOLYBDENUM	J	0.262	2.14	PQL	mg/Kg	
	TIN	J	2.76	10.7	PQL	mg/Kg	
	Zirconium	J	4.10	5.35	PQL	mg/Kg	
SL-549-SA5D-SB-4.0-5.0	BERYLLIUM	J	0.972	1.09	PQL	mg/Kg	J (all detects)
	BORON	J	3.24	10.9	PQL	mg/Kg	
	MOLYBDENUM	J	0.314	2.19	PQL	mg/Kg	
	TIN	J	3.16	10.9	PQL	mg/Kg	
SL-560-SA5D-SB-0.0-0.5	BORON	J	8.20	10.8	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.227	2.17	PQL	mg/Kg	
	TIN	J	3.29	10.8	PQL	mg/Kg	
SL-560-SA5D-SB-4.0-5.0	BERYLLIUM	J	0.668	1.00	PQL	mg/Kg	J (all detects)
	BORON	J	1.90	10.0	PQL	mg/Kg	
	MOLYBDENUM	J	0.261	2.00	PQL	mg/Kg	
	TIN	J	2.97	10.0	PQL	mg/Kg	
	Zirconium	J	4.11	5.01	PQL	mg/Kg	
SL-560-SA5D-SB-7.0-8.0	BERYLLIUM	J	0.601	0.994	PQL	mg/Kg	J (all detects)
	BORON	J	1.76	9.94	PQL	mg/Kg	
	MOLYBDENUM	J	0.213	1.99	PQL	mg/Kg	
	TIN	J	2.36	9.94	PQL	mg/Kg	
	Zirconium	J	3.30	4.97	PQL	mg/Kg	
SL-860-SA5D-SB-4.0-5.0	BERYLLIUM	J	0.618	1.00	PQL	mg/Kg	J (all detects)
	BORON	J	1.94	10.0	PQL	mg/Kg	
	TIN	J	2.85	10.0	PQL	mg/Kg	
	Zirconium	J	3.96	5.01	PQL	mg/Kg	

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

Reporting Limit Outliers

Lab Reporting Batch ID: PH127 **Laboratory: LL**

EDD Filename: PH127_v1. **eQAPP Name: CDM_SSFL_140113_Lan**

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-549-SA5D-SB-0.0-0.5	SELENIUM SILVER	J J	0.234 0.0281	0.421 0.210	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-549-SA5D-SB-11.0-12.0	SILVER	J	0.0425	0.214	PQL	mg/Kg	J (all detects)
SL-549-SA5D-SB-4.0-5.0	SELENIUM SILVER	J J	0.123 0.0498	0.437 0.219	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-560-SA5D-SB-0.0-0.5	SELENIUM SILVER	J J	0.231 0.0568	0.434 0.217	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-560-SA5D-SB-4.0-5.0	HEXAVALENT CHROMIUM	J	0.33	0.42	PQL	mg/Kg	J (all detects)
SL-560-SA5D-SB-7.0-8.0	HEXAVALENT CHROMIUM	J	0.32	0.41	PQL	mg/Kg	J (all detects)
SL-860-SA5D-SB-4.0-5.0	HEXAVALENT CHROMIUM	J	0.34	0.43	PQL	mg/Kg	J (all detects)

Method: 7471B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-549-SA5D-SB-11.0-12.0	MERCURY	J	0.0124	0.0176	PQL	mg/Kg	J (all detects)

Method: 8015M

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-560-SA5D-SB-4.0-5.0	GASOLINE RANGE ORGANICS (C5-C12)	J	0.4	1.1	PQL	mg/Kg	J (all detects)
SL-560-SA5D-SB-7.0-8.0	GASOLINE RANGE ORGANICS (C5-C12)	J	0.3	1	PQL	mg/Kg	J (all detects)

Method: 8081B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-549-SA5D-SB-0.0-0.5	4,4'-DDE 4,4'-DDT	J J	0.49 1.3	1.8 1.8	PQL PQL	ug/Kg ug/Kg	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH127 **Laboratory: LL**

EDD Filename: PH127_v1. **eQAPP Name: CDM_SSFL_140113_Lan**

Method: **8270D SIM**

Matrix: **SO**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
SL-549-SA5D-SB-0.0-0.5	BENZO(B)FLUORANTHENE	J	1.3	1.8	PQL	ug/Kg	J (all detects)
	CHRYSENE	J	1.1	1.8	PQL	ug/Kg	

LDC #: 31098A4 **VALIDATION COMPLETENESS WORKSHEET** Date: 1/17/14
SDG #: PH127 ADR Page: 1 of 1
Laboratory: Eurofins Lancaster Laboratories Reviewer: MR
2nd Reviewer:

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

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

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/12/13
II.	ICP/MS Tune	+	
III.	Calibration	—	
IV.	Blanks	SW	
V.	ICP Interference Check Sample (ICS) Analysis	—	
VI.	Matrix Spike Analysis	SW	MS/D
VII.	Duplicate Sample Analysis	SW	DUP
VIII.	Laboratory Control Samples (LCS)	A	
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	—	(3,5)
XV	Field Blanks	SW	EB=1 FB= FB-041613 (PH032)

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	EB1-111213 W	11	SL-560-SA5D-SB-4.0-5.0DUP	21		31	
2	SL-560-SA5D-SB-0.0-0.5	12		22		32	
3	SL-560-SA5D-SB-4.0-5.0	13		23		33	
4	SL-560-SA5D-SB-7.0-8.0	14		24		34	
5	SL-860-SA5D-SB-4.0-5.0	15		25		35	
6	SL-549-SA5D-SB-0.0.-0.5	16		26		36	
7	SL-549-SA5D-SB-4.0-5.0	17		27		37	
8	SL-549-SA5D-SB-11.0-12.0	18		28		38	
9	SL-560-SA5D-SB-4.0-5.0MS	19		29		39	
10	SL-560-SA5D-SB-4.0-5.0MSD	20		30		40	

Notes:

LDC #: 31098A4

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: a
2nd Reviewer:

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000) Soil preparation factor applied: Reason: B

Sample Concentration units, unless otherwise noted: mg/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										
Mg			34.0	0.17	0.0168										

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 #: 31098A4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: CL
2nd Reviewer:

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

Blank units: mg/L **Associated sample units:** mg/Kg Reason: F
Sampling date: 4/16/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All Soil

Analyte	Blank ID	Sample Identification													
	FB-041613 (SDG: PH032)	Action Limit	2	3	4	6	7	8							
Mo	0.0132	6.60	0.287	0.262	0.213	0.429	0.314	0.262							
Sn	0.0029	1.45													

Sampling date: 9/25/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All Soil

Analyte	Blank ID	Sample Identification													
	EB1-111213 (SDG: PH127)	Action Limit	No Qualifiers												
Ba	0.00034	0.17													
Ca	0.0349	17.45													
Mg	0.0168	8.4													

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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>4X

Al, Ca, Fe, Mg out by RPD (J/UJ)

QUALITY ASSURANCE SUMMARY
FORM 5A(MS/MSD)
MATRIX SPIKE/MATRIX SPIKE DUPLICATE
SDG No.: PH127
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7275663BKG Matrix Spike Lab Sample ID: 7275664MS Matrix Spike Duplicate Lab Sample ID: 7275665MSD
Batch Id(s): P32537C, P32538A

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		13981.8359		13748.3850		18656.2942		200.0000	192.3077	MG/KG	-117		2431		30			20	P
Antimony		0.7184	U	31.0450		22.9019		50.0000	48.0769	MG/KG	62	N	48	N	30	*	75 - 125	20	P
Arsenic		5.4699		19.2540		24.0308		15.0000	14.4231	MG/KG	92		129	N	22	*	75 - 125	20	P
Barium		59.7456		264.7610		279.5750		200.0000	192.3077	MG/KG	103		114		5		75 - 125	20	P
Beryllium		0.6476	B	5.6920		5.8875		5.0000	4.8077	MG/KG	101		109		3		75 - 125	20	P
Boron		1.8379	B	198.4720		191.4298		200.0000	192.3077	MG/KG	98		99		4		75 - 125	20	P
Cadmium		0.0738	U	4.8280		4.4731		5.0000	4.8077	MG/KG	97		93		8		75 - 125	20	P
Calcium		2195.6961		2719.3290		5242.4529		400.0000	384.6154	MG/KG	131		792		63			20	P
Chromium		15.8466		33.5030		43.4865		20.0000	19.2308	MG/KG	88		144	N	26	*	75 - 125	20	P
Cobalt		3.0845		52.0790		50.7115		50.0000	48.0769	MG/KG	98		99		3		75 - 125	20	P
Copper		5.7553		28.9250		36.2760		25.0000	24.0385	MG/KG	93		127	N	23	*	75 - 125	20	P
Iron		20556.9563		18838.1370		29858.8365		100.0000	96.1538	MG/KG	-1719		9674		45			20	P
Lead		6.1320		19.2830		24.4962		15.0000	14.4231	MG/KG	88		127	N	24	*	75 - 125	20	P
Lithium		12.2864		113.4940		114.0663		100.0000	96.1538	MG/KG	101		106		1		75 - 125	20	P
Magnesium		3407.0524		3798.5880		5587.1740		200.0000	192.3077	MG/KG	196		1134		38			20	P
Manganese		143.0126		205.0920		235.2606		50.0000	48.0769	MG/KG	124		192	N	14		75 - 125	20	P
Mercury		0.0098	U	0.1748		0.1682		0.1629	0.1593	MG/KG	107		106		4		65 - 135	20	CV
Molybdenum		0.2524	B	190.6210		179.9683		200.0000	192.3077	MG/KG	95		93		6		75 - 125	20	P
Nickel		7.8689		56.3590		59.2019		50.0000	48.0769	MG/KG	97		107		5		75 - 125	20	P
Phosphorus		129.6689		389.1840		261.2423		100.0000	96.1538	MG/KG	260	N	137	N	39	*	75 - 125	20	P
Potassium		2036.5107		3650.8770		3876.6019		1000.0000	961.5385	MG/KG	161	N	191	N	6		75 - 125	20	P
Selenium	78	0.0971	U	2.2712		2.2165		2.0000	1.9231	MG/KG	114		115		2		75 - 125	20	MS
Silver	107	0.0252	U	11.1060		9.9135		10.0000	9.6154	MG/KG	111		103		11		75 - 125	20	MS
Sodium		128.1476		1089.7000		1126.9308		1000.0000	961.5385	MG/KG	96		104		3		75 - 125	20	P
Strontium	88	12.7883		22.0000		30.9615		8.0000	7.6923	MG/KG	115		236	N	34	*	75 - 125	20	MS
Thallium	203	0.2173		0.6452		0.7604		0.4000	0.3846	MG/KG	107		141	N	16		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.: PH127
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7275663BKG Matrix Spike Lab Sample ID: 7275664MS Matrix Spike Duplicate Lab Sample ID: 7275665MSD
Batch Id(s): P32537C, P32538A

		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
Thallium	203	0.2173		0.6452		0.7604		0.4000	0.3846	MG/KG	107		141	N	16		75 - 125	20	MS
Tin		2.8748	B	364.0900		338.7173		400.0000	384.6154	MG/KG	90		87		7		75 - 125	20	P
Titanium		957.8806		1217.9040		1384.8683		100.0000	96.1538	MG/KG	260		444		13			20	P
Vanadium		32.0680		79.8930		95.6635		50.0000	48.0769	MG/KG	96		132	N	18		75 - 125	20	P
Zinc		44.2058		98.9000		114.6510		50.0000	48.0769	MG/KG	109		147	N	15		75 - 125	20	P
Zirconium		3.9835	B	101.6370		98.7712		100.0000	96.1538	MG/KG	98		99		3		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.: PH127
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7275663BKG
Batch ID(s): P32537C, P32538A
Concentration Units: MG/KG

Duplicate Lab Sample ID: 7275669DUP

Analyte	Mass	Control Limit	Samples (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum			13981.8359		13961.2431		0		P
Antimony			0.7184	U	0.7255	U			P
Arsenic		3.9	5.4699		4.9804		9		P
Barium			59.7456		59.5814		0		P
Beryllium			0.6476	B	0.6206	B	4		P
Boron			1.8379	B	1.7294	B	6		P
Cadmium			0.0738	U	0.0745	U			P
Calcium			2195.6961		2162.1451		2		P
Chromium			15.8466		15.8108		0		P
Cobalt		1.0	3.0845		3.1833		3		P
Copper		1.9	5.7553		5.6108		3		P
Iron			20556.9563		20154.6010		2		P
Lead		2.9	6.1320		5.7853		6		P
Lithium		3.9	12.2864		12.4235		1		P
Magnesium			3407.0524		3402.8127		0		P
Manganese			143.0126		149.2167		4		P
Mercury			0.0098	U	0.0097	U			CV
Molybdenum			0.2524	B	0.1667	U	200		P
Nickel		1.9	7.8689		7.9275		1		P
Phosphorus			129.6689		130.5373		1		P
Potassium			2036.5107		2144.0049		5		P
Selenium	78		0.0971	U	0.0980	U			MS
Silver	107		0.0252	U	0.0255	U			MS
Sodium		97.1	128.1476		130.3686		2		P
Strontium	88		12.7883		13.8392		8		MS
Thallium	203	0.2	0.2173		0.2357		8		MS
Tin			2.8748	B	2.9147	B	1		P
Titanium			957.8806		989.9784		3		P
Vanadium			32.0680		31.4922		2		P
Zinc			44.2058		43.3049		2		P
Zirconium			3.9835	B	4.4422	B	11		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

SAMPLE DELIVERY GROUP

PH130

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

January 24, 2014

SUBJECT: Santa Susana Field Laboratory, Subarea 5D Data Validation

Dear Mrs. Zakowski,

Enclosed is the final validation report for the fractions listed below. This SDG was received on January 3, 2014. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 31106:

SDG #	Fraction
PH130	Polynuclear Aromatic Hydrocarbons, Polychlorinated Biphenyls, Metals, Herbicides, Wet Chemistry, Total Petroleum Hydrocarbons as Gasoline, Total Petroleum Hydrocarbons as Extractables, Dioxins/Dibenzofurans

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

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

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

Sincerely,

Shauna McKellar
Project Manager/Chemist

82 pages-CD

Attachment 1

90/10 ADR/IV

LDC #31106 (CDM Federal Programs-Chantilly VA / Santa Susana Field Laboratory, Subarea 5D)

LDC	SDG#	DATE REC'D	(4) DATE DUE	PAHs (8270D -SIM)		PCBs (8082A)		Metals & Hg (SW846)		Herbs. (8151A)		TPH-G (8015M)		TPH-E (8015M)		Dioxins (1613B)		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	PH130	01/03/14	01/31/14	0	6	0	6	0	6	0	5	1	4	0	5	0	6	0	5																		
Total	T/SM			0	6	0	6	0	6	0	5	1	4	0	5	0	6	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	44

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 5D

SDG: PH130

Prepared for

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

Prepared by

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

January 24, 2014

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on November 15, 2013. Data validation was performed in accordance with the Quality Assurance Project Plan (QAPP) for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008), Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005) and for Inorganic Data Review (January 2010). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

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

Wet Chemistry:
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 with the exception of four samples for TPH as gasoline. The associated sample results were qualified as non-detected estimated (UJ). The details regarding the qualification of data are provided in Enclosure I.

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 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
PH130/ 6020A	ICB/CCB	Silver	0.25 ug/L	All samples in SDG PH130
PH130/ 6020A	ICB/CCB	Thallium	0.35 ug/L	All samples in SDG PH130

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
PH130/ 6020A	SL-516-SA5D-SB-0.0-0.5	Silver Thallium	0.0478 mg/kg 0.322 mg/kg	0.0478U mg/kg 0.322U mg/kg
PH130/ 6020A	SL-516-SA5D-SB-4.0-5.0	Silver Thallium	0.0648 mg/kg 0.301 mg/kg	0.0648U mg/kg 0.301U mg/kg

SDG/ Method	Sample	Compound	Reported Concentration	Modified Final Concentration
PH130/ 6020A	SL-816-SA5D-SB-4.0-5.0	Silver Thallium	0.0614 mg/kg 0.289 mg/kg	0.0614U mg/kg 0.289U mg/kg
PH130/ 6020A	SL-516-SA5D-SB-9.0-10.0	Silver Thallium	0.0472 mg/kg 0.292 mg/kg	0.0472U mg/kg 0.292U mg/kg
PH130/ 6020A	SL-516-SA5D-SB-13.0-14.0	Thallium	0.287 mg/kg	0.287U mg/kg
PH130/ 6020A	SL-609-SA5D-SB-0.0-0.5	Silver Thallium	0.0283 mg/kg 0.266 mg/kg	0.0283U mg/kg 0.266U mg/kg

V. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the exception of one sample for PCBs. No data were qualified due to high %Rs since the associated results were non-detected.

VI. ICP Interference Check Sample (ICS) Analysis

ICP interference check data were not reviewed for level III.

VII. Matrix Spike/Matrix Spike Duplicates

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

VIII. Laboratory Duplicates Sample

Laboratory duplicates (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits with the exception of one DUP for metals. The associated sample results were qualified as detected estimated (J). 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 several LCS/LCSD pairs for SVOCs and herbicides. The dinoseb result in samples SL-516-SA5D-SB-0.0-0.5, SL-516-SA5D-SB-13.0-14.0, SL-516-SA5D-SB-4.0-5.0, SL-516-SA5D-SB-9.0-10.0 and SL-816-SA5D-SB-4.0-5.0 were qualified as rejected (R) due to LCS/LCSD %Rs grossly outside of limits (i.e., ≤ 10%). The details regarding the qualification of data are provided in Enclosure I.

X. Internal Standards

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

XI. ICP Serial Dilution

ICP serial dilution analysis was performed by the laboratory. The analysis criteria were met.

XII. Compound Quantitation

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

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

Sample	Finding	Flag	A or P
All samples in SDG PH130	All compounds reported as detected below the RL.	J (all detects)	A

XIII. Field Duplicate Samples

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

XIV. Field Blank Samples

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

One equipment blank (from SDG PH127) was collected and analyzed for SVOCs, PCBs, metals, herbicides, TPH as gasoline, TPH as extractables, dioxins and hexavalent chromium. The equipment blank had detections for SVOCs, metals and dioxins. The sample results were not detected or were significantly greater than the concentrations found in the equipment blank, therefore no data were qualified.

One field blank (from SDG PH032) was collected and analyzed for SVOCs, PCBs, herbicides, metals, TPH as gasoline, TPH as extractables, dioxins, and hexavalent chromium. The field blank had detections for 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

Five herbicide results were rejected due to LCS/LCSD %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-Nov-2013	TB-111513	7280196	TB	5030B	8015M	III
15-Nov-2013	SL-516-SA5D-SB-0.0-0.5	7280197	N	3050B	6010C	III
15-Nov-2013	SL-516-SA5D-SB-0.0-0.5	7280197	N	3050B	6020A	III
15-Nov-2013	SL-516-SA5D-SB-0.0-0.5	7280197	N	3060A	7199	III
15-Nov-2013	SL-516-SA5D-SB-0.0-0.5	7280197	N	3546	8015M	III
15-Nov-2013	SL-516-SA5D-SB-0.0-0.5	7280197	N	3546	8082A	III
15-Nov-2013	SL-516-SA5D-SB-0.0-0.5	7280197	N	3546	8270D SIM	III
15-Nov-2013	SL-516-SA5D-SB-0.0-0.5	7280197	N	3550B	8151A	III
15-Nov-2013	SL-516-SA5D-SB-0.0-0.5	7280197	N	METHOD	1613B	III
15-Nov-2013	SL-516-SA5D-SB-0.0-0.5	7280197	N	METHOD	7471B	III
15-Nov-2013	SL-816-SA5D-SB-4.0-5.0	7280205	FD	3050B	6010C	III
15-Nov-2013	SL-816-SA5D-SB-4.0-5.0	7280205	FD	3050B	6020A	III
15-Nov-2013	SL-816-SA5D-SB-4.0-5.0	7280205	FD	3060A	7199	III
15-Nov-2013	SL-816-SA5D-SB-4.0-5.0	7280205	FD	3546	8015M	III
15-Nov-2013	SL-816-SA5D-SB-4.0-5.0	7280205	FD	3546	8082A	III
15-Nov-2013	SL-816-SA5D-SB-4.0-5.0	7280205	FD	3546	8270D SIM	III
15-Nov-2013	SL-816-SA5D-SB-4.0-5.0	7280205	FD	3550B	8151A	III
15-Nov-2013	SL-816-SA5D-SB-4.0-5.0	7280205	FD	5035A	8015M	III
15-Nov-2013	SL-816-SA5D-SB-4.0-5.0	7280205	FD	METHOD	1613B	III
15-Nov-2013	SL-816-SA5D-SB-4.0-5.0	7280205	FD	METHOD	7471B	III
15-Nov-2013	SL-516-SA5D-SB-4.0-5.0	7280198	N	3050B	6010C	III
15-Nov-2013	SL-516-SA5D-SB-4.0-5.0	7280198	N	3050B	6020A	III
15-Nov-2013	SL-516-SA5D-SB-4.0-5.0	7280198	N	3060A	7199	III
15-Nov-2013	SL-516-SA5D-SB-4.0-5.0	7280198	N	3546	8015M	III
15-Nov-2013	SL-516-SA5D-SB-4.0-5.0	7280198	N	3546	8082A	III
15-Nov-2013	SL-516-SA5D-SB-4.0-5.0	7280198	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
15-Nov-2013	SL-516-SA5D-SB-4.0-5.0	7280198	N	3550B	8151A	III
15-Nov-2013	SL-516-SA5D-SB-4.0-5.0	7280198	N	5035A	8015M	III
15-Nov-2013	SL-516-SA5D-SB-4.0-5.0	7280198	N	METHOD	1613B	III
15-Nov-2013	SL-516-SA5D-SB-4.0-5.0	7280198	N	METHOD	7471B	III
15-Nov-2013	SL-516-SA5D-SB-4.0-5.0MS	7280199	MS	3050B	6010C	III
15-Nov-2013	SL-516-SA5D-SB-4.0-5.0MS	7280199	MS	3050B	6020A	III
15-Nov-2013	SL-516-SA5D-SB-4.0-5.0MS	7280199	MS	3546	8015M	III
15-Nov-2013	SL-516-SA5D-SB-4.0-5.0MS	7280199	MS	3546	8082A	III
15-Nov-2013	SL-516-SA5D-SB-4.0-5.0MS	7280199	MS	3546	8270D SIM	III
15-Nov-2013	SL-516-SA5D-SB-4.0-5.0MS	7280199	MS	3550B	8151A	III
15-Nov-2013	SL-516-SA5D-SB-4.0-5.0MS	7280199	MS	5035A	8015M	III
15-Nov-2013	SL-516-SA5D-SB-4.0-5.0MS	7280199	MS	METHOD	1613B	III
15-Nov-2013	SL-516-SA5D-SB-4.0-5.0MS	7280199	MS	METHOD	7471B	III
15-Nov-2013	SL-516-SA5D-SB-4.0-5.0MSD	7280200	MSD	3050B	6010C	III
15-Nov-2013	SL-516-SA5D-SB-4.0-5.0MSD	7280200	MSD	3050B	6020A	III
15-Nov-2013	SL-516-SA5D-SB-4.0-5.0MSD	7280200	MSD	3546	8015M	III
15-Nov-2013	SL-516-SA5D-SB-4.0-5.0MSD	7280200	MSD	3546	8082A	III
15-Nov-2013	SL-516-SA5D-SB-4.0-5.0MSD	7280200	MSD	3546	8270D SIM	III
15-Nov-2013	SL-516-SA5D-SB-4.0-5.0MSD	7280200	MSD	3550B	8151A	III
15-Nov-2013	SL-516-SA5D-SB-4.0-5.0MSD	7280200	MSD	5035A	8015M	III
15-Nov-2013	SL-516-SA5D-SB-4.0-5.0MSD	7280200	MSD	METHOD	1613B	III
15-Nov-2013	SL-516-SA5D-SB-4.0-5.0MSD	7280200	MSD	METHOD	7471B	III
15-Nov-2013	SL-516-SA5D-SB-4.0-5.0MS	7280201	MS	3060A	7199	III
15-Nov-2013	SL-516-SA5D-SB-4.0-5.0MS	7280202	MS	3060A	7199	III
15-Nov-2013	SL-516-SA5D-SB-4.0-5.0DUP	7280204	DUP	3050B	6010C	III
15-Nov-2013	SL-516-SA5D-SB-4.0-5.0DUP	7280204	DUP	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-Nov-2013	SL-516-SA5D-SB-4.0-5.0DUP	7280204	DUP	3060A	7199	III
15-Nov-2013	SL-516-SA5D-SB-4.0-5.0DUP	7280204	DUP	METHOD	7471B	III
15-Nov-2013	SL-516-SA5D-SB-9.0-10.0	7280206	N	3050B	6010C	III
15-Nov-2013	SL-516-SA5D-SB-9.0-10.0	7280206	N	3050B	6020A	III
15-Nov-2013	SL-516-SA5D-SB-9.0-10.0	7280206	N	3060A	7199	III
15-Nov-2013	SL-516-SA5D-SB-9.0-10.0	7280206	N	3546	8015M	III
15-Nov-2013	SL-516-SA5D-SB-9.0-10.0	7280206	N	3546	8082A	III
15-Nov-2013	SL-516-SA5D-SB-9.0-10.0	7280206	N	3546	8270D SIM	III
15-Nov-2013	SL-516-SA5D-SB-9.0-10.0	7280206	N	3550B	8151A	III
15-Nov-2013	SL-516-SA5D-SB-9.0-10.0	7280206	N	5035A	8015M	III
15-Nov-2013	SL-516-SA5D-SB-9.0-10.0	7280206	N	METHOD	1613B	III
15-Nov-2013	SL-516-SA5D-SB-9.0-10.0	7280206	N	METHOD	7471B	III
15-Nov-2013	SL-516-SA5D-SB-13.0-14.0	7280207	N	3050B	6010C	III
15-Nov-2013	SL-516-SA5D-SB-13.0-14.0	7280207	N	3050B	6020A	III
15-Nov-2013	SL-516-SA5D-SB-13.0-14.0	7280207	N	3060A	7199	III
15-Nov-2013	SL-516-SA5D-SB-13.0-14.0	7280207	N	3546	8015M	III
15-Nov-2013	SL-516-SA5D-SB-13.0-14.0	7280207	N	3546	8082A	III
15-Nov-2013	SL-516-SA5D-SB-13.0-14.0	7280207	N	3546	8270D SIM	III
15-Nov-2013	SL-516-SA5D-SB-13.0-14.0	7280207	N	3550B	8151A	III
15-Nov-2013	SL-516-SA5D-SB-13.0-14.0	7280207	N	5035A	8015M	III
15-Nov-2013	SL-516-SA5D-SB-13.0-14.0	7280207	N	METHOD	1613B	III
15-Nov-2013	SL-516-SA5D-SB-13.0-14.0	7280207	N	METHOD	7471B	III
15-Nov-2013	SL-609-SA5D-SB-0.0-0.5	7280208	N	3050B	6010C	III
15-Nov-2013	SL-609-SA5D-SB-0.0-0.5	7280208	N	3050B	6020A	III
15-Nov-2013	SL-609-SA5D-SB-0.0-0.5	7280208	N	3546	8015M	III
15-Nov-2013	SL-609-SA5D-SB-0.0-0.5	7280208	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-Nov-2013	SL-609-SA5D-SB-0.0-0.5	7280208	N	3546	8270D SIM	III
15-Nov-2013	SL-609-SA5D-SB-0.0-0.5	7280208	N	METHOD	1613B	III
15-Nov-2013	SL-609-SA5D-SB-0.0-0.5	7280208	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: PH130 **Laboratory: LL**

EDD Filename: PrepPH130 **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-516-SA5D-SB-0.0-0.5 *Collected:* 11/15/2013 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	4.19	U	0.776	MDL	4.19	PQL	mg/Kg	UJ	Q
BARIUM	118		0.0346	MDL	1.05	PQL	mg/Kg	J	Q
BERYLLIUM	0.899	J	0.0702	MDL	1.05	PQL	mg/Kg	J	Z
BORON	3.75	J	0.881	MDL	10.5	PQL	mg/Kg	J	Z, E
CALCIUM	3220		3.50	MDL	21.0	PQL	mg/Kg	J	E
MANGANESE	366		0.0870	MDL	1.05	PQL	mg/Kg	J	E
MOLYBDENUM	0.366	J	0.178	MDL	2.10	PQL	mg/Kg	U	F
TIN	2.94	J	0.231	MDL	10.5	PQL	mg/Kg	U	B
Zirconium	4.90	J	0.881	MDL	5.24	PQL	mg/Kg	J	Z
ALUMINUM	22800		7.56	MDL	41.9	PQL	mg/Kg	J	E

Sample ID: SL-516-SA5D-SB-13.0-14.0 *Collected:* 11/15/2013 9:08:00 *Analysis Type:* REA *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.00	U	0.739	MDL	4.00	PQL	mg/Kg	UJ	Q
MOLYBDENUM	0.509	J	0.170	MDL	2.00	PQL	mg/Kg	U	F

Sample ID: SL-516-SA5D-SB-13.0-14.0 *Collected:* 11/15/2013 9:08:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	15700		7.20	MDL	40.0	PQL	mg/Kg	J	E
BARIUM	77.0		0.0330	MDL	0.999	PQL	mg/Kg	J	Q
BERYLLIUM	0.650	J	0.0669	MDL	0.999	PQL	mg/Kg	J	Z
BORON	1.78	J	0.839	MDL	9.99	PQL	mg/Kg	J	Z, E
CALCIUM	4020		3.34	MDL	20.0	PQL	mg/Kg	J	E
MANGANESE	273		0.0829	MDL	0.999	PQL	mg/Kg	J	E
Zirconium	3.74	J	0.839	MDL	4.99	PQL	mg/Kg	J	Z

Sample ID: SL-516-SA5D-SB-4.0-5.0 *Collected:* 11/15/2013 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
ALUMINUM	26200		7.89	MDL	43.8	PQL	mg/Kg	J	E
ANTIMONY	4.38	U	0.810	MDL	4.38	PQL	mg/Kg	UJ	Q
BARIUM	136		0.0361	MDL	1.09	PQL	mg/Kg	J	Q
BERYLLIUM	0.984	J	0.0733	MDL	1.09	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: PH130 **Laboratory: LL**

EDD Filename: PrepPH130 **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-516-SA5D-SB-4.0-5.0 *Collected:* 11/15/2013 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
BORON	2.58	J	0.919	MDL	10.9	PQL	mg/Kg	J	Z, E
CALCIUM	4330		3.65	MDL	21.9	PQL	mg/Kg	J	E
MANGANESE	425		0.0908	MDL	1.09	PQL	mg/Kg	J	E, FD
MOLYBDENUM	0.543	J	0.186	MDL	2.19	PQL	mg/Kg	UJ	FD, F
TIN	3.31	J	0.241	MDL	10.9	PQL	mg/Kg	U	B
Zirconium	4.99	J	0.919	MDL	5.47	PQL	mg/Kg	J	Z

Sample ID: SL-516-SA5D-SB-9.0-10.0 *Collected:* 11/15/2013 8:56:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	23900		7.78	MDL	43.1	PQL	mg/Kg	J	E
ANTIMONY	4.31	U	0.798	MDL	4.31	PQL	mg/Kg	UJ	Q
BARIUM	97.3		0.0356	MDL	1.08	PQL	mg/Kg	J	Q
BERYLLIUM	1.01	J	0.0723	MDL	1.08	PQL	mg/Kg	J	Z
BORON	1.67	J	0.906	MDL	10.8	PQL	mg/Kg	J	Z, E
CALCIUM	2990		3.60	MDL	21.6	PQL	mg/Kg	J	E
MANGANESE	274		0.0895	MDL	1.08	PQL	mg/Kg	J	E
MOLYBDENUM	0.366	J	0.183	MDL	2.16	PQL	mg/Kg	U	F
TIN	3.07	J	0.237	MDL	10.8	PQL	mg/Kg	U	B
Zirconium	4.73	J	0.906	MDL	5.39	PQL	mg/Kg	J	Z

Sample ID: SL-609-SA5D-SB-0.0-0.5 *Collected:* 11/15/2013 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
ALUMINUM	14700		7.51	MDL	41.7	PQL	mg/Kg	J	E
ANTIMONY	4.17	U	0.771	MDL	4.17	PQL	mg/Kg	UJ	Q
BARIUM	96.8		0.0344	MDL	1.04	PQL	mg/Kg	J	Q
BERYLLIUM	0.600	J	0.0698	MDL	1.04	PQL	mg/Kg	J	Z
BORON	1.27	J	0.875	MDL	10.4	PQL	mg/Kg	J	Z, E
CALCIUM	3700		3.48	MDL	20.8	PQL	mg/Kg	J	E
MANGANESE	333		0.0865	MDL	1.04	PQL	mg/Kg	J	E
TIN	2.57	J	0.229	MDL	10.4	PQL	mg/Kg	U	B
Zirconium	4.77	J	0.875	MDL	5.21	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: PH130 **Laboratory: LL**

EDD Filename: PrepPH130 **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-816-SA5D-SB-4.0-5.0 *Collected:* 11/15/2013 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
ALUMINUM	24400		7.80	MDL	43.2	PQL	mg/Kg	J	E
ANTIMONY	4.32	U	0.800	MDL	4.32	PQL	mg/Kg	UJ	Q
BARIUM	106		0.0357	MDL	1.08	PQL	mg/Kg	J	Q
BERYLLIUM	1.01	J	0.0724	MDL	1.08	PQL	mg/Kg	J	Z
BORON	1.71	J	0.908	MDL	10.8	PQL	mg/Kg	J	Z, E
CALCIUM	3670		3.61	MDL	21.6	PQL	mg/Kg	J	E
MANGANESE	243		0.0897	MDL	1.08	PQL	mg/Kg	J	E, FD
MOLYBDENUM	0.294	J	0.184	MDL	2.16	PQL	mg/Kg	UJ	FD, F
TIN	3.07	J	0.238	MDL	10.8	PQL	mg/Kg	U	B
Zirconium	5.10	J	0.908	MDL	5.41	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-516-SA5D-SB-0.0-0.5 *Collected:* 11/15/2013 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
SELENIUM	0.253	J	0.105	MDL	0.419	PQL	mg/Kg	J	Z

Sample ID: SL-516-SA5D-SB-0.0-0.5 *Collected:* 11/15/2013 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	0.0478	J	0.0273	MDL	0.210	PQL	mg/Kg	U	B
STRONTIUM	25.7		0.0713	MDL	0.419	PQL	mg/Kg	J	Q, E
THALLIUM	0.322		0.0315	MDL	0.210	PQL	mg/Kg	U	B

Sample ID: SL-516-SA5D-SB-13.0-14.0 *Collected:* 11/15/2013 9:08:00 *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.160	J	0.0999	MDL	0.400	PQL	mg/Kg	J	Z

Sample ID: SL-516-SA5D-SB-13.0-14.0 *Collected:* 11/15/2013 9:08:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	19.3		0.0679	MDL	0.400	PQL	mg/Kg	J	Q, E

* denotes a non-reportable result

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

Data Qualifier Summary

Lab Reporting Batch ID: PH130 **Laboratory: LL**

EDD Filename: PrepPH130 **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-516-SA5D-SB-13.0-14.0 *Collected:* 11/15/2013 9:08:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
THALLIUM	0.287		0.0300	MDL	0.200	PQL	mg/Kg	U	B

Sample ID: SL-516-SA5D-SB-4.0-5.0 *Collected:* 11/15/2013 8:45:00 *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.167	J	0.109	MDL	0.438	PQL	mg/Kg	J	Z

Sample ID: SL-516-SA5D-SB-4.0-5.0 *Collected:* 11/15/2013 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	0.0648	J	0.0284	MDL	0.219	PQL	mg/Kg	U	B
STRONTIUM	27.8		0.0744	MDL	0.438	PQL	mg/Kg	J	Q, E
THALLIUM	0.301		0.0328	MDL	0.219	PQL	mg/Kg	U	B

Sample ID: SL-516-SA5D-SB-9.0-10.0 *Collected:* 11/15/2013 8:56:00 *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.146	J	0.108	MDL	0.431	PQL	mg/Kg	J	Z

Sample ID: SL-516-SA5D-SB-9.0-10.0 *Collected:* 11/15/2013 8:56:00 *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	0.0280	MDL	0.216	PQL	mg/Kg	U	B
STRONTIUM	23.0		0.0733	MDL	0.431	PQL	mg/Kg	J	Q, E
THALLIUM	0.292		0.0324	MDL	0.216	PQL	mg/Kg	U	B

Sample ID: SL-609-SA5D-SB-0.0-0.5 *Collected:* 11/15/2013 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	0.0283	J	0.0271	MDL	0.208	PQL	mg/Kg	U	B
STRONTIUM	20.2		0.0708	MDL	0.417	PQL	mg/Kg	J	Q, E
THALLIUM	0.266		0.0313	MDL	0.208	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: PH130 **Laboratory: LL**

EDD Filename: PrepPH130 **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-816-SA5D-SB-4.0-5.0 *Collected:* 11/15/2013 8:40:00 *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.147	J	0.108	MDL	0.432	PQL	mg/Kg	J	Z

Sample ID: SL-816-SA5D-SB-4.0-5.0 *Collected:* 11/15/2013 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	0.0614	J	0.0281	MDL	0.216	PQL	mg/Kg	U	B
STRONTIUM	25.9		0.0735	MDL	0.432	PQL	mg/Kg	J	Q, E
THALLIUM	0.289		0.0324	MDL	0.216	PQL	mg/Kg	U	B

Method Category: METALS

Method: 7199 **Matrix: SO**

Sample ID: SL-516-SA5D-SB-13.0-14.0 *Collected:* 11/15/2013 9:08:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
HEXAVALENT CHROMIUM	0.26	J	0.14	MDL	0.41	PQL	mg/Kg	J	Z

Sample ID: SL-516-SA5D-SB-4.0-5.0 *Collected:* 11/15/2013 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
HEXAVALENT CHROMIUM	0.44	U	0.15	MDL	0.44	PQL	mg/Kg	UJ	FD

Sample ID: SL-816-SA5D-SB-4.0-5.0 *Collected:* 11/15/2013 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
HEXAVALENT CHROMIUM	0.16	J	0.16	MDL	0.45	PQL	mg/Kg	J	Z, FD

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: SL-516-SA5D-SB-13.0-14.0 *Collected:* 11/15/2013 9:08:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0103	J	0.0101	MDL	0.0168	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: PH130 **Laboratory: LL**

EDD Filename: PrepPH130 **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-516-SA5D-SB-0.0-0.5 *Collected:* 11/15/2013 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	0.330	JB	0.0482	MDL	5.31	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0969	JB	0.0183	MDL	5.31	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.105	JB	0.0359	MDL	5.31	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0427	JB	0.0386	MDL	5.31	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0747	JB	0.0348	MDL	5.31	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.271	JBQ	0.0415	MDL	5.31	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0549	JQ	0.0305	MDL	5.31	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.421	JB	0.0369	MDL	5.31	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.677	J	0.0397	MDL	5.31	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.102	JQ	0.0539	MDL	5.31	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.168	JBQ	0.0317	MDL	5.31	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.118	JBQ	0.0312	MDL	5.31	PQL	ng/Kg	U	B
OCDD	3.39	JB	0.0518	MDL	10.6	PQL	ng/Kg	U	B
OCDF	0.365	JB	0.0727	MDL	10.6	PQL	ng/Kg	U	B

Sample ID: SL-516-SA5D-SB-13.0-14.0 *Collected:* 11/15/2013 9:08:00 *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	JBQ	0.0277	MDL	5.10	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0921	JBQ	0.0121	MDL	5.10	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0501	JB	0.0183	MDL	5.10	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0505	JBQ	0.0226	MDL	5.10	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0758	JB	0.0197	MDL	5.10	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0367	JBQ	0.0244	MDL	5.10	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0515	J	0.0178	MDL	5.10	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.0443	JBQ	0.0226	MDL	5.10	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0384	J	0.0198	MDL	5.10	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.0548	JQ	0.0358	MDL	5.10	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.0757	JBQ	0.0234	MDL	5.10	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0484	JB	0.0186	MDL	5.10	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0686	JBQ	0.0222	MDL	5.10	PQL	ng/Kg	U	B
OCDD	1.40	JB	0.0320	MDL	10.2	PQL	ng/Kg	U	B
OCDF	0.156	JBQ	0.0363	MDL	10.2	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: PH130 **Laboratory: LL**

