LDC #: 28558K4
SDG #: 12D275
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 1-6-12
Page: 1 of 1
Reviewer: AR
2nd Reviewer: [illegible]

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

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

	Validation Area		Comments
I.	Technical holding times	—	Sampling dates:
II.	ICP/MS Tune	—	
III.	Calibration	—	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	—	
VI.	Matrix Spike Analysis	N	MS/D (from 12E004)
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	N	LCS/D
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= EB050312 (12E034)

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

FB=FB-071112
(12G064

Validated Samples: S

1	SL-712-SA5C-SB-0.0-0.5	11		21		31	
2	SL-713-SA5C-SB-0.0-0.5	12		22		32	
3	SL-715-SA5C-SB-0.0-0.5	13		23		33	
4	SL-720-SA5C-SB-0.0-0.5	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 #: 28558L4
K

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: AL
2nd Reviewer: VV

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

Blank units: ug/L **Associated sample units:** mg/Kg
Sampling date: 5/3/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All

Analyte	Blank ID	Sample Identification											
	EB-050312	Action Limit	No Qualifiers										
Al	0.0208	5.2											
Ca	0.0374	9.35											
Cu	0.000802	0.2005											
Ni	0.000267	0.06675											

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 #: 28558 14

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: CR
2nd Reviewer:

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

Blank units: ug/L **Associated sample units:** mg/Kg
Sampling date: 7/11/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All

Analyte	Blank ID	Sample Identification											
	FB-071112	Action Limit	No Qualifiers										
Al	0.0296	7.4											
Cu	0.00102	0.255											
Ni	0.000204	0.051											

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

12E004

Attachment I

Sample ID Cross Reference and Data Review Level

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
01-May-2012	TB-050112	E004-07	TB	5030B	8015B GRO	III
01-May-2012	SL-580-SA5C-SB-5.0	E004-04	N	5035	8015B GRO	III
01-May-2012	SL-579-SA5C-SB-5.0	E004-03	N	5035	8015B GRO	III
01-May-2012	SL-516-SA5C-SB-5.0	E004-01	N	5035	8015B GRO	III
01-May-2012	SL-570-SA5C-SB-1.5	E004-02	N	5035	8015B GRO	III
01-May-2012	SL-722-SA5C-SB-0.0-0.5	E004-05	N	3550B	8015B EFH	III
01-May-2012	SL-722-SA5C-SB-0.0-0.5	E004-05	N	3550B	8082	III
01-May-2012	SL-722-SA5C-SB-0.0-0.5	E004-05	N	3550B	8270C SIM	III
01-May-2012	SL-722-SA5C-SB-0.0-0.5	E004-05	N	7471A	7471A	III
01-May-2012	SL-722-SA5C-SB-0.0-0.5	E004-05	N	TOTAL	6020	III
01-May-2012	SL-722-SA5C-SB-0.0-0.5MS	E004-05M	MS	3550B	8015B EFH	III
01-May-2012	SL-722-SA5C-SB-0.0-0.5MS	E004-05M	MS	3550B	8082	III
01-May-2012	SL-722-SA5C-SB-0.0-0.5MS	E004-05M	MS	3550B	8270C SIM	III
01-May-2012	SL-722-SA5C-SB-0.0-0.5MS	E004-05M	MS	7471A	7471A	III
01-May-2012	SL-722-SA5C-SB-0.0-0.5MS	E004-05M	MS	TOTAL	6020	III
01-May-2012	SL-722-SA5C-SB-0.0-0.5MSD	E004-05S	MSD	3550B	8015B EFH	III
01-May-2012	SL-722-SA5C-SB-0.0-0.5MSD	E004-05S	MSD	3550B	8082	III
01-May-2012	SL-722-SA5C-SB-0.0-0.5MSD	E004-05S	MSD	3550B	8270C SIM	III
01-May-2012	SL-722-SA5C-SB-0.0-0.5MSD	E004-05S	MSD	7471A	7471A	III
01-May-2012	SL-722-SA5C-SB-0.0-0.5MSD	E004-05S	MSD	TOTAL	6020	III
01-May-2012	SL-1022-SA5C-SB-0.0-0.5	E004-06	FD	3550B	8015B EFH	III
01-May-2012	SL-1022-SA5C-SB-0.0-0.5	E004-06	FD	3550B	8082	III
01-May-2012	SL-1022-SA5C-SB-0.0-0.5	E004-06	FD	3550B	8270C SIM	III
01-May-2012	SL-1022-SA5C-SB-0.0-0.5	E004-06	FD	7471A	7471A	III
01-May-2012	SL-1022-SA5C-SB-0.0-0.5	E004-06	FD	TOTAL	6020	III
01-May-2012	SL-1022-SA5C-SB-0.0-0.5MS	E004-06M	MS	7471A	7471A	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 II

Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: 12E004 **Laboratory: EMXT**

EDD Filename: Prep12E004 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix:** SO

Sample ID: **SL-1022-SA5C-SB-0.0-0.5** ***Collected:*** **5/1/2012 1:30:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1.00**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	5160		12.6	MDL	105	PQL	MG/KG	J	Q
ANTIMONY	0.129	J	0.105	MDL	0.524	PQL	MG/KG	J	Z
BERYLLIUM	0.138	J	0.0524	MDL	0.524	PQL	MG/KG	J	Z
CADMIUM	0.188	J	0.0524	MDL	0.524	PQL	MG/KG	J	Z
IRON	7550		10.5	MDL	105	PQL	MG/KG	J	Q
SELENIUM	0.337	J	0.210	MDL	0.524	PQL	MG/KG	J	Z
SODIUM	66.7	J	52.4	MDL	105	PQL	MG/KG	J	Z
Zirconium	3.01	J	2.62	MDL	5.24	PQL	MG/KG	J	Z

Sample ID: **SL-722-SA5C-SB-0.0-0.5** ***Collected:*** **5/1/2012 1:25:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1.00**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	5270		12.5	MDL	104	PQL	MG/KG	J	Q
ANTIMONY	0.141	J	0.104	MDL	0.522	PQL	MG/KG	J	Z
BERYLLIUM	0.136	J	0.0522	MDL	0.522	PQL	MG/KG	J	Z
CADMIUM	0.173	J	0.0522	MDL	0.522	PQL	MG/KG	J	Z
IRON	7400		10.4	MDL	104	PQL	MG/KG	J	Q
SELENIUM	0.387	J	0.209	MDL	0.522	PQL	MG/KG	J	Z
SODIUM	67.1	J	52.2	MDL	104	PQL	MG/KG	J	Z
Zirconium	3.08	J	2.61	MDL	5.22	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E004 **Laboratory: EMXT**

EDD Filename: Prep12E004 **eQAPP Name: CDM_SSFL_120730_EMAX**

Reason Code Legend

Reason Code	*Description*
Q	Matrix Spike Lower Estimation
Q	Matrix Spike Lower Rejection
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: PHASE3 - SSFL PHASE 3

Enclosure I

Level III ADR Outliers
(including Manual Review Outliers)

Quality Control Outlier Reports

12E004

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 12E004 **Laboratory: EMXT**

EDD Filename: 12E004 **eQAPP Name: CDM_SSFL_120730_EMAX**

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

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
SL-722-SA5C-SB-0.0-0.5MSD (TOT) (SL-1022-SA5C-SB-0.0-0.5 SL-722-SA5C-SB-0.0-0.5)	ALUMINUM IRON	- -	127 149	75.00-125.00 75.00-125.00	- -	ALUMINUM IRON	J (all detects)
SL-722-SA5C-SB-0.0-0.5MS (TOT) (SL-1022-SA5C-SB-0.0-0.5 SL-722-SA5C-SB-0.0-0.5)	TITANIUM	-113	-	75.00-125.00	-	TITANIUM	No Qual, >4x
SL-722-SA5C-SB-0.0-0.5MS (TOT) (SL-1022-SA5C-SB-0.0-0.5 SL-722-SA5C-SB-0.0-0.5)	MANGANESE	67	-	75.00-125.00	-	MANGANESE	No Qual, >4x

Project Name and Number: PHASE3 - SSFL PHASE 3

Reporting Limit Outliers

Lab Reporting Batch ID: 12E004 **Laboratory: EMXT**

EDD Filename: 12E004 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 6020
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-1022-SA5C-SB-0.0-0.5	ANTIMONY	J	0.129	0.524	PQL	MG/KG	J (all detects)
	BERYLLIUM	J	0.138	0.524	PQL	MG/KG	
	CADMIUM	J	0.188	0.524	PQL	MG/KG	
	SELENIUM	J	0.337	0.524	PQL	MG/KG	
	SODIUM	J	66.7	105	PQL	MG/KG	
	Zirconium	J	3.01	5.24	PQL	MG/KG	
SL-722-SA5C-SB-0.0-0.5	ANTIMONY	J	0.141	0.522	PQL	MG/KG	J (all detects)
	BERYLLIUM	J	0.136	0.522	PQL	MG/KG	
	CADMIUM	J	0.173	0.522	PQL	MG/KG	
	SELENIUM	J	0.387	0.522	PQL	MG/KG	
	SODIUM	J	67.1	104	PQL	MG/KG	
	Zirconium	J	3.08	5.22	PQL	MG/KG	

LDC #: 28558L4
SDG #: 12E004
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 11612
Page: 1 of 1
Reviewer: a
2nd Reviewer: [signature]

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

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

	Validation Area		Comments
I.	Technical holding times	—	Sampling dates:
II.	ICP/MS Tune	—	
III.	Calibration	—	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	—	
VI.	Matrix Spike Analysis	N	MS/D (Mn, Ti 74X)
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	N	LCS/D
IX.	Internal Standard (ICP-MS)	N	
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	D	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	N	
XIV.	Field Duplicates	—	
XV	Field Blanks	SW	EB= EB-050312 (12E034) FB= FB-071112 C126084

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-722-SA5C-SB-0.0-0.5	11		21		31	
2	SL-1022-SA5C-SB-0.0-0.5	12		22		32	
3	SL-722-SA5C-SB-0.0-0.5MS	13		23		33	
4	SL-722-SA5C-SB-0.0-0.5MSD	14		24		34	
5	SL-1022-SA5C-SB-0.0-0.5MS	15		25		35	
6	SL-1022-SA5C-SB-0.0-0.5MSD	16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

LDC #: 28558L4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: CL
2nd Reviewer: LW

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

Blank units: ug/L **Associated sample units:** mg/Kg
Sampling date: 5/3/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All

Analyte	Blank ID	Sample Identification											
	EB-050312	Action Limit	No Qualifiers										
Al	0.0208	5.2											
Ca	0.0374	9.35											
Cu	0.000802	0.2005											
Ni	0.000267	0.06675											

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 #: 28558A4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: CR
2nd Reviewer:

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

Blank units: ug/L **Associated sample units:** mg/Kg
Sampling date: 7/11/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All

Analyte	Blank ID	Sample Identification											
	FB-071112	Action Limit	No Qualifiers										
Al	0.0296	7.4											
Cu	0.00102	0.255											
Ni	0.000204	0.051											

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

12E018

Attachment I

Sample ID Cross Reference and Data Review Level

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
02-May-2012	SL-716-SA5C-SB-0.0-0.5	E018-03	N	7471A	7471A	III
02-May-2012	SL-716-SA5C-SB-0.0-0.5	E018-03	N	TOTAL	6020	III
02-May-2012	SL-716-SA5C-SB-0.0-0.5	E018-03W	N	3550B	8082	III
02-May-2012	SL-717-SA5C-SB-0.0-0.5	E018-04	N	7471A	7471A	III
02-May-2012	SL-717-SA5C-SB-0.0-0.5	E018-04	N	TOTAL	6020	III
02-May-2012	SL-717-SA5C-SB-0.0-0.5	E018-04W	N	3550B	8082	III
02-May-2012	SL-718-SA5C-SB-0.0-0.5	E018-05	N	7471A	7471A	III
02-May-2012	SL-718-SA5C-SB-0.0-0.5	E018-05	N	TOTAL	6020	III
02-May-2012	SL-718-SA5C-SB-0.0-0.5	E018-05W	N	3550B	8082	III
02-May-2012	SL-719-SA5C-SB-0.0-0.5	E018-06	N	7471A	7471A	III
02-May-2012	SL-719-SA5C-SB-0.0-0.5	E018-06	N	TOTAL	6020	III
02-May-2012	SL-719-SA5C-SB-0.0-0.5	E018-06W	N	3550B	8082	III
02-May-2012	SL-587-SA5C-SB-0.0-0.5	E018-01	N	3550B	8015B EFH	III
02-May-2012	SL-587-SA5C-SB-0.0-0.5	E018-01	N	3550B	8270C SIM	III
02-May-2012	SL-587-SA5C-SB-0.0-0.5	E018-01	N	7471A	7471A	III
02-May-2012	SL-587-SA5C-SB-0.0-0.5	E018-01	N	TOTAL	6020	III
02-May-2012	SL-587-SA5C-SB-0.0-0.5	E018-01W	N	3550B	8082	III
02-May-2012	SL-604-SA5C-SB-0.0-0.5	E018-02	N	3550B	8015B EFH	III
02-May-2012	SL-604-SA5C-SB-0.0-0.5	E018-02	N	3550B	8270C SIM	III
02-May-2012	SL-604-SA5C-SB-0.0-0.5	E018-02	N	7471A	7471A	III
02-May-2012	SL-604-SA5C-SB-0.0-0.5	E018-02	N	GEN PREP	6850	III
02-May-2012	SL-604-SA5C-SB-0.0-0.5	E018-02	N	TOTAL	6020	III
02-May-2012	SL-604-SA5C-SB-0.0-0.5	E018-02W	N	3550B	8082	III
02-May-2012	SL-585-SA5C-SB-0.0-0.5	E018-07	N	3550B	8015B EFH	III
02-May-2012	SL-585-SA5C-SB-0.0-0.5	E018-07	N	3550B	8270C SIM	III
02-May-2012	SL-585-SA5C-SB-0.0-0.5	E018-07	N	7471A	7471A	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-May-2012	SL-585-SA5C-SB-0.0-0.5	E018-07	N	TOTAL	6020	III
02-May-2012	SL-585-SA5C-SB-0.0-0.5	E018-07W	N	3550B	8082	III
02-May-2012	SL-600-SA5C-SB-0.0-0.5	E018-09	N	3550B	8015B EFH	III
02-May-2012	SL-600-SA5C-SB-0.0-0.5	E018-09	N	3550B	8270C SIM	III
02-May-2012	SL-600-SA5C-SB-0.0-0.5	E018-09	N	7471A	7471A	III
02-May-2012	SL-600-SA5C-SB-0.0-0.5	E018-09	N	GEN PREP	6850	III
02-May-2012	SL-600-SA5C-SB-0.0-0.5	E018-09	N	TOTAL	6020	III
02-May-2012	SL-600-SA5C-SB-0.0-0.5	E018-09W	N	3550B	8082	III
02-May-2012	SL-599-SA5C-SB-0.0-0.5	E018-08	N	3550B	8015B EFH	III
02-May-2012	SL-599-SA5C-SB-0.0-0.5	E018-08	N	3550B	8270C SIM	III
02-May-2012	SL-599-SA5C-SB-0.0-0.5	E018-08	N	7471A	7471A	III
02-May-2012	SL-599-SA5C-SB-0.0-0.5	E018-08	N	GEN PREP	6850	III
02-May-2012	SL-599-SA5C-SB-0.0-0.5	E018-08	N	TOTAL	6020	III
02-May-2012	SL-599-SA5C-SB-0.0-0.5	E018-08W	N	3550B	8082	III
02-May-2012	SL-591-SA5C-SB-0.0-0.5	E018-10	N	3550B	8270C SIM	III
02-May-2012	SL-591-SA5C-SB-0.0-0.5	E018-10	N	7471A	7471A	III
02-May-2012	SL-591-SA5C-SB-0.0-0.5	E018-10	N	TOTAL	6020	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 II

Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: 12E018 **Laboratory:** EMXT

EDD Filename: 12E018 **eQAPP Name:** CDM_SSFL_120730_EMAX

Method Category: METALS

Method: 6020 **Matrix:** SO

Sample ID: SL-585-SA5C-SB-0.0-0.5 ***Collected:*** 5/2/2012 2:00:00 PM ***Analysis Type:*** RES/TOT ***Dilution:*** 0.990

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	14900		12.7	MDL	106	PQL	MG/KG	J	Q
ANTIMONY	0.219	J	0.106	MDL	0.530	PQL	MG/KG	J	Z
BERYLLIUM	0.470	J	0.0530	MDL	0.530	PQL	MG/KG	J	Z
BORON	3.28	J	2.65	MDL	5.30	PQL	MG/KG	J	Z
CADMIUM	0.313	J	0.0530	MDL	0.530	PQL	MG/KG	J	Z
IRON	19500		10.6	MDL	106	PQL	MG/KG	J	Q
MOLYBDENUM	0.493	J	0.0530	MDL	0.530	PQL	MG/KG	J	Z
SODIUM	93.0	J	53.0	MDL	106	PQL	MG/KG	J	Z
THALLIUM	0.231	J	0.0530	MDL	0.424	PQL	MG/KG	J	Z

Sample ID: SL-587-SA5C-SB-0.0-0.5 ***Collected:*** 5/2/2012 11:35:00 ***Analysis Type:*** RES/TOT ***Dilution:*** 0.952

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	16000		13.0	MDL	109	PQL	MG/KG	J	Q
ANTIMONY	0.273	J	0.109	MDL	0.543	PQL	MG/KG	J	Z
BERYLLIUM	0.539	J	0.0543	MDL	0.543	PQL	MG/KG	J	Z
BORON	4.01	J	2.71	MDL	5.43	PQL	MG/KG	J	Z
CADMIUM	0.317	J	0.0543	MDL	0.543	PQL	MG/KG	J	Z
IRON	21300		10.9	MDL	109	PQL	MG/KG	J	Q
THALLIUM	0.246	J	0.0543	MDL	0.434	PQL	MG/KG	J	Z

Sample ID: SL-591-SA5C-SB-0.0-0.5 ***Collected:*** 5/2/2012 3:25:00 PM ***Analysis Type:*** RES/TOT ***Dilution:*** 0.990

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	20800		13.5	MDL	112	PQL	MG/KG	J	Q
ANTIMONY	0.280	J	0.112	MDL	0.561	PQL	MG/KG	J	Z
CADMIUM	0.280	J	0.0561	MDL	0.561	PQL	MG/KG	J	Z
IRON	28000		11.2	MDL	112	PQL	MG/KG	J	Q
SILVER	0.0810	J	0.0561	MDL	0.561	PQL	MG/KG	J	Z
SODIUM	99.4	J	56.1	MDL	112	PQL	MG/KG	J	Z
THALLIUM	0.342	J	0.0561	MDL	0.448	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E018 **Laboratory:** EMXT

EDD Filename: 12E018 **eQAPP Name:** CDM_SSFL_120730_EMAX

Method Category: METALS

Method: 6020 **Matrix:** SO

Sample ID: SL-599-SA5C-SB-0.0-0.5 ***Collected:*** 5/2/2012 2:45:00 PM ***Analysis Type:*** RES/TOT ***Dilution:*** 0.990

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	16400		12.9	MDL	107	PQL	MG/KG	J	Q
ANTIMONY	0.298	J	0.107	MDL	0.536	PQL	MG/KG	J	Z
BORON	4.38	J	2.68	MDL	5.36	PQL	MG/KG	J	Z
CADMIUM	0.470	J	0.0536	MDL	0.536	PQL	MG/KG	J	Z
IRON	21800		10.7	MDL	107	PQL	MG/KG	J	Q
SODIUM	106	J	53.6	MDL	107	PQL	MG/KG	J	Z
THALLIUM	0.262	J	0.0536	MDL	0.429	PQL	MG/KG	J	Z

Sample ID: SL-600-SA5C-SB-0.0-0.5 ***Collected:*** 5/2/2012 2:15:00 PM ***Analysis Type:*** RES/TOT ***Dilution:*** 0.971

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	19700		14.0	MDL	116	PQL	MG/KG	J	Q
ANTIMONY	0.352	J	0.116	MDL	0.582	PQL	MG/KG	J	Z
BORON	4.23	J	2.91	MDL	5.82	PQL	MG/KG	J	Z
CADMIUM	0.401	J	0.0582	MDL	0.582	PQL	MG/KG	J	Z
IRON	22500		11.6	MDL	116	PQL	MG/KG	J	Q
SODIUM	107	J	58.2	MDL	116	PQL	MG/KG	J	Z
THALLIUM	0.310	J	0.0582	MDL	0.466	PQL	MG/KG	J	Z

Sample ID: SL-604-SA5C-SB-0.0-0.5 ***Collected:*** 5/2/2012 11:55:00 ***Analysis Type:*** RES/TOT ***Dilution:*** 0.995

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	20800		13.4	MDL	112	PQL	MG/KG	J	Q
ANTIMONY	0.246	J	0.112	MDL	0.559	PQL	MG/KG	J	Z
BORON	4.25	J	2.79	MDL	5.59	PQL	MG/KG	J	Z
CADMIUM	0.402	J	0.0559	MDL	0.559	PQL	MG/KG	J	Z
IRON	23400		11.2	MDL	112	PQL	MG/KG	J	Q
SODIUM	101	J	55.9	MDL	112	PQL	MG/KG	J	Z
THALLIUM	0.295	J	0.0559	MDL	0.447	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E018 **Laboratory: EMXT**

EDD Filename: 12E018 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: SO**

***Sample ID:*SL-716-SA5C-SB-0.0-0.5** ***Collected:* 5/2/2012 8:35:00 AM** ***Analysis Type:* RES/TOT** ***Dilution:* 1.00**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	11700		12.6	MDL	105	PQL	MG/KG	J	Q
ANTIMONY	0.200	J	0.105	MDL	0.526	PQL	MG/KG	J	Z
BERYLLIUM	0.507	J	0.0526	MDL	0.526	PQL	MG/KG	J	Z
BORON	3.39	J	2.63	MDL	5.26	PQL	MG/KG	J	Z
CADMIUM	0.232	J	0.0526	MDL	0.526	PQL	MG/KG	J	Z
IRON	20100		10.5	MDL	105	PQL	MG/KG	J	Q
SELENIUM	0.276	J	0.211	MDL	0.526	PQL	MG/KG	J	Z
SODIUM	84.1	J	52.6	MDL	105	PQL	MG/KG	J	Z
THALLIUM	0.204	J	0.0526	MDL	0.421	PQL	MG/KG	J	Z

***Sample ID:*SL-717-SA5C-SB-0.0-0.5** ***Collected:* 5/2/2012 9:15:00 AM** ***Analysis Type:* RES/TOT** ***Dilution:* 1.00**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	4220		12.4	MDL	104	PQL	MG/KG	J	Q
ANTIMONY	0.119	J	0.104	MDL	0.518	PQL	MG/KG	J	Z
BERYLLIUM	0.114	J	0.0518	MDL	0.518	PQL	MG/KG	J	Z
CADMIUM	0.155	J	0.0518	MDL	0.518	PQL	MG/KG	J	Z
IRON	6100		10.4	MDL	104	PQL	MG/KG	J	Q
SODIUM	73.2	J	51.8	MDL	104	PQL	MG/KG	J	Z
Zirconium	2.72	J	2.59	MDL	5.18	PQL	MG/KG	J	Z

***Sample ID:*SL-718-SA5C-SB-0.0-0.5** ***Collected:* 5/2/2012 9:35:00 AM** ***Analysis Type:* RES/TOT** ***Dilution:* 0.980**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	7130		12.3	MDL	102	PQL	MG/KG	J	Q
ANTIMONY	0.176	J	0.102	MDL	0.511	PQL	MG/KG	J	Z
BERYLLIUM	0.215	J	0.0511	MDL	0.511	PQL	MG/KG	J	Z
CADMIUM	0.196	J	0.0511	MDL	0.511	PQL	MG/KG	J	Z
IRON	10600		10.2	MDL	102	PQL	MG/KG	J	Q
SELENIUM	0.343	J	0.205	MDL	0.511	PQL	MG/KG	J	Z
SODIUM	77.7	J	51.1	MDL	102	PQL	MG/KG	J	Z
THALLIUM	0.100	J	0.0511	MDL	0.409	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E018 **Laboratory: EMXT**

EDD Filename: 12E018 **eQAPP Name: CDM_SSFL_120730_EMAX**

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

Sample ID: SL-719-SA5C-SB-0.0-0.5 *Collected:* 5/2/2012 10:00:00 *Analysis Type:* RES/TOT *Dilution:* 0.971

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	11700		12.2	MDL	101	PQL	MG/KG	J	Q
ANTIMONY	0.243	J	0.101	MDL	0.506	PQL	MG/KG	J	Z
BERYLLIUM	0.429	J	0.0506	MDL	0.506	PQL	MG/KG	J	Z
CADMIUM	0.356	J	0.0506	MDL	0.506	PQL	MG/KG	J	Z
IRON	18500		10.1	MDL	101	PQL	MG/KG	J	Q
SELENIUM	0.272	J	0.203	MDL	0.506	PQL	MG/KG	J	Z
SODIUM	77.0	J	50.6	MDL	101	PQL	MG/KG	J	Z
THALLIUM	0.220	J	0.0506	MDL	0.405	PQL	MG/KG	J	Z

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

Sample ID: SL-599-SA5C-SB-0.0-0.5 *Collected:* 5/2/2012 2:45:00 PM *Analysis Type:* RES/TOT *Dilution:* 0.998

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0608	J	0.0540	MDL	0.108	PQL	MG/KG	J	Z

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

Sample ID: SL-585-SA5C-SB-0.0-0.5 *Collected:* 5/2/2012 2:00:00 PM *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(B)FLUORANTHENE	5.9	J	5.4	MDL	21	PQL	UG/KG	J	Z
BENZO(E)PYRENE	7.5	J	5.4	MDL	11	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	5.8	J	5.4	MDL	21	PQL	UG/KG	J	Z

Sample ID: SL-591-SA5C-SB-0.0-0.5 *Collected:* 5/2/2012 3:25:00 PM *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 3

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(E)PYRENE	12	J	8.5	MDL	17	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	10	J	8.5	MDL	34	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E018 **Laboratory: EMXT**

EDD Filename: 12E018 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

Method: 8270C SIM *Matrix:* SO

Sample ID: SL-599-SA5C-SB-0.0-0.5 *Collected:* 5/2/2012 2:45:00 PM *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(E)PYRENE	6.6	J	5.4	MDL	11	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	6.2	J	5.4	MDL	22	PQL	UG/KG	J	Z

Sample ID: SL-600-SA5C-SB-0.0-0.5 *Collected:* 5/2/2012 2:15:00 PM *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)PYRENE	3.1	J	3.0	MDL	12	PQL	UG/KG	J	Z
BENZO(B)FLUORANTHENE	4.0	J	3.0	MDL	12	PQL	UG/KG	J	Z
BENZO(E)PYRENE	3.8	J	3.0	MDL	6.0	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	5.6	J	3.0	MDL	12	PQL	UG/KG	J	Z
CHRYSENE	3.2	J	3.0	MDL	12	PQL	UG/KG	J	Z
FLUORANTHENE	5.8	J	3.0	MDL	12	PQL	UG/KG	J	Z
PHENANTHRENE	3.3	J	3.0	MDL	12	PQL	UG/KG	J	Z
PYRENE	5.7	J	3.0	MDL	12	PQL	UG/KG	J	Z

Sample ID: SL-604-SA5C-SB-0.0-0.5 *Collected:* 5/2/2012 11:55:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 3

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(E)PYRENE	16	J	8.4	MDL	17	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	17	J	8.4	MDL	34	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E018 **Laboratory: EMXT**

EDD Filename: 12E018 **eQAPP Name: CDM_SSFL_120730_EMAX**

Reason Code Legend

Reason Code	*Description*
Q	Matrix Spike Lower Estimation
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Enclosure I

Level III ADR Outliers
(including Manual Review Outliers)

Quality Control
Outlier Reports

12E018

Reporting Limit Outliers

Lab Reporting Batch ID: 12E018 **Laboratory: EMXT**

EDD Filename: 12E018 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 6020

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-585-SA5C-SB-0.0-0.5	ANTIMONY	J	0.219	0.530	PQL	MG/KG	
	BERYLLIUM	J	0.470	0.530	PQL	MG/KG	
	BORON	J	3.28	5.30	PQL	MG/KG	
	CADMIUM	J	0.313	0.530	PQL	MG/KG	J (all detects)
	MOLYBDENUM	J	0.493	0.530	PQL	MG/KG	
	SODIUM	J	93.0	106	PQL	MG/KG	
	THALLIUM	J	0.231	0.424	PQL	MG/KG	
SL-587-SA5C-SB-0.0-0.5	ANTIMONY	J	0.273	0.543	PQL	MG/KG	
	BERYLLIUM	J	0.539	0.543	PQL	MG/KG	
	BORON	J	4.01	5.43	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.317	0.543	PQL	MG/KG	
	THALLIUM	J	0.246	0.434	PQL	MG/KG	
SL-591-SA5C-SB-0.0-0.5	ANTIMONY	J	0.280	0.561	PQL	MG/KG	
	CADMIUM	J	0.280	0.561	PQL	MG/KG	
	SILVER	J	0.0810	0.561	PQL	MG/KG	J (all detects)
	SODIUM	J	99.4	112	PQL	MG/KG	
	THALLIUM	J	0.342	0.448	PQL	MG/KG	
SL-599-SA5C-SB-0.0-0.5	ANTIMONY	J	0.298	0.536	PQL	MG/KG	
	BORON	J	4.38	5.36	PQL	MG/KG	
	CADMIUM	J	0.470	0.536	PQL	MG/KG	J (all detects)
	SODIUM	J	106	107	PQL	MG/KG	
	THALLIUM	J	0.262	0.429	PQL	MG/KG	
SL-600-SA5C-SB-0.0-0.5	ANTIMONY	J	0.352	0.582	PQL	MG/KG	
	BORON	J	4.23	5.82	PQL	MG/KG	
	CADMIUM	J	0.401	0.582	PQL	MG/KG	J (all detects)
	SODIUM	J	107	116	PQL	MG/KG	
	THALLIUM	J	0.310	0.466	PQL	MG/KG	
SL-604-SA5C-SB-0.0-0.5	ANTIMONY	J	0.246	0.559	PQL	MG/KG	
	BORON	J	4.25	5.59	PQL	MG/KG	
	CADMIUM	J	0.402	0.559	PQL	MG/KG	J (all detects)
	SODIUM	J	101	112	PQL	MG/KG	
	THALLIUM	J	0.295	0.447	PQL	MG/KG	
SL-716-SA5C-SB-0.0-0.5	ANTIMONY	J	0.200	0.526	PQL	MG/KG	
	BERYLLIUM	J	0.507	0.526	PQL	MG/KG	
	BORON	J	3.39	5.26	PQL	MG/KG	
	CADMIUM	J	0.232	0.526	PQL	MG/KG	J (all detects)
	SELENIUM	J	0.276	0.526	PQL	MG/KG	
	SODIUM	J	84.1	105	PQL	MG/KG	
	THALLIUM	J	0.204	0.421	PQL	MG/KG	
SL-717-SA5C-SB-0.0-0.5	ANTIMONY	J	0.119	0.518	PQL	MG/KG	
	BERYLLIUM	J	0.114	0.518	PQL	MG/KG	
	CADMIUM	J	0.155	0.518	PQL	MG/KG	J (all detects)
	SODIUM	J	73.2	104	PQL	MG/KG	
	Zirconium	J	2.72	5.18	PQL	MG/KG	
SL-718-SA5C-SB-0.0-0.5	ANTIMONY	J	0.176	0.511	PQL	MG/KG	
	BERYLLIUM	J	0.215	0.511	PQL	MG/KG	
	CADMIUM	J	0.196	0.511	PQL	MG/KG	J (all detects)
	SELENIUM	J	0.343	0.511	PQL	MG/KG	
	SODIUM	J	77.7	102	PQL	MG/KG	
	THALLIUM	J	0.100	0.409	PQL	MG/KG	

Reporting Limit Outliers

Lab Reporting Batch ID: 12E018 **Laboratory: EMXT**

EDD Filename: 12E018 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 6020
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-719-SA5C-SB-0.0-0.5	ANTIMONY	J	0.243	0.506	PQL	MG/KG	J (all detects)
	BERYLLIUM	J	0.429	0.506	PQL	MG/KG	
	CADMIUM	J	0.356	0.506	PQL	MG/KG	
	SELENIUM	J	0.272	0.506	PQL	MG/KG	
	SODIUM	J	77.0	101	PQL	MG/KG	
	THALLIUM	J	0.220	0.405	PQL	MG/KG	

Method: 7471A
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-599-SA5C-SB-0.0-0.5	MERCURY	J	0.0608	0.108	PQL	MG/KG	J (all detects)

Method: 8270C SIM
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-585-SA5C-SB-0.0-0.5	BENZO(B)FLUORANTHENE	J	5.9	21	PQL	UG/KG	J (all detects)
	BENZO(E)PYRENE	J	7.5	11	PQL	UG/KG	
	BENZO(G,H,I)PERYLENE	J	5.8	21	PQL	UG/KG	
SL-591-SA5C-SB-0.0-0.5	BENZO(E)PYRENE	J	12	17	PQL	UG/KG	J (all detects)
	BENZO(G,H,I)PERYLENE	J	10	34	PQL	UG/KG	
SL-599-SA5C-SB-0.0-0.5	BENZO(E)PYRENE	J	6.6	11	PQL	UG/KG	J (all detects)
	BENZO(G,H,I)PERYLENE	J	6.2	22	PQL	UG/KG	
SL-600-SA5C-SB-0.0-0.5	BENZO(A)PYRENE	J	3.1	12	PQL	UG/KG	J (all detects)
	BENZO(B)FLUORANTHENE	J	4.0	12	PQL	UG/KG	
	BENZO(E)PYRENE	J	3.8	6.0	PQL	UG/KG	
	BENZO(G,H,I)PERYLENE	J	5.6	12	PQL	UG/KG	
	CHRYSENE	J	3.2	12	PQL	UG/KG	
	FLUORANTHENE	J	5.8	12	PQL	UG/KG	
	PHENANTHRENE	J	3.3	12	PQL	UG/KG	
	PYRENE	J	5.7	12	PQL	UG/KG	
SL-604-SA5C-SB-0.0-0.5	BENZO(E)PYRENE	J	16	17	PQL	UG/KG	J (all detects)
	BENZO(G,H,I)PERYLENE	J	17	34	PQL	UG/KG	

LDC #: 28558M4
SDG #: 12E018
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 1-6-12
Page: 1 of 1
Reviewer: CL
2nd Reviewer: V

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

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

	Validation Area		Comments
I.	Technical holding times	—	Sampling dates:
II.	ICP/MS Tune	—	
III.	Calibration	—	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	—	
VI.	Matrix Spike Analysis	N	MS/D (from 12E004)
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	N	LCS/D
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= EB-050312 (12E034) FB=FB-071112 (12G064)

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-587-SA5C-SB-0.0-0.5	11		21		31	
2	SL-604-SA5C-SB-0.0-0.5	12		22		32	
3	SL-716-SA5C-SB-0.0-0.5	13		23		33	
4	SL-717-SA5C-SB-0.0-0.5	14		24		34	
5	SL-718-SA5C-SB-0.0-0.5	15		25		35	
6	SL-719-SA5C-SB-0.0-0.5	16		26		36	
7	SL-585-SA5C-SB-0.0-0.5	17		27		37	
8	SL-599-SA5C-SB-0.0-0.5	18		28		38	
9	SL-600-SA5C-SB-0.0-0.5	19		29		39	
10	SL-591-SA5C-SB-0.0-0.5	20		30		40	

Notes: _____

LDC #: 28558M4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: AT
2nd Reviewer: LA

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

Blank units: ug/L **Associated sample units:** mg/Kg
Sampling date: 5/3/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All

Analyte	Blank ID	Sample Identification											
	EB-050312	Action Limit	No Qualifiers										
Al	0.0208	5.2											
Ca	0.0374	9.35											
Cu	0.000802	0.2005											
Ni	0.000267	0.06675											

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 #: 28558 4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: CR
2nd Reviewer:

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

Blank units: ug/L **Associated sample units:** mg/Kg
Sampling date: 7/11/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All

Analyte	Blank ID	Sample Identification										
	FB-071112	Action Limit	No Qualifiers									
Al	0.0296	7.4										
Cu	0.00102	0.255										
Ni	0.000204	0.051										

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

12E034

Attachment I

Sample ID Cross Reference and Data Review Level

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
02-May-2012	SL-602-SA5C-SB-0.0-0.5	E034-01	N	3550B	8015B EFH	III
02-May-2012	SL-602-SA5C-SB-0.0-0.5	E034-01	N	3550B	8270C SIM	III
02-May-2012	SL-602-SA5C-SB-0.0-0.5	E034-01	N	GEN PREP	6850	III
02-May-2012	SL-602-SA5C-SB-0.0-0.5	E034-01W	N	3550B	8082	III
03-May-2012	SL-603-SA5C-SB-0.0-0.5	E034-03	N	3550B	8015B EFH	III
03-May-2012	SL-603-SA5C-SB-0.0-0.5	E034-03	N	3550B	8270C SIM	III
03-May-2012	SL-603-SA5C-SB-0.0-0.5	E034-03	N	7471A	7471A	III
03-May-2012	SL-603-SA5C-SB-0.0-0.5	E034-03	N	GEN PREP	6850	III
03-May-2012	SL-603-SA5C-SB-0.0-0.5	E034-03	N	TOTAL	6020	III
03-May-2012	SL-603-SA5C-SB-0.0-0.5MS	E034-03M	MS	3550B	8015B EFH	III
03-May-2012	SL-603-SA5C-SB-0.0-0.5MS	E034-03M	MS	3550B	8082	III
03-May-2012	SL-603-SA5C-SB-0.0-0.5MS	E034-03M	MS	3550B	8270C SIM	III
03-May-2012	SL-603-SA5C-SB-0.0-0.5MS	E034-03M	MS	7471A	7471A	III
03-May-2012	SL-603-SA5C-SB-0.0-0.5MS	E034-03M	MS	GEN PREP	6850	III
03-May-2012	SL-603-SA5C-SB-0.0-0.5MS	E034-03M	MS	TOTAL	6020	III
03-May-2012	SL-603-SA5C-SB-0.0-0.5MSD	E034-03S	MSD	3550B	8015B EFH	III
03-May-2012	SL-603-SA5C-SB-0.0-0.5MSD	E034-03S	MSD	3550B	8082	III
03-May-2012	SL-603-SA5C-SB-0.0-0.5MSD	E034-03S	MSD	3550B	8270C SIM	III
03-May-2012	SL-603-SA5C-SB-0.0-0.5MSD	E034-03S	MSD	7471A	7471A	III
03-May-2012	SL-603-SA5C-SB-0.0-0.5MSD	E034-03S	MSD	GEN PREP	6850	III
03-May-2012	SL-603-SA5C-SB-0.0-0.5MSD	E034-03S	MSD	TOTAL	6020	III
03-May-2012	SL-603-SA5C-SB-0.0-0.5	E034-03W	N	3550B	8082	III
03-May-2012	SL-903-SA5C-SB-0.0-0.5	E034-04	FD	3550B	8015B EFH	III
03-May-2012	SL-903-SA5C-SB-0.0-0.5	E034-04	FD	3550B	8082	III
03-May-2012	SL-903-SA5C-SB-0.0-0.5	E034-04	FD	3550B	8270C SIM	III
03-May-2012	SL-903-SA5C-SB-0.0-0.5	E034-04	FD	7471A	7471A	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-May-2012	SL-903-SA5C-SB-0.0-0.5	E034-04	FD	GEN PREP	6850	III
03-May-2012	SL-903-SA5C-SB-0.0-0.5	E034-04	FD	TOTAL	6020	III
03-May-2012	SL-584-SA5C-SB-0.0-0.5	E034-05	N	3550B	8015B EFH	III
03-May-2012	SL-584-SA5C-SB-0.0-0.5	E034-05	N	3550B	8082	III
03-May-2012	SL-584-SA5C-SB-0.0-0.5	E034-05	N	3550B	8270C SIM	III
03-May-2012	SL-584-SA5C-SB-0.0-0.5	E034-05	N	7471A	7471A	III
03-May-2012	SL-584-SA5C-SB-0.0-0.5	E034-05	N	TOTAL	6020	III
03-May-2012	SL-612-SA5C-SB-0.0-0.5	E034-07	N	3550B	8015B EFH	III
03-May-2012	SL-612-SA5C-SB-0.0-0.5	E034-07	N	3550B	8082	III
03-May-2012	SL-612-SA5C-SB-0.0-0.5	E034-07	N	3550B	8270C SIM	III
03-May-2012	SL-612-SA5C-SB-0.0-0.5	E034-07	N	7471A	7471A	III
03-May-2012	SL-612-SA5C-SB-0.0-0.5	E034-07	N	GEN PREP	6850	III
03-May-2012	SL-612-SA5C-SB-0.0-0.5	E034-07	N	TOTAL	6020	III
03-May-2012	SL-606-SA5C-SB-0.0-0.5	E034-06	N	3550B	8015B EFH	III
03-May-2012	SL-606-SA5C-SB-0.0-0.5	E034-06	N	3550B	8082	III
03-May-2012	SL-606-SA5C-SB-0.0-0.5	E034-06	N	3550B	8270C SIM	III
03-May-2012	SL-606-SA5C-SB-0.0-0.5	E034-06	N	7471A	7471A	III
03-May-2012	SL-606-SA5C-SB-0.0-0.5	E034-06	N	GEN PREP	6850	III
03-May-2012	SL-606-SA5C-SB-0.0-0.5	E034-06	N	TOTAL	6020	III
03-May-2012	EB-050312	E034-02	EB	3520C	8015B EFH	III
03-May-2012	EB-050312	E034-02	EB	3520C	8082	III
03-May-2012	EB-050312	E034-02	EB	3520C	8270C SIM	III
03-May-2012	EB-050312	E034-02	EB	7470A	7470A	III
03-May-2012	EB-050312	E034-02	EB	GEN PREP	7199	III
03-May-2012	EB-050312	E034-02	EB	NONE	314.0	III
03-May-2012	EB-050312	E034-02	EB	TOTAL	6020	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 II

Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: 12E034 **Laboratory: EMXT**

EDD Filename: 12E034 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: **METALS**

Method: **6020** ***Matrix:*** **AQ**

Sample ID: **EB-050312** ***Collected:*** **5/3/2012 2:50:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
ALUMINUM	0.0208	J	0.0200	MDL	0.100	PQL	MG/L	J	Z
CALCIUM	0.0374	J	0.0250	MDL	0.100	PQL	MG/L	J	Z
COPPER	0.000802	J	0.000500	MDL	0.00100	PQL	MG/L	J	Z
NICKEL	0.000267	J	0.000200	MDL	0.00100	PQL	MG/L	J	Z

Method Category: **METALS**

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

Sample ID: **SL-584-SA5C-SB-0.0-0.5** ***Collected:*** **5/3/2012 10:00:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.980**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
ALUMINUM	10800		13.5	MDL	113	PQL	MG/KG	J	Q
ANTIMONY	0.178	J	0.113	MDL	0.565	PQL	MG/KG	J	Z, Q
ARSENIC	4.11		0.226	MDL	0.565	PQL	MG/KG	J	Q
BARIUM	94.4		0.226	MDL	0.565	PQL	MG/KG	J	Q
BERYLLIUM	0.496	J	0.0565	MDL	0.565	PQL	MG/KG	J	Z, Q
CADMIUM	0.284	J	0.0565	MDL	0.565	PQL	MG/KG	J	Z
CALCIUM	5200		11.3	MDL	22.6	PQL	MG/KG	J	Q
CHROMIUM	15.0		0.226	MDL	0.565	PQL	MG/KG	J	Q
COBALT	6.33		0.0565	MDL	0.565	PQL	MG/KG	J	Q
COPPER	8.82		0.226	MDL	0.565	PQL	MG/KG	J	Q
MAGNESIUM	2960		5.65	MDL	11.3	PQL	MG/KG	J	Q
MOLYBDENUM	0.387	J	0.0565	MDL	0.565	PQL	MG/KG	J	Z, Q
NICKEL	9.75		0.226	MDL	0.565	PQL	MG/KG	J	Q
PHOSPHORUS	154		6.77	MDL	13.5	PQL	MG/KG	J	Q
SELENIUM	0.565	U	0.226	MDL	0.565	PQL	MG/KG	UJ	Q
SODIUM	66.0	J	56.5	MDL	113	PQL	MG/KG	J	Z
STRONTIUM	27.0		0.282	MDL	0.565	PQL	MG/KG	J	Q
THALLIUM	0.257	J	0.0565	MDL	0.452	PQL	MG/KG	J	Z
VANADIUM	31.2		0.0565	MDL	0.565	PQL	MG/KG	J	Q
Zirconium	5.65	U	2.82	MDL	5.65	PQL	MG/KG	UJ	Q

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E034 **Laboratory: EMXT**

EDD Filename: 12E034 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: **SL-603-SA5C-SB-0.0-0.5** ***Collected:*** **5/3/2012 9:15:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.985**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	8390		12.8	MDL	107	PQL	MG/KG	J	Q
ANTIMONY	0.266	J	0.107	MDL	0.535	PQL	MG/KG	J	Z, Q
ARSENIC	4.59		0.214	MDL	0.535	PQL	MG/KG	J	Q
BARIUM	80.6		0.214	MDL	0.535	PQL	MG/KG	J	Q
BERYLLIUM	0.475	J	0.0535	MDL	0.535	PQL	MG/KG	J	Z, Q
CADMIUM	0.288	J	0.0535	MDL	0.535	PQL	MG/KG	J	Z
CALCIUM	2370		10.7	MDL	21.4	PQL	MG/KG	J	Q
CHROMIUM	13.9		0.214	MDL	0.535	PQL	MG/KG	J	Q
COBALT	4.39		0.0535	MDL	0.535	PQL	MG/KG	J	Q
COPPER	7.39		0.214	MDL	0.535	PQL	MG/KG	J	Q
MAGNESIUM	2840		5.35	MDL	10.7	PQL	MG/KG	J	Q
MOLYBDENUM	1.40		0.0535	MDL	0.535	PQL	MG/KG	J	Q, FD
NICKEL	8.50		0.214	MDL	0.535	PQL	MG/KG	J	Q
PHOSPHORUS	273		6.42	MDL	12.8	PQL	MG/KG	J	Q
SELENIUM	0.535	U	0.214	MDL	0.535	PQL	MG/KG	UJ	Q
SODIUM	63.5	J	53.5	MDL	107	PQL	MG/KG	J	Z
STRONTIUM	16.9		0.268	MDL	0.535	PQL	MG/KG	J	Q
THALLIUM	0.260	J	0.0535	MDL	0.428	PQL	MG/KG	J	Z
VANADIUM	26.5		0.0535	MDL	0.535	PQL	MG/KG	J	Q
Zirconium	5.35	U	2.68	MDL	5.35	PQL	MG/KG	UJ	Q

Sample ID: **SL-606-SA5C-SB-0.0-0.5** ***Collected:*** **5/3/2012 11:30:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.962**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	7580		12.1	MDL	101	PQL	MG/KG	J	Q
ANTIMONY	0.389	J	0.101	MDL	0.504	PQL	MG/KG	J	Z, Q
ARSENIC	2.50		0.202	MDL	0.504	PQL	MG/KG	J	Q
BARIUM	61.4		0.202	MDL	0.504	PQL	MG/KG	J	Q
BERYLLIUM	0.282	J	0.0504	MDL	0.504	PQL	MG/KG	J	Z, Q
CADMIUM	0.292	J	0.0504	MDL	0.504	PQL	MG/KG	J	Z
CALCIUM	3850		10.1	MDL	20.2	PQL	MG/KG	J	Q
CHROMIUM	16.2		0.202	MDL	0.504	PQL	MG/KG	J	Q

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E034 **Laboratory: EMXT**

EDD Filename: 12E034 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

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

Sample ID: SL-606-SA5C-SB-0.0-0.5 ***Collected:*** 5/3/2012 11:30:00 ***Analysis Type:*** RES/TOT ***Dilution:*** 0.962

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COBALT	3.82		0.0504	MDL	0.504	PQL	MG/KG	J	Q
COPPER	15.7		0.202	MDL	0.504	PQL	MG/KG	J	Q
MAGNESIUM	2790		5.04	MDL	10.1	PQL	MG/KG	J	Q
MOLYBDENUM	2.60		0.0504	MDL	0.504	PQL	MG/KG	J	Q
NICKEL	9.91		0.202	MDL	0.504	PQL	MG/KG	J	Q
PHOSPHORUS	299		6.05	MDL	12.1	PQL	MG/KG	J	Q
SELENIUM	0.504	U	0.202	MDL	0.504	PQL	MG/KG	UJ	Q
SODIUM	75.0	J	50.4	MDL	101	PQL	MG/KG	J	Z
STRONTIUM	14.3		0.252	MDL	0.504	PQL	MG/KG	J	Q
THALLIUM	0.168	J	0.0504	MDL	0.403	PQL	MG/KG	J	Z
VANADIUM	21.3		0.0504	MDL	0.504	PQL	MG/KG	J	Q
Zirconium	5.04	U	2.52	MDL	5.04	PQL	MG/KG	UJ	Q

Sample ID: SL-612-SA5C-SB-0.0-0.5 ***Collected:*** 5/3/2012 10:55:00 ***Analysis Type:*** RES/TOT ***Dilution:*** 0.980

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	12100		12.6	MDL	105	PQL	MG/KG	J	Q
ANTIMONY	0.312	J	0.105	MDL	0.525	PQL	MG/KG	J	Z, Q
ARSENIC	4.03		0.210	MDL	0.525	PQL	MG/KG	J	Q
BARIUM	98.4		0.210	MDL	0.525	PQL	MG/KG	J	Q
BERYLLIUM	0.516	J	0.0525	MDL	0.525	PQL	MG/KG	J	Z, Q
CADMIUM	0.410	J	0.0525	MDL	0.525	PQL	MG/KG	J	Z
CALCIUM	3340		10.5	MDL	21.0	PQL	MG/KG	J	Q
CHROMIUM	19.7		0.210	MDL	0.525	PQL	MG/KG	J	Q
COBALT	5.59		0.0525	MDL	0.525	PQL	MG/KG	J	Q
COPPER	10.5		0.210	MDL	0.525	PQL	MG/KG	J	Q
MAGNESIUM	4140		5.25	MDL	10.5	PQL	MG/KG	J	Q
MOLYBDENUM	0.547		0.0525	MDL	0.525	PQL	MG/KG	J	Q
NICKEL	10.9		0.210	MDL	0.525	PQL	MG/KG	J	Q
PHOSPHORUS	448		6.30	MDL	12.6	PQL	MG/KG	J	Q
SELENIUM	0.525	U	0.210	MDL	0.525	PQL	MG/KG	UJ	Q
SODIUM	68.0	J	52.5	MDL	105	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E034 **Laboratory: EMXT**

EDD Filename: 12E034 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix:** SO

Sample ID: SL-612-SA5C-SB-0.0-0.5 ***Collected:*** 5/3/2012 10:55:00 ***Analysis Type:*** RES/TOT ***Dilution:*** 0.980

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	19.7		0.263	MDL	0.525	PQL	MG/KG	J	Q
THALLIUM	0.242	J	0.0525	MDL	0.420	PQL	MG/KG	J	Z
VANADIUM	33.4		0.0525	MDL	0.525	PQL	MG/KG	J	Q
Zirconium	5.25	U	2.63	MDL	5.25	PQL	MG/KG	UJ	Q

Sample ID: SL-903-SA5C-SB-0.0-0.5 ***Collected:*** 5/3/2012 9:20:00 AM ***Analysis Type:*** RES/TOT ***Dilution:*** 0.976

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	10100		12.6	MDL	105	PQL	MG/KG	J	Q
ANTIMONY	0.242	J	0.105	MDL	0.523	PQL	MG/KG	J	Z, Q
ARSENIC	3.08		0.209	MDL	0.523	PQL	MG/KG	J	Q
BARIUM	91.1		0.209	MDL	0.523	PQL	MG/KG	J	Q
BERYLLIUM	0.426	J	0.0523	MDL	0.523	PQL	MG/KG	J	Z, Q
CADMIUM	0.283	J	0.0523	MDL	0.523	PQL	MG/KG	J	Z
CALCIUM	2790		10.5	MDL	20.9	PQL	MG/KG	J	Q
CHROMIUM	15.4		0.209	MDL	0.523	PQL	MG/KG	J	Q
COBALT	5.06		0.0523	MDL	0.523	PQL	MG/KG	J	Q
COPPER	8.88		0.209	MDL	0.523	PQL	MG/KG	J	Q
MAGNESIUM	3360		5.23	MDL	10.5	PQL	MG/KG	J	Q
MOLYBDENUM	0.442	J	0.0523	MDL	0.523	PQL	MG/KG	J	Z, Q, FD
NICKEL	9.21		0.209	MDL	0.523	PQL	MG/KG	J	Q
PHOSPHORUS	277		6.28	MDL	12.6	PQL	MG/KG	J	Q
SELENIUM	0.523	U	0.209	MDL	0.523	PQL	MG/KG	UJ	Q
SODIUM	74.8	J	52.3	MDL	105	PQL	MG/KG	J	Z
STRONTIUM	19.0		0.262	MDL	0.523	PQL	MG/KG	J	Q
THALLIUM	0.230	J	0.0523	MDL	0.418	PQL	MG/KG	J	Z
VANADIUM	27.7		0.0523	MDL	0.523	PQL	MG/KG	J	Q
Zirconium	5.23	U	2.62	MDL	5.23	PQL	MG/KG	UJ	Q

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E034 **Laboratory: EMXT**

EDD Filename: 12E034 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

Method: 8015B EFH **Matrix: SO**

Sample ID: SL-603-SA5C-SB-0.0-0.5 *Collected:* 5/3/2012 9:15:00 AM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH(C30-C40)	18		5.4	MDL	11	PQL	MG/KG	J	FD

Sample ID: SL-903-SA5C-SB-0.0-0.5 *Collected:* 5/3/2012 9:20:00 AM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH(C30-C40)	31		5.4	MDL	11	PQL	MG/KG	J	FD

Method Category: SVOA

Method: 8270C SIM **Matrix: SO**

Sample ID: SL-602-SA5C-SB-0.0-0.5 *Collected:* 5/2/2012 3:50:00 PM *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 3

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)PYRENE	9.0	J	8.2	MDL	33	PQL	UG/KG	J	Z
BENZO(B)FLUORANTHENE	20	J	8.2	MDL	33	PQL	UG/KG	J	Z
BENZO(E)PYRENE	13	J	8.2	MDL	16	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	9.4	J	8.2	MDL	33	PQL	UG/KG	J	Z
CHRYSENE	9.1	J	8.2	MDL	33	PQL	UG/KG	J	Z
FLUORANTHENE	18	J	8.2	MDL	33	PQL	UG/KG	J	Z
PYRENE	16	J	8.2	MDL	33	PQL	UG/KG	J	Z

Sample ID: SL-603-SA5C-SB-0.0-0.5 *Collected:* 5/3/2012 9:15:00 AM *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)ANTHRACENE	4.2	J	2.7	MDL	11	PQL	UG/KG	J	Z
BENZO(A)PYRENE	5.3	J	2.7	MDL	11	PQL	UG/KG	J	Z
BENZO(B)FLUORANTHENE	7.7	J	2.7	MDL	11	PQL	UG/KG	J	Z
BENZO(E)PYRENE	4.3	J	2.7	MDL	5.4	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	4.3	J	2.7	MDL	11	PQL	UG/KG	J	Z
BENZO(K)FLUORANTHENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	FD
CHRYSENE	4.7	J	2.7	MDL	11	PQL	UG/KG	J	Z
INDENO(1,2,3-CD)PYRENE	2.9	J	2.7	MDL	11	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E034 **Laboratory: EMXT**

EDD Filename: 12E034 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: **SVOA**

Method: **8270C SIM** ***Matrix:*** **SO**

Sample ID: **SL-603-SA5C-SB-0.0-0.5** ***Collected:*** **5/3/2012 9:15:00 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
PHENANTHRENE	4.8	J	2.7	MDL	11	PQL	UG/KG	J	Z
PYRENE	10	J	2.7	MDL	11	PQL	UG/KG	J	Z

Sample ID: **SL-606-SA5C-SB-0.0-0.5** ***Collected:*** **5/3/2012 11:30:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **3**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)ANTHRACENE	8.4	J	7.9	MDL	31	PQL	UG/KG	J	Z
BENZO(A)PYRENE	11	J	7.9	MDL	31	PQL	UG/KG	J	Z
BENZO(B)FLUORANTHENE	19	J	7.9	MDL	31	PQL	UG/KG	J	Z
BENZO(E)PYRENE	14	J	7.9	MDL	16	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	13	J	7.9	MDL	31	PQL	UG/KG	J	Z
CHRYSENE	8.1	J	7.9	MDL	31	PQL	UG/KG	J	Z
FLUORANTHENE	12	J	7.9	MDL	31	PQL	UG/KG	J	Z
PYRENE	12	J	7.9	MDL	31	PQL	UG/KG	J	Z

Sample ID: **SL-612-SA5C-SB-0.0-0.5** ***Collected:*** **5/3/2012 10:55:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)PYRENE	7.4	J	5.4	MDL	21	PQL	UG/KG	J	Z
BENZO(B)FLUORANTHENE	11	J	5.4	MDL	21	PQL	UG/KG	J	Z
BENZO(E)PYRENE	6.8	J	5.4	MDL	11	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	6.3	J	5.4	MDL	21	PQL	UG/KG	J	Z
CHRYSENE	6.4	J	5.4	MDL	21	PQL	UG/KG	J	Z
FLUORANTHENE	13	J	5.4	MDL	21	PQL	UG/KG	J	Z
PYRENE	12	J	5.4	MDL	21	PQL	UG/KG	J	Z

Sample ID: **SL-903-SA5C-SB-0.0-0.5** ***Collected:*** **5/3/2012 9:20:00 AM** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)ANTHRACENE	5.5	J	2.7	MDL	11	PQL	UG/KG	J	Z
BENZO(A)PYRENE	6.5	J	2.7	MDL	11	PQL	UG/KG	J	Z
BENZO(B)FLUORANTHENE	8.4	J	2.7	MDL	11	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E034 **Laboratory: EMXT**

EDD Filename: 12E034 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

Method: 8270C SIM *Matrix:* SO

Sample ID: SL-903-SA5C-SB-0.0-0.5 *Collected:* 5/3/2012 9:20:00 AM *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(G,H,I)PERYLENE	6.1	J	2.7	MDL	11	PQL	UG/KG	J	Z
BENZO(K)FLUORANTHENE	3.1	J	2.7	MDL	11	PQL	UG/KG	J	Z, FD
CHRYSENE	5.6	J	2.7	MDL	11	PQL	UG/KG	J	Z
INDENO(1,2,3-CD)PYRENE	4.0	J	2.7	MDL	11	PQL	UG/KG	J	Z
PHENANTHRENE	4.9	J	2.7	MDL	11	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E034 **Laboratory: EMXT**

EDD Filename: 12E034 **eQAPP Name: CDM_SSFL_120730_EMAX**

Reason Code Legend

Reason Code	*Description*
FD	Field Duplicate Precision
Q	Matrix Spike Lower Estimation
Q	Matrix Spike Lower Rejection
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Enclosure I

Level III ADR Outliers
(including Manual Review Outliers)

Quality Control
Outlier Reports

12E034

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 12E034 **Laboratory: EMXT**

EDD Filename: 12E034 **eQAPP Name: CDM_SSFL_120730_EMAX**

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

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
SL-603-SA5C-SB-0.0-0.5MS (TOT) **SL-603-SA5C-SB-0.0-0.5MSD (TOT)** (SL-584-SA5C-SB-0.0-0.5 SL-603-SA5C-SB-0.0-0.5 SL-606-SA5C-SB-0.0-0.5 SL-612-SA5C-SB-0.0-0.5 SL-903-SA5C-SB-0.0-0.5)	IRON	-130	-87	75.00-125.00	-	IRON	No Qual, >4x
	MANGANESE	-50	38	75.00-125.00	-	MANGANESE	
	TITANIUM	-132	64	75.00-125.00	-	TITANIUM	
SL-603-SA5C-SB-0.0-0.5MS (TOT) **SL-603-SA5C-SB-0.0-0.5MSD (TOT)** (SL-584-SA5C-SB-0.0-0.5 SL-603-SA5C-SB-0.0-0.5 SL-606-SA5C-SB-0.0-0.5 SL-612-SA5C-SB-0.0-0.5 SL-903-SA5C-SB-0.0-0.5)	ALUMINUM	35	59	75.00-125.00	-	ALUMINUM	J(all detects) UJ(all non-detects)
	ANTIMONY	58	57	75.00-125.00	-	ANTIMONY	
	ARSENIC	65	63	75.00-125.00	-	ARSENIC	
	BARIUM	50	-	75.00-125.00	-	BARIUM	
	BERYLLIUM	70	69	75.00-125.00	-	BERYLLIUM	
	CALCIUM	67	-	75.00-125.00	-	CALCIUM	
	CHROMIUM	57	57	75.00-125.00	-	CHROMIUM	
	COBALT	67	67	75.00-125.00	-	COBALT	
	COPPER	63	65	75.00-125.00	-	COPPER	
	MAGNESIUM	62	72	75.00-125.00	-	MAGNESIUM	
	MOLYBDENUM	72	71	75.00-125.00	-	MOLYBDENUM	
	NICKEL	62	62	75.00-125.00	-	NICKEL	
	PHOSPHORUS	62	68	75.00-125.00	-	PHOSPHORUS	
	SELENIUM	-	74	75.00-125.00	-	SELENIUM	
	STRONTIUM	66	70	75.00-125.00	-	STRONTIUM	
	VANADIUM	53	58	75.00-125.00	-	VANADIUM	
	Zirconium	37	38	75.00-125.00	-	Zirconium	

Field Duplicate RPD Report

Lab Reporting Batch ID: 12E034 **Laboratory: EMXT**

EDD Filename: Prep12E034 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 6020
Matrix: SO

Analyte	Concentration (MG/KG)		Sample RPD	eQAPP RPD	Flag
	SL-603-SA5C-SB-0.0-0.5 (TOT)	SL-903-SA5C-SB-0.0-0.5 (TOT)			
ALUMINUM	8390	10100	18	50.00	
ANTIMONY	0.266	0.242	9	50.00	
ARSENIC	4.59	3.08	39	50.00	
BARIUM	80.6	91.1	12	50.00	
BERYLLIUM	0.475	0.426	11	50.00	
CADMIUM	0.288	0.283	2	50.00	
CALCIUM	2370	2790	16	50.00	
CHROMIUM	13.9	15.4	10	50.00	
COBALT	4.39	5.06	14	50.00	
COPPER	7.39	8.88	18	50.00	
IRON	18200	16600	9	50.00	
LEAD	10.6	12.6	17	50.00	No Qualifiers Applied
LITHIUM	13.7	16.4	18	50.00	
MAGNESIUM	2840	3360	17	50.00	
MANGANESE	234	259	10	50.00	
NICKEL	8.50	9.21	8	50.00	
PHOSPHORUS	273	277	1	50.00	
POTASSIUM	2700	3110	14	50.00	
SODIUM	63.5	74.8	16	50.00	
STRONTIUM	16.9	19.0	12	50.00	
THALLIUM	0.260	0.230	12	50.00	
TITANIUM	628	725	14	50.00	
VANADIUM	26.5	27.7	4	50.00	
ZINC	45.4	55.5	20	50.00	
MOLYBDENUM	1.40	0.442	104	50.00	J(all detects)

Method: 7471A
Matrix: SO

Analyte	Concentration (MG/KG)		Sample RPD	eQAPP RPD	Flag
	SL-603-SA5C-SB-0.0-0.5 (TOT)	SL-903-SA5C-SB-0.0-0.5 (TOT)			
MERCURY	0.310	0.314	1	50.00	No Qualifiers Applied

Method: 8015B EFH
Matrix: SO

Analyte	Concentration (MG/KG)		Sample RPD	eQAPP RPD	Flag
	SL-603-SA5C-SB-0.0-0.5	SL-903-SA5C-SB-0.0-0.5			
EFH(C21-C30)	14	9.6	37	50.00	No Qualifiers Applied
EFH(C30-C40)	18	31	53	50.00	J(all detects)

Project Name and Number: PHASE3 - SSFL PHASE 3

Field Duplicate RPD Report

Lab Reporting Batch ID: 12E034 **Laboratory: EMXT**

EDD Filename: 12E034 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 8270C SIM
Matrix: SO

Analyte	Concentration (UG/KG)		Sample RPD	eQAPP RPD	Flag
	SL-603-SA5C-SB-0.0-0.5	SL-903-SA5C-SB-0.0-0.5			
BENZO(A)ANTHRACENE	4.2	5.5	27	50.00	No Qualifiers Applied
BENZO(A)PYRENE	5.3	6.5	20	50.00	
BENZO(B)FLUORANTHENE	7.7	8.4	9	50.00	
BENZO(E)PYRENE	4.3	5.4	23	50.00	
BENZO(G,H,I)PERYLENE	4.3	6.1	35	50.00	
CHRYSENE	4.7	5.6	17	50.00	
FLUORANTHENE	11	11	0	50.00	
INDENO(1,2,3-CD)PYRENE	2.9	4.0	32	50.00	
PHENANTHRENE	4.8	4.9	2	50.00	
PYRENE	10	11	10	50.00	
BENZO(K)FLUORANTHENE	11 U	3.1	200	50.00	J(all detects) UJ(all non-detects)

Method: 9045D
Matrix: SO

Analyte	Concentration (PH UNIT)		Sample RPD	eQAPP RPD	Flag
	SL-603-SA5C-SB-0.0-0.5	SL-903-SA5C-SB-0.0-0.5			
PH	7.47	7.48	0		No Qualifiers Applied

Project Name and Number: PHASE3 - SSFL PHASE 3

Reporting Limit Outliers

Lab Reporting Batch ID: 12E034 **Laboratory: EMXT**

EDD Filename: 12E034 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 6020
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-050312	ALUMINUM	J	0.0208	0.100	PQL	MG/L	J (all detects)
	CALCIUM	J	0.0374	0.100	PQL	MG/L	
	COPPER	J	0.000802	0.00100	PQL	MG/L	
	NICKEL	J	0.000267	0.00100	PQL	MG/L	

Method: 6020
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-584-SA5C-SB-0.0-0.5	ANTIMONY	J	0.178	0.565	PQL	MG/KG	J (all detects)
	BERYLLIUM	J	0.496	0.565	PQL	MG/KG	
	CADMIUM	J	0.284	0.565	PQL	MG/KG	
	MOLYBDENUM	J	0.387	0.565	PQL	MG/KG	
	SODIUM	J	66.0	113	PQL	MG/KG	
	THALLIUM	J	0.257	0.452	PQL	MG/KG	
SL-603-SA5C-SB-0.0-0.5	ANTIMONY	J	0.266	0.535	PQL	MG/KG	J (all detects)
	BERYLLIUM	J	0.475	0.535	PQL	MG/KG	
	CADMIUM	J	0.288	0.535	PQL	MG/KG	
	SODIUM	J	63.5	107	PQL	MG/KG	
	THALLIUM	J	0.260	0.428	PQL	MG/KG	
SL-606-SA5C-SB-0.0-0.5	ANTIMONY	J	0.389	0.504	PQL	MG/KG	J (all detects)
	BERYLLIUM	J	0.282	0.504	PQL	MG/KG	
	CADMIUM	J	0.292	0.504	PQL	MG/KG	
	SODIUM	J	75.0	101	PQL	MG/KG	
	THALLIUM	J	0.168	0.403	PQL	MG/KG	
SL-612-SA5C-SB-0.0-0.5	ANTIMONY	J	0.312	0.525	PQL	MG/KG	J (all detects)
	BERYLLIUM	J	0.516	0.525	PQL	MG/KG	
	CADMIUM	J	0.410	0.525	PQL	MG/KG	
	SODIUM	J	68.0	105	PQL	MG/KG	
	THALLIUM	J	0.242	0.420	PQL	MG/KG	
SL-903-SA5C-SB-0.0-0.5	ANTIMONY	J	0.242	0.523	PQL	MG/KG	J (all detects)
	BERYLLIUM	J	0.426	0.523	PQL	MG/KG	
	CADMIUM	J	0.283	0.523	PQL	MG/KG	
	MOLYBDENUM	J	0.442	0.523	PQL	MG/KG	
	SODIUM	J	74.8	105	PQL	MG/KG	
	THALLIUM	J	0.230	0.418	PQL	MG/KG	

Method: 8270C SIM
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-602-SA5C-SB-0.0-0.5	BENZO(A)PYRENE	J	9.0	33	PQL	UG/KG	J (all detects)
	BENZO(B)FLUORANTHENE	J	20	33	PQL	UG/KG	
	BENZO(E)PYRENE	J	13	16	PQL	UG/KG	
	BENZO(G,H,I)PERYLENE	J	9.4	33	PQL	UG/KG	
	CHRYSENE	J	9.1	33	PQL	UG/KG	
	FLUORANTHENE	J	18	33	PQL	UG/KG	
	PYRENE	J	16	33	PQL	UG/KG	

Project Name and Number: PHASE3 - SSFL PHASE 3

Reporting Limit Outliers

Lab Reporting Batch ID: 12E034 **Laboratory: EMXT**

EDD Filename: 12E034 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 8270C SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-603-SA5C-SB-0.0-0.5	BENZO(A)ANTHRACENE	J	4.2	11	PQL	UG/KG	
	BENZO(A)PYRENE	J	5.3	11	PQL	UG/KG	
	BENZO(B)FLUORANTHENE	J	7.7	11	PQL	UG/KG	
	BENZO(E)PYRENE	J	4.3	5.4	PQL	UG/KG	
	BENZO(G,H,I)PERYLENE	J	4.3	11	PQL	UG/KG	J (all detects)
	CHRYSENE	J	4.7	11	PQL	UG/KG	
	INDENO(1,2,3-CD)PYRENE	J	2.9	11	PQL	UG/KG	
	PHENANTHRENE	J	4.8	11	PQL	UG/KG	
	PYRENE	J	10	11	PQL	UG/KG	
SL-606-SA5C-SB-0.0-0.5	BENZO(A)ANTHRACENE	J	8.4	31	PQL	UG/KG	
	BENZO(A)PYRENE	J	11	31	PQL	UG/KG	
	BENZO(B)FLUORANTHENE	J	19	31	PQL	UG/KG	
	BENZO(E)PYRENE	J	14	16	PQL	UG/KG	
	BENZO(G,H,I)PERYLENE	J	13	31	PQL	UG/KG	J (all detects)
	CHRYSENE	J	8.1	31	PQL	UG/KG	
	FLUORANTHENE	J	12	31	PQL	UG/KG	
	PYRENE	J	12	31	PQL	UG/KG	
SL-612-SA5C-SB-0.0-0.5	BENZO(A)PYRENE	J	7.4	21	PQL	UG/KG	
	BENZO(B)FLUORANTHENE	J	11	21	PQL	UG/KG	
	BENZO(E)PYRENE	J	6.8	11	PQL	UG/KG	
	BENZO(G,H,I)PERYLENE	J	6.3	21	PQL	UG/KG	J (all detects)
	CHRYSENE	J	6.4	21	PQL	UG/KG	
	FLUORANTHENE	J	13	21	PQL	UG/KG	
	PYRENE	J	12	21	PQL	UG/KG	
SL-903-SA5C-SB-0.0-0.5	BENZO(A)ANTHRACENE	J	5.5	11	PQL	UG/KG	
	BENZO(A)PYRENE	J	6.5	11	PQL	UG/KG	
	BENZO(B)FLUORANTHENE	J	8.4	11	PQL	UG/KG	
	BENZO(G,H,I)PERYLENE	J	6.1	11	PQL	UG/KG	
	BENZO(K)FLUORANTHENE	J	3.1	11	PQL	UG/KG	J (all detects)
	CHRYSENE	J	5.6	11	PQL	UG/KG	
	INDENO(1,2,3-CD)PYRENE	J	4.0	11	PQL	UG/KG	
	PHENANTHRENE	J	4.9	11	PQL	UG/KG	

LDC #: 28558N4
SDG #: 12E034
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 11-6-12
Page: 1 of 1
Reviewer: CR
2nd Reviewer: [signature]

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

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

	Validation Area		Comments
I.	Technical holding times	—	Sampling dates:
II.	ICP/MS Tune	—	
III.	Calibration	—	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	—	
VI.	Matrix Spike Analysis	N	MS/D (Fe, Mn, Ti >4X)
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	N	LCS/D
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 FB=FB071112 (120604)

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-050312 W	11		21		31	
2	SL-603-SA5C-SB-0.0-0.5	12		22		32	
3	SL-903-SA5C-SB-0.0-0.5	13		23		33	
4	SL-584-SA5C-SB-0.0-0.5	14		24		34	
5	SL-606-SA5C-SB-0.0-0.5	15		25		35	
6	SL-612-SA5C-SB-0.0-0.5	16		26		36	
7	SL-603-SA5C-SB-0.0-0.5MS	17		27		37	
8	SL-603-SA5C-SB-0.0-0.5MSD	18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

LDC #: 28558N4

VALIDATION FINDINGS WORKSHEET
Field Blanks

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

Blank units: ug/L **Associated sample units:** mg/Kg
Sampling date: 5/3/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All Soil

Analyte	Blank ID	Sample Identification											
	EB-050312	Action Limit	No Qualifiers										
Al	0.0208	5.2											
Ca	0.0374	9.35											
Cu	0.000802	0.2005											
Ni	0.000267	0.06675											

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 #: 28558V4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: CR
2nd Reviewer:

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

Blank units: ug/L **Associated sample units:** mg/Kg
Sampling date: 7/11/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All SO1

Analyte	Blank ID	Sample Identification											
	FB-071112	Action Limit	No Qualifiers										
Al	0.0296	7.4											
Cu	0.00102	0.255											
Ni	0.000204	0.051											

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

12E049

Attachment I

Sample ID Cross Reference and Data Review Level

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
03-May-2012	EB-050312	E049-01	EB	5030B	8015B GRO	III
07-May-2012	TB-050712	E049-02	TB	5030B	8015B GRO	III
07-May-2012	TB-050712	E049-02	TB	5030B	8260B	III
07-May-2012	TB-050712	E049-02	TB	5030B	8260B SIM	III
07-May-2012	SL-592-SA5C-SB-0.0-0.5	E049-05	N	7471A	7471A	III
07-May-2012	SL-592-SA5C-SB-0.0-0.5	E049-05	N	TOTAL	6020	III
07-May-2012	SL-592-SA5C-SB-0.5	E049-06	N	5035	8015B GRO	III
07-May-2012	SL-592-SA5C-SB-0.5	E049-06	N	5035	8260B	III
07-May-2012	SL-592-SA5C-SB-0.5	E049-06	N	5035	8260B SIM	III
07-May-2012	SL-586-SA5C-SB-0.0-0.5	E049-03	N	3550B	8015B EFH	III
07-May-2012	SL-586-SA5C-SB-0.0-0.5	E049-03	N	3550B	8082	III
07-May-2012	SL-586-SA5C-SB-0.0-0.5	E049-03	N	3550B	8270C SIM	III
07-May-2012	SL-586-SA5C-SB-0.0-0.5	E049-03	N	7471A	7471A	III
07-May-2012	SL-586-SA5C-SB-0.0-0.5	E049-03	N	GEN PREP	6850	III
07-May-2012	SL-586-SA5C-SB-0.0-0.5	E049-03	N	TOTAL	6020	III
07-May-2012	SL-589-SA5C-SB-0.0-0.5	E049-04	N	3550B	8270C SIM	III
07-May-2012	SL-589-SA5C-SB-0.0-0.5	E049-04	N	7471A	7471A	III
07-May-2012	SL-589-SA5C-SB-0.0-0.5	E049-04	N	TOTAL	6020	III
07-May-2012	SL-595-SA5C-SB-1.0-2.0	E049-07	N	3550B	8082	III
07-May-2012	SL-595-SA5C-SB-2.0-3.0	E049-08	N	3550B	8082	III
07-May-2012	SL-615-SA5C-SB-0.0-0.5	E049-09	N	3550B	8015B EFH	III
07-May-2012	SL-615-SA5C-SB-0.0-0.5	E049-09	N	3550B	8081A	III
07-May-2012	SL-615-SA5C-SB-0.0-0.5	E049-09	N	3550B	8082	III
07-May-2012	SL-615-SA5C-SB-0.0-0.5	E049-09	N	3550B	8270C SIM	III
07-May-2012	SL-615-SA5C-SB-0.0-0.5	E049-09	N	7471A	7471A	III
07-May-2012	SL-615-SA5C-SB-0.0-0.5	E049-09	N	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
07-May-2012	SL-615-SA5C-SB-0.0-0.5	E049-09	N	GEN PREP	8151A	III
07-May-2012	SL-615-SA5C-SB-0.0-0.5	E049-09	N	TOTAL	6020	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 II

Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: 12E049 **Laboratory: EMXT**

EDD Filename: 12E049 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: **SL-586-SA5C-SB-0.0-0.5** ***Collected:*** **5/7/2012 10:45:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.985**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	8380		13.1	MDL	109	PQL	MG/KG	J	Q
ANTIMONY	2.76		0.109	MDL	0.545	PQL	MG/KG	J	Q
ARSENIC	2.90		0.218	MDL	0.545	PQL	MG/KG	J	Q
BARIUM	69.3		0.218	MDL	0.545	PQL	MG/KG	J	Q
BERYLLIUM	0.352	J	0.0545	MDL	0.545	PQL	MG/KG	J	Z, Q
CALCIUM	3240		10.9	MDL	21.8	PQL	MG/KG	J	Q
CHROMIUM	15.7		0.218	MDL	0.545	PQL	MG/KG	J	Q
COBALT	4.13		0.0545	MDL	0.545	PQL	MG/KG	J	Q
COPPER	8.10		0.218	MDL	0.545	PQL	MG/KG	J	Q
MAGNESIUM	3210		5.45	MDL	10.9	PQL	MG/KG	J	Q
MOLYBDENUM	0.422	J	0.0545	MDL	0.545	PQL	MG/KG	J	Z, Q
NICKEL	9.88		0.218	MDL	0.545	PQL	MG/KG	J	Q
PHOSPHORUS	310		6.54	MDL	13.1	PQL	MG/KG	J	Q
SELENIUM	0.545	U	0.218	MDL	0.545	PQL	MG/KG	UJ	Q
SILVER	0.0557	J	0.0545	MDL	0.545	PQL	MG/KG	J	Z
SODIUM	65.4	J	54.5	MDL	109	PQL	MG/KG	J	Z
STRONTIUM	15.3		0.273	MDL	0.545	PQL	MG/KG	J	Q
THALLIUM	0.199	J	0.0545	MDL	0.436	PQL	MG/KG	J	Z
VANADIUM	22.4		0.0545	MDL	0.545	PQL	MG/KG	J	Q
Zirconium	5.45	U	2.73	MDL	5.45	PQL	MG/KG	UJ	Q

Sample ID: **SL-589-SA5C-SB-0.0-0.5** ***Collected:*** **5/7/2012 11:15:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.980**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	12000		12.8	MDL	106	PQL	MG/KG	J	Q
ANTIMONY	0.218	J	0.106	MDL	0.531	PQL	MG/KG	J	Z, Q
ARSENIC	3.46		0.213	MDL	0.531	PQL	MG/KG	J	Q
BARIUM	108		0.213	MDL	0.531	PQL	MG/KG	J	Q
BERYLLIUM	0.456	J	0.0531	MDL	0.531	PQL	MG/KG	J	Z, Q
CADMIUM	0.252	J	0.0531	MDL	0.531	PQL	MG/KG	J	Z
CALCIUM	3630		10.6	MDL	21.3	PQL	MG/KG	J	Q
CHROMIUM	16.1		0.213	MDL	0.531	PQL	MG/KG	J	Q

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E049 **Laboratory: EMXT**

EDD Filename: 12E049 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: **METALS**

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

Sample ID: **SL-589-SA5C-SB-0.0-0.5** ***Collected:*** **5/7/2012 11:15:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.980**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
COBALT	5.33		0.0531	MDL	0.531	PQL	MG/KG	J	Q
COPPER	7.99		0.213	MDL	0.531	PQL	MG/KG	J	Q
MAGNESIUM	4090		5.31	MDL	10.6	PQL	MG/KG	J	Q
MOLYBDENUM	0.458	J	0.0531	MDL	0.531	PQL	MG/KG	J	Z, Q
NICKEL	10.3		0.213	MDL	0.531	PQL	MG/KG	J	Q
PHOSPHORUS	429		6.38	MDL	12.8	PQL	MG/KG	J	Q
SELENIUM	0.531	U	0.213	MDL	0.531	PQL	MG/KG	UJ	Q
SODIUM	64.3	J	53.1	MDL	106	PQL	MG/KG	J	Z
STRONTIUM	18.0		0.266	MDL	0.531	PQL	MG/KG	J	Q
THALLIUM	0.241	J	0.0531	MDL	0.425	PQL	MG/KG	J	Z
VANADIUM	32.4		0.0531	MDL	0.531	PQL	MG/KG	J	Q
Zirconium	5.31	U	2.66	MDL	5.31	PQL	MG/KG	UJ	Q

Sample ID: **SL-592-SA5C-SB-0.0-0.5** ***Collected:*** **5/7/2012 9:00:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.971**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
ALUMINUM	9340		12.7	MDL	106	PQL	MG/KG	J	Q
ANTIMONY	1.08		0.106	MDL	0.528	PQL	MG/KG	J	Q
ARSENIC	2.96		0.211	MDL	0.528	PQL	MG/KG	J	Q
BARIUM	74.6		0.211	MDL	0.528	PQL	MG/KG	J	Q
BERYLLIUM	0.377	J	0.0528	MDL	0.528	PQL	MG/KG	J	Z, Q
CADMIUM	0.237	J	0.0528	MDL	0.528	PQL	MG/KG	J	Z
CALCIUM	2160		10.6	MDL	21.1	PQL	MG/KG	J	Q
CHROMIUM	14.4		0.211	MDL	0.528	PQL	MG/KG	J	Q
COBALT	4.16		0.0528	MDL	0.528	PQL	MG/KG	J	Q
COPPER	6.47		0.211	MDL	0.528	PQL	MG/KG	J	Q
MAGNESIUM	3500		5.28	MDL	10.6	PQL	MG/KG	J	Q
MOLYBDENUM	0.461	J	0.0528	MDL	0.528	PQL	MG/KG	J	Z, Q
NICKEL	7.50		0.211	MDL	0.528	PQL	MG/KG	J	Q
PHOSPHORUS	294		6.34	MDL	12.7	PQL	MG/KG	J	Q
SELENIUM	0.528	U	0.211	MDL	0.528	PQL	MG/KG	UJ	Q
STRONTIUM	11.2		0.264	MDL	0.528	PQL	MG/KG	J	Q

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E049 **Laboratory: EMXT**

EDD Filename: 12E049 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: SL-592-SA5C-SB-0.0-0.5 **Collected:** 5/7/2012 9:00:00 AM **Analysis Type:** RES/TOT **Dilution:** 0.971

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
THALLIUM	0.215	J	0.0528	MDL	0.423	PQL	MG/KG	J	Z
VANADIUM	24.7		0.0528	MDL	0.528	PQL	MG/KG	J	Q
Zirconium	5.28	U	2.64	MDL	5.28	PQL	MG/KG	UJ	Q

Sample ID: SL-615-SA5C-SB-0.0-0.5 **Collected:** 5/7/2012 3:15:00 PM **Analysis Type:** RES/TOT **Dilution:** 0.971

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	14200		13.1	MDL	109	PQL	MG/KG	J	Q
ANTIMONY	0.348	J	0.109	MDL	0.547	PQL	MG/KG	J	Z, Q
ARSENIC	3.46		0.219	MDL	0.547	PQL	MG/KG	J	Q
BARIUM	114		0.219	MDL	0.547	PQL	MG/KG	J	Q
BERYLLIUM	0.522	J	0.0547	MDL	0.547	PQL	MG/KG	J	Z, Q
BORON	2.82	J	2.74	MDL	5.47	PQL	MG/KG	J	Z
CADMIUM	0.415	J	0.0547	MDL	0.547	PQL	MG/KG	J	Z
CALCIUM	3880		10.9	MDL	21.9	PQL	MG/KG	J	Q
CHROMIUM	128		0.219	MDL	0.547	PQL	MG/KG	J	Q
COBALT	6.95		0.0547	MDL	0.547	PQL	MG/KG	J	Q
COPPER	12.1		0.219	MDL	0.547	PQL	MG/KG	J	Q
MAGNESIUM	4060		5.47	MDL	10.9	PQL	MG/KG	J	Q
MOLYBDENUM	3.10		0.0547	MDL	0.547	PQL	MG/KG	J	Q
NICKEL	72.8		0.219	MDL	0.547	PQL	MG/KG	J	Q
PHOSPHORUS	312		6.57	MDL	13.1	PQL	MG/KG	J	Q
SELENIUM	0.547	U	0.219	MDL	0.547	PQL	MG/KG	UJ	Q
SILVER	0.0648	J	0.0547	MDL	0.547	PQL	MG/KG	J	Z
SODIUM	80.3	J	54.7	MDL	109	PQL	MG/KG	J	Z
STRONTIUM	23.0		0.274	MDL	0.547	PQL	MG/KG	J	Q
THALLIUM	0.246	J	0.0547	MDL	0.438	PQL	MG/KG	J	Z
VANADIUM	37.5		0.0547	MDL	0.547	PQL	MG/KG	J	Q
Zirconium	5.47	U	2.74	MDL	5.47	PQL	MG/KG	UJ	Q

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E049 **Laboratory: EMXT**

EDD Filename: 12E049 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA
Method: 8015B EFH **Matrix: SO**

Sample ID: SL-586-SA5C-SB-0.0-0.5 ***Collected:*** 5/7/2012 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
EFH(C15-C20)	3.7	J	2.8	MDL	5.5	PQL	MG/KG	J	Z

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

Sample ID: SL-615-SA5C-SB-0.0-0.5 ***Collected:*** 5/7/2012 3:15:00 PM ***Analysis Type:*** RES-BASE/NEUTRAL ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDT	1.9	J	0.45	MDL	2.3	PQL	UG/KG	J	Z

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

Sample ID: SL-595-SA5C-SB-1.0-2.0 ***Collected:*** 5/7/2012 1:45:00 PM ***Analysis Type:*** RES-BASE/NEUTRAL ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1260	17	J	11	MDL	22	PQL	UG/KG	J	Z

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

Sample ID: SL-586-SA5C-SB-0.0-0.5 ***Collected:*** 5/7/2012 10:45:00 ***Analysis Type:*** RES-BASE/NEUTRAL ***Dilution:*** 19.86

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(B)FLUORANTHENE	100	J	55	MDL	220	PQL	UG/KG	J	Z

Sample ID: SL-615-SA5C-SB-0.0-0.5 ***Collected:*** 5/7/2012 3:15:00 PM ***Analysis Type:*** RES-BASE/NEUTRAL ***Dilution:*** 9.9

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(B)FLUORANTHENE	43	J	28	MDL	110	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	29	J	28	MDL	110	PQL	UG/KG	J	Z
FLUORANTHENE	46	J	28	MDL	110	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E049 **Laboratory: EMXT**

EDD Filename: 12E049 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

Method: 8270C SIM **Matrix: SO**

Sample ID: **SL-615-SA5C-SB-0.0-0.5** ***Collected:*** **5/7/2012 3:15:00 PM** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **9.9**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PYRENE	41	J	28	MDL	110	PQL	UG/KG	J	Z

Method Category: VOA

Method: 8015B GRO **Matrix: AQ**

Sample ID: **EB-050312** ***Collected:*** **5/3/2012 2:50:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
GASOLINE RANGE ORGANICS (C5-C12)	42	J	10	MDL	50	PQL	UG/L	J	Z

Sample ID: **TB-050712** ***Collected:*** **5/7/2012 8:00:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
GASOLINE RANGE ORGANICS (C5-C12)	44	J	10	MDL	50	PQL	UG/L	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E049 **Laboratory: EMXT**

EDD Filename: 12E049 **eQAPP Name: CDM_SSFL_120730_EMAX**

Reason Code Legend

Reason Code	*Description*
Q	Matrix Spike Lower Estimation
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Enclosure I

Level III ADR Outliers
(including Manual Review Outliers)

Quality Control
Outlier Reports

12E049

Reporting Limit Outliers

Lab Reporting Batch ID: 12E049 **Laboratory: EMXT**

EDD Filename: 12E049 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 8015B GRO
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-050312	GASOLINE RANGE ORGANICS (C5-C12)	J	42	50	PQL	UG/L	J (all detects)
TB-050712	GASOLINE RANGE ORGANICS (C5-C12)	J	44	50	PQL	UG/L	J (all detects)

Method: 6020
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-586-SA5C-SB-0.0-0.5	BERYLLIUM	J	0.352	0.545	PQL	MG/KG	J (all detects)
	MOLYBDENUM	J	0.422	0.545	PQL	MG/KG	
	SILVER	J	0.0557	0.545	PQL	MG/KG	
	SODIUM	J	65.4	109	PQL	MG/KG	
	THALLIUM	J	0.199	0.436	PQL	MG/KG	
SL-589-SA5C-SB-0.0-0.5	ANTIMONY	J	0.218	0.531	PQL	MG/KG	J (all detects)
	BERYLLIUM	J	0.456	0.531	PQL	MG/KG	
	CADMIUM	J	0.252	0.531	PQL	MG/KG	
	MOLYBDENUM	J	0.458	0.531	PQL	MG/KG	
	SODIUM	J	64.3	106	PQL	MG/KG	
	THALLIUM	J	0.241	0.425	PQL	MG/KG	
SL-592-SA5C-SB-0.0-0.5	BERYLLIUM	J	0.377	0.528	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.237	0.528	PQL	MG/KG	
	MOLYBDENUM	J	0.461	0.528	PQL	MG/KG	
	THALLIUM	J	0.215	0.423	PQL	MG/KG	
SL-615-SA5C-SB-0.0-0.5	ANTIMONY	J	0.348	0.547	PQL	MG/KG	J (all detects)
	BERYLLIUM	J	0.522	0.547	PQL	MG/KG	
	BORON	J	2.82	5.47	PQL	MG/KG	
	CADMIUM	J	0.415	0.547	PQL	MG/KG	
	SILVER	J	0.0648	0.547	PQL	MG/KG	
	SODIUM	J	80.3	109	PQL	MG/KG	
	THALLIUM	J	0.246	0.438	PQL	MG/KG	

Method: 8015B EFH
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-586-SA5C-SB-0.0-0.5	EFH(C15-C20)	J	3.7	5.5	PQL	MG/KG	J (all detects)

Method: 8081A
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-615-SA5C-SB-0.0-0.5	4,4'-DDT	J	1.9	2.3	PQL	UG/KG	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: 12E049 **Laboratory: EMXT**

EDD Filename: 12E049 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 8082

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-595-SA5C-SB-1.0-2.0	AROCLOR 1260	J	17	22	PQL	UG/KG	J (all detects)

Method: 8270C SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-586-SA5C-SB-0.0-0.5	BENZO(B)FLUORANTHENE	J	100	220	PQL	UG/KG	J (all detects)
SL-615-SA5C-SB-0.0-0.5	BENZO(B)FLUORANTHENE	J	43	110	PQL	UG/KG	J (all detects)
	BENZO(G,H,I)PERYLENE	J	29	110	PQL	UG/KG	
	FLUORANTHENE	J	46	110	PQL	UG/KG	
	PYRENE	J	41	110	PQL	UG/KG	

LDC #: 28558O4

VALIDATION COMPLETENESS WORKSHEET

ADR

Date: 11-6-12

SDG #: 12E049

Page: 1 of 1

Laboratory: EMAX Laboratories, Inc.