EDD Filename: PrepPH130 **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-516-SA5D-SB-4.0-5.0 *Collected:* 11/15/2013 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
1,2,3,4,6,7,8-HPCDD	0.313	JB	0.0470	MDL	5.44	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.112	JBQ	0.0203	MDL	5.44	PQL	ng/Kg	UJ	B, FD
1,2,3,4,7,8,9-HPCDF	0.0665	JBQ	0.0339	MDL	5.44	PQL	ng/Kg	UJ	B, FD
1,2,3,4,7,8-HxCDD	0.0899	JBQ	0.0422	MDL	5.44	PQL	ng/Kg	UJ	B, FD
1,2,3,4,7,8-HXCDF	0.122	JBQ	0.0376	MDL	5.44	PQL	ng/Kg	UJ	B, FD
1,2,3,6,7,8-HXCDD	0.0667	JB	0.0441	MDL	5.44	PQL	ng/Kg	UJ	B, FD
1,2,3,6,7,8-HXCDF	0.0446	JQ	0.0344	MDL	5.44	PQL	ng/Kg	J	Z, FD
1,2,3,7,8,9-HXCDD	0.121	JBQ	0.0435	MDL	5.44	PQL	ng/Kg	UJ	B, FD
1,2,3,7,8,9-HXCDF	0.146	JQ	0.0466	MDL	5.44	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.0967	JQ	0.0596	MDL	5.44	PQL	ng/Kg	J	Z, FD
1,2,3,7,8-PECDF	0.136	JB	0.0358	MDL	5.44	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0666	JBQ	0.0376	MDL	5.44	PQL	ng/Kg	UJ	B, FD
2,3,4,7,8-PECDF	0.0691	JB	0.0346	MDL	5.44	PQL	ng/Kg	UJ	B, FD
2,3,7,8-TCDD	1.09	U	0.0787	MDL	1.09	PQL	ng/Kg	UJ	FD
2,3,7,8-TCDF	1.09	U	0.0659	MDL	1.09	PQL	ng/Kg	UJ	FD
OCDD	1.85	JB	0.0549	MDL	10.9	PQL	ng/Kg	UJ	B, FD
OCDF	0.281	JB	0.0769	MDL	10.9	PQL	ng/Kg	U	B

Sample ID: SL-516-SA5D-SB-9.0-10.0 *Collected:* 11/15/2013 8:56:00 *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	0.846	JB	0.0439	MDL	5.35	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.216	JB	0.0182	MDL	5.35	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.107	JBQ	0.0282	MDL	5.35	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0581	JBQ	0.0317	MDL	5.35	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.149	JBQ	0.0347	MDL	5.35	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.173	JBQ	0.0328	MDL	5.35	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.122	JQ	0.0295	MDL	5.35	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.216	JB	0.0307	MDL	5.35	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.205	JQ	0.0360	MDL	5.35	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.0896	JQ	0.0446	MDL	5.35	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.303	JB	0.0329	MDL	5.35	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.133	JB	0.0310	MDL	5.35	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.122	JBQ	0.0329	MDL	5.35	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: PH130 **Laboratory: LL**

EDD Filename: PrepPH130 **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-516-SA5D-SB-9.0-10.0 *Collected:* 11/15/2013 8:56:00 *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	0.0992	JB	0.0672	MDL	1.07	PQL	ng/Kg	U	B
OCDD	9.55	JB	0.0407	MDL	10.7	PQL	ng/Kg	J	Z
OCDF	0.601	JBQ	0.0463	MDL	10.7	PQL	ng/Kg	U	B

Sample ID: SL-609-SA5D-SB-0.0-0.5 *Collected:* 11/15/2013 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	0.580	JBQ	0.0278	MDL	5.17	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.544	JB	0.0136	MDL	5.17	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.439	JB	0.0278	MDL	5.17	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.452	JB	0.0364	MDL	5.17	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.393	JB	0.0345	MDL	5.17	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.397	JB	0.0390	MDL	5.17	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.481	JQ	0.0275	MDL	5.17	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.524	JB	0.0388	MDL	5.17	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.492	J	0.0402	MDL	5.17	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.414	J	0.0422	MDL	5.17	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.501	JB	0.0298	MDL	5.17	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.418	JB	0.0305	MDL	5.17	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.336	JBQ	0.0310	MDL	5.17	PQL	ng/Kg	U	B
2,3,7,8-TCDD	0.0640	JBQ	0.0555	MDL	1.03	PQL	ng/Kg	U	B
OCDD	1.49	JB	0.0322	MDL	10.3	PQL	ng/Kg	U	B
OCDF	1.05	JBQ	0.0488	MDL	10.3	PQL	ng/Kg	U	B

Sample ID: SL-816-SA5D-SB-4.0-5.0 *Collected:* 11/15/2013 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
1,2,3,4,6,7,8-HPCDD	0.280	JB	0.0335	MDL	5.44	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.236	JB	0.0182	MDL	5.44	PQL	ng/Kg	UJ	B, FD
1,2,3,4,7,8,9-HPCDF	0.205	JB	0.0269	MDL	5.44	PQL	ng/Kg	UJ	B, FD
1,2,3,4,7,8-HxCDD	0.195	JBQ	0.0367	MDL	5.44	PQL	ng/Kg	UJ	B, FD
1,2,3,4,7,8-HXCDF	0.213	JBQ	0.0337	MDL	5.44	PQL	ng/Kg	UJ	B, FD
1,2,3,6,7,8-HXCDD	0.228	JBQ	0.0414	MDL	5.44	PQL	ng/Kg	UJ	B, FD
1,2,3,6,7,8-HXCDF	0.195	J	0.0311	MDL	5.44	PQL	ng/Kg	J	Z, FD
1,2,3,7,8,9-HXCDD	0.224	JBQ	0.0374	MDL	5.44	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: PH130 **Laboratory: LL**

EDD Filename: PrepPH130 **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-816-SA5D-SB-4.0-5.0 *Collected:* 11/15/2013 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
1,2,3,7,8,9-HXCDF	0.222	JQ	0.0342	MDL	5.44	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.172	J	0.0516	MDL	5.44	PQL	ng/Kg	J	Z, FD
1,2,3,7,8-PECDF	0.214	JB	0.0313	MDL	5.44	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.224	JB	0.0315	MDL	5.44	PQL	ng/Kg	UJ	B, FD
2,3,4,7,8-PECDF	0.223	JBQ	0.0342	MDL	5.44	PQL	ng/Kg	UJ	B, FD
2,3,7,8-TCDD	0.111	JBQ	0.0693	MDL	1.09	PQL	ng/Kg	UJ	B, FD
2,3,7,8-TCDF	0.0787	JB	0.0683	MDL	1.09	PQL	ng/Kg	UJ	B, FD
OCDD	1.03	JB	0.0398	MDL	10.9	PQL	ng/Kg	UJ	B, FD
OCDF	0.462	JB	0.0545	MDL	10.9	PQL	ng/Kg	U	B

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: SL-516-SA5D-SB-0.0-0.5 *Collected:* 11/15/2013 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
EFH (C21-C30)	3.9	J	2.1	MDL	5.3	PQL	mg/Kg	J	Z
EFH (C30-C40)	6.2	J	4.3	MDL	11	PQL	mg/Kg	J	Z

Sample ID: SL-516-SA5D-SB-13.0-14.0 *Collected:* 11/15/2013 9:08:00 *Analysis Type:* REA *Dilution:* 24.75

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
GASOLINE RANGE ORGANICS (C5-C12)	1.0	U	0.2	MDL	1.0	PQL	mg/Kg	UJ	H

Sample ID: SL-516-SA5D-SB-4.0-5.0 *Collected:* 11/15/2013 8:45:00 *Analysis Type:* REA *Dilution:* 26.04

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
GASOLINE RANGE ORGANICS (C5-C12)	1.2	U	0.2	MDL	1.2	PQL	mg/Kg	UJ	H

Sample ID: SL-516-SA5D-SB-9.0-10.0 *Collected:* 11/15/2013 8:56:00 *Analysis Type:* REA *Dilution:* 23.23

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
GASOLINE RANGE ORGANICS (C5-C12)	1.0	U	0.2	MDL	1.0	PQL	mg/Kg	UJ	H

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: PH130 **Laboratory: LL**

EDD Filename: PrepPH130 **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: SL-609-SA5D-SB-0.0-0.5 *Collected:* 11/15/2013 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)	2.6	J	2.1	MDL	5.2	PQL	mg/Kg	J	Z
EFH (C30-C40)	5.5	J	4.2	MDL	10	PQL	mg/Kg	J	Z

Sample ID: SL-816-SA5D-SB-4.0-5.0 *Collected:* 11/15/2013 8:40:00 *Analysis Type:* REA *Dilution:* 26.21

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
GASOLINE RANGE ORGANICS (C5-C12)	1.2	U	0.2	MDL	1.2	PQL	mg/Kg	UJ	H

Method Category: SVOA

Method: 8151A **Matrix: SO**

Sample ID: SL-516-SA5D-SB-0.0-0.5 *Collected:* 11/15/2013 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
DINOSEB	25	U	9.6	MDL	25	PQL	ug/Kg	R	L

Sample ID: SL-516-SA5D-SB-13.0-14.0 *Collected:* 11/15/2013 9:08:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
DINOSEB	25	U	9.2	MDL	25	PQL	ug/Kg	R	L

Sample ID: SL-516-SA5D-SB-4.0-5.0 *Collected:* 11/15/2013 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
DINOSEB	26	U	9.9	MDL	26	PQL	ug/Kg	R	L

Sample ID: SL-516-SA5D-SB-9.0-10.0 *Collected:* 11/15/2013 8:56:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
DINOSEB	26	U	9.9	MDL	26	PQL	ug/Kg	R	L

Sample ID: SL-816-SA5D-SB-4.0-5.0 *Collected:* 11/15/2013 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
DINOSEB	26	U	9.9	MDL	26	PQL	ug/Kg	R	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: PH130 **Laboratory: LL**

EDD Filename: PrepPH130 **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: **SVOA**

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

Sample ID: **SL-516-SA5D-SB-13.0-14.0** ***Collected:*** **11/15/2013 9:08:00** ***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	0.91	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(B)FLUORANTHENE	0.71	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(K)FLUORANTHENE	1.3	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
CHRYSENE	0.96	J	0.34	MDL	1.7	PQL	ug/Kg	J	Z
FLUORANTHENE	1.1	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	1.1	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
PYRENE	0.87	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: PH130 **Laboratory: LL**

EDD Filename: PrepPH130 **eQAPP Name: CDM_SSFL_140113_Lan**

Reason Code Legend

Reason Code	*Description*
B	Calibration Blank Contamination
B	Method Blank Contamination
E	Laboratory Duplicate Precision
E	Matrix Spike Precision
F	Field Blank Contamination
FD	Field Duplicate Precision
H	Extraction to Analysis Estimation
L	Laboratory Control Spike Lower Rejection
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

PH130

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: PH130 **Laboratory: LL**
EDD Filename: PH130 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: 8015M **Preparation Method: 5035A**
Matrix: SO

Sample ID	*Type*	*Actual*	*Criteria*	*Units*	*Flag*
SL-516-SA5D-SB-13.0-14.0 (REA)	Extraction To Analysis	10.00	7.00	DAYS	J (all detects)
SL-516-SA5D-SB-4.0-5.0 (REA)		11.00	7.00	DAYS	UJ (all non-detects)
SL-516-SA5D-SB-4.0-5.0MS (REA)		11.00	7.00	DAYS	
SL-516-SA5D-SB-4.0-5.0MSD (REA		11.00	7.00	DAYS	
SL-516-SA5D-SB-9.0-10.0 (REA)		10.00	7.00	DAYS	
SL-816-SA5D-SB-4.0-5.0 (REA)		10.00	7.00	DAYS	

Method Blank Outlier Report

Lab Reporting Batch ID: PH130 **Laboratory: LL**

EDD Filename: PH130 **eQAPP Name: CDM_SSFL_140113_Lan**

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK3290B372249	11/27/2013 10:49:00 PM	1,2,3,4,6,7,8-HPCDD	0.211 ng/Kg	SL-516-SA5D-SB-0.0-0.5
		1,2,3,4,6,7,8-HPCDF	0.0819 ng/Kg	SL-516-SA5D-SB-13.0-14.0
		1,2,3,4,7,8,9-HPCDF	0.0771 ng/Kg	SL-516-SA5D-SB-4.0-5.0
		1,2,3,4,7,8-HxCDD	0.0502 ng/Kg	SL-516-SA5D-SB-9.0-10.0
		1,2,3,4,7,8-HXCDF	0.0660 ng/Kg	SL-609-SA5D-SB-0.0-0.5
		1,2,3,6,7,8-HXCDD	0.0706 ng/Kg	SL-816-SA5D-SB-4.0-5.0
		1,2,3,7,8,9-HXCDD	0.0838 ng/Kg	
		1,2,3,7,8-PECDF	0.0746 ng/Kg	
		2,3,4,6,7,8-HXCDF	0.0762 ng/Kg	
		2,3,4,7,8-PECDF	0.0903 ng/Kg	
		2,3,7,8-TCDD	0.166 ng/Kg	
		2,3,7,8-TCDF	0.101 ng/Kg	
		OCDD	1.58 ng/Kg	
		OCDF	0.234 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-516-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDD	0.330 ng/Kg	0.330U ng/Kg
SL-516-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDF	0.0969 ng/Kg	0.0969U ng/Kg
SL-516-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.105 ng/Kg	0.105U ng/Kg
SL-516-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.0427 ng/Kg	0.0427U ng/Kg
SL-516-SA5D-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.0747 ng/Kg	0.0747U ng/Kg
SL-516-SA5D-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDD	0.271 ng/Kg	0.271U ng/Kg
SL-516-SA5D-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.168 ng/Kg	0.168U ng/Kg
SL-516-SA5D-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.118 ng/Kg	0.118U ng/Kg
SL-516-SA5D-SB-0.0-0.5(RES)	OCDD	3.39 ng/Kg	3.39U ng/Kg
SL-516-SA5D-SB-0.0-0.5(RES)	OCDF	0.365 ng/Kg	0.365U ng/Kg
SL-516-SA5D-SB-13.0-14.0(RES)	1,2,3,4,6,7,8-HPCDD	0.137 ng/Kg	0.137U ng/Kg
SL-516-SA5D-SB-13.0-14.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0921 ng/Kg	0.0921U ng/Kg
SL-516-SA5D-SB-13.0-14.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0501 ng/Kg	0.0501U ng/Kg
SL-516-SA5D-SB-13.0-14.0(RES)	1,2,3,4,7,8-HxCDD	0.0505 ng/Kg	0.0505U ng/Kg
SL-516-SA5D-SB-13.0-14.0(RES)	1,2,3,4,7,8-HXCDF	0.0758 ng/Kg	0.0758U ng/Kg
SL-516-SA5D-SB-13.0-14.0(RES)	1,2,3,6,7,8-HXCDD	0.0367 ng/Kg	0.0367U ng/Kg
SL-516-SA5D-SB-13.0-14.0(RES)	1,2,3,7,8,9-HXCDD	0.0443 ng/Kg	0.0443U ng/Kg
SL-516-SA5D-SB-13.0-14.0(RES)	1,2,3,7,8-PECDF	0.0757 ng/Kg	0.0757U ng/Kg
SL-516-SA5D-SB-13.0-14.0(RES)	2,3,4,6,7,8-HXCDF	0.0484 ng/Kg	0.0484U ng/Kg
SL-516-SA5D-SB-13.0-14.0(RES)	2,3,4,7,8-PECDF	0.0686 ng/Kg	0.0686U ng/Kg
SL-516-SA5D-SB-13.0-14.0(RES)	OCDD	1.40 ng/Kg	1.40U ng/Kg
SL-516-SA5D-SB-13.0-14.0(RES)	OCDF	0.156 ng/Kg	0.156U ng/Kg
SL-516-SA5D-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDD	0.313 ng/Kg	0.313U ng/Kg
SL-516-SA5D-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.112 ng/Kg	0.112U ng/Kg
SL-516-SA5D-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0665 ng/Kg	0.0665U ng/Kg
SL-516-SA5D-SB-4.0-5.0(RES)	1,2,3,4,7,8-HxCDD	0.0899 ng/Kg	0.0899U ng/Kg
SL-516-SA5D-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.122 ng/Kg	0.122U ng/Kg
SL-516-SA5D-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDD	0.0667 ng/Kg	0.0667U ng/Kg
SL-516-SA5D-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDD	0.121 ng/Kg	0.121U ng/Kg
SL-516-SA5D-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	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: PH130 **Laboratory: LL**

EDD Filename: PH130 **eQAPP Name: CDM_SSFL_140113_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-516-SA5D-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0666 ng/Kg	0.0666U ng/Kg
SL-516-SA5D-SB-4.0-5.0(RES)	2,3,4,7,8-PECDF	0.0691 ng/Kg	0.0691U ng/Kg
SL-516-SA5D-SB-4.0-5.0(RES)	OCDD	1.85 ng/Kg	1.85U ng/Kg
SL-516-SA5D-SB-4.0-5.0(RES)	OCDF	0.281 ng/Kg	0.281U ng/Kg
SL-516-SA5D-SB-9.0-10.0(RES)	1,2,3,4,6,7,8-HPCDD	0.846 ng/Kg	0.846U ng/Kg
SL-516-SA5D-SB-9.0-10.0(RES)	1,2,3,4,6,7,8-HPCDF	0.216 ng/Kg	0.216U ng/Kg
SL-516-SA5D-SB-9.0-10.0(RES)	1,2,3,4,7,8,9-HPCDF	0.107 ng/Kg	0.107U ng/Kg
SL-516-SA5D-SB-9.0-10.0(RES)	1,2,3,4,7,8-HxCDD	0.0581 ng/Kg	0.0581U ng/Kg
SL-516-SA5D-SB-9.0-10.0(RES)	1,2,3,4,7,8-HXCDF	0.149 ng/Kg	0.149U ng/Kg
SL-516-SA5D-SB-9.0-10.0(RES)	1,2,3,6,7,8-HXCDD	0.173 ng/Kg	0.173U ng/Kg
SL-516-SA5D-SB-9.0-10.0(RES)	1,2,3,7,8,9-HXCDD	0.216 ng/Kg	0.216U ng/Kg
SL-516-SA5D-SB-9.0-10.0(RES)	1,2,3,7,8-PECDF	0.303 ng/Kg	0.303U ng/Kg
SL-516-SA5D-SB-9.0-10.0(RES)	2,3,4,6,7,8-HXCDF	0.133 ng/Kg	0.133U ng/Kg
SL-516-SA5D-SB-9.0-10.0(RES)	2,3,4,7,8-PECDF	0.122 ng/Kg	0.122U ng/Kg
SL-516-SA5D-SB-9.0-10.0(RES)	2,3,7,8-TCDF	0.0992 ng/Kg	0.0992U ng/Kg
SL-516-SA5D-SB-9.0-10.0(RES)	OCDF	0.601 ng/Kg	0.601U ng/Kg
SL-609-SA5D-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDD	0.580 ng/Kg	0.580U ng/Kg
SL-609-SA5D-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.336 ng/Kg	0.336U ng/Kg
SL-609-SA5D-SB-0.0-0.5(RES)	2,3,7,8-TCDD	0.0640 ng/Kg	0.0640U ng/Kg
SL-609-SA5D-SB-0.0-0.5(RES)	OCDD	1.49 ng/Kg	1.49U ng/Kg
SL-609-SA5D-SB-0.0-0.5(RES)	OCDF	1.05 ng/Kg	1.05U ng/Kg
SL-816-SA5D-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDD	0.280 ng/Kg	0.280U ng/Kg
SL-816-SA5D-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.236 ng/Kg	0.236U ng/Kg
SL-816-SA5D-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.205 ng/Kg	0.205U ng/Kg
SL-816-SA5D-SB-4.0-5.0(RES)	1,2,3,4,7,8-HxCDD	0.195 ng/Kg	0.195U ng/Kg
SL-816-SA5D-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.213 ng/Kg	0.213U ng/Kg
SL-816-SA5D-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDD	0.228 ng/Kg	0.228U ng/Kg
SL-816-SA5D-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDD	0.224 ng/Kg	0.224U ng/Kg
SL-816-SA5D-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.214 ng/Kg	0.214U ng/Kg
SL-816-SA5D-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.224 ng/Kg	0.224U ng/Kg
SL-816-SA5D-SB-4.0-5.0(RES)	2,3,4,7,8-PECDF	0.223 ng/Kg	0.223U ng/Kg
SL-816-SA5D-SB-4.0-5.0(RES)	2,3,7,8-TCDD	0.111 ng/Kg	0.111U ng/Kg
SL-816-SA5D-SB-4.0-5.0(RES)	2,3,7,8-TCDF	0.0787 ng/Kg	0.0787U ng/Kg
SL-816-SA5D-SB-4.0-5.0(RES)	OCDD	1.03 ng/Kg	1.03U ng/Kg
SL-816-SA5D-SB-4.0-5.0(RES)	OCDF	0.462 ng/Kg	0.462U ng/Kg

Method Blank Outlier Report

Lab Reporting Batch ID: PH130 **Laboratory: LL**

EDD Filename: PH130 **eQAPP Name: CDM_SSFL_140113_Lan**

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P32937AB220213	11/27/2013 2:13:00 AM	TIN	1.55 mg/Kg	SL-516-SA5D-SB-0.0-0.5 SL-516-SA5D-SB-13.0-14.0 SL-516-SA5D-SB-4.0-5.0 SL-516-SA5D-SB-9.0-10.0 SL-609-SA5D-SB-0.0-0.5 SL-816-SA5D-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-SA5D-SB-0.0-0.5(RES)	TIN	2.94 mg/Kg	2.94U mg/Kg
SL-516-SA5D-SB-4.0-5.0(RES)	TIN	3.31 mg/Kg	3.31U mg/Kg
SL-516-SA5D-SB-9.0-10.0(RES)	TIN	3.07 mg/Kg	3.07U mg/Kg
SL-609-SA5D-SB-0.0-0.5(RES)	TIN	2.57 mg/Kg	2.57U mg/Kg
SL-816-SA5D-SB-4.0-5.0(RES)	TIN	3.07 mg/Kg	3.07U mg/Kg

Field Blank Outlier Report

Lab Reporting Batch ID: PH130 **Laboratory: LL**

EDD Filename: PH130 **eQAPP Name: CDM_SSFL_140113_Lan**

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

Field Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
FB-041613(REA2/TOT)	4/16/2013 3:15:00 PM	MOLYBDENUM TIN	0.0132 mg/L 0.0029 mg/L	SL-516-SA5D-SB-0.0-0.5 SL-516-SA5D-SB-13.0-14.0 SL-516-SA5D-SB-4.0-5.0 SL-516-SA5D-SB-9.0-10.0 SL-609-SA5D-SB-0.0-0.5 SL-816-SA5D-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-SA5D-SB-0.0-0.5(RES)	MOLYBDENUM	0.366 mg/Kg	0.366U mg/Kg
SL-516-SA5D-SB-13.0-14.0(REA)	MOLYBDENUM	0.509 mg/Kg	0.509U mg/Kg
SL-516-SA5D-SB-4.0-5.0(RES)	MOLYBDENUM	0.543 mg/Kg	0.543U mg/Kg
SL-516-SA5D-SB-9.0-10.0(RES)	MOLYBDENUM	0.366 mg/Kg	0.366U mg/Kg
SL-816-SA5D-SB-4.0-5.0(RES)	MOLYBDENUM	0.294 mg/Kg	0.294U mg/Kg

Surrogate Outlier Report

Lab Reporting Batch ID: PH130 **Laboratory: LL**

EDD Filename: PH130 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: **8082A**
Matrix: **SO**

Sample ID (Analysis Type)	*Surrogate*	*Sample % Recovery*	*% Recovery Limits*	*Affected Compounds*	*Flag*
SL-816-SA5D-SB-4.0-5.0	DECACHLOROBIPHENYL	122	45.00-120.00	All Target Analytes	J (all detects)

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH130 **Laboratory: LL**

EDD Filename: PH130 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: 6010C
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-516-SA5D-SB-4.0-5.0MS (TOT) SL-516-SA5D-SB-4.0-5.0MSD (TOT) (SL-516-SA5D-SB-0.0-0.5 SL -516-SA5D-SB-13.0-14.0 SL -516-SA5D-SB-4.0-5.0 SL -516-SA5D-SB-9.0-10.0 SL -609-SA5D-SB-0.0-0.5 SL -816-SA5D-SB-4.0-5.0)	TITANIUM	212	172	75.00-125.00	-	TITANIUM	No Qual, >4x
SL-516-SA5D-SB-4.0-5.0MS (TOT) SL-516-SA5D-SB-4.0-5.0MSD (TOT) (SL-516-SA5D-SB-0.0-0.5 SL -516-SA5D-SB-13.0-14.0 SL -516-SA5D-SB-4.0-5.0 SL -516-SA5D-SB-9.0-10.0 SL -609-SA5D-SB-0.0-0.5 SL -816-SA5D-SB-4.0-5.0)	ALUMINUM CALCIUM IRON MAGNESIUM MANGANESE	-1771 -304 -2043 5 -217	2164 -29 1200 193 -97	75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00	32 (20.00) 33 (20.00) - - -	ALUMINUM CALCIUM IRON MAGNESIUM MANGANESE	J(all detects) UJ(all non-detects) Al, Ca, No Qual %R >4x Fe, Mg, Mn, No Qual, >4x
SL-516-SA5D-SB-4.0-5.0MS (TOT) SL-516-SA5D-SB-4.0-5.0MSD (TOT) (SL-516-SA5D-SB-0.0-0.5 SL -516-SA5D-SB-13.0-14.0 SL -516-SA5D-SB-4.0-5.0 SL -516-SA5D-SB-9.0-10.0 SL -609-SA5D-SB-0.0-0.5 SL -816-SA5D-SB-4.0-5.0)	ANTIMONY BARIUM	32 63	30 -	75.00-125.00 75.00-125.00	- -	ANTIMONY BARIUM	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-516-SA5D-SB-4.0-5.0MS (TOT) SL-516-SA5D-SB-4.0-5.0MSD (TOT) (SL-516-SA5D-SB-0.0-0.5 SL -516-SA5D-SB-13.0-14.0 SL -516-SA5D-SB-4.0-5.0 SL -516-SA5D-SB-9.0-10.0 SL -609-SA5D-SB-0.0-0.5 SL -816-SA5D-SB-4.0-5.0)	STRONTIUM	-13	-	75.00-125.00	30 (20.00)	STRONTIUM	J(all detects) R(all non-detects) Post Spike = 351%

Lab Duplicate Outlier Report

Lab Reporting Batch ID: PH130 **Laboratory: LL**

EDD Filename: PH130 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: 6010C
Matrix: SO

QC Sample ID (Associated Sample ID)	Analyte	Sample RPD	eQAPP RPD	Flag
SL-516-SA5D-SB-4.0-5.0DUP (TOT) (SL-516-SA5D-SB-0.0-0.5 SL-516-SA5D-SB-13.0-14.0 SL-516-SA5D-SB-4.0-5.0 SL-516-SA5D-SB-9.0-10.0 SL-609-SA5D-SB-0.0-0.5 SL-816-SA5D-SB-4.0-5.0)	BORON	23	20.00	J (all detects) UJ (all non-detects)
	MANGANESE	63	20.00	

Method: 6020A
Matrix: SO

QC Sample ID (Associated Sample ID)	Analyte	Sample RPD	eQAPP RPD	Flag
SL-516-SA5D-SB-4.0-5.0DUP (TOT) (SL-516-SA5D-SB-0.0-0.5 SL-516-SA5D-SB-13.0-14.0 SL-516-SA5D-SB-4.0-5.0 SL-516-SA5D-SB-9.0-10.0 SL-609-SA5D-SB-0.0-0.5 SL-816-SA5D-SB-4.0-5.0)	SILVER	35	20.00	No Qual, OK by Difference

Method: 7199
Matrix: SO

QC Sample ID (Associated Sample ID)	Analyte	Sample RPD	eQAPP RPD	Flag
SL-516-SA5D-SB-4.0-5.0DUP (TOT) (SL-516-SA5D-SB-0.0-0.5 SL-516-SA5D-SB-13.0-14.0 SL-516-SA5D-SB-4.0-5.0 SL-516-SA5D-SB-9.0-10.0 SL-816-SA5D-SB-4.0-5.0)	HEXAVALENT CHROMIUM	200	20.00	No Qual, OK by Difference

Method: 7471B
Matrix: SO

QC Sample ID (Associated Sample ID)	Analyte	Sample RPD	eQAPP RPD	Flag
SL-516-SA5D-SB-4.0-5.0DUP (TOT) (SL-516-SA5D-SB-0.0-0.5 SL-516-SA5D-SB-13.0-14.0 SL-516-SA5D-SB-4.0-5.0 SL-516-SA5D-SB-9.0-10.0 SL-609-SA5D-SB-0.0-0.5 SL-816-SA5D-SB-4.0-5.0)	MERCURY	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: PH130 **Laboratory: LL**

EDD Filename: PH130 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: 8151A
Matrix: SO

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
P33270AQ241905A (SL-516-SA5D-SB-0.0-0.5 SL-516-SA5D-SB-13.0-14.0 SL-516-SA5D-SB-4.0-5.0 SL-516-SA5D-SB-9.0-10.0 SL-816-SA5D-SB-4.0-5.0)	2,4,5-T 2,4-D	136 129	- -	58.00-135.00 59.00-122.00	- -	2,4,5-T 2,4-D	J (all detects)
P33270AQ241905A (SL-516-SA5D-SB-0.0-0.5 SL-516-SA5D-SB-13.0-14.0 SL-516-SA5D-SB-4.0-5.0 SL-516-SA5D-SB-9.0-10.0 SL-816-SA5D-SB-4.0-5.0)	DINOSEB	7	-	10.00-36.00	-	DINOSEB	J(all detects) R(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
P5LDLCSQ261212 (SL-516-SA5D-SB-0.0-0.5 SL-516-SA5D-SB-13.0-14.0 SL-516-SA5D-SB-4.0-5.0 SL-516-SA5D-SB-9.0-10.0 SL-609-SA5D-SB-0.0-0.5 SL-816-SA5D-SB-4.0-5.0)	BIS(2-ETHYLHEXYL)PHTHALAT	127	-	79.00-121.00	-	BIS(2-ETHYLHEXYL)PHTHALA	J(all detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: PH130 **Laboratory: LL**

EDD Filename: PH130 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: 160.3M
Matrix: SO

Analyte	Concentration (%)		Sample RPD	eQAPP RPD	Flag
	SL-516-SA5D-SB-4.0-5.0	SL-816-SA5D-SB-4.0-5.0			
MOISTURE	9.5	10.2	7		No Qualifiers Applied

Method: 1613B
Matrix: SO

Analyte	Concentration (ng/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-516-SA5D-SB-4.0-5.0	SL-816-SA5D-SB-4.0-5.0			
1,2,3,4,6,7,8-HPCDD	0.313	0.280	11	50.00	
1,2,3,7,8,9-HXCDF	0.146	0.222	41	50.00	
1,2,3,7,8-PECDF	0.136	0.214	45	50.00	No Qualifiers Applied
OCDF	0.281	0.462	49	50.00	
1,2,3,4,6,7,8-HPCDF	0.112	0.236	71	50.00	
1,2,3,4,7,8,9-HPCDF	0.0665	0.205	102	50.00	
1,2,3,4,7,8-HxCDD	0.0899	0.195	74	50.00	
1,2,3,4,7,8-HXCDF	0.122	0.213	54	50.00	
1,2,3,6,7,8-HXCDD	0.0667	0.228	109	50.00	
1,2,3,6,7,8-HXCDF	0.0446	0.195	126	50.00	
1,2,3,7,8,9-HXCDD	0.121	0.224	60	50.00	J(all detects)
1,2,3,7,8-PECDD	0.0967	0.172	56	50.00	UJ(all non-detects)
2,3,4,6,7,8-HXCDF	0.0666	0.224	108	50.00	
2,3,4,7,8-PECDF	0.0691	0.223	105	50.00	
2,3,7,8-TCDD	1.09 U	0.111	200	50.00	
2,3,7,8-TCDF	1.09 U	0.0787	200	50.00	
OCDD	1.85	1.03	57	50.00	

Method: 6010C
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-516-SA5D-SB-4.0-5.0 (TOT)	SL-816-SA5D-SB-4.0-5.0 (TOT)			
ALUMINUM	26200	24400	7	50.00	
ARSENIC	7.49	7.34	2	50.00	
BARIUM	136	106	25	50.00	
BERYLLIUM	0.984	1.01	3	50.00	
BORON	2.58	1.71	41	50.00	
CALCIUM	4330	3670	16	50.00	
CHROMIUM	25.2	25.6	2	50.00	
COBALT	7.02	6.98	1	50.00	
COPPER	12.1	11.4	6	50.00	
IRON	25400	26500	4	50.00	
LEAD	7.84	8.66	10	50.00	
LITHIUM	20.5	19.0	8	50.00	No Qualifiers Applied
MAGNESIUM	4960	5110	3	50.00	
NICKEL	14.3	12.9	10	50.00	
PHOSPHORUS	132	124	6	50.00	
POTASSIUM	2220	2270	2	50.00	
SODIUM	481	539	11	50.00	
TIN	3.31	3.07	8	50.00	
TITANIUM	1140	1050	8	50.00	
VANADIUM	49.7	48.6	2	50.00	
ZINC	48.1	51.9	8	50.00	
Zirconium	4.99	5.10	2	50.00	
MANGANESE	425	243	54	50.00	J(all detects)
MOLYBDENUM	0.543	0.294	59	50.00	

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

Field Duplicate RPD Report

Lab Reporting Batch ID: PH130 **Laboratory: LL**

EDD Filename: PH130 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: 6020A
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-516-SA5D-SB-4.0-5.0 (TOT)	SL-816-SA5D-SB-4.0-5.0 (TOT)			
SELENIUM	0.167	0.147	13	50.00	No Qualifiers Applied
SILVER	0.0648	0.0614	5	50.00	
STRONTIUM	27.8	25.9	7	50.00	
THALLIUM	0.301	0.289	4	50.00	

Method: 7199
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-516-SA5D-SB-4.0-5.0 (TOT)	SL-816-SA5D-SB-4.0-5.0 (TOT)			
HEXAVALENT CHROMIUM	0.44 U	0.16	200	50.00	J(all detects) UJ(all non-detects)

Method: 7471B
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-516-SA5D-SB-4.0-5.0 (TOT)	SL-816-SA5D-SB-4.0-5.0 (TOT)			
MERCURY	0.0337	0.0283	17	50.00	No Qualifiers Applied

Method: 9045M
Matrix: SO

Analyte	Concentration (pH unit)		Sample RPD	eQAPP RPD	Flag
	SL-516-SA5D-SB-4.0-5.0	SL-816-SA5D-SB-4.0-5.0			
PH	7.79	8.32	7	50.00	No Qualifiers Applied

Reporting Limit Outliers

Lab Reporting Batch ID: PH130 **Laboratory: LL**

EDD Filename: PH130 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-516-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	0.330	5.31	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.0969	5.31	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.105	5.31	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.0427	5.31	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.0747	5.31	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.271	5.31	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JQ	0.0549	5.31	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDD	JB	0.421	5.31	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	J	0.677	5.31	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.102	5.31	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.168	5.31	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.118	5.31	PQL	ng/Kg	
	OCDD	JB	3.39	10.6	PQL	ng/Kg	
	OCDF	JB	0.365	10.6	PQL	ng/Kg	
SL-516-SA5D-SB-13.0-14.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.137	5.10	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0921	5.10	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.0501	5.10	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0505	5.10	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.0758	5.10	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.0367	5.10	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	J	0.0515	5.10	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.0443	5.10	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	J	0.0384	5.10	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.0548	5.10	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.0757	5.10	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.0484	5.10	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0686	5.10	PQL	ng/Kg	
	OCDD	JB	1.40	10.2	PQL	ng/Kg	
	OCDF	JBQ	0.156	10.2	PQL	ng/Kg	
SL-516-SA5D-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JB	0.313	5.44	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.112	5.44	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0665	5.44	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0899	5.44	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.122	5.44	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.0667	5.44	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JQ	0.0446	5.44	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.121	5.44	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JQ	0.146	5.44	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.0967	5.44	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.136	5.44	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0666	5.44	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.0691	5.44	PQL	ng/Kg	
	OCDD	JB	1.85	10.9	PQL	ng/Kg	
	OCDF	JB	0.281	10.9	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH130 **Laboratory: LL**

EDD Filename: PH130 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-516-SA5D-SB-9.0-10.0	1,2,3,4,6,7,8-HPCDD	JB	0.846	5.35	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.216	5.35	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.107	5.35	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0581	5.35	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.149	5.35	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.173	5.35	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JQ	0.122	5.35	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.216	5.35	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JQ	0.205	5.35	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JQ	0.0896	5.35	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.303	5.35	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.133	5.35	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.122	5.35	PQL	ng/Kg	
	2,3,7,8-TCDF	JB	0.0992	1.07	PQL	ng/Kg	
	OCDD	JB	9.55	10.7	PQL	ng/Kg	
	OCDF	JBQ	0.601	10.7	PQL	ng/Kg	
SL-609-SA5D-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JBQ	0.580	5.17	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.544	5.17	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.439	5.17	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.452	5.17	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.393	5.17	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.397	5.17	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JQ	0.481	5.17	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.524	5.17	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	J	0.492	5.17	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	J	0.414	5.17	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.501	5.17	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.418	5.17	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.336	5.17	PQL	ng/Kg	
	2,3,7,8-TCDD	JBQ	0.0640	1.03	PQL	ng/Kg	
	OCDD	JB	1.49	10.3	PQL	ng/Kg	
	OCDF	JBQ	1.05	10.3	PQL	ng/Kg	
SL-816-SA5D-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JB	0.280	5.44	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.236	5.44	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.205	5.44	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.195	5.44	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.213	5.44	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.228	5.44	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	J	0.195	5.44	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.224	5.44	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JQ	0.222	5.44	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	J	0.172	5.44	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.214	5.44	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.224	5.44	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.223	5.44	PQL	ng/Kg	
	2,3,7,8-TCDD	JBQ	0.111	1.09	PQL	ng/Kg	
	2,3,7,8-TCDF	JB	0.0787	1.09	PQL	ng/Kg	
	OCDD	JB	1.03	10.9	PQL	ng/Kg	
	OCDF	JB	0.462	10.9	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH130 **Laboratory: LL**

EDD Filename: PH130 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-516-SA5D-SB-0.0-0.5	BERYLLIUM	J	0.899	1.05	PQL	mg/Kg	J (all detects)
	BORON	J	3.75	10.5	PQL	mg/Kg	
	MOLYBDENUM	J	0.366	2.10	PQL	mg/Kg	
	TIN	J	2.94	10.5	PQL	mg/Kg	
	Zirconium	J	4.90	5.24	PQL	mg/Kg	
SL-516-SA5D-SB-13.0-14.0	BERYLLIUM	J	0.650	0.999	PQL	mg/Kg	J (all detects)
	BORON	J	1.78	9.99	PQL	mg/Kg	
	MOLYBDENUM	J	0.509	2.00	PQL	mg/Kg	
	Zirconium	J	3.74	4.99	PQL	mg/Kg	
SL-516-SA5D-SB-4.0-5.0	BERYLLIUM	J	0.984	1.09	PQL	mg/Kg	J (all detects)
	BORON	J	2.58	10.9	PQL	mg/Kg	
	MOLYBDENUM	J	0.543	2.19	PQL	mg/Kg	
	TIN	J	3.31	10.9	PQL	mg/Kg	
	Zirconium	J	4.99	5.47	PQL	mg/Kg	
SL-516-SA5D-SB-9.0-10.0	BERYLLIUM	J	1.01	1.08	PQL	mg/Kg	J (all detects)
	BORON	J	1.67	10.8	PQL	mg/Kg	
	MOLYBDENUM	J	0.366	2.16	PQL	mg/Kg	
	TIN	J	3.07	10.8	PQL	mg/Kg	
	Zirconium	J	4.73	5.39	PQL	mg/Kg	
SL-609-SA5D-SB-0.0-0.5	BERYLLIUM	J	0.600	1.04	PQL	mg/Kg	J (all detects)
	BORON	J	1.27	10.4	PQL	mg/Kg	
	TIN	J	2.57	10.4	PQL	mg/Kg	
	Zirconium	J	4.77	5.21	PQL	mg/Kg	
SL-816-SA5D-SB-4.0-5.0	BERYLLIUM	J	1.01	1.08	PQL	mg/Kg	J (all detects)
	BORON	J	1.71	10.8	PQL	mg/Kg	
	MOLYBDENUM	J	0.294	2.16	PQL	mg/Kg	
	TIN	J	3.07	10.8	PQL	mg/Kg	
	Zirconium	J	5.10	5.41	PQL	mg/Kg	

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-516-SA5D-SB-0.0-0.5	SELENIUM	J	0.253	0.419	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0478	0.210	PQL	mg/Kg	
SL-516-SA5D-SB-13.0-14.0	SELENIUM	J	0.160	0.400	PQL	mg/Kg	J (all detects)
SL-516-SA5D-SB-4.0-5.0	SELENIUM	J	0.167	0.438	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0648	0.219	PQL	mg/Kg	
SL-516-SA5D-SB-9.0-10.0	SELENIUM	J	0.146	0.431	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0472	0.216	PQL	mg/Kg	
SL-609-SA5D-SB-0.0-0.5	SILVER	J	0.0283	0.208	PQL	mg/Kg	J (all detects)
SL-816-SA5D-SB-4.0-5.0	SELENIUM	J	0.147	0.432	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0614	0.216	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH130 **Laboratory: LL**

EDD Filename: PH130 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: 7199

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-516-SA5D-SB-13.0-14.0	HEXAVALENT CHROMIUM	J	0.26	0.41	PQL	mg/Kg	J (all detects)
SL-816-SA5D-SB-4.0-5.0	HEXAVALENT CHROMIUM	J	0.16	0.45	PQL	mg/Kg	J (all detects)

Method: 7471B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-516-SA5D-SB-13.0-14.0	MERCURY	J	0.0103	0.0168	PQL	mg/Kg	J (all detects)

Method: 8015M

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-516-SA5D-SB-0.0-0.5	EFH (C21-C30)	J	3.9	5.3	PQL	mg/Kg	J (all detects)
	EFH (C30-C40)	J	6.2	11	PQL	mg/Kg	
SL-609-SA5D-SB-0.0-0.5	EFH (C21-C30)	J	2.6	5.2	PQL	mg/Kg	J (all detects)
	EFH (C30-C40)	J	5.5	10	PQL	mg/Kg	

Method: 8270D SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-516-SA5D-SB-13.0-14.0	2-METHYLNAPHTHALENE	J	0.91	1.7	PQL	ug/Kg	J (all detects)
	BENZO(B)FLUORANTHENE	J	0.71	1.7	PQL	ug/Kg	
	BENZO(K)FLUORANTHENE	J	1.3	1.7	PQL	ug/Kg	
	CHRYSENE	J	0.96	1.7	PQL	ug/Kg	
	FLUORANTHENE	J	1.1	1.7	PQL	ug/Kg	
	NAPHTHALENE	J	1.4	1.7	PQL	ug/Kg	
	PHENANTHRENE	J	1.1	1.7	PQL	ug/Kg	
	PYRENE	J	0.87	1.7	PQL	ug/Kg	

LDC #: 31106A4
SDG #: PH130
Laboratory: Eurofins Lancaster Laboratories

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 1/17/14
Page: 1 of 1
Reviewer: CR
2nd Reviewer: SA

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: 11/15/13
II.	ICP/MS Tune	—	
III.	Calibration	—	
IV.	Blanks	SW	
V.	ICP Interference Check Sample (ICS) Analysis	—	
VI.	Matrix Spike Analysis	SW	
VII.	Duplicate Sample Analysis	SW	
VIII.	Laboratory Control Samples (LCS)	A	
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	—	(2,3)
XV	Field Blanks	SW	EB= EB1-111213 (PH1127) FB= FB-011613 (PH1032)

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-SA5D-SB-0.0-0.5	11		21		31	
2	SL-516-SA5D-SB-4.0-5.0	12		22		32	
3	SL-816-SA5D-SB-4.0-5.0	13		23		33	
4	SL-516-SA5D-SB-9.0-10.0	14		24		34	
5	SL-516-SA5D-SB-13.0-14.0	15		25		35	
6	SL-609-SA5D-SB-0.0-0.5	16		26		36	
7	SL-516-SA5D-SB-4.0-5.0MS	17		27		37	
8	SL-516-SA5D-SB-4.0-5.0MSD	18		28		38	
9	SL-516-SA5D-SB-4.0-5.0DUP	19		29		39	
10		20		30		40	

Notes: _____

LDC #: 31098A4

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000) Soil preparation factor applied: 100x x 2xdil Reason: B

Sample Concentration units, unless otherwise noted: mg/Kg Associated Samples: All

					Sample Identification										
Analyte	**Maximum PB[a] (mg/Kg)**	**Maximum PB[a] (ug/l)**	**Maximum ICB/CCB[a] (ug/l)**	**Action Level**	1	2	3	4	5	6					
Ag			0.25	0.25	0.0438	0.0648	0.0614	0.0472		0.0283					
Tl			0.35	0.35	0.322	0.301	0.289	0.292	0.287	0.286					

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 #: 31106A4

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: 4/16/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All Soil

Analyte	Blank ID	Sample Identification												
	FB-041613 (SDG: PH032)	Action Limit	1	2	3	4	5							
Mo	0.0132	6.60	0.366	0.543	0.294	0.366	0.509							
Sn	0.0029	1.45												

Sampling date: 9/25/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All Soil

Analyte	Blank ID	Sample Identification												
	EB1-111213 (SDG: PH127)	Action Limit	No Qualifiers											
Ba	0.00034	0.17												
Ca	0.0349	17.45												
Mg	0.0168	8.4												

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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Sr Post Spike = 351%

74

HIGH RPD OUT (MS)

QUALITY ASSURANCE SUMMARY
FORM 5A(MS/MSD)
MATRIX SPIKE/MATRIX SPIKE DUPLICATE
SDG No.: PH130
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7280198BKG Matrix Spike Lab Sample ID: 7280199MS Matrix Spike Duplicate Lab Sample ID: 7280200MSD
Batch Id(s): P32937A, P32938A

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		23697.1911		20259.1311		27981.5693		194.1748	198.0198	MG/KG	-1771		2164		32			20	P
Antimony		0.7327	U	15.6738		14.7802		48.5437	49.5050	MG/KG	32	N	30	N	6		75 - 125	20	P
Arsenic		6.7822		19.0243		20.6277		14.5631	14.8515	MG/KG	84		93		8		75 - 125	20	P
Barium		123.3040		246.2204		289.9851		194.1748	198.0198	MG/KG	63	N	84		16		75 - 125	20	P
Beryllium		0.8901	B	5.4767		5.9515		4.8544	4.9505	MG/KG	94		102		8		75 - 125	20	P
Boron		2.3347	B	182.0893		189.6356		194.1748	198.0198	MG/KG	93		95		4		75 - 125	20	P
Cadmium		0.0752	U	4.0922		4.1881		4.8544	4.9505	MG/KG	84		85		2		75 - 125	20	P
Calcium		3919.0495		2738.3893		3803.9267		388.3495	396.0396	MG/KG	-304		-29		38			20	P
Chromium		22.7931		39.7311		45.2564		19.4175	19.8020	MG/KG	87		113		13		75 - 125	20	P
Cobalt		6.3505		51.4612		53.3257		48.5437	49.5050	MG/KG	93		95		4		75 - 125	20	P
Copper		10.9505		32.6825		36.6663		24.2718	24.7525	MG/KG	90		104		11		75 - 125	20	P
Iron		23010.6000		21026.7767		24198.4574		97.0874	99.0099	MG/KG	-2043		1200		14			20	P
Lead		7.0941		19.3660		21.8911		14.5631	14.8515	MG/KG	84		100		12		75 - 125	20	P
Lithium		18.5752		110.5447		116.4564		97.0874	99.0099	MG/KG	95		99		5		75 - 125	20	P
Magnesium		4493.1970		4503.4990		4875.7832		194.1748	198.0198	MG/KG	5		193		8			20	P
Manganese		385.0317		279.8495		336.8871		48.5437	49.5050	MG/KG	-217		-97		18			20	P
Mercury		0.0305		0.1604		0.1634		0.1573	0.1581	MG/KG	83		84		2		65 - 135	20	CV
Molybdenum		0.4911	B	177.7204		182.1436		194.1748	198.0198	MG/KG	91		92		2		75 - 125	20	P
Nickel		12.9168		56.1350		61.3921		48.5437	49.5050	MG/KG	89		98		9		75 - 125	20	P
Phosphorus		119.7941		202.2670		232.2287		97.0874	99.0099	MG/KG	85		114		14		75 - 125	20	P
Potassium		2004.9950		2974.9796		3239.8099		970.8738	990.0990	MG/KG	100		125		9		75 - 125	20	P
Selenium	78	0.1507	B	2.1060		2.0099		1.9417	1.9802	MG/KG	101		94		5		75 - 125	20	MS
Silver	107	0.0586	B	10.4126		10.1723		9.7087	9.9010	MG/KG	107		102		2		75 - 125	20	MS
Sodium		435.1257		1390.2078		1401.5505		970.8738	990.0990	MG/KG	98		98		1		75 - 125	20	P
Strontium	88	25.1982		24.0800		32.6404		7.7670	7.9208	MG/KG	-14	N	94		30	*	75 - 125	20	MS
Thallium	203	0.2723		0.6431		0.6616		0.3883	0.3960	MG/KG	95		98		3		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.: PH130
Matrix: SOIL Level (low/med): LOW

747

Background Lab Sample ID: 7280198BKG Matrix Spike Lab Sample ID: 7280199MS Matrix Spike Duplicate Lab Sample ID: 7280200MSD
Batch Id(s): P32937A, P32938A

		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		2.9960	B	339.7379		352.5822		388.3495	396.0396	MG/KG	87		88		4		75 - 125	20	P
Titanium		1034.6634		1240.9699		1205.4178		97.0874	99.0099	MG/KG	212		172		3			20	P
Vanadium		45.0119		86.7631		98.2257		48.5437	49.5050	MG/KG	86		107		12		75 - 125	20	P
Zinc		43.5535		91.8078		95.1307		48.5437	49.5050	MG/KG	99		104		4		75 - 125	20	P
Zirconium		4.5139	B	94.6136		98.2693		97.0874	99.0099	MG/KG	93		95		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.: PH130
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7280198BKG
Batch ID(s): P32937A, P32938A
Concentration Units: MG/KG

Duplicate Lab Sample ID: 7280204DUP

Analyte	Mass	Control Limit	Samples (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum			23697.1911		24360.6725		3		P
Antimony			0.7327	U	0.7255	U			P
Arsenic		4.0	6.7822		6.9255		2		P
Barium			123.3040		110.2627		11		P
Beryllium			0.8901	B	0.9235	B	4		P
Boron			2.3347	B	1.8471	B	23	✓	P
Cadmium			-0.5574	B	-0.6255	B	-12		P
Calcium			3919.0495		3933.4922		0		P
Chromium			22.7931		24.2725		6		P
Cobalt			6.3505		5.3363		17		P
Copper			10.9505		11.6431		6		P
Iron			23010.6000		24548.6324		6		P
Lead		3.0	7.0941		8.2020		14		P
Lithium		4.0	18.5752		18.9069		2		P
Magnesium			4493.1970		4696.8225		4		P
Manganese			385.0317		200.2657		63	*✓	P
Mercury		0.0	0.0305		0.0181		51		CV
Molybdenum			0.4911	B	0.4059	B	19		P
Nickel			12.9168		12.1441		6		P
Phosphorus			119.7941		114.4520		5		P
Potassium			2004.9950		2006.1373		0		P
Selenium	78		0.1507	B	0.1425	B	6		MS
Silver	107		0.0586	B	0.0410	B	35		MS
Sodium		99.0	435.1257		448.0873		3		P
Strontium	88		25.1982		25.8012		2		MS
Thallium	203	0.2	0.2723		0.2500		9		MS
Tin			2.9960	B	2.8902	B	4		P
Titanium			1034.6634		1019.6863		1		P
Vanadium			45.0119		47.2412		5		P
Zinc			43.5535		45.0598		3		P
Zirconium		5.0	4.5139	B	5.0108		10		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

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 10, 2013

SUBJECT: Santa Susana Field Laboratory, Data Validation

Dear Mrs. Zakowski,

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

LDC Project # 30210:

SDG #	Fraction
PH062, PH063 PH064, PH065	Volatiles, Semivolatiles, Chlorinated Pesticides, Polychlorinated Biphenyls, Metals, Herbicides, Total Petroleum Hydrocarbons as Gasoline, Total Petroleum Hydrocarbons as Extractables, Dioxins/Dibenzofurans, Perchlorate

The data validation was performed under Standard 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/Senior Chemist

328 pages-CD

Attachment 1

90/10 ADR/IV

LDC #30210 (CDM Federal Programs-Chantilly VA / Santa Susana Field Laboratory, Subarea 8)

LDC	SDG#	DATE REC'D	(4) DATE DUE	VOA (8260B)		SVOA (8270D -SIM)		Pest. (8081A)		PCBs (8082A)		Metals & Hg (SW846)		Herbs (8151A)		TPH-G (8015M)		TPH-E (8015M)		Dioxins (1613B)		CLO_4 (6850)																	
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	W	S
A	PH062	08/09/13	09/06/13	-	-	0	4	-	-	0	4	0	4	-	-	1	1	0	4	0	4	0	3																
B	PH063	08/09/13	09/06/13	-	-	0	5	-	-	0	5	0	5	-	-	1	2	0	5	0	5	-	-																
C	PH064	08/09/13	09/06/13	3	2	2	11	2	0	2	11	2	11	2	0	3	8	2	11	2	8	2	0																
D	PH065	08/09/13	09/06/13	1	2	0	7	-	-	0	7	0	7	-	-	1	5	0	7	0	4	-	-																
Total	T/SM			4	4	2	27	2	0	2	27	2	27	2	0	6	16	2	27	2	21	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	178

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(s): PH062

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 10, 2013

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on July 8, 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-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
Perchlorate by EPA Method 6850

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, 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 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 with the following exceptions:

SDG/ Method	Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PH062/ 6020A	ICB/CCB	Molybdenum	3.9 ug/L	SL-586-SA8-SB-0.0-0.5 SL-588-SA8-SB-0.0-0.5 SL-888-SA8-SB-0.0-0.5 SL-588-SA8-SB-2.0-3.0

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
PH062/ 6020A	SL-586-SA8-SB-0.0-0.5	Molybdenum	0.65 mg/kg	0.65U mg/kg
PH062/ 6020A	SL-588-SA8-SB-0.0-0.5	Molybdenum	0.84 mg/kg	0.84U mg/kg
PH062/ 6020A	SL-888-SA8-SB-0.0-0.5	Molybdenum	0.56 mg/kg	0.56U mg/kg

SDG/Method	Sample	Compound	Reported Concentration	Modified Final Concentration
PH062/ 6020A	SL-588-SA8-SB-2.0-3.0	Molybdenum	0.51 mg/kg	0.51U mg/kg

V. Surrogate Spikes

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

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 dioxins, TPH as extractables and metals. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosure I.

VIII. Laboratory Duplicates Sample

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

IX. Laboratory Control Samples (LCS)

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

X. Internal Standards

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 PH062	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 semivolatiles, PCBs, metals, perchlorate, TPH as extractables, and dioxins. All RPDs were within QC limits with the exception of several dioxins, semivolatiles, perchlorate and metals in the duplicate pair. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The field duplicate result comparisons are provided in Enclosure I.

XIV. Field Blank Samples

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

One equipment blank (from SDG PH064) was collected and analyzed for semivolatiles, PCBs, metals, perchlorate, TPH as gasoline, TPH as extractables, and dioxins. No contaminants were found in the equipment blank with the exception of several dioxins, semivolatiles, and metals. The associated sample results were not detected or were significantly greater than the concentrations found in the associated blanks, therefore no data were qualified.

One field blank (from SDG PH029) was collected and analyzed for semivolatiles, PCBs, metals, perchlorate, TPH as gasoline, TPH as extractables and dioxins. No contaminants were found in the field blank with the exception of several dioxins, semivolatiles, and 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
08-Jul-2013	TB-070813	7120508	TB	5030B	8015M	III
08-Jul-2013	SL-586-SA8-SB-0.0-0.5	7120501	N	3050B	6010C	III
08-Jul-2013	SL-586-SA8-SB-0.0-0.5	7120501	N	3050B	6020A	III
08-Jul-2013	SL-586-SA8-SB-0.0-0.5	7120501	N	3546	8015M	III
08-Jul-2013	SL-586-SA8-SB-0.0-0.5	7120501	N	3546	8082A	III
08-Jul-2013	SL-586-SA8-SB-0.0-0.5	7120501	N	3546	8270D SIM	III
08-Jul-2013	SL-586-SA8-SB-0.0-0.5	7120501	N	METHOD	1613B	III
08-Jul-2013	SL-586-SA8-SB-0.0-0.5	7120501	N	METHOD	7471B	III
08-Jul-2013	SL-588-SA8-SB-0.0-0.5	7120502	N	3050B	6010C	III
08-Jul-2013	SL-588-SA8-SB-0.0-0.5	7120502	N	3050B	6020A	III
08-Jul-2013	SL-588-SA8-SB-0.0-0.5	7120502	N	3546	8015M	III
08-Jul-2013	SL-588-SA8-SB-0.0-0.5	7120502	N	3546	8082A	III
08-Jul-2013	SL-588-SA8-SB-0.0-0.5	7120502	N	3546	8270D SIM	III
08-Jul-2013	SL-588-SA8-SB-0.0-0.5	7120502	N	METHOD	1613B	III
08-Jul-2013	SL-588-SA8-SB-0.0-0.5	7120502	N	METHOD	6850	III
08-Jul-2013	SL-588-SA8-SB-0.0-0.5	7120502	N	METHOD	7471B	III
08-Jul-2013	SL-588-SA8-SB-0.0-0.5MS	7120503	MS	3050B	6010C	III
08-Jul-2013	SL-588-SA8-SB-0.0-0.5MS	7120503	MS	3050B	6020A	III
08-Jul-2013	SL-588-SA8-SB-0.0-0.5MS	7120503	MS	3546	8015M	III
08-Jul-2013	SL-588-SA8-SB-0.0-0.5MS	7120503	MS	3546	8082A	III
08-Jul-2013	SL-588-SA8-SB-0.0-0.5MS	7120503	MS	3546	8270D SIM	III
08-Jul-2013	SL-588-SA8-SB-0.0-0.5MS	7120503	MS	METHOD	1613B	III
08-Jul-2013	SL-588-SA8-SB-0.0-0.5MS	7120503	MS	METHOD	6850	III
08-Jul-2013	SL-588-SA8-SB-0.0-0.5MS	7120503	MS	METHOD	7471B	III
08-Jul-2013	SL-588-SA8-SB-0.0-0.5MSD	7120504	MSD	3050B	6010C	III
08-Jul-2013	SL-588-SA8-SB-0.0-0.5MSD	7120504	MSD	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
08-Jul-2013	SL-588-SA8-SB-0.0-0.5MSD	7120504	MSD	3546	8015M	III
08-Jul-2013	SL-588-SA8-SB-0.0-0.5MSD	7120504	MSD	3546	8270D SIM	III
08-Jul-2013	SL-588-SA8-SB-0.0-0.5MSD	7120504	MSD	Gen Prep	8082A	III
08-Jul-2013	SL-588-SA8-SB-0.0-0.5MSD	7120504	MSD	METHOD	1613B	III
08-Jul-2013	SL-588-SA8-SB-0.0-0.5MSD	7120504	MSD	METHOD	6850	III
08-Jul-2013	SL-588-SA8-SB-0.0-0.5MSD	7120504	MSD	METHOD	7471B	III
08-Jul-2013	SL-588-SA8-SB-0.0-0.5DUP	7120505	DUP	3050B	6010C	III
08-Jul-2013	SL-588-SA8-SB-0.0-0.5DUP	7120505	DUP	3050B	6020A	III
08-Jul-2013	SL-588-SA8-SB-0.0-0.5DUP	7120505	DUP	METHOD	7471B	III
08-Jul-2013	SL-888-SA8-SB-0.0-0.5	7120506	FD	3050B	6010C	III
08-Jul-2013	SL-888-SA8-SB-0.0-0.5	7120506	FD	3050B	6020A	III
08-Jul-2013	SL-888-SA8-SB-0.0-0.5	7120506	FD	3546	8015M	III
08-Jul-2013	SL-888-SA8-SB-0.0-0.5	7120506	FD	3546	8082A	III
08-Jul-2013	SL-888-SA8-SB-0.0-0.5	7120506	FD	3546	8270D SIM	III
08-Jul-2013	SL-888-SA8-SB-0.0-0.5	7120506	FD	METHOD	1613B	III
08-Jul-2013	SL-888-SA8-SB-0.0-0.5	7120506	FD	METHOD	6850	III
08-Jul-2013	SL-888-SA8-SB-0.0-0.5	7120506	FD	METHOD	7471B	III
08-Jul-2013	SL-588-SA8-SB-2.0-3.0	7120507	N	3050B	6010C	III
08-Jul-2013	SL-588-SA8-SB-2.0-3.0	7120507	N	3050B	6020A	III
08-Jul-2013	SL-588-SA8-SB-2.0-3.0	7120507	N	3546	8015M	III
08-Jul-2013	SL-588-SA8-SB-2.0-3.0	7120507	N	3546	8082A	III
08-Jul-2013	SL-588-SA8-SB-2.0-3.0	7120507	N	3546	8270D SIM	III
08-Jul-2013	SL-588-SA8-SB-2.0-3.0	7120507	N	5035A	8015M	III
08-Jul-2013	SL-588-SA8-SB-2.0-3.0	7120507	N	METHOD	1613B	III
08-Jul-2013	SL-588-SA8-SB-2.0-3.0	7120507	N	METHOD	6850	III
08-Jul-2013	SL-588-SA8-SB-2.0-3.0	7120507	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: PH062 **Laboratory: LL**

EDD Filename: PH062_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-586-SA8-SB-0.0-0.5 *Collected:* 7/8/2013 1:10:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.12	U	0.762	MDL	4.12	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.548	J	0.0690	MDL	1.03	PQL	mg/Kg	J	Z
BORON	4.37	J	0.865	MDL	10.3	PQL	mg/Kg	J	Z
CADMIUM	0.535	J	0.0782	MDL	1.03	PQL	mg/Kg	J	Z
CALCIUM	3660		3.44	MDL	20.6	PQL	mg/Kg	J	E
MOLYBDENUM	0.652	J	0.175	MDL	2.06	PQL	mg/Kg	U	B, F
POTASSIUM	3690		8.59	MDL	103	PQL	mg/Kg	J	Q, E
SODIUM	84.2	J	17.2	MDL	103	PQL	mg/Kg	J	Z
TIN	2.58	J	0.227	MDL	10.3	PQL	mg/Kg	U	B
ZINC	101		0.206	MDL	4.12	PQL	mg/Kg	J	E
Zirconium	3.99	J	0.865	MDL	5.15	PQL	mg/Kg	J	Z

Sample ID: SL-588-SA8-SB-0.0-0.5 *Collected:* 7/8/2013 1:50:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	3.96	U	0.732	MDL	3.96	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.522	J	0.0663	MDL	0.990	PQL	mg/Kg	J	Z
BORON	2.63	J	0.831	MDL	9.90	PQL	mg/Kg	J	Z
CADMIUM	0.423	J	0.0752	MDL	0.990	PQL	mg/Kg	J	Z
CALCIUM	2210		3.31	MDL	19.8	PQL	mg/Kg	J	E
MOLYBDENUM	0.843	J	0.168	MDL	1.98	PQL	mg/Kg	U	B, F
POTASSIUM	3690		8.25	MDL	99.0	PQL	mg/Kg	J	Q, E
SODIUM	66.5	J	16.5	MDL	99.0	PQL	mg/Kg	J	Z
TIN	2.47	J	0.218	MDL	9.90	PQL	mg/Kg	U	B
ZINC	62.4		0.198	MDL	3.96	PQL	mg/Kg	J	E
Zirconium	3.62	J	0.831	MDL	4.95	PQL	mg/Kg	J	Z

Sample ID: SL-588-SA8-SB-2.0-3.0 *Collected:* 7/8/2013 2:35:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.08	U	0.755	MDL	4.08	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.604	J	0.0684	MDL	1.02	PQL	mg/Kg	J	Z
BORON	2.18	J	0.857	MDL	10.2	PQL	mg/Kg	J	Z
CADMIUM	0.393	J	0.0776	MDL	1.02	PQL	mg/Kg	J	Z
CALCIUM	2060		3.41	MDL	20.4	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: PH062 **Laboratory: LL**

EDD Filename: PH062_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-588-SA8-SB-2.0-3.0 *Collected:* 7/8/2013 2:35:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.513	J	0.173	MDL	2.04	PQL	mg/Kg	U	B, F
POTASSIUM	3500		8.51	MDL	102	PQL	mg/Kg	J	Q, E
SODIUM	74.3	J	17.0	MDL	102	PQL	mg/Kg	J	Z
TIN	2.39	J	0.224	MDL	10.2	PQL	mg/Kg	U	B
ZINC	61.9		0.204	MDL	4.08	PQL	mg/Kg	J	E
Zirconium	3.40	J	0.857	MDL	5.10	PQL	mg/Kg	J	Z

Sample ID: SL-888-SA8-SB-0.0-0.5 *Collected:* 7/8/2013 2:00:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	3.96	U	0.733	MDL	3.96	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.551	J	0.0663	MDL	0.990	PQL	mg/Kg	J	Z
BORON	2.49	J	0.832	MDL	9.90	PQL	mg/Kg	J	Z
CADMIUM	0.441	J	0.0752	MDL	0.990	PQL	mg/Kg	J	Z
CALCIUM	2320		3.31	MDL	19.8	PQL	mg/Kg	J	E
MOLYBDENUM	0.559	J	0.168	MDL	1.98	PQL	mg/Kg	U	B, F
POTASSIUM	3950		8.26	MDL	99.0	PQL	mg/Kg	J	Q, E
SODIUM	67.3	J	16.5	MDL	99.0	PQL	mg/Kg	J	Z
TIN	2.41	J	0.218	MDL	9.90	PQL	mg/Kg	U	B
ZINC	65.2		0.198	MDL	3.96	PQL	mg/Kg	J	E
Zirconium	3.65	J	0.832	MDL	4.95	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-586-SA8-SB-0.0-0.5 *Collected:* 7/8/2013 1:10:00 PM *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.139	J	0.103	MDL	0.412	PQL	mg/Kg	J	Z

Sample ID: SL-586-SA8-SB-0.0-0.5 *Collected:* 7/8/2013 1:10:00 PM *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0427	J	0.0268	MDL	0.206	PQL	mg/Kg	J	Z
STRONTIUM	25.7		0.0700	MDL	0.412	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: PH062 **Laboratory: LL**

EDD Filename: PH062_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-588-SA8-SB-0.0-0.5 *Collected:* 7/8/2013 1:50:00 PM *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.102	J	0.0990	MDL	0.396	PQL	mg/Kg	J	Z, FD

Sample ID: SL-588-SA8-SB-0.0-0.5 *Collected:* 7/8/2013 1:50:00 PM *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0326	J	0.0257	MDL	0.198	PQL	mg/Kg	J	Z
STRONTIUM	19.3		0.0673	MDL	0.396	PQL	mg/Kg	J	E

Sample ID: SL-588-SA8-SB-2.0-3.0 *Collected:* 7/8/2013 2:35:00 PM *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0476	J	0.0265	MDL	0.204	PQL	mg/Kg	J	Z
STRONTIUM	20.0		0.0694	MDL	0.408	PQL	mg/Kg	J	E

Sample ID: SL-888-SA8-SB-0.0-0.5 *Collected:* 7/8/2013 2:00:00 PM *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.181	J	0.0990	MDL	0.396	PQL	mg/Kg	J	Z, FD

Sample ID: SL-888-SA8-SB-0.0-0.5 *Collected:* 7/8/2013 2:00:00 PM *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0312	J	0.0257	MDL	0.198	PQL	mg/Kg	J	Z
STRONTIUM	20.8		0.0673	MDL	0.396	PQL	mg/Kg	J	E

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: SL-588-SA8-SB-0.0-0.5 *Collected:* 7/8/2013 1:50:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0120	J	0.0101	MDL	0.0168	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: PH062 **Laboratory: LL**

EDD Filename: PH062_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: SL-888-SA8-SB-0.0-0.5 *Collected:* 7/8/2013 2:00:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0099	J	0.0094	MDL	0.0157	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-586-SA8-SB-0.0-0.5 *Collected:* 7/8/2013 1:10:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDF	2.14	JB	0.0258	MDL	5.05	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.221	JB	0.0319	MDL	5.05	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.249	JB	0.0335	MDL	5.05	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.378	JB	0.0212	MDL	5.05	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.807	JB	0.0362	MDL	5.05	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.383	JB	0.0211	MDL	5.05	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.711	JB	0.0343	MDL	5.05	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.345	JBQ	0.0213	MDL	5.05	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.397	JB	0.0356	MDL	5.05	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.914	JB	0.0257	MDL	5.05	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.337	JB	0.0197	MDL	5.05	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.566	JB	0.0239	MDL	5.05	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.0950	J	0.0216	MDL	1.01	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.538	J	0.0529	MDL	1.01	PQL	ng/Kg	J	Z
OCDF	5.49	JB	0.0248	MDL	10.1	PQL	ng/Kg	J	Z

Sample ID: SL-588-SA8-SB-0.0-0.5 *Collected:* 7/8/2013 1:50:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDF	0.972	JB	0.0144	MDL	4.91	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.118	JBQ	0.0205	MDL	4.91	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.130	JBQ	0.0388	MDL	4.91	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.270	JB	0.0224	MDL	4.91	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.460	JB	0.0428	MDL	4.91	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.223	JB	0.0227	MDL	4.91	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.467	JB	0.0409	MDL	4.91	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: PH062 **Laboratory: LL**

EDD Filename: PH062_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-588-SA8-SB-0.0-0.5 *Collected:* 7/8/2013 1:50:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,7,8,9-HXCDF	0.309	JB	0.0235	MDL	4.91	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.178	JB	0.0285	MDL	4.91	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.397	JBQ	0.0249	MDL	4.91	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.243	JB	0.0222	MDL	4.91	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.518	JB	0.0231	MDL	4.91	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.0397	JQ	0.0216	MDL	0.982	PQL	ng/Kg	J	Z, FD
2,3,7,8-TCDF	0.345	J	0.0504	MDL	0.982	PQL	ng/Kg	J	Z
OCDD	70.3	B	0.0211	MDL	9.82	PQL	ng/Kg	J	Q
OCDF	1.80	JB	0.0230	MDL	9.82	PQL	ng/Kg	J	Z

Sample ID: SL-588-SA8-SB-2.0-3.0 *Collected:* 7/8/2013 2:35:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDF	0.508	JB	0.0381	MDL	4.97	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0811	JBQ	0.0471	MDL	4.97	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0750	JB	0.0342	MDL	4.97	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0905	JBQ	0.0150	MDL	4.97	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.257	JB	0.0365	MDL	4.97	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0816	JBQ	0.0149	MDL	4.97	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.266	JB	0.0379	MDL	4.97	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.163	JB	0.0159	MDL	4.97	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.0492	JBQ	0.0283	MDL	4.97	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.170	JB	0.0202	MDL	4.97	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.105	JB	0.0163	MDL	4.97	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.165	JBQ	0.0173	MDL	4.97	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.0981	JQ	0.0334	MDL	0.995	PQL	ng/Kg	J	Z
OCDF	1.03	JB	0.0270	MDL	9.95	PQL	ng/Kg	J	Z

Sample ID: SL-888-SA8-SB-0.0-0.5 *Collected:* 7/8/2013 2:00:00 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-HPCDF	0.910	JB	0.0165	MDL	5.03	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.103	JB	0.0239	MDL	5.03	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.152	JB	0.0345	MDL	5.03	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.190	JB	0.0207	MDL	5.03	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: PH062 **Laboratory: LL**

EDD Filename: PH062_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-888-SA8-SB-0.0-0.5 *Collected:* 7/8/2013 2:00:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,6,7,8-HXCDD	0.410	JBQ	0.0378	MDL	5.03	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.206	JB	0.0208	MDL	5.03	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.484	JB	0.0354	MDL	5.03	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.304	JB	0.0213	MDL	5.03	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.148	JBQ	0.0255	MDL	5.03	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.307	JB	0.0220	MDL	5.03	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.184	JB	0.0204	MDL	5.03	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.330	JB	0.0194	MDL	5.03	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.0222	JQ	0.0191	MDL	1.01	PQL	ng/Kg	J	Z, FD
2,3,7,8-TCDF	0.265	JQ	0.0421	MDL	1.01	PQL	ng/Kg	J	Z
OCDF	1.73	JB	0.0194	MDL	10.1	PQL	ng/Kg	J	Z

Method Category: SVOA

Method: 6850 **Matrix: SO**

Sample ID: SL-588-SA8-SB-0.0-0.5 *Collected:* 7/8/2013 1:50:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	3.0	J	2.1	MDL	5.0	PQL	ug/Kg	J	Z, FD

Sample ID: SL-888-SA8-SB-0.0-0.5 *Collected:* 7/8/2013 2:00:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	5.0	U	2.1	MDL	5.0	PQL	ug/Kg	UJ	FD

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: SL-586-SA8-SB-0.0-0.5 *Collected:* 7/8/2013 1:10:00 PM *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)	7.5	J	4.2	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: PH062 **Laboratory: LL**

EDD Filename: PH062_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

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

Sample ID: SL-588-SA8-SB-0.0-0.5 *Collected:* 7/8/2013 1:50:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C21-C30)	9.3		2.0	MDL	5.0	PQL	mg/Kg	J	Q, Q

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

Sample ID: SL-586-SA8-SB-0.0-0.5 *Collected:* 7/8/2013 1:10:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Aroclor 5460	12	J	11	MDL	35	PQL	ug/Kg	J	Z

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

Sample ID: SL-586-SA8-SB-0.0-0.5 *Collected:* 7/8/2013 1:10:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1-METHYLNAPHTHALENE	1.2	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(A)PYRENE	1.3	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(G,H,I)PERYLENE	0.73	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
Di-n-butylphthalate	9.3	J	6.3	MDL	19	PQL	ug/Kg	J	Z
Di-n-octylphthalate	7.8	J	6.3	MDL	19	PQL	ug/Kg	J	Z

Sample ID: SL-588-SA8-SB-0.0-0.5 *Collected:* 7/8/2013 1:50:00 PM *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(B)FLUORANTHENE	0.82	J	0.66	MDL	1.7	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	10	J	6.0	MDL	18	PQL	ug/Kg	J	Z, FD
CHRYSENE	1.1	J	0.33	MDL	1.7	PQL	ug/Kg	J	Z
FLUORANTHENE	0.87	J	0.66	MDL	1.7	PQL	ug/Kg	J	Z
PYRENE	0.73	J	0.66	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: SL-588-SA8-SB-2.0-3.0 *Collected:* 7/8/2013 2:35:00 PM *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHRYSENE	0.41	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: PH062 **Laboratory: LL**

EDD Filename: PH062_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: **SVOA**

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

Sample ID: **SL-888-SA8-SB-0.0-0.5** ***Collected:*** **7/8/2013 2:00:00 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*
BENZO(B)FLUORANTHENE	0.71	J	0.67	MDL	1.7	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	18	U	6.0	MDL	18	PQL	ug/Kg	UJ	FD
CHRYSENE	0.94	J	0.34	MDL	1.7	PQL	ug/Kg	J	Z
FLUORANTHENE	0.90	J	0.67	MDL	1.7	PQL	ug/Kg	J	Z
PYRENE	0.67	J	0.67	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: PH062 **Laboratory: LL**

EDD Filename: PH062_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Reason Code Legend

Reason Code	*Description*
B	Calibration Blank Contamination
B	Method Blank Contamination
E	Laboratory Duplicate Precision
E	Matrix Spike Precision
F	Field Blank Contamination
FD	Field Duplicate Precision
Q	Laboratory Duplicate Precision
Q	Matrix Spike Lower Estimation
Q	Matrix Spike Precision
Q	Matrix Spike Upper Estimation
S	Surrogate/Tracer Recovery Upper Estimation
Z	Reporting Limit Trace Value

* denotes a non-reportable result

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

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control
Outlier Reports

PH062

Method Blank Outlier Report

Lab Reporting Batch ID: PH062 **Laboratory: LL**

EDD Filename: PH062_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK1920B370624	7/13/2013 6:24:00 AM	1,2,3,4,6,7,8-HPCDD	0.0814 ng/Kg	SL-586-SA8-SB-0.0-0.5
		1,2,3,4,6,7,8-HPCDF	0.0265 ng/Kg	SL-588-SA8-SB-0.0-0.5
		1,2,3,4,7,8,9-HPCDF	0.0357 ng/Kg	SL-588-SA8-SB-2.0-3.0
		1,2,3,4,7,8-HxCDD	0.0239 ng/Kg	SL-888-SA8-SB-0.0-0.5
		1,2,3,4,7,8-HXCDF	0.0351 ng/Kg	
		1,2,3,6,7,8-HXCDD	0.0206 ng/Kg	
		1,2,3,6,7,8-HXCDF	0.0220 ng/Kg	
		1,2,3,7,8,9-HXCDD	0.0274 ng/Kg	
		1,2,3,7,8,9-HXCDF	0.0184 ng/Kg	
		1,2,3,7,8-PECDD	0.0216 ng/Kg	
		1,2,3,7,8-PECDF	0.0503 ng/Kg	
		2,3,4,6,7,8-HXCDF	0.0269 ng/Kg	
		2,3,4,7,8-PECDF	0.0333 ng/Kg	
		OCDD	0.214 ng/Kg	
		OCDF	0.0705 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-588-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.118 ng/Kg	0.118U ng/Kg
SL-588-SA8-SB-2.0-3.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0811 ng/Kg	0.0811U ng/Kg
SL-588-SA8-SB-2.0-3.0(RES)	1,2,3,4,7,8-HxCDD	0.0750 ng/Kg	0.0750U ng/Kg
SL-588-SA8-SB-2.0-3.0(RES)	1,2,3,4,7,8-HXCDF	0.0905 ng/Kg	0.0905U ng/Kg
SL-588-SA8-SB-2.0-3.0(RES)	1,2,3,6,7,8-HXCDF	0.0816 ng/Kg	0.0816U ng/Kg
SL-588-SA8-SB-2.0-3.0(RES)	1,2,3,7,8-PECDD	0.0492 ng/Kg	0.0492U ng/Kg
SL-588-SA8-SB-2.0-3.0(RES)	1,2,3,7,8-PECDF	0.170 ng/Kg	0.170U ng/Kg
SL-588-SA8-SB-2.0-3.0(RES)	2,3,4,6,7,8-HXCDF	0.105 ng/Kg	0.105U ng/Kg
SL-588-SA8-SB-2.0-3.0(RES)	2,3,4,7,8-PECDF	0.165 ng/Kg	0.165U ng/Kg
SL-888-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.103 ng/Kg	0.103U ng/Kg

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P19137AB221846	7/12/2013 6:46:00 PM	ALUMINUM	11.0 mg/Kg	SL-586-SA8-SB-0.0-0.5
		CALCIUM	12.8 mg/Kg	SL-588-SA8-SB-0.0-0.5
		IRON	6.78 mg/Kg	SL-588-SA8-SB-2.0-3.0
		MAGNESIUM	5.68 mg/Kg	SL-888-SA8-SB-0.0-0.5
		TIN	1.32 mg/Kg	
		TITANIUM	0.177 mg/Kg	
		ZINC	0.422 mg/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-586-SA8-SB-0.0-0.5(RES)	TIN	2.58 mg/Kg	2.58U mg/Kg
SL-588-SA8-SB-0.0-0.5(RES)	TIN	2.47 mg/Kg	2.47U mg/Kg
SL-588-SA8-SB-2.0-3.0(RES)	TIN	2.39 mg/Kg	2.39U mg/Kg
SL-888-SA8-SB-0.0-0.5(RES)	TIN	2.41 mg/Kg	2.41U mg/Kg