Reviewer: [illegible]

2nd Reviewer: [illegible]

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

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

	Validation Area		Comments
I.	Technical holding times	—	Sampling dates:
II.	ICP/MS Tune	—	
III.	Calibration	—	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	—	
VI.	Matrix Spike Analysis	N	MS/D (from 12E034)
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	N	LCS/D
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 = EB-051012 (12E082) FB = FB-060512 (12F037)

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-SA5C-SB-0.0-0.5	11		21		31	
2	SL-589-SA5C-SB-0.0-0.5	12		22		32	
3	SL-592-SA5C-SB-0.0-0.5	13		23		33	
4	SL-615-SA5C-SB-0.0-0.5	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 #: 28558O4

VALIDATION FINDINGS WORKSHEET
Field Blanks

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

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

Blank units: ug/L **Associated sample units:** mg/Kg
Sampling date: 5/10/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All

Analyte	Blank ID	Sample Identification											
	EB-051012	Action Limit	No Qualifiers										
Al	0.0421	10.525											
B	0.00572	1.43											
Cu	0.00178	0.445											
Na	0.0575	14.375											

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 #: 28558 (4)

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: A
2nd Reviewer: A

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

Blank units: ug/L **Associated sample units:** mg/Kg

Sampling date: 6/5/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All

Analyte	Blank ID	Sample Identification										
	FB-060512	Action Limit	No Qualifiers									
Al	0.0270	6.75										
Ca	0.0263	6.575										
Cu	0.000954	0.2385										

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

12E055

Attachment I

Sample ID Cross Reference and Data Review Level

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
08-May-2012	SL-671-SA5C-SB-0.0-0.5	E055-04	N	3550B	8015B EFH	III
08-May-2012	SL-671-SA5C-SB-0.0-0.5	E055-04	N	3550B	8082	III
08-May-2012	SL-671-SA5C-SB-0.0-0.5	E055-04	N	3550B	8270C SIM	III
08-May-2012	SL-671-SA5C-SB-0.0-0.5	E055-04	N	7471A	7471A	III
08-May-2012	SL-671-SA5C-SB-0.0-0.5	E055-04	N	TOTAL	6020	III
08-May-2012	SL-673-SA5C-SB-0.0-0.5	E055-05	N	3550B	8015B EFH	III
08-May-2012	SL-673-SA5C-SB-0.0-0.5	E055-05	N	3550B	8082	III
08-May-2012	SL-673-SA5C-SB-0.0-0.5	E055-05	N	3550B	8270C SIM	III
08-May-2012	SL-673-SA5C-SB-0.0-0.5	E055-05	N	7471A	7471A	III
08-May-2012	SL-673-SA5C-SB-0.0-0.5	E055-05	N	TOTAL	6020	III
08-May-2012	SL-548-SA5C-SB-0.0-0.5	E055-03	N	3550B	8015B EFH	III
08-May-2012	SL-548-SA5C-SB-0.0-0.5	E055-03	N	3550B	8082	III
08-May-2012	SL-548-SA5C-SB-0.0-0.5	E055-03	N	3550B	8270C SIM	III
08-May-2012	SL-548-SA5C-SB-0.0-0.5	E055-03	N	7471A	7471A	III
08-May-2012	SL-548-SA5C-SB-0.0-0.5	E055-03	N	GEN PREP	7199	III
08-May-2012	SL-548-SA5C-SB-0.0-0.5	E055-03	N	GEN PREP	8015B	III
08-May-2012	SL-548-SA5C-SB-0.0-0.5	E055-03	N	GEN PREP	8015M	III
08-May-2012	SL-548-SA5C-SB-0.0-0.5	E055-03	N	TOTAL	6020	III
08-May-2012	SL-547-SA5C-SB-0.0-0.5	E055-02	N	3550B	8015B EFH	III
08-May-2012	SL-547-SA5C-SB-0.0-0.5	E055-02	N	3550B	8082	III
08-May-2012	SL-547-SA5C-SB-0.0-0.5	E055-02	N	3550B	8270C SIM	III
08-May-2012	SL-547-SA5C-SB-0.0-0.5	E055-02	N	7471A	7471A	III
08-May-2012	SL-547-SA5C-SB-0.0-0.5	E055-02	N	GEN PREP	7199	III
08-May-2012	SL-547-SA5C-SB-0.0-0.5	E055-02	N	GEN PREP	8015B	III
08-May-2012	SL-547-SA5C-SB-0.0-0.5	E055-02	N	GEN PREP	8015M	III
08-May-2012	SL-547-SA5C-SB-0.0-0.5	E055-02	N	TOTAL	6020	III

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

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
08-May-2012	SL-536-SA5C-SB-0.0-0.5	E055-01	N	3550B	8015B EFH	III
08-May-2012	SL-536-SA5C-SB-0.0-0.5	E055-01	N	3550B	8082	III
08-May-2012	SL-536-SA5C-SB-0.0-0.5	E055-01	N	3550B	8270C SIM	III
08-May-2012	SL-536-SA5C-SB-0.0-0.5	E055-01	N	7471A	7471A	III
08-May-2012	SL-536-SA5C-SB-0.0-0.5	E055-01	N	GEN PREP	8015B	IV
08-May-2012	SL-536-SA5C-SB-0.0-0.5	E055-01	N	GEN PREP	8015M	IV
08-May-2012	SL-536-SA5C-SB-0.0-0.5	E055-01	N	TOTAL	6020	III
08-May-2012	SL-644-SA5C-SB-2.0-3.0	E055-08	N	3550B	8082	III
08-May-2012	SL-644-SA5C-SB-2.0-3.0MS	E055-08M	MS	3550B	8082	III
08-May-2012	SL-644-SA5C-SB-2.0-3.0MSD	E055-08S	MSD	3550B	8082	III
08-May-2012	SL-644-SA5C-SB-1.0-2.0	E055-07	N	3550B	8082	III
08-May-2012	SL-566-SA5C-SB-0.0-0.5	E055-06	N	3550B	8082	III
08-May-2012	SL-566-SA5C-SB-0.0-0.5	E055-06	N	3550B	8270C SIM	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 II

Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: 12E055 **Laboratory: EMXT**

EDD Filename: 12E055 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 *Matrix:* SO

Sample ID: SL-536-SA5C-SB-0.0-0.5 *Collected:* 5/8/2012 11:25:00 *Analysis Type:* RES/TOT *Dilution:* 0.980

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	9930		12.7	MDL	106	PQL	MG/KG	J	Q
ANTIMONY	0.202	J	0.106	MDL	0.528	PQL	MG/KG	J	Z, Q
ARSENIC	3.55		0.211	MDL	0.528	PQL	MG/KG	J	Q
BARIUM	89.8		0.211	MDL	0.528	PQL	MG/KG	J	Q
BERYLLIUM	0.487	J	0.0528	MDL	0.528	PQL	MG/KG	J	Z, Q
CADMIUM	0.467	J	0.0528	MDL	0.528	PQL	MG/KG	J	Z
CALCIUM	3000		10.6	MDL	21.1	PQL	MG/KG	J	Q
CHROMIUM	14.6		0.211	MDL	0.528	PQL	MG/KG	J	Q
COBALT	5.04		0.0528	MDL	0.528	PQL	MG/KG	J	Q
COPPER	8.21		0.211	MDL	0.528	PQL	MG/KG	J	Q
MAGNESIUM	3090		5.28	MDL	10.6	PQL	MG/KG	J	Q
MOLYBDENUM	0.368	J	0.0528	MDL	0.528	PQL	MG/KG	J	Z, Q
NICKEL	8.15		0.211	MDL	0.528	PQL	MG/KG	J	Q
PHOSPHORUS	164		6.34	MDL	12.7	PQL	MG/KG	J	Q
SELENIUM	0.528	U	0.211	MDL	0.528	PQL	MG/KG	UJ	Q
SODIUM	99.0	J	52.8	MDL	106	PQL	MG/KG	J	Z
STRONTIUM	20.8		0.264	MDL	0.528	PQL	MG/KG	J	Q
THALLIUM	0.221	J	0.0528	MDL	0.422	PQL	MG/KG	J	Z
VANADIUM	28.2		0.0528	MDL	0.528	PQL	MG/KG	J	Q
Zirconium	5.28	U	2.64	MDL	5.28	PQL	MG/KG	UJ	Q

Sample ID: SL-547-SA5C-SB-0.0-0.5 *Collected:* 5/8/2012 10:10:00 *Analysis Type:* RES/TOT *Dilution:* 0.962

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	14700		13.2	MDL	110	PQL	MG/KG	J	Q
ANTIMONY	0.370	J	0.110	MDL	0.550	PQL	MG/KG	J	Z, Q
ARSENIC	3.98		0.220	MDL	0.550	PQL	MG/KG	J	Q
BARIUM	126		0.220	MDL	0.550	PQL	MG/KG	J	Q
BERYLLIUM	0.613		0.0550	MDL	0.550	PQL	MG/KG	J	Q
BORON	3.14	J	2.75	MDL	5.50	PQL	MG/KG	J	Z
CADMIUM	0.362	J	0.0550	MDL	0.550	PQL	MG/KG	J	Z
CALCIUM	4450		11.0	MDL	22.0	PQL	MG/KG	J	Q

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E055 **Laboratory: EMXT**

EDD Filename: 12E055 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix:** SO

Sample ID: SL-547-SA5C-SB-0.0-0.5 ***Collected:*** 5/8/2012 10:10:00 ***Analysis Type:*** RES/TOT ***Dilution:*** 0.962

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	20.0		0.220	MDL	0.550	PQL	MG/KG	J	Q
COBALT	6.61		0.0550	MDL	0.550	PQL	MG/KG	J	Q
COPPER	12.5		0.220	MDL	0.550	PQL	MG/KG	J	Q
MAGNESIUM	4170		5.50	MDL	11.0	PQL	MG/KG	J	Q
MOLYBDENUM	0.684		0.0550	MDL	0.550	PQL	MG/KG	J	Q
NICKEL	12.3		0.220	MDL	0.550	PQL	MG/KG	J	Q
PHOSPHORUS	274		6.60	MDL	13.2	PQL	MG/KG	J	Q
SELENIUM	0.550	U	0.220	MDL	0.550	PQL	MG/KG	UJ	Q
SILVER	0.0796	J	0.0550	MDL	0.550	PQL	MG/KG	J	Z
SODIUM	90.2	J	55.0	MDL	110	PQL	MG/KG	J	Z
STRONTIUM	27.1		0.275	MDL	0.550	PQL	MG/KG	J	Q
THALLIUM	0.263	J	0.0550	MDL	0.440	PQL	MG/KG	J	Z
VANADIUM	39.3		0.0550	MDL	0.550	PQL	MG/KG	J	Q
Zirconium	5.50	U	2.75	MDL	5.50	PQL	MG/KG	UJ	Q

Sample ID: SL-548-SA5C-SB-0.0-0.5 ***Collected:*** 5/8/2012 9:45:00 AM ***Analysis Type:*** RES/TOT ***Dilution:*** 0.966

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	13600		13.5	MDL	113	PQL	MG/KG	J	Q
ANTIMONY	1.64		0.113	MDL	0.564	PQL	MG/KG	J	Q
ARSENIC	4.20		0.225	MDL	0.564	PQL	MG/KG	J	Q
BARIUM	111		0.225	MDL	0.564	PQL	MG/KG	J	Q
BERYLLIUM	0.592		0.0564	MDL	0.564	PQL	MG/KG	J	Q
CADMIUM	0.515	J	0.0564	MDL	0.564	PQL	MG/KG	J	Z
CALCIUM	3600		11.3	MDL	22.5	PQL	MG/KG	J	Q
CHROMIUM	21.3		0.225	MDL	0.564	PQL	MG/KG	J	Q
COBALT	7.97		0.0564	MDL	0.564	PQL	MG/KG	J	Q
COPPER	10.9		0.225	MDL	0.564	PQL	MG/KG	J	Q
MAGNESIUM	4070		5.64	MDL	11.3	PQL	MG/KG	J	Q
MOLYBDENUM	0.565		0.0564	MDL	0.564	PQL	MG/KG	J	Q
NICKEL	12.4		0.225	MDL	0.564	PQL	MG/KG	J	Q
PHOSPHORUS	287		6.76	MDL	13.5	PQL	MG/KG	J	Q

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E055 **Laboratory: EMXT**

EDD Filename: 12E055 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix:** SO

Sample ID: SL-548-SA5C-SB-0.0-0.5 ***Collected:*** 5/8/2012 9:45:00 AM ***Analysis Type:*** RES/TOT ***Dilution:*** 0.966

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.564	U	0.225	MDL	0.564	PQL	MG/KG	UJ	Q
SILVER	0.0837	J	0.0564	MDL	0.564	PQL	MG/KG	J	Z
SODIUM	93.6	J	56.4	MDL	113	PQL	MG/KG	J	Z
STRONTIUM	21.9		0.282	MDL	0.564	PQL	MG/KG	J	Q
THALLIUM	0.266	J	0.0564	MDL	0.451	PQL	MG/KG	J	Z
VANADIUM	38.3		0.0564	MDL	0.564	PQL	MG/KG	J	Q
Zirconium	5.64	U	2.82	MDL	5.64	PQL	MG/KG	UJ	Q

Sample ID: SL-671-SA5C-SB-0.0-0.5 ***Collected:*** 5/8/2012 8:30:00 AM ***Analysis Type:*** RES/TOT ***Dilution:*** 0.976

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	9480		12.4	MDL	103	PQL	MG/KG	J	Q
ANTIMONY	0.433	J	0.103	MDL	0.516	PQL	MG/KG	J	Z, Q
ARSENIC	3.30		0.207	MDL	0.516	PQL	MG/KG	J	Q
BARIUM	69.6		0.207	MDL	0.516	PQL	MG/KG	J	Q
BERYLLIUM	0.398	J	0.0516	MDL	0.516	PQL	MG/KG	J	Z, Q
BORON	2.95	J	2.58	MDL	5.16	PQL	MG/KG	J	Z
CALCIUM	2390		10.3	MDL	20.7	PQL	MG/KG	J	Q
CHROMIUM	21.1		0.207	MDL	0.516	PQL	MG/KG	J	Q
COBALT	4.17		0.0516	MDL	0.516	PQL	MG/KG	J	Q
COPPER	14.2		0.207	MDL	0.516	PQL	MG/KG	J	Q
MAGNESIUM	3550		5.16	MDL	10.3	PQL	MG/KG	J	Q
MOLYBDENUM	0.575		0.0516	MDL	0.516	PQL	MG/KG	J	Q
NICKEL	10.9		0.207	MDL	0.516	PQL	MG/KG	J	Q
PHOSPHORUS	348		6.20	MDL	12.4	PQL	MG/KG	J	Q
SELENIUM	0.516	U	0.207	MDL	0.516	PQL	MG/KG	UJ	Q
SILVER	0.296	J	0.0516	MDL	0.516	PQL	MG/KG	J	Z
STRONTIUM	20.3		0.258	MDL	0.516	PQL	MG/KG	J	Q
THALLIUM	0.177	J	0.0516	MDL	0.413	PQL	MG/KG	J	Z
VANADIUM	25.3		0.0516	MDL	0.516	PQL	MG/KG	J	Q
Zirconium	5.16	U	2.58	MDL	5.16	PQL	MG/KG	UJ	Q

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E055 **Laboratory: EMXT**

EDD Filename: 12E055 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: SL-673-SA5C-SB-0.0-0.5 *Collected:* 5/8/2012 8:50:00 AM *Analysis Type:* RES/TOT *Dilution:* 0.971

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	6920		12.9	MDL	108	PQL	MG/KG	J	Q
ANTIMONY	0.311	J	0.108	MDL	0.539	PQL	MG/KG	J	Z, Q
ARSENIC	2.72		0.216	MDL	0.539	PQL	MG/KG	J	Q
BARIUM	55.3		0.216	MDL	0.539	PQL	MG/KG	J	Q
BERYLLIUM	0.315	J	0.0539	MDL	0.539	PQL	MG/KG	J	Z, Q
CALCIUM	2150		10.8	MDL	21.6	PQL	MG/KG	J	Q
CHROMIUM	13.6		0.216	MDL	0.539	PQL	MG/KG	J	Q
COBALT	3.48		0.0539	MDL	0.539	PQL	MG/KG	J	Q
COPPER	8.66		0.216	MDL	0.539	PQL	MG/KG	J	Q
MAGNESIUM	2930		5.39	MDL	10.8	PQL	MG/KG	J	Q
MOLYBDENUM	0.339	J	0.0539	MDL	0.539	PQL	MG/KG	J	Z, Q
NICKEL	7.10		0.216	MDL	0.539	PQL	MG/KG	J	Q
PHOSPHORUS	292		6.47	MDL	12.9	PQL	MG/KG	J	Q
SELENIUM	0.539	U	0.216	MDL	0.539	PQL	MG/KG	UJ	Q
SILVER	0.146	J	0.0539	MDL	0.539	PQL	MG/KG	J	Z
SODIUM	84.4	J	53.9	MDL	108	PQL	MG/KG	J	Z
STRONTIUM	16.7		0.269	MDL	0.539	PQL	MG/KG	J	Q
THALLIUM	0.165	J	0.0539	MDL	0.431	PQL	MG/KG	J	Z
VANADIUM	20.5		0.0539	MDL	0.539	PQL	MG/KG	J	Q
Zirconium	5.39	U	2.69	MDL	5.39	PQL	MG/KG	UJ	Q

Method Category: SVOA

Method: 8270C SIM **Matrix: SO**

Sample ID: SL-536-SA5C-SB-0.0-0.5 *Collected:* 5/8/2012 11:25:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORENE	5.7	J	2.7	MDL	11	PQL	UG/KG	J	Z
N-NITROSODIMETHYLAMINE	2.7	J	2.7	MDL	11	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E055 **Laboratory: EMXT**

EDD Filename: 12E055 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

Method: 8270C SIM **Matrix: SO**

Sample ID: **SL-547-SA5C-SB-0.0-0.5** ***Collected:*** **5/8/2012 10:10:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)PYRENE	7.2	J	5.7	MDL	23	PQL	UG/KG	J	Z
BENZO(B)FLUORANTHENE	20	J	5.7	MDL	23	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	14	J	5.7	MDL	23	PQL	UG/KG	J	Z
FLUORANTHENE	12	J	5.7	MDL	23	PQL	UG/KG	J	Z
INDENO(1,2,3-CD)PYRENE	7.4	J	5.7	MDL	23	PQL	UG/KG	J	Z
PYRENE	11	J	5.7	MDL	23	PQL	UG/KG	J	Z

Sample ID: **SL-548-SA5C-SB-0.0-0.5** ***Collected:*** **5/8/2012 9:45:00 AM** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)ANTHRACENE	8.9	J	5.8	MDL	23	PQL	UG/KG	J	Z
BENZO(A)PYRENE	8.5	J	5.8	MDL	23	PQL	UG/KG	J	Z
BENZO(B)FLUORANTHENE	14	J	5.8	MDL	23	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	16	J	5.8	MDL	23	PQL	UG/KG	J	Z
FLUORANTHENE	12	J	5.8	MDL	23	PQL	UG/KG	J	Z
PYRENE	12	J	5.8	MDL	23	PQL	UG/KG	J	Z

Sample ID: **SL-566-SA5C-SB-0.0-0.5** ***Collected:*** **5/8/2012 2:40:00 PM** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORENE	17	J	5.4	MDL	22	PQL	UG/KG	J	Z

Sample ID: **SL-671-SA5C-SB-0.0-0.5** ***Collected:*** **5/8/2012 8:30:00 AM** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)PYRENE	8.0	J	5.3	MDL	21	PQL	UG/KG	J	Z
BENZO(B)FLUORANTHENE	11	J	5.3	MDL	21	PQL	UG/KG	J	Z
BENZO(E)PYRENE	7.9	J	5.3	MDL	11	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	6.3	J	5.3	MDL	21	PQL	UG/KG	J	Z
FLUORANTHENE	10	J	5.3	MDL	21	PQL	UG/KG	J	Z
PYRENE	10	J	5.3	MDL	21	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E055 **Laboratory: EMXT**

EDD Filename: 12E055 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

Method: 8270C SIM *Matrix:* SO

Sample ID: SL-673-SA5C-SB-0.0-0.5 *Collected:* 5/8/2012 8:50:00 AM *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)PYRENE	3.4	J	2.8	MDL	11	PQL	UG/KG	J	Z
BENZO(B)FLUORANTHENE	6.5	J	2.8	MDL	11	PQL	UG/KG	J	Z
BENZO(E)PYRENE	4.3	J	2.8	MDL	5.5	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	4.1	J	2.8	MDL	11	PQL	UG/KG	J	Z
CHRYSENE	4.2	J	2.8	MDL	11	PQL	UG/KG	J	Z
FLUORANTHENE	7.7	J	2.8	MDL	11	PQL	UG/KG	J	Z
PHENANTHRENE	3.3	J	2.8	MDL	11	PQL	UG/KG	J	Z
PYRENE	7.1	J	2.8	MDL	11	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E055 **Laboratory: EMXT**

EDD Filename: 12E055 **eQAPP Name: CDM_SSFL_120730_EMAX**

Reason Code Legend

Reason Code	*Description*
Q	Matrix Spike Lower Estimation
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Enclosure I

Level III ADR Outliers
(including Manual Review Outliers)

Quality Control
Outlier Reports

12E055

Reporting Limit Outliers

Lab Reporting Batch ID: 12E055 **Laboratory: EMXT**

EDD Filename: 12E055 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 6020
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-536-SA5C-SB-0.0-0.5	ANTIMONY	J	0.202	0.528	PQL	MG/KG	J (all detects)
	BERYLLIUM	J	0.487	0.528	PQL	MG/KG	
	CADMIUM	J	0.467	0.528	PQL	MG/KG	
	MOLYBDENUM	J	0.368	0.528	PQL	MG/KG	
	SODIUM	J	99.0	106	PQL	MG/KG	
	THALLIUM	J	0.221	0.422	PQL	MG/KG	
SL-547-SA5C-SB-0.0-0.5	ANTIMONY	J	0.370	0.550	PQL	MG/KG	J (all detects)
	BORON	J	3.14	5.50	PQL	MG/KG	
	CADMIUM	J	0.362	0.550	PQL	MG/KG	
	SILVER	J	0.0796	0.550	PQL	MG/KG	
	SODIUM	J	90.2	110	PQL	MG/KG	
	THALLIUM	J	0.263	0.440	PQL	MG/KG	
SL-548-SA5C-SB-0.0-0.5	CADMIUM	J	0.515	0.564	PQL	MG/KG	J (all detects)
	SILVER	J	0.0837	0.564	PQL	MG/KG	
	SODIUM	J	93.6	113	PQL	MG/KG	
	THALLIUM	J	0.266	0.451	PQL	MG/KG	
SL-671-SA5C-SB-0.0-0.5	ANTIMONY	J	0.433	0.516	PQL	MG/KG	J (all detects)
	BERYLLIUM	J	0.398	0.516	PQL	MG/KG	
	BORON	J	2.95	5.16	PQL	MG/KG	
	SILVER	J	0.296	0.516	PQL	MG/KG	
	THALLIUM	J	0.177	0.413	PQL	MG/KG	
SL-673-SA5C-SB-0.0-0.5	ANTIMONY	J	0.311	0.539	PQL	MG/KG	J (all detects)
	BERYLLIUM	J	0.315	0.539	PQL	MG/KG	
	MOLYBDENUM	J	0.339	0.539	PQL	MG/KG	
	SILVER	J	0.146	0.539	PQL	MG/KG	
	SODIUM	J	84.4	108	PQL	MG/KG	
	THALLIUM	J	0.165	0.431	PQL	MG/KG	

Method: 8270C SIM
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-536-SA5C-SB-0.0-0.5	FLUORENE	J	5.7	11	PQL	UG/KG	J (all detects)
	N-NITROSODIMETHYLAMINE	J	2.7	11	PQL	UG/KG	
SL-547-SA5C-SB-0.0-0.5	BENZO(A)PYRENE	J	7.2	23	PQL	UG/KG	J (all detects)
	BENZO(B)FLUORANTHENE	J	20	23	PQL	UG/KG	
	BENZO(G,H,I)PERYLENE	J	14	23	PQL	UG/KG	
	FLUORANTHENE	J	12	23	PQL	UG/KG	
	INDENO(1,2,3-CD)PYRENE	J	7.4	23	PQL	UG/KG	
	PYRENE	J	11	23	PQL	UG/KG	
SL-548-SA5C-SB-0.0-0.5	BENZO(A)ANTHRACENE	J	8.9	23	PQL	UG/KG	J (all detects)
	BENZO(A)PYRENE	J	8.5	23	PQL	UG/KG	
	BENZO(B)FLUORANTHENE	J	14	23	PQL	UG/KG	
	BENZO(G,H,I)PERYLENE	J	16	23	PQL	UG/KG	
	FLUORANTHENE	J	12	23	PQL	UG/KG	
	PYRENE	J	12	23	PQL	UG/KG	
SL-566-SA5C-SB-0.0-0.5	FLUORENE	J	17	22	PQL	UG/KG	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: 12E055 **Laboratory: EMXT**

EDD Filename: 12E055 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: **8270C SIM**

Matrix: **SO**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
SL-671-SA5C-SB-0.0-0.5	BENZO(A)PYRENE	J	8.0	21	PQL	UG/KG	J (all detects)
	BENZO(B)FLUORANTHENE	J	11	21	PQL	UG/KG	
	BENZO(E)PYRENE	J	7.9	11	PQL	UG/KG	
	BENZO(G,H,I)PERYLENE	J	6.3	21	PQL	UG/KG	
	FLUORANTHENE	J	10	21	PQL	UG/KG	
	PYRENE	J	10	21	PQL	UG/KG	
SL-673-SA5C-SB-0.0-0.5	BENZO(A)PYRENE	J	3.4	11	PQL	UG/KG	J (all detects)
	BENZO(B)FLUORANTHENE	J	6.5	11	PQL	UG/KG	
	BENZO(E)PYRENE	J	4.3	5.5	PQL	UG/KG	
	BENZO(G,H,I)PERYLENE	J	4.1	11	PQL	UG/KG	
	CHRYSENE	J	4.2	11	PQL	UG/KG	
	FLUORANTHENE	J	7.7	11	PQL	UG/KG	
	PHENANTHRENE	J	3.3	11	PQL	UG/KG	
	PYRENE	J	7.1	11	PQL	UG/KG	

LDC #: 28558P4

SDG #: 12E055

Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET

ADR

Date: 11-6-12

Page: 1 of 1

Reviewer: CL

2nd Reviewer: V

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

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

	Validation Area		Comments
I.	Technical holding times	—	Sampling dates:
II.	ICP/MS Tune	—	
III.	Calibration	—	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	—	
VI.	Matrix Spike Analysis	N	MS/D (from 12E034)
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	N	LCS/D
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= EB-051012 (12E082) FB= FB060512 (12F037)

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: 5

1	SL-536-SA5C-SB-0.0-0.5	11		21		31	
2	SL-547-SA5C-SB-0.0-0.5	12		22		32	
3	SL-548-SA5C-SB-0.0-0.5	13		23		33	
4	SL-671-SA5C-SB-0.0-0.5	14		24		34	
5	SL-673-SA5C-SB-0.0-0.5	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 #: 28558P4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: CA
2nd Reviewer: CA

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

Blank units: ug/L **Associated sample units:** mg/Kg
Sampling date: 5/10/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All

Analyte	Blank ID	Sample Identification											
	EB-051012	Action Limit	No Qualifiers										
Al	0.0421	10.525											
B	0.00572	1.43											
Cu	0.00178	0.445											
Na	0.0575	14.375											

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 #: 28558 4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer:
2nd Reviewer:

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

Blank units: ug/L **Associated sample units:** mg/Kg

Sampling date: 6/5/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All

Analyte	Blank ID	Sample Identification										
	FB-060512	Action Limit	No Qualifiers									
Al	0.0270	6.75										
Ca	0.0263	6.575										
Cu	0.000954	0.2385										

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".

Enclosure II

Level IV Validation Reports

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Santa Susana Field Laboratory
Collection Date:	May 8, 2012
LDC Report Date:	November 15, 2012
Matrix:	Soil
Parameters:	Alcohols
Validation Level:	Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	12E055

Sample Identification

SL-536-SA5C-SB-0.0-0.5

Introduction

This data review covers one soil sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015B for Alcohols.

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%.

Retention time windows were evaluated and considered technically acceptable.

III. Calibration Verification

Calibration verification 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.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No alcohol contaminants were found in the method blanks.

Sample EB-051012 (from SDG 12E082) was identified as an equipment blank. No alcohol contaminants were found.

Sample FB-060512 (from SDG 12F037) was identified as a field blank. No alcohol contaminants were found.

V. Surrogate Recovery

Surrogates were not required by the method.

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 and RLs

All compound quantitation and RLs were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 12E055	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
Alcohols - Data Qualification Summary - SDG 12E055

SDG	Sample	Compound	Flag	A or P	Reason (Code)
12E055	SL-536-SA5C-SB-0.0-0.5	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (Z)

Santa Susana Field Laboratory
Alcohols - Laboratory Blank Data Qualification Summary - SDG 12E055

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Alcohols - Field Blank Data Qualification Summary - SDG 12E055

No Sample Data Qualified in this SDG

LDC #: 28558P43 **VALIDATION COMPLETENESS WORKSHEET** Date: 10/18/12

SDG #: 12E055 Level IV Page: 1 of 1

Laboratory: EMAX Laboratories, Inc. Reviewer: D

2nd Reviewer: C

METHOD: GC Alcohols (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: 5/8/12
II	Initial calibration	A	%D RSD ≤20
III.	Calibration verification/ICV	A	ICV/CCV ≤ 20
IV.	Blanks	A	
V	Surrogate recovery	N	not required
VI.	Matrix spike/Matrix spike duplicates	N	client specified
VII.	Laboratory control samples	A	LCS/D
VIII.	Target compound identification	A	
IX.	Compound quantitation/RL/LOQ/LODs	A	
X.	System Performance	A	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	ND	EB= EB-051012 (SDG 12E082) FB= FB-060512 (SDG 12F037)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: SOIL

1	SL-536-SA5C-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 #: 28558P43
SDG #: per cover

VALIDATION FINDINGS CHECKLIST

Page: 1 of 2
Reviewer: FT
2nd Reviewer: A

Method: ✓ GC _____ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation?		✓		
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?			✓	
Were the RT windows properly established?	✓			
IV. Continuing calibration				
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20%.0 or percent recoveries 80-120%?	✓			
Were all the retention times within the acceptance windows?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?			✓	
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.			✓	
Was a MS/MSD analyzed every 20 samples of each matrix?			✓	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	

LDC #: 29558P43
SDG #: all cover

VALIDATION FINDINGS CHECKLIST

Reviewer: FJ
2nd Reviewer: A

Validation Area	Yes	No	NA	Findings/Comments
X. Target compound identification				
Were the retention times of reported detects within the RT windows?	✓		—	
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?		✓		
XII. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.		—		
Target compounds were detected in the field duplicates.			—	
XV. Field blanks				
Field blanks were identified in this SDG.	✓	NA		
Target compounds were detected in the field blanks.		/	NA	

LDC #: 28558P43
SDG #: [illegible]

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

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

METHOD: GC ✓ HPLC ____

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

CF = A/C
average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

A = Area of compound,
C = Concentration of compound,
S = Standard deviation of the CF
X = Mean of the CFs

#	Standard ID	Calibration Date	Compound	Reported CF (10std)	Recalculated CF (10 std)	Reported Average CF (initial)	Recalculated Average CF (initial)	Reported %RSD	Recalculated %RSD
1	ICAL	4/9/12	ethanol	930.30	930.30	963.905	963.905	5.2	5.2
2									
3									
4									

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

LDC #: 28558 (243
SDG #: pw cover

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: EJ
2nd Reviewer: [illegible]

METHOD: GC ✓ HPLC_____

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

% Difference = 100 * (ave. CF - CF)/ave. CF
CF = A/C

Where: ave. CF = initial calibration average CF
CF = continuing calibration CF
A = Area of compound
C = Concentration of compound

#	Standard ID	Calibration Date	Compound	Average CF(ical)/ CCV Conc.	Reported CF/Conc. CCV	Recalculated CF/Conc. CCV	Reported %D	Recalculated %D
1	BE 090064	3/9/12	ethanol	10.0	10.21	10.21	2	2
2								
3								
4								

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

LDC #: 28558P43
SDG #: all cases

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample/Laboratory Control Sample Duplicate Results Verification

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

METHOD: ✓ GC __HPLC

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
RPD = | LCS - LCSD | * 2/(LCS + LCSD)

Where: SSC = Spiked sample concentration
SA = Spike added
LCS = Laboratory control sample percent recovery
SC = Concentration
LCSD = Laboratory control sample duplicate percent recovery

LCS/LCSD samples: lcs ID

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.
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)										
ethanol	10000	10000	9030	9320	90	90	93	93	3	3

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 #: 28558P43
SDG #: [illegible]

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

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

METHOD: ✓ GC __ HPLC

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration= $\frac{(A)(Fv)(Df)}{(RF)(Vs \text{ or } Ws)(\%S/100)}$

A= Area or height of the compound to be measured
Fv= Final Volume of extract
Df= Dilution Factor
RF= Average response factor of the compound in the initial calibration
Vs= Initial volume of the sample
Ws= Initial weight of the sample
%S= Percent Solid

Example:

Sample ID._____ Compound Name _____

Concentration =_____

NB

#	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:	May 8, 2012
LDC Report Date:	October 23, 2012
Matrix:	Soil
Parameters:	Glycols
Validation Level:	Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	12E055

Sample Identification

SL-536-SA5C-SB-0.0-0.5

Introduction

This data review covers one soil sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015B for Glycols.

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 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%.

Retention time windows were evaluated and considered technically acceptable.

III. Calibration Verification

Calibration verification 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.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No glycol contaminants were found in the method blanks.

Sample EB-051012 (from SDG 12E082) was identified as an equipment blank. No glycol contaminants were found.

Sample FB-060512 (from SDG 12F037) was identified as a field blank. No glycol contaminants were found.

V. Surrogate Recovery

Surrogates were not required by the method.

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 and RLs

All compound quantitation and RLs were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 12E055	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
Glycols - Data Qualification Summary - SDG 12E055

SDG	Sample	Compound	Flag	A or P	Reason (Code)
12E055	SL-536-SA5C-SB-0.0-0.5	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (Z)

Santa Susana Field Laboratory
Glycols - Laboratory Blank Data Qualification Summary - SDG 12E055

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Glycols - Field Blank Data Qualification Summary - SDG 12E055

No Sample Data Qualified in this SDG

LDC #: 28558P45 **VALIDATION COMPLETENESS WORKSHEET** Date: 10/18/12

SDG #: 12E055 Level IV Page: 6 of 7

Laboratory: EMAX Laboratories Inc. Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: GC Glycols (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: 5/8/12
II	Initial calibration	A	%RSD ≤ 20
III.	Calibration verification/ICV	A	ICV/CCV ≤ 20
IV.	Blanks	A	
V	Surrogate recovery	N	not required
VI.	Matrix spike/Matrix spike duplicates	N	client specific
VII.	Laboratory control samples	A	LCS/D
VIII.	Target compound identification	A	
IX.	Compound quantitation/RL/LOQ/LODs	A	
X.	System Performance	A	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	ND	EB = EB-051012 (SDG 12E082) FB= FB-060512 (SDG# 12F037

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: SOIL

1	SL-536-SA5C-SB-0.0-0.5	11	MBLK1S	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 #: 28558P45
SDG #: per cover

VALIDATION FINDINGS CHECKLIST

Reviewer: P
2nd Reviewer: A

Method: ✓ GC ____ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation?		✓		
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?			✓	
Were the RT windows properly established?	✓			
IV. Continuing calibration				
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20%.0 or percent recoveries 80-120%?	✓			
Were all the retention times within the acceptance windows?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.			✓	
Was a MS/MSD analyzed every 20 samples of each matrix?			✓	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	

LDC #: 28558P45
SDG #: per cover

VALIDATION FINDINGS CHECKLIST

Reviewer: FJ
2nd Reviewer: A

Validation Area	Yes	No	NA	Findings/Comments
X. Target compound identification				
Were the retention times of reported detects within the RT windows?	✓			
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?			✓	
XII. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XV. Field blanks				
Field blanks were identified in this SDG.	✓	NA		
Target compounds were detected in the field blanks.		✓	✓	

LDC #: 28558 PA5
SDG #: [illegible]

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: EJ
2nd Reviewer:

METHOD: GC ✓ HPLC ____

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

CF = A/C
average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

A = Area of compound,
C = Concentration of compound,
S = Standard deviation of the CF
X = Mean of the CFs

#	Standard ID	Calibration Date	Compound	Reported CF ($\bar{5}$std)	Recalculated CF ($\bar{5}$std)	Reported Average CF (initial)	Recalculated Average CF (initial)	Reported %RSD	Recalculated %RSD
1	4/18/12 ICAL	4/18/12	Ethylene Glycol	5909	5909	6419.7	6419.7	10.5	10.5
2									
3									
4									

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

LDC #: 78538P4T
SDG #: w cover

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: EJ
2nd Reviewer: C

METHOD: GC_____HPLC_____

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

% Difference = 100 * (ave. CF - CF)/ave. CF
CF = A/C

Where: ave. CF = initial calibration average CF
CF = continuing calibration CF
A = Area of compound
C = Concentration of compound

#	Standard ID	Calibration Date	Compound	Average CF(ical)/ CCV Conc.	Reported CF/Conc. CCV	Recalculated CF/Conc. CCV	Reported %D	Recalculated %D
1	TE09005A	5/9/12	Ethylene Glycol	50.0	43.94	43.94	12	12
2								
3								
4								

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

LDC #: 28558P45
SDG #: All cores

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample/Laboratory Control Sample Duplicate Results Verification

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

METHOD: ✓ GC __HPLC

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
RPD = | LCS - LCSD | * 2/(LCS + LCSD)

Where: SSC = Spiked sample concentration
SA = Spike added
LCS = Laboratory control sample percent recovery
SC = Concentration
LCSD = Laboratory control sample duplicate percent recovery

LCS/LCSD samples: 1 & 2

Compound	Spike Added (mg/kg)		Spiked 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)										
Diethylene Glycol	50.0	50.0	43.4	45.9	87	87	92	92	6	6

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 #: 27558P45
SDG #: [illegible]

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

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

METHOD: GC HPLC

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration= $\frac{(A)(Fv)(Df)}{(RF)(Vs \text{ or } Ws)(\%S/100)}$

A= Area or height of the compound to be measured
Fv= Final Volume of extract
Df= Dilution Factor
RF= Average response factor of the compound in the initial calibration
Vs= Initial volume of the sample
Ws= Initial weight of the sample
%S= Percent Solid

Example:

Sample ID._____ Compound Name _____

Concentration = _____

#	Sample ID	Compound	Reported Concentrations	Recalculated Results Concentrations	Qualifications

Comments: _____

SAMPLE DELIVERY GROUP

12E067

Attachment I

Sample ID Cross Reference and Data Review Level

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
09-May-2012	SL-542-SA5C-SB-0.0-0.5	E067-01	N	3550B	8270C SIM	III
09-May-2012	SL-542-SA5C-SB-0.0-0.5	E067-01	N	7471A	7471A	III
09-May-2012	SL-542-SA5C-SB-0.0-0.5	E067-01	N	GEN PREP	7199	III
09-May-2012	SL-542-SA5C-SB-0.0-0.5	E067-01	N	TOTAL	6020	III
09-May-2012	SL-542-SA5C-SB-1.0-2.0	E067-02	N	7471A	7471A	III
09-May-2012	SL-542-SA5C-SB-1.0-2.0	E067-02	N	GEN PREP	7199	III
09-May-2012	SL-542-SA5C-SB-1.0-2.0	E067-02	N	TOTAL	6020	III
09-May-2012	SL-542-SA5C-SB-1.0-2.0	E067-02R	N	3550B	8270C SIM	III
09-May-2012	SL-609-SA5C-SB-0.0-0.5	E067-03	N	3550B	8015B EFH	III
09-May-2012	SL-609-SA5C-SB-0.0-0.5	E067-03	N	3550B	8082	III
09-May-2012	SL-609-SA5C-SB-0.0-0.5	E067-03	N	7471A	7471A	III
09-May-2012	SL-609-SA5C-SB-0.0-0.5	E067-03	N	GEN PREP	8015B	III
09-May-2012	SL-609-SA5C-SB-0.0-0.5	E067-03	N	GEN PREP	8015M	III
09-May-2012	SL-609-SA5C-SB-0.0-0.5	E067-03	N	TOTAL	6020	III
09-May-2012	SL-608-SA5C-SB-0.0-0.5	E067-04	N	3550B	8015B EFH	III
09-May-2012	SL-608-SA5C-SB-0.0-0.5	E067-04	N	3550B	8082	III
09-May-2012	SL-608-SA5C-SB-0.0-0.5	E067-04	N	7471A	7471A	III
09-May-2012	SL-608-SA5C-SB-0.0-0.5	E067-04	N	GEN PREP	8015B	III
09-May-2012	SL-608-SA5C-SB-0.0-0.5	E067-04	N	GEN PREP	8015M	III
09-May-2012	SL-608-SA5C-SB-0.0-0.5	E067-04	N	TOTAL	6020	III
09-May-2012	SL-613-SA5C-SB-0.0-0.5	E067-05	N	3550B	8082	III
09-May-2012	SL-613-SA5C-SB-0.0-0.5	E067-05R	N	3550B	8270C 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*

Attachment II

Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: 12E067 **Laboratory: EMXT**

EDD Filename: Prep12E067 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix:** SO

Sample ID: SL-542-SA5C-SB-0.0-0.5 ***Collected:*** 5/9/2012 9:00:00 AM ***Analysis Type:*** RES/TOT ***Dilution:*** 0.985

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	14.5		0.100	MDL	0.501	PQL	MG/KG	J	Q
BARIUM	456		0.200	MDL	0.501	PQL	MG/KG	J	Q
CALCIUM	3610		10.0	MDL	20.0	PQL	MG/KG	J	Q
COBALT	6.42		0.0501	MDL	0.501	PQL	MG/KG	J	E
COPPER	17.0		0.200	MDL	0.501	PQL	MG/KG	J	Q
LEAD	396		0.100	MDL	0.501	PQL	MG/KG	J	Q
MANGANESE	233		0.251	MDL	0.501	PQL	MG/KG	J	E
NICKEL	30.5		0.200	MDL	0.501	PQL	MG/KG	J	E
SILVER	0.140	J	0.0501	MDL	0.501	PQL	MG/KG	J	Z
THALLIUM	0.226	J	0.0501	MDL	0.401	PQL	MG/KG	J	Z
Zirconium	5.01	U	2.51	MDL	5.01	PQL	MG/KG	UJ	Q

Sample ID: SL-542-SA5C-SB-1.0-2.0 ***Collected:*** 5/9/2012 9:30:00 AM ***Analysis Type:*** RES/TOT ***Dilution:*** 0.971

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.314	J	0.109	MDL	0.546	PQL	MG/KG	J	Z, Q
BARIUM	194		0.218	MDL	0.546	PQL	MG/KG	J	Q
CADMIUM	0.267	J	0.0546	MDL	0.546	PQL	MG/KG	J	Z
CALCIUM	13800		10.9	MDL	21.8	PQL	MG/KG	J	Q
COBALT	7.67		0.0546	MDL	0.546	PQL	MG/KG	J	E
COPPER	17.8		0.218	MDL	0.546	PQL	MG/KG	J	Q
LEAD	21.8		0.109	MDL	0.546	PQL	MG/KG	J	Q
MANGANESE	193		0.273	MDL	0.546	PQL	MG/KG	J	E
MOLYBDENUM	0.310	J	0.0546	MDL	0.546	PQL	MG/KG	J	Z
NICKEL	15.3		0.218	MDL	0.546	PQL	MG/KG	J	E
SILVER	0.0693	J	0.0546	MDL	0.546	PQL	MG/KG	J	Z
THALLIUM	0.350	J	0.0546	MDL	0.437	PQL	MG/KG	J	Z
Zirconium	5.46	U	2.73	MDL	5.46	PQL	MG/KG	UJ	Q

Sample ID: SL-608-SA5C-SB-0.0-0.5 ***Collected:*** 5/9/2012 1:20:00 PM ***Analysis Type:*** RES/TOT ***Dilution:*** 0.980

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	1.21		0.101	MDL	0.506	PQL	MG/KG	J	Q
BARIUM	129		0.202	MDL	0.506	PQL	MG/KG	J	Q
BERYLLIUM	0.284	J	0.0506	MDL	0.506	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E067 **Laboratory: EMXT**

EDD Filename: Prep12E067 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: SL-608-SA5C-SB-0.0-0.5 *Collected:* 5/9/2012 1:20:00 PM *Analysis Type:* RES/TOT *Dilution:* 0.980

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	3.72	J	2.53	MDL	5.06	PQL	MG/KG	J	Z
CALCIUM	30800		10.1	MDL	20.2	PQL	MG/KG	J	Q
COBALT	11.5		0.0506	MDL	0.506	PQL	MG/KG	J	E
COPPER	16.1		0.202	MDL	0.506	PQL	MG/KG	J	Q
LEAD	49.1		0.101	MDL	0.506	PQL	MG/KG	J	Q
MANGANESE	405		0.253	MDL	0.506	PQL	MG/KG	J	E
NICKEL	12.1		0.202	MDL	0.506	PQL	MG/KG	J	E
SILVER	0.0654	J	0.0506	MDL	0.506	PQL	MG/KG	J	Z
THALLIUM	0.143	J	0.0506	MDL	0.405	PQL	MG/KG	J	Z
Zirconium	4.81	J	2.53	MDL	5.06	PQL	MG/KG	J	Z, Q

Sample ID: SL-609-SA5C-SB-0.0-0.5 *Collected:* 5/9/2012 11:13:00 *Analysis Type:* RES/TOT *Dilution:* 0.976

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.303	J	0.110	MDL	0.548	PQL	MG/KG	J	Z, Q
BARIUM	108		0.219	MDL	0.548	PQL	MG/KG	J	Q
BERYLLIUM	0.447	J	0.0548	MDL	0.548	PQL	MG/KG	J	Z
CADMIUM	0.378	J	0.0548	MDL	0.548	PQL	MG/KG	J	Z
CALCIUM	2950		11.0	MDL	21.9	PQL	MG/KG	J	Q
COBALT	5.56		0.0548	MDL	0.548	PQL	MG/KG	J	E
COPPER	11.8		0.219	MDL	0.548	PQL	MG/KG	J	Q
LEAD	12.5		0.110	MDL	0.548	PQL	MG/KG	J	Q
MANGANESE	281		0.274	MDL	0.548	PQL	MG/KG	J	E
NICKEL	9.61		0.219	MDL	0.548	PQL	MG/KG	J	E
SILVER	0.104	J	0.0548	MDL	0.548	PQL	MG/KG	J	Z
SODIUM	88.9	J	54.8	MDL	110	PQL	MG/KG	J	Z
THALLIUM	0.224	J	0.0548	MDL	0.438	PQL	MG/KG	J	Z
Zirconium	5.48	U	2.74	MDL	5.48	PQL	MG/KG	UJ	Q

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E067 **Laboratory: EMXT**

EDD Filename: Prep12E067 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

Method: 8015B EFH **Matrix: SO**

Sample ID: SL-609-SA5C-SB-0.0-0.5 *Collected:* 5/9/2012 11:13:00 *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)	3.3	J	2.8	MDL	5.6	PQL	MG/KG	J	Z
EFH(C30-C40)	9.7	J	5.6	MDL	11	PQL	MG/KG	J	Z

Method Category: SVOA

Method: 8082 **Matrix: SO**

Sample ID: SL-608-SA5C-SB-0.0-0.5 *Collected:* 5/9/2012 1:20:00 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
AROCLOR 1260	17	J	10	MDL	21	PQL	UG/KG	J	Z

Method Category: SVOA

Method: 8270C SIM **Matrix: SO**

Sample ID: SL-542-SA5C-SB-0.0-0.5 *Collected:* 5/9/2012 9:00:00 AM *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)ANTHRACENE	12	J	5.1	MDL	20	PQL	UG/KG	J	Z
BENZO(A)PYRENE	18	J	5.1	MDL	20	PQL	UG/KG	J	Z
BENZO(K)FLUORANTHENE	9.0	J	5.1	MDL	20	PQL	UG/KG	J	Z
INDENO(1,2,3-CD)PYRENE	12	J	5.1	MDL	20	PQL	UG/KG	J	Z
NAPHTHALENE	6.6	J	5.1	MDL	20	PQL	UG/KG	J	Z
PHENANTHRENE	14	J	5.1	MDL	20	PQL	UG/KG	J	Z

Sample ID: SL-613-SA5C-SB-0.0-0.5 *Collected:* 5/9/2012 1:55:00 PM *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(B)FLUORANTHENE	3.5	J	2.6	MDL	10	PQL	UG/KG	J	Z
FLUORANTHENE	3.0	J	2.6	MDL	10	PQL	UG/KG	J	Z
PYRENE	3.1	J	2.6	MDL	10	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E067 **Laboratory: EMXT**

EDD Filename: Prep12E067 **eQAPP Name: CDM_SSFL_120730_EMAX**

Reason Code Legend

Reason Code	*Description*
E	Matrix Spike 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: PHASE3 - SSFL PHASE 3

Enclosure I

Level III ADR Outliers
(including Manual Review Outliers)

Quality Control Outlier Reports

12E067

Reporting Limit Outliers

Lab Reporting Batch ID: 12E067 **Laboratory: EMXT**

EDD Filename: 12E067 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 6020
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-542-SA5C-SB-0.0-0.5	SILVER	J	0.140	0.501	PQL	MG/KG	J (all detects)
	THALLIUM	J	0.226	0.401	PQL	MG/KG	
SL-542-SA5C-SB-1.0-2.0	ANTIMONY	J	0.314	0.546	PQL	MG/KG	
	CADMIUM	J	0.267	0.546	PQL	MG/KG	
	MOLYBDENUM	J	0.310	0.546	PQL	MG/KG	J (all detects)
	SILVER	J	0.0693	0.546	PQL	MG/KG	
	THALLIUM	J	0.350	0.437	PQL	MG/KG	
SL-608-SA5C-SB-0.0-0.5	BERYLLIUM	J	0.284	0.506	PQL	MG/KG	
	BORON	J	3.72	5.06	PQL	MG/KG	
	SILVER	J	0.0654	0.506	PQL	MG/KG	J (all detects)
	THALLIUM	J	0.143	0.405	PQL	MG/KG	
	Zirconium	J	4.81	5.06	PQL	MG/KG	
SL-609-SA5C-SB-0.0-0.5	ANTIMONY	J	0.303	0.548	PQL	MG/KG	
	BERYLLIUM	J	0.447	0.548	PQL	MG/KG	
	CADMIUM	J	0.378	0.548	PQL	MG/KG	
	SILVER	J	0.104	0.548	PQL	MG/KG	J (all detects)
	SODIUM	J	88.9	110	PQL	MG/KG	
	THALLIUM	J	0.224	0.438	PQL	MG/KG	

Method: 8015B EFH
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-609-SA5C-SB-0.0-0.5	EFH(C21-C30)	J	3.3	5.6	PQL	MG/KG	J (all detects)
	EFH(C30-C40)	J	9.7	11	PQL	MG/KG	

Method: 8082
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-608-SA5C-SB-0.0-0.5	AROCLOR 1260	J	17	21	PQL	UG/KG	J (all detects)

Method: 8270C SIM
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-542-SA5C-SB-0.0-0.5	BENZO(A)ANTHRACENE	J	12	20	PQL	UG/KG	
	BENZO(A)PYRENE	J	18	20	PQL	UG/KG	
	BENZO(K)FLUORANTHENE	J	9.0	20	PQL	UG/KG	J (all detects)
	INDENO(1,2,3-CD)PYRENE	J	12	20	PQL	UG/KG	
	NAPHTHALENE	J	6.6	20	PQL	UG/KG	
	PHENANTHRENE	J	14	20	PQL	UG/KG	

Reporting Limit Outliers

Lab Reporting Batch ID: 12E067 **Laboratory: EMXT**

EDD Filename: 12E067 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: **8270C SIM**

Matrix: **SO**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
SL-613-SA5C-SB-0.0-0.5	BENZO(B)FLUORANTHENE	J	3.5	10	PQL	UG/KG	
	FLUORANTHENE	J	3.0	10	PQL	UG/KG	J (all detects)
	PYRENE	J	3.1	10	PQL	UG/KG	

LDC #: 28558Q4
SDG #: 12E067
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 11-6-12
Page: 1 of 1
Reviewer: CR
2nd Reviewer: [illegible]

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

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

	Validation Area		Comments
I.	Technical holding times	—	Sampling dates:
II.	ICP/MS Tune	—	
III.	Calibration	—	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	—	
VI.	Matrix Spike Analysis	N	MSD (see 12E082)
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	N	LCSD
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= EB-051012(12E082) FB=FB-060512 (12F037)

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-542-SA5C-SB-0.0-0.5	11		21		31	
2	SL-542-SA5C-SB-1.0-2.0	12		22		32	
3	SL-609-SA5C-SB-0.0-0.5	13		23		33	
4	SL-608-SA5C-SB-0.0-0.5	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 #: 28558Q4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: CR
2nd Reviewer: [illegible]

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

Blank units: ug/L **Associated sample units:** mg/Kg
Sampling date: 5/10/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: All

Analyte	Blank ID	Sample Identification											
	EB-051012	Action Limit	No Qualifiers										
Al	0.0421	10.525											
B	0.00572	1.43											
Cu	0.00178	0.445											
Na	0.0575	14.375											

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 #: 28558Q4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: CR
2nd Reviewer: AM

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

Blank units: ug/L **Associated sample units:** mg/Kg

Sampling date: 6/5/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All

Analyte	Blank ID	Sample Identification										
	FB-060512	Action Limit	No Qualifiers									
Al	0.0270	6.75										
Ca	0.0263	6.575										
Cu	0.000954	0.2385										

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

12E082

Attachment I

Sample ID Cross Reference and Data Review Level

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
09-May-2012	SL-529-SA5C-SB-4.0-5.0	E082-02	N	3550B	8015B EFH	III
09-May-2012	SL-529-SA5C-SB-4.0-5.0	E082-02	N	3550B	8082	III
09-May-2012	SL-529-SA5C-SB-4.0-5.0	E082-02	N	7471A	7471A	III
09-May-2012	SL-529-SA5C-SB-4.0-5.0	E082-02	N	TOTAL	6020	III
09-May-2012	SL-529-SA5C-SB-4.0-5.0	E082-02R	N	3550B	8270C SIM	III
10-May-2012	TB-051012	E082-07	TB	5030B	8015B GRO	III
10-May-2012	SL-529-SA5C-SB-5.0	E082-03	N	5035	8015B GRO	III
10-May-2012	SL-512-SA5C-SB-0.0-0.5	E082-10	N	3550B	8015B EFH	III
10-May-2012	SL-512-SA5C-SB-0.0-0.5	E082-10	N	3550B	8082	III
10-May-2012	SL-512-SA5C-SB-0.0-0.5	E082-10	N	3550B	8270C SIM	III
10-May-2012	SL-512-SA5C-SB-0.0-0.5	E082-10	N	7471A	7471A	III
10-May-2012	SL-512-SA5C-SB-0.0-0.5	E082-10	N	GEN PREP	6850	III
10-May-2012	SL-512-SA5C-SB-0.0-0.5	E082-10	N	TOTAL	6020	III
10-May-2012	SL-512-SA5C-SB-0.0-0.5MS	E082-10M	MS	3550B	8015B EFH	III
10-May-2012	SL-512-SA5C-SB-0.0-0.5MS	E082-10M	MS	3550B	8082	III
10-May-2012	SL-512-SA5C-SB-0.0-0.5MS	E082-10M	MS	3550B	8270C SIM	III
10-May-2012	SL-512-SA5C-SB-0.0-0.5MS	E082-10M	MS	7471A	7471A	III
10-May-2012	SL-512-SA5C-SB-0.0-0.5MS	E082-10M	MS	GEN PREP	6850	III
10-May-2012	SL-512-SA5C-SB-0.0-0.5MS	E082-10M	MS	TOTAL	6020	III
10-May-2012	SL-512-SA5C-SB-0.0-0.5MSD	E082-10S	MSD	3550B	8015B EFH	III
10-May-2012	SL-512-SA5C-SB-0.0-0.5MSD	E082-10S	MSD	3550B	8082	III
10-May-2012	SL-512-SA5C-SB-0.0-0.5MSD	E082-10S	MSD	3550B	8270C SIM	III
10-May-2012	SL-512-SA5C-SB-0.0-0.5MSD	E082-10S	MSD	7471A	7471A	III
10-May-2012	SL-512-SA5C-SB-0.0-0.5MSD	E082-10S	MSD	GEN PREP	6850	III
10-May-2012	SL-512-SA5C-SB-0.0-0.5MSD	E082-10S	MSD	TOTAL	6020	III
10-May-2012	SL-512-SA5C-SB-4.0-5.0	E082-04	N	3550B	8015B EFH	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-May-2012	SL-512-SA5C-SB-4.0-5.0	E082-04	N	3550B	8082	III
10-May-2012	SL-512-SA5C-SB-4.0-5.0	E082-04	N	3550B	8270C SIM	III
10-May-2012	SL-512-SA5C-SB-4.0-5.0	E082-04	N	7471A	7471A	III
10-May-2012	SL-512-SA5C-SB-4.0-5.0	E082-04	N	GEN PREP	6850	III
10-May-2012	SL-512-SA5C-SB-4.0-5.0	E082-04	N	TOTAL	6020	III
10-May-2012	SL-512-SA5C-SB-5.0	E082-05	N	5035	8015B GRO	III
10-May-2012	SL-812-SA5C-SB-0.0-0.5	E082-06	FD	3550B	8015B EFH	III
10-May-2012	SL-812-SA5C-SB-0.0-0.5	E082-06	FD	3550B	8082	III
10-May-2012	SL-812-SA5C-SB-0.0-0.5	E082-06	FD	3550B	8270C SIM	III
10-May-2012	SL-812-SA5C-SB-0.0-0.5	E082-06	FD	7471A	7471A	III
10-May-2012	SL-812-SA5C-SB-0.0-0.5	E082-06	FD	GEN PREP	6850	III
10-May-2012	SL-812-SA5C-SB-0.0-0.5	E082-06	FD	TOTAL	6020	III
10-May-2012	SL-512-SA5C-SB-6.0-7.0	E082-11	N	3550B	8015B EFH	III
10-May-2012	SL-512-SA5C-SB-6.0-7.0	E082-11	N	3550B	8082	III
10-May-2012	SL-512-SA5C-SB-6.0-7.0	E082-11	N	3550B	8270C SIM	III
10-May-2012	SL-512-SA5C-SB-6.0-7.0	E082-11	N	7471A	7471A	III
10-May-2012	SL-512-SA5C-SB-6.0-7.0	E082-11	N	GEN PREP	6850	III
10-May-2012	SL-512-SA5C-SB-6.0-7.0	E082-11	N	TOTAL	6020	III
10-May-2012	SL-512-SA5C-SB-7.0	E082-12	N	5035	8015B GRO	III
10-May-2012	EB-051012	E082-01	EB	3520C	8015B EFH	III
10-May-2012	EB-051012	E082-01	EB	3520C	8081A	III
10-May-2012	EB-051012	E082-01	EB	3520C	8082	III
10-May-2012	EB-051012	E082-01	EB	3520C	8270C SIM	III
10-May-2012	EB-051012	E082-01	EB	5030B	8015B GRO	III
10-May-2012	EB-051012	E082-01	EB	5030B	8260B	III
10-May-2012	EB-051012	E082-01	EB	5030B	8260B 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
10-May-2012	EB-051012	E082-01	EB	7470A	7470A	III
10-May-2012	EB-051012	E082-01	EB	GEN PREP	6850	III
10-May-2012	EB-051012	E082-01	EB	GEN PREP	7199	III
10-May-2012	EB-051012	E082-01	EB	GEN PREP	8015B	III
10-May-2012	EB-051012	E082-01	EB	GEN PREP	8015M	III
10-May-2012	EB-051012	E082-01	EB	GEN PREP	8151A	III
10-May-2012	EB-051012	E082-01	EB	TOTAL	6020	III
10-May-2012	SL-513-SA5C-SB-4.0-5.0	E082-08	N	3550B	8015B EFH	III
10-May-2012	SL-513-SA5C-SB-4.0-5.0	E082-08	N	3550B	8082	III
10-May-2012	SL-513-SA5C-SB-4.0-5.0	E082-08	N	3550B	8270C SIM	III
10-May-2012	SL-513-SA5C-SB-4.0-5.0	E082-08	N	7471A	7471A	III
10-May-2012	SL-513-SA5C-SB-4.0-5.0	E082-08	N	GEN PREP	6850	III
10-May-2012	SL-513-SA5C-SB-4.0-5.0	E082-08	N	TOTAL	6020	III
10-May-2012	SL-513-SA5C-SB-5.0	E082-09	N	5035	8015B GRO	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 II

Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: 12E082 **Laboratory: EMXT**

EDD Filename: Prep12E082 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: EB-051012 *Collected:* 5/10/2012 3:00:00 *Analysis Type:* RES/TOT *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	0.0421	J	0.0200	MDL	0.100	PQL	MG/L	J	Z
BORON	0.00572	J	0.00500	MDL	0.0100	PQL	MG/L	J	Z
SODIUM	0.0575	J	0.0500	MDL	0.100	PQL	MG/L	J	Z

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: SL-512-SA5C-SB-0.0-0.5 *Collected:* 5/10/2012 10:00:00 *Analysis Type:* RES/TOT *Dilution:* 0.971

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.220	J	0.107	MDL	0.534	PQL	MG/KG	J	Z, Q
BARIUM	105		0.213	MDL	0.534	PQL	MG/KG	J	Q
BORON	3.39	J	2.67	MDL	5.34	PQL	MG/KG	J	Z
CADMIUM	0.487	J	0.0534	MDL	0.534	PQL	MG/KG	J	Z
CALCIUM	4450		10.7	MDL	21.3	PQL	MG/KG	J	Q
COBALT	6.07		0.0534	MDL	0.534	PQL	MG/KG	J	E
COPPER	11.9		0.213	MDL	0.534	PQL	MG/KG	J	Q
LEAD	12.2		0.107	MDL	0.534	PQL	MG/KG	J	Q
MANGANESE	258		0.267	MDL	0.534	PQL	MG/KG	J	E
MOLYBDENUM	0.522	J	0.0534	MDL	0.534	PQL	MG/KG	J	Z
NICKEL	11.2		0.213	MDL	0.534	PQL	MG/KG	J	E
SELENIUM	0.534	U	0.213	MDL	0.534	PQL	MG/KG	UJ	FD
SODIUM	82.0	J	53.4	MDL	107	PQL	MG/KG	J	Z
THALLIUM	0.216	J	0.0534	MDL	0.427	PQL	MG/KG	J	Z
Zirconium	5.34	U	2.67	MDL	5.34	PQL	MG/KG	UJ	Q

Sample ID: SL-512-SA5C-SB-4.0-5.0 *Collected:* 5/10/2012 10:30:00 *Analysis Type:* RES/TOT *Dilution:* 0.966

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.201	J	0.112	MDL	0.559	PQL	MG/KG	J	Z, Q
BARIUM	173		0.224	MDL	0.559	PQL	MG/KG	J	Q
BORON	2.93	J	2.80	MDL	5.59	PQL	MG/KG	J	Z
CADMIUM	0.300	J	0.0559	MDL	0.559	PQL	MG/KG	J	Z
CALCIUM	33500		11.2	MDL	22.4	PQL	MG/KG	J	Q

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E082 **Laboratory: EMXT**

EDD Filename: Prep12E082 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: **METALS**

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

Sample ID: **SL-512-SA5C-SB-4.0-5.0** ***Collected:*** **5/10/2012 10:30:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.966**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COBALT	6.90		0.0559	MDL	0.559	PQL	MG/KG	J	E
COPPER	9.54		0.224	MDL	0.559	PQL	MG/KG	J	Q
LEAD	7.05		0.112	MDL	0.559	PQL	MG/KG	J	Q
MANGANESE	270		0.280	MDL	0.559	PQL	MG/KG	J	E
MOLYBDENUM	0.123	J	0.0559	MDL	0.559	PQL	MG/KG	J	Z
NICKEL	16.6		0.224	MDL	0.559	PQL	MG/KG	J	E
SILVER	0.474	J	0.0559	MDL	0.559	PQL	MG/KG	J	Z
THALLIUM	0.226	J	0.0559	MDL	0.447	PQL	MG/KG	J	Z
Zirconium	3.46	J	2.80	MDL	5.59	PQL	MG/KG	J	Z, Q

Sample ID: **SL-512-SA5C-SB-6.0-7.0** ***Collected:*** **5/10/2012 2:05:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.995**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.135	J	0.114	MDL	0.572	PQL	MG/KG	J	Z, Q
BARIUM	73.5		0.229	MDL	0.572	PQL	MG/KG	J	Q
BERYLLIUM	0.561	J	0.0572	MDL	0.572	PQL	MG/KG	J	Z
CALCIUM	89000		11.4	MDL	22.9	PQL	MG/KG	J	Q
COBALT	4.28		0.0572	MDL	0.572	PQL	MG/KG	J	E
COPPER	6.74		0.229	MDL	0.572	PQL	MG/KG	J	Q
LEAD	5.24		0.114	MDL	0.572	PQL	MG/KG	J	Q
MANGANESE	230		0.286	MDL	0.572	PQL	MG/KG	J	E
MOLYBDENUM	0.181	J	0.0572	MDL	0.572	PQL	MG/KG	J	Z
NICKEL	8.46		0.229	MDL	0.572	PQL	MG/KG	J	E
SODIUM	100	J	57.2	MDL	114	PQL	MG/KG	J	Z
THALLIUM	0.169	J	0.0572	MDL	0.457	PQL	MG/KG	J	Z
Zirconium	5.72	U	2.86	MDL	5.72	PQL	MG/KG	UJ	Q

Sample ID: **SL-513-SA5C-SB-4.0-5.0** ***Collected:*** **5/10/2012 3:00:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.966**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.200	J	0.109	MDL	0.545	PQL	MG/KG	J	Z, Q
BARIUM	172		0.218	MDL	0.545	PQL	MG/KG	J	Q
CADMIUM	0.238	J	0.0545	MDL	0.545	PQL	MG/KG	J	Z
CALCIUM	6420		10.9	MDL	21.8	PQL	MG/KG	J	Q
COBALT	7.68		0.0545	MDL	0.545	PQL	MG/KG	J	E

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E082 **Laboratory: EMXT**

EDD Filename: Prep12E082 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: SL-513-SA5C-SB-4.0-5.0 *Collected:* 5/10/2012 3:00:00 *Analysis Type:* RES/TOT *Dilution:* 0.966

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	9.25		0.218	MDL	0.545	PQL	MG/KG	J	Q
LEAD	9.52		0.109	MDL	0.545	PQL	MG/KG	J	Q
MANGANESE	269		0.272	MDL	0.545	PQL	MG/KG	J	E
MOLYBDENUM	0.387	J	0.0545	MDL	0.545	PQL	MG/KG	J	Z
NICKEL	14.2		0.218	MDL	0.545	PQL	MG/KG	J	E
SILVER	0.0598	J	0.0545	MDL	0.545	PQL	MG/KG	J	Z
THALLIUM	0.274	J	0.0545	MDL	0.436	PQL	MG/KG	J	Z
Zirconium	5.45	U	2.72	MDL	5.45	PQL	MG/KG	UJ	Q

Sample ID: SL-529-SA5C-SB-4.0-5.0 *Collected:* 5/9/2012 3:20:00 PM *Analysis Type:* RES/TOT *Dilution:* 1.00

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.178	J	0.109	MDL	0.547	PQL	MG/KG	J	Z, Q
BARIUM	101		0.219	MDL	0.547	PQL	MG/KG	J	Q
CADMIUM	0.166	J	0.0547	MDL	0.547	PQL	MG/KG	J	Z
CALCIUM	3580		10.9	MDL	21.9	PQL	MG/KG	J	Q
COBALT	13.0		0.0547	MDL	0.547	PQL	MG/KG	J	E
COPPER	6.60		0.219	MDL	0.547	PQL	MG/KG	J	Q
LEAD	5.69		0.109	MDL	0.547	PQL	MG/KG	J	Q
MANGANESE	202		0.274	MDL	0.547	PQL	MG/KG	J	E
MOLYBDENUM	0.284	J	0.0547	MDL	0.547	PQL	MG/KG	J	Z
NICKEL	10.5		0.219	MDL	0.547	PQL	MG/KG	J	E
THALLIUM	0.237	J	0.0547	MDL	0.438	PQL	MG/KG	J	Z
Zirconium	5.47	U	2.74	MDL	5.47	PQL	MG/KG	UJ	Q