Method Blank Outlier Report

Lab Reporting Batch ID: PH062 **Laboratory: LL**

EDD Filename: PH062_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P19137AB221713A	7/18/2013 5:13:00 PM	STRONTIUM	0.0774 mg/Kg	SL-586-SA8-SB-0.0-0.5 SL-588-SA8-SB-0.0-0.5 SL-588-SA8-SB-2.0-3.0 SL-888-SA8-SB-0.0-0.5

Field Blank Outlier Report

Lab Reporting Batch ID: PH062 **Laboratory: LL**

EDD Filename: PH062_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-586-SA8-SB-0.0-0.5 SL-588-SA8-SB-0.0-0.5 SL-588-SA8-SB-2.0-3.0 SL-888-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-586-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.652 mg/Kg	0.652U mg/Kg
SL-588-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.843 mg/Kg	0.843U mg/Kg
SL-588-SA8-SB-2.0-3.0(RES)	MOLYBDENUM	0.513 mg/Kg	0.513U mg/Kg
SL-888-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.559 mg/Kg	0.559U mg/Kg

Surrogate Outlier Report

Lab Reporting Batch ID: PH062 **Laboratory: LL**

EDD Filename: PH062_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: **8082A**
Matrix: **SO**

Sample ID (Analysis Type)	*Surrogate*	*Sample % Recovery*	*% Recovery Limits*	*Affected Compounds*	*Flag*
SL-888-SA8-SB-0.0 -0.5	TETRACHLORO-M-XYLENE	121	45.00-120.00	All Target Analytes	J (all detects)

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH062 **Laboratory: LL**

EDD Filename: PH062_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-588-SA8-SB-0.0-0.5MS (SL-588-SA8-SB-0.0-0.5)	OCDD	138	-	40.00-135.00	-	OCDD	J (all detects)

Method: 8015M
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-588-SA8-SB-0.0-0.5MS	EFH (C15-C20)	173	132	49.00-123.00	27 (20.00)	EFH (C15-C20)	J(all detects)
SL-588-SA8-SB-0.0-0.5MSD	EFH (C21-C30)	162	-	49.00-123.00	24 (20.00)	EFH (C21-C30)	EFH (C30-C40), No Qual, >4x
(SL-588-SA8-SB-0.0-0.5)	EFH (C30-C40)	388	182	49.00-123.00	26 (20.00)	EFH (C30-C40)	

Method: 6010C
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-588-SA8-SB-0.0-0.5MS	ALUMINUM	1971	2027	75.00-125.00	-	ALUMINUM	
(TOT)	CALCIUM	228	188	75.00-125.00	-	CALCIUM	J(all detects)
SL-588-SA8-SB-0.0-0.5MSD	IRON	1714	1495	75.00-125.00	-	IRON	
(TOT)	MAGNESIUM	296	298	75.00-125.00	-	MAGNESIUM	
(SL-586-SA8-SB-0.0-0.5	MANGANESE	132	137	75.00-125.00	-	MANGANESE	Al, Ca, Fe, Mg, Mn, Ti, No Qual, >4x
SL -588-SA8-SB-0.0-0.5	POTASSIUM	158	162	75.00-125.00	-	POTASSIUM	
SL -588-SA8-SB-2.0-3.0	TITANIUM	371	392	75.00-125.00	-	TITANIUM	
SL -888-SA8-SB-0.0-0.5)							
SL-588-SA8-SB-0.0-0.5MS	ANTIMONY	37	37	75.00-125.00	-	ANTIMONY	
(TOT)							
SL-588-SA8-SB-0.0-0.5MSD							
(TOT)							J(all detects)
(SL-586-SA8-SB-0.0-0.5							UJ(all non-detects)
SL -588-SA8-SB-0.0-0.5							
SL -588-SA8-SB-2.0-3.0							
SL -888-SA8-SB-0.0-0.5)							

Lab Duplicate Outlier Report

Lab Reporting Batch ID: PH062 **Laboratory: LL**

EDD Filename: PH062_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 6010C
Matrix: SO

QC Sample ID (Associated Sample ID)	Analyte	Sample RPD	eQAPP RPD	Flag
SL-588-SA8-SB-0.0-0.5DUP (TOT) (SL-586-SA8-SB-0.0-0.5 SL -588-SA8-SB-0.0-0.5 SL -588-SA8-SB-2.0-3.0 SL -888-SA8-SB-0.0-0.5)	BORON	25	20.00	J (all detects) UJ (all non-detects)
	CADMIUM	72	20.00	
	CALCIUM	41	20.00	
	MOLYBDENUM	29	20.00	B, Cd, Mo, Na, Zr, No Qual, OK by Difference
	POTASSIUM	23	20.00	
	SODIUM	23	20.00	
	ZINC	60	20.00	
	Zirconium	29	20.00	

Method: 6020A
Matrix: SO

QC Sample ID (Associated Sample ID)	Analyte	Sample RPD	eQAPP RPD	Flag
SL-588-SA8-SB-0.0-0.5DUP (TOT) (SL-586-SA8-SB-0.0-0.5 SL -588-SA8-SB-0.0-0.5 SL -588-SA8-SB-2.0-3.0 SL -888-SA8-SB-0.0-0.5)	SELENIUM	21	20.00	J(all detects) UJ(all non-detects)
	STRONTIUM	26	20.00	Se, No Qual, OK by Difference

Method: 7471B
Matrix: SO

QC Sample ID (Associated Sample ID)	Analyte	Sample RPD	eQAPP RPD	Flag
SL-588-SA8-SB-0.0-0.5DUP (TOT) (SL-586-SA8-SB-0.0-0.5 SL -588-SA8-SB-0.0-0.5 SL -588-SA8-SB-2.0-3.0 SL -888-SA8-SB-0.0-0.5)	MERCURY	80	20.00	No Qual, OK by Difference

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

Field Duplicate RPD Report

Lab Reporting Batch ID: PH062 **Laboratory: LL**

EDD Filename: PH062_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 160.3M
Matrix: SO

Analyte	Concentration (%)		Sample RPD	eQAPP RPD	Flag
	SL-588-SA8-SB-0.0-0.5	SL-888-SA8-SB-0.0-0.5			
MOISTURE	0.95	0.97	2		No Qualifiers Applied

Method: 1613B
Matrix: SO

Analyte	Concentration (ng/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-588-SA8-SB-0.0-0.5	SL-888-SA8-SB-0.0-0.5			
1,2,3,4,6,7,8-HPCDD	6.94	5.63	21	50.00	
1,2,3,4,6,7,8-HPCDF	0.972	0.910	7	50.00	
1,2,3,4,7,8,9-HPCDF	0.118	0.103	14	50.00	
1,2,3,4,7,8-HxCDD	0.130	0.152	16	50.00	
1,2,3,4,7,8-HXCDF	0.270	0.190	35	50.00	
1,2,3,6,7,8-HXCDD	0.460	0.410	11	50.00	
1,2,3,6,7,8-HXCDF	0.223	0.206	8	50.00	
1,2,3,7,8,9-HXCDD	0.467	0.484	4	50.00	
1,2,3,7,8,9-HXCDF	0.309	0.304	2	50.00	No Qualifiers Applied
1,2,3,7,8-PECDD	0.178	0.148	18	50.00	
1,2,3,7,8-PECDF	0.397	0.307	26	50.00	
2,3,4,6,7,8-HXCDF	0.243	0.184	28	50.00	
2,3,4,7,8-PECDF	0.518	0.330	44	50.00	
2,3,7,8-TCDF	0.345	0.265	26	50.00	
OCDD	70.3	55.8	23	50.00	
OCDF	1.80	1.73	4	50.00	
2,3,7,8-TCDD	0.0397	0.0222	57	50.00	J(all detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: PH062 **Laboratory: LL**

EDD Filename: PH062_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 6010C
Matrix: SO

Analyte	Concentration (mg/Kg) SL-588-SA8-SB-0.0-0.5 (TOT)	Concentration (mg/Kg) SL-888-SA8-SB-0.0-0.5 (TOT)	Sample RPD	eQAPP RPD	Flag
ALUMINUM	16000	16600	4	50.00	
ARSENIC	4.15	4.22	2	50.00	
BARIUM	103	109	6	50.00	
BERYLLIUM	0.522	0.551	5	50.00	
BORON	2.63	2.49	5	50.00	
CADMIUM	0.423	0.441	4	50.00	
CALCIUM	2210	2320	5	50.00	
CHROMIUM	16.0	16.5	3	50.00	
COBALT	4.35	4.55	4	50.00	
COPPER	10.4	10.7	3	50.00	
IRON	17100	18000	5	50.00	
LEAD	9.00	8.79	2	50.00	
LITHIUM	20.1	21.1	5	50.00	No Qualifiers Applied
MAGNESIUM	3500	3680	5	50.00	
MANGANESE	325	341	5	50.00	
MOLYBDENUM	0.843	0.559	41	50.00	
NICKEL	10.3	10.5	2	50.00	
PHOSPHORUS	493	501	2	50.00	
POTASSIUM	3690	3950	7	50.00	
SODIUM	66.5	67.3	1	50.00	
TIN	2.47	2.41	2	50.00	
TITANIUM	1020	1050	3	50.00	
VANADIUM	28.9	30.7	6	50.00	
ZINC	62.4	65.2	4	50.00	
Zirconium	3.62	3.65	1	50.00	

Method: 6020A
Matrix: SO

Analyte	Concentration (mg/Kg) SL-588-SA8-SB-0.0-0.5 (TOT)	Concentration (mg/Kg) SL-888-SA8-SB-0.0-0.5 (TOT)	Sample RPD	eQAPP RPD	Flag
SILVER	0.0326	0.0312	4	50.00	
STRONTIUM	19.3	20.8	7	50.00	No Qualifiers Applied
THALLIUM	0.240	0.249	4	50.00	
SELENIUM	0.102	0.181	56	50.00	J(all detects)

Method: 6850
Matrix: SO

Analyte	Concentration (ug/Kg) SL-588-SA8-SB-0.0-0.5	Concentration (ug/Kg) SL-888-SA8-SB-0.0-0.5	Sample RPD	eQAPP RPD	Flag
PERCHLORATE	3.0	5.0 U	200	50.00	J(all detects) UJ(all non-detects)

Method: 7471B
Matrix: SO

Analyte	Concentration (mg/Kg) SL-588-SA8-SB-0.0-0.5 (TOT)	Concentration (mg/Kg) SL-888-SA8-SB-0.0-0.5 (TOT)	Sample RPD	eQAPP RPD	Flag
MERCURY	0.0120	0.0099	19	50.00	No Qualifiers Applied

Field Duplicate RPD Report

Lab Reporting Batch ID: PH062 **Laboratory: LL**

EDD Filename: PH062_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 8015M
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-588-SA8-SB-0.0-0.5	SL-888-SA8-SB-0.0-0.5			
EFH (C21-C30)	9.3	10	7	50.00	No Qualifiers Applied
EFH (C30-C40)	25	27	8	50.00	

Method: 8270D SIM
Matrix: SO

Analyte	Concentration (ug/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-588-SA8-SB-0.0-0.5	SL-888-SA8-SB-0.0-0.5			
BENZO(B)FLUORANTHENE	0.82	0.71	14	50.00	No Qualifiers Applied
BENZO(K)FLUORANTHENE	4.1	4.9	18	50.00	
CHRYSENE	1.1	0.94	16	50.00	
FLUORANTHENE	0.87	0.90	3	50.00	
PYRENE	0.73	0.67	9	50.00	
BIS(2-ETHYLHEXYL)PHTHALATE	10	18 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-588-SA8-SB-0.0-0.5	SL-888-SA8-SB-0.0-0.5			
PH	6.56	6.42	2	50.00	No Qualifiers Applied

Reporting Limit Outliers

Lab Reporting Batch ID: PH062 **Laboratory: LL**

EDD Filename: PH062_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-586-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDF	JB	2.14	5.05	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.221	5.05	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.249	5.05	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.378	5.05	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.807	5.05	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.383	5.05	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.711	5.05	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.345	5.05	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JB	0.397	5.05	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.914	5.05	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.337	5.05	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.566	5.05	PQL	ng/Kg	
	2,3,7,8-TCDD	J	0.0950	1.01	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.538	1.01	PQL	ng/Kg	
	OCDF	JB	5.49	10.1	PQL	ng/Kg	
SL-588-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDF	JB	0.972	4.91	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.118	4.91	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.130	4.91	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.270	4.91	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.460	4.91	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.223	4.91	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.467	4.91	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.309	4.91	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JB	0.178	4.91	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.397	4.91	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.243	4.91	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.518	4.91	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.0397	0.982	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.345	0.982	PQL	ng/Kg	
	OCDF	JB	1.80	9.82	PQL	ng/Kg	
SL-588-SA8-SB-2.0-3.0	1,2,3,4,6,7,8-HPCDF	JB	0.508	4.97	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0811	4.97	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.0750	4.97	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0905	4.97	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.257	4.97	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0816	4.97	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.266	4.97	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.163	4.97	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JBQ	0.0492	4.97	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.170	4.97	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.105	4.97	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.165	4.97	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0981	0.995	PQL	ng/Kg	
	OCDF	JB	1.03	9.95	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH062 **Laboratory: LL**

EDD Filename: PH062_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-888-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDF	JB	0.910	5.03	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.103	5.03	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.152	5.03	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.190	5.03	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.410	5.03	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.206	5.03	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.484	5.03	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.304	5.03	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JBQ	0.148	5.03	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.307	5.03	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.184	5.03	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.330	5.03	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.0222	1.01	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.265	1.01	PQL	ng/Kg	
	OCDF	JB	1.73	10.1	PQL	ng/Kg	

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-586-SA8-SB-0.0-0.5	BERYLLIUM	J	0.548	1.03	PQL	mg/Kg	
	BORON	J	4.37	10.3	PQL	mg/Kg	
	CADMIUM	J	0.535	1.03	PQL	mg/Kg	
	MOLYBDENUM	J	0.652	2.06	PQL	mg/Kg	J (all detects)
	SODIUM	J	84.2	103	PQL	mg/Kg	
	TIN	J	2.58	10.3	PQL	mg/Kg	
	Zirconium	J	3.99	5.15	PQL	mg/Kg	
SL-588-SA8-SB-0.0-0.5	BERYLLIUM	J	0.522	0.990	PQL	mg/Kg	
	BORON	J	2.63	9.90	PQL	mg/Kg	
	CADMIUM	J	0.423	0.990	PQL	mg/Kg	
	MOLYBDENUM	J	0.843	1.98	PQL	mg/Kg	J (all detects)
	SODIUM	J	66.5	99.0	PQL	mg/Kg	
	TIN	J	2.47	9.90	PQL	mg/Kg	
	Zirconium	J	3.62	4.95	PQL	mg/Kg	
SL-588-SA8-SB-2.0-3.0	BERYLLIUM	J	0.604	1.02	PQL	mg/Kg	
	BORON	J	2.18	10.2	PQL	mg/Kg	
	CADMIUM	J	0.393	1.02	PQL	mg/Kg	
	MOLYBDENUM	J	0.513	2.04	PQL	mg/Kg	J (all detects)
	SODIUM	J	74.3	102	PQL	mg/Kg	
	TIN	J	2.39	10.2	PQL	mg/Kg	
	Zirconium	J	3.40	5.10	PQL	mg/Kg	
SL-888-SA8-SB-0.0-0.5	BERYLLIUM	J	0.551	0.990	PQL	mg/Kg	
	BORON	J	2.49	9.90	PQL	mg/Kg	
	CADMIUM	J	0.441	0.990	PQL	mg/Kg	
	MOLYBDENUM	J	0.559	1.98	PQL	mg/Kg	J (all detects)
	SODIUM	J	67.3	99.0	PQL	mg/Kg	
	TIN	J	2.41	9.90	PQL	mg/Kg	
	Zirconium	J	3.65	4.95	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH062 **Laboratory: LL**

EDD Filename: PH062_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 6020A
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-586-SA8-SB-0.0-0.5	SELENIUM SILVER	J J	0.139 0.0427	0.412 0.206	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-588-SA8-SB-0.0-0.5	SELENIUM SILVER	J J	0.102 0.0326	0.396 0.198	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-588-SA8-SB-2.0-3.0	SILVER	J	0.0476	0.204	PQL	mg/Kg	J (all detects)
SL-888-SA8-SB-0.0-0.5	SELENIUM SILVER	J J	0.181 0.0312	0.396 0.198	PQL PQL	mg/Kg mg/Kg	J (all detects)

Method: 6850
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-588-SA8-SB-0.0-0.5	PERCHLORATE	J	3.0	5.0	PQL	ug/Kg	J (all detects)

Method: 7471B
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-588-SA8-SB-0.0-0.5	MERCURY	J	0.0120	0.0168	PQL	mg/Kg	J (all detects)
SL-888-SA8-SB-0.0-0.5	MERCURY	J	0.0099	0.0157	PQL	mg/Kg	J (all detects)

Method: 8015M
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-586-SA8-SB-0.0-0.5	EFH (C15-C20)	J	7.5	10	PQL	mg/Kg	J (all detects)

Method: 8082A
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-586-SA8-SB-0.0-0.5	Aroclor 5460	J	12	35	PQL	ug/Kg	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH062 **Laboratory: LL**

EDD Filename: PH062_v1. **eQAPP Name: CDM_SSFL_130808_Lan**

Method: **8270D SIM**

Matrix: **SO**

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-586-SA8-SB-0.0-0.5	1-METHYLNAPHTHALENE	J	1.2	1.8	PQL	ug/Kg	
	BENZO(A)PYRENE	J	1.3	1.8	PQL	ug/Kg	
	BENZO(G,H,I)PERYLENE	J	0.73	1.8	PQL	ug/Kg	J (all detects)
	Di-n-butylphthalate	J	9.3	19	PQL	ug/Kg	
	Di-n-octylphthalate	J	7.8	19	PQL	ug/Kg	
SL-588-SA8-SB-0.0-0.5	BENZO(B)FLUORANTHENE	J	0.82	1.7	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	10	18	PQL	ug/Kg	
	CHRYSENE	J	1.1	1.7	PQL	ug/Kg	J (all detects)
	FLUORANTHENE	J	0.87	1.7	PQL	ug/Kg	
	PYRENE	J	0.73	1.7	PQL	ug/Kg	
SL-588-SA8-SB-2.0-3.0	CHRYSENE	J	0.41	1.7	PQL	ug/Kg	J (all detects)
SL-888-SA8-SB-0.0-0.5	BENZO(B)FLUORANTHENE	J	0.71	1.7	PQL	ug/Kg	
	CHRYSENE	J	0.94	1.7	PQL	ug/Kg	J (all detects)
	FLUORANTHENE	J	0.90	1.7	PQL	ug/Kg	
	PYRENE	J	0.67	1.7	PQL	ug/Kg	

LDC #: 30210A4

SDG #: PH062

Laboratory: Eurofins Lancaster Laboratories

VALIDATION COMPLETENESS WORKSHEET

ADR

Date: 8/28/13

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: 7/8/13
II.	ICP/MS Tune	—	
III.	Calibration	—	
IV.	Blanks	SW	
V.	ICP Interference Check Sample (ICS) Analysis	—	
VI.	Matrix Spike Analysis	SW	MS/D
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=EB2-071013 (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-586-SA8-SB-0.0-0.5	11		21		31	
2	SL-588-SA8-SB-0.0-0.5	12		22		32	
3	SL-888-SA8-SB-0.0-0.5	13		23		33	
4	SL-588-SA8-SB-2.0-3.0	14		24		34	
5	SL-588-SA8-SB-0.0-0.5MS	15		25		35	
6	SL-588-SA8-SB-0.0-0.5MSD	16		26		36	
7	SL-588-SA8-SB-0.0-0.5DUP	17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

LDC #: 30210A4

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

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 mg/kg Associated Samples: All

					Sample Identification										
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Action Level	1	2	3	4							
Mo			3.9	1.95	0.65	0.84	0.56	0.51							

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 #: 30210C4 (A)

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer: CL
2nd Reviewer: VC

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

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

Analyte	Blank ID	Sample Identification											
	FB-041113 (SDG: PH029)	Action Limit	1	2	3	4							
Cu	0.0036	1.8											
Mo	0.0036	1.8	0.65	0.84	0.56	0.51							

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											
	EB2-071013 (SDG: PH064)	Action Limit	No Qualifiers										
Cu	0.0030	1.5											

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.: PH062
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7120502BKG Matrix Spike Lab Sample ID: 7120503MS Matrix Spike Duplicate Lab Sample ID: 7120504MSD
Batch Id(s): P19137A, P19138A

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		15805.5029		19747.6560		19780.0500		200.0000	196.0784	MG/KG	1971	*	2027	*	0			20	P
Antimony		0.7255	U	18.6030		18.0853		50.0000	49.0196	MG/KG	37	N	37	N	3		75 - 125	20	P
Arsenic		4.1069		19.7570		19.2451		15.0000	14.7059	MG/KG	104		103		3		75 - 125	20	P
Barium		102.4804		313.7070		309.5902		200.0000	196.0784	MG/KG	106		106		1		75 - 125	20	P
Beryllium		0.5167	B	5.7610		5.6775		5.0000	4.9020	MG/KG	105		105		1		75 - 125	20	P
Boron		2.6059	B	204.8300		200.7216		200.0000	196.0784	MG/KG	101		101		2		75 - 125	20	P
Cadmium		0.4186	B	5.4390		5.2735		5.0000	4.9020	MG/KG	100		99		3		75 - 125	20	P
Calcium		2190.9853		3104.0020		2928.4078		400.0000	392.1569	MG/KG	228	*	188	*	6			20	P
Chromium		15.8127		39.8230		37.7255		20.0000	19.6078	MG/KG	120		112		5		75 - 125	20	P
Cobalt		4.3098		53.7250		52.3353		50.0000	49.0196	MG/KG	99		98		3		75 - 125	20	P
Copper		10.3059		37.2340		36.5784		25.0000	24.5098	MG/KG	108		107		2		75 - 125	20	P
Iron		16896.1314		18609.6560		18362.1882		100.0000	98.0392	MG/KG	1714	*	1495	*	1			20	P
Lead		8.9167		24.4460		23.7941		15.0000	14.7059	MG/KG	104		101		3		75 - 125	20	P
Lithium		19.9392		124.9810		122.4069		100.0000	98.0392	MG/KG	105		105		2		75 - 125	20	P
Magnesium		3466.4882		4058.9570		4051.0843		200.0000	196.0784	MG/KG	296	*	298	*	0			20	P
Manganese		321.6892		387.7610		389.0029		50.0000	49.0196	MG/KG	132	*	137	*	0			20	P
Mercury		0.0119	B	0.1931		0.2075		0.1652	0.1655	MG/KG	110		118		7		65 - 135	20	CV
Molybdenum		0.8353	B	198.8710		195.0304		200.0000	196.0784	MG/KG	99		99		2		75 - 125	20	P
Nickel		10.2500		61.4360		59.7853		50.0000	49.0196	MG/KG	102		101		3		75 - 125	20	P
Phosphorus		488.5598		608.8550		608.2971		100.0000	98.0392	MG/KG	120		122		0			20	P
Potassium		3654.5431		5232.0070		5243.0422		1000.0000	980.3922	MG/KG	158	N	162	N	0		75 - 125	20	P
Selenium	78	0.1012	B	1.8504		1.9647		2.0000	1.9608	MG/KG	87		95		6		75 - 125	20	MS
Silver	107	0.0323	B	10.3100		9.7078		10.0000	9.8039	MG/KG	103		99		6		75 - 125	20	MS
Sodium		65.8725	B	1069.6280		1039.3000		1000.0000	980.3922	MG/KG	100		99		3		75 - 125	20	P
Strontium	88	19.0863		28.3200		27.3333		8.0000	7.8431	MG/KG	115		105		4		75 - 125	20	MS
Thallium	203	0.2373		0.6384		0.6345		0.4000	0.3922	MG/KG	100		101		1		75 - 125	20	MS
Tin		2.4471	B	368.6250		361.4343		400.0000	392.1569	MG/KG	92		92		2		75 - 125	20	P
Titanium		1006.1961		1377.4590		1390.1735		100.0000	98.0392	MG/KG	371	*	392	*	1			20	P
Vanadium		28.6529		84.7950		82.9422		50.0000	49.0196	MG/KG	112		111		2		75 - 125	20	P
Zinc		61.7814		121.8310		116.8833		50.0000	49.0196	MG/KG	120		112		4		75 - 125	20	P
Zirconium		3.5882	B	101.0480		99.4794		100.0000	98.0392	MG/KG	97		98		2		75 - 125	20	P

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 6
DUPLICATES
SDG No.: PH062
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7120502BKG
Batch ID(s): P19137A, P19138A
Concentration Units: MG/KG

Duplicate Lab Sample ID: 7120505DUP

Analyte	Mass	Control Limit	Samples (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum			15805.5029		16890.0900		7		P
Antimony			0.7255	U	-0.8430	B	-200	*	P
Arsenic		3.9	4.1069		4.4610		8		P
Barium			102.4804		109.3240		6		P
Beryllium			0.5167	B	0.5300	B	3		P
Boron			2.6059	B	3.3450	B	25		P
Cadmium			0.4186	B	0.8860	B	72	*	P
Calcium			2190.9853		3308.0810		41	*	P
Chromium			15.8127		18.4020		15		P
Cobalt		1.0	4.3098		4.8120		11		P
Copper			10.3059		11.3550		10		P
Iron			16896.1314		18563.3180		9		P
Lead		2.9	8.9167		10.3420		15		P
Lithium			19.9392		22.2850		11		P
Magnesium			3466.4882		3912.7770		12		P
Manganese			321.6892		345.0400		7		P
Mercury		0.0	0.0119	B	0.0278		80		CV
Molybdenum			0.8353	B	0.6260	B	29		P
Nickel			10.2500		11.4710		11		P
Phosphorus			488.5598		566.0640		15		P
Potassium			3654.5431		4623.5210		23	*	P
Selenium	78		0.1012	B	0.1254	B	21		MS
Silver	107		0.0323	B	0.0295	B	9		MS
Sodium			65.8725	B	82.7290	B	23		P
Strontium	88		19.0863		24.9000		26	*	MS
Thallium	203	0.2	0.2373		0.2486		5		MS
Tin			2.4471	B	2.5500	B	4		P
Titanium			1006.1961		1024.9500		2		P
Vanadium			28.6529		32.9080		14		P
Zinc			61.7814		114.4030		60	*	P
Zirconium			3.5882	B	4.8200	B	29		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

Data Validation Report
Santa Susan Field Laboratory
Subarea 8

SDG(s): PH063

Prepared for

CDM
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Prepared by

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September 10, 2013

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on July 9, 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-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, field blanks and equipment 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 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.

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
PH063/ 6020A	ICB/CCB	Molybdenum	3.9 ug/L	SL-561-SA8-SB-0.0-0.5 SL-561-SA8-SB-4.0-5.0 SL-562-SA8-SB-0.0-0.5 SL-563-SA8-SB-0.0-0.5 SL-563-SA8-SB-2.0-3.0

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
PH063/ 6020A	SL-561-SA8-SB-0.0-0.5	Molybdenum	0.51 mg/kg	0.51U mg/kg
PH063/ 6020A	SL-561-SA8-SB-4.0-5.0	Molybdenum	0.28 mg/kg	0.28U mg/kg
PH063/ 6020A	SL-562-SA8-SB-0.0-0.5	Molybdenum	0.47 mg/kg	0.47U mg/kg

SDG/Method	Sample	Compound	Reported Concentration	Modified Final Concentration
PH063/ 6020A	SL-563-SA8-SB-0.0-0.5	Molybdenum	0.39 mg/kg	0.39U mg/kg
PH063/ 6020A	SL-563-SA8-SB-2.0-3.0	Molybdenum	0.36 mg/kg	0.36U mg/kg

V. Surrogate Spikes

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

VI. ICP Interference Check Sample (ICS) Analysis

ICP interference check data were not reviewed for level III.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed at the required frequency. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of one MS/MSD pair for metals performed in SDG PH062. 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 PH062.

VIII. Laboratory Duplicates Sample

Laboratory duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits with the exception of one DUP for metals performed in SDG PH062. 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 the Enclosure I of the DVR for SDG PH062.

IX. Laboratory Control Samples (LCS)

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

X. Internal Standards

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

XI. ICP Serial Dilution

ICP serial dilution analysis was performed by the laboratory. The analysis criteria were met.

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 PH063	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 PH064) 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 dioxins, semivolatiles, and metals. The associated sample results were not detected or were significantly greater than the concentrations found in the associated blanks, therefore 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 dioxins, semivolatiles, and metals. 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 field blank outlier reports are presented in Enclosure I.

XV. Overall Assessment of Data

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

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
09-Jul-2013	TB-070913	7122287	TB	5030B	8015M	III
09-Jul-2013	SL-562-SA8-SB-0.0-0.5	7122290	N	3050B	6010C	III
09-Jul-2013	SL-562-SA8-SB-0.0-0.5	7122290	N	3050B	6020A	III
09-Jul-2013	SL-562-SA8-SB-0.0-0.5	7122290	N	3546	8015M	III
09-Jul-2013	SL-562-SA8-SB-0.0-0.5	7122290	N	3546	8082A	III
09-Jul-2013	SL-562-SA8-SB-0.0-0.5	7122290	N	3546	8270D SIM	III
09-Jul-2013	SL-562-SA8-SB-0.0-0.5	7122290	N	METHOD	1613B	III
09-Jul-2013	SL-562-SA8-SB-0.0-0.5	7122290	N	METHOD	7471B	III
09-Jul-2013	SL-561-SA8-SB-0.0-0.5	7122288	N	3050B	6010C	III
09-Jul-2013	SL-561-SA8-SB-0.0-0.5	7122288	N	3050B	6020A	III
09-Jul-2013	SL-561-SA8-SB-0.0-0.5	7122288	N	3546	8015M	III
09-Jul-2013	SL-561-SA8-SB-0.0-0.5	7122288	N	3546	8082A	III
09-Jul-2013	SL-561-SA8-SB-0.0-0.5	7122288	N	3546	8270D SIM	III
09-Jul-2013	SL-561-SA8-SB-0.0-0.5	7122288	N	METHOD	1613B	III
09-Jul-2013	SL-561-SA8-SB-0.0-0.5	7122288	N	METHOD	7471B	III
09-Jul-2013	SL-561-SA8-SB-0.0-0.5MSD	P122288M240210A	MSD	3546	8082A	III
09-Jul-2013	SL-561-SA8-SB-0.0-0.5MSD	P122288M260632	MSD	3546	8270D SIM	III
09-Jul-2013	SL-561-SA8-SB-0.0-0.5MS	P122288R240151A	MS	3546	8082A	III
09-Jul-2013	SL-561-SA8-SB-0.0-0.5MS	P122288R260600	MS	3546	8270D SIM	III
09-Jul-2013	SL-561-SA8-SB-4.0-5.0	7122289	N	3050B	6010C	III
09-Jul-2013	SL-561-SA8-SB-4.0-5.0	7122289	N	3050B	6020A	III
09-Jul-2013	SL-561-SA8-SB-4.0-5.0	7122289	N	3546	8015M	III
09-Jul-2013	SL-561-SA8-SB-4.0-5.0	7122289	N	3546	8082A	III
09-Jul-2013	SL-561-SA8-SB-4.0-5.0	7122289	N	3546	8270D SIM	III
09-Jul-2013	SL-561-SA8-SB-4.0-5.0	7122289	N	5035A	8015M	III
09-Jul-2013	SL-561-SA8-SB-4.0-5.0	7122289	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
09-Jul-2013	SL-561-SA8-SB-4.0-5.0	7122289	N	METHOD	7471B	III
09-Jul-2013	SL-563-SA8-SB-0.0-0.5	7122291	N	3050B	6010C	III
09-Jul-2013	SL-563-SA8-SB-0.0-0.5	7122291	N	3050B	6020A	III
09-Jul-2013	SL-563-SA8-SB-0.0-0.5	7122291	N	3546	8015M	III
09-Jul-2013	SL-563-SA8-SB-0.0-0.5	7122291	N	3546	8082A	III
09-Jul-2013	SL-563-SA8-SB-0.0-0.5	7122291	N	3546	8270D SIM	III
09-Jul-2013	SL-563-SA8-SB-0.0-0.5	7122291	N	METHOD	1613B	III
09-Jul-2013	SL-563-SA8-SB-0.0-0.5	7122291	N	METHOD	7471B	III
09-Jul-2013	SL-563-SA8-SB-2.0-3.0	7122292	N	3050B	6010C	III
09-Jul-2013	SL-563-SA8-SB-2.0-3.0	7122292	N	3050B	6020A	III
09-Jul-2013	SL-563-SA8-SB-2.0-3.0	7122292	N	3546	8015M	III
09-Jul-2013	SL-563-SA8-SB-2.0-3.0	7122292	N	3546	8082A	III
09-Jul-2013	SL-563-SA8-SB-2.0-3.0	7122292	N	3546	8270D SIM	III
09-Jul-2013	SL-563-SA8-SB-2.0-3.0	7122292	N	5035A	8015M	III
09-Jul-2013	SL-563-SA8-SB-2.0-3.0	7122292	N	METHOD	1613B	III
09-Jul-2013	SL-563-SA8-SB-2.0-3.0	7122292	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: PH063 **Laboratory: LL**

EDD Filename: PH063_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-561-SA8-SB-0.0-0.5 *Collected:* 7/9/2013 9:45:00 AM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.08	U	0.755	MDL	4.08	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.611	J	0.0684	MDL	1.02	PQL	mg/Kg	J	Z
BORON	4.63	J	0.857	MDL	10.2	PQL	mg/Kg	J	Z
CADMIUM	0.477	J	0.0776	MDL	1.02	PQL	mg/Kg	J	Z
CALCIUM	3500		3.41	MDL	20.4	PQL	mg/Kg	J	E
MOLYBDENUM	0.508	J	0.174	MDL	2.04	PQL	mg/Kg	U	B, F
POTASSIUM	4740		8.51	MDL	102	PQL	mg/Kg	J	Q, E
SODIUM	76.3	J	17.0	MDL	102	PQL	mg/Kg	J	Z
TIN	2.46	J	0.225	MDL	10.2	PQL	mg/Kg	U	B
ZINC	58.6		0.204	MDL	4.08	PQL	mg/Kg	J	E
Zirconium	4.50	J	0.857	MDL	5.10	PQL	mg/Kg	J	Z

Sample ID: SL-561-SA8-SB-4.0-5.0 *Collected:* 7/9/2013 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	4.31	U	0.797	MDL	4.31	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.975	J	0.0722	MDL	1.08	PQL	mg/Kg	J	Z
BORON	3.82	J	0.905	MDL	10.8	PQL	mg/Kg	J	Z
CADMIUM	0.400	J	0.0819	MDL	1.08	PQL	mg/Kg	J	Z
CALCIUM	6820		3.60	MDL	21.5	PQL	mg/Kg	J	E
MOLYBDENUM	0.280	J	0.183	MDL	2.15	PQL	mg/Kg	U	B, F
POTASSIUM	2910		8.99	MDL	108	PQL	mg/Kg	J	Q, E
TIN	2.80	J	0.237	MDL	10.8	PQL	mg/Kg	U	B
ZINC	62.1		0.215	MDL	4.31	PQL	mg/Kg	J	E

Sample ID: SL-562-SA8-SB-0.0-0.5 *Collected:* 7/9/2013 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	3.96	U	0.733	MDL	3.96	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.618	J	0.0664	MDL	0.991	PQL	mg/Kg	J	Z
BORON	2.75	J	0.832	MDL	9.91	PQL	mg/Kg	J	Z
CADMIUM	0.405	J	0.0753	MDL	0.991	PQL	mg/Kg	J	Z
CALCIUM	2520		3.31	MDL	19.8	PQL	mg/Kg	J	E
MOLYBDENUM	0.467	J	0.168	MDL	1.98	PQL	mg/Kg	U	B, F
POTASSIUM	3550		8.26	MDL	99.1	PQL	mg/Kg	J	Q, E

* denotes a non-reportable result

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

Data Qualifier Summary

Lab Reporting Batch ID: PH063 **Laboratory: LL**

EDD Filename: PH063_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-562-SA8-SB-0.0-0.5 *Collected:* 7/9/2013 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
SODIUM	80.1	J	16.5	MDL	99.1	PQL	mg/Kg	J	Z
TIN	2.38	J	0.218	MDL	9.91	PQL	mg/Kg	U	B
ZINC	50.1		0.198	MDL	3.96	PQL	mg/Kg	J	E
Zirconium	4.13	J	0.832	MDL	4.95	PQL	mg/Kg	J	Z

Sample ID: SL-563-SA8-SB-0.0-0.5 *Collected:* 7/9/2013 1:50:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.02	U	0.744	MDL	4.02	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.573	J	0.0673	MDL	1.01	PQL	mg/Kg	J	Z
BORON	2.72	J	0.844	MDL	10.1	PQL	mg/Kg	J	Z
CADMIUM	0.431	J	0.0764	MDL	1.01	PQL	mg/Kg	J	Z
CALCIUM	2780		3.36	MDL	20.1	PQL	mg/Kg	J	E
MOLYBDENUM	0.390	J	0.171	MDL	2.01	PQL	mg/Kg	U	B, F
POTASSIUM	3510		8.38	MDL	101	PQL	mg/Kg	J	Q, E
SODIUM	73.0	J	16.8	MDL	101	PQL	mg/Kg	J	Z
TIN	2.30	J	0.221	MDL	10.1	PQL	mg/Kg	U	B
ZINC	52.8		0.201	MDL	4.02	PQL	mg/Kg	J	E
Zirconium	3.77	J	0.844	MDL	5.03	PQL	mg/Kg	J	Z

Sample ID: SL-563-SA8-SB-2.0-3.0 *Collected:* 7/9/2013 2:30:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.08	U	0.755	MDL	4.08	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.755	J	0.0684	MDL	1.02	PQL	mg/Kg	J	Z
BORON	2.67	J	0.857	MDL	10.2	PQL	mg/Kg	J	Z
CADMIUM	0.434	J	0.0776	MDL	1.02	PQL	mg/Kg	J	Z
CALCIUM	2940		3.41	MDL	20.4	PQL	mg/Kg	J	E
MOLYBDENUM	0.364	J	0.174	MDL	2.04	PQL	mg/Kg	U	B, F
POTASSIUM	3160		8.51	MDL	102	PQL	mg/Kg	J	Q, E
SODIUM	100	J	17.0	MDL	102	PQL	mg/Kg	J	Z
TIN	2.63	J	0.225	MDL	10.2	PQL	mg/Kg	U	B
ZINC	56.5		0.204	MDL	4.08	PQL	mg/Kg	J	E
Zirconium	4.55	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: PH063 **Laboratory: LL**

EDD Filename: PH063_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-561-SA8-SB-0.0-0.5 *Collected:* 7/9/2013 9:45:00 AM *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.135	J	0.102	MDL	0.408	PQL	mg/Kg	J	Z

Sample ID: SL-561-SA8-SB-0.0-0.5 *Collected:* 7/9/2013 9:45:00 AM *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	24.6		0.0694	MDL	0.408	PQL	mg/Kg	J	E

Sample ID: SL-561-SA8-SB-4.0-5.0 *Collected:* 7/9/2013 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	0.0465	J	0.0280	MDL	0.215	PQL	mg/Kg	J	Z
STRONTIUM	36.6		0.0733	MDL	0.431	PQL	mg/Kg	J	E

Sample ID: SL-562-SA8-SB-0.0-0.5 *Collected:* 7/9/2013 8:45:00 AM *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.130	J	0.0991	MDL	0.396	PQL	mg/Kg	J	Z

Sample ID: SL-562-SA8-SB-0.0-0.5 *Collected:* 7/9/2013 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	0.0399	J	0.0258	MDL	0.198	PQL	mg/Kg	J	Z
STRONTIUM	22.7		0.0674	MDL	0.396	PQL	mg/Kg	J	E

Sample ID: SL-563-SA8-SB-0.0-0.5 *Collected:* 7/9/2013 1:50:00 PM *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.151	J	0.101	MDL	0.402	PQL	mg/Kg	J	Z