Sample ID: SL-812-SA5C-SB-0.0-0.5 *Collected:* 5/10/2012 11:40:00 *Analysis Type:* RES/TOT *Dilution:* 0.948

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.237	J	0.105	MDL	0.524	PQL	MG/KG	J	Z, Q
BARIUM	122		0.210	MDL	0.524	PQL	MG/KG	J	Q
BORON	3.57	J	2.62	MDL	5.24	PQL	MG/KG	J	Z
CADMIUM	0.508	J	0.0524	MDL	0.524	PQL	MG/KG	J	Z
CALCIUM	7360		10.5	MDL	21.0	PQL	MG/KG	J	Q
COBALT	7.52		0.0524	MDL	0.524	PQL	MG/KG	J	E
COPPER	10.7		0.210	MDL	0.524	PQL	MG/KG	J	Q

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E082 **Laboratory: EMXT**

EDD Filename: Prep12E082 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: SL-812-SA5C-SB-0.0-0.5 *Collected:* 5/10/2012 11:40:00 *Analysis Type:* RES/TOT *Dilution:* 0.948

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
LEAD	13.8		0.105	MDL	0.524	PQL	MG/KG	J	Q
MANGANESE	294		0.262	MDL	0.524	PQL	MG/KG	J	E
NICKEL	13.1		0.210	MDL	0.524	PQL	MG/KG	J	E
SELENIUM	0.250	J	0.210	MDL	0.524	PQL	MG/KG	J	Z, FD
SODIUM	85.2	J	52.4	MDL	105	PQL	MG/KG	J	Z
THALLIUM	0.233	J	0.0524	MDL	0.419	PQL	MG/KG	J	Z
Zirconium	5.24	U	2.62	MDL	5.24	PQL	MG/KG	UJ	Q

Method Category: SVOA

Method: 8015B EFH **Matrix: SO**

Sample ID: SL-512-SA5C-SB-0.0-0.5 *Collected:* 5/10/2012 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(C21-C30)	22		2.7	MDL	5.5	PQL	MG/KG	J	FD
EFH(C30-C40)	46		5.5	MDL	11	PQL	MG/KG	J	FD

Sample ID: SL-812-SA5C-SB-0.0-0.5 *Collected:* 5/10/2012 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
EFH(C21-C30)	44		2.8	MDL	5.5	PQL	MG/KG	J	FD
EFH(C30-C40)	110		5.5	MDL	11	PQL	MG/KG	J	FD

Method Category: SVOA

Method: 8082 **Matrix: SO**

Sample ID: SL-512-SA5C-SB-0.0-0.5 *Collected:* 5/10/2012 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
AROCLOR 1260	21	J	11	MDL	22	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E082 **Laboratory: EMXT**

EDD Filename: Prep12E082 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

Method: 8270C SIM **Matrix: AQ**

Sample ID: EB-051012 *Collected:* 5/10/2012 3:00:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1.06

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NAPHTHALENE	0.15	J	0.11	MDL	0.21	PQL	UG/L	J	Z

Method Category: SVOA

Method: 8270C SIM **Matrix: SO**

Sample ID: SL-512-SA5C-SB-0.0-0.5 *Collected:* 5/10/2012 10:00:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(B)FLUORANTHENE	49		5.5	MDL	22	PQL	UG/KG	J	Q
BENZO(K)FLUORANTHENE	10	J	5.5	MDL	22	PQL	UG/KG	J	Z
DIBENZO(A,H)ANTHRACENE	6.2	J	5.5	MDL	22	PQL	UG/KG	J	Z, FD
FLUORANTHENE	39		5.5	MDL	22	PQL	UG/KG	J	Q, Q
INDENO(1,2,3-CD)PYRENE	16	J	5.5	MDL	22	PQL	UG/KG	J	Z
PHENANTHRENE	12	J	5.5	MDL	22	PQL	UG/KG	J	Z
PYRENE	46		5.5	MDL	22	PQL	UG/KG	J	Q, Q

Sample ID: SL-812-SA5C-SB-0.0-0.5 *Collected:* 5/10/2012 11:40:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)ANTHRACENE	21	J	5.5	MDL	22	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	18	J	5.5	MDL	22	PQL	UG/KG	J	Z
BENZO(K)FLUORANTHENE	7.7	J	5.5	MDL	22	PQL	UG/KG	J	Z
DIBENZO(A,H)ANTHRACENE	22	U	5.5	MDL	22	PQL	UG/KG	UJ	FD
INDENO(1,2,3-CD)PYRENE	11	J	5.5	MDL	22	PQL	UG/KG	J	Z
PHENANTHRENE	15	J	5.5	MDL	22	PQL	UG/KG	J	Z

Method Category: VOA

Method: 8015B GRO **Matrix: AQ**

Sample ID: EB-051012 *Collected:* 5/10/2012 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
GASOLINE RANGE ORGANICS (C5-C12)	17	J	10	MDL	50	PQL	UG/L	U	T

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E082 **Laboratory: EMXT**

EDD Filename: Prep12E082 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: **VOA**

Method: **8015B GRO** ***Matrix:*** **AQ**

Sample ID: TB-051012 ***Collected:*** 5/10/2012 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
GASOLINE RANGE ORGANICS (C5-C12)	29	J	10	MDL	50	PQL	UG/L	J	Z

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **AQ**

Sample ID: EB-051012 ***Collected:*** 5/10/2012 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
ETHYLBENZENE	0.44	J	0.20	MDL	1.0	PQL	UG/L	J	Z
m,p-Xylene	0.59	J	0.40	MDL	2.0	PQL	UG/L	J	Z
O-XYLENE	0.25	J	0.20	MDL	1.0	PQL	UG/L	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E082 **Laboratory: EMXT**

EDD Filename: Prep12E082 **eQAPP Name: CDM_SSFL_120730_EMAX**

Reason Code Legend

Reason Code	*Description*
E	Matrix Spike Precision
FD	Field Duplicate Precision
Q	Matrix Spike Lower Estimation
Q	Matrix Spike Lower Rejection
Q	Matrix Spike Precision
Q	Matrix Spike Upper Estimation
T	Trip Blank Contamination
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Enclosure I

Level III ADR Outliers
(including Manual Review Outliers)

Quality Control
Outlier Reports

12E082

Trip Blank Outlier Report

Lab Reporting Batch ID: 12E082 **Laboratory: EMXT**

EDD Filename: 12E082 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: **8015B GRO**
Matrix: **AQ**

Trip Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
TB-051012(RES)	5/10/2012 8:00:00 AM	GASOLINE RANGE ORGANICS (C5-C12)	29 UG/L	EB-051012 SL-512-SA5C-SB-0.0-0.5 SL-512-SA5C-SB-4.0-5.0 SL-512-SA5C-SB-5.0 SL-512-SA5C-SB-6.0-7.0 SL-512-SA5C-SB-7.0 SL-513-SA5C-SB-4.0-5.0 SL-513-SA5C-SB-5.0 SL-529-SA5C-SB-4.0-5.0 SL-529-SA5C-SB-5.0 SL-812-SA5C-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
EB-051012(RES)	GASOLINE RANGE ORGANICS (C5-C12)	17 UG/L	50U UG/L

Project Name and Number: PHASE3 - SSFL PHASE 3

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 12E082 **Laboratory: EMXT**

EDD Filename: 12E082 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 6020
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-512-SA5C-SB-0.0-0.5MS (TOT) SL-512-SA5C-SB-0.0-0.5MSD (TOT) (SL-512-SA5C-SB-0.0-0.5 SL-512-SA5C-SB-4.0-5.0 SL-512-SA5C-SB-6.0-7.0 SL-513-SA5C-SB-4.0-5.0 SL-529-SA5C-SB-4.0-5.0 SL-812-SA5C-SB-0.0-0.5)	ALUMINUM BARIUM CALCIUM IRON LEAD TITANIUM	140 161 174 132 - 161	- - 208 - 128 -	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 BARIUM CALCIUM IRON LEAD TITANIUM	J (all detects) Al, Fe, Ti, No Qual, >4x
SL-512-SA5C-SB-0.0-0.5MS (TOT) SL-512-SA5C-SB-0.0-0.5MSD (TOT) (SL-512-SA5C-SB-0.0-0.5 SL-512-SA5C-SB-4.0-5.0 SL-512-SA5C-SB-6.0-7.0 SL-513-SA5C-SB-4.0-5.0 SL-529-SA5C-SB-4.0-5.0 SL-812-SA5C-SB-0.0-0.5)	MANGANESE	622	-1	75.00-125.00	49 (20.00)	MANGANESE	J(all detects) UJ(all non-detects) No Qual, %R > 4x
SL-512-SA5C-SB-0.0-0.5MS (TOT) SL-512-SA5C-SB-0.0-0.5MSD (TOT) (SL-512-SA5C-SB-0.0-0.5 SL-512-SA5C-SB-4.0-5.0 SL-512-SA5C-SB-6.0-7.0 SL-513-SA5C-SB-4.0-5.0 SL-529-SA5C-SB-4.0-5.0 SL-812-SA5C-SB-0.0-0.5)	ANTIMONY COBALT COPPER NICKEL Zirconium	65 - 71 - 71	64 - 71 - 68	75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00	- 22 (20.00) - 28 (20.00) -	ANTIMONY COBALT COPPER NICKEL Zirconium	J(all detects) UJ(all non-detects)

Method: 8270C SIM
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-512-SA5C-SB-0.0-0.5MSD (SL-512-SA5C-SB-0.0-0.5)	BENZO(B)FLUORANTHENE FLUORANTHENE PYRENE	- - -	142 161 161	30.00-130.00 30.00-150.00 10.00-160.00	- 54 (50.00) 54 (50.00)	BENZO(B)FLUORANTHENE FLUORANTHENE PYRENE	J(all detects)

Project Name and Number: PHASE3 - SSFL PHASE 3

Field Duplicate RPD Report

Lab Reporting Batch ID: 12E082 **Laboratory: EMXT**

EDD Filename: Prep12E082 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 6020
Matrix: SO

Analyte	Concentration (MG/KG)		Sample RPD	eQAPP RPD	Flag
	SL-512-SA5C-SB-0.0-0.5 (TOT)	SL-812-SA5C-SB-0.0-0.5 (TOT)			
ALUMINUM	13500	14400	6	50.00	
ANTIMONY	0.220	0.237	7	50.00	
ARSENIC	3.79	4.56	18	50.00	
BARIUM	105	122	15	50.00	
BERYLLIUM	0.588	0.647	10	50.00	
BORON	3.39	3.57	5	50.00	
CADMIUM	0.487	0.508	4	50.00	
CALCIUM	4450	7360	49	50.00	
CHROMIUM	17.6	21.4	19	50.00	
COBALT	6.07	7.52	21	50.00	
COPPER	11.9	10.7	11	50.00	
IRON	18200	20500	12	50.00	
LEAD	12.2	13.8	12	50.00	
LITHIUM	13.1	15.2	15	50.00	No Qualifiers Applied
MAGNESIUM	3480	4070	16	50.00	
MANGANESE	258	294	13	50.00	
MOLYBDENUM	0.522	0.524	0	50.00	
NICKEL	11.2	13.1	16	50.00	
PHOSPHORUS	217	257	17	50.00	
POTASSIUM	2530	2680	6	50.00	
SILVER	0.619	0.761	21	50.00	
SODIUM	82.0	85.2	4	50.00	
STRONTIUM	25.5	35.2	32	50.00	
THALLIUM	0.216	0.233	8	50.00	
TITANIUM	718	700	3	50.00	
VANADIUM	33.9	38.6	13	50.00	
ZINC	69.8	92.7	28	50.00	
SELENIUM	0.534 U	0.250	200	50.00	J(all detects) UJ(all non-detects)

Method: 8015B EFH
Matrix: SO

Analyte	Concentration (MG/KG)		Sample RPD	eQAPP RPD	Flag
	SL-512-SA5C-SB-0.0-0.5	SL-812-SA5C-SB-0.0-0.5			
EFH(C21-C30)	22	44	67	50.00	J(all detects)
EFH(C30-C40)	46	110	82	50.00	

Method: 8082
Matrix: SO

Analyte	Concentration (UG/KG)		Sample RPD	eQAPP RPD	Flag
	SL-512-SA5C-SB-0.0-0.5	SL-812-SA5C-SB-0.0-0.5			
AROCLOR 1260	21	22	5	50.00	No Qualifiers Applied

Project Name and Number: PHASE3 - SSFL PHASE 3

Field Duplicate RPD Report

Lab Reporting Batch ID: 12E082 **Laboratory: EMXT**

EDD Filename: Prep12E082 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 8270C SIM
Matrix: SO

Analyte	Concentration (UG/KG)		Sample RPD	eQAPP RPD	Flag
	SL-512-SA5C-SB-0.0-0.5	SL-812-SA5C-SB-0.0-0.5			
BENZO(A)ANTHRACENE	26	21	21	50.00	
BENZO(A)PYRENE	33	24	32	50.00	
BENZO(B)FLUORANTHENE	49	35	33	50.00	
BENZO(E)PYRENE	29	22	27	50.00	
BENZO(G,H,I)PERYLENE	26	18	36	50.00	
BENZO(K)FLUORANTHENE	10	7.7	26	50.00	No Qualifiers Applied
CHRYSENE	26	22	17	50.00	
FLUORANTHENE	39	39	0	50.00	
INDENO(1,2,3-CD)PYRENE	16	11	37	50.00	
PHENANTHRENE	12	15	22	50.00	
PYRENE	46	39	16	50.00	
DIBENZO(A,H)ANTHRACENE	6.2	22 U	200	50.00	J(all detects) UJ(all non-detects)

Method: 9045D
Matrix: SO

Analyte	Concentration (PH UNIT)		Sample RPD	eQAPP RPD	Flag
	SL-512-SA5C-SB-0.0-0.5	SL-812-SA5C-SB-0.0-0.5			
PH	8.20	8.17	0		No Qualifiers Applied

Project Name and Number: PHASE3 - SSFL PHASE 3

Reporting Limit Outliers

Lab Reporting Batch ID: 12E082 **Laboratory: EMXT**

EDD Filename: 12E082 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 6020
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-051012	ALUMINUM	J	0.0421	0.100	PQL	MG/L	J (all detects)
	BORON	J	0.00572	0.0100	PQL	MG/L	
	SODIUM	J	0.0575	0.100	PQL	MG/L	

Method: 8015B GRO
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-051012	GASOLINE RANGE ORGANICS (C5-C12)	J	17	50	PQL	UG/L	J (all detects)
TB-051012	GASOLINE RANGE ORGANICS (C5-C12)	J	29	50	PQL	UG/L	J (all detects)

Method: 8260B
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-051012	ETHYLBENZENE	J	0.44	1.0	PQL	UG/L	J (all detects)
	m,p-Xylene	J	0.59	2.0	PQL	UG/L	
	O-XYLENE	J	0.25	1.0	PQL	UG/L	

Method: 8270C SIM
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-051012	NAPHTHALENE	J	0.15	0.21	PQL	UG/L	J (all detects)

Method: 6020
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-512-SA5C-SB-0.0-0.5	ANTIMONY	J	0.220	0.534	PQL	MG/KG	J (all detects)
	BORON	J	3.39	5.34	PQL	MG/KG	
	CADMIUM	J	0.487	0.534	PQL	MG/KG	
	MOLYBDENUM	J	0.522	0.534	PQL	MG/KG	
	SODIUM	J	82.0	107	PQL	MG/KG	
	THALLIUM	J	0.216	0.427	PQL	MG/KG	
SL-512-SA5C-SB-4.0-5.0	ANTIMONY	J	0.201	0.559	PQL	MG/KG	J (all detects)
	BORON	J	2.93	5.59	PQL	MG/KG	
	CADMIUM	J	0.300	0.559	PQL	MG/KG	
	MOLYBDENUM	J	0.123	0.559	PQL	MG/KG	
	SILVER	J	0.474	0.559	PQL	MG/KG	
	THALLIUM	J	0.226	0.447	PQL	MG/KG	
	Zirconium	J	3.46	5.59	PQL	MG/KG	

Project Name and Number: PHASE3 - SSFL PHASE 3

Reporting Limit Outliers

Lab Reporting Batch ID: 12E082 **Laboratory: EMXT**

EDD Filename: 12E082 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 6020
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-512-SA5C-SB-6.0-7.0	ANTIMONY	J	0.135	0.572	PQL	MG/KG	J (all detects)
	BERYLLIUM	J	0.561	0.572	PQL	MG/KG	
	MOLYBDENUM	J	0.181	0.572	PQL	MG/KG	
	SODIUM	J	100	114	PQL	MG/KG	
	THALLIUM	J	0.169	0.457	PQL	MG/KG	
SL-513-SA5C-SB-4.0-5.0	ANTIMONY	J	0.200	0.545	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.238	0.545	PQL	MG/KG	
	MOLYBDENUM	J	0.387	0.545	PQL	MG/KG	
	SILVER	J	0.0598	0.545	PQL	MG/KG	
	THALLIUM	J	0.274	0.436	PQL	MG/KG	
SL-529-SA5C-SB-4.0-5.0	ANTIMONY	J	0.178	0.547	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.166	0.547	PQL	MG/KG	
	MOLYBDENUM	J	0.284	0.547	PQL	MG/KG	
	THALLIUM	J	0.237	0.438	PQL	MG/KG	
SL-812-SA5C-SB-0.0-0.5	ANTIMONY	J	0.237	0.524	PQL	MG/KG	J (all detects)
	BORON	J	3.57	5.24	PQL	MG/KG	
	CADMIUM	J	0.508	0.524	PQL	MG/KG	
	SELENIUM	J	0.250	0.524	PQL	MG/KG	
	SODIUM	J	85.2	105	PQL	MG/KG	
	THALLIUM	J	0.233	0.419	PQL	MG/KG	

Method: 8082
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-512-SA5C-SB-0.0-0.5	AROCLOR 1260	J	21	22	PQL	UG/KG	J (all detects)

Method: 8270C SIM
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-512-SA5C-SB-0.0-0.5	BENZO(K)FLUORANTHENE	J	10	22	PQL	UG/KG	J (all detects)
	DIBENZO(A,H)ANTHRACENE	J	6.2	22	PQL	UG/KG	
	INDENO(1,2,3-CD)PYRENE	J	16	22	PQL	UG/KG	
	PHENANTHRENE	J	12	22	PQL	UG/KG	
SL-812-SA5C-SB-0.0-0.5	BENZO(A)ANTHRACENE	J	21	22	PQL	UG/KG	J (all detects)
	BENZO(G,H,I)PERYLENE	J	18	22	PQL	UG/KG	
	BENZO(K)FLUORANTHENE	J	7.7	22	PQL	UG/KG	
	INDENO(1,2,3-CD)PYRENE	J	11	22	PQL	UG/KG	
	PHENANTHRENE	J	15	22	PQL	UG/KG	

LDC #: 28558R4
SDG #: 12E082
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 11-6-12
Page: 1 of 1
Reviewer: CL
2nd Reviewer: V

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

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

	Validation Area		Comments
I.	Technical holding times	—	Sampling dates:
II.	ICP/MS Tune	—	
III.	Calibration	—	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	—	
VI.	Matrix Spike Analysis	N	MS/D (Al, Fe, Mn, Ti > 4X) →RPDout
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	N	LCS/D
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 FB=FB060512

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

CL2F037

Validated Samples: soil / water

1	EB-051012 W	11		21		31	
2	SL-529-SA5C-SB-4.0-5.0	12		22		32	
3	SL-512-SA5C-SB-4.0-5.0	13		23		33	
4	SL-812-SA5C-SB-0.0-0.5	14		24		34	
5	SL-513-SA5C-SB-4.0-5.0	15		25		35	
6	SL-512-SA5C-SB-0.0-0.5	16		26		36	
7	SL-512-SA5C-SB-6.0-7.0	17		27		37	
8	SL-512-SA5C-SB-0.0-0.5MS	18		28		38	
9	SL-512-SA5C-SB-0.0-0.5MSD	19		29		39	
10		20		30		40	

Notes: _____

LDC #: 28558R4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer:
2nd Reviewer:

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

Blank units: ug/L **Associated sample units:** mg/Kg
Sampling date: 5/10/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All Soil

Analyte	Blank ID	Sample Identification											
	EB-051012	Action Limit	No Qualifiers										
Al	0.0421	10.525											
B	0.00572	1.43											
Cu	0.00178	0.445											
Na	0.0575	14.375											

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 #: 28558 4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: 2nd Reviewer:

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

Blank units: ug/L **Associated sample units:** mg/Kg

Sampling date: 6/5/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All Soil

Analyte	Blank ID	Sample Identification										
	FB-060512	Action Limit	No Qualifiers									
Al	0.0270	6.75										
Ca	0.0263	6.575										
Cu	0.000954	0.2385										

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

12E098

Attachment I

Sample ID Cross Reference and Data Review Level

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
14-May-2012	TB-051412	E098-07	TB	5030B	8015B GRO	III
14-May-2012	SL-513-SA5C-SB-9.0-10.0	E098-01	N	3550B	8015B EFH	III
14-May-2012	SL-513-SA5C-SB-9.0-10.0	E098-01	N	3550B	8082	III
14-May-2012	SL-513-SA5C-SB-9.0-10.0	E098-01	N	3550B	8270C SIM	III
14-May-2012	SL-513-SA5C-SB-9.0-10.0	E098-01	N	7471A	7471A	III
14-May-2012	SL-513-SA5C-SB-9.0-10.0	E098-01	N	GEN PREP	6850	III
14-May-2012	SL-513-SA5C-SB-9.0-10.0	E098-01	N	TOTAL	6020	III
14-May-2012	SL-513-SA5C-SB-10.0	E098-02	N	5035	8015B GRO	III
14-May-2012	SL-514-SA5C-SB-4.0-5.0	E098-03	N	3550B	8015B EFH	III
14-May-2012	SL-514-SA5C-SB-4.0-5.0	E098-03	N	3550B	8082	III
14-May-2012	SL-514-SA5C-SB-4.0-5.0	E098-03	N	3550B	8270C SIM	III
14-May-2012	SL-514-SA5C-SB-4.0-5.0	E098-03	N	7471A	7471A	III
14-May-2012	SL-514-SA5C-SB-4.0-5.0	E098-03	N	GEN PREP	6850	III
14-May-2012	SL-514-SA5C-SB-4.0-5.0	E098-03	N	TOTAL	6020	III
14-May-2012	SL-514-SA5C-SB-5.0	E098-04	N	5035	8015B GRO	III
14-May-2012	SL-514-SA5C-SB-9.0-10.0	E098-05	N	3550B	8015B EFH	III
14-May-2012	SL-514-SA5C-SB-9.0-10.0	E098-05	N	3550B	8082	III
14-May-2012	SL-514-SA5C-SB-9.0-10.0	E098-05	N	3550B	8270C SIM	III
14-May-2012	SL-514-SA5C-SB-9.0-10.0	E098-05	N	7471A	7471A	III
14-May-2012	SL-514-SA5C-SB-9.0-10.0	E098-05	N	GEN PREP	6850	III
14-May-2012	SL-514-SA5C-SB-9.0-10.0	E098-05	N	TOTAL	6020	III
14-May-2012	SL-514-SA5C-SB-9.0-10.0MS	E098-05M	MS	TOTAL	6020	III
14-May-2012	SL-514-SA5C-SB-10.0	E098-06	N	5035	8015B GRO	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 II

Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: 12E098 **Laboratory: EMXT**

EDD Filename: Prep12E098 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: **SL-513-SA5C-SB-9.0-10.0** ***Collected:*** **5/14/2012 10:10:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.980**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.202	J	0.111	MDL	0.557	PQL	MG/KG	J	Z
CADMIUM	0.303	J	0.0557	MDL	0.557	PQL	MG/KG	J	Z
MANGANESE	279		0.279	MDL	0.557	PQL	MG/KG	J	E
MOLYBDENUM	0.271	J	0.0557	MDL	0.557	PQL	MG/KG	J	Z
THALLIUM	0.283	J	0.0557	MDL	0.446	PQL	MG/KG	J	Z
Zirconium	3.46	J	2.79	MDL	5.57	PQL	MG/KG	J	Z

Sample ID: **SL-514-SA5C-SB-4.0-5.0** ***Collected:*** **5/14/2012 11:20:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.995**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.200	J	0.107	MDL	0.533	PQL	MG/KG	J	Z
CADMIUM	0.157	J	0.0533	MDL	0.533	PQL	MG/KG	J	Z
MANGANESE	284		0.266	MDL	0.533	PQL	MG/KG	J	E
MOLYBDENUM	0.303	J	0.0533	MDL	0.533	PQL	MG/KG	J	Z
THALLIUM	0.169	J	0.0533	MDL	0.426	PQL	MG/KG	J	Z

Sample ID: **SL-514-SA5C-SB-9.0-10.0** ***Collected:*** **5/14/2012 12:25:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.957**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.190	J	0.103	MDL	0.513	PQL	MG/KG	J	Z
BERYLLIUM	0.432	J	0.0513	MDL	0.513	PQL	MG/KG	J	Z
CADMIUM	0.155	J	0.0513	MDL	0.513	PQL	MG/KG	J	Z
MANGANESE	196		0.256	MDL	0.513	PQL	MG/KG	J	E
MOLYBDENUM	0.240	J	0.0513	MDL	0.513	PQL	MG/KG	J	Z
THALLIUM	0.168	J	0.0513	MDL	0.410	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E098 **Laboratory: EMXT**

EDD Filename: Prep12E098 **eQAPP Name: CDM_SSFL_120730_EMAX**

Reason Code Legend

Reason Code	*Description*
E	Matrix Spike 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: PHASE3 - SSFL PHASE 3

Enclosure I

Level III ADR Outliers
(including Manual Review Outliers)

Quality Control
Outlier Reports

12E098

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 12E098 **Laboratory: EMXT**

EDD Filename: 12E098 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 6020
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-514-SA5C-SB-9.0-10.0MS (TOT) **SL-514-SA5C-SB-9.0-10.0MSD (TOT)** (SL-513-SA5C-SB-9.0-10.0 SL-514-SA5C-SB-4.0-5.0 SL-514-SA5C-SB-9.0-10.0)	MANGANESE TITANIUM	305 -14	-148 -53	75.00-125.00 75.00-125.00	56 (20.00) -	MANGANESE TITANIUM	J (all detects) UJ (all non-detects) Mn, Ti, No Qual %R > 4x
SL-514-SA5C-SB-9.0-10.0MS (TOT) **SL-514-SA5C-SB-9.0-10.0MSD (TOT)** (SL-513-SA5C-SB-9.0-10.0 SL-514-SA5C-SB-4.0-5.0 SL-514-SA5C-SB-9.0-10.0)	IRON	61	57	75.00-125.00	-	IRON	No Qual, >4x

Project Name and Number: PHASE3 - SSFL PHASE 3

Reporting Limit Outliers

Lab Reporting Batch ID: 12E098 **Laboratory:** EMXT

EDD Filename: 12E098 **eQAPP Name:** CDM_SSFL_120730_EMAX

Method: 6020

Matrix: SO

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
SL-513-SA5C-SB-9.0-10.0	ANTIMONY	J	0.202	0.557	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.303	0.557	PQL	MG/KG	
	MOLYBDENUM	J	0.271	0.557	PQL	MG/KG	
	THALLIUM	J	0.283	0.446	PQL	MG/KG	
	Zirconium	J	3.46	5.57	PQL	MG/KG	
SL-514-SA5C-SB-4.0-5.0	ANTIMONY	J	0.200	0.533	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.157	0.533	PQL	MG/KG	
	MOLYBDENUM	J	0.303	0.533	PQL	MG/KG	
	THALLIUM	J	0.169	0.426	PQL	MG/KG	
SL-514-SA5C-SB-9.0-10.0	ANTIMONY	J	0.190	0.513	PQL	MG/KG	J (all detects)
	BERYLLIUM	J	0.432	0.513	PQL	MG/KG	
	CADMIUM	J	0.155	0.513	PQL	MG/KG	
	MOLYBDENUM	J	0.240	0.513	PQL	MG/KG	
	THALLIUM	J	0.168	0.410	PQL	MG/KG	

LDC #: 28558S4 **VALIDATION COMPLETENESS WORKSHEET** Date: 11-6-12
SDG #: 12E098 ADR Page: 1 of 1
Laboratory: EMAX Laboratories, Inc. Reviewer:
2nd Reviewer:

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

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

	Validation Area		Comments
I.	Technical holding times	✓	Sampling dates:
II.	ICP/MS Tune	✓	
III.	Calibration	✓	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	✓	
VI.	Matrix Spike Analysis	N	MS/D (Fe, Mn, Ti >4x) → RPD out
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	N	LCS/D
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 = EB1-051712 (12E134) FB = FB-051712 (12F057)

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-513-SA5C-SB-9.0-10.0	11		21		31	
2	SL-514-SA5C-SB-4.0-5.0	12		22		32	
3	SL-514-SA5C-SB-9.0-10.0	13		23		33	
4	SL-514-SA5C-SB-9.0-10.0MS	14		24		34	
5	SL-514-SA5C-SB-9.0-10.0MSD	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 #: 28558S4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: CR
2nd Reviewer: C

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

Blank units: ug/L **Associated sample units:** mg/Kg
Sampling date: 5/17/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All

Analyte	Blank ID	Sample Identification										
	EB1-051712	Action Limit	No Qualifiers									
Al	0.0627	15.675										
B	0.00549	1.3725										
Cu	0.00215	0.5375										
Ni	0.000401	0.10025										
K	0.0204	5.1										
Na	0.0965	24.125										

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 #: 28558S4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: 2nd Reviewer:

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

Blank units: ug/L **Associated sample units:** mg/Kg

Sampling date: 6/5/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All

Analyte	Blank ID	Sample Identification										
	FB-060512	Action Limit	No Qualifiers									
Al	0.0270	6.75										
Ca	0.0263	6.575										
Cu	0.000954	0.2385										

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

12E108

Attachment I

Sample ID Cross Reference and Data Review Level

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
15-May-2012	SL-556B-SA5C-SB-2.0-3.0	E108-01	N	3550B	8082	III
15-May-2012	SL-556C-SA5C-SB-2.0-3.0	E108-02	N	3550B	8082	III
15-May-2012	SL-556D-SA5C-SB-2.0-3.0	E108-03	N	3550B	8082	III
15-May-2012	SL-556D-SA5C-SB-2.0-3.0MS	E108-03M	MS	3550B	8082	III
15-May-2012	SL-856D-SA5C-SB-2.0-3.0	E108-04	FD	3550B	8082	III
15-May-2012	SL-557D-SA5C-SB-2.0-3.0	E108-08	N	3550B	8082	III
15-May-2012	SL-557C-SA5C-SB-2.0-3.0	E108-07	N	3550B	8082	III
15-May-2012	SL-557B-SA5C-SB-2.0-3.0	E108-06	N	3550B	8082	III
15-May-2012	SL-557A-SA5C-SB-2.0-3.0	E108-05	N	3550B	8082	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 II

Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: 12E108 **Laboratory: EMXT**

EDD Filename: 12E108 **eQAPP Name: CDM_SSFL_120730_EMAX**

No Data Review Qualifiers Applied.

Enclosure I

Level III ADR Outliers
(including Manual Review Outliers)

Quality Control Outlier Reports

12E108

(No Outliers)

SAMPLE DELIVERY GROUP

12E116

Attachment I

Sample ID Cross Reference and Data Review Level

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
16-May-2012	TB-051612	E116-13	TB	5030B	8015B GRO	III
16-May-2012	SL-695-SA5C-SB-4.0-5.0	E116-01	N	3550B	8015B EFH	III
16-May-2012	SL-695-SA5C-SB-4.0-5.0	E116-01	N	3550B	8082	III
16-May-2012	SL-695-SA5C-SB-4.0-5.0	E116-01	N	3550B	8270C SIM	III
16-May-2012	SL-695-SA5C-SB-4.0-5.0	E116-01	N	7471A	7471A	III
16-May-2012	SL-695-SA5C-SB-4.0-5.0	E116-01	N	GEN PREP	7199	III
16-May-2012	SL-695-SA5C-SB-4.0-5.0	E116-01	N	TOTAL	6020	III
16-May-2012	SL-695-SA5C-SB-5.0	E116-02	N	5035	8015B GRO	III
16-May-2012	SL-695-SA5C-SB-9.0-10.0	E116-03	N	3550B	8015B EFH	III
16-May-2012	SL-695-SA5C-SB-9.0-10.0	E116-03	N	3550B	8082	III
16-May-2012	SL-695-SA5C-SB-9.0-10.0	E116-03	N	3550B	8270C SIM	III
16-May-2012	SL-695-SA5C-SB-9.0-10.0	E116-03	N	7471A	7471A	III
16-May-2012	SL-695-SA5C-SB-9.0-10.0	E116-03	N	GEN PREP	7199	III
16-May-2012	SL-695-SA5C-SB-9.0-10.0	E116-03	N	TOTAL	6020	III
16-May-2012	SL-695-SA5C-SB-10.0	E116-04	N	5035	8015B GRO	III
16-May-2012	SL-697-SA5C-SB-4.0-5.0	E116-05	N	3550B	8015B EFH	III
16-May-2012	SL-697-SA5C-SB-5.0	E116-06	N	5035	8015B GRO	III
16-May-2012	SL-697-SA5C-SB-9.0-10.0	E116-07	N	3550B	8015B EFH	III
16-May-2012	SL-697-SA5C-SB-10.0	E116-08	N	5035	8015B GRO	III
16-May-2012	SL-698-SA5C-SB-4.0-5.0	E116-09	N	3550B	8015B EFH	III
16-May-2012	SL-698-SA5C-SB-4.0-5.0	E116-09	N	3550B	8270C SIM	III
16-May-2012	SL-698-SA5C-SB-5.0	E116-10	N	5035	8015B GRO	III
16-May-2012	SL-698-SA5C-SB-9.0-10.0	E116-11	N	3550B	8015B EFH	III
16-May-2012	SL-698-SA5C-SB-9.0-10.0	E116-11	N	3550B	8270C SIM	III
16-May-2012	SL-698-SA5C-SB-10.0	E116-12	N	5035	8015B GRO	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 II

Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: 12E116 **Laboratory:** EMXT

EDD Filename: 12E116 **eQAPP Name:** CDM_SSFL_120730_EMAX

Method Category: METALS

Method: 6020 **Matrix:** SO

Sample ID: SL-695-SA5C-SB-4.0-5.0 ***Collected:*** 5/16/2012 8:55:00 ***Analysis Type:*** RES/TOT ***Dilution:*** 0.966

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.196	J	0.105	MDL	0.524	PQL	MG/KG	J	Z
CADMIUM	0.169	J	0.0524	MDL	0.524	PQL	MG/KG	J	Z
MANGANESE	282		0.262	MDL	0.524	PQL	MG/KG	J	A
THALLIUM	0.262	J	0.0524	MDL	0.420	PQL	MG/KG	J	Z

Sample ID: SL-695-SA5C-SB-9.0-10.0 ***Collected:*** 5/16/2012 9:56:00 ***Analysis Type:*** RES/TOT ***Dilution:*** 0.980

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.176	J	0.114	MDL	0.568	PQL	MG/KG	J	Z
CADMIUM	0.168	J	0.0568	MDL	0.568	PQL	MG/KG	J	Z
MANGANESE	178		0.284	MDL	0.568	PQL	MG/KG	J	A
MOLYBDENUM	0.342	J	0.0568	MDL	0.568	PQL	MG/KG	J	Z
SILVER	0.0699	J	0.0568	MDL	0.568	PQL	MG/KG	J	Z
THALLIUM	0.245	J	0.0568	MDL	0.455	PQL	MG/KG	J	Z

Method Category: SVOA

Method: 8015B EFH **Matrix:** SO

Sample ID: SL-698-SA5C-SB-4.0-5.0 ***Collected:*** 5/16/2012 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
EFH(C21-C30)	3.0	J	2.8	MDL	5.6	PQL	MG/KG	J	Z

Method Category: VOA

Method: 8015B GRO **Matrix:** AQ

Sample ID: TB-051612 ***Collected:*** 5/16/2012 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
GASOLINE RANGE ORGANICS (C5-C12)	22	J	10	MDL	50	PQL	UG/L	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E116 **Laboratory: EMXT**

EDD Filename: 12E116 **eQAPP Name: CDM_SSFL_120730_EMAX**

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E116 **Laboratory: EMXT**

EDD Filename: Prep12E116 **eQAPP Name: CDM_SSFL_120730_EMAX**

Reason Code Legend

Reason Code	*Description*
*#	Professional Judgment
A	ICP Serial Dilution
S	Surrogate/Tracer Recovery Lower Estimation
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Enclosure I

Level III ADR Outliers
(including Manual Review Outliers)

Quality Control
Outlier Reports

12E116

Surrogate Outlier Report

Lab Reporting Batch ID: 12E116 **Laboratory: EMXT**

EDD Filename: 12E116 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 8270C SIM
Matrix: SO

Sample ID (Analysis Type)	*Surrogate*	*Sample % Recovery*	*% Recovery Limits*	*Affected Compounds*	*Flag*
SL-698-SA5C-SB-9.0-10.0	2-FLUOROBIPHENYL	44	45.00-130.00	No Affected Compounds	

Reporting Limit Outliers

Lab Reporting Batch ID: 12E116 **Laboratory: EMXT**

EDD Filename: 12E116 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 8015B GRO
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TB-051612	GASOLINE RANGE ORGANICS (C5-C12)	J	22	50	PQL	UG/L	J (all detects)

Method: 6020
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-695-SA5C-SB-4.0-5.0	ANTIMONY	J	0.196	0.524	PQL	MG/KG	
	CADMIUM	J	0.169	0.524	PQL	MG/KG	J (all detects)
	THALLIUM	J	0.262	0.420	PQL	MG/KG	
SL-695-SA5C-SB-9.0-10.0	ANTIMONY	J	0.176	0.568	PQL	MG/KG	
	CADMIUM	J	0.168	0.568	PQL	MG/KG	
	MOLYBDENUM	J	0.342	0.568	PQL	MG/KG	J (all detects)
	SILVER	J	0.0699	0.568	PQL	MG/KG	
	THALLIUM	J	0.245	0.455	PQL	MG/KG	

Method: 8015B EFH
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-698-SA5C-SB-4.0-5.0	EFH(C21-C30)	J	3.0	5.6	PQL	MG/KG	J (all detects)

LDC #: 28558U4
SDG #: 12E116
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 11-6-12
Page: 1 of 1
Reviewer: CL
2nd Reviewer: L

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

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

	Validation Area		Comments
I.	Technical holding times	✓	Sampling dates:
II.	ICP/MS Tune	✓	
III.	Calibration	✓	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	✓	
VI.	Matrix Spike Analysis	N	MS/D (see 12E134)
VII.	Duplicate Sample Analysis	N	
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	From 12E134 (Mn: J/UJ)
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	N	
XIV.	Field Duplicates	✓	
XV	Field Blanks	SW	EB=EB1-051712 (12E134) FB=FB060512 (12F057)

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: S

1	SL-695-SA5C-SB-4.0-5.0	11		21		31	
2	SL-695-SA5C-SB-9.0-10.0	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 #: 28558U4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer:
2nd Reviewer:

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

Blank units: ug/L **Associated sample units:** mg/Kg
Sampling date: 5/17/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All

Analyte	Blank ID	Sample Identification											
	EB1-051712	Action Limit	No Qualifiers										
Al	0.0627	15.675											
B	0.00549	1.3725											
Cu	0.00215	0.5375											
Ni	0.000401	0.10025											
K	0.0204	5.1											
Na	0.0965	24.125											

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 #: 28558X4

VALIDATION FINDINGS WORKSHEET
Field Blanks

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

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

Blank units: ug/L **Associated sample units:** mg/Kg

Sampling date: 6/5/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All

Analyte	Blank ID	Sample Identification										
	FB-060512	Action Limit	No Qualifiers									
Al	0.0270	6.75										
Ca	0.0263	6.575										
Cu	0.000954	0.2385										

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

12E134

Attachment I

Sample ID Cross Reference and Data Review Level

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
17-May-2012	TB-051712	E134-31	TB	5030B	8015B GRO	III
17-May-2012	SL-735-SA5C-SB-4.0-5.0	E134-03	N	3550B	8015B EFH	III
17-May-2012	SL-735-SA5C-SB-4.0-5.0	E134-03	N	3550B	8082	III
17-May-2012	SL-735-SA5C-SB-4.0-5.0	E134-03	N	7471A	7471A	III
17-May-2012	SL-735-SA5C-SB-4.0-5.0	E134-03	N	TOTAL	6020	III
17-May-2012	SL-735-SA5C-SB-4.0-5.0MS	E134-03M	MS	7471A	7471A	III
17-May-2012	SL-735-SA5C-SB-4.0-5.0MSD	E134-03S	MSD	7471A	7471A	III
17-May-2012	SL-735-SA5C-SB-5.0	E134-04	N	5035	8015B GRO	III
17-May-2012	SL-735-SA5C-SB-9.0-10.0	E134-05	N	3550B	8015B EFH	III
17-May-2012	SL-735-SA5C-SB-9.0-10.0	E134-05	N	3550B	8082	III
17-May-2012	SL-735-SA5C-SB-9.0-10.0	E134-05	N	7471A	7471A	III
17-May-2012	SL-735-SA5C-SB-9.0-10.0	E134-05	N	TOTAL	6020	III
17-May-2012	SL-735-SA5C-SB-10.0	E134-06	N	5035	8015B GRO	III
17-May-2012	SL-736-SA5C-SB-2.0-3.0	E134-07	N	7471A	7471A	III
17-May-2012	SL-736-SA5C-SB-2.0-3.0	E134-07	N	TOTAL	6020	III
17-May-2012	SL-736-SA5C-SB-4.0-5.0	E134-08	N	3550B	8015B EFH	III
17-May-2012	SL-736-SA5C-SB-4.0-5.0	E134-08	N	7471A	7471A	III
17-May-2012	SL-736-SA5C-SB-4.0-5.0	E134-08	N	TOTAL	6020	III
17-May-2012	SL-736-SA5C-SB-5.0	E134-09	N	5035	8015B GRO	III
17-May-2012	SL-736-SA5C-SB-9.0-10.0	E134-10	N	3550B	8015B EFH	III
17-May-2012	SL-736-SA5C-SB-9.0-10.0	E134-10	N	7471A	7471A	III
17-May-2012	SL-736-SA5C-SB-9.0-10.0	E134-10	N	TOTAL	6020	III
17-May-2012	SL-736-SA5C-SB-10.0	E134-11	N	5035	8015B GRO	III
17-May-2012	SL-737-SA5C-SB-2.5-3.5	E134-12	N	7471A	7471A	III
17-May-2012	SL-737-SA5C-SB-2.5-3.5	E134-12	N	TOTAL	6020	III
17-May-2012	SL-737-SA5C-SB-4.0-5.0	E134-13	N	3550B	8015B EFH	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-May-2012	SL-737-SA5C-SB-4.0-5.0	E134-13	N	3550B	8082	III
17-May-2012	SL-737-SA5C-SB-4.0-5.0	E134-13	N	7471A	7471A	III
17-May-2012	SL-737-SA5C-SB-4.0-5.0	E134-13	N	TOTAL	6020	III
17-May-2012	SL-737-SA5C-SB-5.0	E134-14	N	5035	8015B GRO	III
17-May-2012	SL-737-SA5C-SB-9.0-10.0	E134-15	N	3550B	8015B EFH	III
17-May-2012	SL-737-SA5C-SB-9.0-10.0	E134-15	N	3550B	8082	III
17-May-2012	SL-737-SA5C-SB-9.0-10.0	E134-15	N	7471A	7471A	III
17-May-2012	SL-737-SA5C-SB-9.0-10.0	E134-15	N	TOTAL	6020	III
17-May-2012	SL-737-SA5C-SB-10.0	E134-16	N	5035	8015B GRO	III
17-May-2012	SL-738-SA5C-SB-0.0-0.5	E134-21	N	3550B	8015B EFH	III
17-May-2012	SL-738-SA5C-SB-0.0-0.5	E134-21	N	3550B	8082	III
17-May-2012	SL-738-SA5C-SB-0.0-0.5	E134-21	N	7471A	7471A	III
17-May-2012	SL-738-SA5C-SB-0.0-0.5	E134-21	N	TOTAL	6020	III
17-May-2012	SL-738-SA5C-SB-4.0-5.0	E134-22	N	3550B	8015B EFH	III
17-May-2012	SL-738-SA5C-SB-4.0-5.0	E134-22	N	3550B	8082	III
17-May-2012	SL-738-SA5C-SB-4.0-5.0	E134-22	N	7471A	7471A	III
17-May-2012	SL-738-SA5C-SB-4.0-5.0	E134-22	N	TOTAL	6020	III
17-May-2012	SL-738-SA5C-SB-5.0	E134-23	N	5035	8015B GRO	III
17-May-2012	SL-738-SA5C-SB-9.0-10.0	E134-24	N	3550B	8015B EFH	III
17-May-2012	SL-738-SA5C-SB-9.0-10.0	E134-24	N	3550B	8082	III
17-May-2012	SL-738-SA5C-SB-9.0-10.0	E134-24	N	7471A	7471A	III
17-May-2012	SL-738-SA5C-SB-9.0-10.0	E134-24	N	TOTAL	6020	III
17-May-2012	SL-738-SA5C-SB-10.0	E134-25	N	5035	8015B GRO	III
17-May-2012	SL-686-SA5C-SB-4.0-5.0	E134-17	N	3550B	8015B EFH	III
17-May-2012	SL-686-SA5C-SB-4.0-5.0	E134-17	N	3550B	8082	III
17-May-2012	SL-686-SA5C-SB-4.0-5.0	E134-17	N	3550B	8270C 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-May-2012	SL-686-SA5C-SB-4.0-5.0	E134-17	N	7471A	7471A	III
17-May-2012	SL-686-SA5C-SB-4.0-5.0	E134-17	N	TOTAL	6020	III
17-May-2012	SL-686-SA5C-SB-5.0	E134-18	N	5035	8015B GRO	III
17-May-2012	EB1-051712	E134-01	EB	3520C	8015B EFH	III
17-May-2012	EB1-051712	E134-01	EB	3520C	8082	III
17-May-2012	EB1-051712	E134-01	EB	3520C	8270C SIM	III
17-May-2012	EB1-051712	E134-01	EB	5030B	8015B GRO	III
17-May-2012	EB1-051712	E134-01	EB	7470A	7470A	III
17-May-2012	EB1-051712	E134-01	EB	GEN PREP	6850	III
17-May-2012	EB1-051712	E134-01	EB	GEN PREP	7199	III
17-May-2012	EB1-051712	E134-01	EB	TOTAL	6020	III
17-May-2012	SL-686-SA5C-SB-9.0-10.0	E134-19	N	3550B	8015B EFH	III
17-May-2012	SL-686-SA5C-SB-9.0-10.0	E134-19	N	3550B	8082	III
17-May-2012	SL-686-SA5C-SB-9.0-10.0	E134-19	N	3550B	8270C SIM	III
17-May-2012	SL-686-SA5C-SB-9.0-10.0	E134-19	N	7471A	7471A	III
17-May-2012	SL-686-SA5C-SB-9.0-10.0	E134-19	N	TOTAL	6020	III
17-May-2012	SL-686-SA5C-SB-10.0	E134-20	N	5035	8015B GRO	III
17-May-2012	EB2-051712	E134-02	EB	3520C	8015B EFH	III
17-May-2012	EB2-051712	E134-02	EB	3520C	8082	III
17-May-2012	EB2-051712	E134-02	EB	3520C	8270C SIM	III
17-May-2012	EB2-051712	E134-02	EB	5030B	8015B GRO	III
17-May-2012	EB2-051712	E134-02	EB	7470A	7470A	III
17-May-2012	EB2-051712	E134-02	EB	TOTAL	6020	III
17-May-2012	SL-739-SA5C-SB-0.0-0.5	E134-26	N	3550B	8015B EFH	III
17-May-2012	SL-739-SA5C-SB-0.0-0.5	E134-26	N	3550B	8082	III
17-May-2012	SL-739-SA5C-SB-0.0-0.5	E134-26	N	3550B	8270C 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-May-2012	SL-739-SA5C-SB-0.0-0.5	E134-26	N	7471A	7471A	III
17-May-2012	SL-739-SA5C-SB-0.0-0.5	E134-26	N	TOTAL	6020	III
17-May-2012	SL-739-SA5C-SB-0.0-0.5MS	E134-26M	MS	3550B	8015B EFH	III
17-May-2012	SL-739-SA5C-SB-0.0-0.5MSD	E134-26S	MSD	3550B	8015B EFH	III
17-May-2012	SL-739-SA5C-SB-4.0-5.0	E134-27	N	3550B	8015B EFH	III
17-May-2012	SL-739-SA5C-SB-4.0-5.0	E134-27	N	3550B	8082	III
17-May-2012	SL-739-SA5C-SB-4.0-5.0	E134-27	N	3550B	8270C SIM	III
17-May-2012	SL-739-SA5C-SB-4.0-5.0	E134-27	N	7471A	7471A	III
17-May-2012	SL-739-SA5C-SB-4.0-5.0	E134-27	N	TOTAL	6020	III
17-May-2012	SL-739-SA5C-SB-5.0	E134-28	N	5035	8015B GRO	III
17-May-2012	SL-739-SA5C-SB-9.0-10.0	E134-29	N	3550B	8015B EFH	III
17-May-2012	SL-739-SA5C-SB-9.0-10.0	E134-29	N	3550B	8270C SIM	III
17-May-2012	SL-739-SA5C-SB-9.0-10.0	E134-29	N	7471A	7471A	III
17-May-2012	SL-739-SA5C-SB-9.0-10.0	E134-29	N	TOTAL	6020	III
17-May-2012	SL-739-SA5C-SB-9.0-10.0MS	E134-29M	MS	TOTAL	6020	III
17-May-2012	SL-739-SA5C-SB-10.0	E134-30	N	5035	8015B GRO	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 II

Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: 12E134 **Laboratory: EMXT**

EDD Filename: 12E134 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: **EB1-051712** ***Collected:*** **5/17/2012 2:00:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	0.0627	J	0.0200	MDL	0.100	PQL	MG/L	J	Z
BORON	0.00549	J	0.00500	MDL	0.0100	PQL	MG/L	J	Z
NICKEL	0.000401	J	0.000200	MDL	0.00100	PQL	MG/L	J	Z
POTASSIUM	0.0204	J	0.0200	MDL	0.100	PQL	MG/L	J	Z
SODIUM	0.0965	J	0.0500	MDL	0.100	PQL	MG/L	J	Z

Sample ID: **EB2-051712** ***Collected:*** **5/17/2012 2:45:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	0.0329	J	0.0200	MDL	0.100	PQL	MG/L	J	Z
BORON	0.00570	J	0.00500	MDL	0.0100	PQL	MG/L	J	Z
COPPER	0.000960	J	0.000500	MDL	0.00100	PQL	MG/L	J	Z

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: **SL-686-SA5C-SB-4.0-5.0** ***Collected:*** **5/17/2012 1:56:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.985**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.220	J	0.108	MDL	0.542	PQL	MG/KG	J	Z
CADMIUM	0.158	J	0.0542	MDL	0.542	PQL	MG/KG	J	Z
MANGANESE	210		0.271	MDL	0.542	PQL	MG/KG	J	A
SILVER	0.0811	J	0.0542	MDL	0.542	PQL	MG/KG	J	Z
THALLIUM	0.245	J	0.0542	MDL	0.434	PQL	MG/KG	J	Z

Sample ID: **SL-686-SA5C-SB-9.0-10.0** ***Collected:*** **5/17/2012 2:00:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.985**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.159	J	0.108	MDL	0.541	PQL	MG/KG	J	Z
BERYLLIUM	0.393	J	0.0541	MDL	0.541	PQL	MG/KG	J	Z
CADMIUM	0.120	J	0.0541	MDL	0.541	PQL	MG/KG	J	Z
MANGANESE	123		0.271	MDL	0.541	PQL	MG/KG	J	A

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E134 **Laboratory: EMXT**

EDD Filename: 12E134 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: **METALS**

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

Sample ID: SL-686-SA5C-SB-9.0-10.0 ***Collected:*** 5/17/2012 2:00:00 ***Analysis Type:*** RES/TOT ***Dilution:*** 0.985

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.424	J	0.0541	MDL	0.541	PQL	MG/KG	J	Z
THALLIUM	0.219	J	0.0541	MDL	0.433	PQL	MG/KG	J	Z

Sample ID: SL-735-SA5C-SB-4.0-5.0 ***Collected:*** 5/17/2012 8:53:00 ***Analysis Type:*** RES/TOT ***Dilution:*** 0.966

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.216	J	0.106	MDL	0.531	PQL	MG/KG	J	Z
BERYLLIUM	0.502	J	0.0531	MDL	0.531	PQL	MG/KG	J	Z
CADMIUM	0.222	J	0.0531	MDL	0.531	PQL	MG/KG	J	Z
MANGANESE	287		0.265	MDL	0.531	PQL	MG/KG	J	A
THALLIUM	0.226	J	0.0531	MDL	0.425	PQL	MG/KG	J	Z

Sample ID: SL-735-SA5C-SB-9.0-10.0 ***Collected:*** 5/17/2012 8:58:00 ***Analysis Type:*** RES/TOT ***Dilution:*** 0.990

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.233	J	0.110	MDL	0.551	PQL	MG/KG	J	Z
CADMIUM	0.176	J	0.0551	MDL	0.551	PQL	MG/KG	J	Z
MANGANESE	309		0.276	MDL	0.551	PQL	MG/KG	J	A
SILVER	0.0817	J	0.0551	MDL	0.551	PQL	MG/KG	J	Z
THALLIUM	0.227	J	0.0551	MDL	0.441	PQL	MG/KG	J	Z

Sample ID: SL-736-SA5C-SB-2.0-3.0 ***Collected:*** 5/17/2012 9:45:00 ***Analysis Type:*** RES/TOT ***Dilution:*** 0.966

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.247	J	0.104	MDL	0.519	PQL	MG/KG	J	Z
BERYLLIUM	0.490	J	0.0519	MDL	0.519	PQL	MG/KG	J	Z
CADMIUM	0.270	J	0.0519	MDL	0.519	PQL	MG/KG	J	Z
MANGANESE	328		0.259	MDL	0.519	PQL	MG/KG	J	A
SODIUM	101	J	51.9	MDL	104	PQL	MG/KG	J	Z
THALLIUM	0.237	J	0.0519	MDL	0.415	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E134 **Laboratory: EMXT**

EDD Filename: 12E134 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: SL-736-SA5C-SB-4.0-5.0 ***Collected:*** 5/17/2012 9:48:00 ***Analysis Type:*** RES/TOT ***Dilution:*** 0.971

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.258	J	0.105	MDL	0.525	PQL	MG/KG	J	Z
CADMIUM	0.205	J	0.0525	MDL	0.525	PQL	MG/KG	J	Z
MANGANESE	331		0.263	MDL	0.525	PQL	MG/KG	J	A
THALLIUM	0.264	J	0.0525	MDL	0.420	PQL	MG/KG	J	Z

Sample ID: SL-736-SA5C-SB-9.0-10.0 ***Collected:*** 5/17/2012 9:51:00 ***Analysis Type:*** RES/TOT ***Dilution:*** 0.971

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.213	J	0.110	MDL	0.551	PQL	MG/KG	J	Z
CADMIUM	0.144	J	0.0551	MDL	0.551	PQL	MG/KG	J	Z
MANGANESE	159		0.276	MDL	0.551	PQL	MG/KG	J	A
THALLIUM	0.227	J	0.0551	MDL	0.441	PQL	MG/KG	J	Z

Sample ID: SL-737-SA5C-SB-2.5-3.5 ***Collected:*** 5/17/2012 10:45:00 ***Analysis Type:*** RES/TOT ***Dilution:*** 0.980

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.217	J	0.108	MDL	0.542	PQL	MG/KG	J	Z
BERYLLIUM	0.533	J	0.0542	MDL	0.542	PQL	MG/KG	J	Z
CADMIUM	0.173	J	0.0542	MDL	0.542	PQL	MG/KG	J	Z
MANGANESE	247		0.271	MDL	0.542	PQL	MG/KG	J	A
MOLYBDENUM	0.469	J	0.0542	MDL	0.542	PQL	MG/KG	J	Z
SODIUM	102	J	54.2	MDL	108	PQL	MG/KG	J	Z
THALLIUM	0.244	J	0.0542	MDL	0.434	PQL	MG/KG	J	Z

Sample ID: SL-737-SA5C-SB-4.0-5.0 ***Collected:*** 5/17/2012 10:47:00 ***Analysis Type:*** RES/TOT ***Dilution:*** 0.990

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.251	J	0.108	MDL	0.540	PQL	MG/KG	J	Z
CADMIUM	0.171	J	0.0540	MDL	0.540	PQL	MG/KG	J	Z
MANGANESE	358		0.270	MDL	0.540	PQL	MG/KG	J	A
THALLIUM	0.255	J	0.0540	MDL	0.432	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E134 **Laboratory: EMXT**

EDD Filename: 12E134 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: SL-737-SA5C-SB-9.0-10.0 *Collected:* 5/17/2012 10:51:00 *Analysis Type:* RES/TOT *Dilution:* 0.966

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.224	J	0.107	MDL	0.537	PQL	MG/KG	J	Z
BERYLLIUM	0.515	J	0.0537	MDL	0.537	PQL	MG/KG	J	Z
CADMIUM	0.126	J	0.0537	MDL	0.537	PQL	MG/KG	J	Z
MANGANESE	161		0.269	MDL	0.537	PQL	MG/KG	J	A
THALLIUM	0.199	J	0.0537	MDL	0.430	PQL	MG/KG	J	Z

Sample ID: SL-738-SA5C-SB-0.0-0.5 *Collected:* 5/17/2012 12:50:00 *Analysis Type:* RES/TOT *Dilution:* 0.980

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.218	J	0.107	MDL	0.534	PQL	MG/KG	J	Z
BERYLLIUM	0.460	J	0.0534	MDL	0.534	PQL	MG/KG	J	Z
CADMIUM	0.171	J	0.0534	MDL	0.534	PQL	MG/KG	J	Z
MANGANESE	232		0.267	MDL	0.534	PQL	MG/KG	J	A
MOLYBDENUM	0.470	J	0.0534	MDL	0.534	PQL	MG/KG	J	Z
SODIUM	93.8	J	53.4	MDL	107	PQL	MG/KG	J	Z
THALLIUM	0.227	J	0.0534	MDL	0.427	PQL	MG/KG	J	Z

Sample ID: SL-738-SA5C-SB-4.0-5.0 *Collected:* 5/17/2012 1:01:00 *Analysis Type:* RES/TOT *Dilution:* 0.985

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.197	J	0.111	MDL	0.553	PQL	MG/KG	J	Z
CADMIUM	0.200	J	0.0553	MDL	0.553	PQL	MG/KG	J	Z
MANGANESE	325		0.276	MDL	0.553	PQL	MG/KG	J	A
THALLIUM	0.270	J	0.0553	MDL	0.442	PQL	MG/KG	J	Z

Sample ID: SL-738-SA5C-SB-9.0-10.0 *Collected:* 5/17/2012 1:08:00 *Analysis Type:* RES/TOT *Dilution:* 0.976

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.176	J	0.110	MDL	0.550	PQL	MG/KG	J	Z
BERYLLIUM	0.500	J	0.0550	MDL	0.550	PQL	MG/KG	J	Z
CADMIUM	0.137	J	0.0550	MDL	0.550	PQL	MG/KG	J	Z
MANGANESE	189		0.275	MDL	0.550	PQL	MG/KG	J	A

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E134 **Laboratory: EMXT**

EDD Filename: 12E134 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix:** SO

Sample ID: SL-738-SA5C-SB-9.0-10.0 ***Collected:*** 5/17/2012 1:08:00 ***Analysis Type:*** RES/TOT ***Dilution:*** 0.976

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
THALLIUM	0.204	J	0.0550	MDL	0.440	PQL	MG/KG	J	Z

Sample ID: SL-739-SA5C-SB-0.0-0.5 ***Collected:*** 5/17/2012 2:45:00 ***Analysis Type:*** RES/TOT ***Dilution:*** 0.966

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.175	J	0.105	MDL	0.523	PQL	MG/KG	J	Z
BERYLLIUM	0.412	J	0.0523	MDL	0.523	PQL	MG/KG	J	Z
CADMIUM	0.133	J	0.0523	MDL	0.523	PQL	MG/KG	J	Z
MANGANESE	223		0.261	MDL	0.523	PQL	MG/KG	J	A
MOLYBDENUM	0.357	J	0.0523	MDL	0.523	PQL	MG/KG	J	Z
SODIUM	82.6	J	52.3	MDL	105	PQL	MG/KG	J	Z
THALLIUM	0.205	J	0.0523	MDL	0.418	PQL	MG/KG	J	Z

Sample ID: SL-739-SA5C-SB-4.0-5.0 ***Collected:*** 5/17/2012 2:50:00 ***Analysis Type:*** RES/TOT ***Dilution:*** 0.985

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.172	J	0.110	MDL	0.551	PQL	MG/KG	J	Z
CADMIUM	0.171	J	0.0551	MDL	0.551	PQL	MG/KG	J	Z
MANGANESE	323		0.275	MDL	0.551	PQL	MG/KG	J	A
THALLIUM	0.254	J	0.0551	MDL	0.441	PQL	MG/KG	J	Z

Sample ID: SL-739-SA5C-SB-9.0-10.0 ***Collected:*** 5/17/2012 2:55:00 ***Analysis Type:*** RES/TOT ***Dilution:*** 0.966

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.236	J	0.107	MDL	0.536	PQL	MG/KG	J	Z
CADMIUM	0.163	J	0.0536	MDL	0.536	PQL	MG/KG	J	Z
MANGANESE	158		0.268	MDL	0.536	PQL	MG/KG	J	A
THALLIUM	0.275	J	0.0536	MDL	0.429	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E134 **Laboratory: EMXT**

EDD Filename: 12E134 **eQAPP Name: CDM_SSFL_120730_EMAX**

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

Sample ID: SL-738-SA5C-SB-0.0-0.5 *Collected:* 5/17/2012 12:50:00 *Analysis Type:* RES/TOT *Dilution:* 0.998

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0673	J	0.0544	MDL	0.109	PQL	MG/KG	J	Z

Method Category: SVOA
Method: 8015B EFH **Matrix: SO**

Sample ID: SL-737-SA5C-SB-9.0-10.0 *Collected:* 5/17/2012 10:51:00 *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)	3.8	J	2.8	MDL	5.6	PQL	MG/KG	J	Z

Sample ID: SL-738-SA5C-SB-4.0-5.0 *Collected:* 5/17/2012 1:01:00 *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)	9.4	J	5.6	MDL	11	PQL	MG/KG	J	Z

Sample ID: SL-739-SA5C-SB-0.0-0.5 *Collected:* 5/17/2012 2:45:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH(C30-C40)	9.7	J	5.4	MDL	11	PQL	MG/KG	J	Z

Sample ID: SL-739-SA5C-SB-4.0-5.0 *Collected:* 5/17/2012 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
EFH(C30-C40)	7.4	J	5.6	MDL	11	PQL	MG/KG	J	Z

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

Sample ID: EB1-051712 *Collected:* 5/17/2012 2:00:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1.1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NAPHTHALENE	0.12	J	0.11	MDL	0.22	PQL	UG/L	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E134 **Laboratory: EMXT**

EDD Filename: 12E134 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

Method: 8270C SIM **Matrix: AQ**

Sample ID: EB2-051712 *Collected:* 5/17/2012 2:45:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1.05

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NAPHTHALENE	0.11	J	0.10	MDL	0.21	PQL	UG/L	J	Z

Method Category: VOA

Method: 8015B GRO **Matrix: AQ**

Sample ID: EB1-051712 *Collected:* 5/17/2012 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
GASOLINE RANGE ORGANICS (C5-C12)	23	J	10	MDL	50	PQL	UG/L	U	T

Sample ID: EB2-051712 *Collected:* 5/17/2012 2:45:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
GASOLINE RANGE ORGANICS (C5-C12)	26	J	10	MDL	50	PQL	UG/L	U	T

Sample ID: TB-051712 *Collected:* 5/17/2012 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
GASOLINE RANGE ORGANICS (C5-C12)	26	J	10	MDL	50	PQL	UG/L	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E134 **Laboratory: EMXT**

EDD Filename: Prep12E134 **eQAPP Name: CDM_SSFL_120730_EMAX**

Reason Code Legend

Reason Code	*Description*
*#	Professional Judgment
A	ICP Serial Dilution
Q	Matrix Spike Lower Estimation
Q	Matrix Spike Lower Rejection
T	Trip Blank Contamination
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Enclosure I

Level III ADR Outliers
(including Manual Review Outliers)

Quality Control Outlier Reports

12E134

Trip Blank Outlier Report

Lab Reporting Batch ID: 12E134 **Laboratory: EMXT**

EDD Filename: 12E134 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: **8015B GRO**
Matrix: **AQ**

Trip Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
TB-051712(RES)	5/17/2012 8:00:00 AM	GASOLINE RANGE ORGANICS (C5-C12)	26 UG/L	EB1-051712 EB2-051712 SL-686-SA5C-SB-10.0 SL-686-SA5C-SB-4.0-5.0 SL-686-SA5C-SB-5.0 SL-686-SA5C-SB-9.0-10.0 SL-735-SA5C-SB-10.0 SL-735-SA5C-SB-4.0-5.0 SL-735-SA5C-SB-5.0 SL-735-SA5C-SB-9.0-10.0 SL-736-SA5C-SB-10.0 SL-736-SA5C-SB-2.0-3.0 SL-736-SA5C-SB-4.0-5.0 SL-736-SA5C-SB-5.0 SL-736-SA5C-SB-9.0-10.0 SL-737-SA5C-SB-10.0 SL-737-SA5C-SB-2.5-3.5 SL-737-SA5C-SB-4.0-5.0 SL-737-SA5C-SB-5.0 SL-737-SA5C-SB-9.0-10.0 SL-738-SA5C-SB-0.0-0.5 SL-738-SA5C-SB-10.0 SL-738-SA5C-SB-4.0-5.0 SL-738-SA5C-SB-5.0 SL-738-SA5C-SB-9.0-10.0 SL-739-SA5C-SB-0.0-0.5 SL-739-SA5C-SB-10.0 SL-739-SA5C-SB-4.0-5.0 SL-739-SA5C-SB-5.0 SL-739-SA5C-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
EB1-051712(RES)	GASOLINE RANGE ORGANICS (C5-C12)	23 UG/L	50U UG/L
EB2-051712(RES)	GASOLINE RANGE ORGANICS (C5-C12)	26 UG/L	50U UG/L

Project Name and Number: PHASE3 - SSFL PHASE 3

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 12E134 **Laboratory:** EMXT

EDD Filename: 12E134 **eQAPP Name:** CDM_SSFL_120730_EMAX

Method: 6020
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-739-SA5C-SB-9.0-10.0MS (TOT) **SL-739-SA5C-SB-9.0-10.0MSD (TOT)** (SL-686-SA5C-SB-4.0-5.0 SL-686-SA5C-SB-9.0-10.0 SL-735-SA5C-SB-4.0-5.0 SL-735-SA5C-SB-9.0-10.0 SL-736-SA5C-SB-2.0-3.0 SL-736-SA5C-SB-4.0-5.0 SL-736-SA5C-SB-9.0-10.0 SL-737-SA5C-SB-2.5-3.5 SL-737-SA5C-SB-4.0-5.0 SL-737-SA5C-SB-9.0-10.0 SL-738-SA5C-SB-0.0-0.5 SL-738-SA5C-SB-4.0-5.0 SL-738-SA5C-SB-9.0-10.0 SL-739-SA5C-SB-0.0-0.5 SL-739-SA5C-SB-4.0-5.0 SL-739-SA5C-SB-9.0-10.0)	TITANIUM	-47	-47	75.00-125.00	-	TITANIUM	No Qual, >4x
SL-739-SA5C-SB-9.0-10.0MS (TOT) **SL-739-SA5C-SB-9.0-10.0MSD (TOT)** (SL-686-SA5C-SB-4.0-5.0 SL-686-SA5C-SB-9.0-10.0 SL-735-SA5C-SB-4.0-5.0 SL-735-SA5C-SB-9.0-10.0 SL-736-SA5C-SB-2.0-3.0 SL-736-SA5C-SB-4.0-5.0 SL-736-SA5C-SB-9.0-10.0 SL-737-SA5C-SB-2.5-3.5 SL-737-SA5C-SB-4.0-5.0 SL-737-SA5C-SB-9.0-10.0 SL-738-SA5C-SB-0.0-0.5 SL-738-SA5C-SB-4.0-5.0 SL-738-SA5C-SB-9.0-10.0 SL-739-SA5C-SB-0.0-0.5 SL-739-SA5C-SB-4.0-5.0 SL-739-SA5C-SB-9.0-10.0)	ALUMINUM IRON MANGANESE	- 60 40	73 60 46	75.00-125.00 75.00-125.00 75.00-125.00	- - -	ALUMINUM IRON MANGANESE	No Qual, >4x

Project Name and Number: PHASE3 - SSFL PHASE 3

Reporting Limit Outliers

Lab Reporting Batch ID: 12E134 **Laboratory: EMXT**

EDD Filename: 12E134 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 6020
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB1-051712	ALUMINUM	J	0.0627	0.100	PQL	MG/L	J (all detects)
	BORON	J	0.00549	0.0100	PQL	MG/L	
	NICKEL	J	0.000401	0.00100	PQL	MG/L	
	POTASSIUM	J	0.0204	0.100	PQL	MG/L	
	SODIUM	J	0.0965	0.100	PQL	MG/L	
EB2-051712	ALUMINUM	J	0.0329	0.100	PQL	MG/L	J (all detects)
	BORON	J	0.00570	0.0100	PQL	MG/L	
	COPPER	J	0.000960	0.00100	PQL	MG/L	

Method: 8015B GRO
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB1-051712	GASOLINE RANGE ORGANICS (C5-C12)	J	23	50	PQL	UG/L	J (all detects)
EB2-051712	GASOLINE RANGE ORGANICS (C5-C12)	J	26	50	PQL	UG/L	J (all detects)
TB-051712	GASOLINE RANGE ORGANICS (C5-C12)	J	26	50	PQL	UG/L	J (all detects)

Method: 8270C SIM
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB1-051712	NAPHTHALENE	J	0.12	0.22	PQL	UG/L	J (all detects)
EB2-051712	NAPHTHALENE	J	0.11	0.21	PQL	UG/L	J (all detects)

Method: 6020
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-686-SA5C-SB-4.0-5.0	ANTIMONY	J	0.220	0.542	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.158	0.542	PQL	MG/KG	
	SILVER	J	0.0811	0.542	PQL	MG/KG	
	THALLIUM	J	0.245	0.434	PQL	MG/KG	
SL-686-SA5C-SB-9.0-10.0	ANTIMONY	J	0.159	0.541	PQL	MG/KG	J (all detects)
	BERYLLIUM	J	0.393	0.541	PQL	MG/KG	
	CADMIUM	J	0.120	0.541	PQL	MG/KG	
	MOLYBDENUM	J	0.424	0.541	PQL	MG/KG	
	THALLIUM	J	0.219	0.433	PQL	MG/KG	
SL-735-SA5C-SB-4.0-5.0	ANTIMONY	J	0.216	0.531	PQL	MG/KG	J (all detects)
	BERYLLIUM	J	0.502	0.531	PQL	MG/KG	
	CADMIUM	J	0.222	0.531	PQL	MG/KG	
	THALLIUM	J	0.226	0.425	PQL	MG/KG	

Reporting Limit Outliers

Lab Reporting Batch ID: 12E134 **Laboratory: EMXT**

EDD Filename: 12E134 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 6020

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-735-SA5C-SB-9.0-10.0	ANTIMONY	J	0.233	0.551	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.176	0.551	PQL	MG/KG	
	SILVER	J	0.0817	0.551	PQL	MG/KG	
	THALLIUM	J	0.227	0.441	PQL	MG/KG	
SL-736-SA5C-SB-2.0-3.0	ANTIMONY	J	0.247	0.519	PQL	MG/KG	J (all detects)
	BERYLLIUM	J	0.490	0.519	PQL	MG/KG	
	CADMIUM	J	0.270	0.519	PQL	MG/KG	
	SODIUM	J	101	104	PQL	MG/KG	
	THALLIUM	J	0.237	0.415	PQL	MG/KG	
SL-736-SA5C-SB-4.0-5.0	ANTIMONY	J	0.258	0.525	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.205	0.525	PQL	MG/KG	
	THALLIUM	J	0.264	0.420	PQL	MG/KG	
SL-736-SA5C-SB-9.0-10.0	ANTIMONY	J	0.213	0.551	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.144	0.551	PQL	MG/KG	
	THALLIUM	J	0.227	0.441	PQL	MG/KG	
SL-737-SA5C-SB-2.5-3.5	ANTIMONY	J	0.217	0.542	PQL	MG/KG	J (all detects)
	BERYLLIUM	J	0.533	0.542	PQL	MG/KG	
	CADMIUM	J	0.173	0.542	PQL	MG/KG	
	MOLYBDENUM	J	0.469	0.542	PQL	MG/KG	
	SODIUM	J	102	108	PQL	MG/KG	
	THALLIUM	J	0.244	0.434	PQL	MG/KG	
SL-737-SA5C-SB-4.0-5.0	ANTIMONY	J	0.251	0.540	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.171	0.540	PQL	MG/KG	
	THALLIUM	J	0.255	0.432	PQL	MG/KG	
SL-737-SA5C-SB-9.0-10.0	ANTIMONY	J	0.224	0.537	PQL	MG/KG	J (all detects)
	BERYLLIUM	J	0.515	0.537	PQL	MG/KG	
	CADMIUM	J	0.126	0.537	PQL	MG/KG	
	THALLIUM	J	0.199	0.430	PQL	MG/KG	
SL-738-SA5C-SB-0.0-0.5	ANTIMONY	J	0.218	0.534	PQL	MG/KG	J (all detects)
	BERYLLIUM	J	0.460	0.534	PQL	MG/KG	
	CADMIUM	J	0.171	0.534	PQL	MG/KG	
	MOLYBDENUM	J	0.470	0.534	PQL	MG/KG	
	SODIUM	J	93.8	107	PQL	MG/KG	
	THALLIUM	J	0.227	0.427	PQL	MG/KG	
SL-738-SA5C-SB-4.0-5.0	ANTIMONY	J	0.197	0.553	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.200	0.553	PQL	MG/KG	
	THALLIUM	J	0.270	0.442	PQL	MG/KG	
SL-738-SA5C-SB-9.0-10.0	ANTIMONY	J	0.176	0.550	PQL	MG/KG	J (all detects)
	BERYLLIUM	J	0.500	0.550	PQL	MG/KG	
	CADMIUM	J	0.137	0.550	PQL	MG/KG	
	THALLIUM	J	0.204	0.440	PQL	MG/KG	
SL-739-SA5C-SB-0.0-0.5	ANTIMONY	J	0.175	0.523	PQL	MG/KG	J (all detects)
	BERYLLIUM	J	0.412	0.523	PQL	MG/KG	
	CADMIUM	J	0.133	0.523	PQL	MG/KG	
	MOLYBDENUM	J	0.357	0.523	PQL	MG/KG	
	SODIUM	J	82.6	105	PQL	MG/KG	
	THALLIUM	J	0.205	0.418	PQL	MG/KG	
SL-739-SA5C-SB-4.0-5.0	ANTIMONY	J	0.172	0.551	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.171	0.551	PQL	MG/KG	
	THALLIUM	J	0.254	0.441	PQL	MG/KG	

Reporting Limit Outliers

Lab Reporting Batch ID: 12E134 **Laboratory: EMXT**

EDD Filename: 12E134 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 6020
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-739-SA5C-SB-9.0-10.0	ANTIMONY	J	0.236	0.536	PQL	MG/KG	
	CADMIUM	J	0.163	0.536	PQL	MG/KG	J (all detects)
	THALLIUM	J	0.275	0.429	PQL	MG/KG	

Method: 7471A
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-738-SA5C-SB-0.0-0.5	MERCURY	J	0.0673	0.109	PQL	MG/KG	J (all detects)

Method: 8015B EFH
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-737-SA5C-SB-9.0-10.0	EFH(C21-C30)	J	3.8	5.6	PQL	MG/KG	J (all detects)
SL-738-SA5C-SB-4.0-5.0	EFH(C30-C40)	J	9.4	11	PQL	MG/KG	J (all detects)
SL-739-SA5C-SB-0.0-0.5	EFH(C30-C40)	J	9.7	11	PQL	MG/KG	J (all detects)
SL-739-SA5C-SB-4.0-5.0	EFH(C30-C40)	J	7.4	11	PQL	MG/KG	J (all detects)

LDC #: 28558V4
SDG #: 12E134
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 11-612
Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

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

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

	Validation Area		Comments
I.	Technical holding times	—	Sampling dates:
II.	ICP/MS Tune	—	
III.	Calibration	—	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	—	
VI.	Matrix Spike Analysis	N	MS/D (Al, Fe, Mn, Ti >4X)
VII.	Duplicate Sample Analysis	N	
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	Mn: 11% (J/UJ)
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	N	
XIV.	Field Duplicates	—	
XV	Field Blanks	SW	EB = 1, 2 FB = FB-060512

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

(12F037)

Validated Samples: soil/water

1	EB1-051712 W	11	SL-686-SA5C-SB-4.0-5.0	21	SL-739-SA5C-SB-9.0-10.0MS	31	
2	EB2-051712 W	12	SL-686-SA5C-SB-9.0-10.0	22	SL-739-SA5C-SB-9.0-10.0MSD	32	
3	SL-735-SA5C-SB-4.0-5.0	13	SL-738-SA5C-SB-0.0-0.5	23		33	
4	SL-735-SA5C-SB-9.0-10.0	14	SL-738-SA5C-SB-4.0-5.0	24		34	
5	SL-736-SA5C-SB-2.0-3.0	15	SL-738-SA5C-SB-9.0-10.0	25		35	
6	SL-736-SA5C-SB-4.0-5.0	16	SL-739-SA5C-SB-0.0-0.5	26		36	
7	SL-736-SA5C-SB-9.0-10.0	17	SL-739-SA5C-SB-4.0-5.0	27		37	
8	SL-737-SA5C-SB-2.5-3.5	18	SL-739-SA5C-SB-9.0-10.0	28		38	
9	SL-737-SA5C-SB-4.0-5.0	19	SL-735-SA5C-SB-4.0-5.0MS	29		39	
10	SL-737-SA5C-SB-9.0-10.0	20	SL-735-SA5C-SB-4.0-5.0MSD	30		40	

Notes: _____

LDC #: 28558V4

VALIDATION FINDINGS WORKSHEET
Field Blanks

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

Blank units: ug/L **Associated sample units:** mg/Kg
Sampling date: 5/17/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: None

Analyte	Blank ID	Sample Identification											
	EB1-051712	Action Limit	No Qualifiers										
Al	0.0627	15.675											
B	0.00549	1.3725											
Cu	0.00215	0.5375											
Ni	0.000401	0.10025											
K	0.0204	5.1											
Na	0.0965	24.125											

Sampling date: 5/17/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All soil

Analyte	Blank ID	Sample Identification											
	EB2-051712	Action Limit	No Qualifiers										
Al	0.0329	8.225											
B	0.00570	1.425											
Cu	0.000960	0.24											

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 #: 28558V4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: AL
2nd Reviewer: [illegible]

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

Blank units: ug/L **Associated sample units:** mg/Kg

Sampling date: 6/5/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All Soil

Analyte	Blank ID	Sample Identification										
	FB-060512	Action Limit	No Qualifiers									
Al	0.0270	6.75										
Ca	0.0263	6.575										
Cu	0.000954	0.2385										