Sample ID: SL-563-SA8-SB-0.0-0.5 *Collected:* 7/9/2013 1:50:00 PM *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0280	J	0.0261	MDL	0.201	PQL	mg/Kg	J	Z
STRONTIUM	21.9		0.0684	MDL	0.402	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: PH063 **Laboratory: LL**

EDD Filename: PH063_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

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

Sample ID: SL-563-SA8-SB-2.0-3.0 *Collected:* 7/9/2013 2:30:00 PM *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.158	J	0.102	MDL	0.408	PQL	mg/Kg	J	Z

Sample ID: SL-563-SA8-SB-2.0-3.0 *Collected:* 7/9/2013 2:30:00 PM *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0400	J	0.0265	MDL	0.204	PQL	mg/Kg	J	Z
STRONTIUM	25.0		0.0694	MDL	0.408	PQL	mg/Kg	J	E

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

Sample ID: SL-562-SA8-SB-0.0-0.5 *Collected:* 7/9/2013 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	0.0148	J	0.0099	MDL	0.0165	PQL	mg/Kg	J	Z

Sample ID: SL-563-SA8-SB-0.0-0.5 *Collected:* 7/9/2013 1:50:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0116	J	0.0096	MDL	0.0160	PQL	mg/Kg	J	Z

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

Sample ID: SL-561-SA8-SB-0.0-0.5 *Collected:* 7/9/2013 9:45:00 AM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDF	1.81	JB	0.0234	MDL	5.11	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.187	JBQ	0.0284	MDL	5.11	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.185	JB	0.0458	MDL	5.11	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.229	JB	0.0260	MDL	5.11	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.945	JB	0.0474	MDL	5.11	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.284	JB	0.0242	MDL	5.11	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	1.14	JB	0.0482	MDL	5.11	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.844	JB	0.0272	MDL	5.11	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: PH063 **Laboratory: LL**

EDD Filename: PH063_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-561-SA8-SB-0.0-0.5 *Collected:* 7/9/2013 9:45:00 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-PECDD	0.205	JB	0.0362	MDL	5.11	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.484	JB	0.0252	MDL	5.11	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.281	JB	0.0242	MDL	5.11	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.475	JB	0.0238	MDL	5.11	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.349	J	0.0546	MDL	1.02	PQL	ng/Kg	J	Z
OCDF	3.70	JB	0.0182	MDL	10.2	PQL	ng/Kg	J	Z

Sample ID: SL-561-SA8-SB-4.0-5.0 *Collected:* 7/9/2013 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
1,2,3,4,6,7,8-HPCDD	1.26	JB	0.0298	MDL	5.42	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.248	JBQ	0.0115	MDL	5.42	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0995	JBQ	0.0149	MDL	5.42	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.162	JB	0.0284	MDL	5.42	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.182	JBQ	0.0139	MDL	5.42	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.213	JBQ	0.0284	MDL	5.42	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.181	JBQ	0.0132	MDL	5.42	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.199	JB	0.0296	MDL	5.42	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.193	JB	0.0157	MDL	5.42	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.255	JBQ	0.0246	MDL	5.42	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.419	JB	0.0169	MDL	5.42	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.128	JB	0.0133	MDL	5.42	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.259	JB	0.0151	MDL	5.42	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.0640	JQ	0.0256	MDL	1.08	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.124	JQ	0.0284	MDL	1.08	PQL	ng/Kg	J	Z
OCDD	9.19	JB	0.0189	MDL	10.8	PQL	ng/Kg	J	Z
OCDF	0.457	JB	0.0224	MDL	10.8	PQL	ng/Kg	J	Z

Sample ID: SL-562-SA8-SB-0.0-0.5 *Collected:* 7/9/2013 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	3.38	JB	0.0287	MDL	5.09	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.812	JB	0.0153	MDL	5.09	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.127	JB	0.0196	MDL	5.09	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.165	JB	0.0305	MDL	5.09	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: PH063 **Laboratory: LL**

EDD Filename: PH063_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-562-SA8-SB-0.0-0.5 *Collected:* 7/9/2013 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
1,2,3,4,7,8-HXCDF	0.229	JB	0.0179	MDL	5.09	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.835	JB	0.0319	MDL	5.09	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.299	JB	0.0167	MDL	5.09	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	1.08	JB	0.0314	MDL	5.09	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.716	JB	0.0195	MDL	5.09	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.343	JB	0.0312	MDL	5.09	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.561	JB	0.0177	MDL	5.09	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.200	JB	0.0173	MDL	5.09	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.496	JBQ	0.0161	MDL	5.09	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.177	J	0.0330	MDL	1.02	PQL	ng/Kg	J	Z
OCDF	1.40	JB	0.0170	MDL	10.2	PQL	ng/Kg	J	Z

Sample ID: SL-563-SA8-SB-0.0-0.5 *Collected:* 7/9/2013 1:50:00 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	4.37	JB	0.0309	MDL	5.03	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	1.03	JB	0.0139	MDL	5.03	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.146	JBQ	0.0160	MDL	5.03	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.184	JBQ	0.0329	MDL	5.03	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.236	JB	0.0156	MDL	5.03	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.827	JB	0.0350	MDL	5.03	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.260	JB	0.0149	MDL	5.03	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.982	JB	0.0357	MDL	5.03	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.729	JB	0.0168	MDL	5.03	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.315	JB	0.0240	MDL	5.03	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.498	JB	0.0151	MDL	5.03	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.190	JBQ	0.0153	MDL	5.03	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.380	JB	0.0141	MDL	5.03	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.0540	JQ	0.0190	MDL	1.01	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.110	J	0.0309	MDL	1.01	PQL	ng/Kg	J	Z
OCDF	2.97	JB	0.0150	MDL	10.1	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: PH063 **Laboratory: LL**

EDD Filename: PH063_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-563-SA8-SB-2.0-3.0 *Collected:* 7/9/2013 2:30:00 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	0.454	JB	0.0277	MDL	5.22	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.152	JB	0.0131	MDL	5.22	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0678	JBQ	0.0160	MDL	5.22	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.116	JB	0.0346	MDL	5.22	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.141	JBQ	0.0118	MDL	5.22	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.449	JBQ	0.0363	MDL	5.22	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.157	JBQ	0.0121	MDL	5.22	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.658	JB	0.0359	MDL	5.22	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.732	JBQ	0.0131	MDL	5.22	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.211	JBQ	0.0281	MDL	5.22	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.342	JB	0.0143	MDL	5.22	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.0936	JB	0.0120	MDL	5.22	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.194	JB	0.0123	MDL	5.22	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.0293	J	0.0242	MDL	1.04	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.0655	J	0.0235	MDL	1.04	PQL	ng/Kg	J	Z
OCDD	4.24	JB	0.0210	MDL	10.4	PQL	ng/Kg	J	Z
OCDF	0.310	JB	0.0273	MDL	10.4	PQL	ng/Kg	U	B

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: SL-561-SA8-SB-0.0-0.5 *Collected:* 7/9/2013 9:45:00 AM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C15-C20)	3.1	J	2.1	MDL	5.2	PQL	mg/Kg	J	Z

Sample ID: SL-563-SA8-SB-2.0-3.0 *Collected:* 7/9/2013 2:30:00 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)	4.9	J	2.1	MDL	5.3	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: PH063 **Laboratory: LL**

EDD Filename: PH063_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

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

Sample ID: SL-561-SA8-SB-0.0-0.5 *Collected:* 7/9/2013 9:45:00 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
2-METHYLNAPHTHALENE	1.2	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(A)ANTHRACENE	0.79	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(A)PYRENE	0.94	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(G,H,I)PERYLENE	0.82	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	8.8	J	6.2	MDL	18	PQL	ug/Kg	J	Z
FLUORENE	0.87	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
INDENO(1,2,3-CD)PYRENE	0.71	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
NAPHTHALENE	1.3	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: SL-562-SA8-SB-0.0-0.5 *Collected:* 7/9/2013 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
BENZO(B)FLUORANTHENE	0.70	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
CHRYSENE	0.80	J	0.34	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: SL-563-SA8-SB-0.0-0.5 *Collected:* 7/9/2013 1:50:00 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	0.81	J	0.34	MDL	1.7	PQL	ug/Kg	J	Z
FLUORANTHENE	0.76	J	0.67	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: SL-563-SA8-SB-2.0-3.0 *Collected:* 7/9/2013 2:30:00 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
BENZO(K)FLUORANTHENE	0.88	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
CHRYSENE	0.37	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: PH063 **Laboratory: LL**

EDD Filename: PH063_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Reason Code Legend

Reason Code	*Description*
B	Calibration Blank Contamination
B	Method Blank Contamination
E	Laboratory Duplicate Precision
F	Field Blank Contamination
Q	Laboratory Duplicate Precision
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

PH063

Method Blank Outlier Report

Lab Reporting Batch ID: PH063 **Laboratory: LL**

EDD Filename: PH063_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK1920B370624	7/13/2013 6:24:00 AM	1,2,3,4,6,7,8-HPCDD	0.0814 ng/Kg	SL-561-SA8-SB-0.0-0.5
		1,2,3,4,6,7,8-HPCDF	0.0265 ng/Kg	SL-561-SA8-SB-4.0-5.0
		1,2,3,4,7,8,9-HPCDF	0.0357 ng/Kg	SL-562-SA8-SB-0.0-0.5
		1,2,3,4,7,8-HxCDD	0.0239 ng/Kg	SL-563-SA8-SB-0.0-0.5
		1,2,3,4,7,8-HXCDF	0.0351 ng/Kg	SL-563-SA8-SB-2.0-3.0
		1,2,3,6,7,8-HXCDD	0.0206 ng/Kg	
		1,2,3,6,7,8-HXCDF	0.0220 ng/Kg	
		1,2,3,7,8,9-HXCDD	0.0274 ng/Kg	
		1,2,3,7,8,9-HXCDF	0.0184 ng/Kg	
		1,2,3,7,8-PECDD	0.0216 ng/Kg	
		1,2,3,7,8-PECDF	0.0503 ng/Kg	
		2,3,4,6,7,8-HXCDF	0.0269 ng/Kg	
		2,3,4,7,8-PECDF	0.0333 ng/Kg	
		OCDD	0.214 ng/Kg	
		OCDF	0.0705 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-561-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0995 ng/Kg	0.0995U ng/Kg
SL-561-SA8-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.128 ng/Kg	0.128U ng/Kg
SL-562-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.127 ng/Kg	0.127U ng/Kg
SL-563-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.146 ng/Kg	0.146U ng/Kg
SL-563-SA8-SB-2.0-3.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0678 ng/Kg	0.0678U ng/Kg
SL-563-SA8-SB-2.0-3.0(RES)	1,2,3,4,7,8-HxCDD	0.116 ng/Kg	0.116U ng/Kg
SL-563-SA8-SB-2.0-3.0(RES)	1,2,3,4,7,8-HXCDF	0.141 ng/Kg	0.141U ng/Kg
SL-563-SA8-SB-2.0-3.0(RES)	2,3,4,6,7,8-HXCDF	0.0936 ng/Kg	0.0936U ng/Kg
SL-563-SA8-SB-2.0-3.0(RES)	OCDF	0.310 ng/Kg	0.310U ng/Kg

Method: 6010C
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P19137AB221846	7/12/2013 6:46:00 PM	ALUMINUM	11.0 mg/Kg	SL-561-SA8-SB-0.0-0.5
		CALCIUM	12.8 mg/Kg	SL-561-SA8-SB-4.0-5.0
		IRON	6.78 mg/Kg	SL-562-SA8-SB-0.0-0.5
		MAGNESIUM	5.68 mg/Kg	SL-563-SA8-SB-0.0-0.5
		TIN	1.32 mg/Kg	SL-563-SA8-SB-2.0-3.0
		TITANIUM	0.177 mg/Kg	
		ZINC	0.422 mg/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-561-SA8-SB-0.0-0.5(RES)	TIN	2.46 mg/Kg	2.46U mg/Kg
SL-561-SA8-SB-4.0-5.0(RES)	TIN	2.80 mg/Kg	2.80U mg/Kg
SL-562-SA8-SB-0.0-0.5(RES)	TIN	2.38 mg/Kg	2.38U mg/Kg
SL-563-SA8-SB-0.0-0.5(RES)	TIN	2.30 mg/Kg	2.30U mg/Kg
SL-563-SA8-SB-2.0-3.0(RES)	TIN	2.63 mg/Kg	2.63U mg/Kg

Method Blank Outlier Report

Lab Reporting Batch ID: PH063 **Laboratory: LL**

EDD Filename: PH063_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P19137AB221713A	7/18/2013 5:13:00 PM	STRONTIUM	0.0774 mg/Kg	SL-561-SA8-SB-0.0-0.5 SL-561-SA8-SB-4.0-5.0 SL-562-SA8-SB-0.0-0.5 SL-563-SA8-SB-0.0-0.5 SL-563-SA8-SB-2.0-3.0

Field Blank Outlier Report

Lab Reporting Batch ID: PH063 **Laboratory: LL**

EDD Filename: PH063_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-561-SA8-SB-0.0-0.5 SL-561-SA8-SB-4.0-5.0 SL-562-SA8-SB-0.0-0.5 SL-563-SA8-SB-0.0-0.5 SL-563-SA8-SB-2.0-3.0

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-561-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.508 mg/Kg	0.508U mg/Kg
SL-561-SA8-SB-4.0-5.0(RES)	MOLYBDENUM	0.280 mg/Kg	0.280U mg/Kg
SL-562-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.467 mg/Kg	0.467U mg/Kg
SL-563-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.390 mg/Kg	0.390U mg/Kg
SL-563-SA8-SB-2.0-3.0(RES)	MOLYBDENUM	0.364 mg/Kg	0.364U mg/Kg

Reporting Limit Outliers

Lab Reporting Batch ID: PH063 **Laboratory: LL**

EDD Filename: PH063_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-561-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDF	JB	1.81	5.11	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.187	5.11	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.185	5.11	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.229	5.11	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.945	5.11	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.284	5.11	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	1.14	5.11	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	0.844	5.11	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JB	0.205	5.11	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.484	5.11	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.281	5.11	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.475	5.11	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.349	1.02	PQL	ng/Kg	
	OCDF	JB	3.70	10.2	PQL	ng/Kg	
SL-561-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JB	1.26	5.42	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.248	5.42	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0995	5.42	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.162	5.42	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.182	5.42	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.213	5.42	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.181	5.42	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.199	5.42	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.193	5.42	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JBQ	0.255	5.42	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.419	5.42	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.128	5.42	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.259	5.42	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.0640	1.08	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.124	1.08	PQL	ng/Kg	
	OCDD	JB	9.19	10.8	PQL	ng/Kg	
	OCDF	JB	0.457	10.8	PQL	ng/Kg	
SL-562-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	3.38	5.09	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.812	5.09	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.127	5.09	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.165	5.09	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.229	5.09	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.835	5.09	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.299	5.09	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	1.08	5.09	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	0.716	5.09	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JB	0.343	5.09	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.561	5.09	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.200	5.09	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.496	5.09	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.177	1.02	PQL	ng/Kg	
	OCDF	JB	1.40	10.2	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH063 **Laboratory: LL**

EDD Filename: PH063_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-563-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	4.37	5.03	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JB	1.03	5.03	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.146	5.03	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.184	5.03	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.236	5.03	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.827	5.03	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.260	5.03	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.982	5.03	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.729	5.03	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JB	0.315	5.03	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.498	5.03	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.190	5.03	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.380	5.03	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.0540	1.01	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.110	1.01	PQL	ng/Kg	
	OCDF	JB	2.97	10.1	PQL	ng/Kg	
SL-563-SA8-SB-2.0-3.0	1,2,3,4,6,7,8-HPCDD	JB	0.454	5.22	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JB	0.152	5.22	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0678	5.22	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.116	5.22	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.141	5.22	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.449	5.22	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.157	5.22	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.658	5.22	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.732	5.22	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.211	5.22	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.342	5.22	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.0936	5.22	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.194	5.22	PQL	ng/Kg	
	2,3,7,8-TCDD	J	0.0293	1.04	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.0655	1.04	PQL	ng/Kg	
	OCDD	JB	4.24	10.4	PQL	ng/Kg	
	OCDF	JB	0.310	10.4	PQL	ng/Kg	

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-561-SA8-SB-0.0-0.5	BERYLLIUM	J	0.611	1.02	PQL	mg/Kg	J (all detects)
	BORON	J	4.63	10.2	PQL	mg/Kg	
	CADMIUM	J	0.477	1.02	PQL	mg/Kg	
	MOLYBDENUM	J	0.508	2.04	PQL	mg/Kg	
	SODIUM	J	76.3	102	PQL	mg/Kg	
	TIN	J	2.46	10.2	PQL	mg/Kg	
	Zirconium	J	4.50	5.10	PQL	mg/Kg	
SL-561-SA8-SB-4.0-5.0	BERYLLIUM	J	0.975	1.08	PQL	mg/Kg	J (all detects)
	BORON	J	3.82	10.8	PQL	mg/Kg	
	CADMIUM	J	0.400	1.08	PQL	mg/Kg	
	MOLYBDENUM	J	0.280	2.15	PQL	mg/Kg	
	TIN	J	2.80	10.8	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH063 **Laboratory: LL**

EDD Filename: PH063_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-562-SA8-SB-0.0-0.5	BERYLLIUM	J	0.618	0.991	PQL	mg/Kg	
	BORON	J	2.75	9.91	PQL	mg/Kg	
	CADMIUM	J	0.405	0.991	PQL	mg/Kg	
	MOLYBDENUM	J	0.467	1.98	PQL	mg/Kg	J (all detects)
	SODIUM	J	80.1	99.1	PQL	mg/Kg	
	TIN	J	2.38	9.91	PQL	mg/Kg	
	Zirconium	J	4.13	4.95	PQL	mg/Kg	
SL-563-SA8-SB-0.0-0.5	BERYLLIUM	J	0.573	1.01	PQL	mg/Kg	
	BORON	J	2.72	10.1	PQL	mg/Kg	
	CADMIUM	J	0.431	1.01	PQL	mg/Kg	
	MOLYBDENUM	J	0.390	2.01	PQL	mg/Kg	J (all detects)
	SODIUM	J	73.0	101	PQL	mg/Kg	
	TIN	J	2.30	10.1	PQL	mg/Kg	
	Zirconium	J	3.77	5.03	PQL	mg/Kg	
SL-563-SA8-SB-2.0-3.0	BERYLLIUM	J	0.755	1.02	PQL	mg/Kg	
	BORON	J	2.67	10.2	PQL	mg/Kg	
	CADMIUM	J	0.434	1.02	PQL	mg/Kg	
	MOLYBDENUM	J	0.364	2.04	PQL	mg/Kg	J (all detects)
	SODIUM	J	100	102	PQL	mg/Kg	
	TIN	J	2.63	10.2	PQL	mg/Kg	
	Zirconium	J	4.55	5.10	PQL	mg/Kg	

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-561-SA8-SB-0.0-0.5	SELENIUM	J	0.135	0.408	PQL	mg/Kg	J (all detects)
SL-561-SA8-SB-4.0-5.0	SILVER	J	0.0465	0.215	PQL	mg/Kg	J (all detects)
SL-562-SA8-SB-0.0-0.5	SELENIUM	J	0.130	0.396	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0399	0.198	PQL	mg/Kg	
SL-563-SA8-SB-0.0-0.5	SELENIUM	J	0.151	0.402	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0280	0.201	PQL	mg/Kg	
SL-563-SA8-SB-2.0-3.0	SELENIUM	J	0.158	0.408	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0400	0.204	PQL	mg/Kg	

Method: 7471B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-562-SA8-SB-0.0-0.5	MERCURY	J	0.0148	0.0165	PQL	mg/Kg	J (all detects)
SL-563-SA8-SB-0.0-0.5	MERCURY	J	0.0116	0.0160	PQL	mg/Kg	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH063 **Laboratory: LL**

EDD Filename: PH063_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 8015M

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-561-SA8-SB-0.0-0.5	EFH (C15-C20)	J	3.1	5.2	PQL	mg/Kg	J (all detects)
SL-563-SA8-SB-2.0-3.0	EFH (C21-C30)	J	4.9	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-561-SA8-SB-0.0-0.5	2-METHYLNAPHTHALENE	J	1.2	1.7	PQL	ug/Kg	J (all detects)
	BENZO(A)ANTHRACENE	J	0.79	1.7	PQL	ug/Kg	
	BENZO(A)PYRENE	J	0.94	1.7	PQL	ug/Kg	
	BENZO(G,H,I)PERYLENE	J	0.82	1.7	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	8.8	18	PQL	ug/Kg	
	FLUORENE	J	0.87	1.7	PQL	ug/Kg	
	INDENO(1,2,3-CD)PYRENE	J	0.71	1.7	PQL	ug/Kg	
	NAPHTHALENE	J	1.3	1.7	PQL	ug/Kg	
SL-562-SA8-SB-0.0-0.5	BENZO(B)FLUORANTHENE	J	0.70	1.7	PQL	ug/Kg	J (all detects)
	CHRYSENE	J	0.80	1.7	PQL	ug/Kg	
SL-563-SA8-SB-0.0-0.5	CHRYSENE	J	0.81	1.7	PQL	ug/Kg	J (all detects)
	FLUORANTHENE	J	0.76	1.7	PQL	ug/Kg	
SL-563-SA8-SB-2.0-3.0	BENZO(K)FLUORANTHENE	J	0.88	1.8	PQL	ug/Kg	J (all detects)
	CHRYSENE	J	0.37	1.8	PQL	ug/Kg	

LDC #: 30210B4 **VALIDATION COMPLETENESS WORKSHEET** Date: 8/29/13
SDG #: PH063 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: 7/9/13
II.	ICP/MS Tune	—	
III.	Calibration	—	
IV.	Blanks	SW	
V.	ICP Interference Check Sample (ICS) Analysis	—	
VI.	Matrix Spike Analysis	SW	MS/D (from PH062)
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=EB2-071013(PH064) FB=FB011113 (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-561-SA8-SB-0.0-0.5	11		21		31	
2	SL-561-SA8-SB-4.0-5.0	12		22		32	
3	SL-562-SA8-SB-0.0-0.5	13		23		33	
4	SL-563-SA8-SB-0.0-0.5	14		24		34	
5	SL-563-SA8-SB-2.0-3.0	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 #: 30210B4

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Page: 1 of 1
Reviewer: a
2nd Reviewer: w

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000) Soil preparation factor applied: 100x Reason: B
Sample Concentration units, unless otherwise noted: mg/Kg Associated Samples: All

					Sample Identification										
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/l)	Maximum ICB/CCB[a] (ug/l)	Action Level	1	2	3	4	5						
Mo			3.9	1.95	0.51	0.28	0.47	0.39	0.36						

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 #: 30210B4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: CL
2nd Reviewer: LS

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

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

Analyte	Blank ID	Sample Identification										
	FB-041113 (SDG: PH029)	Action Limit	1	2	3	4	5					
Cu	0.0036	1.8										
Mo	0.0036	1.8	0.51	0.28	0.47	0.39	0.36					

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										
	EB2-071013 (SDG: PH064)	Action Limit	No Qualifiers									
Cu	0.0030	1.5										

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(s): PH064

Prepared for

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Prepared by

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7750 El Camino Real, Suite 2L
Carlsbad, California 92009

September 10, 2013

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on July 10, 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:

Volatile Organic Compounds (VOCs) by Environmental Protection Agency (EPA) SW 846 Method 8260B
Semivolatiles by EPA SW 846 Method 8270D-SIM
Pesticides by EPA SW 846 Method 8081A
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 8151A
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
Perchlorate by EPA Method 6850

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, field blanks and equipment 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 with the exception of one sample for herbicides. The associated sample results were qualified as estimated. The details regarding the qualification of data are provided in Enclosure I.

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 method blanks for VOCs, semivolatiles, 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
PH064/ 6020A	ICB/CCB	Copper	2.9 ug/L	EB1-071013 EB2-071013

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
PH064/ 6020A	EB1-071013	Copper	3.1 ug/L	3.1 U ug/L
PH064/ 6020A	EB2-071013	Copper	3.0 ug/L	3.0U 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 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 several LCS/LCSD pairs for VOAs, semivolatiles, and herbicides. The associated sample results were qualified as detected estimated (J) as applicable. The details regarding the qualification of data are provided in Enclosure I.

X. Internal Standards

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

XI. ICP Serial Dilution

ICP serial dilution analysis was performed by the laboratory. The analysis criteria were met.

XII. Compound Quantitation

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

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

Sample	Finding	Flag	A or P
All samples in SDG PH064	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 VOCs and TPH as gasoline. No contaminants were found in the trip blank.

Two equipment blanks were collected and analyzed for VOCs, semivolatiles, pesticides, PCBs, metals, herbicides, perchlorate, TPH as gasoline, TPH as extractables and dioxins. No contaminants were found in the equipment blanks with the exception of several VOAs, herbicides, dioxins, semivolatiles, and metals. The associated samples 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 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 VOCs, semivolatiles, pesticides, PCBs, metals, herbicides, perchlorate, TPH as gasoline, TPH as extractables and dioxins. No contaminants were found in the field blank with the exception of several VOAs, dioxins, semivolatiles, and metals. 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 associated blanks 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
10-Jul-2013	TB-071013	7123477	TB	5030B	8015M	III
10-Jul-2013	TB-071013	7123477	TB	5030B	8260B	III
10-Jul-2013	SL-573-SA8-SB-0.0-0.5	7123474	N	3050B	6010C	III
10-Jul-2013	SL-573-SA8-SB-0.0-0.5	7123474	N	3050B	6020A	III
10-Jul-2013	SL-573-SA8-SB-0.0-0.5	7123474	N	3546	8015M	III
10-Jul-2013	SL-573-SA8-SB-0.0-0.5	7123474	N	3546	8082A	III
10-Jul-2013	SL-573-SA8-SB-0.0-0.5	7123474	N	3546	8270D SIM	III
10-Jul-2013	SL-573-SA8-SB-0.0-0.5	7123474	N	METHOD	1613B	III
10-Jul-2013	SL-573-SA8-SB-0.0-0.5	7123474	N	METHOD	7471B	III
10-Jul-2013	SL-573-SA8-SB-4.0-5.0	7123475	N	3050B	6010C	III
10-Jul-2013	SL-573-SA8-SB-4.0-5.0	7123475	N	3050B	6020A	III
10-Jul-2013	SL-573-SA8-SB-4.0-5.0	7123475	N	3546	8015M	III
10-Jul-2013	SL-573-SA8-SB-4.0-5.0	7123475	N	3546	8082A	III
10-Jul-2013	SL-573-SA8-SB-4.0-5.0	7123475	N	3546	8270D SIM	III
10-Jul-2013	SL-573-SA8-SB-4.0-5.0	7123475	N	5035A	8015M	III
10-Jul-2013	SL-573-SA8-SB-4.0-5.0	7123475	N	METHOD	1613B	III
10-Jul-2013	SL-573-SA8-SB-4.0-5.0	7123475	N	METHOD	7471B	III
10-Jul-2013	SL-573-SA8-SB-9.5-10.5	7123476	N	3050B	6010C	III
10-Jul-2013	SL-573-SA8-SB-9.5-10.5	7123476	N	3050B	6020A	III
10-Jul-2013	SL-573-SA8-SB-9.5-10.5	7123476	N	3546	8015M	III
10-Jul-2013	SL-573-SA8-SB-9.5-10.5	7123476	N	3546	8082A	III
10-Jul-2013	SL-573-SA8-SB-9.5-10.5	7123476	N	3546	8270D SIM	III
10-Jul-2013	SL-573-SA8-SB-9.5-10.5	7123476	N	5035A	8015M	III
10-Jul-2013	SL-573-SA8-SB-9.5-10.5	7123476	N	5035A	8260B	III
10-Jul-2013	SL-573-SA8-SB-9.5-10.5	7123476	N	METHOD	7471B	III
10-Jul-2013	SL-572-SA8-SB-0.0-0.5	7123469	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
10-Jul-2013	SL-572-SA8-SB-0.0-0.5	7123469	N	3050B	6020A	III
10-Jul-2013	SL-572-SA8-SB-0.0-0.5	7123469	N	3546	8015M	III
10-Jul-2013	SL-572-SA8-SB-0.0-0.5	7123469	N	3546	8082A	III
10-Jul-2013	SL-572-SA8-SB-0.0-0.5	7123469	N	3546	8270D SIM	III
10-Jul-2013	SL-572-SA8-SB-0.0-0.5	7123469	N	METHOD	1613B	III
10-Jul-2013	SL-572-SA8-SB-0.0-0.5	7123469	N	METHOD	7471B	III
10-Jul-2013	SL-572-SA8-SB-0.0-0.5DUP	P123469D220949	DUP	METHOD	7471B	III
10-Jul-2013	SL-572-SA8-SB-0.0-0.5MSD	P123469M220953	MSD	METHOD	7471B	III
10-Jul-2013	SL-572-SA8-SB-0.0-0.5MS	P123469R220951	MS	METHOD	7471B	III
10-Jul-2013	SL-572-SA8-SB-4.0-5.0	7123470	N	3050B	6010C	III
10-Jul-2013	SL-572-SA8-SB-4.0-5.0	7123470	N	3050B	6020A	III
10-Jul-2013	SL-572-SA8-SB-4.0-5.0	7123470	N	3546	8015M	III
10-Jul-2013	SL-572-SA8-SB-4.0-5.0	7123470	N	3546	8082A	III
10-Jul-2013	SL-572-SA8-SB-4.0-5.0	7123470	N	3546	8270D SIM	III
10-Jul-2013	SL-572-SA8-SB-4.0-5.0	7123470	N	5035A	8015M	III
10-Jul-2013	SL-572-SA8-SB-4.0-5.0	7123470	N	METHOD	1613B	III
10-Jul-2013	SL-572-SA8-SB-4.0-5.0	7123470	N	METHOD	7471B	III
10-Jul-2013	SL-572-SA8-SB-4.0-5.0DUP	P123470D220843	DUP	3050B	6010C	III
10-Jul-2013	SL-572-SA8-SB-4.0-5.0DUP	P123470D221910A	DUP	3050B	6020A	III
10-Jul-2013	SL-572-SA8-SB-4.0-5.0DUP	P123470D221910B	DUP	3050B	6020A	III
10-Jul-2013	SL-572-SA8-SB-4.0-5.0MSD	P123470M220851	MSD	3050B	6010C	III
10-Jul-2013	SL-572-SA8-SB-4.0-5.0MSD	P123470M221915A	MSD	3050B	6020A	III
10-Jul-2013	SL-572-SA8-SB-4.0-5.0MSD	P123470M221915B	MSD	3050B	6020A	III
10-Jul-2013	SL-572-SA8-SB-4.0-5.0MS	P123470R220847	MS	3050B	6010C	III
10-Jul-2013	SL-572-SA8-SB-4.0-5.0MS	P123470R221912A	MS	3050B	6020A	III
10-Jul-2013	SL-572-SA8-SB-4.0-5.0MS	P123470R221912B	MS	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
10-Jul-2013	SL-572-SA8-SB-9.0-10.0	7123471	N	3050B	6010C	III
10-Jul-2013	SL-572-SA8-SB-9.0-10.0	7123471	N	3050B	6020A	III
10-Jul-2013	SL-572-SA8-SB-9.0-10.0	7123471	N	3546	8015M	III
10-Jul-2013	SL-572-SA8-SB-9.0-10.0	7123471	N	3546	8082A	III
10-Jul-2013	SL-572-SA8-SB-9.0-10.0	7123471	N	3546	8270D SIM	III
10-Jul-2013	SL-572-SA8-SB-9.0-10.0	7123471	N	5035A	8015M	III
10-Jul-2013	SL-572-SA8-SB-9.0-10.0	7123471	N	METHOD	1613B	III
10-Jul-2013	SL-572-SA8-SB-9.0-10.0	7123471	N	METHOD	7471B	III
10-Jul-2013	SL-572-SA8-SB-14.0-15.0	7123472	N	3050B	6010C	III
10-Jul-2013	SL-572-SA8-SB-14.0-15.0	7123472	N	3050B	6020A	III
10-Jul-2013	SL-572-SA8-SB-14.0-15.0	7123472	N	3546	8015M	III
10-Jul-2013	SL-572-SA8-SB-14.0-15.0	7123472	N	3546	8082A	III
10-Jul-2013	SL-572-SA8-SB-14.0-15.0	7123472	N	3546	8270D SIM	III
10-Jul-2013	SL-572-SA8-SB-14.0-15.0	7123472	N	5035A	8015M	III
10-Jul-2013	SL-572-SA8-SB-14.0-15.0	7123472	N	METHOD	7471B	III
10-Jul-2013	SL-572-SA8-SB-18.5-19.5	7123473	N	3050B	6010C	III
10-Jul-2013	SL-572-SA8-SB-18.5-19.5	7123473	N	3050B	6020A	III
10-Jul-2013	SL-572-SA8-SB-18.5-19.5	7123473	N	3546	8015M	III
10-Jul-2013	SL-572-SA8-SB-18.5-19.5	7123473	N	3546	8082A	III
10-Jul-2013	SL-572-SA8-SB-18.5-19.5	7123473	N	3546	8270D SIM	III
10-Jul-2013	SL-572-SA8-SB-18.5-19.5	7123473	N	5035A	8015M	III
10-Jul-2013	SL-572-SA8-SB-18.5-19.5	7123473	N	5035A	8260B	III
10-Jul-2013	SL-572-SA8-SB-18.5-19.5	7123473	N	METHOD	7471B	III
10-Jul-2013	SL-571-SA8-SB-0.0-0.5	7123478	N	3050B	6010C	III
10-Jul-2013	SL-571-SA8-SB-0.0-0.5	7123478	N	3050B	6020A	III
10-Jul-2013	SL-571-SA8-SB-0.0-0.5	7123478	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
10-Jul-2013	SL-571-SA8-SB-0.0-0.5	7123478	N	3546	8082A	III
10-Jul-2013	SL-571-SA8-SB-0.0-0.5	7123478	N	3546	8270D SIM	III
10-Jul-2013	SL-571-SA8-SB-0.0-0.5	7123478	N	METHOD	1613B	III
10-Jul-2013	SL-571-SA8-SB-0.0-0.5	7123478	N	METHOD	7471B	III
10-Jul-2013	SL-571-SA8-SB-6.5-7.5	7123479	N	3050B	6010C	III
10-Jul-2013	SL-571-SA8-SB-6.5-7.5	7123479	N	3050B	6020A	III
10-Jul-2013	SL-571-SA8-SB-6.5-7.5	7123479	N	3546	8015M	III
10-Jul-2013	SL-571-SA8-SB-6.5-7.5	7123479	N	3546	8082A	III
10-Jul-2013	SL-571-SA8-SB-6.5-7.5	7123479	N	3546	8270D SIM	III
10-Jul-2013	SL-571-SA8-SB-6.5-7.5	7123479	N	5035A	8015M	III
10-Jul-2013	SL-571-SA8-SB-6.5-7.5	7123479	N	METHOD	1613B	III
10-Jul-2013	SL-571-SA8-SB-6.5-7.5	7123479	N	METHOD	7471B	III
10-Jul-2013	EB1-071013	7123467	EB	3005A	6010C	III
10-Jul-2013	EB1-071013	7123467	EB	3510C	8015M	III
10-Jul-2013	EB1-071013	7123467	EB	3510C	8081B	III
10-Jul-2013	EB1-071013	7123467	EB	3510C	8082A	III
10-Jul-2013	EB1-071013	7123467	EB	3510C	8270D SIM	III
10-Jul-2013	EB1-071013	7123467	EB	5030B	8015M	III
10-Jul-2013	EB1-071013	7123467	EB	5030B	8260B	III
10-Jul-2013	EB1-071013	7123467	EB	Gen Prep	6850	III
10-Jul-2013	EB1-071013	7123467	EB	M3010A	6020A	III
10-Jul-2013	EB1-071013	7123467	EB	METHOD	1613B	III
10-Jul-2013	EB1-071013	7123467	EB	METHOD	7470A	III
10-Jul-2013	EB1-071013	7123467	EB	METHOD	8151A	III
10-Jul-2013	EB1-071013MSD	P123467M241827A	MSD	Gen Prep	6850	III
10-Jul-2013	EB1-071013MS	P123467R241814A	MS	Gen Prep	6850	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
10-Jul-2013	SL-571-SA8-SB-12.5-13.5	7123480	N	3050B	6010C	III
10-Jul-2013	SL-571-SA8-SB-12.5-13.5	7123480	N	3050B	6020A	III
10-Jul-2013	SL-571-SA8-SB-12.5-13.5	7123480	N	3546	8015M	III
10-Jul-2013	SL-571-SA8-SB-12.5-13.5	7123480	N	3546	8082A	III
10-Jul-2013	SL-571-SA8-SB-12.5-13.5	7123480	N	3546	8270D SIM	III
10-Jul-2013	SL-571-SA8-SB-12.5-13.5	7123480	N	5035A	8015M	III
10-Jul-2013	SL-571-SA8-SB-12.5-13.5	7123480	N	METHOD	1613B	III
10-Jul-2013	SL-571-SA8-SB-12.5-13.5	7123480	N	METHOD	7471B	III
10-Jul-2013	EB2-071013	7123468	EB	3005A	6010C	III
10-Jul-2013	EB2-071013	7123468	EB	3510C	8015M	III
10-Jul-2013	EB2-071013	7123468	EB	3510C	8081B	III
10-Jul-2013	EB2-071013	7123468	EB	3510C	8082A	III
10-Jul-2013	EB2-071013	7123468	EB	3510C	8270D SIM	III
10-Jul-2013	EB2-071013	7123468	EB	5030B	8015M	III
10-Jul-2013	EB2-071013	7123468	EB	5030B	8260B	III
10-Jul-2013	EB2-071013	7123468	EB	Gen Prep	6850	III
10-Jul-2013	EB2-071013	7123468	EB	M3010A	6020A	III
10-Jul-2013	EB2-071013	7123468	EB	METHOD	1613B	III
10-Jul-2013	EB2-071013	7123468	EB	METHOD	7470A	III
10-Jul-2013	EB2-071013	7123468	EB	METHOD	8151A	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: PH064 **Laboratory: LL**

EDD Filename: PrepPH064 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix: AQ**

Sample ID: EB1-071013 *Collected:* 7/10/2013 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
COPPER	0.0031	J	0.0027	MDL	0.0200	PQL	mg/L	U	B, B
MOLYBDENUM	0.0035	J	0.0017	MDL	0.0200	PQL	mg/L	J	Z

Sample ID: EB2-071013 *Collected:* 7/10/2013 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
COPPER	0.0030	J	0.0027	MDL	0.0200	PQL	mg/L	U	B, B

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-571-SA8-SB-0.0-0.5 *Collected:* 7/10/2013 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	4.49	U	0.831	MDL	4.49	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.524	J	0.0752	MDL	1.12	PQL	mg/Kg	J	Z
BORON	5.51	J	0.943	MDL	11.2	PQL	mg/Kg	J	Z
CADMIUM	0.407	J	0.0853	MDL	1.12	PQL	mg/Kg	J	Z
MOLYBDENUM	0.611	J	0.191	MDL	2.25	PQL	mg/Kg	U	F, F
PHOSPHORUS	361		3.24	MDL	11.2	PQL	mg/Kg	J	Q
POTASSIUM	2800		9.36	MDL	112	PQL	mg/Kg	J	Q
TIN	2.79	J	0.247	MDL	11.2	PQL	mg/Kg	U	B

Sample ID: SL-571-SA8-SB-12.5-13.5 *Collected:* 7/10/2013 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	4.20	U	0.778	MDL	4.20	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.525	J	0.0704	MDL	1.05	PQL	mg/Kg	J	Z
BORON	3.81	J	0.883	MDL	10.5	PQL	mg/Kg	J	Z
CADMIUM	0.314	J	0.0799	MDL	1.05	PQL	mg/Kg	J	Z
MOLYBDENUM	0.200	J	0.179	MDL	2.10	PQL	mg/Kg	U	F, F
PHOSPHORUS	447		3.04	MDL	10.5	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: PH064 **Laboratory: LL**

EDD Filename: PrepPH064 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-571-SA8-SB-12.5-13.5 *Collected:* 7/10/2013 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
POTASSIUM	3560		8.76	MDL	105	PQL	mg/Kg	J	Q
TIN	2.93	J	0.231	MDL	10.5	PQL	mg/Kg	U	B
Zirconium	4.13	J	0.883	MDL	5.25	PQL	mg/Kg	J	Z

Sample ID: SL-571-SA8-SB-6.5-7.5 *Collected:* 7/10/2013 2:50:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.31	U	0.797	MDL	4.31	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.590	J	0.0722	MDL	1.08	PQL	mg/Kg	J	Z
BORON	4.64	J	0.905	MDL	10.8	PQL	mg/Kg	J	Z
CADMIUM	0.288	J	0.0819	MDL	1.08	PQL	mg/Kg	J	Z
MOLYBDENUM	0.538	J	0.183	MDL	2.16	PQL	mg/Kg	U	F, F
PHOSPHORUS	383		3.11	MDL	10.8	PQL	mg/Kg	J	Q
POTASSIUM	3240		8.99	MDL	108	PQL	mg/Kg	J	Q
TIN	2.96	J	0.237	MDL	10.8	PQL	mg/Kg	U	B
Zirconium	4.77	J	0.905	MDL	5.39	PQL	mg/Kg	J	Z

Sample ID: SL-572-SA8-SB-0.0-0.5 *Collected:* 7/10/2013 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	0.944	J	0.863	MDL	4.66	PQL	mg/Kg	J	Z, Q
ARSENIC	4.37	J	0.816	MDL	4.66	PQL	mg/Kg	J	Z
BERYLLIUM	1.03	J	0.0781	MDL	1.17	PQL	mg/Kg	J	Z
BORON	9.52	J	0.979	MDL	11.7	PQL	mg/Kg	J	Z
CADMIUM	0.422	J	0.0886	MDL	1.17	PQL	mg/Kg	J	Z
MOLYBDENUM	0.516	J	0.198	MDL	2.33	PQL	mg/Kg	U	F, F
PHOSPHORUS	213		3.37	MDL	11.7	PQL	mg/Kg	J	Q
POTASSIUM	4060		9.72	MDL	117	PQL	mg/Kg	J	Q
TIN	3.45	J	0.256	MDL	11.7	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: PH064 **Laboratory: LL**

EDD Filename: PrepPH064 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-572-SA8-SB-14.0-15.0 *Collected:* 7/10/2013 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	4.37	U	0.808	MDL	4.37	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.643	J	0.0731	MDL	1.09	PQL	mg/Kg	J	Z
BORON	5.60	J	0.917	MDL	10.9	PQL	mg/Kg	J	Z
CADMIUM	0.400	J	0.0830	MDL	1.09	PQL	mg/Kg	J	Z
MOLYBDENUM	0.224	J	0.186	MDL	2.18	PQL	mg/Kg	U	F, F
PHOSPHORUS	401		3.15	MDL	10.9	PQL	mg/Kg	J	Q
POTASSIUM	2980		9.10	MDL	109	PQL	mg/Kg	J	Q
TIN	3.17	J	0.240	MDL	10.9	PQL	mg/Kg	U	B
Zirconium	5.43	J	0.917	MDL	5.46	PQL	mg/Kg	J	Z

Sample ID: SL-572-SA8-SB-18.5-19.5 *Collected:* 7/10/2013 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	4.38	U	0.811	MDL	4.38	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.584	J	0.0734	MDL	1.10	PQL	mg/Kg	J	Z
BORON	5.18	J	0.920	MDL	11.0	PQL	mg/Kg	J	Z
CADMIUM	0.289	J	0.0833	MDL	1.10	PQL	mg/Kg	J	Z
PHOSPHORUS	387		3.17	MDL	11.0	PQL	mg/Kg	J	Q
POTASSIUM	3020		9.14	MDL	110	PQL	mg/Kg	J	Q
TIN	3.07	J	0.241	MDL	11.0	PQL	mg/Kg	U	B
Zirconium	4.53	J	0.920	MDL	5.48	PQL	mg/Kg	J	Z

Sample ID: SL-572-SA8-SB-4.0-5.0 *Collected:* 7/10/2013 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	4.41	U	0.815	MDL	4.41	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.808	J	0.0738	MDL	1.10	PQL	mg/Kg	J	Z
BORON	7.40	J	0.926	MDL	11.0	PQL	mg/Kg	J	Z
CADMIUM	0.358	J	0.0838	MDL	1.10	PQL	mg/Kg	J	Z
MOLYBDENUM	0.346	J	0.187	MDL	2.20	PQL	mg/Kg	U	F, F
PHOSPHORUS	330		3.18	MDL	11.0	PQL	mg/Kg	J	Q
POTASSIUM	3660		9.19	MDL	110	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: PH064 **Laboratory: LL**

EDD Filename: PrepPH064 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-572-SA8-SB-4.0-5.0 *Collected:* 7/10/2013 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
TIN	3.29	J	0.242	MDL	11.0	PQL	mg/Kg	U	B

Sample ID: SL-572-SA8-SB-9.0-10.0 *Collected:* 7/10/2013 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	4.35	U	0.804	MDL	4.35	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.573	J	0.0728	MDL	1.09	PQL	mg/Kg	J	Z
BORON	5.77	J	0.913	MDL	10.9	PQL	mg/Kg	J	Z
CADMIUM	0.408	J	0.0826	MDL	1.09	PQL	mg/Kg	J	Z
MOLYBDENUM	0.211	J	0.185	MDL	2.17	PQL	mg/Kg	U	F, F
PHOSPHORUS	356		3.14	MDL	10.9	PQL	mg/Kg	J	Q
POTASSIUM	2860		9.06	MDL	109	PQL	mg/Kg	J	Q
TIN	2.92	J	0.239	MDL	10.9	PQL	mg/Kg	U	B
Zirconium	5.18	J	0.913	MDL	5.43	PQL	mg/Kg	J	Z

Sample ID: SL-573-SA8-SB-0.0-0.5 *Collected:* 7/10/2013 9:10:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	1.27	J	0.847	MDL	4.58	PQL	mg/Kg	J	Z, Q
ARSENIC	2.91	J	0.801	MDL	4.58	PQL	mg/Kg	J	Z
BERYLLIUM	0.583	J	0.0767	MDL	1.14	PQL	mg/Kg	J	Z
BORON	5.75	J	0.962	MDL	11.4	PQL	mg/Kg	J	Z
CADMIUM	0.688	J	0.0870	MDL	1.14	PQL	mg/Kg	J	Z
MOLYBDENUM	0.723	J	0.195	MDL	2.29	PQL	mg/Kg	U	F, F
PHOSPHORUS	767		3.31	MDL	11.4	PQL	mg/Kg	J	Q
POTASSIUM	3270		9.55	MDL	114	PQL	mg/Kg	J	Q
TIN	2.99	J	0.252	MDL	11.4	PQL	mg/Kg	U	B

Sample ID: SL-573-SA8-SB-4.0-5.0 *Collected:* 7/10/2013 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	0.812	MDL	4.39	PQL	mg/Kg	UJ	Q

* denotes a non-reportable result

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

Data Qualifier Summary

Lab Reporting Batch ID: PH064 **Laboratory: LL**

EDD Filename: PrepPH064 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-573-SA8-SB-4.0-5.0 *Collected:* 7/10/2013 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
BERYLLIUM	0.751	J	0.0735	MDL	1.10	PQL	mg/Kg	J	Z
BORON	6.38	J	0.922	MDL	11.0	PQL	mg/Kg	J	Z
CADMIUM	0.368	J	0.0834	MDL	1.10	PQL	mg/Kg	J	Z
MOLYBDENUM	0.285	J	0.186	MDL	2.19	PQL	mg/Kg	U	F, F
PHOSPHORUS	238		3.17	MDL	11.0	PQL	mg/Kg	J	Q
POTASSIUM	3020		9.15	MDL	110	PQL	mg/Kg	J	Q
TIN	3.08	J	0.241	MDL	11.0	PQL	mg/Kg	U	B

Sample ID: SL-573-SA8-SB-9.5-10.5 *Collected:* 7/10/2013 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	4.14	U	0.765	MDL	4.14	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.422	J	0.0693	MDL	1.03	PQL	mg/Kg	J	Z
BORON	3.25	J	0.869	MDL	10.3	PQL	mg/Kg	J	Z
CADMIUM	0.256	J	0.0786	MDL	1.03	PQL	mg/Kg	J	Z
MOLYBDENUM	0.194	J	0.176	MDL	2.07	PQL	mg/Kg	U	F, F
PHOSPHORUS	332		2.99	MDL	10.3	PQL	mg/Kg	J	Q
POTASSIUM	2700		8.62	MDL	103	PQL	mg/Kg	J	Q
TIN	2.70	J	0.227	MDL	10.3	PQL	mg/Kg	U	B
Zirconium	3.15	J	0.869	MDL	5.17	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-571-SA8-SB-0.0-0.5 *Collected:* 7/10/2013 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	0.0750	J	0.0292	MDL	0.225	PQL	mg/Kg	J	Z
STRONTIUM	62.8		0.0763	MDL	0.449	PQL	mg/Kg	J	E
THALLIUM	0.206	J	0.0337	MDL	0.225	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: PH064 **Laboratory: LL**

EDD Filename: PrepPH064 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-571-SA8-SB-12.5-13.5 *Collected:* 7/10/2013 3:05:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	31.4		0.0715	MDL	0.420	PQL	mg/Kg	J	E

Sample ID: SL-571-SA8-SB-6.5-7.5 *Collected:* 7/10/2013 2:50:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	26.3		0.0733	MDL	0.431	PQL	mg/Kg	J	E

Sample ID: SL-572-SA8-SB-0.0-0.5 *Collected:* 7/10/2013 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	0.0410	J	0.0303	MDL	0.233	PQL	mg/Kg	J	Z
STRONTIUM	47.1		0.0793	MDL	0.466	PQL	mg/Kg	J	E

Sample ID: SL-572-SA8-SB-14.0-15.0 *Collected:* 7/10/2013 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	0.0331	J	0.0284	MDL	0.218	PQL	mg/Kg	J	Z
STRONTIUM	34.8		0.0742	MDL	0.437	PQL	mg/Kg	J	E

Sample ID: SL-572-SA8-SB-18.5-19.5 *Collected:* 7/10/2013 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	0.0509	J	0.0285	MDL	0.219	PQL	mg/Kg	J	Z
STRONTIUM	33.2		0.0745	MDL	0.438	PQL	mg/Kg	J	E

Sample ID: SL-572-SA8-SB-4.0-5.0 *Collected:* 7/10/2013 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	0.0463	J	0.0287	MDL	0.220	PQL	mg/Kg	J	Z
STRONTIUM	42.4		0.0749	MDL	0.441	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: PH064 **Laboratory: LL**

EDD Filename: PrepPH064 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-572-SA8-SB-9.0-10.0 *Collected:* 7/10/2013 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
STRONTIUM	34.7		0.0739	MDL	0.435	PQL	mg/Kg	J	E

Sample ID: SL-573-SA8-SB-0.0-0.5 *Collected:* 7/10/2013 9:10:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	67.1		0.0778	MDL	0.458	PQL	mg/Kg	J	E
THALLIUM	0.181	J	0.0343	MDL	0.229	PQL	mg/Kg	J	Z

Sample ID: SL-573-SA8-SB-4.0-5.0 *Collected:* 7/10/2013 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	0.175	J	0.110	MDL	0.439	PQL	mg/Kg	J	Z

Sample ID: SL-573-SA8-SB-4.0-5.0 *Collected:* 7/10/2013 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	0.0576	J	0.0285	MDL	0.219	PQL	mg/Kg	J	Z
STRONTIUM	53.3		0.0746	MDL	0.439	PQL	mg/Kg	J	E

Sample ID: SL-573-SA8-SB-9.5-10.5 *Collected:* 7/10/2013 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	17.3		0.0703	MDL	0.414	PQL	mg/Kg	J	E

Method Category: SVOA

Method: 1613B **Matrix: AQ**

Sample ID: EB1-071013 *Collected:* 7/10/2013 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	0.309	JBQ	0.193	MDL	9.64	PQL	pg/L	U	B
1,2,3,4,6,7,8-HPCDF	0.282	JBQ	0.0837	MDL	9.64	PQL	pg/L	U	B
1,2,3,4,7,8,9-HPCDF	0.203	JBQ	0.0997	MDL	9.64	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: PH064 **Laboratory: LL**

EDD Filename: PrepPH064 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix: AQ**

Sample ID: EB1-071013 *Collected:* 7/10/2013 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
1,2,3,4,7,8-HxCDD	0.224	JBQ	0.159	MDL	9.64	PQL	pg/L	U	B
1,2,3,4,7,8-HXCDF	0.412	JBQ	0.0847	MDL	9.64	PQL	pg/L	U	B
1,2,3,6,7,8-HXCDD	0.241	JBQ	0.170	MDL	9.64	PQL	pg/L	U	B
1,2,3,6,7,8-HXCDF	0.201	JBQ	0.0855	MDL	9.64	PQL	pg/L	U	B
1,2,3,7,8,9-HXCDD	0.393	JBQ	0.164	MDL	9.64	PQL	pg/L	U	B
1,2,3,7,8,9-HXCDF	0.336	JB	0.0935	MDL	9.64	PQL	pg/L	U	B
1,2,3,7,8-PECDF	0.405	JBQ	0.152	MDL	9.64	PQL	pg/L	U	B
2,3,4,6,7,8-HXCDF	0.235	JBQ	0.0799	MDL	9.64	PQL	pg/L	U	B
OCDD	1.04	JBQ	0.187	MDL	19.3	PQL	pg/L	U	B
OCDF	0.838	JBQ	0.204	MDL	19.3	PQL	pg/L	U	B

Sample ID: EB2-071013 *Collected:* 7/10/2013 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	0.532	JB	0.200	MDL	10.2	PQL	pg/L	U	B
1,2,3,4,6,7,8-HPCDF	0.248	JBQ	0.0753	MDL	10.2	PQL	pg/L	U	B
1,2,3,4,7,8,9-HPCDF	0.333	JBQ	0.0903	MDL	10.2	PQL	pg/L	U	B
1,2,3,4,7,8-HXCDF	0.344	JB	0.0967	MDL	10.2	PQL	pg/L	U	B
1,2,3,6,7,8-HXCDD	0.375	JBQ	0.181	MDL	10.2	PQL	pg/L	U	B
1,2,3,6,7,8-HXCDF	0.187	JBQ	0.101	MDL	10.2	PQL	pg/L	U	B
1,2,3,7,8,9-HXCDF	0.410	JBQ	0.112	MDL	10.2	PQL	pg/L	U	B
1,2,3,7,8-PECDD	0.268	JQ	0.262	MDL	10.2	PQL	pg/L	J	Z
1,2,3,7,8-PECDF	0.450	JB	0.150	MDL	10.2	PQL	pg/L	U	B
2,3,4,6,7,8-HXCDF	0.206	JBQ	0.0930	MDL	10.2	PQL	pg/L	U	B
2,3,4,7,8-PECDF	0.209	JBQ	0.132	MDL	10.2	PQL	pg/L	U	B
OCDD	0.674	JBQ	0.174	MDL	20.4	PQL	pg/L	U	B
OCDF	0.599	JB	0.240	MDL	20.4	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: PH064 **Laboratory: LL**

EDD Filename: PrepPH064 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-571-SA8-SB-0.0-0.5 *Collected:* 7/10/2013 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	2.93	JB	0.0220	MDL	5.60	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.425	JB	0.0170	MDL	5.60	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0682	JBQ	0.0209	MDL	5.60	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0645	JBQ	0.0230	MDL	5.60	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.135	JBQ	0.0163	MDL	5.60	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.184	JB	0.0246	MDL	5.60	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.108	JB	0.0158	MDL	5.60	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.141	JBQ	0.0237	MDL	5.60	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0961	JB	0.0167	MDL	5.60	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.141	JB	0.0222	MDL	5.60	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.335	JB	0.0204	MDL	5.60	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.0901	JB	0.0147	MDL	5.60	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.101	JBQ	0.0187	MDL	5.60	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.0577	JQ	0.0223	MDL	1.12	PQL	ng/Kg	J	Z
OCDF	0.728	JB	0.0197	MDL	11.2	PQL	ng/Kg	J	Z

Sample ID: SL-571-SA8-SB-12.5-13.5 *Collected:* 7/10/2013 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	0.616	JB	0.0202	MDL	5.37	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.130	JB	0.00656	MDL	5.37	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0463	JB	0.00984	MDL	5.37	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0378	JB	0.0158	MDL	5.37	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0558	JBQ	0.00929	MDL	5.37	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0630	JBQ	0.0167	MDL	5.37	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0439	JBQ	0.00907	MDL	5.37	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0685	JBQ	0.0165	MDL	5.37	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0800	JBQ	0.0105	MDL	5.37	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.0920	JBQ	0.0128	MDL	5.37	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0367	JBQ	0.00885	MDL	5.37	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0530	JBQ	0.0127	MDL	5.37	PQL	ng/Kg	U	B
2,3,7,8-TCDD	0.0410	JBQ	0.0210	MDL	1.07	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: PH064 **Laboratory: LL**

EDD Filename: PrepPH064 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-571-SA8-SB-12.5-13.5 *Collected:* 7/10/2013 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
2,3,7,8-TCDF	0.0241	JQ	0.0170	MDL	1.07	PQL	ng/Kg	J	Z
OCDD	8.87	JB	0.0183	MDL	10.7	PQL	ng/Kg	J	Z
OCDF	0.367	JB	0.0179	MDL	10.7	PQL	ng/Kg	U	B

Sample ID: SL-571-SA8-SB-6.5-7.5 *Collected:* 7/10/2013 2:50:00 *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	0.296	JB	0.0216	MDL	5.32	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.109	JBQ	0.00744	MDL	5.32	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0437	JB	0.0134	MDL	5.32	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0624	JB	0.0164	MDL	5.32	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.131	JB	0.0107	MDL	5.32	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0627	JBQ	0.0176	MDL	5.32	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.101	JBQ	0.0101	MDL	5.32	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0682	JB	0.0168	MDL	5.32	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0970	JB	0.0131	MDL	5.32	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.118	JBQ	0.0214	MDL	5.32	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.234	JB	0.0138	MDL	5.32	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0596	JB	0.0101	MDL	5.32	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.155	JBQ	0.0133	MDL	5.32	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.0441	JBQ	0.0198	MDL	1.06	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.0589	JQ	0.0169	MDL	1.06	PQL	ng/Kg	J	Z
OCDD	3.66	JB	0.0273	MDL	10.6	PQL	ng/Kg	J	Z
OCDF	0.218	JB	0.0336	MDL	10.6	PQL	ng/Kg	U	B

Sample ID: SL-572-SA8-SB-0.0-0.5 *Collected:* 7/10/2013 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	2.58	JB	0.0279	MDL	5.82	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.362	JB	0.0108	MDL	5.82	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0525	JBQ	0.0163	MDL	5.82	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0392	JB	0.0247	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: PH064 **Laboratory: LL**

EDD Filename: PrepPH064 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-572-SA8-SB-0.0-0.5 *Collected:* 7/10/2013 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
1,2,3,4,7,8-HXCDF	0.0721	JBQ	0.0185	MDL	5.82	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.195	JB	0.0257	MDL	5.82	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0638	JB	0.0170	MDL	5.82	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.169	JB	0.0251	MDL	5.82	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.162	JBQ	0.0209	MDL	5.82	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0684	JBQ	0.0264	MDL	5.82	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.119	JB	0.0256	MDL	5.82	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0548	JBQ	0.0174	MDL	5.82	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0542	JBQ	0.0233	MDL	5.82	PQL	ng/Kg	U	B
OCDF	0.630	JB	0.0291	MDL	11.6	PQL	ng/Kg	J	Z

Sample ID: SL-572-SA8-SB-4.0-5.0 *Collected:* 7/10/2013 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-HPCDD	0.895	JB	0.0217	MDL	5.53	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.139	JB	0.00988	MDL	5.53	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0284	JB	0.0116	MDL	5.53	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0307	JBQ	0.0198	MDL	5.53	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0499	JBQ	0.0117	MDL	5.53	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0747	JBQ	0.0208	MDL	5.53	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0394	JBQ	0.0115	MDL	5.53	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0450	JBQ	0.0202	MDL	5.53	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0285	JBQ	0.0121	MDL	5.53	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.0477	JB	0.0177	MDL	5.53	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0382	JBQ	0.0108	MDL	5.53	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0424	JB	0.0157	MDL	5.53	PQL	ng/Kg	U	B
2,3,7,8-TCDD	0.0261	JBQ	0.0235	MDL	1.11	PQL	ng/Kg	U	B
OCDD	6.56	JB	0.0242	MDL	11.1	PQL	ng/Kg	J	Z
OCDF	0.204	JB	0.0213	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: PH064 **Laboratory: LL**

EDD Filename: PrepPH064 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-572-SA8-SB-9.0-10.0 *Collected:* 7/10/2013 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	1.04	JB	0.0187	MDL	5.34	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.208	JBQ	0.00931	MDL	5.34	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0291	JB	0.0118	MDL	5.34	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0450	JBQ	0.00998	MDL	5.34	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0572	JB	0.0177	MDL	5.34	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0214	JBQ	0.00965	MDL	5.34	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0400	JBQ	0.0171	MDL	5.34	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0345	JBQ	0.00998	MDL	5.34	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.0612	JBQ	0.0151	MDL	5.34	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0482	JBQ	0.00931	MDL	5.34	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0273	JBQ	0.0134	MDL	5.34	PQL	ng/Kg	U	B
OCDD	8.94	JB	0.0220	MDL	10.7	PQL	ng/Kg	J	Z
OCDF	0.332	JBQ	0.0183	MDL	10.7	PQL	ng/Kg	U	B

Sample ID: SL-573-SA8-SB-0.0-0.5 *Collected:* 7/10/2013 9:10:00 *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	5.29	JB	0.0320	MDL	5.80	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.492	JBQ	0.0173	MDL	5.80	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0658	JBQ	0.0248	MDL	5.80	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0521	JBQ	0.0158	MDL	5.80	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.258	JBQ	0.0296	MDL	5.80	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0576	JB	0.0156	MDL	5.80	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.234	JB	0.0276	MDL	5.80	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.247	JB	0.0196	MDL	5.80	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.0552	JBQ	0.0287	MDL	5.80	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.117	JBQ	0.0185	MDL	5.80	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0778	JB	0.0146	MDL	5.80	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0381	JBQ	0.0169	MDL	5.80	PQL	ng/Kg	U	B
OCDF	1.04	JB	0.0379	MDL	11.6	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: PH064 **Laboratory: LL**

EDD Filename: PrepPH064 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-573-SA8-SB-4.0-5.0 *Collected:* 7/10/2013 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	0.682	JB	0.0235	MDL	5.51	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.0894	JBQ	0.0108	MDL	5.51	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0197	JBQ	0.0124	MDL	5.51	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0315	JBQ	0.0200	MDL	5.51	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0426	JBQ	0.0111	MDL	5.51	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0450	JB	0.0210	MDL	5.51	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0394	JBQ	0.0105	MDL	5.51	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0557	JBQ	0.0200	MDL	5.51	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0595	JBQ	0.0112	MDL	5.51	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0392	JBQ	0.0233	MDL	5.51	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.0614	JBQ	0.0181	MDL	5.51	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0497	JB	0.0104	MDL	5.51	PQL	ng/Kg	U	B
OCDD	5.37	JB	0.0333	MDL	11.0	PQL	ng/Kg	J	Z
OCDF	0.259	JBQ	0.0221	MDL	11.0	PQL	ng/Kg	U	B

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: SL-571-SA8-SB-12.5-13.5 *Collected:* 7/10/2013 3:05:00 *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)	5.1	J	2.2	MDL	5.4	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 8151A **Matrix: AQ**

Sample ID: EB2-071013 *Collected:* 7/10/2013 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
2,4,5-T	0.051	U	0.015	MDL	0.051	PQL	ug/L	UJ	H
2,4,5-TP (Silvex)	0.051	U	0.010	MDL	0.051	PQL	ug/L	UJ	H
2,4-D	0.51	U	0.16	MDL	0.51	PQL	ug/L	UJ	H

* denotes a non-reportable result

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

Data Qualifier Summary

Lab Reporting Batch ID: PH064 **Laboratory: LL**

EDD Filename: PrepPH064 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

Method: 8151A **Matrix: AQ**

Sample ID: EB2-071013 *Collected:* 7/10/2013 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
2,4-DB	1.0	U	0.31	MDL	1.0	PQL	ug/L	UJ	H
DALAPON	1.3	U	0.26	MDL	1.3	PQL	ug/L	UJ	H
DICAMBA	0.31	U	0.082	MDL	0.31	PQL	ug/L	UJ	H
DICHLOROPROP	0.51	U	0.16	MDL	0.51	PQL	ug/L	UJ	H
DINOSEB	0.51	U	0.12	MDL	0.51	PQL	ug/L	UJ	H
MCPA	210	U	51	MDL	210	PQL	ug/L	UJ	H
MCPP	210	U	51	MDL	210	PQL	ug/L	UJ	H

Method Category: SVOA

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

Sample ID: EB1-071013 *Collected:* 7/10/2013 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
BIS(2-ETHYLHEXYL)PHTHALATE	0.43	J	0.052	MDL	1.0	PQL	ug/L	U	B
NAPHTHALENE	0.034	J	0.031	MDL	0.052	PQL	ug/L	J	Z

Sample ID: EB2-071013 *Collected:* 7/10/2013 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
NAPHTHALENE	0.032	J	0.030	MDL	0.051	PQL	ug/L	J	Z

Method Category: SVOA

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

Sample ID: SL-571-SA8-SB-0.0-0.5 *Collected:* 7/10/2013 2:15:00 *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	7.6	MDL	19	PQL	ug/Kg	J	Z
CHRYSENE	13	J	3.8	MDL	19	PQL	ug/Kg	J	Z
PHENANTHRENE	7.8	J	7.6	MDL	19	PQL	ug/Kg	J	Z
PYRENE	8.8	J	7.6	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: PH064 **Laboratory: LL**

EDD Filename: PrepPH064 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

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

Sample ID: SL-571-SA8-SB-12.5-13.5 *Collected:* 7/10/2013 3:05:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHRYSENE	0.70	J	0.36	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: SL-571-SA8-SB-6.5-7.5 *Collected:* 7/10/2013 2:50:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1-METHYLNAPHTHALENE	1.4	J	0.73	MDL	1.8	PQL	ug/Kg	J	Z
2-METHYLNAPHTHALENE	1.3	J	0.73	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(B)FLUORANTHENE	1.1	J	0.73	MDL	1.8	PQL	ug/Kg	J	Z
CHRYSENE	1.1	J	0.37	MDL	1.8	PQL	ug/Kg	J	Z
NAPHTHALENE	0.93	J	0.73	MDL	1.8	PQL	ug/Kg	J	Z
PHENANTHRENE	1.4	J	0.73	MDL	1.8	PQL	ug/Kg	J	Z
PYRENE	0.85	J	0.73	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: SL-572-SA8-SB-0.0-0.5 *Collected:* 7/10/2013 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
2-METHYLNAPHTHALENE	0.80	J	0.79	MDL	2.0	PQL	ug/Kg	J	Z
ANTHRACENE	0.87	J	0.39	MDL	2.0	PQL	ug/Kg	J	Z
BENZO(E)PYRENE	5.2	J	3.9	MDL	20	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	17	J	7.1	MDL	21	PQL	ug/Kg	J	Z
DIBENZO(A,H)ANTHRACENE	1.0	J	0.79	MDL	2.0	PQL	ug/Kg	J	Z
Di-n-octylphthalate	12	J	7.1	MDL	21	PQL	ug/Kg	J	Z

Sample ID: SL-572-SA8-SB-4.0-5.0 *Collected:* 7/10/2013 11:10:00 *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	16	J	7.5	MDL	19	PQL	ug/Kg	J	Z
CHRYSENE	16	J	3.8	MDL	19	PQL	ug/Kg	J	Z
FLUORANTHENE	11	J	7.5	MDL	19	PQL	ug/Kg	J	Z
PHENANTHRENE	14	J	7.5	MDL	19	PQL	ug/Kg	J	Z
PYRENE	13	J	7.5	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: PH064 **Laboratory: LL**

EDD Filename: PrepPH064 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: SVOA

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

Sample ID: SL-572-SA8-SB-9.0-10.0 *Collected:* 7/10/2013 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
ANTHRACENE	0.39	J	0.37	MDL	1.8	PQL	ug/Kg	J	Z
INDENO(1,2,3-CD)PYRENE	1.3	J	0.74	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: SL-573-SA8-SB-0.0-0.5 *Collected:* 7/10/2013 9:10:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)ANTHRACENE	13	J	7.9	MDL	20	PQL	ug/Kg	J	Z
BENZO(A)PYRENE	16	J	7.9	MDL	20	PQL	ug/Kg	J	Z
BENZO(G,H,I)PERYLENE	11	J	7.9	MDL	20	PQL	ug/Kg	J	Z
BENZO(K)FLUORANTHENE	11	J	7.9	MDL	20	PQL	ug/Kg	J	Z
PHENANTHRENE	19	J	7.9	MDL	20	PQL	ug/Kg	J	Z

Sample ID: SL-573-SA8-SB-4.0-5.0 *Collected:* 7/10/2013 9:30:00 *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	16	J	7.5	MDL	19	PQL	ug/Kg	J	Z
CHRYSENE	15	J	3.7	MDL	19	PQL	ug/Kg	J	Z
PHENANTHRENE	9.8	J	7.5	MDL	19	PQL	ug/Kg	J	Z
PYRENE	8.8	J	7.5	MDL	19	PQL	ug/Kg	J	Z

Sample ID: SL-573-SA8-SB-9.5-10.5 *Collected:* 7/10/2013 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	1.0	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(G,H,I)PERYLENE	1.0	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(K)FLUORANTHENE	0.92	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: PH064 **Laboratory: LL**

EDD Filename: PrepPH064 **eQAPP Name: CDM_SSFL_130808_Lan**

Method Category: VOA

Method: 8260B **Matrix: AQ**

Sample ID: EB1-071013 *Collected:* 7/10/2013 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	8	J	6	MDL	20	PQL	ug/L	J	Z

Sample ID: EB2-071013 *Collected:* 7/10/2013 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
ACETONE	7	J	6	MDL	20	PQL	ug/L	J	Z

Method Category: VOA

Method: 8260B **Matrix: SO**

Sample ID: SL-572-SA8-SB-18.5-19.5 *Collected:* 7/10/2013 12:00:00 *Analysis Type:* RES *Dilution:* 0.93

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACETONE	9	J	7	MDL	21	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: PH064 **Laboratory: LL**

EDD Filename: PrepPH064 **eQAPP Name: CDM_SSFL_130808_Lan**

Reason Code Legend

Reason Code	*Description*
B	Calibration Blank Contamination
B	Method Blank Contamination
E	Laboratory Duplicate Precision
E	Matrix Spike Precision
F	Equipment Blank Contamination
F	Field Blank Contamination
H	Sampling to Extraction 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
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

PH064

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: PH064 **Laboratory: LL**
EDD Filename: PH064_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 8151A **Preparation Method: 3546**
Matrix: AQ

Sample ID	*Type*	*Actual*	*Criteria*	*Units*	*Flag*
EB2-071013 (RES)	Sampling To Extraction	8.00	7.00	DAYS	J(all detects) UJ(all non-detects)

Method Blank Outlier Report

Lab Reporting Batch ID: PH064 **Laboratory: LL**

EDD Filename: PH064_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	EB1-071013
		1,2,3,4,6,7,8-HPCDF	0.413 pg/L	EB2-071013
		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
EB1-071013(RES)	1,2,3,4,6,7,8-HPCDD	0.309 pg/L	0.309U pg/L
EB1-071013(RES)	1,2,3,4,6,7,8-HPCDF	0.282 pg/L	0.282U pg/L
EB1-071013(RES)	1,2,3,4,7,8,9-HPCDF	0.203 pg/L	0.203U pg/L
EB1-071013(RES)	1,2,3,4,7,8-HxCDD	0.224 pg/L	0.224U pg/L
EB1-071013(RES)	1,2,3,4,7,8-HXCDF	0.412 pg/L	0.412U pg/L
EB1-071013(RES)	1,2,3,6,7,8-HXCDD	0.241 pg/L	0.241U pg/L
EB1-071013(RES)	1,2,3,6,7,8-HXCDF	0.201 pg/L	0.201U pg/L
EB1-071013(RES)	1,2,3,7,8,9-HXCDD	0.393 pg/L	0.393U pg/L
EB1-071013(RES)	1,2,3,7,8,9-HXCDF	0.336 pg/L	0.336U pg/L
EB1-071013(RES)	1,2,3,7,8-PECDF	0.405 pg/L	0.405U pg/L
EB1-071013(RES)	2,3,4,6,7,8-HXCDF	0.235 pg/L	0.235U pg/L
EB1-071013(RES)	OCDD	1.04 pg/L	1.04U pg/L
EB1-071013(RES)	OCDF	0.838 pg/L	0.838U pg/L
EB2-071013(RES)	1,2,3,4,6,7,8-HPCDD	0.532 pg/L	0.532U pg/L
EB2-071013(RES)	1,2,3,4,6,7,8-HPCDF	0.248 pg/L	0.248U pg/L
EB2-071013(RES)	1,2,3,4,7,8,9-HPCDF	0.333 pg/L	0.333U pg/L
EB2-071013(RES)	1,2,3,4,7,8-HXCDF	0.344 pg/L	0.344U pg/L
EB2-071013(RES)	1,2,3,6,7,8-HXCDD	0.375 pg/L	0.375U pg/L
EB2-071013(RES)	1,2,3,6,7,8-HXCDF	0.187 pg/L	0.187U pg/L
EB2-071013(RES)	1,2,3,7,8,9-HXCDF	0.410 pg/L	0.410U pg/L
EB2-071013(RES)	1,2,3,7,8-PECDF	0.450 pg/L	0.450U pg/L
EB2-071013(RES)	2,3,4,6,7,8-HXCDF	0.206 pg/L	0.206U pg/L
EB2-071013(RES)	2,3,4,7,8-PECDF	0.209 pg/L	0.209U pg/L
EB2-071013(RES)	OCDD	0.674 pg/L	0.674U pg/L
EB2-071013(RES)	OCDF	0.599 pg/L	0.599U pg/L

Method Blank Outlier Report

Lab Reporting Batch ID: PH064 **Laboratory: LL**

EDD Filename: PH064_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK1960B371832	7/16/2013 6:32:00 PM	1,2,3,4,6,7,8-HPCDD	0.0478 ng/Kg	SL-571-SA8-SB-0.0-0.5
		1,2,3,4,6,7,8-HPCDF	0.0258 ng/Kg	SL-571-SA8-SB-12.5-13.5
		1,2,3,4,7,8,9-HPCDF	0.0609 ng/Kg	SL-571-SA8-SB-6.5-7.5
		1,2,3,4,7,8-HxCDD	0.0220 ng/Kg	SL-572-SA8-SB-0.0-0.5
		1,2,3,4,7,8-HXCDF	0.0412 ng/Kg	SL-572-SA8-SB-4.0-5.0
		1,2,3,6,7,8-HXCDD	0.0258 ng/Kg	SL-572-SA8-SB-9.0-10.0
		1,2,3,6,7,8-HXCDF	0.0216 ng/Kg	SL-573-SA8-SB-0.0-0.5
		1,2,3,7,8,9-HXCDD	0.0474 ng/Kg	SL-573-SA8-SB-4.0-5.0
		1,2,3,7,8,9-HXCDF	0.0394 ng/Kg	
		1,2,3,7,8-PECDD	0.0613 ng/Kg	
		1,2,3,7,8-PECDF	0.0646 ng/Kg	
		2,3,4,6,7,8-HXCDF	0.0356 ng/Kg	
		2,3,4,7,8-PECDF	0.0232 ng/Kg	
		2,3,7,8-TCDD	0.0400 ng/Kg	
		OCDD	0.263 ng/Kg	
		OCDF	0.106 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-571-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0682 ng/Kg	0.0682U ng/Kg
SL-571-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.0645 ng/Kg	0.0645U ng/Kg
SL-571-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.135 ng/Kg	0.135U ng/Kg
SL-571-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.108 ng/Kg	0.108U ng/Kg
SL-571-SA8-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDD	0.141 ng/Kg	0.141U ng/Kg
SL-571-SA8-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.0961 ng/Kg	0.0961U ng/Kg
SL-571-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.141 ng/Kg	0.141U ng/Kg
SL-571-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0901 ng/Kg	0.0901U ng/Kg
SL-571-SA8-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.101 ng/Kg	0.101U ng/Kg
SL-571-SA8-SB-12.5-13.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0463 ng/Kg	0.0463U ng/Kg
SL-571-SA8-SB-12.5-13.5(RES)	1,2,3,4,7,8-HxCDD	0.0378 ng/Kg	0.0378U ng/Kg
SL-571-SA8-SB-12.5-13.5(RES)	1,2,3,4,7,8-HXCDF	0.0558 ng/Kg	0.0558U ng/Kg
SL-571-SA8-SB-12.5-13.5(RES)	1,2,3,6,7,8-HXCDD	0.0630 ng/Kg	0.0630U ng/Kg
SL-571-SA8-SB-12.5-13.5(RES)	1,2,3,6,7,8-HXCDF	0.0439 ng/Kg	0.0439U ng/Kg
SL-571-SA8-SB-12.5-13.5(RES)	1,2,3,7,8,9-HXCDD	0.0685 ng/Kg	0.0685U ng/Kg
SL-571-SA8-SB-12.5-13.5(RES)	1,2,3,7,8,9-HXCDF	0.0800 ng/Kg	0.0800U ng/Kg
SL-571-SA8-SB-12.5-13.5(RES)	1,2,3,7,8-PECDF	0.0920 ng/Kg	0.0920U ng/Kg
SL-571-SA8-SB-12.5-13.5(RES)	2,3,4,6,7,8-HXCDF	0.0367 ng/Kg	0.0367U ng/Kg
SL-571-SA8-SB-12.5-13.5(RES)	2,3,4,7,8-PECDF	0.0530 ng/Kg	0.0530U ng/Kg
SL-571-SA8-SB-12.5-13.5(RES)	2,3,7,8-TCDD	0.0410 ng/Kg	0.0410U ng/Kg
SL-571-SA8-SB-12.5-13.5(RES)	OCDF	0.367 ng/Kg	0.367U ng/Kg
SL-571-SA8-SB-6.5-7.5(RES)	1,2,3,4,6,7,8-HPCDF	0.109 ng/Kg	0.109U ng/Kg
SL-571-SA8-SB-6.5-7.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0437 ng/Kg	0.0437U ng/Kg
SL-571-SA8-SB-6.5-7.5(RES)	1,2,3,4,7,8-HxCDD	0.0624 ng/Kg	0.0624U ng/Kg
SL-571-SA8-SB-6.5-7.5(RES)	1,2,3,4,7,8-HXCDF	0.131 ng/Kg	0.131U ng/Kg
SL-571-SA8-SB-6.5-7.5(RES)	1,2,3,6,7,8-HXCDD	0.0627 ng/Kg	0.0627U ng/Kg
SL-571-SA8-SB-6.5-7.5(RES)	1,2,3,6,7,8-HXCDF	0.101 ng/Kg	0.101U ng/Kg
SL-571-SA8-SB-6.5-7.5(RES)	1,2,3,7,8,9-HXCDD	0.0682 ng/Kg	0.0682U ng/Kg
SL-571-SA8-SB-6.5-7.5(RES)	1,2,3,7,8,9-HXCDF	0.0970 ng/Kg	0.0970U ng/Kg