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

12E155

Attachment I

Sample ID Cross Reference and Data Review Level

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
21-May-2012	TB-052112	E155-25	TB	5030B	8015B GRO	III
21-May-2012	SL-740-SA5C-SB-9.0-10.0	E155-13	N	3550B	8015B EFH	III
21-May-2012	SL-740-SA5C-SB-10.0	E155-14	N	5035	8015B GRO	III
21-May-2012	SL-734-SA5C-SB-0.0-0.5	E155-08	N	3550B	8015B EFH	III
21-May-2012	SL-734-SA5C-SB-0.0-0.5	E155-08	N	3550B	8082	III
21-May-2012	SL-734-SA5C-SB-0.0-0.5	E155-08	N	3550B	8270C SIM	III
21-May-2012	SL-734-SA5C-SB-0.0-0.5	E155-08	N	7471A	7471A	III
21-May-2012	SL-734-SA5C-SB-0.0-0.5	E155-08	N	TOTAL	6020	III
21-May-2012	SL-734-SA5C-SB-4.0-5.0	E155-09	N	3550B	8015B EFH	III
21-May-2012	SL-734-SA5C-SB-4.0-5.0	E155-09	N	3550B	8082	III
21-May-2012	SL-734-SA5C-SB-4.0-5.0	E155-09	N	3550B	8270C SIM	III
21-May-2012	SL-734-SA5C-SB-4.0-5.0	E155-09	N	7471A	7471A	III
21-May-2012	SL-734-SA5C-SB-4.0-5.0	E155-09	N	TOTAL	6020	III
21-May-2012	SL-734-SA5C-SB-5.0	E155-10	N	5035	8015B GRO	III
21-May-2012	SL-734-SA5C-SB-9.0-10.0	E155-11	N	3550B	8015B EFH	III
21-May-2012	SL-734-SA5C-SB-9.0-10.0	E155-11	N	3550B	8082	III
21-May-2012	SL-734-SA5C-SB-9.0-10.0	E155-11	N	3550B	8270C SIM	III
21-May-2012	SL-734-SA5C-SB-9.0-10.0	E155-11	N	7471A	7471A	III
21-May-2012	SL-734-SA5C-SB-9.0-10.0	E155-11	N	TOTAL	6020	III
21-May-2012	SL-734-SA5C-SB-10.0	E155-12	N	5035	8015B GRO	III
21-May-2012	SL-727-SA5C-SB-0.0-0.5	E155-01	N	3550B	8015B EFH	III
21-May-2012	SL-727-SA5C-SB-0.0-0.5	E155-01	N	3550B	8082	III
21-May-2012	SL-727-SA5C-SB-0.0-0.5	E155-01	N	3550B	8270C SIM	III
21-May-2012	SL-727-SA5C-SB-0.0-0.5	E155-01	N	7471A	7471A	III
21-May-2012	SL-727-SA5C-SB-0.0-0.5	E155-01	N	TOTAL	6020	III
21-May-2012	SL-727-SA5C-SB-4.0-5.0	E155-02	N	3550B	8015B EFH	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
21-May-2012	SL-727-SA5C-SB-4.0-5.0	E155-02	N	3550B	8082	III
21-May-2012	SL-727-SA5C-SB-4.0-5.0	E155-02	N	3550B	8270C SIM	III
21-May-2012	SL-727-SA5C-SB-4.0-5.0	E155-02	N	7471A	7471A	III
21-May-2012	SL-727-SA5C-SB-4.0-5.0	E155-02	N	TOTAL	6020	III
21-May-2012	SL-727-SA5C-SB-4.0-5.0MS	E155-02M	MS	3550B	8015B EFH	III
21-May-2012	SL-727-SA5C-SB-4.0-5.0MS	E155-02M	MS	3550B	8082	III
21-May-2012	SL-727-SA5C-SB-4.0-5.0MS	E155-02M	MS	3550B	8270C SIM	III
21-May-2012	SL-727-SA5C-SB-4.0-5.0MS	E155-02M	MS	7471A	7471A	III
21-May-2012	SL-727-SA5C-SB-4.0-5.0MS	E155-02M	MS	TOTAL	6020	III
21-May-2012	SL-727-SA5C-SB-4.0-5.0MSD	E155-02S	MSD	3550B	8015B EFH	III
21-May-2012	SL-727-SA5C-SB-4.0-5.0MSD	E155-02S	MSD	3550B	8082	III
21-May-2012	SL-727-SA5C-SB-4.0-5.0MSD	E155-02S	MSD	3550B	8270C SIM	III
21-May-2012	SL-727-SA5C-SB-4.0-5.0MSD	E155-02S	MSD	7471A	7471A	III
21-May-2012	SL-727-SA5C-SB-4.0-5.0MSD	E155-02S	MSD	TOTAL	6020	III
21-May-2012	SL-727-SA5C-SB-5.0	E155-03	N	5035	8015B GRO	III
21-May-2012	SL-727-SA5C-SB-5.0MS	E155-03M	MS	5035	8015B GRO	III
21-May-2012	SL-727-SA5C-SB-5.0MSD	E155-03S	MSD	5035	8015B GRO	III
21-May-2012	SL-727-SA5C-SB-9.0-10.0	E155-04	N	3550B	8015B EFH	III
21-May-2012	SL-727-SA5C-SB-9.0-10.0	E155-04	N	3550B	8082	III
21-May-2012	SL-727-SA5C-SB-9.0-10.0	E155-04	N	3550B	8270C SIM	III
21-May-2012	SL-727-SA5C-SB-9.0-10.0	E155-04	N	7471A	7471A	III
21-May-2012	SL-727-SA5C-SB-9.0-10.0	E155-04	N	TOTAL	6020	III
21-May-2012	SL-727-SA5C-SB-10.0	E155-05	N	5035	8015B GRO	III
21-May-2012	SL-1027-SA5C-SB-4.0-5.0	E155-06	FD	3550B	8015B EFH	III
21-May-2012	SL-1027-SA5C-SB-4.0-5.0	E155-06	FD	3550B	8082	III
21-May-2012	SL-1027-SA5C-SB-4.0-5.0	E155-06	FD	3550B	8270C 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
21-May-2012	SL-1027-SA5C-SB-4.0-5.0	E155-06	FD	7471A	7471A	III
21-May-2012	SL-1027-SA5C-SB-4.0-5.0	E155-06	FD	TOTAL	6020	III
21-May-2012	SL-1027-SA5C-SB-5.0	E155-07	FD	5035	8015B GRO	III
21-May-2012	SL-728-SA5C-SB-0.0-0.5	E155-15	N	3550B	8015B EFH	III
21-May-2012	SL-728-SA5C-SB-4.0-5.0	E155-16	N	3550B	8015B EFH	III
21-May-2012	SL-728-SA5C-SB-5.0	E155-17	N	5035	8015B GRO	III
21-May-2012	SL-728-SA5C-SB-9.0-10.0	E155-18	N	3550B	8015B EFH	III
21-May-2012	SL-728-SA5C-SB-10.0	E155-19	N	5035	8015B GRO	III
21-May-2012	SL-729-SA5C-SB-0.0-0.5	E155-20	N	3550B	8015B EFH	III
21-May-2012	SL-729-SA5C-SB-5.0	E155-22	N	5035	8015B GRO	III
21-May-2012	SL-729-SA5C-SB-4.0-5.0	E155-21	N	3550B	8015B EFH	III
21-May-2012	SL-729-SA5C-SB-10.0	E155-24	N	5035	8015B GRO	III
21-May-2012	SL-729-SA5C-SB-9.0-10.0	E155-23	N	3550B	8015B EFH	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 II

Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: 12E155 **Laboratory: EMXT**

EDD Filename: Prep12E155 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix:** SO

Sample ID: SL-1027-SA5C-SB-4.0-5.0 ***Collected:*** 5/21/2012 11:00:00 ***Analysis Type:*** RES/TOT ***Dilution:*** 0.985

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.196	J	0.112	MDL	0.558	PQL	MG/KG	J	Z
BERYLLIUM	0.493	J	0.0558	MDL	0.558	PQL	MG/KG	J	Z
CADMIUM	0.235	J	0.0558	MDL	0.558	PQL	MG/KG	J	Z
MANGANESE	363		0.279	MDL	0.558	PQL	MG/KG	J	E
SODIUM	89.3	J	55.8	MDL	112	PQL	MG/KG	J	Z
THALLIUM	0.238	J	0.0558	MDL	0.446	PQL	MG/KG	J	Z
Zirconium	5.58	U	2.79	MDL	5.58	PQL	MG/KG	UJ	Q

Sample ID: SL-727-SA5C-SB-0.0-0.5 ***Collected:*** 5/21/2012 10:29:00 ***Analysis Type:*** RES/TOT ***Dilution:*** 0.957

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.252	J	0.104	MDL	0.522	PQL	MG/KG	J	Z
CADMIUM	0.188	J	0.0522	MDL	0.522	PQL	MG/KG	J	Z
MANGANESE	228		0.261	MDL	0.522	PQL	MG/KG	J	E
THALLIUM	0.250	J	0.0522	MDL	0.417	PQL	MG/KG	J	Z
Zirconium	5.22	U	2.61	MDL	5.22	PQL	MG/KG	UJ	Q

Sample ID: SL-727-SA5C-SB-4.0-5.0 ***Collected:*** 5/21/2012 10:32:00 ***Analysis Type:*** RES/TOT ***Dilution:*** 0.976

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.219	J	0.110	MDL	0.552	PQL	MG/KG	J	Z
CADMIUM	0.249	J	0.0552	MDL	0.552	PQL	MG/KG	J	Z
MANGANESE	340		0.276	MDL	0.552	PQL	MG/KG	J	E
SODIUM	102	J	55.2	MDL	110	PQL	MG/KG	J	Z
THALLIUM	0.268	J	0.0552	MDL	0.442	PQL	MG/KG	J	Z
Zirconium	5.52	U	2.76	MDL	5.52	PQL	MG/KG	UJ	Q

Sample ID: SL-727-SA5C-SB-9.0-10.0 ***Collected:*** 5/21/2012 10:36:00 ***Analysis Type:*** RES/TOT ***Dilution:*** 0.966

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.187	J	0.108	MDL	0.541	PQL	MG/KG	J	Z
CADMIUM	0.147	J	0.0541	MDL	0.541	PQL	MG/KG	J	Z
MANGANESE	137		0.271	MDL	0.541	PQL	MG/KG	J	E
THALLIUM	0.204	J	0.0541	MDL	0.433	PQL	MG/KG	J	Z
Zirconium	5.41	U	2.71	MDL	5.41	PQL	MG/KG	UJ	Q

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E155 **Laboratory: EMXT**

EDD Filename: Prep12E155 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: SL-734-SA5C-SB-0.0-0.5 *Collected:* 5/21/2012 9:29:00 *Analysis Type:* RES/TOT *Dilution:* 0.985

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.251	J	0.108	MDL	0.542	PQL	MG/KG	J	Z
CADMIUM	0.188	J	0.0542	MDL	0.542	PQL	MG/KG	J	Z
MANGANESE	217		0.271	MDL	0.542	PQL	MG/KG	J	E
SODIUM	99.0	J	54.2	MDL	108	PQL	MG/KG	J	Z
THALLIUM	0.250	J	0.0542	MDL	0.433	PQL	MG/KG	J	Z
Zirconium	5.42	U	2.71	MDL	5.42	PQL	MG/KG	UJ	Q

Sample ID: SL-734-SA5C-SB-4.0-5.0 *Collected:* 5/21/2012 9:33:00 *Analysis Type:* RES/TOT *Dilution:* 0.985

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.190	J	0.112	MDL	0.558	PQL	MG/KG	J	Z
CADMIUM	0.253	J	0.0558	MDL	0.558	PQL	MG/KG	J	Z
MANGANESE	367		0.279	MDL	0.558	PQL	MG/KG	J	E
THALLIUM	0.261	J	0.0558	MDL	0.447	PQL	MG/KG	J	Z
Zirconium	5.58	U	2.79	MDL	5.58	PQL	MG/KG	UJ	Q

Sample ID: SL-734-SA5C-SB-9.0-10.0 *Collected:* 5/21/2012 9:38:00 *Analysis Type:* RES/TOT *Dilution:* 0.980

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.205	J	0.110	MDL	0.551	PQL	MG/KG	J	Z
BERYLLIUM	0.500	J	0.0551	MDL	0.551	PQL	MG/KG	J	Z
CADMIUM	0.184	J	0.0551	MDL	0.551	PQL	MG/KG	J	Z
MANGANESE	372		0.275	MDL	0.551	PQL	MG/KG	J	E
THALLIUM	0.222	J	0.0551	MDL	0.440	PQL	MG/KG	J	Z
Zirconium	5.51	U	2.75	MDL	5.51	PQL	MG/KG	UJ	Q

Method Category: SVOA

Method: 8015B EFH **Matrix: SO**

Sample ID: SL-1027-SA5C-SB-4.0-5.0 *Collected:* 5/21/2012 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
EFH(C8-C11)	5.7	U	2.8	MDL	5.7	PQL	MG/KG	UJ	FD

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E155 **Laboratory: EMXT**

EDD Filename: Prep12E155 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

Method: 8015B EFH **Matrix: SO**

Sample ID: SL-727-SA5C-SB-4.0-5.0 *Collected:* 5/21/2012 10:32:00 *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)	1.3	J	2.8	MDL	5.7	PQL	MG/KG	J	Z, FD

Sample ID: SL-728-SA5C-SB-9.0-10.0 *Collected:* 5/21/2012 1:37:00 *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)	5.0	J	2.9	MDL	5.7	PQL	MG/KG	J	Z
EFH(C30-C40)	6.3	J	5.7	MDL	11	PQL	MG/KG	J	Z

Sample ID: SL-729-SA5C-SB-4.0-5.0 *Collected:* 5/21/2012 2:29:00 *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)	5.2	J	2.8	MDL	5.6	PQL	MG/KG	J	Z

Method Category: SVOA

Method: 8270C SIM **Matrix: SO**

Sample ID: SL-1027-SA5C-SB-4.0-5.0 *Collected:* 5/21/2012 11:00:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(E)PYRENE	3.9	J	2.8	MDL	5.7	PQL	UG/KG	J	Z

Sample ID: SL-727-SA5C-SB-0.0-0.5 *Collected:* 5/21/2012 10:29:00 *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	3.8	J	2.7	MDL	5.5	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	7.7	J	2.7	MDL	11	PQL	UG/KG	J	Z

Sample ID: SL-727-SA5C-SB-4.0-5.0 *Collected:* 5/21/2012 10:32:00 *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	2.9	J	2.8	MDL	5.7	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E155 **Laboratory: EMXT**

EDD Filename: Prep12E155 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

Method: 8270C SIM **Matrix: SO**

Sample ID: SL-727-SA5C-SB-9.0-10.0 *Collected:* 5/21/2012 10:36:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(G,H,I)PERYLENE	10	J	5.6	MDL	22	PQL	UG/KG	J	Z
PHENANTHRENE	10	J	5.6	MDL	22	PQL	UG/KG	J	Z
PYRENE	7.4	J	5.6	MDL	22	PQL	UG/KG	J	Z

Sample ID: SL-734-SA5C-SB-0.0-0.5 *Collected:* 5/21/2012 9:29:00 *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	3.1	J	2.8	MDL	11	PQL	UG/KG	J	Z
BENZO(E)PYRENE	5.2	J	2.8	MDL	5.5	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	3.9	J	2.8	MDL	11	PQL	UG/KG	J	Z
PHENANTHRENE	3.5	J	2.8	MDL	11	PQL	UG/KG	J	Z

Sample ID: SL-734-SA5C-SB-4.0-5.0 *Collected:* 5/21/2012 9:33:00 *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	5.1	J	2.8	MDL	11	PQL	UG/KG	J	Z
BENZO(E)PYRENE	5.6	J	2.8	MDL	5.7	PQL	UG/KG	J	Z
PHENANTHRENE	4.9	J	2.8	MDL	11	PQL	UG/KG	J	Z

Sample ID: SL-734-SA5C-SB-9.0-10.0 *Collected:* 5/21/2012 9:38:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(B)FLUORANTHENE	7.0	J	2.8	MDL	11	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	4.3	J	2.8	MDL	11	PQL	UG/KG	J	Z
CHRYSENE	5.5	J	2.8	MDL	11	PQL	UG/KG	J	Z
PYRENE	4.3	J	2.8	MDL	11	PQL	UG/KG	J	Z

Method Category: VOA

Method: 8015B GRO **Matrix: AQ**

Sample ID: TB-052112 *Collected:* 5/21/2012 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
GASOLINE RANGE ORGANICS (C5-C12)	46	J	10	MDL	50	PQL	UG/L	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E155 **Laboratory: EMXT**

EDD Filename: Prep12E155 **eQAPP Name: CDM_SSFL_120730_EMAX**

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E155 **Laboratory: EMXT**

EDD Filename: Prep12E155 **eQAPP Name: CDM_SSFL_120730_EMAX**

Reason Code Legend

Reason Code	*Description*
E	Matrix Spike Precision
FD	Field Duplicate Precision
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: PHASE3 - SSFL PHASE 3

Enclosure I

Level III ADR Outliers
(including Manual Review Outliers)

Quality Control
Outlier Reports

12E155

Surrogate Outlier Report

Lab Reporting Batch ID: 12E155 **Laboratory: EMXT**

EDD Filename: 12E155 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: **8270C SIM**
Matrix: **SO**

Sample ID (Analysis Type)	*Surrogate*	*Sample % Recovery*	*% Recovery Limits*	*Affected Compounds*	*Flag*
SL-734-SA5C-SB-9.0-10.0	2-FLUOROBIPHENYL	39.5	45.00-130.00	No Affected Compounds	

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 12E155 **Laboratory: EMXT**

EDD Filename: 12E155 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 6020
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-727-SA5C-SB-4.0-5.0MSD (TOT) (SL-1027-SA5C-SB-4.0-5.0 SL-727-SA5C-SB-0.0-0.5 SL-727-SA5C-SB-4.0-5.0 SL-727-SA5C-SB-9.0-10.0 SL-734-SA5C-SB-0.0-0.5 SL-734-SA5C-SB-4.0-5.0 SL-734-SA5C-SB-9.0-10.0)	TITANIUM	-	251	75.00-125.00	-	TITANIUM	No Qual, >4x
SL-727-SA5C-SB-4.0-5.0MS (TOT) SL-727-SA5C-SB-4.0-5.0MSD (TOT) (SL-1027-SA5C-SB-4.0-5.0 SL-727-SA5C-SB-0.0-0.5 SL-727-SA5C-SB-4.0-5.0 SL-727-SA5C-SB-9.0-10.0 SL-734-SA5C-SB-0.0-0.5 SL-734-SA5C-SB-4.0-5.0 SL-734-SA5C-SB-9.0-10.0)	MANGANESE Zirconium	43 36	622 41	75.00-125.00 75.00-125.00	38 (20.00) -	MANGANESE Zirconium	J(all detects) UJ(all non-detects) Mn, No Qual %R >4x

Project Name and Number: PHASE3 - SSFL PHASE 3

Field Duplicate RPD Report

Lab Reporting Batch ID: 12E155 **Laboratory: EMXT**

EDD Filename: Prep12E155 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 6020
Matrix: SO

Analyte	Concentration (MG/KG)		Sample RPD	eQAPP RPD	Flag
	SL-727-SA5C-SB-4.0-5.0 (TOT)	SL-1027-SA5C-SB-4.0-5.0 (TOT)			
ALUMINUM	10800	9810	10	50.00	
ANTIMONY	0.219	0.196	11	50.00	
ARSENIC	3.24	2.84	13	50.00	
BARIUM	111	105	6	50.00	
BERYLLIUM	0.563	0.493	13	50.00	
CADMIUM	0.249	0.235	6	50.00	
CALCIUM	1520	1380	10	50.00	
CHROMIUM	15.1	14.0	8	50.00	
COBALT	5.76	5.96	3	50.00	
COPPER	9.03	8.16	10	50.00	
IRON	16100	15000	7	50.00	
LEAD	4.67	4.21	10	50.00	
LITHIUM	10.9	10.0	9	50.00	No Qualifiers Applied
MAGNESIUM	2920	2620	11	50.00	
MANGANESE	340	363	7	50.00	
MOLYBDENUM	0.844	0.740	13	50.00	
NICKEL	9.83	9.12	7	50.00	
PHOSPHORUS	161	140	14	50.00	
POTASSIUM	2490	2470	1	50.00	
SODIUM	102	89.3	13	50.00	
STRONTIUM	17.2	15.4	11	50.00	
THALLIUM	0.268	0.238	12	50.00	
TITANIUM	791	762	4	50.00	
VANADIUM	29.1	26.8	8	50.00	
ZINC	36.9	33.8	9	50.00	

Method: 8015B EFH
Matrix: SO

Analyte	Concentration (MG/KG)		Sample RPD	eQAPP RPD	Flag
	SL-727-SA5C-SB-4.0-5.0	SL-1027-SA5C-SB-4.0-5.0			
EFH(C21-C30)	23	26	12	50.00	No Qualifiers Applied
EFH(C30-C40)	17	21	21	50.00	
EFH(C8-C11)	1.3	5.7 U	200	50.00	J(all detects) UJ(all non-detects)

Method: 8270C SIM
Matrix: SO

Analyte	Concentration (UG/KG)		Sample RPD	eQAPP RPD	Flag
	SL-727-SA5C-SB-4.0-5.0	SL-1027-SA5C-SB-4.0-5.0			
BENZO(E)PYRENE	2.9	3.9	29	50.00	No Qualifiers Applied

Method: 9045D
Matrix: SO

Analyte	Concentration (PH UNIT)		Sample RPD	eQAPP RPD	Flag
	SL-727-SA5C-SB-4.0-5.0	SL-1027-SA5C-SB-4.0-5.0			
PH	5.42	5.54	2		No Qualifiers Applied

Project Name and Number: PHASE3 - SSFL PHASE 3

Reporting Limit Outliers

Lab Reporting Batch ID: 12E155 **Laboratory: EMXT**

EDD Filename: 12E155 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 8015B GRO

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TB-052112	GASOLINE RANGE ORGANICS (C5-C12)	J	46	50	PQL	UG/L	J (all detects)

Method: 6020

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-1027-SA5C-SB-4.0-5.0	ANTIMONY	J	0.196	0.558	PQL	MG/KG	J (all detects)
	BERYLLIUM	J	0.493	0.558	PQL	MG/KG	
	CADMIUM	J	0.235	0.558	PQL	MG/KG	
	SODIUM	J	89.3	112	PQL	MG/KG	
	THALLIUM	J	0.238	0.446	PQL	MG/KG	
SL-727-SA5C-SB-0.0-0.5	ANTIMONY	J	0.252	0.522	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.188	0.522	PQL	MG/KG	
	THALLIUM	J	0.250	0.417	PQL	MG/KG	
SL-727-SA5C-SB-4.0-5.0	ANTIMONY	J	0.219	0.552	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.249	0.552	PQL	MG/KG	
	SODIUM	J	102	110	PQL	MG/KG	
	THALLIUM	J	0.268	0.442	PQL	MG/KG	
SL-727-SA5C-SB-9.0-10.0	ANTIMONY	J	0.187	0.541	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.147	0.541	PQL	MG/KG	
	THALLIUM	J	0.204	0.433	PQL	MG/KG	
SL-734-SA5C-SB-0.0-0.5	ANTIMONY	J	0.251	0.542	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.188	0.542	PQL	MG/KG	
	SODIUM	J	99.0	108	PQL	MG/KG	
	THALLIUM	J	0.250	0.433	PQL	MG/KG	
SL-734-SA5C-SB-4.0-5.0	ANTIMONY	J	0.190	0.558	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.253	0.558	PQL	MG/KG	
	THALLIUM	J	0.261	0.447	PQL	MG/KG	
SL-734-SA5C-SB-9.0-10.0	ANTIMONY	J	0.205	0.551	PQL	MG/KG	J (all detects)
	BERYLLIUM	J	0.500	0.551	PQL	MG/KG	
	CADMIUM	J	0.184	0.551	PQL	MG/KG	
	THALLIUM	J	0.222	0.440	PQL	MG/KG	

Method: 8015B EFH

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-727-SA5C-SB-4.0-5.0	EFH(C8-C11)	J	1.3	5.7	PQL	MG/KG	J (all detects)
SL-728-SA5C-SB-9.0-10.0	EFH(C21-C30)	J	5.0	5.7	PQL	MG/KG	J (all detects)
	EFH(C30-C40)	J	6.3	11	PQL	MG/KG	
SL-729-SA5C-SB-4.0-5.0	EFH(C21-C30)	J	5.2	5.6	PQL	MG/KG	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: 12E155 **Laboratory: EMXT**

EDD Filename: 12E155 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: **8270C SIM**

Matrix: **SO**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
SL-1027-SA5C-SB-4.0-5.0	BENZO(E)PYRENE	J	3.9	5.7	PQL	UG/KG	J (all detects)
SL-727-SA5C-SB-0.0-0.5	BENZO(E)PYRENE	J	3.8	5.5	PQL	UG/KG	J (all detects)
	BENZO(G,H,I)PERYLENE	J	7.7	11	PQL	UG/KG	
SL-727-SA5C-SB-4.0-5.0	BENZO(E)PYRENE	J	2.9	5.7	PQL	UG/KG	J (all detects)
SL-727-SA5C-SB-9.0-10.0	BENZO(G,H,I)PERYLENE	J	10	22	PQL	UG/KG	J (all detects)
	PHENANTHRENE	J	10	22	PQL	UG/KG	
	PYRENE	J	7.4	22	PQL	UG/KG	
SL-734-SA5C-SB-0.0-0.5	BENZO(A)ANTHRACENE	J	3.1	11	PQL	UG/KG	J (all detects)
	BENZO(E)PYRENE	J	5.2	5.5	PQL	UG/KG	
	BENZO(G,H,I)PERYLENE	J	3.9	11	PQL	UG/KG	
	PHENANTHRENE	J	3.5	11	PQL	UG/KG	
SL-734-SA5C-SB-4.0-5.0	BENZO(A)ANTHRACENE	J	5.1	11	PQL	UG/KG	J (all detects)
	BENZO(E)PYRENE	J	5.6	5.7	PQL	UG/KG	
	PHENANTHRENE	J	4.9	11	PQL	UG/KG	
SL-734-SA5C-SB-9.0-10.0	BENZO(B)FLUORANTHENE	J	7.0	11	PQL	UG/KG	J (all detects)
	BENZO(G,H,I)PERYLENE	J	4.3	11	PQL	UG/KG	
	CHRYSENE	J	5.5	11	PQL	UG/KG	
	PYRENE	J	4.3	11	PQL	UG/KG	

LDC #: 28558W4
SDG #: 12E155
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 1/6/12
Page: 1 of 1
Reviewer:
2nd Reviewer:

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

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

	Validation Area		Comments
I.	Technical holding times	✓	Sampling dates:
II.	ICP/MS Tune	✓	
III.	Calibration	✓	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	✓	
VI.	Matrix Spike Analysis	N	MS/D (Mn, Ti: >4X RPDout)
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	N	LCS/D
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: EB-052412(12E204) FB: FB060512 C12F037

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-727-SA5C-SB-0.0-0.5	11		21		31	
2	SL-727-SA5C-SB-4.0-5.0	12		22		32	
3	SL-727-SA5C-SB-9.0-10.0	13		23		33	
4	SL-1027-SA5C-SB-4.0-5.0	14		24		34	
5	SL-734-SA5C-SB-0.0-0.5	15		25		35	
6	SL-734-SA5C-SB-4.0-5.0	16		26		36	
7	SL-734-SA5C-SB-9.0-10.0	17		27		37	
8	SL-727-SA5C-SB-4.0-5.0MS	18		28		38	
9	SL-727-SA5C-SB-4.0-5.0MSD	19		29		39	
10		20		30		40	

Notes:

LDC #: 28578A4 (28578W4)

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer: CL
2nd Reviewer: W

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

Blank units: ug/L **Associated sample units:** mg/Kg
Sampling date: 5/24/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All

Analyte	Blank ID	Sample Identification										
	EB-052412	Action Limit	No Qualifiers									
B	0.0049	1.225										
Ni	0.000226	0.0565										

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 #: 28558 4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

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

Blank units: ug/L **Associated sample units:** mg/Kg

Sampling date: 6/5/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All

Analyte	Blank ID	Sample Identification										
	FB-060512	Action Limit	No Qualifiers									
Al	0.0270	6.75										
Ca	0.0263	6.575										
Cu	0.000954	0.2385										

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

12E169

Attachment I

Sample ID Cross Reference and Data Review Level

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
22-May-2012	TB-052212	E169-25	TB	5030B	8015B GRO	III
22-May-2012	SL-730-SA5C-SB-0.0-0.5	E169-01	N	3550B	8015B EFH	IV
22-May-2012	SL-730-SA5C-SB-0.0-0.5	E169-01	N	3550B	8270C SIM	IV
22-May-2012	SL-730-SA5C-SB-0.0-0.5	E169-01	N	7471A	7471A	IV
22-May-2012	SL-730-SA5C-SB-0.0-0.5	E169-01	N	GEN PREP	7199	IV
22-May-2012	SL-730-SA5C-SB-0.0-0.5	E169-01	N	TOTAL	6020	IV
22-May-2012	SL-730-SA5C-SB-0.0-0.5MS	E169-01M	MS	7471A	7471A	IV
22-May-2012	SL-730-SA5C-SB-0.0-0.5MSD	E169-01S	MSD	7471A	7471A	IV
22-May-2012	SL-730-SA5C-SB-5.0	E169-03	N	5035	8015B GRO	IV
22-May-2012	SL-730-SA5C-SB-4.0-5.0	E169-02	N	3550B	8015B EFH	IV
22-May-2012	SL-730-SA5C-SB-4.0-5.0	E169-02	N	3550B	8270C SIM	IV
22-May-2012	SL-730-SA5C-SB-4.0-5.0	E169-02	N	7471A	7471A	IV
22-May-2012	SL-730-SA5C-SB-4.0-5.0	E169-02	N	GEN PREP	7199	IV
22-May-2012	SL-730-SA5C-SB-4.0-5.0	E169-02	N	TOTAL	6020	IV
22-May-2012	SL-730-SA5C-SB-10.0	E169-05	N	5035	8015B GRO	IV
22-May-2012	SL-730-SA5C-SB-9.0-10.0	E169-04	N	3550B	8015B EFH	IV
22-May-2012	SL-730-SA5C-SB-9.0-10.0	E169-04	N	3550B	8270C SIM	IV
22-May-2012	SL-730-SA5C-SB-9.0-10.0	E169-04	N	7471A	7471A	IV
22-May-2012	SL-730-SA5C-SB-9.0-10.0	E169-04	N	GEN PREP	7199	IV
22-May-2012	SL-730-SA5C-SB-9.0-10.0	E169-04	N	TOTAL	6020	IV
22-May-2012	SL-733-SA5C-SB-0.0-0.5	E169-11	N	3550B	8015B EFH	IV
22-May-2012	SL-733-SA5C-SB-0.0-0.5	E169-11	N	3550B	8082	IV
22-May-2012	SL-733-SA5C-SB-0.0-0.5	E169-11	N	3550B	8270C SIM	IV
22-May-2012	SL-733-SA5C-SB-0.0-0.5	E169-11	N	7471A	7471A	IV
22-May-2012	SL-733-SA5C-SB-0.0-0.5	E169-11	N	GEN PREP	7199	III
22-May-2012	SL-733-SA5C-SB-0.0-0.5	E169-11	N	TOTAL	6020	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
22-May-2012	SL-733-SA5C-SB-4.0-5.0	E169-12	N	3550B	8015B EFH	IV
22-May-2012	SL-733-SA5C-SB-4.0-5.0	E169-12	N	3550B	8082	IV
22-May-2012	SL-733-SA5C-SB-4.0-5.0	E169-12	N	3550B	8270C SIM	IV
22-May-2012	SL-733-SA5C-SB-4.0-5.0	E169-12	N	7471A	7471A	IV
22-May-2012	SL-733-SA5C-SB-4.0-5.0	E169-12	N	GEN PREP	7199	III
22-May-2012	SL-733-SA5C-SB-4.0-5.0	E169-12	N	TOTAL	6020	IV
22-May-2012	SL-733-SA5C-SB-5.0	E169-13	N	5035	8015B GRO	IV
22-May-2012	SL-733-SA5C-SB-10.0	E169-15	N	5035	8015B GRO	III
22-May-2012	SL-733-SA5C-SB-9.0-10.0	E169-14	N	3550B	8015B EFH	IV
22-May-2012	SL-733-SA5C-SB-9.0-10.0	E169-14	N	3550B	8082	IV
22-May-2012	SL-733-SA5C-SB-9.0-10.0	E169-14	N	3550B	8270C SIM	IV
22-May-2012	SL-733-SA5C-SB-9.0-10.0	E169-14	N	7471A	7471A	IV
22-May-2012	SL-733-SA5C-SB-9.0-10.0	E169-14	N	GEN PREP	7199	III
22-May-2012	SL-733-SA5C-SB-9.0-10.0	E169-14	N	TOTAL	6020	IV
22-May-2012	SL-733-SA5C-SB-9.0-10.0MS	E169-14M	MS	3550B	8270C SIM	IV
22-May-2012	SL-731-SA5C-SB-0.0-0.5	E169-06	N	3550B	8015B EFH	IV
22-May-2012	SL-731-SA5C-SB-0.0-0.5	E169-06	N	3550B	8270C SIM	IV
22-May-2012	SL-731-SA5C-SB-0.0-0.5	E169-06	N	7471A	7471A	IV
22-May-2012	SL-731-SA5C-SB-0.0-0.5	E169-06	N	GEN PREP	7199	III
22-May-2012	SL-731-SA5C-SB-0.0-0.5	E169-06	N	TOTAL	6020	IV
22-May-2012	SL-731-SA5C-SB-5.0	E169-08	N	5035	8015B GRO	IV
22-May-2012	SL-731-SA5C-SB-4.0-5.0	E169-07	N	3550B	8015B EFH	IV
22-May-2012	SL-731-SA5C-SB-4.0-5.0	E169-07	N	3550B	8270C SIM	IV
22-May-2012	SL-731-SA5C-SB-4.0-5.0	E169-07	N	7471A	7471A	IV
22-May-2012	SL-731-SA5C-SB-4.0-5.0	E169-07	N	GEN PREP	7199	III
22-May-2012	SL-731-SA5C-SB-4.0-5.0	E169-07	N	TOTAL	6020	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
22-May-2012	SL-731-SA5C-SB-4.0-5.0DUP	E169-07D	DUP	GEN PREP	7199	III
22-May-2012	SL-731-SA5C-SB-4.0-5.0MS	E169-07M	MS	GEN PREP	7199	III
22-May-2012	SL-731-SA5C-SB-10.0	E169-10	N	5035	8015B GRO	IV
22-May-2012	SL-731-SA5C-SB-9.0-10.0	E169-09	N	3550B	8015B EFH	IV
22-May-2012	SL-731-SA5C-SB-9.0-10.0	E169-09	N	3550B	8270C SIM	IV
22-May-2012	SL-731-SA5C-SB-9.0-10.0	E169-09	N	7471A	7471A	IV
22-May-2012	SL-731-SA5C-SB-9.0-10.0	E169-09	N	GEN PREP	7199	III
22-May-2012	SL-731-SA5C-SB-9.0-10.0	E169-09	N	TOTAL	6020	IV
22-May-2012	SL-732-SA5C-SB-6.0	E169-22	N	5035	8015B GRO	III
22-May-2012	SL-732-SA5C-SB-5.0-6.0	E169-21	N	3550B	8015B EFH	IV
22-May-2012	SL-732-SA5C-SB-5.0-6.0	E169-21	N	3550B	8270C SIM	IV
22-May-2012	SL-732-SA5C-SB-5.0-6.0	E169-21	N	7471A	7471A	IV
22-May-2012	SL-732-SA5C-SB-5.0-6.0	E169-21	N	GEN PREP	7199	III
22-May-2012	SL-732-SA5C-SB-5.0-6.0	E169-21	N	TOTAL	6020	IV
22-May-2012	SL-732-SA5C-SB-11.5	E169-24	N	5035	8015B GRO	III
22-May-2012	SL-732-SA5C-SB-10.5-11.5	E169-23	N	3550B	8015B EFH	IV
22-May-2012	SL-732-SA5C-SB-10.5-11.5	E169-23	N	3550B	8270C SIM	IV
22-May-2012	SL-732-SA5C-SB-10.5-11.5	E169-23	N	7471A	7471A	IV
22-May-2012	SL-732-SA5C-SB-10.5-11.5	E169-23	N	GEN PREP	7199	III
22-May-2012	SL-732-SA5C-SB-10.5-11.5	E169-23	N	TOTAL	6020	IV
22-May-2012	SL-732-SA5C-SB-10.5-11.5M	E169-23M	MS	TOTAL	6020	IV
22-May-2012	SL-682-SA5C-SB-0.0-0.5	E169-16	N	3550B	8015B EFH	IV
22-May-2012	SL-682-SA5C-SB-0.0-0.5	E169-16	N	3550B	8082	IV
22-May-2012	SL-682-SA5C-SB-0.0-0.5	E169-16	N	3550B	8270C SIM	IV
22-May-2012	SL-682-SA5C-SB-0.0-0.5	E169-16	N	7471A	7471A	IV
22-May-2012	SL-682-SA5C-SB-0.0-0.5	E169-16	N	TOTAL	6020	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
22-May-2012	SL-682-SA5C-SB-5.0	E169-18	N	5035	8015B GRO	III
22-May-2012	SL-682-SA5C-SB-4.0-5.0	E169-17	N	3550B	8015B EFH	IV
22-May-2012	SL-682-SA5C-SB-4.0-5.0	E169-17	N	3550B	8270C SIM	IV
22-May-2012	SL-682-SA5C-SB-4.0-5.0	E169-17	N	7471A	7471A	IV
22-May-2012	SL-682-SA5C-SB-4.0-5.0	E169-17	N	TOTAL	6020	IV
22-May-2012	SL-682-SA5C-SB-4.0-5.0	E169-17R	N	3550B	8082	IV
22-May-2012	SL-682-SA5C-SB-10.0	E169-20	N	5035	8015B GRO	III
22-May-2012	SL-682-SA5C-SB-9.0-10.0	E169-19	N	3550B	8015B EFH	IV
22-May-2012	SL-682-SA5C-SB-9.0-10.0	E169-19	N	3550B	8082	IV
22-May-2012	SL-682-SA5C-SB-9.0-10.0	E169-19	N	3550B	8270C SIM	IV
22-May-2012	SL-682-SA5C-SB-9.0-10.0	E169-19	N	7471A	7471A	IV
22-May-2012	SL-682-SA5C-SB-9.0-10.0	E169-19	N	TOTAL	6020	IV

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

Attachment II

Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: 12E169 **Laboratory: EMXT**

EDD Filename: Prep12E169 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

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

Sample ID: SL-682-SA5C-SB-0.0-0.5 ***Collected:*** 5/22/2012 2:50:00 ***Analysis Type:*** RES/TOT ***Dilution:*** 0.995

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	12700		13.3	MDL	111	PQL	MG/KG	J	Q
ANTIMONY	0.208	J	0.111	MDL	0.553	PQL	MG/KG	J	Z
BORON	3.35	J	2.76	MDL	5.53	PQL	MG/KG	J	Z
CADMIUM	0.204	J	0.0553	MDL	0.553	PQL	MG/KG	J	Z
MAGNESIUM	4440		5.53	MDL	11.1	PQL	MG/KG	J	Q
MOLYBDENUM	0.425	J	0.0553	MDL	0.553	PQL	MG/KG	J	Z
PHOSPHORUS	255		6.63	MDL	13.3	PQL	MG/KG	J	Q
SODIUM	71.3	J	55.3	MDL	111	PQL	MG/KG	J	Z
THALLIUM	0.258	J	0.0553	MDL	0.442	PQL	MG/KG	J	Z

Sample ID: SL-682-SA5C-SB-4.0-5.0 ***Collected:*** 5/22/2012 2:54:00 ***Analysis Type:*** RES/TOT ***Dilution:*** 0.957

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	16200		13.0	MDL	109	PQL	MG/KG	J	Q
ANTIMONY	0.217	J	0.109	MDL	0.544	PQL	MG/KG	J	Z
CADMIUM	0.114	J	0.0544	MDL	0.544	PQL	MG/KG	J	Z
MAGNESIUM	3730		5.44	MDL	10.9	PQL	MG/KG	J	Q
MOLYBDENUM	0.507	J	0.0544	MDL	0.544	PQL	MG/KG	J	Z
PHOSPHORUS	82.3		6.53	MDL	13.0	PQL	MG/KG	J	Q
SILVER	0.0763	J	0.0544	MDL	0.544	PQL	MG/KG	J	Z
THALLIUM	0.237	J	0.0544	MDL	0.435	PQL	MG/KG	J	Z

Sample ID: SL-682-SA5C-SB-9.0-10.0 ***Collected:*** 5/22/2012 2:58:00 ***Analysis Type:*** RES/TOT ***Dilution:*** 0.952

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	13700		13.1	MDL	109	PQL	MG/KG	J	Q
ANTIMONY	0.170	J	0.109	MDL	0.545	PQL	MG/KG	J	Z
CADMIUM	0.0697	J	0.0545	MDL	0.545	PQL	MG/KG	J	Z
MAGNESIUM	3820		5.45	MDL	10.9	PQL	MG/KG	J	Q
MOLYBDENUM	0.331	J	0.0545	MDL	0.545	PQL	MG/KG	J	Z
PHOSPHORUS	108		6.54	MDL	13.1	PQL	MG/KG	J	Q
THALLIUM	0.200	J	0.0545	MDL	0.436	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E169 **Laboratory: EMXT**

EDD Filename: Prep12E169 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: **METALS**

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

Sample ID: **SL-730-SA5C-SB-0.0-0.5** ***Collected:*** **5/22/2012 8:13:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.976**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	10600		12.9	MDL	107	PQL	MG/KG	J	Q
ANTIMONY	0.187	J	0.107	MDL	0.536	PQL	MG/KG	J	Z
BERYLLIUM	0.512	J	0.0536	MDL	0.536	PQL	MG/KG	J	Z
CADMIUM	0.165	J	0.0536	MDL	0.536	PQL	MG/KG	J	Z
MAGNESIUM	3260		5.36	MDL	10.7	PQL	MG/KG	J	Q
MOLYBDENUM	0.491	J	0.0536	MDL	0.536	PQL	MG/KG	J	Z
PHOSPHORUS	219		6.44	MDL	12.9	PQL	MG/KG	J	Q
SODIUM	80.8	J	53.6	MDL	107	PQL	MG/KG	J	Z
THALLIUM	0.219	J	0.0536	MDL	0.429	PQL	MG/KG	J	Z

Sample ID: **SL-730-SA5C-SB-4.0-5.0** ***Collected:*** **5/22/2012 8:19:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.971**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	11000		13.2	MDL	110	PQL	MG/KG	J	Q
ANTIMONY	0.202	J	0.110	MDL	0.548	PQL	MG/KG	J	Z
CADMIUM	0.209	J	0.0548	MDL	0.548	PQL	MG/KG	J	Z
MAGNESIUM	3560		5.48	MDL	11.0	PQL	MG/KG	J	Q
PHOSPHORUS	463		6.58	MDL	13.2	PQL	MG/KG	J	Q
THALLIUM	0.254	J	0.0548	MDL	0.438	PQL	MG/KG	J	Z

Sample ID: **SL-730-SA5C-SB-9.0-10.0** ***Collected:*** **5/22/2012 8:23:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.990**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	17200		13.5	MDL	113	PQL	MG/KG	J	Q
ANTIMONY	0.262	J	0.113	MDL	0.563	PQL	MG/KG	J	Z
CADMIUM	0.118	J	0.0563	MDL	0.563	PQL	MG/KG	J	Z
MAGNESIUM	4710		5.63	MDL	11.3	PQL	MG/KG	J	Q
PHOSPHORUS	171		6.76	MDL	13.5	PQL	MG/KG	J	Q
THALLIUM	0.254	J	0.0563	MDL	0.451	PQL	MG/KG	J	Z

Sample ID: **SL-731-SA5C-SB-0.0-0.5** ***Collected:*** **5/22/2012 10:48:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.966**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	14200		12.8	MDL	107	PQL	MG/KG	J	Q
ANTIMONY	0.214	J	0.107	MDL	0.534	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E169 **Laboratory: EMXT**

EDD Filename: Prep12E169 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: SL-731-SA5C-SB-0.0-0.5 *Collected:* 5/22/2012 10:48:00 *Analysis Type:* RES/TOT *Dilution:* 0.966

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CADMIUM	0.172	J	0.0534	MDL	0.534	PQL	MG/KG	J	Z
MAGNESIUM	4360		5.34	MDL	10.7	PQL	MG/KG	J	Q
PHOSPHORUS	262		6.41	MDL	12.8	PQL	MG/KG	J	Q
THALLIUM	0.245	J	0.0534	MDL	0.427	PQL	MG/KG	J	Z

Sample ID: SL-731-SA5C-SB-4.0-5.0 *Collected:* 5/22/2012 10:54:00 *Analysis Type:* RES/TOT *Dilution:* 0.935

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	10600		12.7	MDL	106	PQL	MG/KG	J	Q
ANTIMONY	0.194	J	0.106	MDL	0.531	PQL	MG/KG	J	Z
BERYLLIUM	0.499	J	0.0531	MDL	0.531	PQL	MG/KG	J	Z
CADMIUM	0.275	J	0.0531	MDL	0.531	PQL	MG/KG	J	Z
MAGNESIUM	3470		5.31	MDL	10.6	PQL	MG/KG	J	Q
PHOSPHORUS	412		6.38	MDL	12.7	PQL	MG/KG	J	Q
SODIUM	82.4	J	53.1	MDL	106	PQL	MG/KG	J	Z
THALLIUM	0.257	J	0.0531	MDL	0.425	PQL	MG/KG	J	Z

Sample ID: SL-731-SA5C-SB-9.0-10.0 *Collected:* 5/22/2012 10:57:00 *Analysis Type:* RES/TOT *Dilution:* 0.966

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	15100		12.7	MDL	106	PQL	MG/KG	J	Q
ANTIMONY	0.231	J	0.106	MDL	0.530	PQL	MG/KG	J	Z
CADMIUM	0.126	J	0.0530	MDL	0.530	PQL	MG/KG	J	Z
MAGNESIUM	5820		5.30	MDL	10.6	PQL	MG/KG	J	Q
MOLYBDENUM	0.518	J	0.0530	MDL	0.530	PQL	MG/KG	J	Z
PHOSPHORUS	346		6.36	MDL	12.7	PQL	MG/KG	J	Q
THALLIUM	0.246	J	0.0530	MDL	0.424	PQL	MG/KG	J	Z

Sample ID: SL-732-SA5C-SB-10.5-11.5 *Collected:* 5/22/2012 1:30:00 *Analysis Type:* RES/TOT *Dilution:* 0.971

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	9950		12.5	MDL	104	PQL	MG/KG	J	Q
ANTIMONY	0.178	J	0.104	MDL	0.520	PQL	MG/KG	J	Z
BERYLLIUM	0.441	J	0.0520	MDL	0.520	PQL	MG/KG	J	Z
CADMIUM	0.0906	J	0.0520	MDL	0.520	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E169 **Laboratory: EMXT**

EDD Filename: Prep12E169 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: SL-732-SA5C-SB-10.5-11.5 *Collected:* 5/22/2012 1:30:00 *Analysis Type:* RES/TOT *Dilution:* 0.971

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MAGNESIUM	4950		5.20	MDL	10.4	PQL	MG/KG	J	Q
MOLYBDENUM	0.297	J	0.0520	MDL	0.520	PQL	MG/KG	J	Z
PHOSPHORUS	402		6.24	MDL	12.5	PQL	MG/KG	J	Q
THALLIUM	0.251	J	0.0520	MDL	0.416	PQL	MG/KG	J	Z

Sample ID: SL-732-SA5C-SB-5.0-6.0 *Collected:* 5/22/2012 1:25:00 *Analysis Type:* RES/TOT *Dilution:* 0.962

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	12500		12.9	MDL	108	PQL	MG/KG	J	Q
ANTIMONY	0.178	J	0.108	MDL	0.539	PQL	MG/KG	J	Z
CADMIUM	0.164	J	0.0539	MDL	0.539	PQL	MG/KG	J	Z
MAGNESIUM	3720		5.39	MDL	10.8	PQL	MG/KG	J	Q
PHOSPHORUS	265		6.46	MDL	12.9	PQL	MG/KG	J	Q
SODIUM	89.5	J	53.9	MDL	108	PQL	MG/KG	J	Z
THALLIUM	0.252	J	0.0539	MDL	0.431	PQL	MG/KG	J	Z

Sample ID: SL-733-SA5C-SB-0.0-0.5 *Collected:* 5/22/2012 9:23:00 *Analysis Type:* RES/TOT *Dilution:* 0.948

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	12000		12.4	MDL	104	PQL	MG/KG	J	Q
ANTIMONY	0.221	J	0.104	MDL	0.519	PQL	MG/KG	J	Z
CADMIUM	0.163	J	0.0519	MDL	0.519	PQL	MG/KG	J	Z
MAGNESIUM	4220		5.19	MDL	10.4	PQL	MG/KG	J	Q
PHOSPHORUS	310		6.22	MDL	12.4	PQL	MG/KG	J	Q
SODIUM	83.0	J	51.9	MDL	104	PQL	MG/KG	J	Z
THALLIUM	0.246	J	0.0519	MDL	0.415	PQL	MG/KG	J	Z

Sample ID: SL-733-SA5C-SB-4.0-5.0 *Collected:* 5/22/2012 9:42:00 *Analysis Type:* RES/TOT *Dilution:* 0.930

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	13000		12.4	MDL	103	PQL	MG/KG	J	Q
ANTIMONY	0.200	J	0.103	MDL	0.515	PQL	MG/KG	J	Z
CADMIUM	0.109	J	0.0515	MDL	0.515	PQL	MG/KG	J	Z
MAGNESIUM	3680		5.15	MDL	10.3	PQL	MG/KG	J	Q
PHOSPHORUS	220		6.18	MDL	12.4	PQL	MG/KG	J	Q

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E169 **Laboratory: EMXT**

EDD Filename: Prep12E169 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: SL-733-SA5C-SB-4.0-5.0 *Collected:* 5/22/2012 9:42:00 *Analysis Type:* RES/TOT *Dilution:* 0.930

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0570	J	0.0515	MDL	0.515	PQL	MG/KG	J	Z
SODIUM	95.2	J	51.5	MDL	103	PQL	MG/KG	J	Z
THALLIUM	0.248	J	0.0515	MDL	0.412	PQL	MG/KG	J	Z

Sample ID: SL-733-SA5C-SB-9.0-10.0 *Collected:* 5/22/2012 9:58:00 *Analysis Type:* RES/TOT *Dilution:* 0.980

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	11500		13.2	MDL	110	PQL	MG/KG	J	Q
ANTIMONY	0.163	J	0.110	MDL	0.551	PQL	MG/KG	J	Z
CADMIUM	0.0848	J	0.0551	MDL	0.551	PQL	MG/KG	J	Z
MAGNESIUM	4690		5.51	MDL	11.0	PQL	MG/KG	J	Q
MOLYBDENUM	0.430	J	0.0551	MDL	0.551	PQL	MG/KG	J	Z
PHOSPHORUS	387		6.61	MDL	13.2	PQL	MG/KG	J	Q
SODIUM	105	J	55.1	MDL	110	PQL	MG/KG	J	Z
THALLIUM	0.251	J	0.0551	MDL	0.440	PQL	MG/KG	J	Z

Method Category: METALS

Method: 7471A **Matrix: SO**

Sample ID: SL-733-SA5C-SB-0.0-0.5 *Collected:* 5/22/2012 9:23:00 *Analysis Type:* RES/TOT *Dilution:* 0.990

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0682	J	0.0542	MDL	0.108	PQL	MG/KG	J	Z

Method Category: SVOA

Method: 8015B EFH **Matrix: SO**

Sample ID: SL-730-SA5C-SB-4.0-5.0 *Collected:* 5/22/2012 8:19:00 *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)	7.2	J	5.6	MDL	11	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E169 **Laboratory: EMXT**

EDD Filename: Prep12E169 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

Method: 8015B EFH **Matrix: SO**

Sample ID: SL-731-SA5C-SB-4.0-5.0 *Collected:* 5/22/2012 10:54:00 *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)	4.4	J	2.8	MDL	5.7	PQL	MG/KG	J	Z
EFH(C30-C40)	9.4	J	5.7	MDL	11	PQL	MG/KG	J	Z

Sample ID: SL-732-SA5C-SB-5.0-6.0 *Collected:* 5/22/2012 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
EFH(C21-C30)	4.6	J	2.8	MDL	5.6	PQL	MG/KG	J	Z
EFH(C30-C40)	7.4	J	5.6	MDL	11	PQL	MG/KG	J	Z

Sample ID: SL-733-SA5C-SB-4.0-5.0 *Collected:* 5/22/2012 9:42:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH(C30-C40)	6.4	J	5.5	MDL	11	PQL	MG/KG	J	Z

Method Category: SVOA

Method: 8270C SIM **Matrix: SO**

Sample ID: SL-682-SA5C-SB-0.0-0.5 *Collected:* 5/22/2012 2:50:00 *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	3.5	J	2.8	MDL	5.6	PQL	UG/KG	J	Z

Sample ID: SL-730-SA5C-SB-9.0-10.0 *Collected:* 5/22/2012 8:23:00 *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	3.4	J	2.8	MDL	11	PQL	UG/KG	J	Z
BENZO(E)PYRENE	4.5	J	2.8	MDL	5.7	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	3.3	J	2.8	MDL	11	PQL	UG/KG	J	Z

Sample ID: SL-731-SA5C-SB-0.0-0.5 *Collected:* 5/22/2012 10:48:00 *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	3.7	J	2.8	MDL	5.5	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	3.3	J	2.8	MDL	11	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E169 **Laboratory: EMXT**

EDD Filename: Prep12E169 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

Method: 8270C SIM **Matrix: SO**

Sample ID: SL-731-SA5C-SB-9.0-10.0 *Collected:* 5/22/2012 10:57:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)ANTHRACENE	5.8	J	5.5	MDL	22	PQL	UG/KG	J	Z
BENZO(B)FLUORANTHENE	5.7	J	5.5	MDL	22	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	8.8	J	5.5	MDL	22	PQL	UG/KG	J	Z
PHENANTHRENE	6.6	J	5.5	MDL	22	PQL	UG/KG	J	Z

Sample ID: SL-733-SA5C-SB-0.0-0.5 *Collected:* 5/22/2012 9:23:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(E)PYRENE	7.6	J	5.5	MDL	11	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	6.0	J	5.5	MDL	22	PQL	UG/KG	J	Z
PYRENE	5.7	J	5.5	MDL	22	PQL	UG/KG	J	Z

Method Category: VOA

Method: 8015B GRO **Matrix: AQ**

Sample ID: TB-052212 *Collected:* 5/22/2012 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
GASOLINE RANGE ORGANICS (C5-C12)	32	J	10	MDL	50	PQL	UG/L	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E169 **Laboratory: EMXT**

EDD Filename: Prep12E169 **eQAPP Name: CDM_SSFL_120730_EMAX**

Reason Code Legend

Reason Code	*Description*
Q	Matrix Spike Lower Estimation
Q	Matrix Spike Lower Rejection
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Enclosure I

Level III ADR Outliers
(including Manual Review Outliers)

Quality Control
Outlier Reports

12E169

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 12E169 **Laboratory: EMXT**

EDD Filename: 12E169 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 6020
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-732-SA5C-SB-10.5-11.5MS (TOT) **SL-732-SA5C-SB-10.5-11.5MSD (TOT)** (SL-682-SA5C-SB-0.0-0.5 SL-682-SA5C-SB-4.0-5.0 SL-682-SA5C-SB-9.0-10.0 SL-730-SA5C-SB-0.0-0.5 SL-730-SA5C-SB-4.0-5.0 SL-730-SA5C-SB-9.0-10.0 SL-731-SA5C-SB-0.0-0.5 SL-731-SA5C-SB-4.0-5.0 SL-731-SA5C-SB-9.0-10.0 SL-732-SA5C-SB-10.5-11.5 SL-732-SA5C-SB-5.0-6.0 SL-733-SA5C-SB-0.0-0.5 SL-733-SA5C-SB-4.0-5.0 SL-733-SA5C-SB-9.0-10.0)	MANGANESE TITANIUM	15 -244	43 -8	75.00-125.00 75.00-125.00	- -	MANGANESE TITANIUM	No Qual, >4x
SL-732-SA5C-SB-10.5-11.5MS (TOT) **SL-732-SA5C-SB-10.5-11.5MSD (TOT)** (SL-682-SA5C-SB-0.0-0.5 SL-682-SA5C-SB-4.0-5.0 SL-682-SA5C-SB-9.0-10.0 SL-730-SA5C-SB-0.0-0.5 SL-730-SA5C-SB-4.0-5.0 SL-730-SA5C-SB-9.0-10.0 SL-731-SA5C-SB-0.0-0.5 SL-731-SA5C-SB-4.0-5.0 SL-731-SA5C-SB-9.0-10.0 SL-732-SA5C-SB-10.5-11.5 SL-732-SA5C-SB-5.0-6.0 SL-733-SA5C-SB-0.0-0.5 SL-733-SA5C-SB-4.0-5.0 SL-733-SA5C-SB-9.0-10.0)	ALUMINUM IRON MAGNESIUM PHOSPHORUS	42 48 63 -	61 - 74 71	75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00	- - - -	ALUMINUM IRON MAGNESIUM PHOSPHORUS	J(all detects) UJ(all non-detects) Fe, No Qual, >4x

Project Name and Number: PHASE3 - SSFL PHASE 3

Reporting Limit Outliers

Lab Reporting Batch ID: 12E169 **Laboratory: EMXT**

EDD Filename: 12E169 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 8015B GRO

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TB-052212	GASOLINE RANGE ORGANICS (C5-C12)	J	32	50	PQL	UG/L	J (all detects)

Method: 6020

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-682-SA5C-SB-0.0-0.5	ANTIMONY	J	0.208	0.553	PQL	MG/KG	J (all detects)
	BORON	J	3.35	5.53	PQL	MG/KG	
	CADMIUM	J	0.204	0.553	PQL	MG/KG	
	MOLYBDENUM	J	0.425	0.553	PQL	MG/KG	
	SODIUM	J	71.3	111	PQL	MG/KG	
	THALLIUM	J	0.258	0.442	PQL	MG/KG	
SL-682-SA5C-SB-4.0-5.0	ANTIMONY	J	0.217	0.544	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.114	0.544	PQL	MG/KG	
	MOLYBDENUM	J	0.507	0.544	PQL	MG/KG	
	SILVER	J	0.0763	0.544	PQL	MG/KG	
	THALLIUM	J	0.237	0.435	PQL	MG/KG	
SL-682-SA5C-SB-9.0-10.0	ANTIMONY	J	0.170	0.545	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.0697	0.545	PQL	MG/KG	
	MOLYBDENUM	J	0.331	0.545	PQL	MG/KG	
	THALLIUM	J	0.200	0.436	PQL	MG/KG	
SL-730-SA5C-SB-0.0-0.5	ANTIMONY	J	0.187	0.536	PQL	MG/KG	J (all detects)
	BERYLLIUM	J	0.512	0.536	PQL	MG/KG	
	CADMIUM	J	0.165	0.536	PQL	MG/KG	
	MOLYBDENUM	J	0.491	0.536	PQL	MG/KG	
	SODIUM	J	80.8	107	PQL	MG/KG	
	THALLIUM	J	0.219	0.429	PQL	MG/KG	
SL-730-SA5C-SB-4.0-5.0	ANTIMONY	J	0.202	0.548	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.209	0.548	PQL	MG/KG	
	THALLIUM	J	0.254	0.438	PQL	MG/KG	
SL-730-SA5C-SB-9.0-10.0	ANTIMONY	J	0.262	0.563	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.118	0.563	PQL	MG/KG	
	THALLIUM	J	0.254	0.451	PQL	MG/KG	
SL-731-SA5C-SB-0.0-0.5	ANTIMONY	J	0.214	0.534	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.172	0.534	PQL	MG/KG	
	THALLIUM	J	0.245	0.427	PQL	MG/KG	
SL-731-SA5C-SB-4.0-5.0	ANTIMONY	J	0.194	0.531	PQL	MG/KG	J (all detects)
	BERYLLIUM	J	0.499	0.531	PQL	MG/KG	
	CADMIUM	J	0.275	0.531	PQL	MG/KG	
	SODIUM	J	82.4	106	PQL	MG/KG	
	THALLIUM	J	0.257	0.425	PQL	MG/KG	
SL-731-SA5C-SB-9.0-10.0	ANTIMONY	J	0.231	0.530	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.126	0.530	PQL	MG/KG	
	MOLYBDENUM	J	0.518	0.530	PQL	MG/KG	
	THALLIUM	J	0.246	0.424	PQL	MG/KG	

Reporting Limit Outliers

Lab Reporting Batch ID: 12E169 **Laboratory: EMXT**

EDD Filename: 12E169 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 6020

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-732-SA5C-SB-10.5-11.5	ANTIMONY	J	0.178	0.520	PQL	MG/KG	J (all detects)
	BERYLLIUM	J	0.441	0.520	PQL	MG/KG	
	CADMIUM	J	0.0906	0.520	PQL	MG/KG	
	MOLYBDENUM	J	0.297	0.520	PQL	MG/KG	
	THALLIUM	J	0.251	0.416	PQL	MG/KG	
SL-732-SA5C-SB-5.0-6.0	ANTIMONY	J	0.178	0.539	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.164	0.539	PQL	MG/KG	
	SODIUM	J	89.5	108	PQL	MG/KG	
	THALLIUM	J	0.252	0.431	PQL	MG/KG	
SL-733-SA5C-SB-0.0-0.5	ANTIMONY	J	0.221	0.519	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.163	0.519	PQL	MG/KG	
	SODIUM	J	83.0	104	PQL	MG/KG	
	THALLIUM	J	0.246	0.415	PQL	MG/KG	
SL-733-SA5C-SB-4.0-5.0	ANTIMONY	J	0.200	0.515	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.109	0.515	PQL	MG/KG	
	SILVER	J	0.0570	0.515	PQL	MG/KG	
	SODIUM	J	95.2	103	PQL	MG/KG	
	THALLIUM	J	0.248	0.412	PQL	MG/KG	
SL-733-SA5C-SB-9.0-10.0	ANTIMONY	J	0.163	0.551	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.0848	0.551	PQL	MG/KG	
	MOLYBDENUM	J	0.430	0.551	PQL	MG/KG	
	SODIUM	J	105	110	PQL	MG/KG	
	THALLIUM	J	0.251	0.440	PQL	MG/KG	

Method: 7471A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-733-SA5C-SB-0.0-0.5	MERCURY	J	0.0682	0.108	PQL	MG/KG	J (all detects)

Method: 8015B EFH

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-730-SA5C-SB-4.0-5.0	EFH(C30-C40)	J	7.2	11	PQL	MG/KG	J (all detects)
SL-731-SA5C-SB-4.0-5.0	EFH(C21-C30)	J	4.4	5.7	PQL	MG/KG	J (all detects)
	EFH(C30-C40)	J	9.4	11	PQL	MG/KG	
SL-732-SA5C-SB-5.0-6.0	EFH(C21-C30)	J	4.6	5.6	PQL	MG/KG	J (all detects)
	EFH(C30-C40)	J	7.4	11	PQL	MG/KG	
SL-733-SA5C-SB-4.0-5.0	EFH(C30-C40)	J	6.4	11	PQL	MG/KG	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: 12E169 **Laboratory: EMXT**

EDD Filename: 12E169 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: **8270C SIM**

Matrix: **SO**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
SL-682-SA5C-SB-0.0-0.5	BENZO(E)PYRENE	J	3.5	5.6	PQL	UG/KG	J (all detects)
SL-730-SA5C-SB-9.0-10.0	BENZO(A)ANTHRACENE	J	3.4	11	PQL	UG/KG	J (all detects)
	BENZO(E)PYRENE	J	4.5	5.7	PQL	UG/KG	
	BENZO(G,H,I)PERYLENE	J	3.3	11	PQL	UG/KG	
SL-731-SA5C-SB-0.0-0.5	BENZO(E)PYRENE	J	3.7	5.5	PQL	UG/KG	J (all detects)
	BENZO(G,H,I)PERYLENE	J	3.3	11	PQL	UG/KG	
SL-731-SA5C-SB-9.0-10.0	BENZO(A)ANTHRACENE	J	5.8	22	PQL	UG/KG	J (all detects)
	BENZO(B)FLUORANTHENE	J	5.7	22	PQL	UG/KG	
	BENZO(G,H,I)PERYLENE	J	8.8	22	PQL	UG/KG	
	PHENANTHRENE	J	6.6	22	PQL	UG/KG	
SL-733-SA5C-SB-0.0-0.5	BENZO(E)PYRENE	J	7.6	11	PQL	UG/KG	J (all detects)
	BENZO(G,H,I)PERYLENE	J	6.0	22	PQL	UG/KG	
	PYRENE	J	5.7	22	PQL	UG/KG	

Enclosure II

Level IV Validation Reports

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Santa Susana Field Laboratory

Collection Date: May 22, 2012

LDC Report Date: October 23, 2012

Matrix: Soil

Parameters: Semivolatiles

Validation Level: Level IV

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 12E169

Sample Identification

SL-730-SA5C-SB-0.0-0.5
SL-730-SA5C-SB-4.0-5.0
SL-730-SA5C-SB-9.0-10.0
SL-731-SA5C-SB-0.0-0.5
SL-731-SA5C-SB-4.0-5.0
SL-731-SA5C-SB-9.0-10.0
SL-733-SA5C-SB-0.0-0.5
SL-733-SA5C-SB-4.0-5.0
SL-733-SA5C-SB-9.0-10.0
SL-682-SA5C-SB-0.0-0.5
SL-682-SA5C-SB-4.0-5.0
SL-682-SA5C-SB-9.0-10.0
SL-732-SA5C-SB-5.0-6.0
SL-732-SA5C-SB-10.5-11.5
SL-733-SA5C-SB-9.0-10.0MS
SL-733-SA5C-SB-9.0-10.0MSD

Introduction

This data review covers 16 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

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

J Indicates an estimated value.

R Quality control indicates the data is not usable.

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

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

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

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

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds all coefficients of determination (r^2) were greater than or equal to 0.990 .

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs) and 25.0% for all other compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

Sample EB-052412 (from SDG 12E204) was identified as an equipment blank. No semivolatile contaminants were found with the following exceptions:

Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB-052412	5/24/12	Naphthalene	0.23 ug/L	All samples in SDG 12E169

Sample FB-060512 (from SDG 12F037) was identified as a field blank. No semivolatile contaminants were found.

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

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

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

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. 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 and RLs

All compound quantitation and RLs were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 12E169	All compounds reported below the RL.	J (all detects)	A

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Santa Susana Field Laboratory
Semivolatiles - Data Qualification Summary - SDG 12E169

SDG	Sample	Compound	Flag	A or P	Reason (Code)
12E169	SL-730-SA5C-SB-0.0-0.5 SL-730-SA5C-SB-4.0-5.0 SL-730-SA5C-SB-9.0-10.0 SL-731-SA5C-SB-0.0-0.5 SL-731-SA5C-SB-4.0-5.0 SL-731-SA5C-SB-9.0-10.0 SL-733-SA5C-SB-0.0-0.5 SL-733-SA5C-SB-4.0-5.0 SL-733-SA5C-SB-9.0-10.0 SL-682-SA5C-SB-0.0-0.5 SL-682-SA5C-SB-4.0-5.0 SL-682-SA5C-SB-9.0-10.0 SL-732-SA5C-SB-5.0-6.0 SL-732-SA5C-SB-10.5-11.5	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (Z)

Santa Susana Field Laboratory
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 12E169

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Semivolatiles - Field Blank Data Qualification Summary - SDG 12E169

No Sample Data Qualified in this SDG

LDC #: 28558X2a **VALIDATION COMPLETENESS WORKSHEET** Date: 10/18/12

SDG #: 12E169 Level IV Page: 1 of 1

Laboratory: EMAX Laboratories, Inc. Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270C)

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: 5/22/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 30, r²
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 25
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	A	
XII.	Compound quantitation/RL/LOQ/LODs	A	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	A	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	SW	EB= EB-052412 (SDG 12E204) *FB= FB-060512 (SDG 12F037)

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-730-SA5C-SB-0.0-0.5	11	SL-682-SA5C-SB-4.0-5.0	21	MBLK1 S	31	
2	SL-730-SA5C-SB-4.0-5.0	12	SL-682-SA5C-SB-9.0-10.0	22		32	
3	SL-730-SA5C-SB-9.0-10.0	13	SL-732-SA5C-SB-5.0-6.0	23		33	
4	SL-731-SA5C-SB-0.0-0.5	14	SL-732-SA5C-SB-10.5-11.5	24		34	
5	SL-731-SA5C-SB-4.0-5.0	15	SL-733-SA5C-SB-9.0-10.0MS	25		35	
6	SL-731-SA5C-SB-9.0-10.0	16	SL-733-SA5C-SB-9.0-10.0MSD	26		36	
7	SL-733-SA5C-SB-0.0-0.5	17		27		37	
8	SL-733-SA5C-SB-4.0-5.0	18		28		38	
9	SL-733-SA5C-SB-9.0-10.0	19		29		39	
10	SL-682-SA5C-SB-0.0-0.5	20		30		40	

LDC #: 28558X2a

VALIDATION FINDINGS CHECKLIST

Page: 1 of 2
Reviewer: FT
2nd Reviewer: C

Method: Semivolatiles (EPA SW 846 Method 8270C)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/MS Instrument performance check				
Were the DFTPP performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Was a curve fit used for evaluation?	✓			
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?	✓			
Were all percent relative standard deviations (%RSD) ≤ 30% and relative response factors (RRF) ≥ 0.05?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Were all percent differences (%D) ≤ 25% and relative response factors (RRF) ≥ 0.05?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	✓			
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 #: 28558X2a

VALIDATION FINDINGS CHECKLIST

Reviewer: FT
2nd Reviewer:

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds from the associated calibration standard?	✓			
XI. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XII. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?			✓	
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓	NA		
Target compounds were detected in the field duplicates.	✓		NA	
XVII. Field blanks				
Field blanks were identified in this SDG.	✓	NA		
Target compounds were detected in the field blanks.	✓		NA	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA Method 8270)

A. Phenol	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol	III. Benzo(a)pyrene
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene	T. 4-Chloroaniline	II. 4-Nitrophenol	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene	JJ. Dibenzofuran	YY. Fluoranthene	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine	Y. 2,4,6-Trichlorophenol	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. 1-Methylnaphthalene
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)	FFF. Di-n-octylphthalate	UUU.
N. 2-Nitrophenol	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

LDC #: 28558X22

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer: FT
2nd Reviewer:

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

EB = EB-052412
SDG # 120204

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: 5/24/12
Field blank type: (circle one) Field Blank / Rinsate / Other: EB Associated Samples: All (ND)

Compound	Blank ID	Sample Identification								
	EB									
S	0.23									
CRQL										

Blank units: _____ **Associated sample units:** _____
Sampling date: _____
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: _____

Compound	Blank ID	Sample Identification								
CRQL										

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 #: 28558X29

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: FT
2nd Reviewer:

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

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

RRF = $(A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of compound,
C_x = Concentration of compound,
S = Standard deviation of the RRFs,

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Reported RRF (10 std)	Recalculated RRF (10 std)	Reported Average RRF (initial)	Recalculated Average RRF (initial)	Reported %RSD	Recalculated %RSD
1	SYE4AXS	1/25/12	~~Phenol~~ Acenaphthylene (1st internal standard)	3.905	3.905	3.698	3.698	4.65	4.65
			~~Naphthalene~~ Anthracene (2nd internal standard)	1.175	1.175	1.146	1.146	3.14	3.14
			~~Fluorene~~ Benzo(a)pyrene (3rd internal standard)	1.115	1.115	0.991	0.991	13.16	13.16
			~~Pentachlorophenol (4th internal standard)~~						
			Bis(2-ethylhexyl)phthalate (5th internal standard)						
			~~Benzo(a)pyrene (6th internal standard)~~						
2			Phenol (1st internal standard)						
			Naphthalene (2nd internal standard)						
			Fluorene (3rd internal standard)						
			Pentachlorophenol (4th internal standard)						
			Bis(2-ethylhexyl)phthalate (5th internal standard)						
			Benzo(a)pyrene (6th internal standard)						
3			Phenol (1st internal standard)						
			Naphthalene (2nd internal standard)						
			Fluorene (3rd internal standard)						
			Pentachlorophenol (4th internal standard)						
			Bis(2-ethylhexyl)phthalate (5th internal standard)						
			Benzo(a)pyrene (6th internal standard)						

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

LDC #: 28558X29

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Page: 1 of 1
Reviewer: FT
2nd Reviewer:

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

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

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

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

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Average RRF (initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported %D	Recalculated %D
1	CCV	5/31/12	~~Phenol~~ Acenaphthylene (1st internal standard)	3.698	3.797	3.797	2.7	2.7
			~~Naphthalene~~ Anthracene (2nd internal standard)	1.146	1.091	1.091	4.8	4.8
			~~Fluorene~~ Benzo(a) pyrene (3rd internal standard)	0.991	1.102	1.102	11.2	11.2
			Pentachlorophenol (4th internal standard)					
			Bis(2-ethylhexyl)phthalate (5th internal standard)					
			Benzo(a)pyrene (6th internal standard)					
2			Phenol (1st internal standard)					
			Naphthalene (2nd internal standard)					
			Fluorene (3rd internal standard)					
			Pentachlorophenol (4th internal standard)					
			Bis(2-ethylhexyl)phthalate (5th internal standard)					
			Benzo(a)pyrene (6th internal standard)					
3			Phenol (1st internal standard)					
			Naphthalene (2nd internal standard)					
			Fluorene (3rd internal standard)					
			Pentachlorophenol (4th internal standard)					
			Bis(2-ethylhexyl)phthalate (5th internal standard)					
			Benzo(a)pyrene (6th internal standard)					

Comments: Refer to 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 #: 28559X29

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Page: 1 of 1
Reviewer: FT
2nd reviewer:

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #13

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5	10	5.83	58.3	58.3	0
2-Fluorobiphenyl	↓	5.49	54.9	54.9	↓
Terphenyl-d14	↓	7.60	76.0	76.0	↓
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 #: 28558X29

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SSC - SC)/SA Where: SSC = Spiked sample concentration; SA = Spike added; SC = Sample concentation

RPD = I MSC - MSC I * 2/(MSC + MSDC) MSC = Matrix spike concentration MSDC = Matrix spike duplicate concentration

MS/MSD samples: 15 + 16

Compound	Spike Added (ug/Kg)		Sample Concentration (ug/Kg)	Spiked Sample Concentration (ug/Kg)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	------	MS	MSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
Phenol											
N-Nitroso-di-n-propylamine											
4-Chloro-3-methylphenol											
Acenaphthene	374	374	NO	369	357	98	98	95	95	3	3
Pentachlorophenol											
Pyrene	L	L	ND	386	378	103	103	101	101	2	2

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 #: 28558 28518A25

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Page: 1 of 1
Reviewer: FT
2nd Reviewer:

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SC/SA Where: SSC = Spike concentration
SA = Spike added

RPD = I LCSC - LCSDC I * 2/(LCSC + LCSDC) LCSC = Laboraotry control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: 1es/D

Compound	Spike Added (ug/kg)		Spike Concentration (ug/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
Phenol	~~333~~	333								
N-Nitroso-di-n-propylamine										
4-Chloro-3-methylphenol										
Acenaphthene	333	333	322	321	97	97	96	96	0	0
Pentachlorophenol										
Pyrene	↓	↓	356	337	107	101	101	101	5	5

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 #: 28558X25

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: FT
2nd reviewer: A

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

1/30.02
%S = 87.9

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(V_t)(DF)(2.0)}{(A_{is})(RRF)(V_o)(V_i)(\%S)}$

A_x	=	Area of the characteristic ion (EICP) for the compound to be measured
A_{is}	=	Area of the characteristic ion (EICP) for the specific internal standard
I_s	=	Amount of internal standard added in nanograms (ng)
V_o	=	Volume or weight of sample extract in milliliters (ml) or grams (g).
V_i	=	Volume of extract injected in microliters (ul)
V_t	=	Volume of the concentrated extract in microliters (ul)
Df	=	Dilution Factor.
%S	=	Percent solids, applicable to soil and solid matrices only.
2.0	=	Factor of 2 to account for GPC cleanup

Example:

Sample I.D. #3, Benzo(g,h,i)perylene

Conc. = $\frac{(2158)(40)(1)(\quad)(\quad)(\quad)}{(110585)(0.899)(30.02)(0.879)}$

=

3.3 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: May 22, 2012

LDC Report Date: October 23, 2012

Matrix: Soil

Parameters: Polychlorinated Biphenyls

Validation Level: Level IV

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 12E169

Sample Identification

SL-733-SA5C-SB-0.0-0.5
SL-733-SA5C-SB-4.0-5.0
SL-733-SA5C-SB-9.0-10.0
SL-682-SA5C-SB-0.0-0.5
SL-682-SA5C-SB-4.0-5.0
SL-682-SA5C-SB-9.0-10.0

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 8082 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-052412 (from SDG 12E204) was identified as an equipment blank. No polychlorinated biphenyl contaminants were found.

Sample FB-060512 (from SDG 12F037) was identified as a field blank. No polychlorinated biphenyl contaminants were found.

VI. Surrogate Spikes

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

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

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

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

XI. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XII. Target Compound Identification

All target compound identifications were within validation criteria.