Method Blank Outlier Report

Lab Reporting Batch ID: PH064 **Laboratory: LL**

EDD Filename: PH064_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-571-SA8-SB-6.5-7.5(RES)	1,2,3,7,8-PECDD	0.118 ng/Kg	0.118U ng/Kg
SL-571-SA8-SB-6.5-7.5(RES)	1,2,3,7,8-PECDF	0.234 ng/Kg	0.234U ng/Kg
SL-571-SA8-SB-6.5-7.5(RES)	2,3,4,6,7,8-HXCDF	0.0596 ng/Kg	0.0596U ng/Kg
SL-571-SA8-SB-6.5-7.5(RES)	2,3,7,8-TCDD	0.0441 ng/Kg	0.0441U ng/Kg
SL-571-SA8-SB-6.5-7.5(RES)	OCDF	0.218 ng/Kg	0.218U ng/Kg
SL-572-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0525 ng/Kg	0.0525U ng/Kg
SL-572-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.0392 ng/Kg	0.0392U ng/Kg
SL-572-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.0721 ng/Kg	0.0721U ng/Kg
SL-572-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.0638 ng/Kg	0.0638U ng/Kg
SL-572-SA8-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDD	0.169 ng/Kg	0.169U ng/Kg
SL-572-SA8-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.162 ng/Kg	0.162U ng/Kg
SL-572-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.0684 ng/Kg	0.0684U ng/Kg
SL-572-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.119 ng/Kg	0.119U ng/Kg
SL-572-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0548 ng/Kg	0.0548U ng/Kg
SL-572-SA8-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.0542 ng/Kg	0.0542U ng/Kg
SL-572-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0284 ng/Kg	0.0284U ng/Kg
SL-572-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HxCDD	0.0307 ng/Kg	0.0307U ng/Kg
SL-572-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.0499 ng/Kg	0.0499U ng/Kg
SL-572-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDD	0.0747 ng/Kg	0.0747U ng/Kg
SL-572-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.0394 ng/Kg	0.0394U ng/Kg
SL-572-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDD	0.0450 ng/Kg	0.0450U ng/Kg
SL-572-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDF	0.0285 ng/Kg	0.0285U ng/Kg
SL-572-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.0477 ng/Kg	0.0477U ng/Kg
SL-572-SA8-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0382 ng/Kg	0.0382U ng/Kg
SL-572-SA8-SB-4.0-5.0(RES)	2,3,4,7,8-PECDF	0.0424 ng/Kg	0.0424U ng/Kg
SL-572-SA8-SB-4.0-5.0(RES)	2,3,7,8-TCDD	0.0261 ng/Kg	0.0261U ng/Kg
SL-572-SA8-SB-4.0-5.0(RES)	OCDF	0.204 ng/Kg	0.204U ng/Kg
SL-572-SA8-SB-9.0-10.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0291 ng/Kg	0.0291U ng/Kg
SL-572-SA8-SB-9.0-10.0(RES)	1,2,3,4,7,8-HXCDF	0.0450 ng/Kg	0.0450U ng/Kg
SL-572-SA8-SB-9.0-10.0(RES)	1,2,3,6,7,8-HXCDD	0.0572 ng/Kg	0.0572U ng/Kg
SL-572-SA8-SB-9.0-10.0(RES)	1,2,3,6,7,8-HXCDF	0.0214 ng/Kg	0.0214U ng/Kg
SL-572-SA8-SB-9.0-10.0(RES)	1,2,3,7,8,9-HXCDD	0.0400 ng/Kg	0.0400U ng/Kg
SL-572-SA8-SB-9.0-10.0(RES)	1,2,3,7,8,9-HXCDF	0.0345 ng/Kg	0.0345U ng/Kg
SL-572-SA8-SB-9.0-10.0(RES)	1,2,3,7,8-PECDF	0.0612 ng/Kg	0.0612U ng/Kg
SL-572-SA8-SB-9.0-10.0(RES)	2,3,4,6,7,8-HXCDF	0.0482 ng/Kg	0.0482U ng/Kg
SL-572-SA8-SB-9.0-10.0(RES)	2,3,4,7,8-PECDF	0.0273 ng/Kg	0.0273U ng/Kg
SL-572-SA8-SB-9.0-10.0(RES)	OCDF	0.332 ng/Kg	0.332U ng/Kg
SL-573-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0658 ng/Kg	0.0658U ng/Kg
SL-573-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.0521 ng/Kg	0.0521U ng/Kg
SL-573-SA8-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.0576 ng/Kg	0.0576U ng/Kg

Method Blank Outlier Report

Lab Reporting Batch ID: PH064 **Laboratory: LL**

EDD Filename: PH064_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-573-SA8-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDD	0.234 ng/Kg	0.234U ng/Kg
SL-573-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.0552 ng/Kg	0.0552U ng/Kg
SL-573-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.117 ng/Kg	0.117U ng/Kg
SL-573-SA8-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0778 ng/Kg	0.0778U ng/Kg
SL-573-SA8-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.0381 ng/Kg	0.0381U ng/Kg
SL-573-SA8-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0894 ng/Kg	0.0894U ng/Kg
SL-573-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0197 ng/Kg	0.0197U ng/Kg
SL-573-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HxCDD	0.0315 ng/Kg	0.0315U ng/Kg
SL-573-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.0426 ng/Kg	0.0426U ng/Kg
SL-573-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDD	0.0450 ng/Kg	0.0450U ng/Kg
SL-573-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.0394 ng/Kg	0.0394U ng/Kg
SL-573-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDD	0.0557 ng/Kg	0.0557U ng/Kg
SL-573-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDF	0.0595 ng/Kg	0.0595U ng/Kg
SL-573-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDD	0.0392 ng/Kg	0.0392U ng/Kg
SL-573-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.0614 ng/Kg	0.0614U ng/Kg
SL-573-SA8-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0497 ng/Kg	0.0497U ng/Kg
SL-573-SA8-SB-4.0-5.0(RES)	OCDF	0.259 ng/Kg	0.259U ng/Kg

Method: **6010C**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P19735AB222028	7/18/2013 8:28:00 PM	COPPER	0.0034 mg/L	EB1-071013 EB2-071013

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
EB1-071013(REA2)	COPPER	0.0031 mg/L	0.0031U mg/L
EB2-071013(REA2)	COPPER	0.0030 mg/L	0.0030U mg/L

Method Blank Outlier Report

Lab Reporting Batch ID: PH064 **Laboratory: LL**

EDD Filename: PH064_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 6010C
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P19237AB222027	7/18/2013 8:27:00 PM	CALCIUM MAGNESIUM TIN ZINC	8.96 mg/Kg 2.47 mg/Kg 1.45 mg/Kg 0.430 mg/Kg	SL-571-SA8-SB-0.0-0.5 SL-571-SA8-SB-12.5-13.5 SL-571-SA8-SB-6.5-7.5 SL-572-SA8-SB-0.0-0.5 SL-572-SA8-SB-14.0-15.0 SL-572-SA8-SB-18.5-19.5 SL-572-SA8-SB-4.0-5.0 SL-572-SA8-SB-9.0-10.0 SL-573-SA8-SB-0.0-0.5 SL-573-SA8-SB-4.0-5.0 SL-573-SA8-SB-9.5-10.5

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-571-SA8-SB-0.0-0.5(RES)	TIN	2.79 mg/Kg	2.79U mg/Kg
SL-571-SA8-SB-12.5-13.5(RES)	TIN	2.93 mg/Kg	2.93U mg/Kg
SL-571-SA8-SB-6.5-7.5(RES)	TIN	2.96 mg/Kg	2.96U mg/Kg
SL-572-SA8-SB-0.0-0.5(RES)	TIN	3.45 mg/Kg	3.45U mg/Kg
SL-572-SA8-SB-14.0-15.0(RES)	TIN	3.17 mg/Kg	3.17U mg/Kg
SL-572-SA8-SB-18.5-19.5(RES)	TIN	3.07 mg/Kg	3.07U mg/Kg
SL-572-SA8-SB-4.0-5.0(RES)	TIN	3.29 mg/Kg	3.29U mg/Kg
SL-572-SA8-SB-9.0-10.0(RES)	TIN	2.92 mg/Kg	2.92U mg/Kg
SL-573-SA8-SB-0.0-0.5(RES)	TIN	2.99 mg/Kg	2.99U mg/Kg
SL-573-SA8-SB-4.0-5.0(RES)	TIN	3.08 mg/Kg	3.08U mg/Kg
SL-573-SA8-SB-9.5-10.5(RES)	TIN	2.70 mg/Kg	2.70U mg/Kg

Method: 8151A
Matrix: AQ

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P99991AB241002A	7/19/2013 10:02:00 AM	2,4,5-T	0.099 ug/L	EB2-071013

Method: 8270D SIM
Matrix: AQ

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
PLKWC19B262100	7/19/2013 9:00:00 PM	BIS(2-ETHYLHEXYL)PHTHALATE	0.31 ug/L	EB1-071013 EB2-071013

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
EB1-071013(RES)	BIS(2-ETHYLHEXYL)PHTHALATE	0.43 ug/L	1.0U ug/L

Equipment Rinsate Blank Outlier Report

Lab Reporting Batch ID: PH064 **Laboratory: LL**

EDD Filename: PrepPH064 **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-571-SA8-SB-0.0-0.5 SL-571-SA8-SB-12.5-13.5 SL-571-SA8-SB-6.5-7.5 SL-572-SA8-SB-0.0-0.5 SL-572-SA8-SB-14.0-15.0 SL-572-SA8-SB-18.5-19.5 SL-572-SA8-SB-4.0-5.0 SL-572-SA8-SB-9.0-10.0 SL-573-SA8-SB-0.0-0.5 SL-573-SA8-SB-4.0-5.0 SL-573-SA8-SB-9.5-10.5

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-571-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.611 mg/Kg	0.611U mg/Kg
SL-571-SA8-SB-12.5-13.5(RES)	MOLYBDENUM	0.200 mg/Kg	0.200U mg/Kg
SL-571-SA8-SB-6.5-7.5(RES)	MOLYBDENUM	0.538 mg/Kg	0.538U mg/Kg
SL-572-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.516 mg/Kg	0.516U mg/Kg
SL-572-SA8-SB-14.0-15.0(RES)	MOLYBDENUM	0.224 mg/Kg	0.224U mg/Kg
SL-572-SA8-SB-4.0-5.0(RES)	MOLYBDENUM	0.346 mg/Kg	0.346U mg/Kg
SL-572-SA8-SB-9.0-10.0(RES)	MOLYBDENUM	0.211 mg/Kg	0.211U mg/Kg
SL-573-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.723 mg/Kg	0.723U mg/Kg
SL-573-SA8-SB-4.0-5.0(RES)	MOLYBDENUM	0.285 mg/Kg	0.285U mg/Kg
SL-573-SA8-SB-9.5-10.5(RES)	MOLYBDENUM	0.194 mg/Kg	0.194U mg/Kg

Method: 8260B
Matrix: SO

Equipment Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
EB1-071013(RES)	7/10/2013 3:00:00 PM	ACETONE	8 ug/L	SL-571-SA8-SB-0.0-0.5 SL-571-SA8-SB-12.5-13.5 SL-571-SA8-SB-6.5-7.5 SL-572-SA8-SB-0.0-0.5 SL-572-SA8-SB-14.0-15.0 SL-572-SA8-SB-18.5-19.5 SL-572-SA8-SB-4.0-5.0 SL-572-SA8-SB-9.0-10.0 SL-573-SA8-SB-0.0-0.5 SL-573-SA8-SB-4.0-5.0 SL-573-SA8-SB-9.5-10.5

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-572-SA8-SB-18.5-19.5(RES)	ACETONE	9 ug/Kg	21U ug/Kg

Field Blank Outlier Report

Lab Reporting Batch ID: PH064 **Laboratory: LL**

EDD Filename: PrepPH064 **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-571-SA8-SB-0.0-0.5 SL-571-SA8-SB-12.5-13.5 SL-571-SA8-SB-6.5-7.5 SL-572-SA8-SB-0.0-0.5 SL-572-SA8-SB-14.0-15.0 SL-572-SA8-SB-18.5-19.5 SL-572-SA8-SB-4.0-5.0 SL-572-SA8-SB-9.0-10.0 SL-573-SA8-SB-0.0-0.5 SL-573-SA8-SB-4.0-5.0 SL-573-SA8-SB-9.5-10.5

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-571-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.611 mg/Kg	0.611U mg/Kg
SL-571-SA8-SB-12.5-13.5(RES)	MOLYBDENUM	0.200 mg/Kg	0.200U mg/Kg
SL-571-SA8-SB-6.5-7.5(RES)	MOLYBDENUM	0.538 mg/Kg	0.538U mg/Kg
SL-572-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.516 mg/Kg	0.516U mg/Kg
SL-572-SA8-SB-14.0-15.0(RES)	MOLYBDENUM	0.224 mg/Kg	0.224U mg/Kg
SL-572-SA8-SB-4.0-5.0(RES)	MOLYBDENUM	0.346 mg/Kg	0.346U mg/Kg
SL-572-SA8-SB-9.0-10.0(RES)	MOLYBDENUM	0.211 mg/Kg	0.211U mg/Kg
SL-573-SA8-SB-0.0-0.5(RES)	MOLYBDENUM	0.723 mg/Kg	0.723U mg/Kg
SL-573-SA8-SB-4.0-5.0(RES)	MOLYBDENUM	0.285 mg/Kg	0.285U mg/Kg
SL-573-SA8-SB-9.5-10.5(RES)	MOLYBDENUM	0.194 mg/Kg	0.194U mg/Kg

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH064 **Laboratory: LL**

EDD Filename: PH064_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-572-SA8-SB-4.0-5.0MS (TOT) **SL-572-SA8-SB-4.0-5.0MSD (TOT)** (SL-571-SA8-SB-0.0-0.5 SL-571-SA8-SB-12.5-13.5 SL-571-SA8-SB-6.5-7.5 SL-572-SA8-SB-0.0-0.5 SL-572-SA8-SB-14.0-15.0 SL-572-SA8-SB-18.5-19.5 SL-572-SA8-SB-4.0-5.0 SL-572-SA8-SB-9.0-10.0 SL-573-SA8-SB-0.0-0.5 SL-573-SA8-SB-4.0-5.0 SL-573-SA8-SB-9.5-10.5)	ALUMINUM IRON MAGNESIUM POTASSIUM TITANIUM	1834 1182 229 135 274	1927 1485 277 148 360	75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00	- - - - -	ALUMINUM IRON MAGNESIUM POTASSIUM TITANIUM	J (all detects) Al, Fe, Mg, Ti No Qual, >4x
SL-572-SA8-SB-4.0-5.0MS (TOT) **SL-572-SA8-SB-4.0-5.0MSD (TOT)** (SL-571-SA8-SB-0.0-0.5 SL-571-SA8-SB-12.5-13.5 SL-571-SA8-SB-6.5-7.5 SL-572-SA8-SB-0.0-0.5 SL-572-SA8-SB-14.0-15.0 SL-572-SA8-SB-18.5-19.5 SL-572-SA8-SB-4.0-5.0 SL-572-SA8-SB-9.0-10.0 SL-573-SA8-SB-0.0-0.5 SL-573-SA8-SB-4.0-5.0 SL-573-SA8-SB-9.5-10.5)	CALCIUM	-365	-585	75.00-125.00	-	CALCIUM	No Qual, >4x
SL-572-SA8-SB-4.0-5.0MS (TOT) **SL-572-SA8-SB-4.0-5.0MSD (TOT)** (SL-571-SA8-SB-0.0-0.5 SL-571-SA8-SB-12.5-13.5 SL-571-SA8-SB-6.5-7.5 SL-572-SA8-SB-0.0-0.5 SL-572-SA8-SB-14.0-15.0 SL-572-SA8-SB-18.5-19.5 SL-572-SA8-SB-4.0-5.0 SL-572-SA8-SB-9.0-10.0 SL-573-SA8-SB-0.0-0.5 SL-573-SA8-SB-4.0-5.0 SL-573-SA8-SB-9.5-10.5)	ANTIMONY PHOSPHORUS	60 64	58 -	75.00-125.00 75.00-125.00	- -	ANTIMONY PHOSPHORUS	J(all detects) UJ(all non-detects)

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH064 **Laboratory: LL**

EDD Filename: PH064_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-572-SA8-SB-4.0-5.0MS (TOT) **SL-572-SA8-SB-4.0-5.0MSD (TOT)** (SL-571-SA8-SB-0.0-0.5 SL-571-SA8-SB-12.5-13.5 SL-571-SA8-SB-6.5-7.5 SL-572-SA8-SB-0.0-0.5 SL-572-SA8-SB-14.0-15.0 SL-572-SA8-SB-18.5-19.5 SL-572-SA8-SB-4.0-5.0 SL-572-SA8-SB-9.0-10.0 SL-573-SA8-SB-0.0-0.5 SL-573-SA8-SB-4.0-5.0 SL-573-SA8-SB-9.5-10.5)	STRONTIUM	65	197	75.00-125.00	22 (20.00)	STRONTIUM	J(all detects) UJ(all non-detects) Sr, No Qual %R >4x

Lab Duplicate Outlier Report

Lab Reporting Batch ID: PH064 **Laboratory: LL**

EDD Filename: PH064_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 6010C
Matrix: SO

QC Sample ID (Associated Sample ID)	Analyte	Sample RPD	eQAPP RPD	Flag
SL-572-SA8-SB-4.0-5.0DUP (TOT) (SL-571-SA8-SB-0.0-0.5 SL -571-SA8-SB-12.5-13.5 SL -571-SA8-SB-6.5-7.5 SL -572-SA8-SB-0.0-0.5 SL -572-SA8-SB-14.0-15.0 SL -572-SA8-SB-18.5-19.5 SL -572-SA8-SB-4.0-5.0 SL -572-SA8-SB-9.0-10.0 SL -573-SA8-SB-0.0-0.5 SL -573-SA8-SB-4.0-5.0 SL -573-SA8-SB-9.5-10.5)	ANTIMONY	200	20.00	No Qual, OK by Difference

Method: 6020A
Matrix: SO

QC Sample ID (Associated Sample ID)	Analyte	Sample RPD	eQAPP RPD	Flag
SL-572-SA8-SB-4.0-5.0DUP (TOT) (SL-571-SA8-SB-0.0-0.5 SL -571-SA8-SB-12.5-13.5 SL -571-SA8-SB-6.5-7.5 SL -572-SA8-SB-0.0-0.5 SL -572-SA8-SB-14.0-15.0 SL -572-SA8-SB-18.5-19.5 SL -572-SA8-SB-4.0-5.0 SL -572-SA8-SB-9.0-10.0 SL -573-SA8-SB-0.0-0.5 SL -573-SA8-SB-4.0-5.0 SL -573-SA8-SB-9.5-10.5)	SILVER	200	20.00	No Qual, OK by Difference

Method: 7471B
Matrix: SO

QC Sample ID (Associated Sample ID)	Analyte	Sample RPD	eQAPP RPD	Flag
SL-572-SA8-SB-0.0-0.5DUP (TOT) (SL-571-SA8-SB-0.0-0.5 SL -571-SA8-SB-12.5-13.5 SL -571-SA8-SB-6.5-7.5 SL -572-SA8-SB-0.0-0.5 SL -572-SA8-SB-14.0-15.0 SL -572-SA8-SB-18.5-19.5 SL -572-SA8-SB-4.0-5.0 SL -572-SA8-SB-9.0-10.0 SL -573-SA8-SB-0.0-0.5 SL -573-SA8-SB-4.0-5.0 SL -573-SA8-SB-9.5-10.5)	MERCURY	200	20.00	No Qual, OK by Difference

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH064 **Laboratory: LL**

EDD Filename: PH064_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 8151A
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
P31991AQ241029A P31991AY241055A (EB2-071013)	2,4,5-TP (Silvex) 2,4-D DICHLOROPROP	- - 182	161 161 182	58.00-155.00 68.00-155.00 89.00-162.00	- - -	2,4,5-TP (Silvex) 2,4-D DICHLOROPROP	J (all detects)

Method: 8270D SIM
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
P7WCLCSQ262127 P7WCLCSY262155 (EB1-071013 EB2-071013)	INDENO(1,2,3-CD)PYRENE	140	138	66.00-122.00	-	INDENO(1,2,3-CD)PYRENE	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-572-SA8-SB-18.5-19.5 SL-573-SA8-SB-9.5-10.5)	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)

Reporting Limit Outliers

Lab Reporting Batch ID: PH064 **Laboratory: LL**

EDD Filename: PH064_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB1-071013	1,2,3,4,6,7,8-HPCDD	JBQ	0.309	9.64	PQL	pg/L	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.282	9.64	PQL	pg/L	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.203	9.64	PQL	pg/L	
	1,2,3,4,7,8-HxCDD	JBQ	0.224	9.64	PQL	pg/L	
	1,2,3,4,7,8-HXCDF	JBQ	0.412	9.64	PQL	pg/L	
	1,2,3,6,7,8-HXCDD	JBQ	0.241	9.64	PQL	pg/L	
	1,2,3,6,7,8-HXCDF	JBQ	0.201	9.64	PQL	pg/L	J (all detects)
	1,2,3,7,8,9-HXCDD	JBQ	0.393	9.64	PQL	pg/L	
	1,2,3,7,8,9-HXCDF	JB	0.336	9.64	PQL	pg/L	
	1,2,3,7,8-PECDF	JBQ	0.405	9.64	PQL	pg/L	
	2,3,4,6,7,8-HXCDF	JBQ	0.235	9.64	PQL	pg/L	
	OCDD	JBQ	1.04	19.3	PQL	pg/L	
	OCDF	JBQ	0.838	19.3	PQL	pg/L	
EB2-071013	1,2,3,4,6,7,8-HPCDD	JB	0.532	10.2	PQL	pg/L	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.248	10.2	PQL	pg/L	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.333	10.2	PQL	pg/L	
	1,2,3,4,7,8-HXCDF	JB	0.344	10.2	PQL	pg/L	
	1,2,3,6,7,8-HXCDD	JBQ	0.375	10.2	PQL	pg/L	
	1,2,3,6,7,8-HXCDF	JBQ	0.187	10.2	PQL	pg/L	
	1,2,3,7,8,9-HXCDF	JBQ	0.410	10.2	PQL	pg/L	J (all detects)
	1,2,3,7,8-PECDD	JQ	0.268	10.2	PQL	pg/L	
	1,2,3,7,8-PECDF	JB	0.450	10.2	PQL	pg/L	
	2,3,4,6,7,8-HXCDF	JBQ	0.206	10.2	PQL	pg/L	
	2,3,4,7,8-PECDF	JBQ	0.209	10.2	PQL	pg/L	
	OCDD	JBQ	0.674	20.4	PQL	pg/L	
	OCDF	JB	0.599	20.4	PQL	pg/L	

Method: 6010C
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB1-071013	COPPER	J	0.0031	0.0200	PQL	mg/L	J (all detects)
	MOLYBDENUM	J	0.0035	0.0200	PQL	mg/L	
EB2-071013	COPPER	J	0.0030	0.0200	PQL	mg/L	J (all detects)

Method: 8260B
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB1-071013	ACETONE	J	8	20	PQL	ug/L	J (all detects)
EB2-071013	ACETONE	J	7	20	PQL	ug/L	J (all detects)

Method: 8270D SIM
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB1-071013	BIS(2-ETHYLHEXYL)PHTHALATE	J	0.43	1.0	PQL	ug/L	J (all detects)
	NAPHTHALENE	J	0.034	0.052	PQL	ug/L	

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

Reporting Limit Outliers

Lab Reporting Batch ID: PH064 **Laboratory: LL**

EDD Filename: PH064_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 8270D SIM

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB2-071013	NAPHTHALENE	J	0.032	0.051	PQL	ug/L	J (all detects)

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-571-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	2.93	5.60	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.425	5.60	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0682	5.60	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0645	5.60	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.135	5.60	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.184	5.60	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.108	5.60	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.141	5.60	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	0.0961	5.60	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JB	0.141	5.60	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.335	5.60	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.0901	5.60	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.101	5.60	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0577	1.12	PQL	ng/Kg	
	OCDF	JB	0.728	11.2	PQL	ng/Kg	
SL-571-SA8-SB-12.5-13.5	1,2,3,4,6,7,8-HPCDD	JB	0.616	5.37	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.130	5.37	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.0463	5.37	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.0378	5.37	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0558	5.37	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.0630	5.37	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0439	5.37	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.0685	5.37	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JBQ	0.0800	5.37	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.0920	5.37	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0367	5.37	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0530	5.37	PQL	ng/Kg	
	2,3,7,8-TCDD	JBQ	0.0410	1.07	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0241	1.07	PQL	ng/Kg	
	OCDD	JB	8.87	10.7	PQL	ng/Kg	
	OCDF	JB	0.367	10.7	PQL	ng/Kg	
SL-571-SA8-SB-6.5-7.5	1,2,3,4,6,7,8-HPCDD	JB	0.296	5.32	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.109	5.32	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.0437	5.32	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.0624	5.32	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.131	5.32	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.0627	5.32	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.101	5.32	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.0682	5.32	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.0970	5.32	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JBQ	0.118	5.32	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.234	5.32	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.0596	5.32	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.155	5.32	PQL	ng/Kg	
	2,3,7,8-TCDD	JBQ	0.0441	1.06	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0589	1.06	PQL	ng/Kg	
	OCDD	JB	3.66	10.6	PQL	ng/Kg	
	OCDF	JB	0.218	10.6	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH064 **Laboratory: LL**

EDD Filename: PH064_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-572-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	2.58	5.82	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.362	5.82	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0525	5.82	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.0392	5.82	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0721	5.82	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.195	5.82	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.0638	5.82	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDD	JB	0.169	5.82	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.162	5.82	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.0684	5.82	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.119	5.82	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0548	5.82	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0542	5.82	PQL	ng/Kg	
	OCDF	JB	0.630	11.6	PQL	ng/Kg	
SL-572-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JB	0.895	5.53	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.139	5.53	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.0284	5.53	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0307	5.53	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0499	5.53	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.0747	5.53	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0394	5.53	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.0450	5.53	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JBQ	0.0285	5.53	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.0477	5.53	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0382	5.53	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.0424	5.53	PQL	ng/Kg	
	2,3,7,8-TCDD	JBQ	0.0261	1.11	PQL	ng/Kg	
	OCDD	JB	6.56	11.1	PQL	ng/Kg	
	OCDF	JB	0.204	11.1	PQL	ng/Kg	
SL-572-SA8-SB-9.0-10.0	1,2,3,4,6,7,8-HPCDD	JB	1.04	5.34	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.208	5.34	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.0291	5.34	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0450	5.34	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.0572	5.34	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0214	5.34	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.0400	5.34	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JBQ	0.0345	5.34	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.0612	5.34	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0482	5.34	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0273	5.34	PQL	ng/Kg	
	OCDD	JB	8.94	10.7	PQL	ng/Kg	
	OCDF	JBQ	0.332	10.7	PQL	ng/Kg	
SL-573-SA8-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	5.29	5.80	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.492	5.80	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0658	5.80	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0521	5.80	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.258	5.80	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.0576	5.80	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.234	5.80	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	0.247	5.80	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.0552	5.80	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.117	5.80	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.0778	5.80	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0381	5.80	PQL	ng/Kg	
	OCDF	JB	1.04	11.6	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH064 **Laboratory: LL**

EDD Filename: PH064_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 1613B
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-573-SA8-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JB	0.682	5.51	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0894	5.51	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0197	5.51	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0315	5.51	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0426	5.51	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.0450	5.51	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0394	5.51	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.0557	5.51	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.0595	5.51	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.0392	5.51	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.0614	5.51	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.0497	5.51	PQL	ng/Kg	
	OCDD	JB	5.37	11.0	PQL	ng/Kg	
	OCDF	JBQ	0.259	11.0	PQL	ng/Kg	

Method: 6010C
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-571-SA8-SB-0.0-0.5	BERYLLIUM	J	0.524	1.12	PQL	mg/Kg	J (all detects)
	BORON	J	5.51	11.2	PQL	mg/Kg	
	CADMIUM	J	0.407	1.12	PQL	mg/Kg	
	MOLYBDENUM	J	0.611	2.25	PQL	mg/Kg	
	TIN	J	2.79	11.2	PQL	mg/Kg	
SL-571-SA8-SB-12.5-13.5	BERYLLIUM	J	0.525	1.05	PQL	mg/Kg	J (all detects)
	BORON	J	3.81	10.5	PQL	mg/Kg	
	CADMIUM	J	0.314	1.05	PQL	mg/Kg	
	MOLYBDENUM	J	0.200	2.10	PQL	mg/Kg	
	TIN	J	2.93	10.5	PQL	mg/Kg	
	Zirconium	J	4.13	5.25	PQL	mg/Kg	
SL-571-SA8-SB-6.5-7.5	BERYLLIUM	J	0.590	1.08	PQL	mg/Kg	J (all detects)
	BORON	J	4.64	10.8	PQL	mg/Kg	
	CADMIUM	J	0.288	1.08	PQL	mg/Kg	
	MOLYBDENUM	J	0.538	2.16	PQL	mg/Kg	
	TIN	J	2.96	10.8	PQL	mg/Kg	
	Zirconium	J	4.77	5.39	PQL	mg/Kg	
SL-572-SA8-SB-0.0-0.5	ANTIMONY	J	0.944	4.66	PQL	mg/Kg	J (all detects)
	ARSENIC	J	4.37	4.66	PQL	mg/Kg	
	BERYLLIUM	J	1.03	1.17	PQL	mg/Kg	
	BORON	J	9.52	11.7	PQL	mg/Kg	
	CADMIUM	J	0.422	1.17	PQL	mg/Kg	
	MOLYBDENUM	J	0.516	2.33	PQL	mg/Kg	
	TIN	J	3.45	11.7	PQL	mg/Kg	
SL-572-SA8-SB-14.0-15.0	BERYLLIUM	J	0.643	1.09	PQL	mg/Kg	J (all detects)
	BORON	J	5.60	10.9	PQL	mg/Kg	
	CADMIUM	J	0.400	1.09	PQL	mg/Kg	
	MOLYBDENUM	J	0.224	2.18	PQL	mg/Kg	
	TIN	J	3.17	10.9	PQL	mg/Kg	
	Zirconium	J	5.43	5.46	PQL	mg/Kg	
SL-572-SA8-SB-18.5-19.5	BERYLLIUM	J	0.584	1.10	PQL	mg/Kg	J (all detects)
	BORON	J	5.18	11.0	PQL	mg/Kg	
	CADMIUM	J	0.289	1.10	PQL	mg/Kg	
	TIN	J	3.07	11.0	PQL	mg/Kg	
	Zirconium	J	4.53	5.48	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH064 **Laboratory: LL**

EDD Filename: PH064_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-572-SA8-SB-4.0-5.0	BERYLLIUM	J	0.808	1.10	PQL	mg/Kg	J (all detects)
	BORON	J	7.40	11.0	PQL	mg/Kg	
	CADMIUM	J	0.358	1.10	PQL	mg/Kg	
	MOLYBDENUM	J	0.346	2.20	PQL	mg/Kg	
	TIN	J	3.29	11.0	PQL	mg/Kg	
SL-572-SA8-SB-9.0-10.0	BERYLLIUM	J	0.573	1.09	PQL	mg/Kg	J (all detects)
	BORON	J	5.77	10.9	PQL	mg/Kg	
	CADMIUM	J	0.408	1.09	PQL	mg/Kg	
	MOLYBDENUM	J	0.211	2.17	PQL	mg/Kg	
	TIN	J	2.92	10.9	PQL	mg/Kg	
	Zirconium	J	5.18	5.43	PQL	mg/Kg	
SL-573-SA8-SB-0.0-0.5	ANTIMONY	J	1.27	4.58	PQL	mg/Kg	J (all detects)
	ARSENIC	J	2.91	4.58	PQL	mg/Kg	
	BERYLLIUM	J	0.583	1.14	PQL	mg/Kg	
	BORON	J	5.75	11.4	PQL	mg/Kg	
	CADMIUM	J	0.688	1.14	PQL	mg/Kg	
	MOLYBDENUM	J	0.723	2.29	PQL	mg/Kg	
	TIN	J	2.99	11.4	PQL	mg/Kg	
SL-573-SA8-SB-4.0-5.0	BERYLLIUM	J	0.751	1.10	PQL	mg/Kg	J (all detects)
	BORON	J	6.38	11.0	PQL	mg/Kg	
	CADMIUM	J	0.368	1.10	PQL	mg/Kg	
	MOLYBDENUM	J	0.285	2.19	PQL	mg/Kg	
	TIN	J	3.08	11.0	PQL	mg/Kg	
SL-573-SA8-SB-9.5-10.5	BERYLLIUM	J	0.422	1.03	PQL	mg/Kg	J (all detects)
	BORON	J	3.25	10.3	PQL	mg/Kg	
	CADMIUM	J	0.256	1.03	PQL	mg/Kg	
	MOLYBDENUM	J	0.194	2.07	PQL	mg/Kg	
	TIN	J	2.70	10.3	PQL	mg/Kg	
	Zirconium	J	3.15	5.17	PQL	mg/Kg	

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-571-SA8-SB-0.0-0.5	SILVER	J	0.0750	0.225	PQL	mg/Kg	J (all detects)
	THALLIUM	J	0.206	0.225	PQL	mg/Kg	
SL-572-SA8-SB-0.0-0.5	SILVER	J	0.0410	0.233	PQL	mg/Kg	J (all detects)
SL-572-SA8-SB-14.0-15.0	SILVER	J	0.0331	0.218	PQL	mg/Kg	J (all detects)
SL-572-SA8-SB-18.5-19.5	SILVER	J	0.0509	0.219	PQL	mg/Kg	J (all detects)
SL-572-SA8-SB-4.0-5.0	SILVER	J	0.0463	0.220	PQL	mg/Kg	J (all detects)
SL-573-SA8-SB-0.0-0.5	THALLIUM	J	0.181	0.229	PQL	mg/Kg	J (all detects)
SL-573-SA8-SB-4.0-5.0	SELENIUM	J	0.175	0.439	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0576	0.219	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH064 **Laboratory: LL**

EDD Filename: PH064_v1 **eQAPP Name: CDM_SSFL_130808_Lan**

Method: 8015M
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-571-SA8-SB-12.5-13.5	EFH (C21-C30)	J	5.1	5.4	PQL	mg/Kg	J (all detects)

Method: 8260B
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-572-SA8-SB-18.5-19.5	ACETONE	J	9	21	PQL	ug/Kg	J (all detects)

Method: 8270D SIM
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-571-SA8-SB-0.0-0.5	BENZO(B)FLUORANTHENE	J	13	19	PQL	ug/Kg	J (all detects)
	CHRYSENE	J	13	19	PQL	ug/Kg	
	PHENANTHRENE	J	7.8	19	PQL	ug/Kg	
	PYRENE	J	8.8	19	PQL	ug/Kg	
SL-571-SA8-SB-12.5-13.5	CHRYSENE	J	0.70	1.8	PQL	ug/Kg	J (all detects)
SL-571-SA8-SB-6.5-7.5	1-METHYLNAPHTHALENE	J	1.4	1.8	PQL	ug/Kg	J (all detects)
	2-METHYLNAPHTHALENE	J	1.3	1.8	PQL	ug/Kg	
	BENZO(B)FLUORANTHENE	J	1.1	1.8	PQL	ug/Kg	
	CHRYSENE	J	1.1	1.8	PQL	ug/Kg	
	NAPHTHALENE	J	0.93	1.8	PQL	ug/Kg	
	PHENANTHRENE	J	1.4	1.8	PQL	ug/Kg	
	PYRENE	J	0.85	1.8	PQL	ug/Kg	
SL-572-SA8-SB-0.0-0.5	2-METHYLNAPHTHALENE	J	0.80	2.0	PQL	ug/Kg	J (all detects)
	ANTHRACENE	J	0.87	2.0	PQL	ug/Kg	
	BENZO(E)PYRENE	J	5.2	20	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	17	21	PQL	ug/Kg	
	DIBENZO(A,H)ANTHRACENE	J	1.0	2.0	PQL	ug/Kg	
	Di-n-octylphthalate	J	12	21	PQL	ug/Kg	
SL-572-SA8-SB-4.0-5.0	BENZO(B)FLUORANTHENE	J	16	19	PQL	ug/Kg	J (all detects)
	CHRYSENE	J	16	19	PQL	ug/Kg	
	FLUORANTHENE	J	11	19	PQL	ug/Kg	
	PHENANTHRENE	J	14	19	PQL	ug/Kg	
	PYRENE	J	13	19	PQL	ug/Kg	
SL-572-SA8-SB-9.0-10.0	ANTHRACENE	J	0.39	1.8	PQL	ug/Kg	J (all detects)
	INDENO(1,2,3-CD)PYRENE	J	1.3	1.8	PQL	ug/Kg	
SL-573-SA8-SB-0.0-0.5	BENZO(A)ANTHRACENE	J	13	20	PQL	ug/Kg	J (all detects)
	BENZO(A)PYRENE	J	16	20	PQL	ug/Kg	
	BENZO(G,H,I)PERYLENE	J	11	20	PQL	ug/Kg	
	BENZO(K)FLUORANTHENE	J	11	20	PQL	ug/Kg	
	PHENANTHRENE	J	19	20	PQL	ug/Kg	
SL-573-SA8-SB-4.0-5.0	BENZO(B)FLUORANTHENE	J	16	19	PQL	ug/Kg	J (all detects)
	CHRYSENE	J	15	19	PQL	ug/Kg	
	PHENANTHRENE	J	9.8	19	PQL	ug/Kg	
	PYRENE	J	8.8	19	PQL	ug/Kg	
SL-573-SA8-SB-9.5-10.5	BENZO(A)ANTHRACENE	J	1.0	1.8	PQL	ug/Kg	J (all detects)
	BENZO(G,H,I)PERYLENE	J	1.0	1.8	PQL	ug/Kg	
	BENZO(K)FLUORANTHENE	J	0.92	1.8	PQL	ug/Kg	

LDC #: 30210C4

SDG #: PH064

Laboratory: Eurofins Lancaster Laboratories

VALIDATION COMPLETENESS WORKSHEET

ADR

Date: 8/28/13

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: 7/10/13
II.	ICP/MS Tune	—	
III.	Calibration	—	
IV.	Blanks	SW	
V.	ICP Interference Check Sample (ICS) Analysis	—	
VI.	Matrix Spike Analysis	SW	MS/D
VII.	Duplicate Sample Analysis	SW	Dup
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	A	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	N	
XIV.	Field Duplicates	—	
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	EB1-071013 W	11	SL-571-SA8-SB-0.0-0.5	21		31	
2	EB2-071013 W	12	SL-571-SA8-SB-6.5-7.5	22		32	
3	SL-572-SA8-SB-0.0-0.5	13	SL-571-SA8-SB-12.5-13.5	23		33	
4	SL-572-SA8-SB-4.0-5.0	14	~~A~~3 MS (Hg)	24		34	
5	SL-572-SA8-SB-9.0-10.0	15	MSD	25		35	
6	SL-572-SA8-SB-14.0-15.0	16	Dup	26		36	
7	SL-572-SA8-SB-18.5-19.5	17	~~A~~4 MS	27		37	
8	SL-573-SA8-SB-0.0-0.5	18	Dup	28		38	
9	SL-573-SA8-SB-4.0-5.0	19	MS	29		39	
10	SL-573-SA8-SB-9.5-10.5	20		30		40	

Notes: _____

LDC #: 30210C4

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: [illegible]
2nd Reviewer: [illegible]

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	2									
Cu			2.9	14.5	3.1	3.0									

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 #: 30210C4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: AL
2nd Reviewer: VW

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	5	6	8	9	10	11	12	13
Cu	0.0036	1.8										
Mo	0.0036	1.8	0.52	0.35	0.21	0.22	0.72	0.29	0.19	0.64	0.21	0.20

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

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

Sampling date: 7/10/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: None

Analyte	Blank ID	Sample Identification											
	EB2-071013 (SDG: PH064)	Action Limit	No Qualifiers										
Cu	0.0030	1.5											

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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Self-noted (CSR qualified from RPD)

QUALITY ASSURANCE SUMMARY
FORM 5A(MS/MSD)
MATRIX SPIKE/MATRIX SPIKE DUPLICATE
SDG No.: PH064
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7123470BKG Matrix Spike Lab Sample ID: 7123470MS Matrix Spike Duplicate Lab Sample ID: 7123470MSD
Batch Id(s): P19237A

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		23391.4621		26953.0427		27133.0252		194.1748	194.1748	MG/KG	1834		1927		1			20	P
Antimony		0.7184	U	29.2136		28.3951		48.5437	48.5437	MG/KG	60	N	58	N	3		75 - 125	20	P
Arsenic		5.0757		19.6214		19.6097		14.5631	14.5631	MG/KG	100		100		0		75 - 125	20	P
Barium		76.9359		316.9078		280.6427		194.1748	194.1748	MG/KG	124		105		12		75 - 125	20	P
Beryllium		0.7117	B	5.7485		5.6816		4.8544	4.8544	MG/KG	104		102		1		75 - 125	20	P
Boron		6.5233	B	200.9621		199.1728		194.1748	194.1748	MG/KG	100		99		1		75 - 125	20	P
Cadmium		0.3155	B	4.7612		4.7816		4.8544	4.8544	MG/KG	92		92		0		75 - 125	20	P
Calcium		12994.3019		11577.3097		10721.0272		388.3495	388.3495	MG/KG	-365		-585		8			20	P
Chromium		25.6942		47.2233		46.6951		19.4175	19.4175	MG/KG	111		108		1		75 - 125	20	P
Cobalt		6.8398		52.6563		52.8320		48.5437	48.5437	MG/KG	94		95		0		75 - 125	20	P
Copper		11.7311		37.6126		37.8408		24.2718	24.2718	MG/KG	107		108		1		75 - 125	20	P
Iron		24840.0583		25987.7427		26281.6942		97.0874	97.0874	MG/KG	1182		1485		1			20	P
Lead		7.1000		19.6553		19.8505		14.5631	14.5631	MG/KG	86		88		1		75 - 125	20	P
Lithium		20.5650		120.4408		120.6126		97.0874	97.0874	MG/KG	103		103		0		75 - 125	20	P
Magnesium		5436.3796		5881.2340		5974.7563		194.1748	194.1748	MG/KG	229		277		2			20	P
Manganese		322.3951		368.3738		370.2243		48.5437	48.5437	MG/KG	95		99		1			20	P
Molybdenum		0.3049	B	181.5175		181.2689		194.1748	194.1748	MG/KG	93		93		0		75 - 125	20	P
Nickel		14.6184		60.4806		60.9699		48.5437	48.5437	MG/KG	94		95		1		75 - 125	20	P
Phosphorus		290.4971		352.8932		383.7000		97.0874	97.0874	MG/KG	64	N	96		8		75 - 125	20	P
Potassium		3220.3204		4530.9660		4656.8282		970.8738	970.8738	MG/KG	135	N	148	N	3		75 - 125	20	P
Selenium	78	0.0971	U	1.8289		1.9748		1.9417	1.9417	MG/KG	94		102		8		75 - 125	20	MS
Silver	107	0.0408	B	9.6427		9.8913		9.7087	9.7087	MG/KG	99		101		3		75 - 125	20	MS
Sodium		511.6466		1489.2680		1500.4592		970.8738	970.8738	MG/KG	101		102		1		75 - 125	20	P
Strontium	88	37.3398		42.3883		52.6214		7.7670	7.7670	MG/KG	65		197		22	*		20	MS
Thallium	203	0.2540		0.6258		0.6575		0.3883	0.3883	MG/KG	96		104		5		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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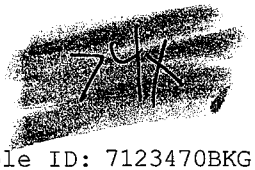
QUALITY ASSURANCE SUMMARY
FORM 5A(MS/MSD)
MATRIX SPIKE/MATRIX SPIKE DUPLICATE
SDG No.: PH064
Matrix: SOIL Level (low/med): LOW



Background Lab Sample ID: 7123470BKG Matrix Spike Lab Sample ID: 7123470MS Matrix Spike Duplicate Lab Sample ID: 7123470MSD
Batch Id(s): P19237A

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		2.8971	B	348.7757		347.5243		388.3495	388.3495	MG/KG	89		89		0		75 - 125	20	P
Titanium		1342.8107		1608.9417		1692.4320		97.0874	97.0874	MG/KG	274	N	360	N	5			20	P
Vanadium		46.3039		100.4806		100.8155		48.5437	48.5437	MG/KG	112		112		0		75 - 125	20	P
Zinc		55.7602		104.2175		104.7592		48.5437	48.5437	MG/KG	100		101		1		75 - 125	20	P
Zirconium		5.6204		101.1019		101.2485		97.0874	97.0874	MG/KG	98		98		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.: PH064
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7123470BKG
Batch ID(s): P19237A
Concentration Units: MG/KG

Duplicate Lab Sample ID: 7123470DUP

Analyte	Mass	Control Limit	Samples (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum			23391.4621		22124.6767		6		P
Antimony			0.7184	U	0.9476	B	200	*	P
Arsenic		3.9	5.0757		5.2117		3		P
Barium			76.9359		72.8718		5		P
Beryllium			0.7117	B	0.6961	B	2		P
Boron			6.5233	B	6.1767	B	5		P
Cadmium			0.3155	B	0.3398	B	7		P
Calcium			12994.3019		13316.8000		2		P
Chromium			25.6942		24.9699		3		P
Cobalt			6.8398		6.5893		4		P
Copper			11.7311		11.4204		3		P
Iron			24840.0583		25659.6650		3		P
Lead		2.9	7.1000		6.8379		4		P
Lithium			20.5650		20.0272		3		P
Magnesium			5436.3796		5207.5155		4		P
Manganese			322.3951		309.9816		4		P
Molybdenum			0.3049	B	0.3000	B	2		P
Nickel			14.6184		14.1155		4		P
Phosphorus			290.4971		256.8825		12		P
Potassium			3220.3204		3043.9942		6		P
Selenium	78		0.0971	U	0.0971	U			MS
Silver	107		0.0408	B	0.0252	U	200		MS
Sodium			511.6466		491.4311		4		P
Strontium	88		37.3398		34.9320		7		MS
Thallium	203	0.2	0.2540		0.2579		2		MS
Tin			2.8971	B	2.7476	B	5		P
Titanium			1342.8107		1249.3107		7		P
Vanadium			46.3039		45.0272		3		P
Zinc			55.7602		54.6981		2		P
Zirconium		4.9	5.6204		6.1592		9		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 6
DUPLICATES
SDG No.: PH064
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7123469BKG
Batch ID(s): P19238A
Concentration Units: MG/KG

Duplicate Lab Sample ID: 7123469DUP

Analyte	Mass	Control Limit	Samples (S)	C	Duplicate (D)	C	RPD	Q	M
Mercury			0.0095	U	0.0101	B	200		CV

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:	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

Data Validation Report
Santa Susan Field Laboratory
Subarea 8

SDG(s): PH065

Prepared for

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Prepared by

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September 10, 2013

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on July 11, 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:

Volatile Organic Compounds (VOCs) by Environmental Protection Agency (EPA) SW 846 Method 8260B
Semivolatiles by EPA SW 846 Method 8270D-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 dilution, method blanks, trip blanks, equipment blanks, field blanks and field duplicates. No samples in this SDG were subjected to Level IV evaluation.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of 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 blanks or initial, continuing, and 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 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.

V. Surrogate Spikes

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

VI. ICP Interference Check Sample (ICS) Analysis

ICP interference check data were not reviewed for level III.

VII. Matrix Spike/Matrix Spike Duplicates

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

VIII. Laboratory Duplicates Sample

Laboratory duplicate (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 three VOCs and semivolatiles. 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-574-SA8-SB-14.0-15.0	Iron Lithium	12 (≤10) 11 (≤10)	SL-574-SA8-SB-0.0-0.5 SL-574-SA8-SB-4.0-5.0 SL-574-SA8-SB-9.0-10.0 SL-574-SA8-SB-14.0-15.0 SL-874-SA8-SB-14.0-15.0 SL-570-SA8-SB-0.0-0.5 SL-570-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 PH065	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 VOCs, semivolatiles, PCBs, metals, TPH as gasoline, TPH as extractables and dioxins. All RPDs were within QC criteria with the exception of two metals. 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 VOCs and TPH as gasoline. No contaminants were found in the trip blank.

One equipment blank (from SDG PH064) was collected and analyzed for VOCs, semivolatiles, PCBs, metals, TPH as gasoline, TPH as extractables and dioxins. No contaminants were found in the equipment blank with the exception of several VOAs, semivolatiles, dioxins and metals. The associated sample results were not detected or were significantly greater than the concentrations found in the equipment blank, therefore no data were qualified.

One field blank (from SDG PH029) was collected and analyzed for VOCs, semivolatiles, PCBs, metals, TPH as gasoline, TPH as extractables and dioxins. No contaminants were found in the field blank with the exception of several VOAs, semivolatiles, dioxins and metals. The associated sample results were not detected or were significantly greater than the concentrations found in the field blank, therefore 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
11-Jul-2013	TB-071113	7125066	TB	5030B	8015M	III
11-Jul-2013	TB-071113	7125066	TB	5030B	8260B	III
11-Jul-2013	SL-574-SA8-SB-0.0-0.5	7125058	N	3050B	6010C	III
11-Jul-2013	SL-574-SA8-SB-0.0-0.5	7125058	N	3050B	6020A	III
11-Jul-2013	SL-574-SA8-SB-0.0-0.5	7125058	N	3546	8015M	III
11-Jul-2013	SL-574-SA8-SB-0.0-0.5	7125058	N	3546	8082A	III
11-Jul-2013	SL-574-SA8-SB-0.0-0.5	7125058	N	3546	8270D SIM	III
11-Jul-2013	SL-574-SA8-SB-0.0-0.5	7125058	N	METHOD	1613B	III
11-Jul-2013	SL-574-SA8-SB-0.0-0.5	7125058	N	METHOD	7471B	III
11-Jul-2013	SL-574-SA8-SB-4.0-5.0	7125059	N	3050B	6010C	III
11-Jul-2013	SL-574-SA8-SB-4.0-5.0	7125059	N	3050B	6020A	III
11-Jul-2013	SL-574-SA8-SB-4.0-5.0	7125059	N	3546	8015M	III
11-Jul-2013	SL-574-SA8-SB-4.0-5.0	7125059	N	3546	8082A	III
11-Jul-2013	SL-574-SA8-SB-4.0-5.0	7125059	N	3546	8270D SIM	III
11-Jul-2013	SL-574-SA8-SB-4.0-5.0	7125059	N	5035A	8015M	III
11-Jul-2013	SL-574-SA8-SB-4.0-5.0	7125059	N	METHOD	1613B	III
11-Jul-2013	SL-574-SA8-SB-4.0-5.0	7125059	N	METHOD	7471B	III
11-Jul-2013	SL-574-SA8-SB-9.0-10.0	7125060	N	3050B	6010C	III
11-Jul-2013	SL-574-SA8-SB-9.0-10.0	7125060	N	3050B	6020A	III
11-Jul-2013	SL-574-SA8-SB-9.0-10.0	7125060	N	3546	8015M	III
11-Jul-2013	SL-574-SA8-SB-9.0-10.0	7125060	N	3546	8082A	III
11-Jul-2013	SL-574-SA8-SB-9.0-10.0	7125060	N	3546	8270D SIM	III
11-Jul-2013	SL-574-SA8-SB-9.0-10.0	7125060	N	5035A	8015M	III
11-Jul-2013	SL-574-SA8-SB-9.0-10.0	7125060	N	METHOD	7471B	III
11-Jul-2013	SL-574-SA8-SB-14.0-15.0	7125061	N	3050B	6010C	III
11-Jul-2013	SL-574-SA8-SB-14.0-15.0	7125061	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
11-Jul-2013	SL-574-SA8-SB-14.0-15.0	7125061	N	3546	8015M	III
11-Jul-2013	SL-574-SA8-SB-14.0-15.0	7125061	N	3546	8082A	III
11-Jul-2013	SL-574-SA8-SB-14.0-15.0	7125061	N	3546	8270D SIM	III
11-Jul-2013	SL-574-SA8-SB-14.0-15.0	7125061	N	5035A	8015M	III
11-Jul-2013	SL-574-SA8-SB-14.0-15.0	7125061	N	5035A	8260B	III
11-Jul-2013	SL-574-SA8-SB-14.0-15.0	7125061	N	METHOD	7471B	III
11-Jul-2013	SL-574-SA8-SB-14.0-15.0MS	7125062	MS	3050B	6010C	III
11-Jul-2013	SL-574-SA8-SB-14.0-15.0MS	7125062	MS	3050B	6020A	III
11-Jul-2013	SL-574-SA8-SB-14.0-15.0MS	7125062	MS	3546	8015M	III
11-Jul-2013	SL-574-SA8-SB-14.0-15.0MS	7125062	MS	3546	8082A	III
11-Jul-2013	SL-574-SA8-SB-14.0-15.0MS	7125062	MS	3546	8270D SIM	III
11-Jul-2013	SL-574-SA8-SB-14.0-15.0MS	7125062	MS	5035A	8015M	III
11-Jul-2013	SL-574-SA8-SB-14.0-15.0MS	7125062	MS	5035A	8260B	III
11-Jul-2013	SL-574-SA8-SB-14.0-15.0MS	7125062	MS	METHOD	7471B	III
11-Jul-2013	SL-574-SA8-SB-14.0-15.0DU	7125064	DUP	3050B	6010C	III
11-Jul-2013	SL-574-SA8-SB-14.0-15.0DU	7125064	DUP	3050B	6020A	III
11-Jul-2013	SL-574-SA8-SB-14.0-15.0DU	7125064	DUP	METHOD	7471B	III
11-Jul-2013	SL-874-SA8-SB-14.0-15.0	7125065	FD	3050B	6010C	III
11-Jul-2013	SL-874-SA8-SB-14.0-15.0	7125065	FD	3050B	6020A	III
11-Jul-2013	SL-874-SA8-SB-14.0-15.0	7125065	FD	3546	8015M	III
11-Jul-2013	SL-874-SA8-SB-14.0-15.0	7125065	FD	3546	8082A	III
11-Jul-2013	SL-874-SA8-SB-14.0-15.0	7125065	FD	3546	8270D SIM	III
11-Jul-2013	SL-874-SA8-SB-14.0-15.0	7125065	FD	5035A	8015M	III
11-Jul-2013	SL-874-SA8-SB-14.0-15.0	7125065	FD	5035A	8260B	III
11-Jul-2013	SL-874-SA8-SB-14.0-15.0	7125065	FD	METHOD	7471B	III
11-Jul-2013	SL-570-SA8-SB-0.0-0.5	7125067	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
11-Jul-2013	SL-570-SA8-SB-0.0-0.5	7125067	N	3050B	6020A	III
11-Jul-2013	SL-570-SA8-SB-0.0-0.5	7125067	N	3546	8015M	III
11-Jul-2013	SL-570-SA8-SB-0.0-0.5	7125067	N	3546	8082A	III
11-Jul-2013	SL-570-SA8-SB-0.0-0.5	7125067	N	3546	8270D SIM	III
11-Jul-2013	SL-570-SA8-SB-0.0-0.5	7125067	N	METHOD	1613B	III
11-Jul-2013	SL-570-SA8-SB-0.0-0.5	7125067	N	METHOD	7471B	III
11-Jul-2013	SL-570-SA8-SB-4.0-5.0	7125068	N	3050B	6010C	III
11-Jul-2013	SL-570-SA8-SB-4.0-5.0	7125068	N	3050B	6020A	III
11-Jul-2013	SL-570-SA8-SB-4.0-5.0	7125068	N	3546	8015M	III
11-Jul-2013	SL-570-SA8-SB-4.0-5.0	7125068	N	3546	8082A	III
11-Jul-2013	SL-570-SA8-SB-4.0-5.0	7125068	N	3546	8270D SIM	III
11-Jul-2013	SL-570-SA8-SB-4.0-5.0	7125068	N	5035A	8015M	III
11-Jul-2013	SL-570-SA8-SB-4.0-5.0	7125068	N	METHOD	1613B	III
11-Jul-2013	SL-570-SA8-SB-4.0-5.0	7125068	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: PH065 **Laboratory: LL**

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

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-570-SA8-SB-0.0-0.5 *Collected:* 7/11/2013 1:50:00 *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CALCIUM	69200		7.10	MDL	42.5	PQL	mg/Kg	J	E

Sample ID: SL-570-SA8-SB-0.0-0.5 *Collected:* 7/11/2013 1:50:00 *Analysis Type:* REA3 *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	14000		3.81	MDL	42.1	PQL	mg/Kg	J	A

Sample ID: SL-570-SA8-SB-0.0-0.5 *Collected:* 7/11/2013 1:50:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	1.18	J	0.787	MDL	4.25	PQL	mg/Kg	J	Z, Q
BERYLLIUM	0.140	J	0.0712	MDL	1.06	PQL	mg/Kg	J	Z
BORON	9.64	J	0.893	MDL	10.6	PQL	mg/Kg	J	Z
CADMIUM	0.548	J	0.0808	MDL	1.06	PQL	mg/Kg	J	Z
CHROMIUM	18.4		0.170	MDL	3.19	PQL	mg/Kg	J	Q
LITHIUM	8.9		0.36	MDL	4.3	PQL	mg/Kg	J	A
MANGANESE	225		0.0883	MDL	1.06	PQL	mg/Kg	J	E
POTASSIUM	1910		8.87	MDL	106	PQL	mg/Kg	J	Q
TIN	2.06	J	0.234	MDL	10.6	PQL	mg/Kg	U	B
ZINC	44.0		0.213	MDL	4.25	PQL	mg/Kg	J	Q

Sample ID: SL-570-SA8-SB-4.0-5.0 *Collected:* 7/11/2013 2:15:00 *Analysis Type:* REA3 *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	25900		4.10	MDL	45.3	PQL	mg/Kg	J	A

Sample ID: SL-570-SA8-SB-4.0-5.0 *Collected:* 7/11/2013 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	4.53	U	0.838	MDL	4.53	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.714	J	0.0759	MDL	1.13	PQL	mg/Kg	J	Z
BORON	8.50	J	0.952	MDL	11.3	PQL	mg/Kg	J	Z
CADMIUM	0.497	J	0.0861	MDL	1.13	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: PH065 **Laboratory: LL**

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

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-570-SA8-SB-4.0-5.0 *Collected:* 7/11/2013 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	7720		3.78	MDL	22.7	PQL	mg/Kg	J	E
CHROMIUM	26.7		0.181	MDL	3.40	PQL	mg/Kg	J	Q
LITHIUM	21.3		0.39	MDL	4.5	PQL	mg/Kg	J	A
MANGANESE	188		0.0940	MDL	1.13	PQL	mg/Kg	J	E
POTASSIUM	2490		9.45	MDL	113	PQL	mg/Kg	J	Q
TIN	3.01	J	0.249	MDL	11.3	PQL	mg/Kg	U	B
ZINC	58.4		0.227	MDL	4.53	PQL	mg/Kg	J	Q
Zirconium	2.90	J	0.952	MDL	5.66	PQL	mg/Kg	J	Z

Sample ID: SL-574-SA8-SB-0.0-0.5 *Collected:* 7/11/2013 8:45:00 *Analysis Type:* REA3 *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	26500		4.13	MDL	45.6	PQL	mg/Kg	J	A

Sample ID: SL-574-SA8-SB-0.0-0.5 *Collected:* 7/11/2013 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	4.51	U	0.835	MDL	4.51	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.368	J	0.0756	MDL	1.13	PQL	mg/Kg	J	Z
BORON	9.30	J	0.948	MDL	11.3	PQL	mg/Kg	J	Z
CADMIUM	0.764	J	0.0858	MDL	1.13	PQL	mg/Kg	J	Z
CALCIUM	27900		3.77	MDL	22.6	PQL	mg/Kg	J	E
CHROMIUM	19.5		0.181	MDL	3.39	PQL	mg/Kg	J	Q
LITHIUM	12.2		0.38	MDL	4.5	PQL	mg/Kg	J	A
MANGANESE	251		0.0937	MDL	1.13	PQL	mg/Kg	J	E
POTASSIUM	2210		9.41	MDL	113	PQL	mg/Kg	J	Q
TIN	2.25	J	0.248	MDL	11.3	PQL	mg/Kg	U	B
ZINC	77.7		0.226	MDL	4.51	PQL	mg/Kg	J	Q
Zirconium	4.46	J	0.948	MDL	5.64	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: PH065 **Laboratory: LL**

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

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-574-SA8-SB-14.0-15.0 *Collected:* 7/11/2013 10:00:00 *Analysis Type:* REA3 *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	27600		3.81	MDL	42.1	PQL	mg/Kg	J	A

Sample ID: SL-574-SA8-SB-14.0-15.0 *Collected:* 7/11/2013 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	4.38	U	0.810	MDL	4.38	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.681	J	0.0734	MDL	1.10	PQL	mg/Kg	J	Z
BORON	5.22	J	0.920	MDL	11.0	PQL	mg/Kg	J	Z
CADMIUM	0.508	J	0.0832	MDL	1.10	PQL	mg/Kg	J	Z
CALCIUM	9730		3.66	MDL	21.9	PQL	mg/Kg	J	E, FD
CHROMIUM	31.9		0.175	MDL	3.29	PQL	mg/Kg	J	Q
LITHIUM	26.1		0.37	MDL	4.4	PQL	mg/Kg	J	A
MANGANESE	328		0.0909	MDL	1.10	PQL	mg/Kg	J	E
POTASSIUM	2720		9.13	MDL	110	PQL	mg/Kg	J	Q
TIN	3.20	J	0.241	MDL	11.0	PQL	mg/Kg	U	B
ZINC	75.1		0.219	MDL	4.38	PQL	mg/Kg	J	Q
Zirconium	5.48	U	0.920	MDL	5.48	PQL	mg/Kg	UJ	FD

Sample ID: SL-574-SA8-SB-4.0-5.0 *Collected:* 7/11/2013 9:30:00 *Analysis Type:* REA3 *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	27200		3.65	MDL	40.3	PQL	mg/Kg	J	A

Sample ID: SL-574-SA8-SB-4.0-5.0 *Collected:* 7/11/2013 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	4.11	U	0.761	MDL	4.11	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.854	J	0.0689	MDL	1.03	PQL	mg/Kg	J	Z
CADMIUM	0.439	J	0.0781	MDL	1.03	PQL	mg/Kg	J	Z
CALCIUM	7560		3.43	MDL	20.6	PQL	mg/Kg	J	E
CHROMIUM	33.7		0.165	MDL	3.08	PQL	mg/Kg	J	Q
LITHIUM	27.7		0.35	MDL	4.1	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: PH065 **Laboratory: LL**

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

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-574-SA8-SB-4.0-5.0 *Collected:* 7/11/2013 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
MANGANESE	341		0.0853	MDL	1.03	PQL	mg/Kg	J	E
POTASSIUM	4040		8.57	MDL	103	PQL	mg/Kg	J	Q
TIN	2.58	J	0.226	MDL	10.3	PQL	mg/Kg	U	B
ZINC	62.4		0.206	MDL	4.11	PQL	mg/Kg	J	Q
Zirconium	4.00	J	0.864	MDL	5.14	PQL	mg/Kg	J	Z

Sample ID: SL-574-SA8-SB-9.0-10.0 *Collected:* 7/11/2013 9:45:00 *Analysis Type:* REA3 *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	20100		3.95	MDL	43.6	PQL	mg/Kg	J	A

Sample ID: SL-574-SA8-SB-9.0-10.0 *Collected:* 7/11/2013 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	4.45	U	0.823	MDL	4.45	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.652	J	0.0745	MDL	1.11	PQL	mg/Kg	J	Z
BORON	5.92	J	0.934	MDL	11.1	PQL	mg/Kg	J	Z
CADMIUM	0.345	J	0.0845	MDL	1.11	PQL	mg/Kg	J	Z
CALCIUM	11900		3.72	MDL	22.2	PQL	mg/Kg	J	E
CHROMIUM	21.2		0.178	MDL	3.34	PQL	mg/Kg	J	Q
LITHIUM	19.9		0.38	MDL	4.4	PQL	mg/Kg	J	A
MANGANESE	145		0.0923	MDL	1.11	PQL	mg/Kg	J	E
POTASSIUM	2710		9.28	MDL	111	PQL	mg/Kg	J	Q
TIN	2.68	J	0.245	MDL	11.1	PQL	mg/Kg	U	B
ZINC	45.7		0.222	MDL	4.45	PQL	mg/Kg	J	Q
Zirconium	1.89	J	0.934	MDL	5.56	PQL	mg/Kg	J	Z

Sample ID: SL-874-SA8-SB-14.0-15.0 *Collected:* 7/11/2013 10:15:00 *Analysis Type:* REA3 *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	21200		3.85	MDL	42.5	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: PH065 **Laboratory: LL**

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

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-874-SA8-SB-14.0-15.0 *Collected:* 7/11/2013 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	4.17	U	0.771	MDL	4.17	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.493	J	0.0698	MDL	1.04	PQL	mg/Kg	J	Z
BORON	4.00	J	0.875	MDL	10.4	PQL	mg/Kg	J	Z
CADMIUM	0.447	J	0.0792	MDL	1.04	PQL	mg/Kg	J	Z
CALCIUM	5690		3.48	MDL	20.8	PQL	mg/Kg	J	E, FD
CHROMIUM	19.4		0.167	MDL	3.13	PQL	mg/Kg	J	Q
LITHIUM	19.6		0.35	MDL	4.2	PQL	mg/Kg	J	A
MANGANESE	267		0.0865	MDL	1.04	PQL	mg/Kg	J	E
POTASSIUM	2590		8.69	MDL	104	PQL	mg/Kg	J	Q
TIN	2.73	J	0.229	MDL	10.4	PQL	mg/Kg	U	B
ZINC	52.6		0.208	MDL	4.17	PQL	mg/Kg	J	Q
Zirconium	1.50	J	0.875	MDL	5.21	PQL	mg/Kg	J	Z, FD

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-570-SA8-SB-0.0-0.5 *Collected:* 7/11/2013 1:50:00 *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.280	J	0.106	MDL	0.425	PQL	mg/Kg	J	Z

Sample ID: SL-570-SA8-SB-0.0-0.5 *Collected:* 7/11/2013 1:50:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0560	J	0.0276	MDL	0.213	PQL	mg/Kg	J	Z
THALLIUM	0.110	J	0.0319	MDL	0.213	PQL	mg/Kg	J	Z

Sample ID: SL-570-SA8-SB-4.0-5.0 *Collected:* 7/11/2013 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	0.0354	J	0.0295	MDL	0.227	PQL	mg/Kg	J	Z

* denotes a non-reportable result

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

Data Qualifier Summary

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

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

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-574-SA8-SB-0.0-0.5 *Collected:* 7/11/2013 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	0.0390	J	0.0293	MDL	0.226	PQL	mg/Kg	J	Z
THALLIUM	0.155	J	0.0339	MDL	0.226	PQL	mg/Kg	J	Z

Sample ID: SL-574-SA8-SB-4.0-5.0 *Collected:* 7/11/2013 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	0.0400	J	0.0267	MDL	0.206	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: SL-574-SA8-SB-9.0-10.0 *Collected:* 7/11/2013 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
MERCURY	0.0163	J	0.0106	MDL	0.0177	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-570-SA8-SB-0.0-0.5 *Collected:* 7/11/2013 1:50:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,7,8,9-HPCDF	0.542	JB	0.0780	MDL	5.45	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.431	JBQ	0.0588	MDL	5.45	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.763	JB	0.0472	MDL	5.45	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	2.08	JB	0.0597	MDL	5.45	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.464	JBQ	0.0468	MDL	5.45	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.861	JBQ	0.0587	MDL	5.45	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.271	JB	0.0769	MDL	5.45	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.241	JB	0.0456	MDL	5.45	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.292	JB	0.0564	MDL	5.45	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.660	JB	0.0469	MDL	5.45	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: PH065 **Laboratory: LL**

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

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-570-SA8-SB-0.0-0.5 *Collected:* 7/11/2013 1:50:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,3,4,7,8-PECDF	1.08	JB	0.0536	MDL	5.45	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.0427	JBQ	0.0335	MDL	1.09	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.201	JQ	0.0620	MDL	1.09	PQL	ng/Kg	J	Z
OCDF	9.42	JB	0.111	MDL	10.9	PQL	ng/Kg	J	Z

Sample ID: SL-570-SA8-SB-4.0-5.0 *Collected:* 7/11/2013 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	1.20	JB	0.0469	MDL	5.60	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.265	JBQ	0.0190	MDL	5.60	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0594	JB	0.0241	MDL	5.60	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0374	JB	0.0232	MDL	5.60	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0553	JB	0.0137	MDL	5.60	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0606	JB	0.0243	MDL	5.60	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0420	JBQ	0.0130	MDL	5.60	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0480	JB	0.0235	MDL	5.60	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0497	JBQ	0.0151	MDL	5.60	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0308	JBQ	0.0262	MDL	5.60	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.0599	JBQ	0.0167	MDL	5.60	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0476	JBQ	0.0133	MDL	5.60	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0318	JBQ	0.0158	MDL	5.60	PQL	ng/Kg	U	B
2,3,7,8-TCDD	0.0237	JB	0.0184	MDL	1.12	PQL	ng/Kg	U	B
OCDD	9.62	JB	0.0695	MDL	11.2	PQL	ng/Kg	J	Z
OCDF	0.419	JBQ	0.0636	MDL	11.2	PQL	ng/Kg	U	B

Sample ID: SL-574-SA8-SB-0.0-0.5 *Collected:* 7/11/2013 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
1,2,3,4,6,7,8-HPCDF	1.47	JB	0.0189	MDL	5.76	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.122	JB	0.0293	MDL	5.76	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.136	JBQ	0.0396	MDL	5.76	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.171	JB	0.0300	MDL	5.76	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: PH065 **Laboratory: LL**

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

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-574-SA8-SB-0.0-0.5 *Collected:* 7/11/2013 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
1,2,3,6,7,8-HXCDD	0.893	JB	0.0431	MDL	5.76	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.178	JBQ	0.0299	MDL	5.76	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.533	JBQ	0.0410	MDL	5.76	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.265	JB	0.0362	MDL	5.76	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.174	JB	0.0407	MDL	5.76	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.298	JB	0.0339	MDL	5.76	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.262	JBQ	0.0288	MDL	5.76	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.476	JB	0.0296	MDL	5.76	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.105	JBQ	0.0269	MDL	1.15	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.192	J	0.0501	MDL	1.15	PQL	ng/Kg	J	Z
OCDF	2.47	JB	0.0370	MDL	11.5	PQL	ng/Kg	J	Z

Sample ID: SL-574-SA8-SB-4.0-5.0 *Collected:* 7/11/2013 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	1.17	JB	0.0272	MDL	5.19	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.143	JBQ	0.0105	MDL	5.19	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0518	JBQ	0.0134	MDL	5.19	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0465	JBQ	0.0226	MDL	5.19	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0884	JB	0.0130	MDL	5.19	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.157	JB	0.0248	MDL	5.19	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.108	JBQ	0.0132	MDL	5.19	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.186	JB	0.0229	MDL	5.19	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.195	JB	0.0143	MDL	5.19	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.102	JBQ	0.0213	MDL	5.19	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.196	JBQ	0.0170	MDL	5.19	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0606	JB	0.0124	MDL	5.19	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.109	JBQ	0.0151	MDL	5.19	PQL	ng/Kg	U	B
2,3,7,8-TCDD	0.0333	JBQ	0.0194	MDL	1.04	PQL	ng/Kg	U	B
OCDD	5.70	JB	0.0325	MDL	10.4	PQL	ng/Kg	J	Z
OCDF	0.217	JB	0.0280	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: PH065 **Laboratory: LL**

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

Method Category: SVOA

Method: 8082A **Matrix: SO**

Sample ID: SL-570-SA8-SB-0.0-0.5 *Collected:* 7/11/2013 1:50:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Aroclor 5460	12	J	11	MDL	36	PQL	ug/Kg	J	Z

Method Category: SVOA

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

Sample ID: SL-570-SA8-SB-0.0-0.5 *Collected:* 7/11/2013 1:50:00 *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	0.99	J	0.73	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(G,H,I)PERYLENE	0.94	J	0.73	MDL	1.8	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	11	J	6.6	MDL	20	PQL	ug/Kg	J	Z
CHRYSENE	0.59	J	0.36	MDL	1.8	PQL	ug/Kg	J	Z
PYRENE	0.76	J	0.73	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: SL-570-SA8-SB-4.0-5.0 *Collected:* 7/11/2013 2:15:00 *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	6.0	J	3.8	MDL	19	PQL	ug/Kg	J	Z

Sample ID: SL-574-SA8-SB-4.0-5.0 *Collected:* 7/11/2013 9:30:00 *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	4.7	J	3.4	MDL	17	PQL	ug/Kg	J	Z

Sample ID: SL-574-SA8-SB-9.0-10.0 *Collected:* 7/11/2013 9:45:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHRYSENE	6.4	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: PH065 **Laboratory: LL**

EDD Filename: PrepPH065 **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
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

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control
Outlier Reports

PH065

Method Blank Outlier Report

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

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

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK1960B371832	7/16/2013 6:32:00 PM	1,2,3,4,6,7,8-HPCDD	0.0478 ng/Kg	SL-570-SA8-SB-0.0-0.5
		1,2,3,4,6,7,8-HPCDF	0.0258 ng/Kg	SL-570-SA8-SB-4.0-5.0
		1,2,3,4,7,8,9-HPCDF	0.0609 ng/Kg	SL-574-SA8-SB-0.0-0.5
		1,2,3,4,7,8-HxCDD	0.0220 ng/Kg	SL-574-SA8-SB-4.0-5.0
		1,2,3,4,7,8-HXCDF	0.0412 ng/Kg	
		1,2,3,6,7,8-HXCDD	0.0258 ng/Kg	
		1,2,3,6,7,8-HXCDF	0.0216 ng/Kg	
		1,2,3,7,8,9-HXCDD	0.0474 ng/Kg	
		1,2,3,7,8,9-HXCDF	0.0394 ng/Kg	
		1,2,3,7,8-PECDD	0.0613 ng/Kg	
		1,2,3,7,8-PECDF	0.0646 ng/Kg	
		2,3,4,6,7,8-HXCDF	0.0356 ng/Kg	
		2,3,4,7,8-PECDF	0.0232 ng/Kg	
		2,3,7,8-TCDD	0.0400 ng/Kg	
		OCDD	0.263 ng/Kg	
		OCDF	0.106 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-570-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.241 ng/Kg	0.241U ng/Kg
SL-570-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.292 ng/Kg	0.292U ng/Kg
SL-570-SA8-SB-0.0-0.5(RES)	2,3,7,8-TCDD	0.0427 ng/Kg	0.0427U ng/Kg
SL-570-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0594 ng/Kg	0.0594U ng/Kg
SL-570-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HxCDD	0.0374 ng/Kg	0.0374U ng/Kg
SL-570-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.0553 ng/Kg	0.0553U ng/Kg
SL-570-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDD	0.0606 ng/Kg	0.0606U ng/Kg
SL-570-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.0420 ng/Kg	0.0420U ng/Kg
SL-570-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDD	0.0480 ng/Kg	0.0480U ng/Kg
SL-570-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDF	0.0497 ng/Kg	0.0497U ng/Kg
SL-570-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDD	0.0308 ng/Kg	0.0308U ng/Kg
SL-570-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.0599 ng/Kg	0.0599U ng/Kg
SL-570-SA8-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0476 ng/Kg	0.0476U ng/Kg
SL-570-SA8-SB-4.0-5.0(RES)	2,3,4,7,8-PECDF	0.0318 ng/Kg	0.0318U ng/Kg
SL-570-SA8-SB-4.0-5.0(RES)	2,3,7,8-TCDD	0.0237 ng/Kg	0.0237U ng/Kg
SL-570-SA8-SB-4.0-5.0(RES)	OCDF	0.419 ng/Kg	0.419U ng/Kg
SL-574-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.122 ng/Kg	0.122U ng/Kg
SL-574-SA8-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.171 ng/Kg	0.171U ng/Kg
SL-574-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.174 ng/Kg	0.174U ng/Kg
SL-574-SA8-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.298 ng/Kg	0.298U ng/Kg
SL-574-SA8-SB-0.0-0.5(RES)	2,3,7,8-TCDD	0.105 ng/Kg	0.105U ng/Kg
SL-574-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0518 ng/Kg	0.0518U ng/Kg
SL-574-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HxCDD	0.0465 ng/Kg	0.0465U ng/Kg
SL-574-SA8-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.0884 ng/Kg	0.0884U ng/Kg
SL-574-SA8-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.108 ng/Kg	0.108U ng/Kg
SL-574-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDD	0.186 ng/Kg	0.186U ng/Kg
SL-574-SA8-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDF	0.195 ng/Kg	0.195U ng/Kg
SL-574-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDD	0.102 ng/Kg	0.102U ng/Kg
SL-574-SA8-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.196 ng/Kg	0.196U ng/Kg

Method Blank Outlier Report

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

EDD Filename: PH065_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-574-SA8-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0606 ng/Kg	0.0606U ng/Kg
SL-574-SA8-SB-4.0-5.0(RES)	2,3,4,7,8-PECDF	0.109 ng/Kg	0.109U ng/Kg
SL-574-SA8-SB-4.0-5.0(RES)	2,3,7,8-TCDD	0.0333 ng/Kg	0.0333U ng/Kg
SL-574-SA8-SB-4.0-5.0(RES)	OCDF	0.217 ng/Kg	0.217U ng/Kg

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

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P19737AB220512	7/18/2013 5:12:00 AM	CALCIUM TIN	5.84 mg/Kg 1.28 mg/Kg	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

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-570-SA8-SB-0.0-0.5(RES)	TIN	2.06 mg/Kg	2.06U mg/Kg
SL-570-SA8-SB-4.0-5.0(RES)	TIN	3.01 mg/Kg	3.01U mg/Kg
SL-574-SA8-SB-0.0-0.5(RES)	TIN	2.25 mg/Kg	2.25U mg/Kg
SL-574-SA8-SB-14.0-15.0(RES)	TIN	3.20 mg/Kg	3.20U mg/Kg
SL-574-SA8-SB-4.0-5.0(RES)	TIN	2.58 mg/Kg	2.58U mg/Kg
SL-574-SA8-SB-9.0-10.0(RES)	TIN	2.68 mg/Kg	2.68U mg/Kg
SL-874-SA8-SB-14.0-15.0(RES)	TIN	2.73 mg/Kg	2.73U mg/Kg

Matrix Spike/Matrix Spike Duplicate Outlier Report

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

EDD Filename: PH065_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-574-SA8-SB-14.0-15.0MS (TOT) **SL-574-SA8-SB-14.0-15.0MSD (TOT)** (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)	ALUMINUM POTASSIUM TITANIUM	604 136 293	190 - -	75.00-125.00 75.00-125.00 75.00-125.00	- - -	ALUMINUM POTASSIUM TITANIUM	J (all detects) Al, Ti, No Qual, >4x
SL-574-SA8-SB-14.0-15.0MS (TOT) **SL-574-SA8-SB-14.0-15.0MSD (TOT)** (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)	CALCIUM MAGNESIUM PHOSPHORUS	-709 -74 -14	-964 -558 -90	75.00-125.00 75.00-125.00 75.00-125.00	- - -	CALCIUM MAGNESIUM PHOSPHORUS	 No Qual, >4x
SL-574-SA8-SB-14.0-15.0MS (TOT) **SL-574-SA8-SB-14.0-15.0MSD (TOT)** (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)	ANTIMONY CHROMIUM MANGANESE ZINC	57 - 346 -	55 54 36 56	75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00	- - 39 (20.00) -	ANTIMONY CHROMIUM MANGANESE ZINC	J(all detects) UJ(all non-detects) Mn, No Qual %R >4x

Method: 6020A
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-574-SA8-SB-14.0-15.0MS (TOT) **SL-574-SA8-SB-14.0-15.0MSD (TOT)** (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)	STRONTIUM	0	21	75.00-125.00	-	STRONTIUM	 No Qual, >4x

Matrix Spike/Matrix Spike Duplicate Outlier Report

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

EDD Filename: PH065_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-574-SA8-SB-14.0-15.0MS (TOT) **SL-574-SA8-SB-14.0-15.0MSD (TOT)** (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)	IRON	-1653	-2598	75.00-125.00	-	IRON	No Qual, >4x

Lab Duplicate Outlier Report

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

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

Method: 6010C
Matrix: SO

QC Sample ID (Associated Sample ID)	*Analyte*	*Sample RPD*	*eQAPP RPD*	*Flag*
SL-574-SA8-SB-14.0-15.0DUP	ARSENIC	32	20.00	
(TOT)	CALCIUM	29	20.00	
(SL-570-SA8-SB-0.0-0.5	LEAD	26	20.00	J (all detects)
SL-570-SA8-SB-4.0-5.0	Zirconium	200	20.00	UJ (all non-detects)
SL -574-SA8-SB-0.0-0.5				
SL -574-SA8-SB-14.0-15.0				As, Pb, Zr,
SL -574-SA8-SB-4.0-5.0				No Qual,
SL -574-SA8-SB-9.0-10.0				OK by Difference
SL -874-SA8-SB-14.0-15.0)				