XIII. Compound Quantitation and Reported RLs

All compound quantitation and RLs were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 12E169	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 12E169

SDG	Sample	Compound	Flag	A or P	Reason (Code)
12E169	SL-733-SA5C-SB-0.0-0.5 SL-733-SA5C-SB-4.0-5.0 SL-733-SA5C-SB-9.0-10.0 SL-682-SA5C-SB-0.0-0.5 SL-682-SA5C-SB-4.0-5.0 SL-682-SA5C-SB-9.0-10.0	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (Z)

Santa Susana Field Laboratory
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 12E169

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 12E169

No Sample Data Qualified in this SDG

LDC #: 28558X3b **VALIDATION COMPLETENESS WORKSHEET** Date: 10/18/12

SDG #: 12E169 Level IV Page: 1 of 1

Laboratory: EMAX Laboratories, Inc. Reviewer: TT

2nd Reviewer: [illegible]

METHOD: GC Polychlorinated Biphenyls (EPA SW 846 Method 8082)

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: 5/22/12
II.	GC/ECD Instrument Performance Check	NA	
III.	Initial calibration	A	% RSD ≤ 20
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 20
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	client specific
VIII.	Laboratory control samples	A	LCS/D
IX.	Regional quality assurance and quality control	N	
X.	Florisil cartridge check	N	
XI.	GPC Calibration	N	
XII.	Target compound identification	A	
XIII.	Compound quantitation/RL/LOQ/LODs	A	
XIV.	Overall assessment of data	A	
XV.	Field duplicates	N	
XVI.	Field blanks	NP	FB = EB-052412 (SDG-12E204) FB = FB-060512 (SDG 12F037)

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

Validated Samples:

SOIL

1	SL-733-SA5C-SB-0.0-0.5	11	MBLK15	21		31	
2	SL-733-SA5C-SB-4.0-5.0	12	MBLK23	22		32	
3	SL-733-SA5C-SB-9.0-10.0	13		23		33	
4	SL-682-SA5C-SB-0.0-0.5	14		24		34	
5	SL-682-SA5C-SB-4.0-5.0	15		25		35	
6	SL-682-SA5C-SB-9.0-10.0	16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

LDC #: 28558X3b
SDG #: per cover

VALIDATION FINDINGS CHECKLIST

Page: 1 of 2
Reviewer: FT
2nd Reviewer: A

Method: ✓ GC ____ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation?		✓		
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?			✓	
Were the RT windows properly established?	✓			
IV. Continuing calibration				
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20%.0 or percent recoveries 80-120%?	✓			
Were all the retention times within the acceptance windows?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.			✓	
Was a MS/MSD analyzed every 20 samples of each matrix?			✓	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	

LDC #: 28558x36
SDG #: per cover

VALIDATION FINDINGS CHECKLIST

Reviewer: FJ
2nd Reviewer: A

Validation Area	Yes	No	NA	Findings/Comments
X. Target compound identification				
Were the retention times of reported detects within the RT windows?			✓	
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XII. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XV. Field blanks				
Field blanks were identified in this SDG.	✓	NA		
Target compounds were detected in the field blanks.		✓	NA	

LDC #: 28558X3b
SDG #: [illegible]

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: F2
2nd Reviewer: SA

METHOD: GC ✓ HPLC ____

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

CF = A/C
average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

A = Area of compound,
C = Concentration of compound,
S = Standard deviation of the CF
X = Mean of the CFs

#	Standard ID	Calibration Date	Compound	Reported CF (100 std)	Recalculated CF (100 std)	Reported Average CF (initial)	Recalculated Average CF (initial)	Reported %RSD	Recalculated %RSD
1	ICAL	6/01/12	PCB 1260-1 STXCLP1	9453	9453	10034.6	10034.6	18.4	18.4
			STXCLP2	14768	14768	16004.7	16004.7	15.4	15.4
2									
3									
4									

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

LDC #: 28558X36
SDG #: pw cover

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: EJ
2nd Reviewer:

METHOD: GC_____ HPLC_____

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

% Difference = 100 * (ave. CF - CF)/ave. CF
CF = A/C

Where: ave. CF = initial calibration average CF
CF = continuing calibration CF
A = Area of compound
C = Concentration of compound

#	Standard ID	Calibration Date	Compound	Average CF(ical)/ CCV Conc.	Reported CF/Conc. CCV	Recalculated CF/Conc. CCV	Reported %D	Recalculated %D
1	SF01048A	6/2/12	PCB 1260 STX CLP1	500.0	461.657	461.657	8	8
			STX CLP II	500.0	448.317	448.317	10	10
2	SF05002A	6/5/12	↓	↓	459.193	459.193	8	8
			↓	↓	454.208	454.208	9	9
3								
4								

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

LDC #: 28558x36
SDG #: all cover

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample/Laboratory Control Sample Duplicate Results Verification

Reviewer: EJ
2nd Reviewer: [illegible]

METHOD: ✓ GC __HPLC

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
RPD = | LCS - LCSD | * 2/(LCS + LCSD)

Where: SSC = Spiked sample concentration
SA = Spike added
LCS = Laboratory control sample percent recovery
SC = Concentration
LCSD = Laboratory control sample duplicate percent recovery

LCS/LCSD samples: 10 & 10

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.
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)										
Aroclor 1260	167	167	166	159	100	100	95	95	4	4

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 #: 28558X3b
SDG #: see cover

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

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

METHOD: ✓ GC ___ HPLC

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds within 10% of the reported results?

$$\text{Concentration} = \frac{(A)(Fv)(Df)}{(RF)(Vs \text{ or } Ws)(\%S/100)}$$

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. ____________ Compound Name ____________

Concentration = ____________

ND

#	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: May 22, 2012

LDC Report Date: November 26, 2012

Matrix: Soil

Parameters: Metals

Validation Level: Level IV

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 12E169

Sample Identification

SL-730-SA5C-SB-0.0-0.5
SL-730-SA5C-SB-4.0-5.0
SL-730-SA5C-SB-9.0-10.0
SL-731-SA5C-SB-0.0-0.5
SL-731-SA5C-SB-4.0-5.0
SL-731-SA5C-SB-9.0-10.0
SL-733-SA5C-SB-0.0-0.5
SL-733-SA5C-SB-4.0-5.0
SL-733-SA5C-SB-9.0-10.0
SL-682-SA5C-SB-0.0-0.5
SL-682-SA5C-SB-4.0-5.0
SL-682-SA5C-SB-9.0-10.0
SL-732-SA5C-SB-5.0-6.0
SL-732-SA5C-SB-10.5-11.5
SL-730-SA5C-SB-0.0-0.5MS
SL-730-SA5C-SB-0.0-0.5MSD
SL-732-SA5C-SB-10.5-11.5MS
SL-732-SA5C-SB-10.5-11.5MSD

Introduction

This data review covers 18 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6020 and 7471A for Metals. The metals analyzed were Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc, and Zirconium.

This review follows the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

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

J Indicates an estimated value.

R Quality control indicates the data is not usable.

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

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

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

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

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5% .

III. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) 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.

Sample EB-052412 (from SDG 12E204) was identified as an equipment blank. No metal contaminants were found with the following exceptions:

Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
EB-052412	5/24/12	Boron Nickel	0.0049 ug/L 0.000226 ug/L	All samples in SDG 12E169

Sample FB-060512 (from SDG 12F037) was identified as a field blank. No metal contaminants were found with the following exceptions:

Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
FB-060512	6/5/12	Aluminum Calcium Copper	0.0270 ug/L 0.0263 ug/L 0.000954 ug/L	All samples in SDG 12E169

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.

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-732-SA5C-SB-10.5-11.5MS/MSD (All samples in SDG 12E169)	Aluminum Magnesium Phosphorus	42 (75-125) 63 (75-125) -	61 (75-125) 74 (75-125) 71 (75-125)	- - -	J (all detects) UJ (all non-detects)	A

VII. Duplicate Sample Analysis

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

VIII. Laboratory Control Samples (LCS)

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

IX. Internal Standards

All internal standard percent recoveries (%R) were within QC limits.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution analysis was performed by the laboratory. The analysis criteria were met.

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 12E169	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 12E169

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
12E169	SL-730-SA5C-SB-0.0-0.5 SL-730-SA5C-SB-4.0-5.0 SL-730-SA5C-SB-9.0-10.0 SL-731-SA5C-SB-0.0-0.5 SL-731-SA5C-SB-4.0-5.0 SL-731-SA5C-SB-9.0-10.0 SL-733-SA5C-SB-0.0-0.5 SL-733-SA5C-SB-4.0-5.0 SL-733-SA5C-SB-9.0-10.0 SL-682-SA5C-SB-0.0-0.5 SL-682-SA5C-SB-4.0-5.0 SL-682-SA5C-SB-9.0-10.0 SL-732-SA5C-SB-5.0-6.0 SL-732-SA5C-SB-10.5-11.5	Aluminum Magnesium Phosphorus	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (%R)(Q)
12E169	SL-730-SA5C-SB-0.0-0.5 SL-730-SA5C-SB-4.0-5.0 SL-730-SA5C-SB-9.0-10.0 SL-731-SA5C-SB-0.0-0.5 SL-731-SA5C-SB-4.0-5.0 SL-731-SA5C-SB-9.0-10.0 SL-733-SA5C-SB-0.0-0.5 SL-733-SA5C-SB-4.0-5.0 SL-733-SA5C-SB-9.0-10.0 SL-682-SA5C-SB-0.0-0.5 SL-682-SA5C-SB-4.0-5.0 SL-682-SA5C-SB-9.0-10.0 SL-732-SA5C-SB-5.0-6.0 SL-732-SA5C-SB-10.5-11.5	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (Z)

Santa Susana Field Laboratory
Metals - Laboratory Blank Data Qualification Summary - SDG 12E169

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Metals - Field Blank Data Qualification Summary - SDG 12E169

No Sample Data Qualified in this SDG

LDC #: 28558X4 **VALIDATION COMPLETENESS WORKSHEET** Date: 10-30-12

SDG #: 12E169 Level IV Page: 1 of 1

Laboratory: EMAX Laboratories, Inc. Reviewer: CL

2nd Reviewer: W

METHOD: Metals (EPA SW 846 Method ~~6010B/6020A/7000~~ 6020 / 7471A)

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

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 5/22/12
II.	ICP/MS Tune	A	
III.	Calibration	A	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	A	
VI.	Matrix Spike Analysis	SW	MS/D
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	A	LCS/D
IX.	Internal Standard (ICP-MS)	A	
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	A	
XII.	Sample Result Verification	A	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	N	
XV	Field Blanks	SW	EB=EB-052412 (12E204) FB=FB-060512 (12F037)

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-730-SA5C-SB-0.0-0.5	11	SL-682-SA5C-SB-4.0-5.0	21		31	
2	SL-730-SA5C-SB-4.0-5.0	12	SL-682-SA5C-SB-9.0-10.0	22		32	
3	SL-730-SA5C-SB-9.0-10.0	13	SL-732-SA5C-SB-5.0-6.0	23		33	
4	SL-731-SA5C-SB-0.0-0.5	14	SL-732-SA5C-SB-10.5-11.5	24		34	
5	SL-731-SA5C-SB-4.0-5.0	15	SL-730-SA5C-SB-0.0-0.5MS	25		35	
6	SL-731-SA5C-SB-9.0-10.0	16	SL-730-SA5C-SB-0.0-0.5MSD	26		36	
7	SL-733-SA5C-SB-0.0-0.5	17	SL-732-SA5C-SB-10.5-11.5MS	27		37	
8	SL-733-SA5C-SB-4.0-5.0	18	SL-732-SA5C-SB-10.5-11.5MSD	28		38	
9	SL-733-SA5C-SB-9.0-10.0	19		29		39	
10	SL-682-SA5C-SB-0.0-0.5	20		30		40	

Notes: _____

LDC #: 28558X4

VALIDATION FINDINGS CHECKLIST

Page: 1 of 2
Reviewer: CR
2nd Reviewer: VC

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 #: 28558X4

VALIDATION FINDINGS CHECKLIST

Page: 2 of 3
Reviewer: CR
2nd Reviewer: V

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.	/	AFOV	AFOV	
Target analytes were detected in the field blanks.	/			

LDC #: 28558X4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Page: 1 of 1
Reviewer: CR
2nd reviewer: [illegible]

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-14		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
QC:15,16		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
17,18		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 #: 28558X4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: QR
2nd Reviewer: L

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

Blank units: ug/L **Associated sample units:** mg/Kg
Sampling date: 5/24/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All

Analyte	Blank ID	Sample Identification											
	EB-052412	Action Limit	No Qualifiers										
B	0.0049	1.225											
Ni	0.000226	0.0565											

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 #: 28558X4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: [signature]
2nd Reviewer: [signature]

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

Blank units: ug/L **Associated sample units:** mg/Kg

Sampling date: 6/5/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All

Analyte	Blank ID	Sample Identification										
	FB-060512	Action Limit	No Qualifiers									
Al	0.0270	6.75										
Ca	0.0263	6.575										
Cu	0.000954	0.2385										

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 #: 26558X4

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Page: 1 of 1
Reviewer: CR
2nd Reviewer: [illegible]

METHOD: Trace metals (EPA SW 846 Method 6010/6020/7000)

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

(Y) N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y (N) N/A Were matrix spike percent recoveries (%R) within the control limits of 75-125? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

(Y) N N/A Were all duplicate sample relative percent differences (RPD) ≤ 20% for water samples and ≤35% for soil samples?

LEVEL IV ONLY:

(Y) N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	MS/MSD ID	Matrix	Analyte	MS %Recovery	MSD %Recovery	RPD (Limits)	Associated Samples	Qualifications
	17/18	S	Al	42	61		All	J (UJ/A (Q)
			Mg	63	74		↓	↓
			Ca		71			

Comments: Fe, Mn, Ti >4x

LDC #: 28558X4

VALIDATION FINDINGS WORKSHEET
Initial and Continuing Calibration Calculation Verification

Reviewer: QR
2nd Reviewer: LA

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

An initial and continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

%R = Found x 100 / True

Where, Found = concentration (in ug/L) of each analyte measured in the analysis of the ICV or CCV solution
True = concentration (in ug/L) of each analyte in the ICV or CCV source

Standard ID	Type of Analysis	Element	Found (ug/L)	True (ug/L)	Recalculated %R	Reported %R	Acceptable (Y/N)
	ICP (Initial calibration)						
ICV	ICP/MS (Initial calibration)	V	30.67	30	102	102	Y
ICV	CVAA (Initial calibration)	Hg	2.07	2	104	-	
	ICP (Continuing calibration)						
CCV2	ICP/MS (Continuing calibration)	Sn	25.89	25	104	104	
CCV2	CVAA (Continuing calibration)	Hg	5.33	5	107	-	
	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 #: 28558X4

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Page: 1 of 1
Reviewer: QR
2nd Reviewer:

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

Percent recoveries (%R) for an ICP interference check sample, a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$\%R = \frac{Found}{True} \times 100$ Where, Found = Concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, Found = SSR (spiked sample result) - SR (sample result).
True = Concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$RPD = \frac{|S-D|}{(S+D)/2} \times 100$ Where, S = Original sample concentration
D = Duplicate sample concentration

An ICP serial dilution percent difference (%D) was recalculated using the following formula:

$\%D = \frac{|I-SDR|}{I} \times 100$ Where, I = Initial Sample Result (mg/L)
SDR = Serial Dilution Result (mg/L) (Instrument Reading x 5)

Sample ID	Type of Analysis	Element	Found / S / I (units)	True / D / SDR (units)	Recalculated %R / RPD / %D	Reported %R / RPD / %D	Acceptable (Y/N)
ICSAB	ICP interference check	Cr	19.79	20	99	99	Y
LCS	Laboratory control sample	Cd	23.9	25	96	96	
17	Matrix spike	B	(SSR-SR) 26.2	25.4	103	103	
17/18	Duplicate	Mo	24.1	24.8	3	3	
14	ICP serial dilution	K	2990	3080	3	3	

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

LDC #: 25558X 4

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 2
Reviewer: AL
2nd reviewer: V

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 Cd were recalculated and verified using the following equation:

Concentration = $\frac{(RD)(FV)(Dil)}{(In.\ Vol.)}$

RD = Raw data concentration
FV = Final volume (ml)
In. Vol. = Initial volume (ml) or weight (G)
Dil = Dilution factor

Recalculation:

$$\frac{100mL(10)(0.3083\mu g/L)}{0.91(2.05g)(1000)} = 0.165 mg/kg$$

#	Sample ID	Analyte	Reported Concentration (mg/Kg)	Calculated Concentration (mg/Kg)	Acceptable (Y/N)
	1	Al	10600	10600	
		Sb	0.187	0.187	
		As	3.25	3.25	
		Ba	71.9	71.9	
		Be	0.512	0.512	
		Cd	0.165	0.165	
		Ca	1770	1770	
		Cr	12.9	12.9	
		Co	4.43	4.43	
		Cu	6.25	6.25	
		Fe	15700	15700	
		Pb	4.56	4.56	
		Mg	3260	3260	
		Mn	168	168	
		Mo	0.491	0.491	
		Ni	7.55	7.55	
		K	1990	1990	
		Na	80.8	80.8	
		Sr	13.9	13.9	
		Tl	0.219	0.219	
		Ti	804	804	
		V	27.2	27.2	
		Zn	37.3	37.3	
		Li	14.8	14.8	
		P	219	219	

LDC #: 25558X 4

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: AR
2nd reviewer: [illegible]

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

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

Y N N/A Have results been reported and calculated correctly?
Y N N/A Are results within the calibrated range of the instruments and within the linear range of the ICP?
Y N N/A Are all detection limits below the CRDL?

Detected analyte results for Mo were recalculated and verified using the following equation:

Concentration = $\frac{(RD)(FV)(Dil)}{(In.\ Vol.)}$

RD = Raw data concentration
FV = Final volume (ml)
In. Vol. = Initial volume (ml) or weight (G)
Dil = Dilution factor

Recalculation:

$$\frac{100mL(10)(0.9316mg/L)}{0.88(2.19g)(1000)} = 0.5065 mg/Kg$$

#	Sample ID	Analyte	Reported Concentration (mg/Kg)	Calculated Concentration (mg/Kg)	Acceptable (Y/N)
	11	Al	16200	16200	Y
		Sb	0.217	0.217	
		As	4.21	4.21	
		Ba	109	109	
		Be	0.743	0.743	
		Cd	0.114	0.114	
		Ca	1460	1460	
		Cr	17.2	17.2	
		Co	4.30	4.30	
		Cu	5.09	5.09	
		Fe	18900	18900	
		Pb	5.46	5.46	
		Mg	3730	3730	
		Mn	135	135	
		Mo	0.507	0.507	
		Ni	8.91	8.91	
		K	1440	1440	
		Ag	0.0763	0.0763	
		Na	313	313	
		Sr	19.6	19.6	
		Tl	0.237	0.237	
		Ti	861	861	
		V	35.3	35.3	
		Zn	33.7	33.7	
		Li	16.6	16.6	
		P	82.3	82.3	Y

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Santa Susana Field Laboratory
Collection Date:	May 22, 2012
LDC Report Date:	November 26, 2012
Matrix:	Soil
Parameters:	Hexavalent Chromium
Validation Level:	Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	12E169

Sample Identification

SL-730-SA5C-SB-0.0-0.5
SL-730-SA5C-SB-4.0-5.0
SL-730-SA5C-SB-9.0-10.0

Introduction

This data review covers 3 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 7199 for Hexavalent Chromium.

This review follows the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

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

J Indicates an estimated value.

R Quality control indicates the data is not usable.

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

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

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

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

II. Initial Calibration

All criteria for the initial calibration 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 EB-052412 (from SDG 12E204) was identified as an equipment blank. No contaminant concentrations were found.

Sample FB-060512 (from SDG 12F037) 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.

VI. Duplicates

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

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) 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 12E169	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
Hexavalent Chromium - Data Qualification Summary - SDG 12E169

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
12E169	SL-730-SA5C-SB-0.0-0.5 SL-730-SA5C-SB-4.0-5.0 SL-730-SA5C-SB-9.0-10.0	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (Z)

Santa Susana Field Laboratory
Hexavalent Chromium – Laboratory Blank Data Qualification Summary - SDG 12E169

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Hexavalent Chromium - Field Blank Data Qualification Summary - SDG 12E169

No Sample Data Qualified in this SDG

LDC #: 28558X6 **VALIDATION COMPLETENESS WORKSHEET** Date: 10-30-12
SDG #: 12E169 Level IV Page: 1 of 1
Laboratory: EMAX Laboratories, Inc. Reviewer: CL
2nd Reviewer: ✓

METHOD: (Analyte) Hexavalent Chromium (EPA SW846 Method 7199)

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

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 5/22/12
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	A	
V	Matrix Spike/Matrix Spike Duplicates	A	MS
VI.	Duplicates	N	
VII.	Laboratory control samples	A	LCS
VIII.	Sample result verification	A	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	
XI.	Field blanks	ND	EB= EB-052412 (12E204) FB= FB060512 (12F037)

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-730-SA5C-SB-0.0-0.5	11		21		31	
2	SL-730-SA5C-SB-4.0-5.0	12		22		32	
3	SL-730-SA5C-SB-9.0-10.0	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 #: 28558X6

VALIDATION FINDINGS CHECKLIST

Reviewer: QR
2nd Reviewer: W

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 #: 26558X6

VALIDATION FINDINGS CHECKLIST

Reviewer: AR
2nd Reviewer: MV

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 #: 26558X6

Validation Findings Worksheet
Initial and Continuing Calibration Calculation Verification

Reviewer: CA
2nd Reviewer: [illegible]

Method: Inorganics, Method see cover

The correlation coefficient (r) for the calibration of Cr6+ was recalculated. Calibration date: 5/24/12

An initial or continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

$$\%R = \frac{\text{Found} \times 100}{\text{True}}$$

Where, Found = concentration of each analyte measured in the analysis of the ICV or CCV solution
True = concentration of each analyte in the ICV or CCV source

Type of analysis	Analyte	Standard	Conc. (mg/l)	Area	Recalculated r or r^2	Reported r or r^2	Acceptable (Y/N)
Initial calibration	Cr6+	s1	0	0	*0.9997*	0.9996	Y
		s2	0.1	0.0000237			
		s3	1	0.0001243			
		s4	2	0.0002714			
		s5	5	0.0006314			
		s6	7.5	0.0009614			
		s7	10	0.0012577			
Calibration verification		ICV	2	2.087	104	—	
Calibration verification		CCV		2.172	109	109	
Calibration verification				2.148	107	107	

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 #: 28558V6

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Page: 1 of 1
Reviewer: QR
2nd Reviewer: [illegible]

METHOD: Inorganics, Method See cover

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	Cr6+	10.4	10.0	104	104	Y
SL-731-SA5C-4.0-5.0	Matrix spike sample	↓	(SSR-SR) 11.9	11.4	104	104	↓
N	Duplicate sample						

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

LDC #: 28554B6

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: QR
2nd reviewer:

METHOD: Inorganics, Method see cover

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

Y N N/A Have results been reported and calculated correctly?
Y N N/A Are results within the calibrated range of the instruments?
Y N N/A Are all detection limits below the CRQL?

Compound (analyte) results for _____ reported with a positive detect were recalculated and verified using the following equation:

Concentration =

Recalculation:

ND

#	Sample ID	Analyte	Reported Concentration ( )	Calculated Concentration ( )	Acceptable (Y/N)

Note: _____

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Santa Susana Field Laboratory

Collection Date: May 22, 2012

LDC Report Date: November 15, 2012

Matrix: Soil

Parameters: Total Petroleum Hydrocarbons as Gasoline

Validation Level: Level IV

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 12E169

Sample Identification

SL-730-SA5C-SB-5.0
SL-730-SA5C-SB-10.0
SL-731-SA5C-SB-5.0
SL-731-SA5C-SB-10.0
SL-733-SA5C-SB-5.0
TB-052212

Introduction

This data review covers 5 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-052212 was identified as a trip blank. No total petroleum hydrocarbons as gasoline contaminants were found with the following exceptions:

Blank ID	Sampling Date	Compound	Concentration	Associated Samples
TB-052212	5/22/12	Gasoline range organics	32 ug/L	All samples in SDG 12E169

Sample EB-052412 (from SDG 12E204) was identified as an equipment blank. No total petroleum hydrocarbons as gasoline contaminants were found with the following exceptions:

Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB-052412	5/24/12	Gasoline range organics (C5-C12)	13 ug/L	All soil samples in SDG 12E169

Sample FB-060512 (from SDG 12F037) was identified as a field blank. No total petroleum hydrocarbons as gasoline contaminants were found with the following exceptions:

Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB-060512	5/24/12	Gasoline range organics (C5-C12)	49 ug/L	All soil samples in SDG 12E169

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.

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 and RLs

All compound quantitation and RLs were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 12E169	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 12E169

SDG	Sample	Compound	Flag	A or P	Reason (Code)
12E169	SL-730-SA5C-SB-5.0 SL-730-SA5C-SB-10.0 SL-731-SA5C-SB-5.0 SL-731-SA5C-SB-10.0 SL-733-SA5C-SB-5.0	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (Z)

Santa Susana Field Laboratory
Total Petroleum Hydrocarbons as Gasoline - Laboratory Blank Data Qualification Summary - SDG 12E169

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Total Petroleum Hydrocarbons as Gasoline - Field Blank Data Qualification Summary - SDG 12E169

No Sample Data Qualified in this SDG

LDC #: 28558X7 **VALIDATION COMPLETENESS WORKSHEET** Date: 10/18/12

SDG #: 12E169 Level IV Page: 1 of 1

Laboratory: EMAX Laboratories, Inc. Reviewer: [illegible]

2nd Reviewer: [illegible]

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: 5/22/12
II	Initial calibration	A	%RSD ≤ 20
III.	Calibration verification/ICV	A	ICV/CCV ≤ 20
IV.	Blanks	A	
V	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	N	client specified
VII.	Laboratory control samples	A	LCS/D
VIII.	Target compound identification	A	
IX.	Compound quantitation/RL/LOQ/LODs	A	
X.	System Performance	A	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks SW	ND	TB = 052212 EB = EB-052412 (SDG 12E294) FB = FB-060512 (SDG 12F037)

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	SL-730-SA5C-SB-5.0	11		21		31	
2	SL-730-SA5C-SB-10.0	12		22		32	
3	SL-731-SA5C-SB-5.0	13		23		33	
4	SL-731-SA5C-SB-10.0	14		24		34	
5	SL-733-SA5C-SB-5.0	15		25		35	
6	TB-052212	16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

LDC #: 28558X7
SDG #: per cover

VALIDATION FINDINGS CHECKLIST

Reviewer: FT
2nd Reviewer: C

Method: ✓ GC ____ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation?		✓		
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?			✓	
Were the RT windows properly established?	✓			
IV. Continuing calibration				
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20%.0 or percent recoveries 80-120%?	✓			
Were all the retention times within the acceptance windows?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.			✓	
Was a MS/MSD analyzed every 20 samples of each matrix?			✓	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	

LDC #: 28558X7
SDG #: per cover

VALIDATION FINDINGS CHECKLIST

Reviewer: FT
2nd Reviewer:

Validation Area	Yes	No	NA	Findings/Comments
X. Target compound identification.				
Were the retention times of reported detects within the RT windows?			✓	
XI. Compound quantitation/CRQLs.				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XII. System performance.				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data.				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates.				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XV. Field blanks.				
Field blanks were identified in this SDG.	✓	✓		
Target compounds were detected in the field blanks.	✓			

LDC #: 28558X7

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: FT
2nd Reviewer: [illegible]

EB = EB-052412 (SDG # 12E204)
FB = FB-060512 (SDG # 12F037)

METHOD: V GC __ HPLC

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: 5/24/12

Field blank type: (circle one) Field Blank / Trip Blank / Atmospheric Blank / Ambient Blank

Rinsate / Equipment Rinsate / Equipment Blank / Source Blank / Other: EB

Associated Samples: All soils CND

Compound	Blank ID	Blank ID	Sample Identification							
	EB	FB								
Gasoline Range Organics (C5-C12)	13	49								
CRQL										

Blank units: _____ **Associated sample units:** _____

Sampling date: _____

Field blank type: (circle one) Field Blank / Trip Blank/ Atmospheric Blank/ Ambient Blank

Rinsate / Equipment Rinsate / Equipment Blank / Source Blank / Other: _____

Associated Samples: _____

Compound	Blank ID	Blank ID	Sample Identification							
CRQL										

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:

Samples with compound concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

LDC #: 28558X7

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: FT
2nd Reviewer: [illegible]

METHOD: ✓ **GC** __ **HPLC**

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: 5/22/12
Field blank type: (circle one) Field Blank / Trip Blank / Atmospheric Blank / Ambient Blank
Rinsate / Equipment Rinsate / Equipment Blank / Source Blank / Other:

Associated Samples: All (ND)

Compound	Blank ID	Blank ID	Sample Identification							
[redacted]	TB-052212									
Gasoline Range Organics	32									
CRQL										

Blank units: _____ **Associated sample units:** _____
Sampling date: _____
Field blank type: (circle one) Field Blank / Trip Blank/ Atmospheric Blank/ Ambient Blank
Rinsate / Equipment Rinsate / Equipment Blank / Source Blank / Other:

Associated Samples: _____

Compound	Blank ID	Blank ID	Sample Identification							
[redacted]										
CRQL										

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

LDC #: 28558X7
SDG #: [illegible]

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC ✓ HPLC _____

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

CF = A/C
average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

A = Area of compound,
C = Concentration of compound,
S = Standard deviation of the CF
X = Mean of the CFs

#	Standard ID	Calibration Date	Compound	Reported CF (5W std)	Recalculated CF (5W2 std)	Reported Average CF (initial)	Recalculated Average CF (initial)	Reported %RSD	Recalculated %RSD
1	VCAL	5/18/12	GRO a5-a12	29479	29479	27004.2	27004.2	10.1	10.1
2									
3									
4									

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

LDC #: 28558X7
SDG #: w Cover

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: EJ
2nd Reviewer: C

METHOD: GC ✓ HPLC _____

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

% Difference = 100 * (ave. CF - CF)/ave. CF
CF = A/C

Where: ave. CF = initial calibration average CF
CF = continuing calibration CF
A = Area of compound
C = Concentration of compound

#	Standard ID	Calibration Date	Compound	Average CF(ical)/ CCV Conc.	Reported CF/Conc. CCV	Recalculated CF/Conc. CCV	Reported %D	Recalculated %D
1	EE 23053A	5/15/12	gasoline (C5 - C12	1000	996.41	996.41	0	0
2	EE 25002A	5/25/12	"	1000	1048.57	1048.57	5	5
3								
4								

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

LDC #: 28558X7
SDG #: see cover

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: FT
2nd reviewer: SA

METHOD: ✓ GC __ HPLC

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #5

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
4BFB	DB-5	40.0	29.98	74.9	74.9	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 #: 28558 x 7
SDG #: pu cover

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample/Laboratory Control Sample Duplicate Results Verification

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

METHOD: ✓ GC __HPLC

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
RPD = | LCS - LCSD | * 2/(LCS + LCSD)

Where: SSC = Spiked sample concentration
SA = Spike added
LCS = Laboratory control sample percent recovery
SC = Concentration
LCSD = Laboratory control sample duplicate percent recovery

LCS/LCSD samples: vcs 1D

Compound	Spike Added (mg/kg)		Spiked 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)	25.0	25.0	21.3	20.2	85	85	81	81	5	5
Diesel (8015)										
Benzene (8021B)										
Methane (RSK-175)										
2,4-D (8151)										
Dinoseb (8151)										
Naphthalene (8310)										
Anthracene (8310)										
HMX (8330)										
2,4,6-Trinitrotoluene (8330)										

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 28558X7
SDG #: [illegible]

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

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

METHOD: GC __ HPLC

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration= $\frac{(A)(Fv)(Df)}{(RF)(Vs \text{ or } Ws)(\%S/100)}$

A= Area or height of the compound to be measured
Fv= Final Volume of extract
Df= Dilution Factor
RF= Average response factor of the compound in the initial calibration
Vs= Initial volume of the sample
Ws= Initial weight of the sample
%S= Percent Solid

Example:

Sample ID. ND Compound Name _____

Concentration = _____

#	Sample ID	Compound	Reported Concentrations ( )	Recalculated Results Concentrations ( )	Qualifications

Comments: _____

SAMPCALew.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Santa Susana Field Laboratory

Collection Date: May 22, 2012

LDC Report Date: October 23, 2012

Matrix: Soil

Parameters: Total Petroleum Hydrocarbons as Extractables

Validation Level: Level IV

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 12E169

Sample Identification

SL-730-SA5C-SB-0.0-0.5
SL-730-SA5C-SB-4.0-5.0
SL-730-SA5C-SB-9.0-10.0
SL-731-SA5C-SB-0.0-0.5
SL-731-SA5C-SB-4.0-5.0
SL-731-SA5C-SB-9.0-10.0
SL-733-SA5C-SB-0.0-0.5
SL-733-SA5C-SB-4.0-5.0
SL-733-SA5C-SB-9.0-10.0
SL-682-SA5C-SB-0.0-0.5
SL-682-SA5C-SB-4.0-5.0
SL-682-SA5C-SB-9.0-10.0
SL-732-SA5C-SB-5.0-6.0
SL-732-SA5C-SB-10.5-11.5

Introduction

This data review covers 14 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 EB-052412 (from SDG 12E204) was identified as an equipment blank. No total petroleum hydrocarbons as extractables contaminants were found.

Sample FB-060512 (from SDG 12F037) was identified as a field blank. No total petroleum hydrocarbons as extractables contaminants were found.

V. Surrogate Recovery

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

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

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

IX. Compound Quantitation and RLs

All compound quantitation and RLs were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 12E169	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 12E169

SDG	Sample	Compound	Flag	A or P	Reason (Code)
12E169	SL-730-SA5C-SB-0.0-0.5 SL-730-SA5C-SB-4.0-5.0 SL-730-SA5C-SB-9.0-10.0 SL-731-SA5C-SB-0.0-0.5 SL-731-SA5C-SB-4.0-5.0 SL-731-SA5C-SB-9.0-10.0 SL-733-SA5C-SB-0.0-0.5 SL-733-SA5C-SB-4.0-5.0 SL-733-SA5C-SB-9.0-10.0 SL-682-SA5C-SB-0.0-0.5 SL-682-SA5C-SB-4.0-5.0 SL-682-SA5C-SB-9.0-10.0 SL-732-SA5C-SB-5.0-6.0 SL-732-SA5C-SB-10.5-11.5	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (Z)

Santa Susana Field Laboratory
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG 12E169

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG 12E169

No Sample Data Qualified in this SDG

LDC #: 28558X8 **VALIDATION COMPLETENESS WORKSHEET** Date: 10/18/12
SDG #: 12E169 Level IV Page: 1 of 7
Laboratory: EMAX Laboratories, Inc. Reviewer: 15
2nd Reviewer: A

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: 5/22/12
II	Initial calibration	A	%RSD ≤ 20
III.	Calibration verification/ICV	A	ICV/CCV ≤ 20
IV.	Blanks	A	
V	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	N	client specified
VII.	Laboratory control samples	A	LCS ID
VIII.	Target compound identification	A	
IX.	Compound quantitation/RL/LOQ/LODs	A	
X.	System Performance	A	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	ND	EB = EB-EB-052412 (SDG 12E204) FB - FB-060512 (SDG 12F037)

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-730-SA5C-SB-0.0-0.5	11	SL-682-SA5C-SB-4.0-5.0	21		31	
2	SL-730-SA5C-SB-4.0-5.0	12	SL-682-SA5C-SB-9.0-10.0	22		32	
3	SL-730-SA5C-SB-9.0-10.0	13	SL-732-SA5C-SB-5.0-6.0	23		33	
4	SL-731-SA5C-SB-0.0-0.5	14	SL-732-SA5C-SB-10.5-11.5	24		34	
5	SL-731-SA5C-SB-4.0-5.0	15		25		35	
6	SL-731-SA5C-SB-9.0-10.0	16		26		36	
7	SL-733-SA5C-SB-0.0-0.5	17		27		37	
8	SL-733-SA5C-SB-4.0-5.0	18		28		38	
9	SL-733-SA5C-SB-9.0-10.0	19		29		39	
10	SL-682-SA5C-SB-0.0-0.5	20		30		40	

Notes:

LDC #: 28558X8
SDG #: per cover

VALIDATION FINDINGS CHECKLIST

Reviewer: FR
2nd Reviewer: [illegible]

Method: ✓ GC _____ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation?		✓		
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?			✓	
Were the RT windows properly established?	✓			
IV. Continuing calibration				
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20%.0 or percent recoveries 80-120%?	✓			
Were all the retention times within the acceptance windows?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.			✓	
Was a MS/MSD analyzed every 20 samples of each matrix?			✓	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	

LDC #: 28558X8
SDG #: all cases

VALIDATION FINDINGS CHECKLIST

Reviewer: FJ
2nd Reviewer: [illegible]

Validation Area	Yes	No	NA	Findings/Comments
X. Target compound identification				
Were the retention times of reported detects within the RT windows?	✓			
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XII. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XV. Field blanks				
Field blanks were identified in this SDG.		✓		
Target compounds were detected in the field blanks.			✓	

LDC #: 28558X8
SDG #: [illegible]

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

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

METHOD: GC [illegible] HPLC _____

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

CF = A/C
average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

A = Area of compound,
C = Concentration of compound,
S = Standard deviation of the CF
X = Mean of the CFs

#	Standard ID	Calibration Date	Compound	Reported CF (50 std)	Recalculated CF (50 std)	Reported Average CF (initial)	Recalculated Average CF (initial)	Reported %RSD	Recalculated %RSD
1	ICAL	02/01/12	Total EPH (c8-c40)	25640	25640	23084.1	23084.1	10.8	10.8
2									
3									
4									

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

LDC #: 28558X8
SDG #: pw cover

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: EJ
2nd Reviewer: [illegible]

METHOD: GC ✓ HPLC _____

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

% Difference = 100 * (ave. CF - CF)/ave. CF
CF = A/C

Where: ave. CF = initial calibration average CF
CF = continuing calibration CF
A = Area of compound
C = Concentration of compound

#	Standard ID	Calibration Date	Compound	Average CF(ical)/ CCV Conc.	Reported CF/Conc. CCV	Recalculated CF/Conc. CCV	Reported %D	Recalculated %D
1	LB29039A	5/30/12	Total EFH (c8-c40)	500.0	464.27	464.27	7	7
2	LE29051A	5/30/12	"	500.0	460.99	460.99	8	8
3								
4								

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

LDC #: 28558x8

SDG #: see cover

METHOD: ✓ GC __ HPLC

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: FT

2nd reviewer: ✓

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 Reported	Percent Recovery Recalculated	Percent Difference
Bromobenzene	DB-5	100	75.602	75.6	75.6	0
Hexacosane	↓	25	20.473	81.9	81.9	↓

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference

LDC #: 28558X8
SDG #: all cores

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample/Laboratory Control Sample Duplicate Results Verification

Reviewer: F
2nd Reviewer: Q

METHOD: ✓ GC __HPLC

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
RPD = | LCS - LCSD | * 2/(LCS + LCSD)

Where: SSC = Spiked sample concentration
SA = Spike added
LCS = Laboratory control sample percent recovery
SC = Concentration
LCSD = Laboratory control sample duplicate percent recovery

LCS/LCSD samples: LCS 10

Compound	Spike Added (mg/kg)		Spiked 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)										
Total EPH (c9-c40)	500	500	468	425	94	94	85	85	9	9

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 #: 28558X8
SDG #: MW power

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: F
2nd Reviewer: S

10/10.01
S = 0.91

METHOD: GC HPLC

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration= $\frac{(A)(Fv)(Df)}{(RF)(Vs \text{ or } Ws)(\%S/100)}$

A= Area or height of the compound to be measured
Fv= Final Volume of extract
Df= Dilution Factor
RF= Average response factor of the compound in the initial calibration
Vs= Initial volume of the sample
Ws= Initial weight of the sample
%S= Percent Solid

Example:

Sample ID. #1 Compound Name Total EPH (C8-C40)

Concentration = $\frac{473810 \quad (10)}{2308 4.0647 1 (10.01)(0.91)}$

= 22 mg/kg

#	Sample ID	Compound	Reported Concentrations ( )	Recalculated Results Concentrations ( )	Qualifications

Comments:

SAMPCALew.wpd

SAMPLE DELIVERY GROUP

12E187

Attachment I

Sample ID Cross Reference and Data Review Level

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
23-May-2012	TB-052312	E187-25	TB	5030B	8015B GRO	III
23-May-2012	SL-681-SA5C-SB-5.0	E187-13	N	5035	8015B GRO	III
23-May-2012	SL-681-SA5C-SB-4.0-5.0	E187-12	N	3550B	8015B EFH	III
23-May-2012	SL-681-SA5C-SB-4.0-5.0	E187-12	N	3550B	8082	III
23-May-2012	SL-681-SA5C-SB-4.0-5.0	E187-12	N	3550B	8270C SIM	III
23-May-2012	SL-681-SA5C-SB-4.0-5.0	E187-12	N	7471A	7471A	III
23-May-2012	SL-681-SA5C-SB-4.0-5.0	E187-12	N	TOTAL	6020	III
23-May-2012	SL-681-SA5C-SB-7.5-8.5	E187-14	N	3550B	8015B EFH	III
23-May-2012	SL-681-SA5C-SB-7.5-8.5	E187-14	N	3550B	8082	III
23-May-2012	SL-681-SA5C-SB-7.5-8.5	E187-14	N	3550B	8270C SIM	III
23-May-2012	SL-681-SA5C-SB-7.5-8.5	E187-14	N	7471A	7471A	III
23-May-2012	SL-681-SA5C-SB-7.5-8.5	E187-14	N	TOTAL	6020	III
23-May-2012	SL-681-SA5C-SB-8.5	E187-15	N	5035	8015B GRO	III
23-May-2012	SL-678-SA5C-SB-0.0-0.5	E187-07	N	3550B	8015B EFH	III
23-May-2012	SL-678-SA5C-SB-0.0-0.5	E187-07	N	3550B	8081A	III
23-May-2012	SL-678-SA5C-SB-0.0-0.5	E187-07	N	3550B	8082	III
23-May-2012	SL-678-SA5C-SB-0.0-0.5	E187-07	N	3550B	8270C SIM	III
23-May-2012	SL-678-SA5C-SB-0.0-0.5	E187-07	N	7471A	7471A	III
23-May-2012	SL-678-SA5C-SB-0.0-0.5	E187-07	N	TOTAL	6020	III
23-May-2012	SL-678-SA5C-SB-3.5	E187-09	N	5035	8015B GRO	III
23-May-2012	SL-678-SA5C-SB-2.5-3.5	E187-08	N	3550B	8015B EFH	III
23-May-2012	SL-678-SA5C-SB-2.5-3.5	E187-08	N	3550B	8081A	III
23-May-2012	SL-678-SA5C-SB-2.5-3.5	E187-08	N	3550B	8082	III
23-May-2012	SL-678-SA5C-SB-2.5-3.5	E187-08	N	3550B	8270C SIM	III
23-May-2012	SL-678-SA5C-SB-2.5-3.5	E187-08	N	7471A	7471A	III
23-May-2012	SL-678-SA5C-SB-2.5-3.5	E187-08	N	TOTAL	6020	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-May-2012	SL-675-SA5C-SB-0.0-0.5	E187-04	N	3550B	8015B EFH	III
23-May-2012	SL-675-SA5C-SB-0.0-0.5	E187-04	N	3550B	8081A	III
23-May-2012	SL-675-SA5C-SB-0.0-0.5	E187-04	N	3550B	8082	III
23-May-2012	SL-675-SA5C-SB-0.0-0.5	E187-04	N	3550B	8270C SIM	III
23-May-2012	SL-675-SA5C-SB-0.0-0.5	E187-04	N	7471A	7471A	III
23-May-2012	SL-675-SA5C-SB-0.0-0.5	E187-04	N	TOTAL	6020	III
23-May-2012	SL-674-SA5C-SB-0.0-0.5	E187-01	N	3550B	8015B EFH	III
23-May-2012	SL-674-SA5C-SB-0.0-0.5	E187-01	N	3550B	8082	III
23-May-2012	SL-674-SA5C-SB-0.0-0.5	E187-01	N	3550B	8270C SIM	III
23-May-2012	SL-674-SA5C-SB-0.0-0.5	E187-01	N	7471A	7471A	III
23-May-2012	SL-674-SA5C-SB-0.0-0.5	E187-01	N	GEN PREP	6850	III
23-May-2012	SL-674-SA5C-SB-0.0-0.5	E187-01	N	GEN PREP	8015B	III
23-May-2012	SL-674-SA5C-SB-0.0-0.5	E187-01	N	GEN PREP	8015M	III
23-May-2012	SL-674-SA5C-SB-0.0-0.5	E187-01	N	TOTAL	6020	III
23-May-2012	SL-674-SA5C-SB-3.5	E187-03	N	5035	8015B GRO	III
23-May-2012	SL-674-SA5C-SB-2.5-3.5	E187-02	N	3550B	8015B EFH	III
23-May-2012	SL-674-SA5C-SB-2.5-3.5	E187-02	N	3550B	8082	III
23-May-2012	SL-674-SA5C-SB-2.5-3.5	E187-02	N	3550B	8270C SIM	III
23-May-2012	SL-674-SA5C-SB-2.5-3.5	E187-02	N	7471A	7471A	III
23-May-2012	SL-674-SA5C-SB-2.5-3.5	E187-02	N	GEN PREP	6850	III
23-May-2012	SL-674-SA5C-SB-2.5-3.5	E187-02	N	GEN PREP	8015B	III
23-May-2012	SL-674-SA5C-SB-2.5-3.5	E187-02	N	GEN PREP	8015M	III
23-May-2012	SL-674-SA5C-SB-2.5-3.5	E187-02	N	TOTAL	6020	III
23-May-2012	SL-671-SA5C-SB-3.0	E187-22	N	5035	8015B GRO	III
23-May-2012	SL-671-SA5C-SB-2.0-3.0	E187-21	N	3550B	8015B EFH	III
23-May-2012	SL-671-SA5C-SB-2.0-3.0	E187-21	N	3550B	8082	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-May-2012	SL-671-SA5C-SB-2.0-3.0	E187-21	N	3550B	8270C SIM	III
23-May-2012	SL-671-SA5C-SB-2.0-3.0	E187-21	N	7471A	7471A	III
23-May-2012	SL-671-SA5C-SB-2.0-3.0	E187-21	N	TOTAL	6020	III
23-May-2012	SL-676-SA5C-SB-0.0-0.5	E187-16	N	3550B	8015B EFH	III
23-May-2012	SL-676-SA5C-SB-0.0-0.5	E187-16	N	3550B	8081A	III
23-May-2012	SL-676-SA5C-SB-0.0-0.5	E187-16	N	3550B	8082	III
23-May-2012	SL-676-SA5C-SB-0.0-0.5	E187-16	N	3550B	8270C SIM	III
23-May-2012	SL-676-SA5C-SB-0.0-0.5	E187-16	N	7471A	7471A	III
23-May-2012	SL-676-SA5C-SB-0.0-0.5	E187-16	N	TOTAL	6020	III
23-May-2012	SL-676-SA5C-SB-5.0	E187-18	N	5035	8015B GRO	III
23-May-2012	SL-676-SA5C-SB-5.0MS	E187-18M	MS	5035	8015B GRO	III
23-May-2012	SL-676-SA5C-SB-5.0MSD	E187-18S	MSD	5035	8015B GRO	III
23-May-2012	SL-676-SA5C-SB-4.0-5.0	E187-17	N	3550B	8015B EFH	III
23-May-2012	SL-676-SA5C-SB-4.0-5.0	E187-17	N	3550B	8081A	III
23-May-2012	SL-676-SA5C-SB-4.0-5.0	E187-17	N	3550B	8082	III
23-May-2012	SL-676-SA5C-SB-4.0-5.0	E187-17	N	7471A	7471A	III
23-May-2012	SL-676-SA5C-SB-4.0-5.0	E187-17	N	TOTAL	6020	III
23-May-2012	SL-676-SA5C-SB-4.0-5.0MS	E187-17M	MS	3550B	8015B EFH	III
23-May-2012	SL-676-SA5C-SB-4.0-5.0MS	E187-17M	MS	3550B	8081A	III
23-May-2012	SL-676-SA5C-SB-4.0-5.0MS	E187-17M	MS	3550B	8082	III
23-May-2012	SL-676-SA5C-SB-4.0-5.0MS	E187-17M	MS	3550B	8270C SIM	III
23-May-2012	SL-676-SA5C-SB-4.0-5.0MS	E187-17M	MS	7471A	7471A	III
23-May-2012	SL-676-SA5C-SB-4.0-5.0MS	E187-17M	MS	TOTAL	6020	III
23-May-2012	SL-676-SA5C-SB-4.0-5.0MSD	E187-17S	MSD	3550B	8015B EFH	III
23-May-2012	SL-676-SA5C-SB-4.0-5.0MSD	E187-17S	MSD	3550B	8081A	III
23-May-2012	SL-676-SA5C-SB-4.0-5.0MSD	E187-17S	MSD	3550B	8082	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-May-2012	SL-676-SA5C-SB-4.0-5.0MSD	E187-17S	MSD	3550B	8270C SIM	III
23-May-2012	SL-676-SA5C-SB-4.0-5.0MSD	E187-17S	MSD	7471A	7471A	III
23-May-2012	SL-676-SA5C-SB-4.0-5.0MSD	E187-17S	MSD	TOTAL	6020	III
23-May-2012	SL-676-SA5C-SB-4.0-5.0	E187-17W	N	3550B	8270C SIM	III
23-May-2012	SL-976-SA5C-SB-5.0	E187-20	N	5035	8015B GRO	III
23-May-2012	SL-976-SA5C-SB-4.0-5.0	E187-19	N	3550B	8015B EFH	III
23-May-2012	SL-976-SA5C-SB-4.0-5.0	E187-19	N	3550B	8081A	III
23-May-2012	SL-976-SA5C-SB-4.0-5.0	E187-19	N	3550B	8082	III
23-May-2012	SL-976-SA5C-SB-4.0-5.0	E187-19	N	3550B	8270C SIM	III
23-May-2012	SL-976-SA5C-SB-4.0-5.0	E187-19	N	7471A	7471A	III
23-May-2012	SL-976-SA5C-SB-4.0-5.0	E187-19	N	TOTAL	6020	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 II

Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: 12E187 **Laboratory: EMXT**

EDD Filename: 12E187 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: **SL-671-SA5C-SB-2.0-3.0** ***Collected:*** **5/23/2012 1:38:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.990**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.258	J	0.110	MDL	0.550	PQL	MG/KG	J	Z
CADMIUM	0.130	J	0.0550	MDL	0.550	PQL	MG/KG	J	Z
MOLYBDENUM	0.504	J	0.0550	MDL	0.550	PQL	MG/KG	J	Z
THALLIUM	0.199	J	0.0550	MDL	0.440	PQL	MG/KG	J	Z

Sample ID: **SL-674-SA5C-SB-0.0-0.5** ***Collected:*** **5/23/2012 10:59:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.980**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.288	J	0.108	MDL	0.542	PQL	MG/KG	J	Z
CADMIUM	0.158	J	0.0542	MDL	0.542	PQL	MG/KG	J	Z
MOLYBDENUM	0.475	J	0.0542	MDL	0.542	PQL	MG/KG	J	Z
THALLIUM	0.219	J	0.0542	MDL	0.434	PQL	MG/KG	J	Z

Sample ID: **SL-674-SA5C-SB-2.5-3.5** ***Collected:*** **5/23/2012 11:02:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.971**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.301	J	0.106	MDL	0.532	PQL	MG/KG	J	Z
CADMIUM	0.128	J	0.0532	MDL	0.532	PQL	MG/KG	J	Z
SILVER	0.0579	J	0.0532	MDL	0.532	PQL	MG/KG	J	Z
THALLIUM	0.200	J	0.0532	MDL	0.426	PQL	MG/KG	J	Z

Sample ID: **SL-675-SA5C-SB-0.0-0.5** ***Collected:*** **5/23/2012 10:26:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.971**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.194	J	0.102	MDL	0.512	PQL	MG/KG	J	Z
CADMIUM	0.201	J	0.0512	MDL	0.512	PQL	MG/KG	J	Z
MOLYBDENUM	0.417	J	0.0512	MDL	0.512	PQL	MG/KG	J	Z
THALLIUM	0.227	J	0.0512	MDL	0.409	PQL	MG/KG	J	Z

Sample ID: **SL-676-SA5C-SB-0.0-0.5** ***Collected:*** **5/23/2012 2:40:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.962**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.218	J	0.110	MDL	0.550	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E187 **Laboratory: EMXT**

EDD Filename: 12E187 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix:** SO

Sample ID: SL-676-SA5C-SB-0.0-0.5 **Collected:** 5/23/2012 2:40:00 **Analysis Type:** RES/TOT **Dilution:** 0.962

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CADMIUM	0.147	J	0.0550	MDL	0.550	PQL	MG/KG	J	Z
MOLYBDENUM	0.315	J	0.0550	MDL	0.550	PQL	MG/KG	J	Z
THALLIUM	0.254	J	0.0550	MDL	0.440	PQL	MG/KG	J	Z

Sample ID: SL-676-SA5C-SB-4.0-5.0 **Collected:** 5/23/2012 2:43:00 **Analysis Type:** RES/TOT **Dilution:** 0.990

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.310	J	0.113	MDL	0.563	PQL	MG/KG	J	Z
CADMIUM	0.175	J	0.0563	MDL	0.563	PQL	MG/KG	J	Z
MOLYBDENUM	0.469	J	0.0563	MDL	0.563	PQL	MG/KG	J	Z
THALLIUM	0.238	J	0.0563	MDL	0.451	PQL	MG/KG	J	Z

Sample ID: SL-678-SA5C-SB-0.0-0.5 **Collected:** 5/23/2012 9:42:00 **Analysis Type:** RES/TOT **Dilution:** 0.990

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.231	J	0.110	MDL	0.548	PQL	MG/KG	J	Z
CADMIUM	0.170	J	0.0548	MDL	0.548	PQL	MG/KG	J	Z
MOLYBDENUM	0.338	J	0.0548	MDL	0.548	PQL	MG/KG	J	Z
THALLIUM	0.299	J	0.0548	MDL	0.438	PQL	MG/KG	J	Z

Sample ID: SL-678-SA5C-SB-2.5-3.5 **Collected:** 5/23/2012 9:46:00 **Analysis Type:** RES/TOT **Dilution:** 0.962

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.216	J	0.107	MDL	0.533	PQL	MG/KG	J	Z
CADMIUM	0.148	J	0.0533	MDL	0.533	PQL	MG/KG	J	Z
MOLYBDENUM	0.336	J	0.0533	MDL	0.533	PQL	MG/KG	J	Z
THALLIUM	0.284	J	0.0533	MDL	0.426	PQL	MG/KG	J	Z

Sample ID: SL-681-SA5C-SB-4.0-5.0 **Collected:** 5/23/2012 7:59:00 **Analysis Type:** RES/TOT **Dilution:** 0.995

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.244	J	0.111	MDL	0.555	PQL	MG/KG	J	Z
CADMIUM	0.146	J	0.0555	MDL	0.555	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E187 **Laboratory: EMXT**

EDD Filename: 12E187 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: SL-681-SA5C-SB-4.0-5.0 *Collected:* 5/23/2012 7:59:00 *Analysis Type:* RES/TOT *Dilution:* 0.995

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
THALLIUM	0.238	J	0.0555	MDL	0.444	PQL	MG/KG	J	Z

Sample ID: SL-681-SA5C-SB-7.5-8.5 *Collected:* 5/23/2012 8:05:00 *Analysis Type:* RES/TOT *Dilution:* 0.985

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.235	J	0.107	MDL	0.537	PQL	MG/KG	J	Z
CADMIUM	0.173	J	0.0537	MDL	0.537	PQL	MG/KG	J	Z
THALLIUM	0.279	J	0.0537	MDL	0.430	PQL	MG/KG	J	Z

Sample ID: SL-976-SA5C-SB-4.0-5.0 *Collected:* 5/23/2012 3:11:00 *Analysis Type:* RES/TOT *Dilution:* 0.985

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.214	J	0.110	MDL	0.552	PQL	MG/KG	J	Z
CADMIUM	0.152	J	0.0552	MDL	0.552	PQL	MG/KG	J	Z
MOLYBDENUM	0.338	J	0.0552	MDL	0.552	PQL	MG/KG	J	Z
THALLIUM	0.230	J	0.0552	MDL	0.441	PQL	MG/KG	J	Z

Method Category: SVOA

Method: 8015B EFH **Matrix: SO**

Sample ID: SL-678-SA5C-SB-0.0-0.5 *Collected:* 5/23/2012 9:42:00 *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)	8.7	J	5.5	MDL	11	PQL	MG/KG	J	Z

Sample ID: SL-678-SA5C-SB-2.5-3.5 *Collected:* 5/23/2012 9:46:00 *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)	4.2	J	2.8	MDL	5.5	PQL	MG/KG	J	Z
EFH(C30-C40)	5.6	J	5.5	MDL	11	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E187 **Laboratory: EMXT**

EDD Filename: 12E187 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

Method: 8270C SIM **Matrix: SO**

Sample ID: SL-675-SA5C-SB-0.0-0.5 *Collected:* 5/23/2012 10:26:00 *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	3.3	J	2.6	MDL	5.3	PQL	UG/KG	J	Z

Sample ID: SL-676-SA5C-SB-0.0-0.5 *Collected:* 5/23/2012 2:40:00 *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)ANTHRACENE	2.9	J	2.9	MDL	11	PQL	UG/KG	J	Z
BENZO(B)FLUORANTHENE	4.0	J	2.9	MDL	11	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	3.1	J	2.9	MDL	11	PQL	UG/KG	J	Z

Sample ID: SL-676-SA5C-SB-4.0-5.0 *Collected:* 5/23/2012 2:43:00 *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	2.8	J	2.8	MDL	5.7	PQL	UG/KG	J	Z

Sample ID: SL-678-SA5C-SB-0.0-0.5 *Collected:* 5/23/2012 9:42:00 *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	3.2	J	2.8	MDL	11	PQL	UG/KG	J	Z
BENZO(B)FLUORANTHENE	3.7	J	2.8	MDL	11	PQL	UG/KG	J	Z

Method Category: VOA

Method: 8015B GRO **Matrix: AQ**

Sample ID: TB-052312 *Collected:* 5/23/2012 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
GASOLINE RANGE ORGANICS (C5-C12)	19	J	10	MDL	50	PQL	UG/L	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E187 **Laboratory: EMXT**

EDD Filename: 12E187 **eQAPP Name: CDM_SSFL_120730_EMAX**

Reason Code Legend

Reason Code	*Description*
Q	Matrix Spike Lower Estimation
Q	Matrix Spike Upper Estimation
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Enclosure I

Level III ADR Outliers
(including Manual Review Outliers)

Quality Control
Outlier Reports

12E187

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 12E187 **Laboratory: EMXT**

EDD Filename: 12E187 **eQAPP Name: CDM_SSFL_120730_EMAX**

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

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
SL-676-SA5C-SB-4.0-5.0MS (TOT) **SL-676-SA5C-SB-4.0-5.0MSD (TOT)** (SL-671-SA5C-SB-2.0-3.0 SL-674-SA5C-SB-0.0-0.5 SL-674-SA5C-SB-2.5-3.5 SL-675-SA5C-SB-0.0-0.5 SL-676-SA5C-SB-0.0-0.5 SL-676-SA5C-SB-4.0-5.0 SL-678-SA5C-SB-0.0-0.5 SL-678-SA5C-SB-2.5-3.5 SL-681-SA5C-SB-4.0-5.0 SL-681-SA5C-SB-7.5-8.5 SL-976-SA5C-SB-4.0-5.0)	TITANIUM	338	211	75.00-125.00	-	TITANIUM	No Qual, >4x
SL-676-SA5C-SB-4.0-5.0MS (TOT) (SL-671-SA5C-SB-2.0-3.0 SL-674-SA5C-SB-0.0-0.5 SL-674-SA5C-SB-2.5-3.5 SL-675-SA5C-SB-0.0-0.5 SL-676-SA5C-SB-0.0-0.5 SL-676-SA5C-SB-4.0-5.0 SL-678-SA5C-SB-0.0-0.5 SL-678-SA5C-SB-2.5-3.5 SL-681-SA5C-SB-4.0-5.0 SL-681-SA5C-SB-7.5-8.5 SL-976-SA5C-SB-4.0-5.0)	IRON MANGANESE	70 74	- -	75.00-125.00 75.00-125.00	- -	IRON MANGANESE	No Qual, >4x

Project Name and Number: PHASE3 - SSFL PHASE 3

Reporting Limit Outliers

Lab Reporting Batch ID: 12E187 **Laboratory: EMXT**

EDD Filename: 12E187 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 8015B GRO

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TB-052312	GASOLINE RANGE ORGANICS (C5-C12)	J	19	50	PQL	UG/L	J (all detects)

Method: 6020

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-671-SA5C-SB-2.0-3.0	ANTIMONY	J	0.258	0.550	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.130	0.550	PQL	MG/KG	
	MOLYBDENUM	J	0.504	0.550	PQL	MG/KG	
	THALLIUM	J	0.199	0.440	PQL	MG/KG	
SL-674-SA5C-SB-0.0-0.5	ANTIMONY	J	0.288	0.542	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.158	0.542	PQL	MG/KG	
	MOLYBDENUM	J	0.475	0.542	PQL	MG/KG	
	THALLIUM	J	0.219	0.434	PQL	MG/KG	
SL-674-SA5C-SB-2.5-3.5	ANTIMONY	J	0.301	0.532	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.128	0.532	PQL	MG/KG	
	SILVER	J	0.0579	0.532	PQL	MG/KG	
	THALLIUM	J	0.200	0.426	PQL	MG/KG	
SL-675-SA5C-SB-0.0-0.5	ANTIMONY	J	0.194	0.512	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.201	0.512	PQL	MG/KG	
	MOLYBDENUM	J	0.417	0.512	PQL	MG/KG	
	THALLIUM	J	0.227	0.409	PQL	MG/KG	
SL-676-SA5C-SB-0.0-0.5	ANTIMONY	J	0.218	0.550	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.147	0.550	PQL	MG/KG	
	MOLYBDENUM	J	0.315	0.550	PQL	MG/KG	
	THALLIUM	J	0.254	0.440	PQL	MG/KG	
SL-676-SA5C-SB-4.0-5.0	ANTIMONY	J	0.310	0.563	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.175	0.563	PQL	MG/KG	
	MOLYBDENUM	J	0.469	0.563	PQL	MG/KG	
	THALLIUM	J	0.238	0.451	PQL	MG/KG	
SL-678-SA5C-SB-0.0-0.5	ANTIMONY	J	0.231	0.548	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.170	0.548	PQL	MG/KG	
	MOLYBDENUM	J	0.338	0.548	PQL	MG/KG	
	THALLIUM	J	0.299	0.438	PQL	MG/KG	
SL-678-SA5C-SB-2.5-3.5	ANTIMONY	J	0.216	0.533	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.148	0.533	PQL	MG/KG	
	MOLYBDENUM	J	0.336	0.533	PQL	MG/KG	
	THALLIUM	J	0.284	0.426	PQL	MG/KG	
SL-681-SA5C-SB-4.0-5.0	ANTIMONY	J	0.244	0.555	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.146	0.555	PQL	MG/KG	
	THALLIUM	J	0.238	0.444	PQL	MG/KG	
SL-681-SA5C-SB-7.5-8.5	ANTIMONY	J	0.235	0.537	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.173	0.537	PQL	MG/KG	
	THALLIUM	J	0.279	0.430	PQL	MG/KG	
SL-976-SA5C-SB-4.0-5.0	ANTIMONY	J	0.214	0.552	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.152	0.552	PQL	MG/KG	
	MOLYBDENUM	J	0.338	0.552	PQL	MG/KG	
	THALLIUM	J	0.230	0.441	PQL	MG/KG	

Project Name and Number: PHASE3 - SSFL PHASE 3

Reporting Limit Outliers

Lab Reporting Batch ID: 12E187 **Laboratory: EMXT**

EDD Filename: 12E187 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 8015B EFH

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-678-SA5C-SB-0.0-0.5	EFH(C30-C40)	J	8.7	11	PQL	MG/KG	J (all detects)
SL-678-SA5C-SB-2.5-3.5	EFH(C21-C30) EFH(C30-C40)	J J	4.2 5.6	5.5 11	PQL PQL	MG/KG MG/KG	J (all detects)

Method: 8270C SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-675-SA5C-SB-0.0-0.5	BENZO(E)PYRENE	J	3.3	5.3	PQL	UG/KG	J (all detects)
SL-676-SA5C-SB-0.0-0.5	BENZO(A)ANTHRACENE BENZO(B)FLUORANTHENE BENZO(G,H,I)PERYLENE	J J J	2.9 4.0 3.1	11 11 11	PQL PQL PQL	UG/KG UG/KG UG/KG	J (all detects)
SL-676-SA5C-SB-4.0-5.0	BENZO(E)PYRENE	J	2.8	5.7	PQL	UG/KG	J (all detects)
SL-678-SA5C-SB-0.0-0.5	BENZO(A)ANTHRACENE BENZO(B)FLUORANTHENE	J J	3.2 3.7	11 11	PQL PQL	UG/KG UG/KG	J (all detects)

LDC #: 28578A4
SDG #: 12E187
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 11-6-12
Page: 1 of 1
Reviewer: CL
2nd Reviewer: W

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

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

	Validation Area		Comments
I.	Technical holding times	✓	Sampling dates:
II.	ICP/MS Tune	✓	
III.	Calibration	✓	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	✓	
VI.	Matrix Spike Analysis	N	MS/D (Fe, Mn, Ti >4X)
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	N	LCS/D
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= EB-052412 (12E204) FB= FB-060512 (12F037)

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-674-SA5C-SB-0.0-0.5	11	SL-671-SA5C-SB-2.0-3.0	21		31	
2	SL-674-SA5C-SB-2.5-3.5	12	SL-676-SA5C-SB-4.0-5.0MS	22		32	
3	SL-675-SA5C-SB-0.0-0.5	13	SL-676-SA5C-SB-4.0-5.0MSD	23		33	
4	SL-678-SA5C-SB-0.0-0.5	14		24		34	
5	SL-678-SA5C-SB-2.5-3.5	15		25		35	
6	SL-681-SA5C-SB-4.0-5.0	16		26		36	
7	SL-681-SA5C-SB-7.5-8.5	17		27		37	
8	SL-676-SA5C-SB-0.0-0.5	18		28		38	
9	SL-676-SA5C-SB-4.0-5.0	19		29		39	
10	SL-976-SA5C-SB-4.0-5.0	20		30		40	

Notes:

LDC #: 28578A4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: CL
2nd Reviewer:

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

Blank units: ug/L **Associated sample units:** mg/Kg
Sampling date: 5/24/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All

Analyte	Blank ID	Sample Identification										
	EB-052412	Action Limit	No Qualifiers									
B	0.0049	1.225										
Ni	0.000226	0.0565										

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 #: 28578A4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: CT
2nd Reviewer: [illegible]

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

Blank units: ug/L **Associated sample units:** mg/Kg

Sampling date: 6/5/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: AllSoil

Analyte	Blank ID	Sample Identification											
	FB-060512	Action Limit	No Qualifiers										
Al	0.0270	6.75											
Ca	0.0263	6.575											
Cu	0.000954	0.2385											

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

12E204

Attachment I

Sample ID Cross Reference and Data Review Level

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
24-May-2012	SL-739-SA5C-SB-9.0-10.0EX	E204-15	N	3550B	8082	III
24-May-2012	TB-052412	E204-24	TB	5030B	8015B GRO	III
24-May-2012	SL-704-SA5C-SB-0.0-0.5	E204-02	N	3550B	8015B EFH	III
24-May-2012	SL-704-SA5C-SB-0.0-0.5	E204-02	N	3550B	8082	III
24-May-2012	SL-704-SA5C-SB-0.0-0.5	E204-02	N	3550B	8270C SIM	III
24-May-2012	SL-704-SA5C-SB-0.0-0.5	E204-02	N	7471A	7471A	III
24-May-2012	SL-704-SA5C-SB-0.0-0.5	E204-02	N	TOTAL	6020	III
24-May-2012	SL-704-SA5C-SB-0.0-0.5MS	E204-02M	MS	7471A	7471A	III
24-May-2012	SL-704-SA5C-SB-0.0-0.5MSD	E204-02S	MSD	7471A	7471A	III
24-May-2012	SL-704-SA5C-SB-5.0	E204-04	N	5035	8015B GRO	III
24-May-2012	SL-704-SA5C-SB-4.0-5.0	E204-03	N	3550B	8082	III
24-May-2012	SL-704-SA5C-SB-4.0-5.0	E204-03	N	3550B	8270C SIM	III
24-May-2012	SL-704-SA5C-SB-4.0-5.0	E204-03	N	7471A	7471A	III
24-May-2012	SL-704-SA5C-SB-4.0-5.0	E204-03	N	TOTAL	6020	III
24-May-2012	SL-704-SA5C-SB-4.0-5.0	E204-03T	N	3550B	8015B EFH	III
24-May-2012	SL-704-SA5C-SB-10.0	E204-06	N	5035	8015B GRO	III
24-May-2012	SL-704-SA5C-SB-9.0-10.0	E204-05	N	3550B	8015B EFH	III
24-May-2012	SL-704-SA5C-SB-9.0-10.0	E204-05	N	3550B	8082	III
24-May-2012	SL-704-SA5C-SB-9.0-10.0	E204-05	N	3550B	8270C SIM	III
24-May-2012	SL-704-SA5C-SB-9.0-10.0	E204-05	N	7471A	7471A	III
24-May-2012	SL-704-SA5C-SB-9.0-10.0	E204-05	N	TOTAL	6020	III
24-May-2012	SL-704-SA5C-SB-9.0-10.0MS	E204-05M	MS	3550B	8015B EFH	III
24-May-2012	SL-704-SA5C-SB-9.0-10.0MS	E204-05M	MS	3550B	8270C SIM	III
24-May-2012	SL-672-SA5C-SB-5.0	E204-13	N	5035	8015B GRO	III
24-May-2012	SL-672-SA5C-SB-0.0-0.5	E204-12	N	3550B	8015B EFH	III
24-May-2012	SL-672-SA5C-SB-0.0-0.5	E204-12	N	3550B	8082	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-May-2012	SL-672-SA5C-SB-0.0-0.5	E204-12	N	3550B	8270C SIM	III
24-May-2012	SL-672-SA5C-SB-0.0-0.5	E204-12	N	7471A	7471A	III
24-May-2012	SL-672-SA5C-SB-0.0-0.5	E204-12	N	TOTAL	6020	III
24-May-2012	SL-672-SA5C-SB-4.0-5.0	E204-14	N	3550B	8015B EFH	III
24-May-2012	SL-672-SA5C-SB-4.0-5.0	E204-14	N	3550B	8082	III
24-May-2012	SL-672-SA5C-SB-4.0-5.0	E204-14	N	3550B	8270C SIM	III
24-May-2012	SL-672-SA5C-SB-4.0-5.0	E204-14	N	7471A	7471A	III
24-May-2012	SL-672-SA5C-SB-4.0-5.0	E204-14	N	TOTAL	6020	III
24-May-2012	SL-694-SA5C-SB-0.0-0.5	E204-07	N	3550B	8015B EFH	III
24-May-2012	SL-694-SA5C-SB-0.0-0.5	E204-07	N	3550B	8082	III
24-May-2012	SL-694-SA5C-SB-0.0-0.5	E204-07	N	3550B	8270C SIM	III
24-May-2012	SL-694-SA5C-SB-0.0-0.5	E204-07	N	7471A	7471A	III
24-May-2012	SL-694-SA5C-SB-0.0-0.5	E204-07	N	TOTAL	6020	III
24-May-2012	SL-694-SA5C-SB-5.0	E204-08	N	5035	8015B GRO	III
24-May-2012	SL-694-SA5C-SB-4.0-5.0	E204-09	N	3550B	8015B EFH	III
24-May-2012	SL-694-SA5C-SB-4.0-5.0	E204-09	N	3550B	8082	III
24-May-2012	SL-694-SA5C-SB-4.0-5.0	E204-09	N	3550B	8270C SIM	III
24-May-2012	SL-694-SA5C-SB-4.0-5.0	E204-09	N	7471A	7471A	III
24-May-2012	SL-694-SA5C-SB-4.0-5.0	E204-09	N	TOTAL	6020	III
24-May-2012	SL-694-SA5C-SB-10.0	E204-10	N	5035	8015B GRO	III
24-May-2012	SL-694-SA5C-SB-9.0-10.0	E204-11	N	3550B	8015B EFH	III
24-May-2012	SL-694-SA5C-SB-9.0-10.0	E204-11	N	3550B	8082	III
24-May-2012	SL-694-SA5C-SB-9.0-10.0	E204-11	N	3550B	8270C SIM	III
24-May-2012	SL-694-SA5C-SB-9.0-10.0	E204-11	N	7471A	7471A	III
24-May-2012	SL-694-SA5C-SB-9.0-10.0	E204-11	N	TOTAL	6020	III
24-May-2012	SL-705-SA5C-SB-0.0-0.5	E204-19	N	3550B	8015B EFH	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-May-2012	SL-705-SA5C-SB-0.0-0.5	E204-19	N	3550B	8082	III
24-May-2012	SL-705-SA5C-SB-0.0-0.5	E204-19	N	3550B	8270C SIM	III
24-May-2012	SL-705-SA5C-SB-0.0-0.5	E204-19	N	7471A	7471A	III
24-May-2012	SL-705-SA5C-SB-0.0-0.5	E204-19	N	TOTAL	6020	III
24-May-2012	SL-705-SA5C-SB-5.0	E204-21	N	5035	8015B GRO	III
24-May-2012	SL-705-SA5C-SB-4.0-5.0	E204-20	N	3550B	8015B EFH	III
24-May-2012	SL-705-SA5C-SB-4.0-5.0	E204-20	N	3550B	8082	III
24-May-2012	SL-705-SA5C-SB-4.0-5.0	E204-20	N	3550B	8270C SIM	III
24-May-2012	SL-705-SA5C-SB-4.0-5.0	E204-20	N	7471A	7471A	III
24-May-2012	SL-705-SA5C-SB-4.0-5.0	E204-20	N	TOTAL	6020	III
24-May-2012	SL-705-SA5C-SB-10.0	E204-23	N	5035	8015B GRO	III
24-May-2012	SL-705-SA5C-SB-9.0-10.0	E204-22	N	3550B	8015B EFH	III
24-May-2012	SL-705-SA5C-SB-9.0-10.0	E204-22	N	3550B	8082	III
24-May-2012	SL-705-SA5C-SB-9.0-10.0	E204-22	N	3550B	8270C SIM	III
24-May-2012	SL-705-SA5C-SB-9.0-10.0	E204-22	N	7471A	7471A	III
24-May-2012	SL-705-SA5C-SB-9.0-10.0	E204-22	N	TOTAL	6020	III
24-May-2012	SL-705-SA5C-SB-9.0-10.0MS	E204-22M	MS	3550B	8082	III
24-May-2012	SL-705-SA5C-SB-9.0-10.0MS	E204-22M	MS	TOTAL	6020	III
24-May-2012	SL-677-SA5C-SB-0.0-0.5	E204-16	N	3550B	8015B EFH	III
24-May-2012	SL-677-SA5C-SB-0.0-0.5	E204-16	N	3550B	8082	III
24-May-2012	SL-677-SA5C-SB-0.0-0.5	E204-16	N	3550B	8270C SIM	III
24-May-2012	SL-677-SA5C-SB-0.0-0.5	E204-16	N	7471A	7471A	III
24-May-2012	SL-677-SA5C-SB-0.0-0.5	E204-16	N	TOTAL	6020	III
24-May-2012	SL-677-SA5C-SB-5.0	E204-18	N	5035	8015B GRO	III
24-May-2012	SL-677-SA5C-SB-4.0-5.0	E204-17	N	3550B	8015B EFH	III
24-May-2012	SL-677-SA5C-SB-4.0-5.0	E204-17	N	3550B	8082	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-May-2012	SL-677-SA5C-SB-4.0-5.0	E204-17	N	7471A	7471A	III
24-May-2012	SL-677-SA5C-SB-4.0-5.0	E204-17	N	TOTAL	6020	III
24-May-2012	SL-677-SA5C-SB-4.0-5.0	E204-17W	N	3550B	8270C SIM	III
24-May-2012	EB-052412	E204-01	EB	3520C	8015B EFH	III
24-May-2012	EB-052412	E204-01	EB	3520C	8081A	III
24-May-2012	EB-052412	E204-01	EB	3520C	8082	III
24-May-2012	EB-052412	E204-01	EB	3520C	8270C SIM	III
24-May-2012	EB-052412	E204-01	EB	5030B	8015B GRO	III
24-May-2012	EB-052412	E204-01	EB	7470A	7470A	III
24-May-2012	EB-052412	E204-01	EB	GEN PREP	6850	III
24-May-2012	EB-052412	E204-01	EB	GEN PREP	7199	III
24-May-2012	EB-052412	E204-01	EB	GEN PREP	8015B	III
24-May-2012	EB-052412	E204-01	EB	GEN PREP	8015M	III
24-May-2012	EB-052412	E204-01	EB	TOTAL	6020	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 II

Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: 12E204 **Laboratory: EMXT**

EDD Filename: Prep12E204 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS
Method: 6020 **Matrix: AQ**

Sample ID: **EB-052412** ***Collected:*** **5/24/2012 3:00:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	0.00549	J	0.00500	MDL	0.0100	PQL	MG/L	J	Z
NICKEL	0.000226	J	0.000200	MDL	0.00100	PQL	MG/L	J	Z

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

Sample ID: **SL-672-SA5C-SB-0.0-0.5** ***Collected:*** **5/24/2012 9:50:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.995**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.224	J	0.111	MDL	0.557	PQL	MG/KG	J	Z
CADMIUM	0.110	J	0.0557	MDL	0.557	PQL	MG/KG	J	Z
COBALT	3.29		0.0557	MDL	0.557	PQL	MG/KG	J	A
IRON	21300		11.1	MDL	111	PQL	MG/KG	J	A
MANGANESE	105		0.279	MDL	0.557	PQL	MG/KG	J	A
MOLYBDENUM	0.381	J	0.0557	MDL	0.557	PQL	MG/KG	J	Z
THALLIUM	0.223	J	0.0557	MDL	0.446	PQL	MG/KG	J	Z

Sample ID: **SL-672-SA5C-SB-4.0-5.0** ***Collected:*** **5/24/2012 9:55:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.971**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.177	J	0.115	MDL	0.577	PQL	MG/KG	J	Z
CADMIUM	0.203	J	0.0577	MDL	0.577	PQL	MG/KG	J	Z
COBALT	7.63		0.0577	MDL	0.577	PQL	MG/KG	J	A
IRON	37800		11.5	MDL	115	PQL	MG/KG	J	A
MANGANESE	163		0.289	MDL	0.577	PQL	MG/KG	J	A
MOLYBDENUM	0.361	J	0.0577	MDL	0.577	PQL	MG/KG	J	Z
SILVER	0.0604	J	0.0577	MDL	0.577	PQL	MG/KG	J	Z
THALLIUM	0.376	J	0.0577	MDL	0.462	PQL	MG/KG	J	Z

Sample ID: **SL-677-SA5C-SB-0.0-0.5** ***Collected:*** **5/24/2012 2:23:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.990**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.331	J	0.116	MDL	0.578	PQL	MG/KG	J	Z
CADMIUM	0.156	J	0.0578	MDL	0.578	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E204 **Laboratory: EMXT**

EDD Filename: Prep12E204 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: **SL-677-SA5C-SB-0.0-0.5** ***Collected:*** **5/24/2012 2:23:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.990**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COBALT	4.22		0.0578	MDL	0.578	PQL	MG/KG	J	A
IRON	26700		11.6	MDL	116	PQL	MG/KG	J	A
MANGANESE	122		0.289	MDL	0.578	PQL	MG/KG	J	A
SILVER	0.113	J	0.0578	MDL	0.578	PQL	MG/KG	J	Z
THALLIUM	0.274	J	0.0578	MDL	0.463	PQL	MG/KG	J	Z

Sample ID: **SL-677-SA5C-SB-4.0-5.0** ***Collected:*** **5/24/2012 2:33:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.957**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.177	J	0.109	MDL	0.546	PQL	MG/KG	J	Z
CADMIUM	0.137	J	0.0546	MDL	0.546	PQL	MG/KG	J	Z
COBALT	4.52		0.0546	MDL	0.546	PQL	MG/KG	J	A
IRON	18000		10.9	MDL	109	PQL	MG/KG	J	A
MANGANESE	101		0.273	MDL	0.546	PQL	MG/KG	J	A
MOLYBDENUM	0.504	J	0.0546	MDL	0.546	PQL	MG/KG	J	Z
THALLIUM	0.246	J	0.0546	MDL	0.437	PQL	MG/KG	J	Z

Sample ID: **SL-694-SA5C-SB-0.0-0.5** ***Collected:*** **5/24/2012 11:03:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.952**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.308	J	0.111	MDL	0.556	PQL	MG/KG	J	Z
CADMIUM	0.147	J	0.0556	MDL	0.556	PQL	MG/KG	J	Z
COBALT	4.45		0.0556	MDL	0.556	PQL	MG/KG	J	A
IRON	28800		11.1	MDL	111	PQL	MG/KG	J	A
MANGANESE	129		0.278	MDL	0.556	PQL	MG/KG	J	A
THALLIUM	0.282	J	0.0556	MDL	0.445	PQL	MG/KG	J	Z

Sample ID: **SL-694-SA5C-SB-4.0-5.0** ***Collected:*** **5/24/2012 11:08:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.980**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.221	J	0.109	MDL	0.544	PQL	MG/KG	J	Z
CADMIUM	0.138	J	0.0544	MDL	0.544	PQL	MG/KG	J	Z
COBALT	7.02		0.0544	MDL	0.544	PQL	MG/KG	J	A
IRON	20500		10.9	MDL	109	PQL	MG/KG	J	A
MANGANESE	211		0.272	MDL	0.544	PQL	MG/KG	J	A

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E204 **Laboratory: EMXT**

EDD Filename: Prep12E204 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix:** SO

Sample ID: SL-694-SA5C-SB-4.0-5.0 **Collected:** 5/24/2012 11:08:00 **Analysis Type:** RES/TOT **Dilution:** 0.980

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.517	J	0.0544	MDL	0.544	PQL	MG/KG	J	Z
THALLIUM	0.260	J	0.0544	MDL	0.435	PQL	MG/KG	J	Z

Sample ID: SL-694-SA5C-SB-9.0-10.0 **Collected:** 5/24/2012 11:13:00 **Analysis Type:** RES/TOT **Dilution:** 1.00

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.232	J	0.115	MDL	0.573	PQL	MG/KG	J	Z
CADMIUM	0.210	J	0.0573	MDL	0.573	PQL	MG/KG	J	Z
COBALT	6.73		0.0573	MDL	0.573	PQL	MG/KG	J	A
IRON	24500		11.5	MDL	115	PQL	MG/KG	J	A
MANGANESE	280		0.287	MDL	0.573	PQL	MG/KG	J	A
SILVER	0.112	J	0.0573	MDL	0.573	PQL	MG/KG	J	Z
THALLIUM	0.287	J	0.0573	MDL	0.459	PQL	MG/KG	J	Z

Sample ID: SL-704-SA5C-SB-0.0-0.5 **Collected:** 5/24/2012 8:46:00 **Analysis Type:** RES/TOT **Dilution:** 0.948

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.227	J	0.106	MDL	0.530	PQL	MG/KG	J	Z
CADMIUM	0.118	J	0.0530	MDL	0.530	PQL	MG/KG	J	Z
COBALT	4.76		0.0530	MDL	0.530	PQL	MG/KG	J	A
IRON	19900		10.6	MDL	106	PQL	MG/KG	J	A
MANGANESE	164		0.265	MDL	0.530	PQL	MG/KG	J	A
THALLIUM	0.209	J	0.0530	MDL	0.424	PQL	MG/KG	J	Z

Sample ID: SL-704-SA5C-SB-4.0-5.0 **Collected:** 5/24/2012 8:52:00 **Analysis Type:** RES/TOT **Dilution:** 0.935

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.298	J	0.109	MDL	0.544	PQL	MG/KG	J	Z
CADMIUM	0.173	J	0.0544	MDL	0.544	PQL	MG/KG	J	Z
COBALT	8.88		0.0544	MDL	0.544	PQL	MG/KG	J	A
IRON	33700		10.9	MDL	109	PQL	MG/KG	J	A
MANGANESE	242		0.272	MDL	0.544	PQL	MG/KG	J	A
THALLIUM	0.345	J	0.0544	MDL	0.435	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E204 **Laboratory:** EMXT

EDD Filename: Prep12E204 **eQAPP Name:** CDM_SSFL_120730_EMAX

Method Category: METALS

Method: 6020 **Matrix:** SO

Sample ID: SL-704-SA5C-SB-9.0-10.0 ***Collected:*** 5/24/2012 8:57:00 ***Analysis Type:*** RES/TOT ***Dilution:*** 0.976

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.264	J	0.109	MDL	0.546	PQL	MG/KG	J	Z
CADMIUM	0.260	J	0.0546	MDL	0.546	PQL	MG/KG	J	Z
COBALT	8.09		0.0546	MDL	0.546	PQL	MG/KG	J	A
IRON	28600		10.9	MDL	109	PQL	MG/KG	J	A
MANGANESE	294		0.273	MDL	0.546	PQL	MG/KG	J	A
MOLYBDENUM	0.382	J	0.0546	MDL	0.546	PQL	MG/KG	J	Z
SILVER	0.103	J	0.0546	MDL	0.546	PQL	MG/KG	J	Z
THALLIUM	0.300	J	0.0546	MDL	0.437	PQL	MG/KG	J	Z

Sample ID: SL-705-SA5C-SB-0.0-0.5 ***Collected:*** 5/24/2012 1:40:00 ***Analysis Type:*** RES/TOT ***Dilution:*** 0.962

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.260	J	0.109	MDL	0.545	PQL	MG/KG	J	Z
CADMIUM	0.117	J	0.0545	MDL	0.545	PQL	MG/KG	J	Z
COBALT	7.38		0.0545	MDL	0.545	PQL	MG/KG	J	A
IRON	19900		10.9	MDL	109	PQL	MG/KG	J	A
MANGANESE	150		0.272	MDL	0.545	PQL	MG/KG	J	A
SILVER	0.0642	J	0.0545	MDL	0.545	PQL	MG/KG	J	Z
THALLIUM	0.210	J	0.0545	MDL	0.436	PQL	MG/KG	J	Z

Sample ID: SL-705-SA5C-SB-4.0-5.0 ***Collected:*** 5/24/2012 1:43:00 ***Analysis Type:*** RES/TOT ***Dilution:*** 0.952

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.224	J	0.107	MDL	0.537	PQL	MG/KG	J	Z
CADMIUM	0.173	J	0.0537	MDL	0.537	PQL	MG/KG	J	Z
COBALT	11.7		0.0537	MDL	0.537	PQL	MG/KG	J	A
IRON	21400		10.7	MDL	107	PQL	MG/KG	J	A
MANGANESE	179		0.269	MDL	0.537	PQL	MG/KG	J	A
THALLIUM	0.256	J	0.0537	MDL	0.430	PQL	MG/KG	J	Z

Sample ID: SL-705-SA5C-SB-9.0-10.0 ***Collected:*** 5/24/2012 1:48:00 ***Analysis Type:*** RES/TOT ***Dilution:*** 0.962

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.253	J	0.110	MDL	0.549	PQL	MG/KG	J	Z
CADMIUM	0.129	J	0.0549	MDL	0.549	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E204 **Laboratory: EMXT**

EDD Filename: Prep12E204 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: **SL-705-SA5C-SB-9.0-10.0** ***Collected:*** **5/24/2012 1:48:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.962**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COBALT	5.56		0.0549	MDL	0.549	PQL	MG/KG	J	A
IRON	23600		11.0	MDL	110	PQL	MG/KG	J	A
MANGANESE	163		0.275	MDL	0.549	PQL	MG/KG	J	A
SILVER	0.0756	J	0.0549	MDL	0.549	PQL	MG/KG	J	Z
THALLIUM	0.251	J	0.0549	MDL	0.439	PQL	MG/KG	J	Z
Zirconium	2.93	J	2.75	MDL	5.49	PQL	MG/KG	J	Z

Method Category: SVOA

Method: 8015B EFH **Matrix: SO**

Sample ID: **SL-677-SA5C-SB-0.0-0.5** ***Collected:*** **5/24/2012 2:23:00** ***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	2.9	MDL	5.8	PQL	MG/KG	J	Z

Method Category: SVOA

Method: 8270C SIM **Matrix: SO**

Sample ID: **SL-672-SA5C-SB-4.0-5.0** ***Collected:*** **5/24/2012 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
BENZO(A)ANTHRACENE	8.1	J	3.0	MDL	12	PQL	UG/KG	J	Z
BENZO(B)FLUORANTHENE	7.6	J	3.0	MDL	12	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	4.7	J	3.0	MDL	12	PQL	UG/KG	J	Z
CHRYSENE	4.1	J	3.0	MDL	12	PQL	UG/KG	J	Z
PHENANTHRENE	5.0	J	3.0	MDL	12	PQL	UG/KG	J	Z
PYRENE	3.5	J	3.0	MDL	12	PQL	UG/KG	J	Z

Sample ID: **SL-677-SA5C-SB-4.0-5.0** ***Collected:*** **5/24/2012 2:33:00** ***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	4.0	J	2.9	MDL	5.7	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E204 **Laboratory: EMXT**

EDD Filename: Prep12E204 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

Method: 8270C SIM **Matrix: SO**

Sample ID: SL-704-SA5C-SB-0.0-0.5 **Collected: 5/24/2012 8:46:00** **Analysis Type: RES-BASE/NEUTRAL** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(E)PYRENE	9.0	J	5.6	MDL	11	PQL	UG/KG	J	Z

Sample ID: SL-704-SA5C-SB-4.0-5.0 **Collected: 5/24/2012 8:52:00** **Analysis Type: RES-BASE/NEUTRAL** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)ANTHRACENE	9.1	J	5.8	MDL	23	PQL	UG/KG	J	Z
BENZO(B)FLUORANTHENE	10	J	5.8	MDL	23	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	8.7	J	5.8	MDL	23	PQL	UG/KG	J	Z
CHRYSENE	6.4	J	5.8	MDL	23	PQL	UG/KG	J	Z

Sample ID: SL-705-SA5C-SB-4.0-5.0 **Collected: 5/24/2012 1:43:00** **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	4.2	J	2.8	MDL	5.6	PQL	UG/KG	J	Z

Method Category: VOA

Method: 8015B GRO **Matrix: AQ**

Sample ID: EB-052412 **Collected: 5/24/2012 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
GASOLINE RANGE ORGANICS (C5-C12)	13	J	10	MDL	50	PQL	UG/L	U	T

Sample ID: TB-052412 **Collected: 5/24/2012 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
GASOLINE RANGE ORGANICS (C5-C12)	28	J	10	MDL	50	PQL	UG/L	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E204 **Laboratory: EMXT**

EDD Filename: Prep12E204 **eQAPP Name: CDM_SSFL_120730_EMAX**

Reason Code Legend

Reason Code	*Description*
*#	Professional Judgment
A	ICP Serial Dilution
Q	Matrix Spike Lower Estimation
Q	Matrix Spike Upper Estimation
T	Trip Blank Contamination
Z	Reporting Limit Trace Value

Enclosure I

Level III ADR Outliers
(including Manual Review Outliers)

Quality Control
Outlier Reports

12E204

Trip Blank Outlier Report

Lab Reporting Batch ID: 12E204 **Laboratory: EMXT**

EDD Filename: 12E204 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: **8015B GRO**
Matrix: **AQ**

Trip Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
TB-052412(RES)	5/24/2012 8:00:00 AM	GASOLINE RANGE ORGANICS (C5-C12)	28 UG/L	EB-052412 SL-672-SA5C-SB-0.0-0.5 SL-672-SA5C-SB-4.0-5.0 SL-672-SA5C-SB-5.0 SL-677-SA5C-SB-0.0-0.5 SL-677-SA5C-SB-4.0-5.0 SL-677-SA5C-SB-5.0 SL-694-SA5C-SB-0.0-0.5 SL-694-SA5C-SB-10.0 SL-694-SA5C-SB-4.0-5.0 SL-694-SA5C-SB-5.0 SL-694-SA5C-SB-9.0-10.0 SL-704-SA5C-SB-0.0-0.5 SL-704-SA5C-SB-10.0 SL-704-SA5C-SB-4.0-5.0 SL-704-SA5C-SB-5.0 SL-704-SA5C-SB-9.0-10.0 SL-705-SA5C-SB-0.0-0.5 SL-705-SA5C-SB-10.0 SL-705-SA5C-SB-4.0-5.0 SL-705-SA5C-SB-5.0 SL-705-SA5C-SB-9.0-10.0 SL-739-SA5C-SB-9.0-10.0EX

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-052412(RES)	GASOLINE RANGE ORGANICS (C5-C12)	13 UG/L	50U UG/L

Project Name and Number: PHASE3 - SSFL PHASE 3

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 12E204 **Laboratory: EMXT**

EDD Filename: 12E204 **eQAPP Name: CDM_SSFL_120730_EMAX**

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

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
SL-705-SA5C-SB-9.0-10.0MS (TOT) (SL-672-SA5C-SB-0.0-0.5 SL -672-SA5C-SB-4.0-5.0 SL -677-SA5C-SB-0.0-0.5 SL -677-SA5C-SB-4.0-5.0 SL -694-SA5C-SB-0.0-0.5 SL -694-SA5C-SB-4.0-5.0 SL -694-SA5C-SB-9.0-10.0 SL -704-SA5C-SB-0.0-0.5 SL -704-SA5C-SB-4.0-5.0 SL -704-SA5C-SB-9.0-10.0 SL -705-SA5C-SB-0.0-0.5 SL -705-SA5C-SB-4.0-5.0 SL -705-SA5C-SB-9.0-10.0)	ALUMINUM IRON	146 127	- -	75.00-125.00 75.00-125.00	- -	ALUMINUM IRON	No Qual, >4x
SL-705-SA5C-SB-9.0-10.0MS (TOT) **SL-705-SA5C-SB-9.0-10.0MSD (TOT)** (SL-672-SA5C-SB-0.0-0.5 SL -672-SA5C-SB-4.0-5.0 SL -677-SA5C-SB-0.0-0.5 SL -677-SA5C-SB-4.0-5.0 SL -694-SA5C-SB-0.0-0.5 SL -694-SA5C-SB-4.0-5.0 SL -694-SA5C-SB-9.0-10.0 SL -704-SA5C-SB-0.0-0.5 SL -704-SA5C-SB-4.0-5.0 SL -704-SA5C-SB-9.0-10.0 SL -705-SA5C-SB-0.0-0.5 SL -705-SA5C-SB-4.0-5.0 SL -705-SA5C-SB-9.0-10.0)	MANGANESE TITANIUM	42 227	54 57	75.00-125.00 75.00-125.00	- -	MANGANESE TITANIUM	No Qual, >4x

Project Name and Number: PHASE3 - SSFL PHASE 3

Reporting Limit Outliers

Lab Reporting Batch ID: 12E204 **Laboratory: EMXT**

EDD Filename: 12E204 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 6020
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-052412	BORON	J	0.00549	0.0100	PQL	MG/L	J (all detects)
	NICKEL	J	0.000226	0.00100	PQL	MG/L	

Method: 8015B GRO
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-052412	GASOLINE RANGE ORGANICS (C5-C12)	J	13	50	PQL	UG/L	J (all detects)
TB-052412	GASOLINE RANGE ORGANICS (C5-C12)	J	28	50	PQL	UG/L	J (all detects)

Method: 6020
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-672-SA5C-SB-0.0-0.5	ANTIMONY	J	0.224	0.557	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.110	0.557	PQL	MG/KG	
	MOLYBDENUM	J	0.381	0.557	PQL	MG/KG	
	THALLIUM	J	0.223	0.446	PQL	MG/KG	
SL-672-SA5C-SB-4.0-5.0	ANTIMONY	J	0.177	0.577	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.203	0.577	PQL	MG/KG	
	MOLYBDENUM	J	0.361	0.577	PQL	MG/KG	
	SILVER	J	0.0604	0.577	PQL	MG/KG	
	THALLIUM	J	0.376	0.462	PQL	MG/KG	
SL-677-SA5C-SB-0.0-0.5	ANTIMONY	J	0.331	0.578	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.156	0.578	PQL	MG/KG	
	SILVER	J	0.113	0.578	PQL	MG/KG	
	THALLIUM	J	0.274	0.463	PQL	MG/KG	
SL-677-SA5C-SB-4.0-5.0	ANTIMONY	J	0.177	0.546	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.137	0.546	PQL	MG/KG	
	MOLYBDENUM	J	0.504	0.546	PQL	MG/KG	
	THALLIUM	J	0.246	0.437	PQL	MG/KG	
SL-694-SA5C-SB-0.0-0.5	ANTIMONY	J	0.308	0.556	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.147	0.556	PQL	MG/KG	
	THALLIUM	J	0.282	0.445	PQL	MG/KG	
SL-694-SA5C-SB-4.0-5.0	ANTIMONY	J	0.221	0.544	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.138	0.544	PQL	MG/KG	
	MOLYBDENUM	J	0.517	0.544	PQL	MG/KG	
	THALLIUM	J	0.260	0.435	PQL	MG/KG	
SL-694-SA5C-SB-9.0-10.0	ANTIMONY	J	0.232	0.573	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.210	0.573	PQL	MG/KG	
	SILVER	J	0.112	0.573	PQL	MG/KG	
	THALLIUM	J	0.287	0.459	PQL	MG/KG	
SL-704-SA5C-SB-0.0-0.5	ANTIMONY	J	0.227	0.530	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.118	0.530	PQL	MG/KG	
	THALLIUM	J	0.209	0.424	PQL	MG/KG	

Project Name and Number: PHASE3 - SSFL PHASE 3

Reporting Limit Outliers

Lab Reporting Batch ID: 12E204 **Laboratory: EMXT**

EDD Filename: 12E204 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 6020
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-704-SA5C-SB-4.0-5.0	ANTIMONY	J	0.298	0.544	PQL	MG/KG	
	CADMIUM	J	0.173	0.544	PQL	MG/KG	J (all detects)
	THALLIUM	J	0.345	0.435	PQL	MG/KG	
SL-704-SA5C-SB-9.0-10.0	ANTIMONY	J	0.264	0.546	PQL	MG/KG	
	CADMIUM	J	0.260	0.546	PQL	MG/KG	
	MOLYBDENUM	J	0.382	0.546	PQL	MG/KG	J (all detects)
	SILVER	J	0.103	0.546	PQL	MG/KG	
	THALLIUM	J	0.300	0.437	PQL	MG/KG	
SL-705-SA5C-SB-0.0-0.5	ANTIMONY	J	0.260	0.545	PQL	MG/KG	
	CADMIUM	J	0.117	0.545	PQL	MG/KG	J (all detects)
	SILVER	J	0.0642	0.545	PQL	MG/KG	
	THALLIUM	J	0.210	0.436	PQL	MG/KG	
SL-705-SA5C-SB-4.0-5.0	ANTIMONY	J	0.224	0.537	PQL	MG/KG	
	CADMIUM	J	0.173	0.537	PQL	MG/KG	J (all detects)
	THALLIUM	J	0.256	0.430	PQL	MG/KG	
SL-705-SA5C-SB-9.0-10.0	ANTIMONY	J	0.253	0.549	PQL	MG/KG	
	CADMIUM	J	0.129	0.549	PQL	MG/KG	
	SILVER	J	0.0756	0.549	PQL	MG/KG	J (all detects)
	THALLIUM	J	0.251	0.439	PQL	MG/KG	
	Zirconium	J	2.93	5.49	PQL	MG/KG	

Method: 8015B EFH
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-677-SA5C-SB-0.0-0.5	EFH(C21-C30)	J	3.7	5.8	PQL	MG/KG	J (all detects)

Method: 8270C SIM
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-672-SA5C-SB-4.0-5.0	BENZO(A)ANTHRACENE	J	8.1	12	PQL	UG/KG	
	BENZO(B)FLUORANTHENE	J	7.6	12	PQL	UG/KG	
	BENZO(G,H,I)PERYLENE	J	4.7	12	PQL	UG/KG	J (all detects)
	CHRYSENE	J	4.1	12	PQL	UG/KG	
	PHENANTHRENE	J	5.0	12	PQL	UG/KG	
	PYRENE	J	3.5	12	PQL	UG/KG	
SL-677-SA5C-SB-4.0-5.0	BENZO(E)PYRENE	J	4.0	5.7	PQL	UG/KG	J (all detects)
SL-704-SA5C-SB-0.0-0.5	BENZO(E)PYRENE	J	9.0	11	PQL	UG/KG	J (all detects)
SL-704-SA5C-SB-4.0-5.0	BENZO(A)ANTHRACENE	J	9.1	23	PQL	UG/KG	
	BENZO(B)FLUORANTHENE	J	10	23	PQL	UG/KG	
	BENZO(G,H,I)PERYLENE	J	8.7	23	PQL	UG/KG	J (all detects)
	CHRYSENE	J	6.4	23	PQL	UG/KG	
SL-705-SA5C-SB-4.0-5.0	BENZO(E)PYRENE	J	4.2	5.6	PQL	UG/KG	J (all detects)

Project Name and Number: PHASE3 - SSFL PHASE 3

LDC #: 28578B4
SDG #: 12E204
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 11-6-12
Page: 1 of 1
Reviewer: CA
2nd Reviewer: W

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

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

	Validation Area		Comments
I.	Technical holding times	—	Sampling dates:
II.	ICP/MS Tune	—	
III.	Calibration	—	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	—	
VI.	Matrix Spike Analysis	N	MS/D (Al, Fe, Mn, Ti > 4X)
VII.	Duplicate Sample Analysis	N	
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	—	
XV	Field Blanks	SW	EB=1 FB=FB-060512 C12F037

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-052412	11	SL-677-SA5C-SB-4.0-5.0	21		31	
2	SL-704-SA5C-SB-0.0-0.5	12	SL-705-SA5C-SB-0.0-0.5	22		32	
3	SL-704-SA5C-SB-4.0-5.0	13	SL-705-SA5C-SB-4.0-5.0	23		33	
4	SL-704-SA5C-SB-9.0-10.0	14	SL-705-SA5C-SB-9.0-10.0	24		34	
5	SL-694-SA5C-SB-0.0-0.5	15	SL-704-SA5C-SB-0.0-0.5MS	25		35	
6	SL-694-SA5C-SB-4.0-5.0	16	SL-704-SA5C-SB-0.0-0.5MSD	26		36	
7	SL-694-SA5C-SB-9.0-10.0	17	SL-705-SA5C-SB-9.0-10.0MS	27		37	
8	SL-672-SA5C-SB-0.0-0.5	18	SL-705-SA5C-SB-9.0-10.0MSD	28		38	
9	SL-672-SA5C-SB-4.0-5.0	19		29		39	
10	SL-677-SA5C-SB-0.0-05	20		30		40	

Notes: _____

LDC #: 28578B4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: [signature]
2nd Reviewer: [signature]

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

Blank units: ug/L **Associated sample units:** mg/Kg
Sampling date: 5/24/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: All 5

Analyte	Blank ID	Sample Identification										
	EB-052412	Action Limit	No Qualifiers									
B	0.0049	1.225										
Ni	0.000226	0.0565										

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 #: 28578H4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: 2
2nd Reviewer:

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

Blank units: ug/L **Associated sample units:** mg/Kg

Sampling date: 6/5/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: AllSoil

Analyte	Blank ID	Sample Identification										
	FB-060512	Action Limit	No Qualifiers									
Al	0.0270	6.75										
Ca	0.0263	6.575										
Cu	0.000954	0.2385										

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 #: 28578B4

VALIDATION FINDINGS WORKSHEET
ICP Serial Dilution

Reviewer: CK
2nd Reviewer: LA

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

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

Y N N/A If analyte concentrations were > 50X the MDL (ICP) ,or >100X the MDL (ICP/MS), was a serial dilution analyzed?
Y N N/A Were ICP serial dilution percent differences (%D) ≤10%?
Y N N/A Is there evidence of negative interference? If yes, professional judgement will be used to qualify the data.

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Date	Diluted Sample ID	Matrix	Analyte	%D (Limits)	Associated Samples	Qualifications
		14	S	Co	11	All Soil	J/UJ/A (A)
				Fe	11	↓	↓
				Mn	12	↓	↓

Comments:

SAMPLE DELIVERY GROUP

12E229

Attachment I

Sample ID Cross Reference and Data Review Level

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
29-May-2012	TB-052912	E229-24	TB	5030B	8015B GRO	III
29-May-2012	SL-724-SA5C-SB-0.0-0.5	E229-11	N	3550B	8015B EFH	III
29-May-2012	SL-724-SA5C-SB-0.0-0.5	E229-11	N	3550B	8082	III
29-May-2012	SL-724-SA5C-SB-0.0-0.5	E229-11	N	3550B	8270C SIM	III
29-May-2012	SL-724-SA5C-SB-0.0-0.5	E229-11	N	7471A	7471A	III
29-May-2012	SL-724-SA5C-SB-0.0-0.5	E229-11	N	TOTAL	6020	III
29-May-2012	SL-724-SA5C-SB-5.0	E229-13	N	5035	8015B GRO	III
29-May-2012	SL-724-SA5C-SB-4.0-5.0	E229-12	N	3550B	8015B EFH	III
29-May-2012	SL-724-SA5C-SB-4.0-5.0	E229-12	N	3550B	8082	III
29-May-2012	SL-724-SA5C-SB-4.0-5.0	E229-12	N	3550B	8270C SIM	III
29-May-2012	SL-724-SA5C-SB-4.0-5.0	E229-12	N	7471A	7471A	III
29-May-2012	SL-724-SA5C-SB-4.0-5.0	E229-12	N	TOTAL	6020	III
29-May-2012	SL-724-SA5C-SB-4.0-5.0MS	E229-12M	MS	3550B	8082	III
29-May-2012	SL-724-SA5C-SB-4.0-5.0MSD	E229-12S	MSD	3550B	8082	III
29-May-2012	SL-724-SA5C-SB-10.0	E229-15	N	5035	8015B GRO	III
29-May-2012	SL-724-SA5C-SB-9.0-10.0	E229-14	N	3550B	8015B EFH	III
29-May-2012	SL-724-SA5C-SB-9.0-10.0	E229-14	N	3550B	8082	III
29-May-2012	SL-724-SA5C-SB-9.0-10.0	E229-14	N	3550B	8270C SIM	III
29-May-2012	SL-724-SA5C-SB-9.0-10.0	E229-14	N	7471A	7471A	III
29-May-2012	SL-724-SA5C-SB-9.0-10.0	E229-14	N	TOTAL	6020	III
29-May-2012	SL-723-SA5C-SB-0.0-0.5	E229-06	N	3550B	8015B EFH	III
29-May-2012	SL-723-SA5C-SB-0.0-0.5	E229-06	N	3550B	8082	III
29-May-2012	SL-723-SA5C-SB-0.0-0.5	E229-06	N	3550B	8270C SIM	III
29-May-2012	SL-723-SA5C-SB-0.0-0.5	E229-06	N	7471A	7471A	III
29-May-2012	SL-723-SA5C-SB-0.0-0.5	E229-06	N	TOTAL	6020	III
29-May-2012	SL-723-SA5C-SB-5.0	E229-08	N	5035	8015B GRO	III

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

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
29-May-2012	SL-723-SA5C-SB-4.0-5.0	E229-07	N	3550B	8015B EFH	III
29-May-2012	SL-723-SA5C-SB-4.0-5.0	E229-07	N	3550B	8082	III
29-May-2012	SL-723-SA5C-SB-4.0-5.0	E229-07	N	3550B	8270C SIM	III
29-May-2012	SL-723-SA5C-SB-4.0-5.0	E229-07	N	7471A	7471A	III
29-May-2012	SL-723-SA5C-SB-4.0-5.0	E229-07	N	TOTAL	6020	III
29-May-2012	SL-723-SA5C-SB-10.0	E229-10	N	5035	8015B GRO	III
29-May-2012	SL-723-SA5C-SB-9.0-10.0	E229-09	N	3550B	8015B EFH	III
29-May-2012	SL-723-SA5C-SB-9.0-10.0	E229-09	N	3550B	8082	III
29-May-2012	SL-723-SA5C-SB-9.0-10.0	E229-09	N	3550B	8270C SIM	III
29-May-2012	SL-723-SA5C-SB-9.0-10.0	E229-09	N	7471A	7471A	III
29-May-2012	SL-723-SA5C-SB-9.0-10.0	E229-09	N	TOTAL	6020	III
29-May-2012	SL-706-SA5C-SB-0.0-0.5	E229-01	N	3550B	8082	III
29-May-2012	SL-706-SA5C-SB-0.0-0.5	E229-01	N	3550B	8270C SIM	III
29-May-2012	SL-706-SA5C-SB-0.0-0.5	E229-01	N	7471A	7471A	III
29-May-2012	SL-706-SA5C-SB-0.0-0.5	E229-01	N	TOTAL	6020	III
29-May-2012	SL-706-SA5C-SB-0.0-0.5	E229-01T	N	3550B	8015B EFH	III
29-May-2012	SL-706-SA5C-SB-5.0	E229-03	N	5035	8015B GRO	III
29-May-2012	SL-706-SA5C-SB-4.0-5.0	E229-02	N	3550B	8015B EFH	III
29-May-2012	SL-706-SA5C-SB-4.0-5.0	E229-02	N	3550B	8082	III
29-May-2012	SL-706-SA5C-SB-4.0-5.0	E229-02	N	3550B	8270C SIM	III
29-May-2012	SL-706-SA5C-SB-4.0-5.0	E229-02	N	7471A	7471A	III
29-May-2012	SL-706-SA5C-SB-4.0-5.0	E229-02	N	TOTAL	6020	III
29-May-2012	SL-706-SA5C-SB-10.0	E229-05	N	5035	8015B GRO	III
29-May-2012	SL-706-SA5C-SB-9.0-10.0	E229-04	N	3550B	8015B EFH	III
29-May-2012	SL-706-SA5C-SB-9.0-10.0	E229-04	N	3550B	8082	III
29-May-2012	SL-706-SA5C-SB-9.0-10.0	E229-04	N	3550B	8270C 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
29-May-2012	SL-706-SA5C-SB-9.0-10.0	E229-04	N	7471A	7471A	III
29-May-2012	SL-706-SA5C-SB-9.0-10.0	E229-04	N	TOTAL	6020	III
29-May-2012	SL-750-SA5C-SB-0.0-0.5	E229-16	N	3550B	8015B EFH	III
29-May-2012	SL-750-SA5C-SB-0.0-0.5	E229-16	N	3550B	8082	III
29-May-2012	SL-750-SA5C-SB-0.0-0.5	E229-16	N	3550B	8270C SIM	III
29-May-2012	SL-750-SA5C-SB-0.0-0.5	E229-16	N	7471A	7471A	III
29-May-2012	SL-750-SA5C-SB-0.0-0.5	E229-16	N	TOTAL	6020	III
29-May-2012	SL-750-SA5C-SB-6.5	E229-18	N	5035	8015B GRO	III
29-May-2012	SL-750-SA5C-SB-5.5-6.5	E229-17	N	3550B	8015B EFH	III
29-May-2012	SL-750-SA5C-SB-5.5-6.5	E229-17	N	3550B	8082	III
29-May-2012	SL-750-SA5C-SB-5.5-6.5	E229-17	N	3550B	8270C SIM	III
29-May-2012	SL-750-SA5C-SB-5.5-6.5	E229-17	N	7471A	7471A	III
29-May-2012	SL-750-SA5C-SB-5.5-6.5	E229-17	N	TOTAL	6020	III
29-May-2012	SL-555-SA5C-SB-0.0-0.5	E229-20	N	3550B	8082	III
29-May-2012	SL-555-SA5C-SB-0.0-0.5	E229-20	N	3550B	8270C SIM	III
29-May-2012	SL-555-SA5C-SB-0.0-0.5	E229-20	N	7471A	7471A	III
29-May-2012	SL-555-SA5C-SB-0.0-0.5	E229-20	N	GEN PREP	8015B	III
29-May-2012	SL-555-SA5C-SB-0.0-0.5	E229-20	N	GEN PREP	8015M	III
29-May-2012	SL-555-SA5C-SB-0.0-0.5	E229-20	N	TOTAL	6020	III
29-May-2012	SL-555-SA5C-SB-0.0-0.5	E229-20T	N	3550B	8015B EFH	III
29-May-2012	SL-555-SA5C-SB-3.5	E229-22	N	5035	8015B GRO	III
29-May-2012	SL-555-SA5C-SB-2.5-3.5	E229-21	N	3550B	8015B EFH	III
29-May-2012	SL-555-SA5C-SB-2.5-3.5	E229-21	N	3550B	8082	III
29-May-2012	SL-555-SA5C-SB-2.5-3.5	E229-21	N	3550B	8270C SIM	III
29-May-2012	SL-555-SA5C-SB-2.5-3.5	E229-21	N	7471A	7471A	III
29-May-2012	SL-555-SA5C-SB-2.5-3.5	E229-21	N	GEN PREP	8015B	III

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

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
29-May-2012	SL-555-SA5C-SB-2.5-3.5	E229-21	N	GEN PREP	8015M	III
29-May-2012	SL-555-SA5C-SB-2.5-3.5	E229-21	N	TOTAL	6020	III
29-May-2012	SL-555-SA5C-SB-2.5-3.5MS	E229-21M	MS	3550B	8270C SIM	III
29-May-2012	SL-555-SA5C-SB-2.5-3.5MSD	E229-21S	MSD	3550B	8270C SIM	III
29-May-2012	SL-554-SA5C-SB-0.0-0.5	E229-19	N	3550B	8015B EFH	III
29-May-2012	SL-554-SA5C-SB-0.0-0.5	E229-19	N	3550B	8082	III
29-May-2012	SL-554-SA5C-SB-0.0-0.5	E229-19	N	3550B	8270C SIM	III
29-May-2012	SL-554-SA5C-SB-0.0-0.5	E229-19	N	7471A	7471A	III
29-May-2012	SL-554-SA5C-SB-0.0-0.5	E229-19	N	GEN PREP	8015M	III
29-May-2012	SL-554-SA5C-SB-0.0-0.5	E229-19	N	TOTAL	6020	III
29-May-2012	SL-554-SA5C-SB-0.0-0.5	E229-19W	N	GEN PREP	8015B	III
29-May-2012	SL-620-SA5C-SB-0.0-0.5	E229-23	N	3550B	8015B EFH	III
29-May-2012	SL-620-SA5C-SB-0.0-0.5	E229-23	N	3550B	8082	III
29-May-2012	SL-620-SA5C-SB-0.0-0.5	E229-23	N	3550B	8270C SIM	III
29-May-2012	SL-620-SA5C-SB-0.0-0.5	E229-23	N	7471A	7471A	III
29-May-2012	SL-620-SA5C-SB-0.0-0.5	E229-23	N	GEN PREP	6850	III
29-May-2012	SL-620-SA5C-SB-0.0-0.5	E229-23	N	TOTAL	6020	III
29-May-2012	SL-620-SA5C-SB-0.0-0.5MS	E229-23M	MS	3550B	8015B EFH	III
29-May-2012	SL-620-SA5C-SB-0.0-0.5MS	E229-23M	MS	TOTAL	6020	III
29-May-2012	SL-620-SA5C-SB-0.0-0.5MSD	E229-23S	MSD	3550B	8015B EFH	III
29-May-2012	SL-620-SA5C-SB-0.0-0.5MSD	E229-23S	MSD	TOTAL	6020	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 II

Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: 12E229 **Laboratory: EMXT**

EDD Filename: 12E229 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: SL-554-SA5C-SB-0.0-0.5 **Collected:** 5/29/2012 2:45:00 **Analysis Type:** RES/TOT **Dilution:** 0.976

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.234	J	0.108	MDL	0.540	PQL	MG/KG	J	Z
BERYLLIUM	0.532	J	0.0540	MDL	0.540	PQL	MG/KG	J	Z
CADMIUM	0.229	J	0.0540	MDL	0.540	PQL	MG/KG	J	Z
SODIUM	80.0	J	54.0	MDL	108	PQL	MG/KG	J	Z
THALLIUM	0.259	J	0.0540	MDL	0.432	PQL	MG/KG	J	Z
Zirconium	2.88	J	2.70	MDL	5.40	PQL	MG/KG	J	Z

Sample ID: SL-555-SA5C-SB-0.0-0.5 **Collected:** 5/29/2012 2:12:00 **Analysis Type:** RES/TOT **Dilution:** 0.943

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.295	J	0.107	MDL	0.534	PQL	MG/KG	J	Z
CADMIUM	0.158	J	0.0534	MDL	0.534	PQL	MG/KG	J	Z
MOLYBDENUM	0.475	J	0.0534	MDL	0.534	PQL	MG/KG	J	Z
SILVER	0.255	J	0.0534	MDL	0.534	PQL	MG/KG	J	Z
THALLIUM	0.302	J	0.0534	MDL	0.427	PQL	MG/KG	J	Z

Sample ID: SL-555-SA5C-SB-2.5-3.5 **Collected:** 5/29/2012 2:14:00 **Analysis Type:** RES/TOT **Dilution:** 0.952

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.289	J	0.108	MDL	0.541	PQL	MG/KG	J	Z
CADMIUM	0.352	J	0.0541	MDL	0.541	PQL	MG/KG	J	Z
SELENIUM	0.294	J	0.216	MDL	0.541	PQL	MG/KG	J	Z
SILVER	0.109	J	0.0541	MDL	0.541	PQL	MG/KG	J	Z
THALLIUM	0.334	J	0.0541	MDL	0.433	PQL	MG/KG	J	Z
Zirconium	3.44	J	2.70	MDL	5.41	PQL	MG/KG	J	Z

Sample ID: SL-620-SA5C-SB-0.0-0.5 **Collected:** 5/29/2012 3:10:00 **Analysis Type:** RES/TOT **Dilution:** 0.939

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.310	J	0.101	MDL	0.505	PQL	MG/KG	J	Z
CADMIUM	0.184	J	0.0505	MDL	0.505	PQL	MG/KG	J	Z
THALLIUM	0.239	J	0.0505	MDL	0.404	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E229 **Laboratory: EMXT**

EDD Filename: 12E229 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: SL-706-SA5C-SB-0.0-0.5 **Collected:** 5/29/2012 10:54:00 **Analysis Type:** RES/TOT **Dilution:** 0.966

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.430	J	0.104	MDL	0.518	PQL	MG/KG	J	Z
BERYLLIUM	0.493	J	0.0518	MDL	0.518	PQL	MG/KG	J	Z
BORON	4.81	J	2.59	MDL	5.18	PQL	MG/KG	J	Z
CADMIUM	0.239	J	0.0518	MDL	0.518	PQL	MG/KG	J	Z
THALLIUM	0.201	J	0.0518	MDL	0.415	PQL	MG/KG	J	Z

Sample ID: SL-706-SA5C-SB-4.0-5.0 **Collected:** 5/29/2012 10:59:00 **Analysis Type:** RES/TOT **Dilution:** 0.943

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.241	J	0.104	MDL	0.522	PQL	MG/KG	J	Z
CADMIUM	0.120	J	0.0522	MDL	0.522	PQL	MG/KG	J	Z
THALLIUM	0.311	J	0.0522	MDL	0.417	PQL	MG/KG	J	Z

Sample ID: SL-706-SA5C-SB-9.0-10.0 **Collected:** 5/29/2012 11:04:00 **Analysis Type:** RES/TOT **Dilution:** 0.995

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.206	J	0.110	MDL	0.548	PQL	MG/KG	J	Z
CADMIUM	0.117	J	0.0548	MDL	0.548	PQL	MG/KG	J	Z
THALLIUM	0.228	J	0.0548	MDL	0.438	PQL	MG/KG	J	Z

Sample ID: SL-723-SA5C-SB-0.0-0.5 **Collected:** 5/29/2012 10:05:00 **Analysis Type:** RES/TOT **Dilution:** 0.990

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.402	J	0.105	MDL	0.523	PQL	MG/KG	J	Z
BERYLLIUM	0.445	J	0.0523	MDL	0.523	PQL	MG/KG	J	Z
CADMIUM	0.197	J	0.0523	MDL	0.523	PQL	MG/KG	J	Z
THALLIUM	0.218	J	0.0523	MDL	0.419	PQL	MG/KG	J	Z

Sample ID: SL-723-SA5C-SB-4.0-5.0 **Collected:** 5/29/2012 10:09:00 **Analysis Type:** RES/TOT **Dilution:** 0.980

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.221	J	0.111	MDL	0.553	PQL	MG/KG	J	Z
CADMIUM	0.134	J	0.0553	MDL	0.553	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E229 **Laboratory: EMXT**

EDD Filename: 12E229 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: SL-723-SA5C-SB-4.0-5.0 **Collected:** 5/29/2012 10:09:00 **Analysis Type:** RES/TOT **Dilution:** 0.980

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.526	J	0.0553	MDL	0.553	PQL	MG/KG	J	Z
SILVER	0.0654	J	0.0553	MDL	0.553	PQL	MG/KG	J	Z
THALLIUM	0.270	J	0.0553	MDL	0.442	PQL	MG/KG	J	Z

Sample ID: SL-723-SA5C-SB-9.0-10.0 **Collected:** 5/29/2012 10:13:00 **Analysis Type:** RES/TOT **Dilution:** 0.935

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.325	J	0.101	MDL	0.505	PQL	MG/KG	J	Z
CADMIUM	0.237	J	0.0505	MDL	0.505	PQL	MG/KG	J	Z
SILVER	0.0648	J	0.0505	MDL	0.505	PQL	MG/KG	J	Z
THALLIUM	0.324	J	0.0505	MDL	0.404	PQL	MG/KG	J	Z

Sample ID: SL-724-SA5C-SB-0.0-0.5 **Collected:** 5/29/2012 8:57:00 **Analysis Type:** RES/TOT **Dilution:** 0.990

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.192	J	0.114	MDL	0.570	PQL	MG/KG	J	Z
CADMIUM	0.230	J	0.0570	MDL	0.570	PQL	MG/KG	J	Z
SODIUM	99.2	J	57.0	MDL	114	PQL	MG/KG	J	Z
THALLIUM	0.284	J	0.0570	MDL	0.456	PQL	MG/KG	J	Z

Sample ID: SL-724-SA5C-SB-4.0-5.0 **Collected:** 5/29/2012 9:00:00 **Analysis Type:** RES/TOT **Dilution:** 0.939

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.214	J	0.108	MDL	0.540	PQL	MG/KG	J	Z
CADMIUM	0.128	J	0.0540	MDL	0.540	PQL	MG/KG	J	Z
MOLYBDENUM	0.297	J	0.0540	MDL	0.540	PQL	MG/KG	J	Z
SILVER	0.0541	J	0.0540	MDL	0.540	PQL	MG/KG	J	Z
THALLIUM	0.301	J	0.0540	MDL	0.432	PQL	MG/KG	J	Z

Sample ID: SL-724-SA5C-SB-9.0-10.0 **Collected:** 5/29/2012 9:04:00 **Analysis Type:** RES/TOT **Dilution:** 0.976

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.262	J	0.111	MDL	0.556	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E229 **Laboratory: EMXT**

EDD Filename: 12E229 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: SL-724-SA5C-SB-9.0-10.0 *Collected:* 5/29/2012 9:04:00 *Analysis Type:* RES/TOT *Dilution:* 0.976

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CADMIUM	0.233	J	0.0556	MDL	0.556	PQL	MG/KG	J	Z
MOLYBDENUM	0.434	J	0.0556	MDL	0.556	PQL	MG/KG	J	Z
SILVER	0.116	J	0.0556	MDL	0.556	PQL	MG/KG	J	Z
THALLIUM	0.320	J	0.0556	MDL	0.445	PQL	MG/KG	J	Z

Sample ID: SL-750-SA5C-SB-0.0-0.5 *Collected:* 5/29/2012 11:47:00 *Analysis Type:* RES/TOT *Dilution:* 0.966

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.215	J	0.107	MDL	0.535	PQL	MG/KG	J	Z
CADMIUM	0.242	J	0.0535	MDL	0.535	PQL	MG/KG	J	Z
MOLYBDENUM	0.496	J	0.0535	MDL	0.535	PQL	MG/KG	J	Z
THALLIUM	0.371	J	0.0535	MDL	0.428	PQL	MG/KG	J	Z

Sample ID: SL-750-SA5C-SB-5.5-6.5 *Collected:* 5/29/2012 11:56:00 *Analysis Type:* RES/TOT *Dilution:* 0.948

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.217	J	0.104	MDL	0.522	PQL	MG/KG	J	Z
CADMIUM	0.269	J	0.0522	MDL	0.522	PQL	MG/KG	J	Z
MOLYBDENUM	0.494	J	0.0522	MDL	0.522	PQL	MG/KG	J	Z
SILVER	0.0985	J	0.0522	MDL	0.522	PQL	MG/KG	J	Z
THALLIUM	0.319	J	0.0522	MDL	0.418	PQL	MG/KG	J	Z

Method Category: SVOA

Method: 8015B EFH **Matrix: SO**

Sample ID: SL-724-SA5C-SB-0.0-0.5 *Collected:* 5/29/2012 8:57:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH(C21-C30)	3.2	J	2.9	MDL	5.8	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E229 **Laboratory: EMXT**

EDD Filename: 12E229 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

Method: 8270C SIM **Matrix:** SO

Sample ID: SL-555-SA5C-SB-0.0-0.5 *Collected:* 5/29/2012 2:12:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 3

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)ANTHRACENE	13	J	8.5	MDL	34	PQL	UG/KG	J	Z
BENZO(E)PYRENE	13	J	8.5	MDL	17	PQL	UG/KG	J	Z

Sample ID: SL-706-SA5C-SB-0.0-0.5 *Collected:* 5/29/2012 10:54:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 3

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)ANTHRACENE	14	J	8.0	MDL	32	PQL	UG/KG	J	Z
BENZO(A)PYRENE	22	J	8.0	MDL	32	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	11	J	8.0	MDL	32	PQL	UG/KG	J	Z
BENZO(K)FLUORANTHENE	21	J	8.0	MDL	32	PQL	UG/KG	J	Z

Sample ID: SL-706-SA5C-SB-4.0-5.0 *Collected:* 5/29/2012 10:59:00 *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	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
ACENAPHTHENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
ACENAPHTHYLENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
ANTHRACENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
BENZO(A)ANTHRACENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
BENZO(A)PYRENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
BENZO(B)FLUORANTHENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
BENZO(E)PYRENE	5.5	U	2.8	MDL	5.5	PQL	UG/KG	UJ	S
BENZO(G,H,I)PERYLENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
BENZO(K)FLUORANTHENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
CHRYSENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
DIBENZO(A,H)ANTHRACENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
FLUORANTHENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
FLUORENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
INDENO(1,2,3-CD)PYRENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
NAPHTHALENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
N-NITROSODIMETHYLAMINE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
PHENANTHRENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E229 **Laboratory: EMXT**

EDD Filename: 12E229 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

Method: 8270C SIM **Matrix: SO**

Sample ID: SL-706-SA5C-SB-4.0-5.0 *Collected:* 5/29/2012 10:59:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PYRENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S

Sample ID: SL-706-SA5C-SB-9.0-10.0 *Collected:* 5/29/2012 11:04:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-METHYLNAPHTHALENE	22	U	5.5	MDL	22	PQL	UG/KG	UJ	S
ACENAPHTHENE	22	U	5.5	MDL	22	PQL	UG/KG	UJ	S
ACENAPHTHYLENE	22	U	5.5	MDL	22	PQL	UG/KG	UJ	S
ANTHRACENE	22	U	5.5	MDL	22	PQL	UG/KG	UJ	S
BENZO(A)ANTHRACENE	22	U	5.5	MDL	22	PQL	UG/KG	UJ	S
BENZO(A)PYRENE	22	U	5.5	MDL	22	PQL	UG/KG	UJ	S
BENZO(B)FLUORANTHENE	22	U	5.5	MDL	22	PQL	UG/KG	UJ	S
BENZO(E)PYRENE	11	U	5.5	MDL	11	PQL	UG/KG	UJ	S
BENZO(G,H,I)PERYLENE	22	U	5.5	MDL	22	PQL	UG/KG	UJ	S
BENZO(K)FLUORANTHENE	22	U	5.5	MDL	22	PQL	UG/KG	UJ	S
CHRYSENE	22	U	5.5	MDL	22	PQL	UG/KG	UJ	S
DIBENZO(A,H)ANTHRACENE	22	U	5.5	MDL	22	PQL	UG/KG	UJ	S
FLUORANTHENE	22	U	5.5	MDL	22	PQL	UG/KG	UJ	S
FLUORENE	22	U	5.5	MDL	22	PQL	UG/KG	UJ	S
INDENO(1,2,3-CD)PYRENE	22	U	5.5	MDL	22	PQL	UG/KG	UJ	S
NAPHTHALENE	22	U	5.5	MDL	22	PQL	UG/KG	UJ	S
N-NITROSODIMETHYLAMINE	22	U	5.5	MDL	22	PQL	UG/KG	UJ	S
PHENANTHRENE	22	U	5.5	MDL	22	PQL	UG/KG	UJ	S
PYRENE	22	U	5.5	MDL	22	PQL	UG/KG	UJ	S

Sample ID: SL-723-SA5C-SB-0.0-0.5 *Collected:* 5/29/2012 10:05:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-METHYLNAPHTHALENE	21	U	5.3	MDL	21	PQL	UG/KG	UJ	S
ACENAPHTHENE	21	U	5.3	MDL	21	PQL	UG/KG	UJ	S
ACENAPHTHYLENE	21	U	5.3	MDL	21	PQL	UG/KG	UJ	S
ANTHRACENE	21	U	5.3	MDL	21	PQL	UG/KG	UJ	S

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E229 **Laboratory: EMXT**

EDD Filename: 12E229 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

Method: 8270C SIM **Matrix: SO**

Sample ID: SL-723-SA5C-SB-0.0-0.5 *Collected:* 5/29/2012 10:05:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)ANTHRACENE	6.0	J	5.3	MDL	21	PQL	UG/KG	J	Z, S
BENZO(A)PYRENE	6.4	J	5.3	MDL	21	PQL	UG/KG	J	Z, S
BENZO(B)FLUORANTHENE	16	J	5.3	MDL	21	PQL	UG/KG	J	Z, S
BENZO(E)PYRENE	7.0	J	5.3	MDL	11	PQL	UG/KG	J	Z, S
BENZO(G,H,I)PERYLENE	21	U	5.3	MDL	21	PQL	UG/KG	UJ	S
BENZO(K)FLUORANTHENE	17	J	5.3	MDL	21	PQL	UG/KG	J	Z, S
CHRYSENE	10	J	5.3	MDL	21	PQL	UG/KG	J	Z, S
DIBENZO(A,H)ANTHRACENE	21	U	5.3	MDL	21	PQL	UG/KG	UJ	S
FLUORANTHENE	11	J	5.3	MDL	21	PQL	UG/KG	J	Z, S
FLUORENE	21	U	5.3	MDL	21	PQL	UG/KG	UJ	S
INDENO(1,2,3-CD)PYRENE	21	U	5.3	MDL	21	PQL	UG/KG	UJ	S
NAPHTHALENE	21	U	5.3	MDL	21	PQL	UG/KG	UJ	S
N-NITROSODIMETHYLAMINE	21	U	5.3	MDL	21	PQL	UG/KG	UJ	S
PHENANTHRENE	21	U	5.3	MDL	21	PQL	UG/KG	UJ	S
PYRENE	9.4	J	5.3	MDL	21	PQL	UG/KG	J	Z, S

Sample ID: SL-723-SA5C-SB-9.0-10.0 *Collected:* 5/29/2012 10:13:00 *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	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S
ACENAPHTHENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S
ACENAPHTHYLENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S
ANTHRACENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S
BENZO(A)ANTHRACENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S
BENZO(A)PYRENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S
BENZO(B)FLUORANTHENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S
BENZO(E)PYRENE	5.4	U	2.7	MDL	5.4	PQL	UG/KG	UJ	S
BENZO(G,H,I)PERYLENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S
BENZO(K)FLUORANTHENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S
CHRYSENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S
DIBENZO(A,H)ANTHRACENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S
FLUORANTHENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E229 **Laboratory: EMXT**

EDD Filename: 12E229 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

Method: 8270C SIM *Matrix:* SO

Sample ID: SL-723-SA5C-SB-9.0-10.0 *Collected:* 5/29/2012 10:13:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S
INDENO(1,2,3-CD)PYRENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S
NAPHTHALENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S
N-NITROSODIMETHYLAMINE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S
PHENANTHRENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S
PYRENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S

Sample ID: SL-724-SA5C-SB-9.0-10.0 *Collected:* 5/29/2012 9:04:00 *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	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
ACENAPHTHENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
ACENAPHTHYLENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
ANTHRACENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
BENZO(A)ANTHRACENE	5.5	J	2.8	MDL	11	PQL	UG/KG	J	Z, S
BENZO(A)PYRENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
BENZO(B)FLUORANTHENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
BENZO(E)PYRENE	5.7	U	2.8	MDL	5.7	PQL	UG/KG	UJ	S
BENZO(G,H,I)PERYLENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
BENZO(K)FLUORANTHENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
CHRYSENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
DIBENZO(A,H)ANTHRACENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
FLUORANTHENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
FLUORENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
INDENO(1,2,3-CD)PYRENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
NAPHTHALENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
N-NITROSODIMETHYLAMINE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
PHENANTHRENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
PYRENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E229 **Laboratory: EMXT**

EDD Filename: 12E229 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: VOA

Method: 8015B GRO *Matrix:* AQ

Sample ID: TB-052912 *Collected:* 5/29/2012 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
GASOLINE RANGE ORGANICS (C5-C12)	27	J	10	MDL	50	PQL	UG/L	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E229 **Laboratory: EMXT**

EDD Filename: 12E229 **eQAPP Name: CDM_SSFL_120730_EMAX**

Reason Code Legend

Reason Code	*Description*
Q	Matrix Spike Lower Estimation
Q	Matrix Spike Lower Rejection
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: PHASE3 - SSFL PHASE 3

Enclosure I

Level III ADR Outliers
(including Manual Review Outliers)

Quality Control
Outlier Reports

12E229

Surrogate Outlier Report

Lab Reporting Batch ID: 12E229 **Laboratory: EMXT**

EDD Filename: Prep12E229 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 8270C SIM
Matrix: SO

Sample ID (Analysis Type)	Surrogate	Sample % Recovery	% Recovery Limits	Affected Compounds	Flag
SL-554-SA5C-SB-0.0-0.5	2-FLUOROBIPHENYL	39.2	45.00-130.00	No Affected Compounds	
SL-706-SA5C-SB-4.0-5.0	2-FLUOROBIPHENYL Nitrobenzene-d5	28 30.4	45.00-130.00 40.00-130.00	All Base/Neutral Target Analytes	J(all detects) UJ(all non-detects)
SL-706-SA5C-SB-9.0-10.0	2-FLUOROBIPHENYL Nitrobenzene-d5	36.7 37.3	45.00-130.00 40.00-130.00	All Base/Neutral Target Analytes	J(all detects) UJ(all non-detects)
SL-723-SA5C-SB-0.0-0.5	2-FLUOROBIPHENYL Nitrobenzene-d5	37.9 38.9	45.00-130.00 40.00-130.00	All Base/Neutral Target Analytes	J(all detects) UJ(all non-detects)
SL-723-SA5C-SB-9.0-10.0	2-FLUOROBIPHENYL Nitrobenzene-d5	31.6 35.5	45.00-130.00 40.00-130.00	All Base/Neutral Target Analytes	J(all detects) UJ(all non-detects)
SL-724-SA5C-SB-0.0-0.5	2-FLUOROBIPHENYL	32.6	45.00-130.00	No Affected Compounds	
SL-724-SA5C-SB-9.0-10.0	2-FLUOROBIPHENYL Nitrobenzene-d5	29.1 29.1	45.00-130.00 40.00-130.00	All Base/Neutral Target Analytes	J(all detects) UJ(all non-detects)
SL-750-SA5C-SB-0.0-0.5	2-FLUOROBIPHENYL	40.4	45.00-130.00	No Affected Compounds	

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 12E229 **Laboratory: EMXT**

EDD Filename: 12E229 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 6020
Matrix: SO

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
SL-620-SA5C-SB-0.0-0.5MSD (TOT) (SL-554-SA5C-SB-0.0-0.5 SL -555-SA5C-SB-0.0-0.5 SL -555-SA5C-SB-2.5-3.5 SL -620-SA5C-SB-0.0-0.5 SL -706-SA5C-SB-0.0-0.5 SL -706-SA5C-SB-4.0-5.0 SL -706-SA5C-SB-9.0-10.0 SL -723-SA5C-SB-0.0-0.5 SL -723-SA5C-SB-4.0-5.0 SL -723-SA5C-SB-9.0-10.0 SL -724-SA5C-SB-0.0-0.5 SL -724-SA5C-SB-4.0-5.0 SL -724-SA5C-SB-9.0-10.0 SL -750-SA5C-SB-0.0-0.5 SL -750-SA5C-SB-5.5-6.5)	MANGANESE	-	209	75.00-125.00	-	MANGANESE	No Qual, >4x
SL-620-SA5C-SB-0.0-0.5MS (TOT) (SL-554-SA5C-SB-0.0-0.5 SL -555-SA5C-SB-0.0-0.5 SL -555-SA5C-SB-2.5-3.5 SL -620-SA5C-SB-0.0-0.5 SL -706-SA5C-SB-0.0-0.5 SL -706-SA5C-SB-4.0-5.0 SL -706-SA5C-SB-9.0-10.0 SL -723-SA5C-SB-0.0-0.5 SL -723-SA5C-SB-4.0-5.0 SL -723-SA5C-SB-9.0-10.0 SL -724-SA5C-SB-0.0-0.5 SL -724-SA5C-SB-4.0-5.0 SL -724-SA5C-SB-9.0-10.0 SL -750-SA5C-SB-0.0-0.5 SL -750-SA5C-SB-5.5-6.5)	TITANIUM	-50	-	75.00-125.00	-	TITANIUM	No Qual, >4x
SL-620-SA5C-SB-0.0-0.5MS (TOT) **SL-620-SA5C-SB-0.0-0.5MSD (TOT)** (SL-554-SA5C-SB-0.0-0.5 SL -555-SA5C-SB-0.0-0.5 SL -555-SA5C-SB-2.5-3.5 SL -620-SA5C-SB-0.0-0.5 SL -706-SA5C-SB-0.0-0.5 SL -706-SA5C-SB-4.0-5.0 SL -706-SA5C-SB-9.0-10.0 SL -723-SA5C-SB-0.0-0.5 SL -723-SA5C-SB-4.0-5.0 SL -723-SA5C-SB-9.0-10.0 SL -724-SA5C-SB-0.0-0.5 SL -724-SA5C-SB-4.0-5.0 SL -724-SA5C-SB-9.0-10.0 SL -750-SA5C-SB-0.0-0.5 SL -750-SA5C-SB-5.5-6.5)	ALUMINUM IRON	63 46	- 60	75.00-125.00 75.00-125.00	- -	ALUMINUM IRON	No Qual, >4x

Project Name and Number: PHASE3 - SSFL PHASE 3

Reporting Limit Outliers

Lab Reporting Batch ID: 12E229 **Laboratory: EMXT**

EDD Filename: 12E229 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 8015B GRO

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TB-052912	GASOLINE RANGE ORGANICS (C5-C12)	J	27	50	PQL	UG/L	J (all detects)

Method: 6020

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-554-SA5C-SB-0.0-0.5	ANTIMONY	J	0.234	0.540	PQL	MG/KG	J (all detects)
	BERYLLIUM	J	0.532	0.540	PQL	MG/KG	
	CADMIUM	J	0.229	0.540	PQL	MG/KG	
	SODIUM	J	80.0	108	PQL	MG/KG	
	THALLIUM	J	0.259	0.432	PQL	MG/KG	
	Zirconium	J	2.88	5.40	PQL	MG/KG	
SL-555-SA5C-SB-0.0-0.5	ANTIMONY	J	0.295	0.534	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.158	0.534	PQL	MG/KG	
	MOLYBDENUM	J	0.475	0.534	PQL	MG/KG	
	SILVER	J	0.255	0.534	PQL	MG/KG	
	THALLIUM	J	0.302	0.427	PQL	MG/KG	
SL-555-SA5C-SB-2.5-3.5	ANTIMONY	J	0.289	0.541	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.352	0.541	PQL	MG/KG	
	SELENIUM	J	0.294	0.541	PQL	MG/KG	
	SILVER	J	0.109	0.541	PQL	MG/KG	
	THALLIUM	J	0.334	0.433	PQL	MG/KG	
	Zirconium	J	3.44	5.41	PQL	MG/KG	
SL-620-SA5C-SB-0.0-0.5	ANTIMONY	J	0.310	0.505	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.184	0.505	PQL	MG/KG	
	THALLIUM	J	0.239	0.404	PQL	MG/KG	
SL-706-SA5C-SB-0.0-0.5	ANTIMONY	J	0.430	0.518	PQL	MG/KG	J (all detects)
	BERYLLIUM	J	0.493	0.518	PQL	MG/KG	
	BORON	J	4.81	5.18	PQL	MG/KG	
	CADMIUM	J	0.239	0.518	PQL	MG/KG	
	THALLIUM	J	0.201	0.415	PQL	MG/KG	
SL-706-SA5C-SB-4.0-5.0	ANTIMONY	J	0.241	0.522	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.120	0.522	PQL	MG/KG	
	THALLIUM	J	0.311	0.417	PQL	MG/KG	
SL-706-SA5C-SB-9.0-10.0	ANTIMONY	J	0.206	0.548	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.117	0.548	PQL	MG/KG	
	THALLIUM	J	0.228	0.438	PQL	MG/KG	
SL-723-SA5C-SB-0.0-0.5	ANTIMONY	J	0.402	0.523	PQL	MG/KG	J (all detects)
	BERYLLIUM	J	0.445	0.523	PQL	MG/KG	
	CADMIUM	J	0.197	0.523	PQL	MG/KG	
	THALLIUM	J	0.218	0.419	PQL	MG/KG	
SL-723-SA5C-SB-4.0-5.0	ANTIMONY	J	0.221	0.553	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.134	0.553	PQL	MG/KG	
	MOLYBDENUM	J	0.526	0.553	PQL	MG/KG	
	SILVER	J	0.0654	0.553	PQL	MG/KG	
	THALLIUM	J	0.270	0.442	PQL	MG/KG	

Reporting Limit Outliers

Lab Reporting Batch ID: 12E229 **Laboratory: EMXT**

EDD Filename: 12E229 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 6020

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-723-SA5C-SB-9.0-10.0	ANTIMONY	J	0.325	0.505	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.237	0.505	PQL	MG/KG	
	SILVER	J	0.0648	0.505	PQL	MG/KG	
	THALLIUM	J	0.324	0.404	PQL	MG/KG	
SL-724-SA5C-SB-0.0-0.5	ANTIMONY	J	0.192	0.570	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.230	0.570	PQL	MG/KG	
	SODIUM	J	99.2	114	PQL	MG/KG	
	THALLIUM	J	0.284	0.456	PQL	MG/KG	
SL-724-SA5C-SB-4.0-5.0	ANTIMONY	J	0.214	0.540	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.128	0.540	PQL	MG/KG	
	MOLYBDENUM	J	0.297	0.540	PQL	MG/KG	
	SILVER	J	0.0541	0.540	PQL	MG/KG	
	THALLIUM	J	0.301	0.432	PQL	MG/KG	
SL-724-SA5C-SB-9.0-10.0	ANTIMONY	J	0.262	0.556	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.233	0.556	PQL	MG/KG	
	MOLYBDENUM	J	0.434	0.556	PQL	MG/KG	
	SILVER	J	0.116	0.556	PQL	MG/KG	
	THALLIUM	J	0.320	0.445	PQL	MG/KG	
SL-750-SA5C-SB-0.0-0.5	ANTIMONY	J	0.215	0.535	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.242	0.535	PQL	MG/KG	
	MOLYBDENUM	J	0.496	0.535	PQL	MG/KG	
	THALLIUM	J	0.371	0.428	PQL	MG/KG	
SL-750-SA5C-SB-5.5-6.5	ANTIMONY	J	0.217	0.522	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.269	0.522	PQL	MG/KG	
	MOLYBDENUM	J	0.494	0.522	PQL	MG/KG	
	SILVER	J	0.0985	0.522	PQL	MG/KG	
	THALLIUM	J	0.319	0.418	PQL	MG/KG	

Method: 8015B EFH

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-724-SA5C-SB-0.0-0.5	EFH(C21-C30)	J	3.2	5.8	PQL	MG/KG	J (all detects)

Method: 8270C SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-555-SA5C-SB-0.0-0.5	BENZO(A)ANTHRACENE	J	13	34	PQL	UG/KG	J (all detects)
	BENZO(E)PYRENE	J	13	17	PQL	UG/KG	
SL-706-SA5C-SB-0.0-0.5	BENZO(A)ANTHRACENE	J	14	32	PQL	UG/KG	J (all detects)
	BENZO(A)PYRENE	J	22	32	PQL	UG/KG	
	BENZO(G,H,I)PERYLENE	J	11	32	PQL	UG/KG	
	BENZO(K)FLUORANTHENE	J	21	32	PQL	UG/KG	

Reporting Limit Outliers

Lab Reporting Batch ID: 12E229 **Laboratory: EMXT**

EDD Filename: 12E229 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: **8270C SIM**

Matrix: **SO**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
SL-723-SA5C-SB-0.0-0.5	BENZO(A)ANTHRACENE	J	6.0	21	PQL	UG/KG	J (all detects)
	BENZO(A)PYRENE	J	6.4	21	PQL	UG/KG	
	BENZO(B)FLUORANTHENE	J	16	21	PQL	UG/KG	
	BENZO(E)PYRENE	J	7.0	11	PQL	UG/KG	
	BENZO(K)FLUORANTHENE	J	17	21	PQL	UG/KG	
	CHRYSENE	J	10	21	PQL	UG/KG	
	FLUORANTHENE	J	11	21	PQL	UG/KG	
	PYRENE	J	9.4	21	PQL	UG/KG	
SL-724-SA5C-SB-9.0-10.0	BENZO(A)ANTHRACENE	J	5.5	11	PQL	UG/KG	J (all detects)

LDC #: 28578C4
SDG #: 12E229
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 11-6-12
Page: ~ of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

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

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

	Validation Area		Comments
I.	Technical holding times	~	Sampling dates:
II.	ICP/MS Tune	~	
III.	Calibration	~	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	~	
VI.	Matrix Spike Analysis	N	MS/D (Al, Fe, Mn, Ti; 7%)
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	N	LCS/D
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= EB-053012 (12E244) FB= FB-060512 (12F037)

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: 50.1

1	SL-706-SA5C-SB-0.0-0.5	11	SL-750-SA5C-SB-5.5-6.5	21		31	
2	SL-706-SA5C-SB-4.0-5.0	12	SL-554-SA5C-SB-0.0-0.5	22		32	
3	SL-706-SA5C-SB-9.0-10.0	13	SL-555-SA5C-SB-0.0-0.5	23		33	
4	SL-723-SA5C-SB-0.0-0.5	14	SL-555-SA5C-SB-2.5-3.5	24		34	
5	SL-723-SA5C-SB-4.0-5.0	15	SL-620-SA5C-SB-0.0-0.5	25		35	
6	SL-723-SA5C-SB-9.0-10.0	16	SL-620-SA5C-SB-0.0-0.5MS	26		36	
7	SL-724-SA5C-SB-0.0-0.5	17	SL-620-SA5C-SB-0.0-0.5MSD	27		37	
8	SL-724-SA5C-SB-4.0-5.0	18		28		38	
9	SL-724-SA5C-SB-9.0-10.0	19		29		39	
10	SL-750-SA5C-SB-0.0-0.5	20		30		40	

Notes: _____

LDC #: 28578C4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: [signature]
2nd Reviewer: [signature]

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

Blank units: ug/L **Associated sample units:** mg/Kg

Sampling date: 5/30/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All

Analyte	Blank ID	Sample Identification										
	EB-053012	Action Limit	No Qualifiers									
B	0.00535	1.3375										
Ca	0.0269	6.725										

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 #: 28578 4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer: AL
2nd Reviewer: LW

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

Blank units: ug/L **Associated sample units:** mg/Kg

Sampling date: 6/5/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: AllSoil

Analyte	Blank ID	Sample Identification										
	FB-060512	Action Limit	No Qualifiers									
Al	0.0270	6.75										
Ca	0.0263	6.575										
Cu	0.000954	0.2385										

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

12E244

Attachment I

Sample ID Cross Reference and Data Review Level

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
30-May-2012	TB-053012	E244-11	TB	5030B	8015B GRO	IV
30-May-2012	SL-752-SA5C-SB-0.0-0.5	E244-09	N	3550B	8015B EFH	IV
30-May-2012	SL-752-SA5C-SB-0.0-0.5	E244-09	N	3550B	8082	III
30-May-2012	SL-752-SA5C-SB-0.0-0.5	E244-09	N	3550B	8270C SIM	III
30-May-2012	SL-752-SA5C-SB-0.0-0.5	E244-09	N	7471A	7471A	III
30-May-2012	SL-752-SA5C-SB-0.0-0.5	E244-09	N	GEN PREP	7199	III
30-May-2012	SL-752-SA5C-SB-0.0-0.5	E244-09	N	GEN PREP	8015B	IV
30-May-2012	SL-752-SA5C-SB-0.0-0.5	E244-09	N	GEN PREP	8015M	IV
30-May-2012	SL-752-SA5C-SB-0.0-0.5	E244-09	N	TOTAL	6020	III
30-May-2012	SL-560-SA5C-SB-7.5	E244-08	N	5035	8015B GRO	IV
30-May-2012	SL-560-SA5C-SB-6.5-7.5	E244-07	N	3550B	8015B EFH	IV
30-May-2012	SL-560-SA5C-SB-6.5-7.5	E244-07	N	3550B	8082	III
30-May-2012	SL-560-SA5C-SB-6.5-7.5	E244-07	N	3550B	8270C SIM	III
30-May-2012	SL-560-SA5C-SB-6.5-7.5	E244-07	N	7471A	7471A	III
30-May-2012	SL-560-SA5C-SB-6.5-7.5	E244-07	N	GEN PREP	7199	III
30-May-2012	SL-560-SA5C-SB-6.5-7.5	E244-07	N	GEN PREP	8015B	IV
30-May-2012	SL-560-SA5C-SB-6.5-7.5	E244-07	N	GEN PREP	8015M	IV
30-May-2012	SL-560-SA5C-SB-6.5-7.5	E244-07	N	TOTAL	6020	III
30-May-2012	SL-560-SA5C-SB-0.0-0.5	E244-06	N	3550B	8082	III
30-May-2012	SL-560-SA5C-SB-0.0-0.5	E244-06	N	3550B	8270C SIM	III
30-May-2012	SL-560-SA5C-SB-0.0-0.5	E244-06	N	7471A	7471A	III
30-May-2012	SL-560-SA5C-SB-0.0-0.5	E244-06	N	GEN PREP	7199	III
30-May-2012	SL-560-SA5C-SB-0.0-0.5	E244-06	N	GEN PREP	8015B	IV
30-May-2012	SL-560-SA5C-SB-0.0-0.5	E244-06	N	GEN PREP	8015M	IV
30-May-2012	SL-560-SA5C-SB-0.0-0.5	E244-06	N	TOTAL	6020	III
30-May-2012	SL-560-SA5C-SB-0.0-0.5	E244-06T	N	3550B	8015B EFH	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
30-May-2012	SL-550-SA5C-SB-0.0-0.5	E244-05	N	3550B	8015B EFH	IV
30-May-2012	SL-550-SA5C-SB-0.0-0.5	E244-05	N	3550B	8082	III
30-May-2012	SL-550-SA5C-SB-0.0-0.5	E244-05	N	3550B	8270C SIM	III
30-May-2012	SL-550-SA5C-SB-0.0-0.5	E244-05	N	7471A	7471A	III
30-May-2012	SL-550-SA5C-SB-0.0-0.5	E244-05	N	GEN PREP	8015B	IV
30-May-2012	SL-550-SA5C-SB-0.0-0.5	E244-05	N	GEN PREP	8015M	IV
30-May-2012	SL-550-SA5C-SB-0.0-0.5	E244-05	N	TOTAL	6020	III
30-May-2012	SL-544-SA5C-SB-0.0-0.5	E244-02	N	3550B	8015B EFH	IV
30-May-2012	SL-544-SA5C-SB-0.0-0.5	E244-02	N	3550B	8082	III
30-May-2012	SL-544-SA5C-SB-0.0-0.5	E244-02	N	3550B	8270C SIM	III
30-May-2012	SL-544-SA5C-SB-0.0-0.5	E244-02	N	7471A	7471A	III
30-May-2012	SL-544-SA5C-SB-0.0-0.5	E244-02	N	GEN PREP	8015B	IV
30-May-2012	SL-544-SA5C-SB-0.0-0.5	E244-02	N	GEN PREP	8015M	IV
30-May-2012	SL-544-SA5C-SB-0.0-0.5	E244-02	N	TOTAL	6020	III
30-May-2012	SL-544-SA5C-SB-6.0	E244-04	N	5035	8015B GRO	IV
30-May-2012	SL-544-SA5C-SB-5.0-6.0	E244-03	N	3550B	8015B EFH	IV
30-May-2012	SL-544-SA5C-SB-5.0-6.0	E244-03	N	3550B	8082	III
30-May-2012	SL-544-SA5C-SB-5.0-6.0	E244-03	N	3550B	8270C SIM	III
30-May-2012	SL-544-SA5C-SB-5.0-6.0	E244-03	N	7471A	7471A	III
30-May-2012	SL-544-SA5C-SB-5.0-6.0	E244-03	N	GEN PREP	8015B	IV
30-May-2012	SL-544-SA5C-SB-5.0-6.0	E244-03	N	GEN PREP	8015M	IV
30-May-2012	SL-544-SA5C-SB-5.0-6.0	E244-03	N	TOTAL	6020	III
30-May-2012	SL-621-SA5C-SB-0.0-0.5	E244-10	N	3550B	8015B EFH	IV
30-May-2012	SL-621-SA5C-SB-0.0-0.5	E244-10	N	3550B	8082	III
30-May-2012	SL-621-SA5C-SB-0.0-0.5	E244-10	N	7471A	7471A	III
30-May-2012	SL-621-SA5C-SB-0.0-0.5	E244-10	N	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

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
30-May-2012	SL-621-SA5C-SB-0.0-0.5	E244-10	N	TOTAL	6020	III
30-May-2012	EB-053012	E244-01	EB	3520C	8015B EFH	IV
30-May-2012	EB-053012	E244-01	EB	3520C	8082	III
30-May-2012	EB-053012	E244-01	EB	3520C	8270C SIM	III
30-May-2012	EB-053012	E244-01	EB	5030B	8015B GRO	IV
30-May-2012	EB-053012	E244-01	EB	7470A	7470A	III
30-May-2012	EB-053012	E244-01	EB	GEN PREP	6850	III
30-May-2012	EB-053012	E244-01	EB	GEN PREP	7199	III
30-May-2012	EB-053012	E244-01	EB	GEN PREP	8015B	IV
30-May-2012	EB-053012	E244-01	EB	GEN PREP	8015M	IV
30-May-2012	EB-053012	E244-01	EB	TOTAL	6020	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 II

Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: 12E244 **Laboratory: EMXT**

EDD Filename: 12E244 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: EB-053012 *Collected:* 5/30/2012 3:00:00 *Analysis Type:* RES/TOT *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	0.00535	J	0.00500	MDL	0.0100	PQL	MG/L	J	Z
CALCIUM	0.0269	J	0.0250	MDL	0.100	PQL	MG/L	J	Z

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: SL-544-SA5C-SB-0.0-0.5 *Collected:* 5/30/2012 11:45:00 *Analysis Type:* RES/TOT *Dilution:* 0.957

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.235	J	0.104	MDL	0.521	PQL	MG/KG	J	Z
BERYLLIUM	0.321	J	0.0521	MDL	0.521	PQL	MG/KG	J	Z
CADMIUM	0.104	J	0.0521	MDL	0.521	PQL	MG/KG	J	Z
MAGNESIUM	3720		5.21	MDL	10.4	PQL	MG/KG	J	Q
MOLYBDENUM	0.429	J	0.0521	MDL	0.521	PQL	MG/KG	J	Z
THALLIUM	0.243	J	0.0521	MDL	0.417	PQL	MG/KG	J	Z
Zirconium	5.21	U	2.61	MDL	5.21	PQL	MG/KG	UJ	Q

Sample ID: SL-544-SA5C-SB-5.0-6.0 *Collected:* 5/30/2012 11:51:00 *Analysis Type:* RES/TOT *Dilution:* 0.971

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.287	J	0.112	MDL	0.561	PQL	MG/KG	J	Z
CADMIUM	0.464	J	0.0561	MDL	0.561	PQL	MG/KG	J	Z
MAGNESIUM	8210		5.61	MDL	11.2	PQL	MG/KG	J	Q
MOLYBDENUM	0.493	J	0.0561	MDL	0.561	PQL	MG/KG	J	Z
SILVER	0.0882	J	0.0561	MDL	0.561	PQL	MG/KG	J	Z
Zirconium	5.61	U	2.80	MDL	5.61	PQL	MG/KG	UJ	Q

Sample ID: SL-550-SA5C-SB-0.0-0.5 *Collected:* 5/30/2012 11:15:00 *Analysis Type:* RES/TOT *Dilution:* 0.985

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	0.530	J	0.0534	MDL	0.534	PQL	MG/KG	J	Z
CADMIUM	0.210	J	0.0534	MDL	0.534	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E244 **Laboratory: EMXT**

EDD Filename: 12E244 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: SL-550-SA5C-SB-0.0-0.5 *Collected:* 5/30/2012 11:15:00 *Analysis Type:* RES/TOT *Dilution:* 0.985

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MAGNESIUM	5280		5.34	MDL	10.7	PQL	MG/KG	J	Q
THALLIUM	0.264	J	0.0534	MDL	0.427	PQL	MG/KG	J	Z
Zirconium	5.34	U	2.67	MDL	5.34	PQL	MG/KG	UJ	Q

Sample ID: SL-560-SA5C-SB-0.0-0.5 *Collected:* 5/30/2012 10:29:00 *Analysis Type:* RES/TOT *Dilution:* 1.00

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CADMIUM	0.265	J	0.0580	MDL	0.580	PQL	MG/KG	J	Z
MAGNESIUM	4100		5.80	MDL	11.6	PQL	MG/KG	J	Q
MOLYBDENUM	0.486	J	0.0580	MDL	0.580	PQL	MG/KG	J	Z
SODIUM	104	J	58.0	MDL	116	PQL	MG/KG	J	Z
THALLIUM	0.232	J	0.0580	MDL	0.464	PQL	MG/KG	J	Z
Zirconium	5.80	U	2.90	MDL	5.80	PQL	MG/KG	UJ	Q

Sample ID: SL-560-SA5C-SB-6.5-7.5 *Collected:* 5/30/2012 10:15:00 *Analysis Type:* RES/TOT *Dilution:* 0.962

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.192	J	0.106	MDL	0.532	PQL	MG/KG	J	Z
BERYLLIUM	0.514	J	0.0532	MDL	0.532	PQL	MG/KG	J	Z
CADMIUM	0.109	J	0.0532	MDL	0.532	PQL	MG/KG	J	Z
MAGNESIUM	3880		5.32	MDL	10.6	PQL	MG/KG	J	Q
MOLYBDENUM	0.277	J	0.0532	MDL	0.532	PQL	MG/KG	J	Z
THALLIUM	0.216	J	0.0532	MDL	0.426	PQL	MG/KG	J	Z
Zirconium	5.32	U	2.66	MDL	5.32	PQL	MG/KG	UJ	Q

Sample ID: SL-621-SA5C-SB-0.0-0.5 *Collected:* 5/30/2012 2:05:00 *Analysis Type:* RES/TOT *Dilution:* 0.971

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.313	J	0.106	MDL	0.528	PQL	MG/KG	J	Z
CADMIUM	0.329	J	0.0528	MDL	0.528	PQL	MG/KG	J	Z
MAGNESIUM	5340		5.28	MDL	10.6	PQL	MG/KG	J	Q
SELENIUM	0.508	J	0.211	MDL	0.528	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E244 **Laboratory: EMXT**

EDD Filename: 12E244 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: SL-621-SA5C-SB-0.0-0.5 *Collected:* 5/30/2012 2:05:00 *Analysis Type:* RES/TOT *Dilution:* 0.971

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
THALLIUM	0.266	J	0.0528	MDL	0.423	PQL	MG/KG	J	Z
Zirconium	5.28	U	2.64	MDL	5.28	PQL	MG/KG	UJ	Q

Sample ID: SL-752-SA5C-SB-0.0-0.5 *Collected:* 5/30/2012 8:28:00 *Analysis Type:* RES/TOT *Dilution:* 0.990

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.214	J	0.114	MDL	0.570	PQL	MG/KG	J	Z
CADMIUM	0.112	J	0.0570	MDL	0.570	PQL	MG/KG	J	Z
MAGNESIUM	3510		5.70	MDL	11.4	PQL	MG/KG	J	Q
MOLYBDENUM	0.287	J	0.0570	MDL	0.570	PQL	MG/KG	J	Z
THALLIUM	0.214	J	0.0570	MDL	0.456	PQL	MG/KG	J	Z
Zirconium	5.70	U	2.85	MDL	5.70	PQL	MG/KG	UJ	Q

Method Category: SVOA

Method: 8270C SIM **Matrix: AQ**

Sample ID: EB-053012 *Collected:* 5/30/2012 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
NAPHTHALENE	0.12	J	0.10	MDL	0.20	PQL	UG/L	J	Z

Method Category: SVOA

Method: 8270C SIM **Matrix: SO**

Sample ID: SL-550-SA5C-SB-0.0-0.5 *Collected:* 5/30/2012 11:15:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(E)PYRENE	4.1	J	2.7	MDL	5.4	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	3.5	J	2.7	MDL	11	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E244 **Laboratory: EMXT**

EDD Filename: 12E244 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

Method: 8270C SIM **Matrix: SO**

Sample ID: SL-560-SA5C-SB-0.0-0.5 *Collected:* 5/30/2012 10:29:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 3

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(B)FLUORANTHENE	8.9	J	8.7	MDL	35	PQL	UG/KG	J	Z
BENZO(E)PYRENE	16	J	8.7	MDL	17	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	17	J	8.7	MDL	35	PQL	UG/KG	J	Z

Method Category: VOA

Method: 8015B GRO **Matrix: AQ**

Sample ID: EB-053012 *Collected:* 5/30/2012 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
GASOLINE RANGE ORGANICS (C5-C12)	25	J	10	MDL	50	PQL	UG/L	U	T

Sample ID: TB-053012 *Collected:* 5/30/2012 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
GASOLINE RANGE ORGANICS (C5-C12)	17	J	10	MDL	50	PQL	UG/L	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E244 **Laboratory: EMXT**

EDD Filename: 12E244 **eQAPP Name: CDM_SSFL_120730_EMAX**

Reason Code Legend

Reason Code	*Description*
Q	Matrix Spike Lower Estimation
S	Surrogate/Tracer Recovery Lower Estimation
T	Trip Blank Contamination
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Enclosure I

Level III ADR Outliers
(including Manual Review Outliers)

Quality Control
Outlier Reports

12E244

Trip Blank Outlier Report

Lab Reporting Batch ID: 12E244 **Laboratory: EMXT**

EDD Filename: 12E244 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: **8015B GRO**
Matrix: **AQ**

Trip Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
TB-053012(RES)	5/30/2012 8:00:00 AM	GASOLINE RANGE ORGANICS (C5-C12)	17 UG/L	EB-053012 SL-544-SA5C-SB-0.0-0.5 SL-544-SA5C-SB-5.0-6.0 SL-544-SA5C-SB-6.0 SL-550-SA5C-SB-0.0-0.5 SL-560-SA5C-SB-0.0-0.5 SL-560-SA5C-SB-6.5-7.5 SL-560-SA5C-SB-7.5 SL-621-SA5C-SB-0.0-0.5 SL-752-SA5C-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
EB-053012(RES)	GASOLINE RANGE ORGANICS (C5-C12)	25 UG/L	50U UG/L

Project Name and Number: PHASE3 - SSFL PHASE 3

Surrogate Outlier Report

Lab Reporting Batch ID: 12E244 **Laboratory: EMXT**

EDD Filename: 12E244 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 8270C SIM
Matrix: SO

Sample ID (Analysis Type)	Surrogate	Sample % Recovery	% Recovery Limits	Affected Compounds	Flag
SL-752-SA5C-SB-0.0-0.5	2-FLUOROBIPHENYL	39.7	45.00-130.00	No Affected Compounds	

Reporting Limit Outliers

Lab Reporting Batch ID: 12E244 **Laboratory: EMXT**

EDD Filename: 12E244 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 6020
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-053012	BORON	J	0.00535	0.0100	PQL	MG/L	J (all detects)
	CALCIUM	J	0.0269	0.100	PQL	MG/L	

Method: 8015B GRO
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-053012	GASOLINE RANGE ORGANICS (C5-C12)	J	25	50	PQL	UG/L	J (all detects)
TB-053012	GASOLINE RANGE ORGANICS (C5-C12)	J	17	50	PQL	UG/L	J (all detects)

Method: 8270C SIM
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-053012	NAPHTHALENE	J	0.12	0.20	PQL	UG/L	J (all detects)

Method: 6020
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-544-SA5C-SB-0.0-0.5	ANTIMONY	J	0.235	0.521	PQL	MG/KG	J (all detects)
	BERYLLIUM	J	0.321	0.521	PQL	MG/KG	
	CADMIUM	J	0.104	0.521	PQL	MG/KG	
	MOLYBDENUM	J	0.429	0.521	PQL	MG/KG	
	THALLIUM	J	0.243	0.417	PQL	MG/KG	
SL-544-SA5C-SB-5.0-6.0	ANTIMONY	J	0.287	0.561	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.464	0.561	PQL	MG/KG	
	MOLYBDENUM	J	0.493	0.561	PQL	MG/KG	
	SILVER	J	0.0882	0.561	PQL	MG/KG	
SL-550-SA5C-SB-0.0-0.5	BERYLLIUM	J	0.530	0.534	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.210	0.534	PQL	MG/KG	
	THALLIUM	J	0.264	0.427	PQL	MG/KG	
SL-560-SA5C-SB-0.0-0.5	CADMIUM	J	0.265	0.580	PQL	MG/KG	J (all detects)
	MOLYBDENUM	J	0.486	0.580	PQL	MG/KG	
	SODIUM	J	104	116	PQL	MG/KG	
	THALLIUM	J	0.232	0.464	PQL	MG/KG	
SL-560-SA5C-SB-6.5-7.5	ANTIMONY	J	0.192	0.532	PQL	MG/KG	J (all detects)
	BERYLLIUM	J	0.514	0.532	PQL	MG/KG	
	CADMIUM	J	0.109	0.532	PQL	MG/KG	
	MOLYBDENUM	J	0.277	0.532	PQL	MG/KG	
	THALLIUM	J	0.216	0.426	PQL	MG/KG	

Project Name and Number: PHASE3 - SSFL PHASE 3

Reporting Limit Outliers

Lab Reporting Batch ID: 12E244 **Laboratory: EMXT**

EDD Filename: 12E244 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 6020

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-621-SA5C-SB-0.0-0.5	ANTIMONY	J	0.313	0.528	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.329	0.528	PQL	MG/KG	
	SELENIUM	J	0.508	0.528	PQL	MG/KG	
	THALLIUM	J	0.266	0.423	PQL	MG/KG	
SL-752-SA5C-SB-0.0-0.5	ANTIMONY	J	0.214	0.570	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.112	0.570	PQL	MG/KG	
	MOLYBDENUM	J	0.287	0.570	PQL	MG/KG	
	THALLIUM	J	0.214	0.456	PQL	MG/KG	

Method: 8270C SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-550-SA5C-SB-0.0-0.5	BENZO(E)PYRENE	J	4.1	5.4	PQL	UG/KG	J (all detects)
	BENZO(G,H,I)PERYLENE	J	3.5	11	PQL	UG/KG	
SL-560-SA5C-SB-0.0-0.5	BENZO(B)FLUORANTHENE	J	8.9	35	PQL	UG/KG	J (all detects)
	BENZO(E)PYRENE	J	16	17	PQL	UG/KG	
	BENZO(G,H,I)PERYLENE	J	17	35	PQL	UG/KG	

LDC #: 28578D4 **VALIDATION COMPLETENESS WORKSHEET** Date: 1/6/12
SDG #: 12E244 ADR Page: 1 of 1
Laboratory: EMAX Laboratories, Inc. Reviewer: AL
2nd Reviewer: W

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

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

	Validation Area		Comments
I.	Technical holding times	/	Sampling dates:
II.	ICP/MS Tune	/	
III.	Calibration	/	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	/	
VI.	Matrix Spike Analysis	N	MS/D (from 12E267)
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	N	LCS/D
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, EB-053112 (12E267)

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

FB = FB-060512 (12F037) ~~12F0-~~

Validated Samples: soil/water

1	EB-053012 ✓	11		21		31	
2	SL-544-SA5C-SB-0.0-0.5	12		22		32	
3	SL-544-SA5C-SB-5.0-6.0	13		23		33	
4	SL-550-SA5C-SB-0.0-0.5	14		24		34	
5	SL-560-SA5C-SB-0.0-0.5	15		25		35	
6	SL-560-SA5C-SB-6.5-7.5	16		26		36	
7	SL-752-SA5C-SB-0.0-0.5	17		27		37	
8	SL-621-SA5C-SB-0.0-0.5	18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

LDC #: 28578D4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: CR
2nd Reviewer: CR

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

Blank units: ug/L **Associated sample units:** mg/Kg
Sampling date: 5/31/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: 5-7

Analyte	Blank ID	Sample Identification										
	EB-053112	Action Limit	No Qualifiers									
Al	0.0374	9.35										
Ba	0.000502	0.1255										
B	0.00549	1.3725										
Cu	0.00139	0.3475										
Mn	0.000249	0.06225										
Na	0.0526	13.15										

Sampling date: 5/30/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: 2-4, 8

Analyte	Blank ID	Sample Identification										
	EB-053012	Action Limit	No Qualifiers									
B	0.00535	1.3375										
Ca	0.0269	6.725										

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 #: 28578 4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer: CL
2nd Reviewer: LW

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

Blank units: ug/L **Associated sample units:** mg/Kg

Sampling date: 6/5/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: AllSoil

Analyte	Blank ID	Sample Identification										
	FB-060512	Action Limit	No Qualifiers									
Al	0.0270	6.75										
Ca	0.0263	6.575										
Cu	0.000954	0.2385										

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".

Enclosure II

Level IV Validation Reports

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Santa Susana Field Laboratory
Collection Date:	May 30, 2012
LDC Report Date:	November 14, 2012
Matrix:	Soil/Water
Parameters:	Total Petroleum Hydrocarbons as Gasoline
Validation Level:	Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	12E244

Sample Identification

EB-053012
SL-544-SA5C-SB-6.0
SL-560-SA5C-SB-7.5
TB-053012

Introduction

This data review covers 2 soil samples and 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015B for Total Petroleum Hydrocarbons (TPH) as 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-053012 was identified as a trip blank. No total petroleum hydrocarbons as gasoline contaminants were found with the following exceptions:

Blank ID	Sampling Date	Compound	Concentration	Associated Samples
TB-053012	5/30/12	Gasoline range organics (C5-C12)	17 ug/L	EB-053012 SL-544-SA5C-SB-6.0 SL-560-SA5C-SB-7.5

Samples EB-053012 and EB-053112 (from SDG 12E267) were identified as equipment blanks. No total petroleum hydrocarbons as gasoline contaminants were found with the following exceptions:

Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB-053012	5/30/12	Gasoline range organics (C5-C12)	25 ug/L	SL-544-SA5C-SB-6.0
EB-053112	5/31/12	Gasoline range organics (C5-C12)	54 ug/L	SL-560-SA5C-SB-7.5

Sample FB-060512 (from SDG 12F037) was identified as a field blank. No total petroleum hydrocarbons as gasoline contaminants were found with the following exceptions:

Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB-060512	6/5/12	Gasoline range organics (C5-C12)	49 ug/L	SL-544-SA5C-SB-6.0 SL-560-SA5C-SB-7.5

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
EB-053012	Gasoline range organics (C5-C12)	25 ug/L	25U ug/L

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 and RLs

All compound quantitation and RLs were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 12E244	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 12E244

SDG	Sample	Compound	Flag	A or P	Reason (Code)
12E244	EB-053012 SL-544-SA5C-SB-6.0 SL-560-SA5C-SB-7.5 TB-053012	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (Z)

Santa Susana Field Laboratory
Total Petroleum Hydrocarbons as Gasoline - Laboratory Blank Data Qualification Summary - SDG 12E244

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Total Petroleum Hydrocarbons as Gasoline - Field Blank Data Qualification Summary - SDG 12E244

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
12E244	EB-053012	Gasoline range organics (C5-C12)	25U ug/L	A	T

LDC #: 28578D7 **VALIDATION COMPLETENESS WORKSHEET** Date: 12/21/12
SDG #: 12E244 Level IV Page: 1 of 1
Laboratory: EMAX Laboratories, Inc. Reviewer: [illegible]
2nd Reviewer: A

METHOD: GC TPH as Gasoline (EPA SW 846 Method 8015B)

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

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 5/30/12
II	Initial calibration	A	%D RSD ≤20
III.	Calibration verification/ICV	A	ICV/CCV ≤20
IV.	Blanks	A	
V	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	N	client specified
VII.	Laboratory control samples	A	LCS
VIII.	Target compound identification	A	
IX.	Compound quantitation/RL/LOQ/LODs	A	
X.	System Performance	A	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	SW	EB = 1 TB = 1

EB = EB-053112 SDG # 12E367

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

FB = FB-060512 SDG # 12F037

Validated Samples: soil + water

1	EB-053012 W	11	MBLKIW	21		31	
2	SL-544-SA5C-SB-6.0 S	12	MB2KIS	22		32	
3	SL-560-SA5C-SB-7.5 ↓	13		23		33	
4	TB-053012 W	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: _____

DC #: 285787
SDG #: per cover

VALIDATION FINDINGS CHECKLIST

Page: 1 of 2
Reviewer: [illegible]
2nd Reviewer: [illegible]

Method: ✓ GC _____ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation?		✓		
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?			✓	
Were the RT windows properly established?	✓			
IV. Continuing calibration				
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20%.0 or percent recoveries 80-120%?	✓			
Were all the retention times within the acceptance windows?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.			✓	
Was a MS/MSD analyzed every 20 samples of each matrix?			✓	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	

LDC #: 24578D7
SDG #: per cover

VALIDATION FINDINGS CHECKLIST

Reviewer: FJ
2nd Reviewer: A

Validation Area	Yes	No	NA	Findings/Comments
X. Target compound identification				
Were the retention times of reported detects within the RT windows?	✓			
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XII. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XV. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.	✓			

LDC #: 28578D7

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 6 of 1
Reviewer: FT
2nd Reviewer:

METHOD: ✓ GC __ HPLC

EB: EB-053112 SDG# 12E267

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: 05/31/12
Field blank type: (circle one) Field Blank / Trip Blank / Atmospheric Blank / Ambient Blank
Rinsate / Equipment Rinsate / Equipment Blank / Source Blank / Other: EB

Associated Samples: 3 (ND)

Compound	Blank ID	Blank ID	Sample Identification							
	EB									
Gasoline Range organics (C5-C12)	54									
CRQL										

Blank units: ug/L **Associated sample units:** ug/kg
Sampling date: 06/05/12
Field blank type: (circle one) Field Blank / Trip Blank/ Atmospheric Blank/ Ambient Blank
Rinsate / Equipment Rinsate / Equipment Blank / Source Blank / Other: FB

FB = FB-060512 SDG# 12F037

Associated Samples: 2, 3 (ND)

Compound	Blank ID	Blank ID	Sample Identification							
	FB									
↓	49									
CRQL										

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

LDC #: 28578D7

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer: FT
2nd Reviewer:

METHOD: ✓ **GC** __ **HPLC**

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:** mg/kg #2

Sampling date: 5/30/12

Field blank type: (circle one) Field Blank / Trip Blank / Atmospheric Blank / Ambient Blank Rinsate / Equipment Rinsate / Equipment Blank / Source Blank / Other: EB

Associated Samples: All SOILS (ND)

Compound	Blank ID	Blank ID	Sample Identification							
	1									
Gasoline Range Organics (C5-C12)	25									
CRQL										

Blank units: ug/L **Associated sample units:** ug/L & mg/kg

Sampling date: 5/30/12

Field blank type: (circle one) Field Blank / Trip Blank/ Atmospheric Blank/ Ambient Blank Rinsate / Equipment Rinsate / Equipment Blank / Source Blank / Other: TB

Associated Samples: 1-3

Compound	Blank ID	Blank ID	Sample Identification							
	4			1						
↓	~~1~~ 17			25/4						
CRQL										

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

LDC #: 28578D7
SDG #: per cover

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: FT
2nd Reviewer: A

METHOD: GC ✓ HPLC ____

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

CF = A/C
average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

A = Area of compound,
C = Concentration of compound,
S = Standard deviation of the CF
X = Mean of the CFs

#	Standard ID	Calibration Date	Compound	Reported CF (50µL std)	Recalculated CF (50µL std)	Reported Average CF (initial)	Recalculated Average CF (initial)	Reported %RSD	Recalculated %RSD
1	ICAL	5/18/12	GRO (C5-C12)	29479	29479	27004.2	27004.2	10.1	10.1
2									
3									
4									

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

LDC #: 28578D7
SDG #: see cover

Reviewer: FT
2nd Reviewer: [illegible]

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

METHOD: GC ✓ HPLC ____

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

% Difference = 100 * (ave. CF - CF)/ave. CF
CF = A/C

Where: ave. CF = initial calibration average CF
CF = continuing calibration CF
A = Area of compound
C = Concentration of compound

#	Standard ID	Calibration Date	Compound	Average CF(ical)/ CCV Conc.	Reported CF/Conc. CCV	Recalculated CF/Conc. CCV	Reported %D	Recalculated %D
1	EF01013A	6/01/12	GRO C5-C12	1000.0	1016.82	1016.82	2	2
	EF01025A	6/02/12	↓	1000.0	1000.67	1000.67	0	0
2								
	EF01038A	6/2/12	↓	1000.0	1028.68	1028.68	3	3
3	EF01062A	6/03/12	↓	1000.0	965.33	965.33	3	3
4								

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

LDC #: 28520A1

SDG #: see cover

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Page: 1 of 1

Reviewer: FT

2nd reviewer: [signature]

METHOD: ✓ GC ___ HPLC

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #3

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
4-BFB	PB-5	40	35.15	87.9	87.9	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 #: 28578D7
SDG #: all covers

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample/Laboratory Control Sample Duplicate Results Verification

Reviewer: FO
2nd Reviewer: [illegible]

METHOD: ✓ GC __HPLC

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
RPD = | LCS - LCSD | * 2/(LCS + LCSD)

Where: SSC = Spiked sample concentration
SA = Spike added
LCS = Laboratory control sample percent recovery
SC = Concentration
LCSD = Laboratory control sample duplicate percent recovery

LCS/LCSD samples: 1265 10

Compound	Spike Added (mg/kg)		Spiked 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)	25.0	25.0	18.8	21.2	75	75	85	85	12	12
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 #: 28578D7
SDG #: [illegible]

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: ✓ GC __ HPLC

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration= $\frac{(A)(Fv)(Df)}{(RF)(Vs \text{ or } Ws)(\%S/100)}$

A= Area or height of the compound to be measured
Fv= Final Volume of extract
Df= Dilution Factor
RF= Average response factor of the compound in the initial calibration
Vs= Initial volume of the sample
Ws= Initial weight of the sample
%S= Percent Solid

Example:

Sample ID. # 4 Compound Name GRU

Concentration = $\frac{450667}{27004}$

17 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: May 30, 2012

LDC Report Date: November 14, 2012

Matrix: Soil/Water

Parameters: Total Petroleum Hydrocarbons as Extractables

Validation Level: Level IV

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 12E244

Sample Identification

EB-053012
SL-544-SA5C-SB-0.0-0.5
SL-544-SA5C-SB-5.0-6.0
SL-550-SA5C-SB-0.0-0.5
SL-560-SA5C-SB-0.0-0.5
SL-560-SA5C-SB-6.5-7.5
SL-752-SA5C-SB-0.0-0.5
SL-621-SA5C-SB-0.0-0.5

Introduction

This data review covers 7 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 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.

Samples EB-053012 and EB-053112 (from SDG 12E267) were identified as equipment blanks. No total petroleum hydrocarbons as extractable contaminants were found.

Sample FB-060512 (from SDG 12F037) 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

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 and RLs

All compound quantitation and RLs were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 12E244	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 12E244

SDG	Sample	Compound	Flag	A or P	Reason (Code)
12E244	EB-053012 SL-544-SA5C-SB-0.0-0.5 SL-544-SA5C-SB-5.0-6.0 SL-550-SA5C-SB-0.0-0.5 SL-560-SA5C-SB-0.0-0.5 SL-560-SA5C-SB-6.5-7.5 SL-752-SA5C-SB-0.0-0.5 SL-621-SA5C-SB-0.0-0.5	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (Z)

Santa Susana Field Laboratory
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG 12E244

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG 12E244

No Sample Data Qualified in this SDG

LDC #: 28578D8 **VALIDATION COMPLETENESS WORKSHEET** Date: 10/22/12
SDG #: 12E244 Level IV Page: 1 of 1
Laboratory: EMAX Laboratories, Inc. Reviewer: [illegible]
2nd Reviewer: A

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: 5/30/12
II	Initial calibration	A	% RSD ≤ 20
III.	Calibration verification/ICV	A	ICV/CCV ≤ 20
IV.	Blanks	A	
V	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	N	client specified
VII.	Laboratory control samples	A	LCS ID
VIII.	Target compound identification	A	
IX.	Compound quantitation/RL/LOQ/LODs	A	
X.	System Performance	A	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	ND	EB = 1 EB-053112 SDG # 12E267 FB = FB-060512 SDG # 12F037

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-053012 W	11	MBLKIW	21		31	
2	SL-544-SA5C-SB-0.0-0.5	12	MBLKIS	22		32	
3	SL-544-SA5C-SB-5.0-6.0	13		23		33	
4	SL-550-SA5C-SB-0.0-0.5	14		24		34	
5	SL-560-SA5C-SB-0.0-0.5	15		25		35	
6	SL-560-SA5C-SB-6.5-7.5	16		26		36	
7	SL-752-SA5C-SB-0.0-0.5	17		27		37	
8	SL-621-SA5C-SB-0.0-0.5	18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 28578P8
SDG #: per cover

VALIDATION FINDINGS CHECKLIST

Page: 1 of 2
Reviewer: FT
2nd Reviewer: A

Method: ✓ GC ____ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation?		✓		
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?			✓	
Were the RT windows properly established?	✓			
IV. Continuing calibration				
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20%.0 or percent recoveries 80-120%?	✓			
Were all the retention times within the acceptance windows?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.			✓	
Was a MS/MSD analyzed every 20 samples of each matrix?			✓	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	

LDC #: 28578D8
SDG #: per cover

VALIDATION FINDINGS CHECKLIST

Reviewer: FJ
2nd Reviewer: A

Validation Area	Yes	No	NA	Findings/Comments
X. Target compound identification				
Were the retention times of reported detects within the RT windows?	✓			
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XII. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XV. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.		✓		

LDC #: 28578D8
SDG #: [illegible]

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC ✓ HPLC _____

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

CF = A/C
average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

A = Area of compound,
C = Concentration of compound,
S = Standard deviation of the CF
X = Mean of the CFs

#	Standard ID	Calibration Date	Compound	Reported CF (10 std)	Recalculated CF (10 std)	Reported Average CF (initial)	Recalculated Average CF (initial)	Reported %RSD	Recalculated %RSD
1	ICAL	2/01/12	Total EFH (C8-C40)	25697	25697	23084.1	23084.1	0.8	0.8
2									
3									
4									

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

LDC #: 785780B
SDG #: pw cover

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: EJ
2nd Reviewer: [illegible]

METHOD: GC ✓ HPLC _____

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

% Difference = 100 * (ave. CF - CF)/ave. CF
CF = A/C

Where: ave. CF = initial calibration average CF
CF = continuing calibration CF
A = Area of compound
C = Concentration of compound

#	Standard ID	Calibration Date	Compound	Average CF(ical)/ CCV Conc.	Reported CF/Conc. CCV	Recalculated CF/Conc. CCV	Reported %D	Recalculated %D
1	LFO5062A	6/6/12	TOTAL EFH (C8-C40)	500.0	475.89	475.89	5 ~~5~~	5
2	LFO5074A	6/6/12	"	500.0	482.36	482.36	4	4
3	LFO5086A	6/6/12	"	500.0	516.11	516.11	3	3
4								

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

LDC #: 28578 c8
SDG #: see cover

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: FT
2nd reviewer:

METHOD: ✓ GC __ HPLC

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: # 1

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
Bromobenzene	DB-5	100	78.439	78.4	78.4	0
Hexacosane	"	25	21.54	86.2	86.2	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 #: 28578D8
SDG #: see cover

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample/Laboratory Control Sample Duplicate Results Verification

Reviewer: F
2nd Reviewer: [illegible]

METHOD: ___ GC ___HPLC

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
RPD = | LCS - LCSD | * 2/(LCS + LCSD)

Where: SSC = Spiked sample concentration
SA = Spike added
LCS = Laboratory control sample percent recovery
SC = Concentration
LCSD = Laboratory control sample duplicate percent recovery

LCS/LCSD samples: 185110

Compound	Spike Added (mg/kg)		Spiked 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)										
Total EFH (c9-40)	500	500	414	449	83	83	90	90	8	8

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 #: 25780 8
SDG #: see cover

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: ✓
2nd Reviewer: ✓

METHOD: ✓ GC ___ HPLC

Y N N/A — Were all reported results recalculated and verified for all level IV samples?
Y N N/A — Were all recalculated results for detected target compounds within 10% of the reported results?

$$\text{Concentration} = \frac{(A)(Fv)(Df)}{(RF)(Vs\ \text{or}\ Ws)(\%S/100)}$$

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. #4 Compound Name Total EFH (C8-C40)

$$\text{Concentration} = \frac{1015894\ (10)}{(23084.06471)(0.923)(10.03)}$$

$$= 4768$$

#	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: May 30, 2012

LDC Report Date: October 25, 2012

Matrix: Soil/Water

Parameters: Alcohols

Validation Level: Level IV

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 12E244

Sample Identification

EB-053012
SL-544-SA5C-SB-0.0-0.5
SL-544-SA5C-SB-5.0-6.0
SL-550-SA5C-SB-0.0-0.5
SL-560-SA5C-SB-0.0-0.5
SL-560-SA5C-SB-6.5-7.5
SL-752-SA5C-SB-0.0-0.5

Introduction

This data review covers 6 soil samples and one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015B for Alcohols.

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%.

Retention time windows were evaluated and considered technically acceptable.

III. Calibration Verification

Calibration verification 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.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No alcohol contaminants were found in the method blanks.

Samples EB-053112 (from SDG 12E267) and EB-053012 were identified as equipment blanks. No alcohol contaminants were found.

Sample FB-060512 (from SDG 12F037) was identified as a field blank. No alcohol contaminants were found.

V. Surrogate Recovery

Surrogates were not required by the method.

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 and RLs

All compound quantitation and RLs were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 12E244	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
Alcohols - Data Qualification Summary - SDG 12E244

SDG	Sample	Compound	Flag	A or P	Reason (Code)
12E244	EB-053012 SL-544-SA5C-SB-0.0-0.5 SL-544-SA5C-SB-5.0-6.0 SL-550-SA5C-SB-0.0-0.5 SL-560-SA5C-SB-0.0-0.5 SL-560-SA5C-SB-6.5-7.5 SL-752-SA5C-SB-0.0-0.5	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (Z)

Santa Susana Field Laboratory
Alcohols - Laboratory Blank Data Qualification Summary - SDG 12E244

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Alcohols - Field Blank Data Qualification Summary - SDG 12E244

No Sample Data Qualified in this SDG

LDC #: 28578D43 **VALIDATION COMPLETENESS WORKSHEET** Date: 10/22/12
SDG #: 12E244 Level IV Page: 1 of 1
Laboratory: EMAX Laboratories, Inc. Reviewer: F
2nd Reviewer: A

METHOD: GC Alcohols (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: 5/30/12
II	Initial calibration	A	% RSD ≤ 20
III.	Calibration verification/ICV	A	ICV / CCV ≤ 20
IV.	Blanks	A	
V	Surrogate recovery	~~A~~ N	not Required
VI.	Matrix spike/Matrix spike duplicates	N	
VII.	Laboratory control samples	A	LCS ID
VIII.	Target compound identification	A	
IX.	Compound quantitation/RL/LOQ/LODs	A	
X.	System Performance	A	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	NP	EB = 1, EB-053112 (SDG# 12E267) FB-FB-060512 SDG# 12F037

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-053012 W	11	MB LK/W	21		31	
2	SL-544-SA5C-SB-0.0-0.5	12	MB LK/S	22		32	
3	SL-544-SA5C-SB-5.0-6.0	13		23		33	
4	SL-550-SA5C-SB-0.0-0.5	14		24		34	
5	SL-560-SA5C-SB-0.0-0.5	15		25		35	
6	SL-560-SA5C-SB-6.5-7.5	16		26		36	
7	SL-752-SA5C-SB-0.0-0.5	17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 28578D43
SDG #: per cover

VALIDATION FINDINGS CHECKLIST

Page: 1 of 2
Reviewer: FT
2nd Reviewer:

Method: ✓ GC _____ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation?		✓		
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?			✓	
Were the RT windows properly established?	✓			
IV. Continuing calibration				
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20%.0 or percent recoveries 80-120%?	✓			
Were all the retention times within the acceptance windows?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	✓			
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.			✓	
Was a MS/MSD analyzed every 20 samples of each matrix?			✓	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	

LDC #: 78578D43
SDG #: per cover

VALIDATION FINDINGS CHECKLIST

Reviewer: FJ
2nd Reviewer: A

Validation Area	Yes	No	NA	Findings/Comments
X. Target compound identification.				
Were the retention times of reported detects within the RT windows?			✓	
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XII. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XV. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.		✓		

LDC #: 28578D43
SDG #: [illegible]

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC ✓ HPLC _____

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

CF = A/C
average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

A = Area of compound,
C = Concentration of compound,
S = Standard deviation of the CF
X = Mean of the CFs

#	Standard ID	Calibration Date	Compound	Reported CF (10 std)	Recalculated CF (10 std)	Reported Average CF (initial)	Recalculated Average CF (initial)	Reported %RSD	Recalculated %RSD
1	ICAL	4/9/12	ethano	930.30	930.30	963.905	963.905	5.2	5.2
2									
3									
4									

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

INICIAL SB

LDC #: 28528D43
SDG #: pw cover

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: EJ
2nd Reviewer: [illegible]

METHOD: GC ✓ HPLC _____

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

% Difference = 100 * (ave. CF - CF)/ave. CF
CF = A/C

Where: ave. CF = initial calibration average CF
CF = continuing calibration CF
A = Area of compound
C = Concentration of compound

#	Standard ID	Calibration Date	Compound	Average CF(ical)/ CCV Conc.	Reported CF/Conc. CCV	Recalculated CF/Conc. CCV	Reported %D	Recalculated %D
1	BE3/100A	5/31/12	ethanol	10.0	11.50	11.50	15	15
2								
3								
4								

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

LDC #: 28578P43
SDG #: all cover

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample/Laboratory Control Sample Duplicate Results Verification

Reviewer: FD
2nd Reviewer: [illegible]

METHOD: ✓ GC __HPLC

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
RPD = | LCS - LCSD | * 2/(LCS + LCSD)

Where: SSC = Spiked sample concentration
SA = Spike added
LCS = Laboratory control sample percent recovery
SC = Concentration
LCSD = Laboratory control sample duplicate percent recovery

LCS/LCSD samples: LCS/D 8012

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.
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)										
ethanol	10000	10000	10800	11500	108	108	115	115	6	6

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 #: 28578D43
SDG #: [illegible]

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

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

METHOD: ✓ GC __ HPLC

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration= $\frac{(A)(Fv)(Df)}{(RF)(Vs \text{ or } Ws)(\%S/100)}$

A= Area or height of the compound to be measured
Fv= Final Volume of extract
Df= Dilution Factor
RF= Average response factor of the compound in the initial calibration
Vs= Initial volume of the sample
Ws= Initial weight of the sample
%S= Percent Solid

Example:

Sample ID._____ Compound Name _____

Concentration =_____

MD

#	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: May 30, 2012

LDC Report Date: October 25, 2012

Matrix: Soil/Water

Parameters: Glycols

Validation Level: Level IV

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 12E244

Sample Identification

EB-053012
SL-544-SA5C-SB-0.0-0.5
SL-544-SA5C-SB-5.0-6.0
SL-550-SA5C-SB-0.0-0.5
SL-560-SA5C-SB-0.0-0.5
SL-560-SA5C-SB-6.5-7.5
SL-752-SA5C-SB-0.0-0.5

Introduction

This data review covers 6 soil samples and one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015M for Glycols.

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 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%.

Retention time windows were evaluated and considered technically acceptable.

III. Calibration Verification

Calibration verification 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.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No glycol contaminants were found in the method blanks.

Samples EB-053112 (from SDG 12E267) and EB-053012 were identified as equipment blanks. No glycol contaminants were found.

Sample FB-060512 (from SDG 12F037) was identified as a field blank. No glycol contaminants were found.

V. Surrogate Recovery

Surrogates were not required by the method.

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 and RLs

All compound quantitation and RLs were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 12E244	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
Glycols - Data Qualification Summary - SDG 12E244

SDG	Sample	Compound	Flag	A or P	Reason (Code)
12E244	EB-053012 SL-544-SA5C-SB-0.0-0.5 SL-544-SA5C-SB-5.0-6.0 SL-550-SA5C-SB-0.0-0.5 SL-560-SA5C-SB-0.0-0.5 SL-560-SA5C-SB-6.5-7.5 SL-752-SA5C-SB-0.0-0.5	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (Z)

Santa Susana Field Laboratory
Glycols - Laboratory Blank Data Qualification Summary - SDG 12E244

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Glycols - Field Blank Data Qualification Summary - SDG 12E244

No Sample Data Qualified in this SDG

LDC #: 28578D45 **VALIDATION COMPLETENESS WORKSHEET** Date: 10/22/12
SDG #: 12E244 Level IV Page: 1 of 1
Laboratory: EMAX Laboratories Inc. Reviewer: TT
2nd Reviewer: A

METHOD: GC Glycols (EPA SW 846 Method 8015B)M

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: 5/30/12
II	Initial calibration	A	%D RSD ≤ 20
III.	Calibration verification/ICV	A	ICV/CCV ≤ 20
IV.	Blanks	A	
V	Surrogate recovery	N	not required
VI.	Matrix spike/Matrix spike duplicates	N	client specified
VII.	Laboratory control samples	A	LCS ID
VIII.	Target compound identification	A	
IX.	Compound quantitation/RL/LOQ/LODs	A	
X.	System Performance	A	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	ND	EB = 1 EB = EB 053112 (SDG # 12F267) FB = FB-060512 (SDG # 12F037)

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-053012 W	11	MBLKIW	21		31	
2	SL-544-SA5C-SB-0.0-0.5	12	MBLKIS	22		32	
3	SL-544-SA5C-SB-5.0-6.0	13		23		33	
4	SL-550-SA5C-SB-0.0-0.5	14		24		34	
5	SL-560-SA5C-SB-0.0-0.5	15		25		35	
6	SL-560-SA5C-SB-6.5-7.5	16		26		36	
7	SL-752-SA5C-SB-0.0-0.5	17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 28578D45
SDG #: per cover

VALIDATION FINDINGS CHECKLIST

Reviewer: FM
2nd Reviewer: C

Method: ✓ GC _____ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation?		✓		
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?			✓	
Were the RT windows properly established?	✓			
IV. Continuing calibration				
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20%.0 or percent recoveries 80-120%?	✓			
Were all the retention times within the acceptance windows?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?	✓		✓	
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.			✓	
Was a MS/MSD analyzed every 20 samples of each matrix?			✓	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	

LDC #: 28578D4S
SDG #: per cover

VALIDATION FINDINGS CHECKLIST

Reviewer: FJ
2nd Reviewer: A

Validation Area	Yes	No	NA	Findings/Comments
X. Target compound identification				
Were the retention times of reported detects within the RT windows?			✓	
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XII. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XV. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.		✓		

LDC #: 28578D4T
SDG #: [illegible]

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

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

METHOD: GC ✓ HPLC ____

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

CF = A/C
average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

A = Area of compound,
C = Concentration of compound,
S = Standard deviation of the CF
X = Mean of the CFs

#	Standard ID	Calibration Date	Compound	Reported CF (SV std)	Recalculated CF (SV std)	Reported Average CF (initial)	Recalculated Average CF (initial)	Reported %RSD	Recalculated %RSD
1	10AL	4/18/12	Ethylene Glycol	5909	5909	~~84.75~~ 6419.7	6419.7	10.5	10.5
2									
3									
4									

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

LDC #: 28578045
SDG #: fw cover

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Page: 1 of 7
Reviewer: EJ
2nd Reviewer: A

METHOD: GC ✓ HPLC _____

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

% Difference = 100 * (ave. CF - CF)/ave. CF
CF = A/C

Where: ave. CF = initial calibration average CF
CF = continuing calibration CF
A = Area of compound
C = Concentration of compound

#	Standard ID	Calibration Date	Compound	Average CF(ical)/ CCV Conc.	Reported CF/Conc. CCV	Recalculated CF/Conc. CCV	Reported %D	Recalculated %D
1	TE3100A	5/31/12	Ethylene Glycol	50.0	53.32	53.32	7	7
2	TE 3101SA	5/31/12	"	50.0	50.46	50.46	1	1
3	TF0100GA	06/01/12	"	50.0	47.73	47.73	5	5
4								

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

LDC #: 38578D4T
SDG #: see cover

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample/Laboratory Control Sample Duplicate Results Verification

Reviewer: FO
2nd Reviewer: [illegible]

METHOD: ✓ GC __HPLC

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
RPD = I LCS - LCSD I * 2/(LCS + LCSD)

Where: SSC = Spiked sample concentration
SA = Spike added
LCS = Laboratory control sample percent recovery
SC = Concentration
LCSD = Laboratory control sample duplicate percent recovery

LCS/LCSD samples: WBS/P

Compound	Spike Added (mg/kg)		Spiked 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)										
Diethylene Glycol	50	50	50.4	47.8	101	101	96	96	5	5

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 #: 28578D4J
SDG #: see cover

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: [initials]
2nd Reviewer: [initials]

METHOD: ✓ GC ___ HPLC

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration= $\frac{(A)(Fv)(Df)}{(RF)(Vs\ or\ Ws)(\%S/100)}$

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.__________ Compound Name __________

Concentration = __________

NP

#	Sample ID	Compound	Reported Concentrations ( )	Recalculated Results Concentrations ( )	Qualifications

Comments: __________

SAMPLE DELIVERY GROUP

12E267

Attachment I

Sample ID Cross Reference and Data Review Level

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
30-May-2012	SL-618-SA5C-SB-0.0-1.0	E267-03	N	7471A	7471A	III
30-May-2012	SL-618-SA5C-SB-0.0-1.0	E267-03	N	NONE	314.0	IV
30-May-2012	SL-618-SA5C-SB-0.0-1.0	E267-03	N	TOTAL	6020	III
30-May-2012	SL-619-SA5C-SB-0.0-0.5	E267-02	N	7471A	7471A	III
30-May-2012	SL-619-SA5C-SB-0.0-0.5	E267-02	N	TOTAL	6020	III
31-May-2012	TB-053112	E267-15	TB	5030B	8015B GRO	III
31-May-2012	TB-053112	E267-15	TB	5030B	8260B	IV
31-May-2012	TB-053112	E267-15	TB	5030B	8260B SIM	IV
31-May-2012	SL-618-SA5C-SB-1.0	E267-04	N	5035	8015B GRO	III
31-May-2012	SL-618-SA5C-SB-1.0	E267-04	N	5035	8260B SIM	IV
31-May-2012	SL-618-SA5C-SB-1.0	E267-04R	N	5035	8260B	IV
31-May-2012	SL-614-SA5C-SB-0.0-0.5	E267-12	N	3550B	8082	III
31-May-2012	SL-614-SA5C-SB-3.0-4.0	E267-13	N	3550B	8082	III
31-May-2012	SL-613-SA5C-SB-4.0-5.0	E267-10	N	3550B	8082	III
31-May-2012	SL-613-SA5C-SB-7.5-8.5	E267-11	N	3550B	8082	III
31-May-2012	SL-608-SA5C-SB-3.0	E267-06	N	5035	8015B GRO	III
31-May-2012	SL-608-SA5C-SB-2.0-3.0	E267-05	N	3550B	8015B EFH	III
31-May-2012	SL-608-SA5C-SB-2.0-3.0	E267-05	N	3550B	8082	III
31-May-2012	SL-608-SA5C-SB-2.0-3.0	E267-05	N	7471A	7471A	III
31-May-2012	SL-608-SA5C-SB-2.0-3.0	E267-05	N	GEN PREP	8015B	III
31-May-2012	SL-608-SA5C-SB-2.0-3.0	E267-05	N	GEN PREP	8015M	III
31-May-2012	SL-608-SA5C-SB-2.0-3.0	E267-05	N	TOTAL	6020	III
31-May-2012	SL-611-SA5C-SB-0.0-0.5	E267-07	N	3550B	8015B EFH	III
31-May-2012	SL-611-SA5C-SB-0.0-0.5	E267-07	N	3550B	8082	III
31-May-2012	SL-611-SA5C-SB-0.0-0.5	E267-07	N	3550B	8270C SIM	III
31-May-2012	SL-611-SA5C-SB-0.0-0.5	E267-07	N	7471A	7471A	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
31-May-2012	SL-611-SA5C-SB-0.0-0.5	E267-07	N	GEN PREP	6850	III
31-May-2012	SL-611-SA5C-SB-0.0-0.5	E267-07	N	TOTAL	6020	III
31-May-2012	SL-611-SA5C-SB-6.0	E267-09	N	5035	8015B GRO	III
31-May-2012	SL-611-SA5C-SB-5.0-6.0	E267-08	N	3550B	8015B EFH	III
31-May-2012	SL-611-SA5C-SB-5.0-6.0	E267-08	N	3550B	8082	III
31-May-2012	SL-611-SA5C-SB-5.0-6.0	E267-08	N	3550B	8270C SIM	III
31-May-2012	SL-611-SA5C-SB-5.0-6.0	E267-08	N	7471A	7471A	III
31-May-2012	SL-611-SA5C-SB-5.0-6.0	E267-08	N	GEN PREP	6850	III
31-May-2012	SL-611-SA5C-SB-5.0-6.0	E267-08	N	TOTAL	6020	III
31-May-2012	SL-609-SA5C-SB-4.0	E267-17	N	5035	8015B GRO	III
31-May-2012	SL-609-SA5C-SB-3.0-4.0	E267-16	N	3550B	8015B EFH	III
31-May-2012	SL-609-SA5C-SB-3.0-4.0	E267-16	N	3550B	8082	III
31-May-2012	SL-609-SA5C-SB-3.0-4.0	E267-16	N	7471A	7471A	III
31-May-2012	SL-609-SA5C-SB-3.0-4.0	E267-16	N	GEN PREP	8015B	III
31-May-2012	SL-609-SA5C-SB-3.0-4.0	E267-16	N	GEN PREP	8015M	III
31-May-2012	SL-609-SA5C-SB-3.0-4.0	E267-16	N	TOTAL	6020	III
31-May-2012	SL-610-SA5C-SB-0.0-0.5	E267-14	N	3550B	8015B EFH	III
31-May-2012	SL-610-SA5C-SB-0.0-0.5	E267-14	N	3550B	8082	III
31-May-2012	SL-610-SA5C-SB-0.0-0.5	E267-14	N	7471A	7471A	III
31-May-2012	SL-610-SA5C-SB-0.0-0.5	E267-14	N	GEN PREP	8015B	III
31-May-2012	SL-610-SA5C-SB-0.0-0.5	E267-14	N	GEN PREP	8015M	III
31-May-2012	SL-610-SA5C-SB-0.0-0.5	E267-14	N	TOTAL	6020	III
31-May-2012	SL-612-SA5C-SB-5.0	E267-19	N	5035	8015B GRO	III
31-May-2012	SL-612-SA5C-SB-5.0MS	E267-19M	MS	5035	8015B GRO	III
31-May-2012	SL-612-SA5C-SB-5.0MSD	E267-19S	MSD	5035	8015B GRO	III
31-May-2012	SL-612-SA5C-SB-4.0-5.0	E267-18	N	3550B	8015B EFH	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
31-May-2012	SL-612-SA5C-SB-4.0-5.0	E267-18	N	3550B	8082	III
31-May-2012	SL-612-SA5C-SB-4.0-5.0	E267-18	N	3550B	8270C SIM	III
31-May-2012	SL-612-SA5C-SB-4.0-5.0	E267-18	N	7471A	7471A	III
31-May-2012	SL-612-SA5C-SB-4.0-5.0	E267-18	N	GEN PREP	6850	III
31-May-2012	SL-612-SA5C-SB-4.0-5.0	E267-18	N	TOTAL	6020	III
31-May-2012	SL-612-SA5C-SB-4.0-5.0MS	E267-18M	MS	3550B	8015B EFH	III
31-May-2012	SL-612-SA5C-SB-4.0-5.0MS	E267-18M	MS	3550B	8082	III
31-May-2012	SL-612-SA5C-SB-4.0-5.0MS	E267-18M	MS	3550B	8270C SIM	III
31-May-2012	SL-612-SA5C-SB-4.0-5.0MS	E267-18M	MS	7471A	7471A	III
31-May-2012	SL-612-SA5C-SB-4.0-5.0MS	E267-18M	MS	GEN PREP	6850	III
31-May-2012	SL-612-SA5C-SB-4.0-5.0MS	E267-18M	MS	TOTAL	6020	III
31-May-2012	SL-612-SA5C-SB-4.0-5.0MSD	E267-18S	MSD	3550B	8015B EFH	III
31-May-2012	SL-612-SA5C-SB-4.0-5.0MSD	E267-18S	MSD	3550B	8082	III
31-May-2012	SL-612-SA5C-SB-4.0-5.0MSD	E267-18S	MSD	3550B	8270C SIM	III
31-May-2012	SL-612-SA5C-SB-4.0-5.0MSD	E267-18S	MSD	7471A	7471A	III
31-May-2012	SL-612-SA5C-SB-4.0-5.0MSD	E267-18S	MSD	GEN PREP	6850	III
31-May-2012	SL-612-SA5C-SB-4.0-5.0MSD	E267-18S	MSD	TOTAL	6020	III
31-May-2012	SL-912-SA5C-SB-5.0	E267-21	FD	5035	8015B GRO	III
31-May-2012	SL-912-SA5C-SB-4.0-5.0	E267-20	FD	3550B	8015B EFH	III
31-May-2012	SL-912-SA5C-SB-4.0-5.0	E267-20	FD	3550B	8082	III
31-May-2012	SL-912-SA5C-SB-4.0-5.0	E267-20	FD	3550B	8270C SIM	III
31-May-2012	SL-912-SA5C-SB-4.0-5.0	E267-20	FD	7471A	7471A	III
31-May-2012	SL-912-SA5C-SB-4.0-5.0	E267-20	FD	GEN PREP	6850	III
31-May-2012	SL-912-SA5C-SB-4.0-5.0	E267-20	FD	TOTAL	6020	III
31-May-2012	SL-612-SA5C-SB-8.0	E267-23	N	5035	8015B GRO	III
31-May-2012	SL-612-SA5C-SB-7.0-8.0	E267-22	N	3550B	8015B EFH	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
31-May-2012	SL-612-SA5C-SB-7.0-8.0	E267-22	N	3550B	8082	III
31-May-2012	SL-612-SA5C-SB-7.0-8.0	E267-22	N	3550B	8270C SIM	III
31-May-2012	SL-612-SA5C-SB-7.0-8.0	E267-22	N	7471A	7471A	III
31-May-2012	SL-612-SA5C-SB-7.0-8.0	E267-22	N	GEN PREP	6850	III
31-May-2012	SL-612-SA5C-SB-7.0-8.0	E267-22	N	TOTAL	6020	III
31-May-2012	EB-053112	E267-01	EB	3520C	8015B EFH	III
31-May-2012	EB-053112	E267-01	EB	3520C	8082	III
31-May-2012	EB-053112	E267-01	EB	3520C	8270C SIM	III
31-May-2012	EB-053112	E267-01	EB	5030B	8015B GRO	III
31-May-2012	EB-053112	E267-01	EB	7470A	7470A	III
31-May-2012	EB-053112	E267-01	EB	GEN PREP	6850	III
31-May-2012	EB-053112	E267-01	EB	GEN PREP	7199	III
31-May-2012	EB-053112	E267-01	EB	GEN PREP	8015B	III
31-May-2012	EB-053112	E267-01	EB	GEN PREP	8015M	III
31-May-2012	EB-053112	E267-01	EB	TOTAL	6020	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 II

Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: 12E267 **Laboratory: EMXT**

EDD Filename: Prep12E267 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: **EB-053112** ***Collected:*** **5/31/2012 3:15:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	0.0374	J	0.0200	MDL	0.100	PQL	MG/L	J	Z
BARIUM	0.000502	J	0.000500	MDL	0.00100	PQL	MG/L	J	Z
BORON	0.00549	J	0.00500	MDL	0.0100	PQL	MG/L	J	Z
MANGANESE	0.000249	J	0.000200	MDL	0.00100	PQL	MG/L	J	Z
SODIUM	0.0526	J	0.0500	MDL	0.100	PQL	MG/L	J	Z

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: **SL-608-SA5C-SB-2.0-3.0** ***Collected:*** **5/31/2012 11:07:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.971**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.209	J	0.103	MDL	0.514	PQL	MG/KG	J	Z
BERYLLIUM	0.453	J	0.0514	MDL	0.514	PQL	MG/KG	J	Z
CADMIUM	0.0907	J	0.0514	MDL	0.514	PQL	MG/KG	J	Z
MAGNESIUM	4440		5.14	MDL	10.3	PQL	MG/KG	J	Q
MOLYBDENUM	0.228	J	0.0514	MDL	0.514	PQL	MG/KG	J	Z
THALLIUM	0.237	J	0.0514	MDL	0.411	PQL	MG/KG	J	Z
Zirconium	5.14	U	2.57	MDL	5.14	PQL	MG/KG	UJ	Q

Sample ID: **SL-609-SA5C-SB-3.0-4.0** ***Collected:*** **5/31/2012 1:31:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.962**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.236	J	0.107	MDL	0.534	PQL	MG/KG	J	Z
CADMIUM	0.0976	J	0.0534	MDL	0.534	PQL	MG/KG	J	Z
MAGNESIUM	5480		5.34	MDL	10.7	PQL	MG/KG	J	Q
THALLIUM	0.257	J	0.0534	MDL	0.428	PQL	MG/KG	J	Z
Zirconium	5.34	U	2.67	MDL	5.34	PQL	MG/KG	UJ	Q

Sample ID: **SL-610-SA5C-SB-0.0-0.5** ***Collected:*** **5/31/2012 2:08:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.952**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	0.319	J	0.0499	MDL	0.499	PQL	MG/KG	J	Z
BORON	3.00	J	2.49	MDL	4.99	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E267 **Laboratory: EMXT**

EDD Filename: Prep12E267 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: **METALS**

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

Sample ID: **SL-610-SA5C-SB-0.0-0.5** ***Collected:*** **5/31/2012 2:08:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.952**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MAGNESIUM	4310		4.99	MDL	9.98	PQL	MG/KG	J	Q
SILVER	0.0832	J	0.0499	MDL	0.499	PQL	MG/KG	J	Z
THALLIUM	0.192	J	0.0499	MDL	0.399	PQL	MG/KG	J	Z
Zirconium	4.99	U	2.49	MDL	4.99	PQL	MG/KG	UJ	Q

Sample ID: **SL-611-SA5C-SB-0.0-0.5** ***Collected:*** **5/31/2012 11:29:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.980**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.229	J	0.107	MDL	0.537	PQL	MG/KG	J	Z
BERYLLIUM	0.437	J	0.0537	MDL	0.537	PQL	MG/KG	J	Z
CADMIUM	0.207	J	0.0537	MDL	0.537	PQL	MG/KG	J	Z
MAGNESIUM	3440		5.37	MDL	10.7	PQL	MG/KG	J	Q
SODIUM	91.8	J	53.7	MDL	107	PQL	MG/KG	J	Z
THALLIUM	0.189	J	0.0537	MDL	0.429	PQL	MG/KG	J	Z
Zirconium	5.37	U	2.68	MDL	5.37	PQL	MG/KG	UJ	Q

Sample ID: **SL-611-SA5C-SB-5.0-6.0** ***Collected:*** **5/31/2012 11:33:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.966**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.197	J	0.109	MDL	0.543	PQL	MG/KG	J	Z
BERYLLIUM	0.542	J	0.0543	MDL	0.543	PQL	MG/KG	J	Z
CADMIUM	0.0770	J	0.0543	MDL	0.543	PQL	MG/KG	J	Z
MAGNESIUM	3910		5.43	MDL	10.9	PQL	MG/KG	J	Q
MOLYBDENUM	0.371	J	0.0543	MDL	0.543	PQL	MG/KG	J	Z
SILVER	0.0670	J	0.0543	MDL	0.543	PQL	MG/KG	J	Z
THALLIUM	0.216	J	0.0543	MDL	0.434	PQL	MG/KG	J	Z
Zirconium	5.43	U	2.71	MDL	5.43	PQL	MG/KG	UJ	Q

Sample ID: **SL-612-SA5C-SB-4.0-5.0** ***Collected:*** **5/31/2012 2:54:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.939**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.331	J	0.101	MDL	0.506	PQL	MG/KG	J	Z
CADMIUM	0.227	J	0.0506	MDL	0.506	PQL	MG/KG	J	Z, FD
MAGNESIUM	4750		5.06	MDL	10.1	PQL	MG/KG	J	Q
MOLYBDENUM	0.453	J	0.0506	MDL	0.506	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E267 **Laboratory: EMXT**

EDD Filename: Prep12E267 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: SO**

***Sample ID:*SL-612-SA5C-SB-4.0-5.0** ***Collected:* 5/31/2012 2:54:00** ***Analysis Type:* RES/TOT** ***Dilution:* 0.939**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
THALLIUM	0.269	J	0.0506	MDL	0.405	PQL	MG/KG	J	Z
Zirconium	5.06	U	2.53	MDL	5.06	PQL	MG/KG	UJ	Q

***Sample ID:*SL-612-SA5C-SB-7.0-8.0** ***Collected:* 5/31/2012 3:08:00** ***Analysis Type:* RES/TOT** ***Dilution:* 0.995**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.276	J	0.111	MDL	0.553	PQL	MG/KG	J	Z
CADMIUM	0.174	J	0.0553	MDL	0.553	PQL	MG/KG	J	Z
MAGNESIUM	6150		5.53	MDL	11.1	PQL	MG/KG	J	Q
MOLYBDENUM	0.446	J	0.0553	MDL	0.553	PQL	MG/KG	J	Z
THALLIUM	0.283	J	0.0553	MDL	0.442	PQL	MG/KG	J	Z
Zirconium	5.53	U	2.76	MDL	5.53	PQL	MG/KG	UJ	Q

***Sample ID:*SL-618-SA5C-SB-0.0-1.0** ***Collected:* 5/30/2012 2:48:00** ***Analysis Type:* RES/TOT** ***Dilution:* 0.995**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.207	J	0.104	MDL	0.521	PQL	MG/KG	J	Z
BERYLLIUM	0.331	J	0.0521	MDL	0.521	PQL	MG/KG	J	Z
CADMIUM	0.0950	J	0.0521	MDL	0.521	PQL	MG/KG	J	Z
MAGNESIUM	3640		5.21	MDL	10.4	PQL	MG/KG	J	Q
MOLYBDENUM	0.455	J	0.0521	MDL	0.521	PQL	MG/KG	J	Z
THALLIUM	0.211	J	0.0521	MDL	0.417	PQL	MG/KG	J	Z
Zirconium	5.21	U	2.60	MDL	5.21	PQL	MG/KG	UJ	Q

***Sample ID:*SL-619-SA5C-SB-0.0-0.5** ***Collected:* 5/30/2012 3:20:00** ***Analysis Type:* RES/TOT** ***Dilution:* 0.990**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.236	J	0.105	MDL	0.524	PQL	MG/KG	J	Z
BERYLLIUM	0.369	J	0.0524	MDL	0.524	PQL	MG/KG	J	Z
CADMIUM	0.183	J	0.0524	MDL	0.524	PQL	MG/KG	J	Z
MAGNESIUM	3830		5.24	MDL	10.5	PQL	MG/KG	J	Q
THALLIUM	0.207	J	0.0524	MDL	0.419	PQL	MG/KG	J	Z
Zirconium	5.24	U	2.62	MDL	5.24	PQL	MG/KG	UJ	Q

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E267 **Laboratory: EMXT**

EDD Filename: Prep12E267 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: SL-912-SA5C-SB-4.0-5.0 **Collected:** 5/31/2012 2:58:00 **Analysis Type:** RES/TOT **Dilution:** 0.985

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.210	J	0.105	MDL	0.527	PQL	MG/KG	J	Z
CADMIUM	0.136	J	0.0527	MDL	0.527	PQL	MG/KG	J	Z, FD
MAGNESIUM	5140		5.27	MDL	10.5	PQL	MG/KG	J	Q
MOLYBDENUM	0.276	J	0.0527	MDL	0.527	PQL	MG/KG	J	Z
THALLIUM	0.246	J	0.0527	MDL	0.421	PQL	MG/KG	J	Z
Zirconium	5.27	U	2.63	MDL	5.27	PQL	MG/KG	UJ	Q

Method Category: SVOA

Method: 8015B EFH **Matrix: SO**

Sample ID: SL-611-SA5C-SB-0.0-0.5 **Collected:** 5/31/2012 11:29:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH(C21-C30)	3.2	J	2.7	MDL	5.5	PQL	MG/KG	J	Z
EFH(C30-C40)	9.8	J	5.5	MDL	11	PQL	MG/KG	J	Z

Method Category: SVOA

Method: 8270C SIM **Matrix: AQ**

Sample ID: EB-053112 **Collected:** 5/31/2012 3:15:00 **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 0.99

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NAPHTHALENE	0.13	J	0.099	MDL	0.20	PQL	UG/L	J	Z

Method Category: SVOA

Method: 8270C SIM **Matrix: SO**

Sample ID: SL-612-SA5C-SB-4.0-5.0 **Collected:** 5/31/2012 2:54:00 **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	8.3	J	2.7	MDL	11	PQL	UG/KG	J	Z, FD
BENZO(A)PYRENE	9.2	J	2.7	MDL	11	PQL	UG/KG	J	Z, FD
BENZO(B)FLUORANTHENE	11		2.7	MDL	11	PQL	UG/KG	J	FD
BENZO(E)PYRENE	5.8		2.7	MDL	5.4	PQL	UG/KG	J	FD

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E267 **Laboratory: EMXT**

EDD Filename: Prep12E267 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

Method: 8270C SIM **Matrix: SO**

Sample ID: SL-612-SA5C-SB-4.0-5.0 *Collected:* 5/31/2012 2:54:00 *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	5.5	J	2.7	MDL	11	PQL	UG/KG	J	Z, FD
BENZO(K)FLUORANTHENE	4.2	J	2.7	MDL	11	PQL	UG/KG	J	Z, FD
CHRYSENE	10	J	2.7	MDL	11	PQL	UG/KG	J	Z, FD
FLUORANTHENE	21		2.7	MDL	11	PQL	UG/KG	J	FD
INDENO(1,2,3-CD)PYRENE	4.5	J	2.7	MDL	11	PQL	UG/KG	J	Z, FD
PHENANTHRENE	15		2.7	MDL	11	PQL	UG/KG	J	FD
PYRENE	20		2.7	MDL	11	PQL	UG/KG	J	FD

Sample ID: SL-912-SA5C-SB-4.0-5.0 *Collected:* 5/31/2012 2:58:00 *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	11	U	2.7	MDL	11	PQL	UG/KG	UJ	FD
BENZO(A)PYRENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	FD
BENZO(B)FLUORANTHENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	FD
BENZO(E)PYRENE	5.3	U	2.7	MDL	5.3	PQL	UG/KG	UJ	FD
BENZO(G,H,I)PERYLENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	FD
BENZO(K)FLUORANTHENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	FD
CHRYSENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	FD
FLUORANTHENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	FD
INDENO(1,2,3-CD)PYRENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	FD
PHENANTHRENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	FD
PYRENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	FD

Method Category: VOA

Method: 8015B GRO **Matrix: AQ**

Sample ID: EB-053112 *Collected:* 5/31/2012 3:15:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
GASOLINE RANGE ORGANICS (C5-C12)	54		10	MDL	50	PQL	UG/L	U	T

Sample ID: TB-053112 *Collected:* 5/31/2012 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
GASOLINE RANGE ORGANICS (C5-C12)	27	J	10	MDL	50	PQL	UG/L	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E267 **Laboratory: EMXT**

EDD Filename: Prep12E267 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: VOA
Method: 8015B GRO **Matrix:** AQ

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

Sample ID: TB-053112 **Collected:** 5/31/2012 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
ACROLEIN	10	U	5.0	MDL	10	PQL	UG/L	UJ	R, R
ACRYLONITRILE	10	U	5.0	MDL	10	PQL	UG/L	UJ	R

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

Sample ID: SL-618-SA5C-SB-1.0 **Collected:** 5/31/2012 8:30:00 **Analysis Type:** RES **Dilution:** 0.85

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACROLEIN	9.1	U	4.6	MDL	9.1	PQL	UG/KG	UJ	R, R

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12E267 **Laboratory: EMXT**

EDD Filename: Prep12E267 **eQAPP Name: CDM_SSFL_120730_EMAX**

Reason Code Legend

Reason Code	*Description*
FD	Field Duplicate Precision
Q	Matrix Spike Lower Estimation
Q	Matrix Spike Upper Estimation
R	Continuing Calibration Verification Relative Response Factor
R	Initial Calibration Relative Response Factor
T	Trip Blank Contamination
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Enclosure I

Level III ADR Outliers
(including Manual Review Outliers)

Quality Control
Outlier Reports

12E267

Trip Blank Outlier Report

Lab Reporting Batch ID: 12E267 **Laboratory: EMXT**

EDD Filename: 12E267 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: **8015B GRO**
Matrix: **AQ**

Trip Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
TB-053112(RES)	5/31/2012 8:00:00 AM	GASOLINE RANGE ORGANICS (C5-C12)	27 UG/L	EB-053112 SL-608-SA5C-SB-2.0-3.0 SL-608-SA5C-SB-3.0 SL-609-SA5C-SB-3.0-4.0 SL-609-SA5C-SB-4.0 SL-610-SA5C-SB-0.0-0.5 SL-611-SA5C-SB-0.0-0.5 SL-611-SA5C-SB-5.0-6.0 SL-611-SA5C-SB-6.0 SL-612-SA5C-SB-4.0-5.0 SL-612-SA5C-SB-5.0 SL-612-SA5C-SB-7.0-8.0 SL-612-SA5C-SB-8.0 SL-613-SA5C-SB-4.0-5.0 SL-613-SA5C-SB-7.5-8.5 SL-614-SA5C-SB-0.0-0.5 SL-614-SA5C-SB-3.0-4.0 SL-618-SA5C-SB-0.0-1.0 SL-618-SA5C-SB-1.0 SL-619-SA5C-SB-0.0-0.5 SL-912-SA5C-SB-4.0-5.0 SL-912-SA5C-SB-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
EB-053112(RES)	GASOLINE RANGE ORGANICS (C5-C12)	54 UG/L	54U UG/L

Project Name and Number: PHASE3 - SSFL PHASE 3

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 12E267 **Laboratory: EMXT**

EDD Filename: 12E267 **eQAPP Name: CDM_SSFL_120730_EMAX**

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

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
SL-612-SA5C-SB-4.0-5.0MSD (TOT) (SL-608-SA5C-SB-2.0-3.0 SL-609-SA5C-SB-3.0-4.0 SL-610-SA5C-SB-0.0-0.5 SL-611-SA5C-SB-0.0-0.5 SL-611-SA5C-SB-5.0-6.0 SL-612-SA5C-SB-4.0-5.0 SL-612-SA5C-SB-7.0-8.0 SL-618-SA5C-SB-0.0-1.0 SL-619-SA5C-SB-0.0-0.5 SL-912-SA5C-SB-4.0-5.0)	TITANIUM	-	242	75.00-125.00	-	TITANIUM	No Qual, >4x
SL-612-SA5C-SB-4.0-5.0MS (TOT) **SL-612-SA5C-SB-4.0-5.0MSD (TOT)** (SL-608-SA5C-SB-2.0-3.0 SL-609-SA5C-SB-3.0-4.0 SL-610-SA5C-SB-0.0-0.5 SL-611-SA5C-SB-0.0-0.5 SL-611-SA5C-SB-5.0-6.0 SL-612-SA5C-SB-4.0-5.0 SL-612-SA5C-SB-7.0-8.0 SL-618-SA5C-SB-0.0-1.0 SL-619-SA5C-SB-0.0-0.5 SL-912-SA5C-SB-4.0-5.0)	ALUMINUM BARIUM IRON MAGNESIUM Zirconium	65 71 48 70 67	- - 70 - 62	75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00	- - - - -	ALUMINUM BARIUM IRON MAGNESIUM Zirconium	J(all detects) UJ(all non-detects) Al, Ba, Fe, No Qual, >4x

Project Name and Number: PHASE3 - SSFL PHASE 3

Field Duplicate RPD Report

Lab Reporting Batch ID: 12E267 **Laboratory: EMXT**

EDD Filename: Prep12E267 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 6020
Matrix: SO

Analyte	Concentration (MG/KG)		Sample RPD	eQAPP RPD	Flag
	SL-612-SA5C-SB-4.0-5.0 (TOT)	SL-912-SA5C-SB-4.0-5.0 (TOT)			
ALUMINUM	11700	12900	10	50.00	
ANTIMONY	0.331	0.210	45	50.00	
ARSENIC	6.20	6.91	11	50.00	
BARIUM	113	117	3	50.00	
BERYLLIUM	0.822	0.868	5	50.00	
CALCIUM	6370	5540	14	50.00	
CHROMIUM	20.4	21.6	6	50.00	
COBALT	8.11	6.58	21	50.00	
COPPER	12.1	13.5	11	50.00	
IRON	23300	25200	8	50.00	
LEAD	13.1	8.06	48	50.00	
LITHIUM	24.0	26.7	11	50.00	No Qualifiers Applied
MAGNESIUM	4750	5140	8	50.00	
MANGANESE	220	174	23	50.00	
MOLYBDENUM	0.453	0.276	49	50.00	
NICKEL	13.6	14.1	4	50.00	
PHOSPHORUS	355	329	8	50.00	
POTASSIUM	2100	1470	35	50.00	
SODIUM	314	428	31	50.00	
STRONTIUM	33.6	37.4	11	50.00	
THALLIUM	0.269	0.246	9	50.00	
TITANIUM	783	680	14	50.00	
VANADIUM	37.2	37.9	2	50.00	
ZINC	74.5	61.9	18	50.00	
CADMIUM	0.227	0.136	50	50.00	J(all detects)

Method: 8270C SIM
Matrix: SO

Analyte	Concentration (UG/KG)		Sample RPD	eQAPP RPD	Flag
	SL-612-SA5C-SB-4.0-5.0	SL-912-SA5C-SB-4.0-5.0			
BENZO(A)ANTHRACENE	8.3	11 U	200	50.00	
BENZO(A)PYRENE	9.2	11 U	200	50.00	
BENZO(B)FLUORANTHENE	11	11 U	200	50.00	
BENZO(E)PYRENE	5.8	5.3 U	200	50.00	
BENZO(G,H,I)PERYLENE	5.5	11 U	200	50.00	J(all detects) UJ(all non-detects)
BENZO(K)FLUORANTHENE	4.2	11 U	200	50.00	
CHRYSENE	10	11 U	200	50.00	
FLUORANTHENE	21	11 U	200	50.00	
INDENO(1,2,3-CD)PYRENE	4.5	11 U	200	50.00	
PHENANTHRENE	15	11 U	200	50.00	
PYRENE	20	11 U	200	50.00	

Method: 9045D
Matrix: SO

Analyte	Concentration (PH UNIT)		Sample RPD	eQAPP RPD	Flag
	SL-612-SA5C-SB-4.0-5.0	SL-912-SA5C-SB-4.0-5.0			
PH	8.80	8.92	1		No Qualifiers Applied

Project Name and Number: PHASE3 - SSFL PHASE 3

Reporting Limit Outliers

Lab Reporting Batch ID: 12E267 **Laboratory: EMXT**

EDD Filename: 12E267 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 6020
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-053112	ALUMINUM	J	0.0374	0.100	PQL	MG/L	J (all detects)
	BARIUM	J	0.000502	0.00100	PQL	MG/L	
	BORON	J	0.00549	0.0100	PQL	MG/L	
	MANGANESE	J	0.000249	0.00100	PQL	MG/L	
	SODIUM	J	0.0526	0.100	PQL	MG/L	

Method: 8015B GRO
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TB-053112	GASOLINE RANGE ORGANICS (C5-C12)	J	27	50	PQL	UG/L	J (all detects)

Method: 8270C SIM
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-053112	NAPHTHALENE	J	0.13	0.20	PQL	UG/L	J (all detects)

Method: 6020
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-608-SA5C-SB-2.0-3.0	ANTIMONY	J	0.209	0.514	PQL	MG/KG	J (all detects)
	BERYLLIUM	J	0.453	0.514	PQL	MG/KG	
	CADMIUM	J	0.0907	0.514	PQL	MG/KG	
	MOLYBDENUM	J	0.228	0.514	PQL	MG/KG	
	THALLIUM	J	0.237	0.411	PQL	MG/KG	
SL-609-SA5C-SB-3.0-4.0	ANTIMONY	J	0.236	0.534	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.0976	0.534	PQL	MG/KG	
	THALLIUM	J	0.257	0.428	PQL	MG/KG	
SL-610-SA5C-SB-0.0-0.5	BERYLLIUM	J	0.319	0.499	PQL	MG/KG	J (all detects)
	BORON	J	3.00	4.99	PQL	MG/KG	
	SILVER	J	0.0832	0.499	PQL	MG/KG	
	THALLIUM	J	0.192	0.399	PQL	MG/KG	
SL-611-SA5C-SB-0.0-0.5	ANTIMONY	J	0.229	0.537	PQL	MG/KG	J (all detects)
	BERYLLIUM	J	0.437	0.537	PQL	MG/KG	
	CADMIUM	J	0.207	0.537	PQL	MG/KG	
	SODIUM	J	91.8	107	PQL	MG/KG	
	THALLIUM	J	0.189	0.429	PQL	MG/KG	

Reporting Limit Outliers

Lab Reporting Batch ID: 12E267 **Laboratory: EMXT**

EDD Filename: 12E267 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 6020

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-611-SA5C-SB-5.0-6.0	ANTIMONY	J	0.197	0.543	PQL	MG/KG	J (all detects)
	BERYLLIUM	J	0.542	0.543	PQL	MG/KG	
	CADMIUM	J	0.0770	0.543	PQL	MG/KG	
	MOLYBDENUM	J	0.371	0.543	PQL	MG/KG	
	SILVER	J	0.0670	0.543	PQL	MG/KG	
	THALLIUM	J	0.216	0.434	PQL	MG/KG	
SL-612-SA5C-SB-4.0-5.0	ANTIMONY	J	0.331	0.506	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.227	0.506	PQL	MG/KG	
	MOLYBDENUM	J	0.453	0.506	PQL	MG/KG	
	THALLIUM	J	0.269	0.405	PQL	MG/KG	
SL-612-SA5C-SB-7.0-8.0	ANTIMONY	J	0.276	0.553	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.174	0.553	PQL	MG/KG	
	MOLYBDENUM	J	0.446	0.553	PQL	MG/KG	
	THALLIUM	J	0.283	0.442	PQL	MG/KG	
SL-618-SA5C-SB-0.0-1.0	ANTIMONY	J	0.207	0.521	PQL	MG/KG	J (all detects)
	BERYLLIUM	J	0.331	0.521	PQL	MG/KG	
	CADMIUM	J	0.0950	0.521	PQL	MG/KG	
	MOLYBDENUM	J	0.455	0.521	PQL	MG/KG	
	THALLIUM	J	0.211	0.417	PQL	MG/KG	
SL-619-SA5C-SB-0.0-0.5	ANTIMONY	J	0.236	0.524	PQL	MG/KG	J (all detects)
	BERYLLIUM	J	0.369	0.524	PQL	MG/KG	
	CADMIUM	J	0.183	0.524	PQL	MG/KG	
	THALLIUM	J	0.207	0.419	PQL	MG/KG	
SL-912-SA5C-SB-4.0-5.0	ANTIMONY	J	0.210	0.527	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.136	0.527	PQL	MG/KG	
	MOLYBDENUM	J	0.276	0.527	PQL	MG/KG	
	THALLIUM	J	0.246	0.421	PQL	MG/KG	

Method: 8015B EFH

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-611-SA5C-SB-0.0-0.5	EFH(C21-C30)	J	3.2	5.5	PQL	MG/KG	J (all detects)
	EFH(C30-C40)	J	9.8	11	PQL	MG/KG	

Method: 8270C SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-612-SA5C-SB-4.0-5.0	BENZO(A)ANTHRACENE	J	8.3	11	PQL	UG/KG	J (all detects)
	BENZO(A)PYRENE	J	9.2	11	PQL	UG/KG	
	BENZO(G,H,I)PERYLENE	J	5.5	11	PQL	UG/KG	
	BENZO(K)FLUORANTHENE	J	4.2	11	PQL	UG/KG	
	CHRYSENE	J	10	11	PQL	UG/KG	
	INDENO(1,2,3-CD)PYRENE	J	4.5	11	PQL	UG/KG	

LDC #: 28578E4
SDG #: 12E267
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 11612
Page: 1 of 1
Reviewer: A
2nd Reviewer: W

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

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

	Validation Area		Comments
I.	Technical holding times	=	Sampling dates:
II.	ICP/MS Tune	=	
III.	Calibration	~	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	~	
VI.	Matrix Spike Analysis	N	MS/D (Al, Ba, Fe, T; >4x)
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	N	LCS/D
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, EB-053012 (12E244) FB= FB-060512 (12F037)

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-053112 W	11	SL-612-SA5C-SB-7.0-8.0	21		31	
2	SL-619-SA5C-SB-0.0-0.5	12	SL-612-SA5C-SB-4.0-5.0MS	22		32	
3	SL-618-SA5C-SB-0.0-1.0	13	SL-612-SA5C-SB-4.0-5.0MSD	23		33	
4	SL-608-SA5C-SB-2.0-3.0	14		24		34	
5	SL-611-SA5C-SB-0.0-0.5	15		25		35	
6	SL-611-SA5C-SB-5.0-6.0	16		26		36	
7	SL-610-SA5C-SB-0.0-0.5	17		27		37	
8	SL-609-SA5C-SB-3.0-4.0	18		28		38	
9	SL-612-SA5C-SB-4.0-5.0	19		29		39	
10	SL-912-SA5C-SB-4.0-5.0	20		30		40	

Notes: _____

LDC #: 28578E4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: AL
2nd Reviewer: LW

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

Blank units: ug/L **Associated sample units:** mg/Kg
Sampling date: 5/31/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: 2-6, 8-11

Analyte	Blank ID	Sample Identification										
	EB-053112	Action Limit	No Qualifiers									
Al	0.0374	9.35										
Ba	0.000502	0.1255										
B	0.00549	1.3725										
Cu	0.00139	0.3475										
Mn	0.000249	0.06225										
Na	0.0526	13.15										

Sampling date: 5/30/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: 7

Analyte	Blank ID	Sample Identification										
	EB-053012	Action Limit	No Qualifiers									
B	0.00535	1.3375										
Ca	0.0269	6.725										

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 #: 28578H4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: AL
2nd Reviewer: [illegible]

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

Blank units: ug/L **Associated sample units:** mg/Kg

Sampling date: 6/5/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: AllSoil

Analyte	Blank ID	Sample Identification										
	FB-060512	Action Limit	No Qualifiers									
Al	0.0270	6.75										
Ca	0.0263	6.575										
Cu	0.000954	0.2385										

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".

Enclosure II

Level IV Validation Reports

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Santa Susana Field Laboratory
Collection Date:	May 31, 2012
LDC Report Date:	November 27, 2012
Matrix:	Soil/Water
Parameters:	Volatiles
Validation Level:	Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	12E267

Sample Identification

SL-618-SA5C-SB-1.0
TB-053112

Introduction

This data review covers one soil sample and one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a Laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

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

J Indicates an estimated value.

R Quality control indicates the data is not usable.

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

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

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

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

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990 .

Average relative response factors (RRF) for all compounds were within method and validation criteria with the following exceptions:

Date	Compound	RRF (Limits)	Associated Samples	Flag	A or P
2/29/12	Acrolein	0.011 (≥0.05)	All water samples in SDG 12E267	J (all detects) UJ (all non-detects)	A
4/27/12	Acrolein	0.038 (≥0.05)	All soil samples in SDG 12E267	J (all detects) UJ (all non-detects)	A

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 with the following exceptions:

Date	Compound	RRF (Limits)	Associated Samples	Flag	A or P
6/6/12	Acrolein Acrylonitrile	0.010 (≥0.05) 0.043 (≥0.05)	All water samples in SDG 12E267	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A
6/4/12	Acrolein	0.042 (≥0.05)	All soil samples in SDG 12E267	J (all detects) UJ (all non-detects)	A

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Sample TB-053112 was identified as a trip blank. No volatile contaminants.

Sample EB-060112 (from SDG 12F020) was identified as an equipment blank. No volatile contaminants were found with the following exceptions:

Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB-060112	6/1/12	Methylene chloride	1.8 ug/L	SL-618-SA5C-SB-1.0

Sample FB-060512 (from SDG 12F037) was identified as a field blank. No volatile contaminants were found with the following exceptions:

Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB-060512	6/5/12	Acetone	26 ug/L	SL-618-SA5C-SB-1.0

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks.

VI. Surrogate Spikes

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

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

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

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 and RLs

All compound quantitation and RLs were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 12E267	All compounds reported below the RL.	J (all detects)	A

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Santa Susana Field Laboratory
Volatiles - Data Qualification Summary - SDG 12E267

SDG	Sample	Compound	Flag	A or P	Reason (Code)
12E267	SL-618-SA5C-SB-1.0 TB-053112	Acrolein	J (all detects) UJ (all non-detects)	A	Initial calibration (RRF) (C)
12E267	TB-053112	Acrolein Acrylonitrile	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Continuing calibration (RRF) (C)
12E267	SL-618-SA5C-SB-1.0	Acrolein	J (all detects) UJ (all non-detects)	A	Continuing calibration (RRF) (C)
12E267	SL-618-SA5C-SB-1.0 TB-053112	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (Z)

Santa Susana Field Laboratory
Volatiles - Laboratory Blank Data Qualification Summary - SDG 12E267

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Volatiles - Field Blank Data Qualification Summary - SDG 12E267

No Sample Data Qualified in this SDG

LDC #: 28578E1a **VALIDATION COMPLETENESS WORKSHEET** Date: 11/27/12
SDG #: 12E267 Level IV Page: 1 of 1
Laboratory: EMAX Laboratories, Inc. Reviewer: FJ
2nd Reviewer: A

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

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

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 5/31/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	SW	%RSD ≤30, r =
IV.	Continuing calibration/ICV	SW	ICV/CCV ≤ =
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	client specified
VIII.	Laboratory control samples	A	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	A	
XII.	Compound quantitation/RL/LOQ/LODs	A	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	A	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks SW	~~AD~~	TB* = 2 FB = 060112 SDG # 12F020

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

FB = FB-060512 SDG # 12F037

1	SL-618-SA5C-SB-1.0	11	MBLK1W	21		31	
2	TB-053112	12	MBLK2S	22		32	
3		13	MBLK1S	23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

LDC #: 28578E/2

VALIDATION FINDINGS CHECKLIST

Page: 1 of 2
Reviewer: FT
2nd Reviewer: A

Method: Volatiles (EPA SW 846 Method 8260B)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/MS instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Was a curve fit used for evaluation?	✓			
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?	✓			
Were all percent relative standard deviations (%RSD) ≤ 30% and relative response factors (RRF) ≥ 0.05?		✓		
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Were all percent differences (%D) ≤ 25% and relative response factors (RRF) ≥ 0.05?		✓		
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.			✓	
Was a MS/MSD analyzed every 20 samples of each matrix?			✓	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?				
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per analytical 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 of the associated calibration standard?	✓			
XI. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?			✓	
Did compound spectra meet specified EPA "Functional Guidelines" criteria?			✓	
Were chromatogram peaks verified and accounted for?	✓			
XII. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?			✓	
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?			✓	
XIV. System performance				
System performance was found to be acceptable.				
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XVII. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.		✓		

TARGET COMPOUND WORKSHEET

ETHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride**	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform*	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene**	BB. 1,1,2,2-Tetrachloroethane*	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane*	CC. Toluene**	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene*	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform**	EE. Ethylbenzene**	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN.
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane**	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

= System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

LDC #: 28578E1a

VALIDATION FINDINGS WORKSHEET
Initial Calibration

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

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

Y N N/A Did the laboratory perform a 5 point calibration prior to sample analysis?
Y N N/A Were percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCC's and SPCC's?
Y N N/A Was a curve fit used for evaluation? If yes, what was the acceptance criteria used for evaluation?_____
Y N N/A Did the initial calibration meet the acceptance criteria?
Y N N/A Were all %RSDs and RRFs within the validation criteria of ≤30 %RSD and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %RSD (Limit: ≤30.0%)	Finding RRF (Limit: ≥0.05)	Associated Samples	Qualifications
	2/29/12	V001B29	FFFF		0.011	all waters	J/UJ/A
	4/27/12	V003D27	↓		0.038	all soils	J/UJ/A

INICAL.1S

LDC #: 28578E1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

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

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?

Y N N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?

Y N N/A Were all %D and RRFs within the validation criteria of ≤25 %D and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤25.0%)	Finding RRF (Limit: ≥0.05)	Associated Samples	Qualifications
	6/6/12	RF1051	FFFF		0.010	all water	J/UJ/A
			GGGG		0.043	"	"
	6/4/12	RFB043	FFFF		0.042	all soils	J/UJ/A

CONCAL_8260B.1S

LDC #: 25578t1a

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: FT
2nd Reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

EB = 060112
SDG # 12F02C

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: 06/01/12
Field blank type: (circle one) Field Blank / Rinsate / Trip Blank / Other: EB Associated Samples: 1 (ND)

Compound	Blank ID	Sample Identification								
	EB									
E	1.8									

Blank units: ug/L **Associated sample units:** ug/L, ug/kg
Sampling date: 6/5/12
Field blank type: (circle one) Field Blank / Rinsate / Trip Blank / Other: FB Associated Samples: 1 All (ND)

FB = FB-060512
SDG # 12F037

Compound	Blank ID	Sample Identification								
	FB									
F	26									

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Common contaminants such as Methylene chloride, Acetone, 2-Butanone and Carbon disulfide that were detected in samples within ten times the associated field blank concentration were qualified as not detected, "U". Other contaminants within five times the field blank concentration were also qualified as not detected, "U".

LDC #: 28578E/2

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: FT
2nd Reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

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

RRF = $(A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of compound,
C_x = Concentration of compound,
S = Standard deviation of the RRFs
X = Mean of the RRFs

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Reported RRF (10 std)	Recalculated RRF (10 std)	Reported Average RRF (initial)	Recalculated Average RRF (initial)	Reported %RSD	Recalculated %RSD
1	V001B29	2/29/12	C (1st internal standard)	0.383	0.383	0.391	0.391	5.14	5.14
			V (2nd internal standard)	1.743	1.743	1.683	1.683	4.89	4.89
			BB (3rd internal standard)	0.682	0.682	0.659	0.659	2.54	2.54
			(4th internal standard)						
2	V003D27	4/27/12	C (1st internal standard)	0.373	0.373	0.335	0.335	10.26	10.26
			V (2nd internal standard)	1.464	1.464	1.537	1.537	2.70	2.70
			BB (3rd internal standard)	1.053	1.053	1.160	1.160	4.67	4.67
			(4th internal standard)						
3			(1st internal standard)						
			(2nd internal standard)						
			(3rd internal standard)						
			(4th internal standard)						
4			(1st internal standard)						
			(2nd internal standard)						
			(3rd internal standard)						
			(4th internal standard)						

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

LDC #: 28578E1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: FT
2nd Reviewer: [signature]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

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

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

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

#	Standard ID	Calibration Date	Compound (Reference internal Standard)	Average RRF (initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported %D	Recalculated %D
1	RI=VOS 1	6/6/12	C (1st internal standard)	0.391	0.356	0.356	9.0	9.0
			V (2nd internal standard)	1.683	1.576	1.576	6.4	6.4
			BB (3rd internal standard)	0.659	0.637	0.637	3.3	3.3
			(4th internal standard)					
2	RFB043	6/4/12	C (1st internal standard)	0.335	0.289	0.289	13.7	13.7
			V (2nd internal standard)	1.537	1.503	1.503	2.2	2.2
			BB (3rd internal standard)	1.160	1.222	1.222	5.3	5.3
			(4th internal standard)					
3			(1st internal standard)					
			(2nd internal standard)					
			(3rd internal standard)					
			(4th internal standard)					
4			(1st internal standard)					
			(2nd internal standard)					
			(3rd internal standard)					
			(4th internal standard)					

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

LDC #: 28578E/a

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Page: 1 of 1
Reviewer: FT
2nd reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

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
Dibromofluoromethane	50	53.44	107	107	0
1,2-Dichloroethane-d4	↓	49.89	99.8	99.8	↓
Toluene-d8	↓	56.60	113	113	↓
Bromofluorobenzene	↓	49.91	99.8	99.8	↓

Sample ID: ______

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID: ______

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID: ______

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID: ______

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 78578E1a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

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: LCS/P

Compound	Spike Added (ug/kg)		Spiked Sample Concentration (ug/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
1,1-Dichloroethene	50.0	50.0	48.4	47.1	97	97	94	94	3	3
Trichloroethene	50.0	50.0	50.0	47.1	100	100	94	94	6	6
Benzene	50.0	50.0	51.7	48.7	103	103	97	97	6	6
Toluene	50.0	50.0	52.7	49.7	105	105	99	99	6	6
Chlorobenzene	50.0	50.0	52.2	49.8	104	104	100	100	5	5

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 #: 28578k

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: FT
2nd reviewer: A

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

Y N N/A Were all reported results recalculated and verified for all level IV samples?

Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. _____ , _____:

Conc. = $\frac{(\quad)(\quad)(\quad)}{(\quad)(\quad)(\quad)(\quad)}$

= ND

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Santa Susana Field Laboratory
Collection Date:	May 31, 2012
LDC Report Date:	November 27, 2012
Matrix:	Soil/Water
Parameters:	1,4-Dioxane
Validation Level:	Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	12E267

Sample Identification

SL-618-SA5C-SB-1.0
TB-053112

Introduction

This data review covers one soil sample and one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B using Selected Ion Monitoring (SIM) for 1,4-Dioxane.

This review follows the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

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

J Indicates an estimated value.

R Quality control indicates the data is not usable.

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

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

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

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

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for 1,4-Dioxane.

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 25.0% for 1,4-Dioxane.

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for 1,4-Dioxane.

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 1,4-dioxane was found in the method blanks.

Sample TB-053112 was identified as a trip blank. No 1,4-dioxane was found.

Sample EB-060112 (from SDG 12F020) was identified as an equipment blank. No 1,4-dioxane was found.

Sample FB-060512 (from SDG 12F037) was identified as a field blank. No 1,4-dioxane was found.

VI. Surrogate Spikes

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

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

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

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. 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 and RLs

All compound quantitation and RLs were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 12E267	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
1,4-Dioxane - Data Qualification Summary - SDG 12E267

SDG	Sample	Compound	Flag	A or P	Reason (Code)
12E267	SL-618-SA5C-SB-1.0 TB-053112	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (Z)

Santa Susana Field Laboratory
1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG 12E267

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
1,4-Dioxane - Field Blank Data Qualification Summary - SDG 12E267

No Sample Data Qualified in this SDG

LDC #: 28578E1b **VALIDATION COMPLETENESS WORKSHEET** Date: 11/27/12
SDG #: 12E267 Level IV Page: 1 of 1
Laboratory: EMAX Laboratories, Inc. Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8260B-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: 5/31/12
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	
VIII.	Laboratory control samples	A	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	A	
XII.	Compound quantitation/RL/LOQ/LODs	A	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	A	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	TB= 2 EB=EB-060112

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

SDG # 12F020

FB= FB-060512
SDG # 12F037

Validated Samples:
soil + water

1	SL-618-SA5C-SB-1.0	11	MBLK1W	21		31	
2	TB-053112	12	MBLK1S	22		32	
3		13	MBLK2S	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	

DC #: 28578E1b

VALIDATION FINDINGS CHECKLIST

Reviewer: FT
2nd Reviewer: A

Method: Volatiles (EPA SW 846 Method 8260B)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/MS instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?			✓	
Was a curve fit used for evaluation?		✓		
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?			✓	
Were all percent relative standard deviations (%RSD) ≤ 30% and relative response factors (RRF) > 0.05?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?			✓	
Were all percent differences (%D) ≤ 25% and relative response factors (RRF) ≥ 0.05?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.			✓	
Was a MS/MSD analyzed every 20 samples of each matrix?			✓	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per analytical 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 of the associated calibration standard?	✓			
XI. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?			✓	
Did compound spectra meet specified EPA "Functional Guidelines" criteria?			✓	
Were chromatogram peaks verified and accounted for?	✓			
XII. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?			✓	
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?		✓		
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?			✓	
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XVII. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.		✓		

TARGET COMPOUND WORKSHEET

ETHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride**	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform*	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene**	BB. 1,1,2,2-Tetrachloroethane*	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane*	CC. Toluene**	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene*	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform**	EE. Ethylbenzene**	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN.
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane**	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

= System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

LDC #: 28528E16

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: FT
2nd Reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

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

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of compound,
C_x = Concentration of compound,
S = Standard deviation of the RRFs
X = Mean of the RRFs

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Reported RRF (2nd std)	Recalculated RRF (2nd std)	Reported Average RRF (initial)	Recalculated Average RRF (initial)	Reported %RSD	Recalculated %RSD
1	VOPFSJ31	10/31/12	1,4-Dioxane (1st internal standard)	1.163	1.163	1.145	1.145	7.02	7.02
			(2nd internal standard)						
			(3rd internal standard)						
			(4th internal standard)						
2			(1st internal standard)						
			(2nd internal standard)						
			(3rd internal standard)						
			(4th internal standard)						
3			(1st internal standard)						
			(2nd internal standard)						
			(3rd internal standard)						
			(4th internal standard)						
4			(1st internal standard)						
			(2nd internal standard)						
			(3rd internal standard)						
			(4th internal standard)						

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

LDC #: 28578E1b

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: FT
2nd Reviewer: [signature]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

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

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

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

#	Standard ID	Calibration Date	Compound (Reference internal Standard)	Average RRF (initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported %D	Recalculated %D
1	RF Y002	6/4/12	1,4-Dioxane (1st internal standard)	1.145	1.253	1.253	7.02	7.02
	19:15		(2nd internal standard)					
			(3rd internal standard)					
			(4th internal standard)					
2			(1st internal standard)					
			(2nd internal standard)					
			(3rd internal standard)					
			(4th internal standard)					
3			(1st internal standard)					
			(2nd internal standard)					
			(3rd internal standard)					
			(4th internal standard)					
4			(1st internal standard)					
			(2nd internal standard)					
			(3rd internal standard)					
			(4th internal standard)					

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

LDC #: 28578E1b

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Page: 1 of 1
Reviewer: FT
2nd reviewer: A

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #2

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4	20.00	21.44	107	107	0
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 28578E1b

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Page: 1 of 1
Reviewer: FT
2nd Reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

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: WG 10

Compound	Spike Added (ug/kg)		Spiked Sample Concentration (ug/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
1,1-Dichloroethene										
Trichloroethene										
Benzene										
Toluene										
Chlorobenzene										
1,4- Dioxane	200	200	184	201	92	92	100	100	9	9

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 #: 28578E16

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: FT
2nd reviewer: [signature]

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

Y N N/A Were all reported results recalculated and verified for all level IV samples?

Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. _____ , _____:

Conc. = $\frac{(\quad)(\quad)(\quad)}{(\quad)(\quad)(\quad)(\quad)}$

= M

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Santa Susana Field Laboratory
Collection Date:	May 30, 2012
LDC Report Date:	November 27, 2012
Matrix:	Soil
Parameters:	Perchlorate
Validation Level:	Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	12E267

Sample Identification

SL-618-SA5C-SB-0.0-1.0

Introduction

This data review covers one soil sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 314.0 for Perchlorate.

This review follows the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for 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 perchlorate was found in the initial, continuing and preparation blanks.

No field blanks were identified in this SDG.

V. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VI. Duplicates

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

VII. Laboratory Control Samples

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

VIII. Sample Result Verification

All sample result verifications were acceptable.

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 12E267	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
Perchlorate - Data Qualification Summary - SDG 12E267

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
12E267	SL-618-SA5C-SB-0.0-1.0	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (Z)

Santa Susana Field Laboratory
Perchlorate – Laboratory Blank Data Qualification Summary - SDG 12E267

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Perchlorate - Field Blank Data Qualification Summary - SDG 12E267

No Sample Data Qualified in this SDG

LDC #: 28578E6
SDG #: 12E267
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET
Level IV

Date: 11-27-12
Page: 1 of 1
Reviewer: CM
2nd Reviewer: W

METHOD: (Analyte) Perchlorate (EPA Method 314.0)

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: 5/30/12
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	A	
V	Matrix Spike/Matrix Spike Duplicates	N	CS
VI.	Duplicates	N	↓
VII.	Laboratory control samples	A	LCS/D
VIII.	Sample result verification	A	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	
XI	Field blanks	N	

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-618-SA5C-SB-0.0-1.0	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 #: 28578E6

VALIDATION FINDINGS CHECKLIST

Reviewer: QR
2nd Reviewer: V

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 #: 28578E6

VALIDATION FINDINGS CHECKLIST

Reviewer: AR
2nd Reviewer: VR

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 #: 28578 Eb

Validation Findings Worksheet
Initial and Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: CL
2nd Reviewer: LC

Method: Inorganics, Method See Cover

The correlation coefficient (r) for the calibration of ClO4 was recalculated. Calibration date: 5/4/12

An initial or continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

%R = Found X 100 / True

Where, Found = concentration of each analyte measured in the analysis of the ICV or CCV solution

True = concentration of each analyte in the ICV or CCV source

Type of analysis	Analyte	Standard	Conc. (mg/L)	Area	Recalculated r or r^2	Reported r or r^2	Acceptable (Y/N)
Initial calibration	ClO4	s1	0.0	0	*0.999585*	0.999658	Y
		s2	2	502658			
		s3	4	1165338			
		s4	10	2816346			
		s5	25	7566852			
		s6	30	9059401			
Calibration verification		ICV	25	24.064	96.3	96.3	
Calibration verification		CCV	30	26.456	88.2	88.2	
Calibration verification							

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

LDC #: 985786

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Page: 1 of 1
Reviewer: QR
2nd Reviewer: LW

METHOD: Inorganics, Method See cover

Percent recoveries (%R) for 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

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	Cd	223	250	89	89	Y
N	Matrix spike sample		(SSR-SR)				
N	Duplicate sample						

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

LDC #: 26576E6

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: QR
2nd reviewer: ~

METHOD: Inorganics, Method see cover

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

Y N N/A Have results been reported and calculated correctly?
Y N N/A Are results within the calibrated range of the instruments?
Y N N/A Are all detection limits below the CRQL?

Compound (analyte) results for _____ reported with a positive detect were recalculated and verified using the following equation:

Concentration = Recalculation:

Non Detect

#	Sample ID	Analyte	Reported Concentration ( )	Calculated Concentration ( )	Acceptable (Y/N)

Note: _____

SAMPLE DELIVERY GROUP

12F020

Attachment I

Sample ID Cross Reference and Data Review Level

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
01-Jun-2012	TB-060112	F020-14	TB	5030B	8015B GRO	III
01-Jun-2012	SL-558D-SA5C-SB-0.0-0.5	F020-08	N	3550B	8082	III
01-Jun-2012	SL-558A-SA5C-SB-0.0-0.5	F020-02	N	3550B	8082	III
01-Jun-2012	SL-558A-SA5C-SB-2.0-3.0	F020-03	N	3550B	8082	III
01-Jun-2012	SL-558B-SA5C-SB-0.0-0.5	F020-04	N	3550B	8082	III
01-Jun-2012	SL-558B-SA5C-SB-2.0-3.0	F020-05	N	3550B	8082	III
01-Jun-2012	SL-558C-SA5C-SB-0.0-0.5	F020-06	N	3550B	8082	III
01-Jun-2012	SL-558C-SA5C-SB-2.0-3.0	F020-07	N	3550B	8082	III
01-Jun-2012	SL-563-SA5C-SB-0.0-0.5	F020-09	N	3550B	8015B EFH	III
01-Jun-2012	SL-563-SA5C-SB-0.0-0.5	F020-09R	N	3550B	8270C SIM	III
01-Jun-2012	SL-563-SA5C-SB-5.0	F020-11	N	5035	8015B GRO	III
01-Jun-2012	SL-563-SA5C-SB-4.0-5.0	F020-10	N	3550B	8015B EFH	III
01-Jun-2012	SL-563-SA5C-SB-4.0-5.0	F020-10R	N	3550B	8270C SIM	III
01-Jun-2012	SL-563-SA5C-SB-10.0	F020-13	N	5035	8015B GRO	III
01-Jun-2012	SL-563-SA5C-SB-9.0-10.0	F020-12	N	3550B	8015B EFH	III
01-Jun-2012	SL-563-SA5C-SB-9.0-10.0	F020-12	N	3550B	8270C SIM	III
01-Jun-2012	SL-562-SA5C-SB-0.0-0.5	F020-19	N	3550B	8015B EFH	III
01-Jun-2012	SL-562-SA5C-SB-0.0-0.5	F020-19	N	3550B	8270C SIM	III
01-Jun-2012	SL-562-SA5C-SB-5.0	F020-21	N	5035	8015B GRO	III
01-Jun-2012	SL-562-SA5C-SB-4.0-5.0	F020-20	N	3550B	8015B EFH	III
01-Jun-2012	SL-562-SA5C-SB-4.0-5.0	F020-20R	N	3550B	8270C SIM	III
01-Jun-2012	SL-562-SA5C-SB-10.0	F020-23	N	5035	8015B GRO	III
01-Jun-2012	SL-562-SA5C-SB-9.0-10.0	F020-22	N	3550B	8015B EFH	III
01-Jun-2012	SL-562-SA5C-SB-9.0-10.0	F020-22R	N	3550B	8270C SIM	III
01-Jun-2012	EB-060112	F020-01	EB	5030B	8260B	III
01-Jun-2012	EB-060112	F020-01	EB	5030B	8260B 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
01-Jun-2012	SL-536-SA5C-SB-5.0	F020-16	N	5035	8015B GRO	III
01-Jun-2012	SL-536-SA5C-SB-4.0-5.0	F020-15	N	3550B	8015B EFH	III
01-Jun-2012	SL-536-SA5C-SB-4.0-5.0	F020-15	N	3550B	8082	III
01-Jun-2012	SL-536-SA5C-SB-4.0-5.0	F020-15	N	3550B	8270C SIM	III
01-Jun-2012	SL-536-SA5C-SB-4.0-5.0	F020-15	N	7471A	7471A	III
01-Jun-2012	SL-536-SA5C-SB-4.0-5.0	F020-15	N	GEN PREP	8015B	III
01-Jun-2012	SL-536-SA5C-SB-4.0-5.0	F020-15	N	GEN PREP	8015M	III
01-Jun-2012	SL-536-SA5C-SB-4.0-5.0	F020-15	N	TOTAL	6020	III
01-Jun-2012	SL-536-SA5C-SB-10.0	F020-18	N	5035	8015B GRO	III
01-Jun-2012	SL-536-SA5C-SB-9.0-10.0	F020-17	N	3550B	8015B EFH	III
01-Jun-2012	SL-536-SA5C-SB-9.0-10.0	F020-17	N	3550B	8082	III
01-Jun-2012	SL-536-SA5C-SB-9.0-10.0	F020-17	N	7471A	7471A	III
01-Jun-2012	SL-536-SA5C-SB-9.0-10.0	F020-17	N	GEN PREP	8015B	III
01-Jun-2012	SL-536-SA5C-SB-9.0-10.0	F020-17	N	GEN PREP	8015M	III
01-Jun-2012	SL-536-SA5C-SB-9.0-10.0	F020-17	N	TOTAL	6020	III
01-Jun-2012	SL-536-SA5C-SB-9.0-10.0	F020-17R	N	3550B	8270C 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*

Attachment II

Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: 12F020 **Laboratory: EMXT**

EDD Filename: 12F020 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: SL-536-SA5C-SB-4.0-5.0 *Collected:* 6/1/2012 2:27:00 PM *Analysis Type:* RES/TOT *Dilution:* 0.957

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.233	J	0.103	MDL	0.517	PQL	MG/KG	J	Z
CADMIUM	0.144	J	0.0517	MDL	0.517	PQL	MG/KG	J	Z
MAGNESIUM	3940		5.17	MDL	10.3	PQL	MG/KG	J	Q
MOLYBDENUM	0.301	J	0.0517	MDL	0.517	PQL	MG/KG	J	Z
THALLIUM	0.249	J	0.0517	MDL	0.413	PQL	MG/KG	J	Z
Zirconium	5.17	U	2.58	MDL	5.17	PQL	MG/KG	UJ	Q

Sample ID: SL-536-SA5C-SB-9.0-10.0 *Collected:* 6/1/2012 2:33:00 PM *Analysis Type:* RES/TOT *Dilution:* 0.985

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.243	J	0.109	MDL	0.544	PQL	MG/KG	J	Z
CADMIUM	0.231	J	0.0544	MDL	0.544	PQL	MG/KG	J	Z
MAGNESIUM	4180		5.44	MDL	10.9	PQL	MG/KG	J	Q
MOLYBDENUM	0.448	J	0.0544	MDL	0.544	PQL	MG/KG	J	Z
SILVER	0.0972	J	0.0544	MDL	0.544	PQL	MG/KG	J	Z
THALLIUM	0.277	J	0.0544	MDL	0.435	PQL	MG/KG	J	Z
Zirconium	5.44	U	2.72	MDL	5.44	PQL	MG/KG	UJ	Q

Method Category: SVOA

Method: 8270C SIM **Matrix: SO**

Sample ID: SL-536-SA5C-SB-9.0-10.0 *Collected:* 6/1/2012 2:33:00 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(A)ANTHRACENE	3.4	J	2.8	MDL	11	PQL	UG/KG	J	Z
BENZO(A)PYRENE	2.8	J	2.8	MDL	11	PQL	UG/KG	J	Z
BENZO(B)FLUORANTHENE	3.0	J	2.8	MDL	11	PQL	UG/KG	J	Z
CHRYSENE	3.0	J	2.8	MDL	11	PQL	UG/KG	J	Z
FLUORANTHENE	6.0	J	2.8	MDL	11	PQL	UG/KG	J	Z
PHENANTHRENE	3.8	J	2.8	MDL	11	PQL	UG/KG	J	Z
PYRENE	6.2	J	2.8	MDL	11	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12F020 **Laboratory: EMXT**

EDD Filename: 12F020 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: **VOA**

Method: **8015B GRO** ***Matrix:*** **AQ**

Sample ID: **TB-060112** ***Collected:*** **6/1/2012 8:00:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
GASOLINE RANGE ORGANICS (C5-C12)	29	J	10	MDL	50	PQL	UG/L	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12F020 **Laboratory: EMXT**

EDD Filename: 12F020 **eQAPP Name: CDM_SSFL_120730_EMAX**

Reason Code Legend

Reason Code	*Description*
Q	Matrix Spike Lower Estimation
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Enclosure I

Level III ADR Outliers
(including Manual Review Outliers)

Quality Control
Outlier Reports

12F020

Reporting Limit Outliers

Lab Reporting Batch ID: 12F020 **Laboratory: EMXT**

EDD Filename: 12F020 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 8015B GRO

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TB-060112	GASOLINE RANGE ORGANICS (C5-C12)	J	29	50	PQL	UG/L	J (all detects)

Method: 6020

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-536-SA5C-SB-4.0-5.0	ANTIMONY	J	0.233	0.517	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.144	0.517	PQL	MG/KG	
	MOLYBDENUM	J	0.301	0.517	PQL	MG/KG	
	THALLIUM	J	0.249	0.413	PQL	MG/KG	
SL-536-SA5C-SB-9.0-10.0	ANTIMONY	J	0.243	0.544	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.231	0.544	PQL	MG/KG	
	MOLYBDENUM	J	0.448	0.544	PQL	MG/KG	
	SILVER	J	0.0972	0.544	PQL	MG/KG	
	THALLIUM	J	0.277	0.435	PQL	MG/KG	

Method: 8270C SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-536-SA5C-SB-9.0-10.0	BENZO(A)ANTHRACENE	J	3.4	11	PQL	UG/KG	J (all detects)
	BENZO(A)PYRENE	J	2.8	11	PQL	UG/KG	
	BENZO(B)FLUORANTHENE	J	3.0	11	PQL	UG/KG	
	CHRYSENE	J	3.0	11	PQL	UG/KG	
	FLUORANTHENE	J	6.0	11	PQL	UG/KG	
	PHENANTHRENE	J	3.8	11	PQL	UG/KG	
	PYRENE	J	6.2	11	PQL	UG/KG	

LDC #: 28578F4
SDG #: 12F020
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 11612
Page: 1 of 1
Reviewer:
2nd Reviewer:

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

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

	Validation Area		Comments
I.	Technical holding times	✓	Sampling dates:
II.	ICP/MS Tune	✓	
III.	Calibration	✓	
IV.	Blanks	SA	
V.	ICP Interference Check Sample (ICS) Analysis	✓	
VI.	Matrix Spike Analysis	N	MS/D (from 12E267)
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	N	LCS/D
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: EB-053012 (12E244) FB: FB-060512 (12F037)

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-536-SA5C-SB-4.0-5.0	11		21		31	
2	SL-536-SA5C-SB-9.0-10.0	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 #: 28578F4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: 2R
2nd Reviewer:

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

Blank units: ug/L **Associated sample units:** mg/Kg

Sampling date: 5/30/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All

Analyte	Blank ID	Sample Identification										
	EB-053012	Action Limit	No Qualifiers									
B	0.00535	1.3375										
Ca	0.0269	6.725										

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 #: 28578 F4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer: SZ
2nd Reviewer: [illegible]

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

Blank units: ug/L **Associated sample units:** mg/Kg

Sampling date: 6/5/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: AllSoil

Analyte	Blank ID	Sample Identification											
	FB-060512	Action Limit	No Qualifiers										
Al	0.0270	6.75											
Ca	0.0263	6.575											
Cu	0.000954	0.2385											

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

12F029

Attachment I

Sample ID Cross Reference and Data Review Level

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
04-Jun-2012	SL-573-SA5C-SB-0.0-0.5	F029-04	N	3550B	8082	III
04-Jun-2012	SL-573-SA5C-SB-0.0-0.5	F029-04	N	GEN PREP	7199	III
04-Jun-2012	SL-573-SA5C-SB-0.0-0.5	F029-04	N	GEN PREP	8015B	III
04-Jun-2012	SL-573-SA5C-SB-0.0-0.5	F029-04	N	GEN PREP	8015M	III
04-Jun-2012	SL-573-SA5C-SB-4.0-5.0	F029-05	N	3550B	8082	III
04-Jun-2012	SL-573-SA5C-SB-4.0-5.0	F029-05	N	GEN PREP	7199	III
04-Jun-2012	SL-573-SA5C-SB-4.0-5.0	F029-05	N	GEN PREP	8015B	III
04-Jun-2012	SL-573-SA5C-SB-4.0-5.0	F029-05	N	GEN PREP	8015M	III
04-Jun-2012	SL-573-SA5C-SB-9.0-10.0	F029-06	N	3550B	8082	III
04-Jun-2012	SL-573-SA5C-SB-9.0-10.0	F029-06	N	GEN PREP	7199	III
04-Jun-2012	SL-573-SA5C-SB-9.0-10.0	F029-06	N	GEN PREP	8015B	III
04-Jun-2012	SL-573-SA5C-SB-9.0-10.0	F029-06	N	GEN PREP	8015M	III
04-Jun-2012	SL-564-SA5C-SB-0.0-0.5	F029-01	N	3550B	8082	III
04-Jun-2012	SL-564-SA5C-SB-0.0-0.5	F029-01	N	3550B	8270C SIM	III
04-Jun-2012	SL-564-SA5C-SB-4.0-5.0	F029-02	N	3550B	8082	III
04-Jun-2012	SL-564-SA5C-SB-4.0-5.0MS	F029-02M	MS	3550B	8082	III
04-Jun-2012	SL-564-SA5C-SB-4.0-5.0MSD	F029-02S	MSD	3550B	8082	III
04-Jun-2012	SL-564-SA5C-SB-4.0-5.0	F029-02W	N	3550B	8270C SIM	III
04-Jun-2012	SL-564-SA5C-SB-9.0-10.0	F029-03	N	3550B	8082	III
04-Jun-2012	SL-564-SA5C-SB-9.0-10.0	F029-03	N	3550B	8270C SIM	III
04-Jun-2012	SL-565-SA5C-SB-0.0-0.5	F029-07	N	3550B	8082	III
04-Jun-2012	SL-565-SA5C-SB-0.0-0.5	F029-07	N	3550B	8270C SIM	III
04-Jun-2012	SL-565-SA5C-SB-4.0-5.0	F029-08	N	3550B	8082	III
04-Jun-2012	SL-565-SA5C-SB-4.0-5.0	F029-08	N	3550B	8270C SIM	III
04-Jun-2012	SL-565-SA5C-SB-9.0-10.0	F029-09	N	3550B	8082	III
04-Jun-2012	SL-565-SA5C-SB-9.0-10.0	F029-09	N	3550B	8270C 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
04-Jun-2012	SL-566-SA5C-SB-4.0-5.0	F029-10	N	3550B	8082	III
04-Jun-2012	SL-566-SA5C-SB-4.0-5.0	F029-10R	N	3550B	8270C SIM	III
04-Jun-2012	SL-566-SA5C-SB-9.0-10.0	F029-11	N	3550B	8082	III
04-Jun-2012	SL-566-SA5C-SB-9.0-10.0	F029-11W	N	3550B	8270C 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*

Attachment II

Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: 12F029 **Laboratory: EMXT**

EDD Filename: 12F029 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

Method: 8270C SIM **Matrix: SO**

Sample ID: SL-564-SA5C-SB-0.0-0.5 **Collected:** 6/4/2012 11:30:00 **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(E)PYRENE	8.8	J	5.9	MDL	12	PQL	UG/KG	J	Z
BENZO(K)FLUORANTHENE	7.5	J	5.9	MDL	23	PQL	UG/KG	J	Z

Sample ID: SL-564-SA5C-SB-9.0-10.0 **Collected:** 6/4/2012 11:37:00 **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)ANTHRACENE	8.7	J	5.5	MDL	22	PQL	UG/KG	J	Z
BENZO(A)PYRENE	6.3	J	5.5	MDL	22	PQL	UG/KG	J	Z
BENZO(B)FLUORANTHENE	7.3	J	5.5	MDL	22	PQL	UG/KG	J	Z
BENZO(E)PYRENE	7.3	J	5.5	MDL	11	PQL	UG/KG	J	Z
BENZO(K)FLUORANTHENE	9.0	J	5.5	MDL	22	PQL	UG/KG	J	Z
PHENANTHRENE	6.7	J	5.5	MDL	22	PQL	UG/KG	J	Z

Sample ID: SL-565-SA5C-SB-0.0-0.5 **Collected:** 6/4/2012 1:27:00 PM **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-METHYLNAPHTHALENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S
ACENAPHTHENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S
ACENAPHTHYLENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S
ANTHRACENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S
BENZO(A)ANTHRACENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S
BENZO(A)PYRENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S
BENZO(B)FLUORANTHENE	3.0	J	2.7	MDL	11	PQL	UG/KG	J	Z, S
BENZO(E)PYRENE	5.4	U	2.7	MDL	5.4	PQL	UG/KG	UJ	S
BENZO(G,H,I)PERYLENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S
BENZO(K)FLUORANTHENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S
CHRYSENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S
DIBENZO(A,H)ANTHRACENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S
FLUORANTHENE	4.6	J	2.7	MDL	11	PQL	UG/KG	J	Z, S
FLUORENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S
INDENO(1,2,3-CD)PYRENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S
NAPHTHALENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12F029 **Laboratory: EMXT**

EDD Filename: 12F029 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

Method: 8270C SIM **Matrix: SO**

Sample ID: **SL-565-SA5C-SB-0.0-0.5** ***Collected:*** **6/4/2012 1:27:00 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
N-NITROSODIMETHYLAMINE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S
PHENANTHRENE	3.1	J	2.7	MDL	11	PQL	UG/KG	J	Z, S
PYRENE	4.1	J	2.7	MDL	11	PQL	UG/KG	J	Z, S

Sample ID: **SL-565-SA5C-SB-9.0-10.0** ***Collected:*** **6/4/2012 1:35:00 PM** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PYRENE	2.8	J	2.8	MDL	11	PQL	UG/KG	J	Z

Sample ID: **SL-566-SA5C-SB-9.0-10.0** ***Collected:*** **6/4/2012 2:15:00 PM** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **3**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)ANTHRACENE	19	J	8.4	MDL	34	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	20	J	8.4	MDL	34	PQL	UG/KG	J	Z
BENZO(K)FLUORANTHENE	31	J	8.4	MDL	34	PQL	UG/KG	J	Z
INDENO(1,2,3-CD)PYRENE	13	J	8.4	MDL	34	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12F029 **Laboratory: EMXT**

EDD Filename: 12F029 **eQAPP Name: CDM_SSFL_120730_EMAX**

Reason Code Legend

Reason Code	*Description*
S	Surrogate/Tracer Recovery Lower Estimation
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Enclosure I

Level III ADR Outliers
(including Manual Review Outliers)

Quality Control
Outlier Reports

12F029

Surrogate Outlier Report

Lab Reporting Batch ID: 12F029 **Laboratory: EMXT**

EDD Filename: 12F029 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 8270C SIM
Matrix: SO

Sample ID (Analysis Type)	Surrogate	Sample % Recovery	% Recovery Limits	Affected Compounds	Flag
SL-565-SA5C-SB-0.0-0.5	2-FLUOROBIPHENYL Nitrobenzene-d5	36.4 37.9	45.00-130.00 40.00-130.00	All Base/Neutral Target Analytes	J (all detects) UJ (all non-detects)
SL-565-SA5C-SB-4.0-5.0	2-FLUOROBIPHENYL	36.7	45.00-130.00	No Affected Compounds	

Reporting Limit Outliers

Lab Reporting Batch ID: 12F029 **Laboratory: EMXT**

EDD Filename: 12F029 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: **8270C SIM**

Matrix: **SO**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
SL-564-SA5C-SB-0.0-0.5	BENZO(E)PYRENE	J	8.8	12	PQL	UG/KG	J (all detects)
	BENZO(K)FLUORANTHENE	J	7.5	23	PQL	UG/KG	
SL-564-SA5C-SB-9.0-10.0	BENZO(A)ANTHRACENE	J	8.7	22	PQL	UG/KG	J (all detects)
	BENZO(A)PYRENE	J	6.3	22	PQL	UG/KG	
	BENZO(B)FLUORANTHENE	J	7.3	22	PQL	UG/KG	
	BENZO(E)PYRENE	J	7.3	11	PQL	UG/KG	
	BENZO(K)FLUORANTHENE	J	9.0	22	PQL	UG/KG	
	PHENANTHRENE	J	6.7	22	PQL	UG/KG	
SL-565-SA5C-SB-0.0-0.5	BENZO(B)FLUORANTHENE	J	3.0	11	PQL	UG/KG	J (all detects)
	FLUORANTHENE	J	4.6	11	PQL	UG/KG	
	PHENANTHRENE	J	3.1	11	PQL	UG/KG	
	PYRENE	J	4.1	11	PQL	UG/KG	
SL-565-SA5C-SB-9.0-10.0	PYRENE	J	2.8	11	PQL	UG/KG	J (all detects)
SL-566-SA5C-SB-9.0-10.0	BENZO(A)ANTHRACENE	J	19	34	PQL	UG/KG	J (all detects)
	BENZO(G,H,I)PERYLENE	J	20	34	PQL	UG/KG	
	BENZO(K)FLUORANTHENE	J	31	34	PQL	UG/KG	
	INDENO(1,2,3-CD)PYRENE	J	13	34	PQL	UG/KG	

SAMPLE DELIVERY GROUP

12F037

Attachment I

Sample ID Cross Reference and Data Review Level

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
04-Jun-2012	SL-545-SA5C-SB-0.0-0.5	F037-02	N	3550B	8015B EFH	III
04-Jun-2012	SL-545-SA5C-SB-0.0-0.5	F037-02	N	3550B	8082	III
04-Jun-2012	SL-545-SA5C-SB-0.0-0.5	F037-02	N	3550B	8270C SIM	III
04-Jun-2012	SL-545-SA5C-SB-0.0-0.5	F037-02	N	7471A	7471A	III
04-Jun-2012	SL-545-SA5C-SB-0.0-0.5	F037-02	N	GEN PREP	8015B	III
04-Jun-2012	SL-545-SA5C-SB-0.0-0.5	F037-02	N	GEN PREP	8015M	III
04-Jun-2012	SL-545-SA5C-SB-0.0-0.5	F037-02	N	TOTAL	6020	III
04-Jun-2012	SL-545-SA5C-SB-5.0	F037-04	N	5035	8015B GRO	III
04-Jun-2012	SL-545-SA5C-SB-4.0-5.0	F037-03	N	3550B	8015B EFH	III
04-Jun-2012	SL-545-SA5C-SB-4.0-5.0	F037-03	N	3550B	8082	III
04-Jun-2012	SL-545-SA5C-SB-4.0-5.0	F037-03	N	3550B	8270C SIM	III
04-Jun-2012	SL-545-SA5C-SB-4.0-5.0	F037-03	N	7471A	7471A	III
04-Jun-2012	SL-545-SA5C-SB-4.0-5.0	F037-03	N	GEN PREP	8015B	III
04-Jun-2012	SL-545-SA5C-SB-4.0-5.0	F037-03	N	GEN PREP	8015M	III
04-Jun-2012	SL-545-SA5C-SB-4.0-5.0	F037-03	N	TOTAL	6020	III
04-Jun-2012	SL-545-SA5C-SB-10.0	F037-06	N	5035	8015B GRO	III
04-Jun-2012	SL-545-SA5C-SB-9.0-10.0	F037-05	N	3550B	8015B EFH	III
04-Jun-2012	SL-545-SA5C-SB-9.0-10.0	F037-05	N	3550B	8082	III
04-Jun-2012	SL-545-SA5C-SB-9.0-10.0	F037-05	N	3550B	8270C SIM	III
04-Jun-2012	SL-545-SA5C-SB-9.0-10.0	F037-05	N	7471A	7471A	III
04-Jun-2012	SL-545-SA5C-SB-9.0-10.0	F037-05	N	GEN PREP	8015B	III
04-Jun-2012	SL-545-SA5C-SB-9.0-10.0	F037-05	N	GEN PREP	8015M	III
04-Jun-2012	SL-545-SA5C-SB-9.0-10.0	F037-05	N	TOTAL	6020	III
05-Jun-2012	TB-060512	F037-24	TB	5030B	8015B GRO	III
05-Jun-2012	SL-543-SA5C-SB-0.0-0.5	F037-07	N	3550B	8015B EFH	III
05-Jun-2012	SL-543-SA5C-SB-0.0-0.5	F037-07	N	3550B	8082	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
05-Jun-2012	SL-543-SA5C-SB-0.0-0.5	F037-07	N	3550B	8270C SIM	III
05-Jun-2012	SL-543-SA5C-SB-0.0-0.5	F037-07	N	7471A	7471A	III
05-Jun-2012	SL-543-SA5C-SB-0.0-0.5	F037-07	N	GEN PREP	8015B	III
05-Jun-2012	SL-543-SA5C-SB-0.0-0.5	F037-07	N	GEN PREP	8015M	III
05-Jun-2012	SL-543-SA5C-SB-0.0-0.5	F037-07	N	TOTAL	6020	III
05-Jun-2012	SL-543-SA5C-SB-0.0-0.5MS	F037-07M	MS	3550B	8270C SIM	III
05-Jun-2012	SL-543-SA5C-SB-0.0-0.5MSD	F037-07S	MSD	3550B	8270C SIM	III
05-Jun-2012	SL-543-SA5C-SB-4.5	F037-09	N	5035	8015B GRO	III
05-Jun-2012	SL-543-SA5C-SB-3.5-4.5	F037-08	N	3550B	8015B EFH	III
05-Jun-2012	SL-543-SA5C-SB-3.5-4.5	F037-08	N	3550B	8082	III
05-Jun-2012	SL-543-SA5C-SB-3.5-4.5	F037-08	N	3550B	8270C SIM	III
05-Jun-2012	SL-543-SA5C-SB-3.5-4.5	F037-08	N	7471A	7471A	III
05-Jun-2012	SL-543-SA5C-SB-3.5-4.5	F037-08	N	GEN PREP	8015B	III
05-Jun-2012	SL-543-SA5C-SB-3.5-4.5	F037-08	N	GEN PREP	8015M	III
05-Jun-2012	SL-543-SA5C-SB-3.5-4.5	F037-08	N	TOTAL	6020	III
05-Jun-2012	SL-552-SA5C-SB-0.0-0.5	F037-10	N	3550B	8082	III
05-Jun-2012	SL-552-SA5C-SB-0.0-0.5	F037-10	N	3550B	8270C SIM	III
05-Jun-2012	SL-552-SA5C-SB-0.0-0.5	F037-10	N	7471A	7471A	III
05-Jun-2012	SL-552-SA5C-SB-0.0-0.5	F037-10	N	GEN PREP	8015B	III
05-Jun-2012	SL-552-SA5C-SB-0.0-0.5	F037-10	N	GEN PREP	8015M	III
05-Jun-2012	SL-552-SA5C-SB-0.0-0.5	F037-10	N	TOTAL	6020	III
05-Jun-2012	SL-552-SA5C-SB-0.0-0.5	F037-10T	N	3550B	8015B EFH	III
05-Jun-2012	SL-552-SA5C-SB-0.0-0.5	F037-10W	N	3550B	8270C SIM	III
05-Jun-2012	SL-561-SA5C-SB-0.0-0.5	F037-11	N	3550B	8015B EFH	III
05-Jun-2012	SL-561-SA5C-SB-0.0-0.5	F037-11	N	3550B	8082	III
05-Jun-2012	SL-561-SA5C-SB-0.0-0.5	F037-11	N	3550B	8270C 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
05-Jun-2012	SL-561-SA5C-SB-0.0-0.5	F037-11	N	7471A	7471A	III
05-Jun-2012	SL-561-SA5C-SB-0.0-0.5	F037-11	N	GEN PREP	7199	III
05-Jun-2012	SL-561-SA5C-SB-0.0-0.5	F037-11	N	GEN PREP	8015B	III
05-Jun-2012	SL-561-SA5C-SB-0.0-0.5	F037-11	N	GEN PREP	8015M	III
05-Jun-2012	SL-561-SA5C-SB-0.0-0.5	F037-11	N	TOTAL	6020	III
05-Jun-2012	SL-561-SA5C-SB-6.5	F037-13	N	5035	8015B GRO	III
05-Jun-2012	SL-561-SA5C-SB-5.5-6.5	F037-12	N	3550B	8015B EFH	III
05-Jun-2012	SL-561-SA5C-SB-5.5-6.5	F037-12	N	3550B	8082	III
05-Jun-2012	SL-561-SA5C-SB-5.5-6.5	F037-12	N	3550B	8270C SIM	III
05-Jun-2012	SL-561-SA5C-SB-5.5-6.5	F037-12	N	7471A	7471A	III
05-Jun-2012	SL-561-SA5C-SB-5.5-6.5	F037-12	N	GEN PREP	7199	III
05-Jun-2012	SL-561-SA5C-SB-5.5-6.5	F037-12	N	GEN PREP	8015B	III
05-Jun-2012	SL-561-SA5C-SB-5.5-6.5	F037-12	N	GEN PREP	8015M	III
05-Jun-2012	SL-561-SA5C-SB-5.5-6.5	F037-12	N	TOTAL	6020	III
05-Jun-2012	SL-615-SA5C-SB-4.0-5.0	F037-14	N	3550B	8081A	IV
05-Jun-2012	SL-615-SA5C-SB-4.0-5.0	F037-14	N	3550B	8082	III
05-Jun-2012	SL-615-SA5C-SB-4.0-5.0	F037-14	N	3550B	8270C SIM	III
05-Jun-2012	SL-615-SA5C-SB-4.0-5.0	F037-14	N	7471A	7471A	III
05-Jun-2012	SL-615-SA5C-SB-4.0-5.0	F037-14	N	GEN PREP	6850	III
05-Jun-2012	SL-615-SA5C-SB-4.0-5.0	F037-14	N	GEN PREP	8151A	IV
05-Jun-2012	SL-615-SA5C-SB-4.0-5.0	F037-14	N	TOTAL	6020	III
05-Jun-2012	SL-615-SA5C-SB-4.0-5.0	F037-14R	N	3550B	8015B EFH	III
05-Jun-2012	SL-615-SA5C-SB-5.0	F037-15	N	5035	8015B GRO	III
05-Jun-2012	SL-615-SA5C-SB-9.0-10.0	F037-16	N	3550B	8015B EFH	III
05-Jun-2012	SL-615-SA5C-SB-9.0-10.0	F037-16	N	3550B	8081A	IV
05-Jun-2012	SL-615-SA5C-SB-9.0-10.0	F037-16	N	3550B	8082	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
05-Jun-2012	SL-615-SA5C-SB-9.0-10.0	F037-16	N	3550B	8270C SIM	III
05-Jun-2012	SL-615-SA5C-SB-9.0-10.0	F037-16	N	7471A	7471A	III
05-Jun-2012	SL-615-SA5C-SB-9.0-10.0	F037-16	N	GEN PREP	6850	III
05-Jun-2012	SL-615-SA5C-SB-9.0-10.0	F037-16	N	GEN PREP	8151A	IV
05-Jun-2012	SL-615-SA5C-SB-9.0-10.0	F037-16	N	TOTAL	6020	III
05-Jun-2012	SL-615-SA5C-SB-9.0-10.0MS	F037-16M	MS	3550B	8081A	IV
05-Jun-2012	SL-615-SA5C-SB-9.0-10.0MS	F037-16M	MS	3550B	8082	III
05-Jun-2012	SL-615-SA5C-SB-10.0	F037-17	N	5035	8015B GRO	III
05-Jun-2012	SL-539-SA5C-SB-0.0-0.5	F037-18	N	3550B	8015B EFH	III
05-Jun-2012	SL-539-SA5C-SB-0.0-0.5	F037-18	N	3550B	8082	III
05-Jun-2012	SL-539-SA5C-SB-0.0-0.5	F037-18	N	7471A	7471A	III
05-Jun-2012	SL-539-SA5C-SB-0.0-0.5	F037-18	N	GEN PREP	8015B	III
05-Jun-2012	SL-539-SA5C-SB-0.0-0.5	F037-18	N	GEN PREP	8015M	III
05-Jun-2012	SL-539-SA5C-SB-0.0-0.5	F037-18	N	TOTAL	6020	III
05-Jun-2012	SL-539-SA5C-SB-0.0-0.5	F037-18R	N	3550B	8270C SIM	III
05-Jun-2012	SL-539-SA5C-SB-7.0	F037-20	N	5035	8015B GRO	III
05-Jun-2012	SL-539-SA5C-SB-6.0-7.0	F037-19	N	3550B	8015B EFH	III
05-Jun-2012	SL-539-SA5C-SB-6.0-7.0	F037-19	N	3550B	8082	III
05-Jun-2012	SL-539-SA5C-SB-6.0-7.0	F037-19	N	3550B	8270C SIM	III
05-Jun-2012	SL-539-SA5C-SB-6.0-7.0	F037-19	N	7471A	7471A	III
05-Jun-2012	SL-539-SA5C-SB-6.0-7.0	F037-19	N	GEN PREP	8015B	III
05-Jun-2012	SL-539-SA5C-SB-6.0-7.0	F037-19	N	GEN PREP	8015M	III
05-Jun-2012	SL-539-SA5C-SB-6.0-7.0	F037-19	N	TOTAL	6020	III
05-Jun-2012	FB-060512	F037-01	FB	3520C	8015B EFH	III
05-Jun-2012	FB-060512	F037-01	FB	3520C	8081A	IV
05-Jun-2012	FB-060512	F037-01	FB	3520C	8082	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
05-Jun-2012	FB-060512	F037-01	FB	3520C	8270C SIM	III
05-Jun-2012	FB-060512	F037-01	FB	5030B	8015B GRO	III
05-Jun-2012	FB-060512	F037-01	FB	5030B	8260B	III
05-Jun-2012	FB-060512	F037-01	FB	5030B	8260B SIM	III
05-Jun-2012	FB-060512	F037-01	FB	7470A	7470A	III
05-Jun-2012	FB-060512	F037-01	FB	GEN PREP	6850	III
05-Jun-2012	FB-060512	F037-01	FB	GEN PREP	7199	III
05-Jun-2012	FB-060512	F037-01	FB	GEN PREP	8015B	III
05-Jun-2012	FB-060512	F037-01	FB	GEN PREP	8015M	III
05-Jun-2012	FB-060512	F037-01	FB	GEN PREP	8151A	IV
05-Jun-2012	FB-060512	F037-01	FB	GEN PREP	8330A	III
05-Jun-2012	FB-060512	F037-01	FB	GEN PREP	8332	III
05-Jun-2012	FB-060512	F037-01	FB	TOTAL	6020	III
05-Jun-2012	FB-060512	F037-01R	FB	3520C	8270C	III
05-Jun-2012	SL-551-SA5C-SB-0.0-0.5	F037-21	N	3550B	8015B EFH	III
05-Jun-2012	SL-551-SA5C-SB-0.0-0.5	F037-21	N	3550B	8082	III
05-Jun-2012	SL-551-SA5C-SB-0.0-0.5	F037-21	N	7471A	7471A	III
05-Jun-2012	SL-551-SA5C-SB-0.0-0.5	F037-21	N	GEN PREP	8015B	III
05-Jun-2012	SL-551-SA5C-SB-0.0-0.5	F037-21	N	GEN PREP	8015M	III
05-Jun-2012	SL-551-SA5C-SB-0.0-0.5	F037-21	N	TOTAL	6020	III
05-Jun-2012	SL-551-SA5C-SB-0.0-0.5	F037-21R	N	3550B	8270C SIM	III
05-Jun-2012	SL-551-SA5C-SB-5.0	F037-23	N	5035	8015B GRO	III
05-Jun-2012	SL-551-SA5C-SB-4.0-5.0	F037-22	N	3550B	8015B EFH	III
05-Jun-2012	SL-551-SA5C-SB-4.0-5.0	F037-22	N	3550B	8082	III
05-Jun-2012	SL-551-SA5C-SB-4.0-5.0	F037-22	N	3550B	8270C SIM	III
05-Jun-2012	SL-551-SA5C-SB-4.0-5.0	F037-22	N	7471A	7471A	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
05-Jun-2012	SL-551-SA5C-SB-4.0-5.0	F037-22	N	GEN PREP	8015B	III
05-Jun-2012	SL-551-SA5C-SB-4.0-5.0	F037-22	N	GEN PREP	8015M	III
05-Jun-2012	SL-551-SA5C-SB-4.0-5.0	F037-22	N	TOTAL	6020	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 II

Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: 12F037 **Laboratory: EMXT**

EDD Filename: Prep12F037 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID:*FB-060512** ***Collected: **6/5/2012 3:00:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	0.0270	J	0.0200	MDL	0.100	PQL	MG/L	J	Z
CALCIUM	0.0263	J	0.0250	MDL	0.100	PQL	MG/L	J	Z
COPPER	0.000954	J	0.000500	MDL	0.00100	PQL	MG/L	J	Z

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID:*SL-539-SA5C-SB-0.0-0.5** ***Collected: **6/5/2012 1:55:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.976**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.205	J	0.111	MDL	0.553	PQL	MG/KG	J	Z
CADMIUM	0.129	J	0.0553	MDL	0.553	PQL	MG/KG	J	Z
MANGANESE	201		0.276	MDL	0.553	PQL	MG/KG	J	E
MOLYBDENUM	0.339	J	0.0553	MDL	0.553	PQL	MG/KG	J	Z
SILVER	0.0689	J	0.0553	MDL	0.553	PQL	MG/KG	J	Z
THALLIUM	0.241	J	0.0553	MDL	0.442	PQL	MG/KG	J	Z

Sample ID:*SL-539-SA5C-SB-6.0-7.0** ***Collected: **6/5/2012 2:05:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.971**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.267	J	0.107	MDL	0.536	PQL	MG/KG	J	Z
CADMIUM	0.236	J	0.0536	MDL	0.536	PQL	MG/KG	J	Z
MANGANESE	292		0.268	MDL	0.536	PQL	MG/KG	J	E
MOLYBDENUM	0.509	J	0.0536	MDL	0.536	PQL	MG/KG	J	Z
SILVER	0.283	J	0.0536	MDL	0.536	PQL	MG/KG	J	Z
THALLIUM	0.288	J	0.0536	MDL	0.429	PQL	MG/KG	J	Z

Sample ID:*SL-543-SA5C-SB-0.0-0.5** ***Collected: **6/5/2012 8:40:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.952**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.375	J	0.105	MDL	0.527	PQL	MG/KG	J	Z
CADMIUM	0.163	J	0.0527	MDL	0.527	PQL	MG/KG	J	Z
MANGANESE	227		0.264	MDL	0.527	PQL	MG/KG	J	E
MOLYBDENUM	0.251	J	0.0527	MDL	0.527	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12F037 **Laboratory: EMXT**

EDD Filename: Prep12F037 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix:** SO

Sample ID: SL-543-SA5C-SB-0.0-0.5 *Collected:* 6/5/2012 8:40:00 AM *Analysis Type:* RES/TOT *Dilution:* 0.952

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
THALLIUM	0.275	J	0.0527	MDL	0.422	PQL	MG/KG	J	Z

Sample ID: SL-543-SA5C-SB-3.5-4.5 *Collected:* 6/5/2012 8:47:00 AM *Analysis Type:* RES/TOT *Dilution:* 0.980

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.253	J	0.105	MDL	0.523	PQL	MG/KG	J	Z
BERYLLIUM	0.385	J	0.0523	MDL	0.523	PQL	MG/KG	J	Z
CADMIUM	0.174	J	0.0523	MDL	0.523	PQL	MG/KG	J	Z
MANGANESE	271		0.261	MDL	0.523	PQL	MG/KG	J	E
MOLYBDENUM	0.382	J	0.0523	MDL	0.523	PQL	MG/KG	J	Z
THALLIUM	0.264	J	0.0523	MDL	0.418	PQL	MG/KG	J	Z

Sample ID: SL-545-SA5C-SB-0.0-0.5 *Collected:* 6/4/2012 3:20:00 PM *Analysis Type:* RES/TOT *Dilution:* 0.980

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.236	J	0.112	MDL	0.558	PQL	MG/KG	J	Z
CADMIUM	0.198	J	0.0558	MDL	0.558	PQL	MG/KG	J	Z
MANGANESE	265		0.279	MDL	0.558	PQL	MG/KG	J	E
THALLIUM	0.254	J	0.0558	MDL	0.446	PQL	MG/KG	J	Z

Sample ID: SL-545-SA5C-SB-4.0-5.0 *Collected:* 6/4/2012 3:25:00 PM *Analysis Type:* RES/TOT *Dilution:* 0.948

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.259	J	0.109	MDL	0.543	PQL	MG/KG	J	Z
CADMIUM	0.159	J	0.0543	MDL	0.543	PQL	MG/KG	J	Z
MANGANESE	269		0.271	MDL	0.543	PQL	MG/KG	J	E
SILVER	0.0559	J	0.0543	MDL	0.543	PQL	MG/KG	J	Z
THALLIUM	0.273	J	0.0543	MDL	0.434	PQL	MG/KG	J	Z

Sample ID: SL-545-SA5C-SB-9.0-10.0 *Collected:* 6/4/2012 3:30:00 PM *Analysis Type:* RES/TOT *Dilution:* 0.985

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.240	J	0.112	MDL	0.561	PQL	MG/KG	J	Z
BERYLLIUM	0.527	J	0.0561	MDL	0.561	PQL	MG/KG	J	Z
CADMIUM	0.0997	J	0.0561	MDL	0.561	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12F037 **Laboratory: EMXT**

EDD Filename: Prep12F037 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 *Matrix:* SO

Sample ID: SL-545-SA5C-SB-9.0-10.0 *Collected:* 6/4/2012 3:30:00 PM *Analysis Type:* RES/TOT *Dilution:* 0.985

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MANGANESE	164		0.280	MDL	0.561	PQL	MG/KG	J	E
MOLYBDENUM	0.371	J	0.0561	MDL	0.561	PQL	MG/KG	J	Z
THALLIUM	0.192	J	0.0561	MDL	0.449	PQL	MG/KG	J	Z

Sample ID: SL-551-SA5C-SB-0.0-0.5 *Collected:* 6/5/2012 3:10:00 PM *Analysis Type:* RES/TOT *Dilution:* 0.990

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.213	J	0.115	MDL	0.574	PQL	MG/KG	J	Z
CADMIUM	0.159	J	0.0574	MDL	0.574	PQL	MG/KG	J	Z
MANGANESE	156		0.287	MDL	0.574	PQL	MG/KG	J	E
MOLYBDENUM	0.383	J	0.0574	MDL	0.574	PQL	MG/KG	J	Z
THALLIUM	0.225	J	0.0574	MDL	0.459	PQL	MG/KG	J	Z

Sample ID: SL-551-SA5C-SB-4.0-5.0 *Collected:* 6/5/2012 3:15:00 PM *Analysis Type:* RES/TOT *Dilution:* 0.948

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.211	J	0.106	MDL	0.530	PQL	MG/KG	J	Z
CADMIUM	0.220	J	0.0530	MDL	0.530	PQL	MG/KG	J	Z
MANGANESE	248		0.265	MDL	0.530	PQL	MG/KG	J	E
MOLYBDENUM	0.379	J	0.0530	MDL	0.530	PQL	MG/KG	J	Z
THALLIUM	0.233	J	0.0530	MDL	0.424	PQL	MG/KG	J	Z

Sample ID: SL-552-SA5C-SB-0.0-0.5 *Collected:* 6/5/2012 9:30:00 AM *Analysis Type:* RES/TOT *Dilution:* 0.976

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.293	J	0.104	MDL	0.518	PQL	MG/KG	J	Z
BERYLLIUM	0.444	J	0.0518	MDL	0.518	PQL	MG/KG	J	Z
CADMIUM	0.368	J	0.0518	MDL	0.518	PQL	MG/KG	J	Z
MANGANESE	253		0.259	MDL	0.518	PQL	MG/KG	J	E
THALLIUM	0.221	J	0.0518	MDL	0.414	PQL	MG/KG	J	Z

Sample ID: SL-561-SA5C-SB-0.0-0.5 *Collected:* 6/5/2012 10:20:00 *Analysis Type:* RES/TOT *Dilution:* 0.976

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.239	J	0.111	MDL	0.553	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12F037 **Laboratory: EMXT**

EDD Filename: Prep12F037 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: SL-561-SA5C-SB-0.0-0.5 ***Collected:*** 6/5/2012 10:20:00 ***Analysis Type:*** RES/TOT ***Dilution:*** 0.976

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CADMIUM	0.239	J	0.0553	MDL	0.553	PQL	MG/KG	J	Z
MANGANESE	278		0.277	MDL	0.553	PQL	MG/KG	J	E
MOLYBDENUM	0.369	J	0.0553	MDL	0.553	PQL	MG/KG	J	Z
SILVER	0.0666	J	0.0553	MDL	0.553	PQL	MG/KG	J	Z
THALLIUM	0.307	J	0.0553	MDL	0.443	PQL	MG/KG	J	Z

Sample ID: SL-561-SA5C-SB-5.5-6.5 ***Collected:*** 6/5/2012 10:25:00 ***Analysis Type:*** RES/TOT ***Dilution:*** 0.957

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.222	J	0.101	MDL	0.507	PQL	MG/KG	J	Z
BERYLLIUM	0.441	J	0.0507	MDL	0.507	PQL	MG/KG	J	Z
CADMIUM	0.161	J	0.0507	MDL	0.507	PQL	MG/KG	J	Z
MANGANESE	230		0.253	MDL	0.507	PQL	MG/KG	J	E
MOLYBDENUM	0.243	J	0.0507	MDL	0.507	PQL	MG/KG	J	Z
THALLIUM	0.228	J	0.0507	MDL	0.406	PQL	MG/KG	J	Z

Sample ID: SL-615-SA5C-SB-4.0-5.0 ***Collected:*** 6/5/2012 11:50:00 ***Analysis Type:*** RES/TOT ***Dilution:*** 0.952

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.246	J	0.110	MDL	0.550	PQL	MG/KG	J	Z
CADMIUM	0.169	J	0.0550	MDL	0.550	PQL	MG/KG	J	Z
MANGANESE	308		0.275	MDL	0.550	PQL	MG/KG	J	E
MOLYBDENUM	0.542	J	0.0550	MDL	0.550	PQL	MG/KG	J	Z
SILVER	0.0717	J	0.0550	MDL	0.550	PQL	MG/KG	J	Z
THALLIUM	0.265	J	0.0550	MDL	0.440	PQL	MG/KG	J	Z

Sample ID: SL-615-SA5C-SB-9.0-10.0 ***Collected:*** 6/5/2012 11:55:00 ***Analysis Type:*** RES/TOT ***Dilution:*** 1.00

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.256	J	0.110	MDL	0.551	PQL	MG/KG	J	Z
CADMIUM	0.119	J	0.0551	MDL	0.551	PQL	MG/KG	J	Z
MANGANESE	199		0.275	MDL	0.551	PQL	MG/KG	J	E
MOLYBDENUM	0.396	J	0.0551	MDL	0.551	PQL	MG/KG	J	Z
SILVER	0.142	J	0.0551	MDL	0.551	PQL	MG/KG	J	Z
THALLIUM	0.286	J	0.0551	MDL	0.441	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12F037 **Laboratory: EMXT**

EDD Filename: Prep12F037 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: SO**

Method Category: SVOA

Method: 8015B EFH **Matrix: SO**

Sample ID: **SL-545-SA5C-SB-4.0-5.0** ***Collected:*** **6/4/2012 3:25:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH(C21-C30)	3.4	J	2.9	MDL	5.7	PQL	MG/KG	J	Z
EFH(C30-C40)	6.6	J	5.7	MDL	11	PQL	MG/KG	J	Z

Sample ID: **SL-561-SA5C-SB-0.0-0.5** ***Collected:*** **6/5/2012 10:20:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH(C21-C30)	3.2	J	2.8	MDL	5.7	PQL	MG/KG	J	Z

Method Category: SVOA

Method: 8270C **Matrix: AQ**

Sample ID: **FB-060512** ***Collected:*** **6/5/2012 3:00:00 PM** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1.06**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,4-TRICHLOROBENZENE	11	U	5.3	MDL	11	PQL	UG/L	UJ	H
1,2-DICHLOROBENZENE	11	U	5.3	MDL	11	PQL	UG/L	UJ	H
1,2-DIPHENYLHYDRAZINE	11	U	5.3	MDL	11	PQL	UG/L	UJ	H
1,3-DICHLOROBENZENE	11	U	5.3	MDL	11	PQL	UG/L	UJ	H
1,4-DICHLOROBENZENE	11	U	5.3	MDL	11	PQL	UG/L	UJ	H
2,4,5-TRICHLOROPHENOL	11	U	5.3	MDL	11	PQL	UG/L	UJ	H
2,4,6-TRICHLOROPHENOL	11	U	5.3	MDL	11	PQL	UG/L	UJ	H
2,4-DICHLOROPHENOL	11	U	5.3	MDL	11	PQL	UG/L	UJ	H
2,4-DIMETHYLPHENOL	11	U	5.3	MDL	11	PQL	UG/L	UJ	H
2,4-DINITROPHENOL	21	U	5.3	MDL	21	PQL	UG/L	UJ	H
2,6-DICHLOROPHENOL	11	U	5.3	MDL	11	PQL	UG/L	UJ	H
2-Butoxyethanol	11	U	5.3	MDL	11	PQL	UG/L	UJ	H
2-CHLORONAPHTHALENE	11	U	5.3	MDL	11	PQL	UG/L	UJ	H
2-CHLOROPHENOL	11	U	5.3	MDL	11	PQL	UG/L	UJ	H
2-METHYLPHENOL	11	U	5.3	MDL	11	PQL	UG/L	UJ	H
2-NITROANILINE	11	U	5.3	MDL	11	PQL	UG/L	UJ	H
2-NITROPHENOL	11	U	5.3	MDL	11	PQL	UG/L	UJ	H

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12F037 **Laboratory: EMXT**

EDD Filename: Prep12F037 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

Method: 8270C **Matrix: AQ**

Sample ID: **FB-060512** ***Collected:*** **6/5/2012 3:00:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1.06**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-Phenoxyethanol	11	U	5.3	MDL	11	PQL	UG/L	UJ	H
3,3'-DICHLOROBENZIDINE	11	U	5.3	MDL	11	PQL	UG/L	UJ	H
3,5-Dimethylphenol	21	U	5.3	MDL	21	PQL	UG/L	UJ	H
3-NITROANILINE	11	U	5.3	MDL	11	PQL	UG/L	UJ	H
4,6-DINITRO-2-METHYLPHENOL	21	U	5.3	MDL	21	PQL	UG/L	UJ	H
4-BROMOPHENYL-PHENYLETHER	11	U	5.3	MDL	11	PQL	UG/L	UJ	H
4-CHLORO-3-METHYLPHENOL	11	U	5.3	MDL	11	PQL	UG/L	UJ	H
4-CHLOROANILINE	11	U	5.3	MDL	11	PQL	UG/L	UJ	H
4-METHYLPHENOL	11	U	5.3	MDL	11	PQL	UG/L	UJ	H
4-NITROANILINE	11	U	5.3	MDL	11	PQL	UG/L	UJ	H
4-NITROPHENOL	21	U	5.3	MDL	21	PQL	UG/L	UJ	H
ANILINE	21	U	11	MDL	21	PQL	UG/L	UJ	H
BENZIDINE	53	U	21	MDL	53	PQL	UG/L	UJ	H
BENZOIC ACID	42	U	21	MDL	42	PQL	UG/L	UJ	H
BENZYL ALCOHOL	11	U	5.3	MDL	11	PQL	UG/L	UJ	H
BIS(2-CHLOROETHOXY)METHANE	11	U	5.3	MDL	11	PQL	UG/L	UJ	H
Bis(2-chloroethyl)ether	11	U	5.3	MDL	11	PQL	UG/L	UJ	H
Bis(2-chloroisopropyl)ether	11	U	5.3	MDL	11	PQL	UG/L	UJ	H
BIS(2-ETHYLHEXYL)PHTHALATE	21	U	5.3	MDL	21	PQL	UG/L	UJ	H
Butylbenzylphthalate	11	U	5.3	MDL	11	PQL	UG/L	UJ	H
CARBAZOLE	11	U	5.3	MDL	11	PQL	UG/L	UJ	H
DIBENZOFURAN	11	U	5.3	MDL	11	PQL	UG/L	UJ	H
Diethylphthalate	11	U	5.3	MDL	11	PQL	UG/L	UJ	H
Dimethylphthalate	11	U	5.3	MDL	11	PQL	UG/L	UJ	H
Di-n-butylphthalate	11	U	5.3	MDL	11	PQL	UG/L	UJ	H
Di-n-octylphthalate	11	U	5.3	MDL	11	PQL	UG/L	UJ	H
HEXACHLOROBENZENE	11	U	5.3	MDL	11	PQL	UG/L	UJ	H
HEXACHLOROBUTADIENE	11	U	5.3	MDL	11	PQL	UG/L	UJ	H
HEXACHLOROCYCLOPENTADIENE	21	U	5.3	MDL	21	PQL	UG/L	UJ	H
HEXACHLOROETHANE	11	U	5.3	MDL	11	PQL	UG/L	UJ	H
ISOPHORONE	11	U	5.3	MDL	11	PQL	UG/L	UJ	H
NITROBENZENE	11	U	5.3	MDL	11	PQL	UG/L	UJ	H
N-NITROSO-DI-N-PROPYLAMINE	11	U	5.3	MDL	11	PQL	UG/L	UJ	H
N-NITROSODIPHENYLAMINE	11	U	5.3	MDL	11	PQL	UG/L	UJ	H

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12F037 **Laboratory: EMXT**

EDD Filename: Prep12F037 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

Method: 8270C **Matrix: AQ**

Sample ID: FB-060512 *Collected:* 6/5/2012 3:00:00 PM *Analysis Type:* RES-ACID *Dilution:* 1.06

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PENTACHLOROPHENOL	21	U	5.3	MDL	21	PQL	UG/L	UJ	H
PHENOL	11	U	5.3	MDL	11	PQL	UG/L	UJ	H
Tetralin	11	U	5.3	MDL	11	PQL	UG/L	UJ	H

Method Category: SVOA

Method: 8270C SIM **Matrix: SO**

Sample ID: SL-539-SA5C-SB-6.0-7.0 *Collected:* 6/5/2012 2:05:00 PM *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-METHYLNAPHTHALENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
ACENAPHTHENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
ACENAPHTHYLENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
ANTHRACENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
BENZO(A)ANTHRACENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
BENZO(A)PYRENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
BENZO(B)FLUORANTHENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
BENZO(E)PYRENE	5.5	U	2.8	MDL	5.5	PQL	UG/KG	UJ	S
BENZO(G,H,I)PERYLENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
BENZO(K)FLUORANTHENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
CHRYSENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
DIBENZO(A,H)ANTHRACENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
FLUORANTHENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
FLUORENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
INDENO(1,2,3-CD)PYRENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
NAPHTHALENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
N-NITROSODIMETHYLAMINE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
PHENANTHRENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
PYRENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S

Sample ID: SL-543-SA5C-SB-3.5-4.5 *Collected:* 6/5/2012 8:47:00 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	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12F037 **Laboratory: EMXT**

EDD Filename: Prep12F037 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

Method: 8270C SIM **Matrix: SO**

Sample ID: **SL-543-SA5C-SB-3.5-4.5** ***Collected:*** **6/5/2012 8:47:00 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
ACENAPHTHENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S
ACENAPHTHYLENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S
ANTHRACENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S
BENZO(A)ANTHRACENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S
BENZO(A)PYRENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S
BENZO(B)FLUORANTHENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S
BENZO(E)PYRENE	5.3	U	2.7	MDL	5.3	PQL	UG/KG	UJ	S
BENZO(G,H,I)PERYLENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S
BENZO(K)FLUORANTHENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S
CHRYSENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S
DIBENZO(A,H)ANTHRACENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S
FLUORANTHENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S
FLUORENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S
INDENO(1,2,3-CD)PYRENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S
NAPHTHALENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S
N-NITROSODIMETHYLAMINE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S
PHENANTHRENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S
PYRENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	S

Sample ID: **SL-545-SA5C-SB-0.0-0.5** ***Collected:*** **6/4/2012 3:20:00 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
DIBENZO(A,H)ANTHRACENE	9.3	J	2.8	MDL	11	PQL	UG/KG	J	Z

Sample ID: **SL-545-SA5C-SB-9.0-10.0** ***Collected:*** **6/4/2012 3:30:00 PM** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHRYSENE	4.9	J	2.8	MDL	11	PQL	UG/KG	J	Z

Sample ID: **SL-551-SA5C-SB-4.0-5.0** ***Collected:*** **6/5/2012 3:15:00 PM** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-METHYLNAPHTHALENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
ACENAPHTHENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
ACENAPHTHYLENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12F037 **Laboratory: EMXT**

EDD Filename: Prep12F037 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: **SVOA**

Method: **8270C SIM** ***Matrix:*** **SO**

Sample ID: **SL-551-SA5C-SB-4.0-5.0** ***Collected:*** **6/5/2012 3:15:00 PM** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
ANTHRACENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
BENZO(A)ANTHRACENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
BENZO(A)PYRENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
BENZO(B)FLUORANTHENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
BENZO(E)PYRENE	5.6	U	2.8	MDL	5.6	PQL	UG/KG	UJ	S
BENZO(G,H,I)PERYLENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
BENZO(K)FLUORANTHENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
CHRYSENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
DIBENZO(A,H)ANTHRACENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
FLUORANTHENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
FLUORENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
INDENO(1,2,3-CD)PYRENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
NAPHTHALENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
N-NITROSODIMETHYLAMINE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
PHENANTHRENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
PYRENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S

Sample ID: **SL-552-SA5C-SB-0.0-0.5** ***Collected:*** **6/5/2012 9:30:00 AM** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **6**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
BENZO(A)ANTHRACENE	23	J	16	MDL	64	PQL	UG/KG	J	Z
BENZO(A)PYRENE	34	J	16	MDL	64	PQL	UG/KG	J	Z
BENZO(B)FLUORANTHENE	38	J	16	MDL	64	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	29	J	16	MDL	64	PQL	UG/KG	J	Z
BENZO(K)FLUORANTHENE	41	J	16	MDL	64	PQL	UG/KG	J	Z

Sample ID: **SL-561-SA5C-SB-5.5-6.5** ***Collected:*** **6/5/2012 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(A)ANTHRACENE	6.6	J	2.6	MDL	11	PQL	UG/KG	J	Z
BENZO(A)PYRENE	4.0	J	2.6	MDL	11	PQL	UG/KG	J	Z
BENZO(B)FLUORANTHENE	4.5	J	2.6	MDL	11	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	3.0	J	2.6	MDL	11	PQL	UG/KG	J	Z
BENZO(K)FLUORANTHENE	5.8	J	2.6	MDL	11	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12F037 **Laboratory: EMXT**

EDD Filename: Prep12F037 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

Method: 8270C SIM *Matrix:* SO

Sample ID: SL-615-SA5C-SB-4.0-5.0 *Collected:* 6/5/2012 11:50:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-METHYLNAPHTHALENE	12	U	2.9	MDL	12	PQL	UG/KG	UJ	S
ACENAPHTHENE	12	U	2.9	MDL	12	PQL	UG/KG	UJ	S
ACENAPHTHYLENE	12	U	2.9	MDL	12	PQL	UG/KG	UJ	S
ANTHRACENE	12	U	2.9	MDL	12	PQL	UG/KG	UJ	S
BENZO(A)ANTHRACENE	12	U	2.9	MDL	12	PQL	UG/KG	UJ	S
BENZO(A)PYRENE	12	U	2.9	MDL	12	PQL	UG/KG	UJ	S
BENZO(B)FLUORANTHENE	12	U	2.9	MDL	12	PQL	UG/KG	UJ	S
BENZO(E)PYRENE	5.8	U	2.9	MDL	5.8	PQL	UG/KG	UJ	S
BENZO(G,H,I)PERYLENE	12	U	2.9	MDL	12	PQL	UG/KG	UJ	S
BENZO(K)FLUORANTHENE	12	U	2.9	MDL	12	PQL	UG/KG	UJ	S
CHRYSENE	12	U	2.9	MDL	12	PQL	UG/KG	UJ	S
DIBENZO(A,H)ANTHRACENE	12	U	2.9	MDL	12	PQL	UG/KG	UJ	S
FLUORANTHENE	12	U	2.9	MDL	12	PQL	UG/KG	UJ	S
FLUORENE	12	U	2.9	MDL	12	PQL	UG/KG	UJ	S
INDENO(1,2,3-CD)PYRENE	12	U	2.9	MDL	12	PQL	UG/KG	UJ	S
NAPHTHALENE	12	U	2.9	MDL	12	PQL	UG/KG	UJ	S
N-NITROSODIMETHYLAMINE	12	U	2.9	MDL	12	PQL	UG/KG	UJ	S
PHENANTHRENE	12	U	2.9	MDL	12	PQL	UG/KG	UJ	S
PYRENE	12	U	2.9	MDL	12	PQL	UG/KG	UJ	S

Sample ID: SL-615-SA5C-SB-9.0-10.0 *Collected:* 6/5/2012 11:55:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-METHYLNAPHTHALENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
ACENAPHTHENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
ACENAPHTHYLENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
ANTHRACENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
BENZO(A)ANTHRACENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
BENZO(A)PYRENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
BENZO(B)FLUORANTHENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
BENZO(E)PYRENE	5.5	U	2.8	MDL	5.5	PQL	UG/KG	UJ	S
BENZO(G,H,I)PERYLENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
BENZO(K)FLUORANTHENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
CHRYSENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12F037 **Laboratory: EMXT**

EDD Filename: Prep12F037 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

Method: 8270C SIM **Matrix: SO**

Sample ID: **SL-615-SA5C-SB-9.0-10.0** ***Collected:*** **6/5/2012 11:55:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
DIBENZO(A,H)ANTHRACENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
FLUORANTHENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
FLUORENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
INDENO(1,2,3-CD)PYRENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
NAPHTHALENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
N-NITROSODIMETHYLAMINE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
PHENANTHRENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S
PYRENE	11	U	2.8	MDL	11	PQL	UG/KG	UJ	S

Method Category: VOA

Method: 8015B GRO **Matrix: AQ**

Sample ID: **FB-060512** ***Collected:*** **6/5/2012 3:00:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
GASOLINE RANGE ORGANICS (C5-C12)	49	J	10	MDL	50	PQL	UG/L	J	Z

Sample ID: **TB-060512** ***Collected:*** **6/5/2012 8:00:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
GASOLINE RANGE ORGANICS (C5-C12)	41	J	10	MDL	50	PQL	UG/L	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12F037 **Laboratory: EMXT**

EDD Filename: Prep12F037 **eQAPP Name: CDM_SSFL_120730_EMAX**

Reason Code Legend

Reason Code	*Description*
E	Matrix Spike Precision
H	Sampling to Extraction Estimation
Q	Matrix Spike Precision
S	Surrogate/Tracer Recovery Lower Estimation
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Enclosure I

Level III ADR Outliers
(including Manual Review Outliers)

Quality Control
Outlier Reports

12F037

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: 12F037 **Laboratory: EMXT**

EDD Filename: 12F037 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 8270C **Preparation Method: 5035**

Matrix: AQ

Sample ID	Type	Actual	Criteria	Units	Flag
FB-060512 (RES)	Sampling To Extraction	9.00	7.00	DAYS	J(all detects) UJ(all non-detects)

Surrogate Outlier Report

Lab Reporting Batch ID: 12F037 **Laboratory: EMXT**

EDD Filename: 12F037 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 8270C SIM
Matrix: SO

Sample ID (Analysis Type)	Surrogate	Sample % Recovery	% Recovery Limits	Affected Compounds	Flag
SL-539-SA5C-SB-6.0-7.0	2-FLUOROBIPHENYL Nitrobenzene-d5	30 33.1	45.00-130.00 40.00-130.00	All Base/Neutral Target Analytes	J (all detects) UJ (all non-detects)
SL-543-SA5C-SB-0.0-0.5	2-FLUOROBIPHENYL	36.2	45.00-130.00	No Affected Compounds	
SL-543-SA5C-SB-3.5-4.5	2-FLUOROBIPHENYL Nitrobenzene-d5	29.1 33.3	45.00-130.00 40.00-130.00	All Base/Neutral Target Analytes	J(all detects) UJ(all non-detects)
SL-551-SA5C-SB-4.0-5.0	2-FLUOROBIPHENYL Nitrobenzene-d5	35.9 39	45.00-130.00 40.00-130.00	All Base/Neutral Target Analytes	J(all detects) UJ(all non-detects)
SL-615-SA5C-SB-4.0-5.0	2-FLUOROBIPHENYL Nitrobenzene-d5	26.4 29.7	45.00-130.00 40.00-130.00	All Base/Neutral Target Analytes	J(all detects) UJ(all non-detects)
SL-615-SA5C-SB-9.0-10.0	2-FLUOROBIPHENYL Nitrobenzene-d5	29.1 33.8	45.00-130.00 40.00-130.00	All Base/Neutral Target Analytes	J(all detects) UJ(all non-detects)

Reporting Limit Outliers

Lab Reporting Batch ID: 12F037 **Laboratory: EMXT**

EDD Filename: 12F037 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 6020
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FB-060512	ALUMINUM	J	0.0270	0.100	PQL	MG/L	J (all detects)
	CALCIUM	J	0.0263	0.100	PQL	MG/L	
	COPPER	J	0.000954	0.00100	PQL	MG/L	

Method: 8015B GRO
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FB-060512	GASOLINE RANGE ORGANICS (C5-C12)	J	49	50	PQL	UG/L	J (all detects)
TB-060512	GASOLINE RANGE ORGANICS (C5-C12)	J	41	50	PQL	UG/L	J (all detects)

Method: 6020
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-539-SA5C-SB-0.0-0.5	ANTIMONY	J	0.205	0.553	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.129	0.553	PQL	MG/KG	
	MOLYBDENUM	J	0.339	0.553	PQL	MG/KG	
	SILVER	J	0.0689	0.553	PQL	MG/KG	
	THALLIUM	J	0.241	0.442	PQL	MG/KG	
SL-539-SA5C-SB-6.0-7.0	ANTIMONY	J	0.267	0.536	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.236	0.536	PQL	MG/KG	
	MOLYBDENUM	J	0.509	0.536	PQL	MG/KG	
	SILVER	J	0.283	0.536	PQL	MG/KG	
	THALLIUM	J	0.288	0.429	PQL	MG/KG	
SL-543-SA5C-SB-0.0-0.5	ANTIMONY	J	0.375	0.527	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.163	0.527	PQL	MG/KG	
	MOLYBDENUM	J	0.251	0.527	PQL	MG/KG	
	THALLIUM	J	0.275	0.422	PQL	MG/KG	
SL-543-SA5C-SB-3.5-4.5	ANTIMONY	J	0.253	0.523	PQL	MG/KG	J (all detects)
	BERYLLIUM	J	0.385	0.523	PQL	MG/KG	
	CADMIUM	J	0.174	0.523	PQL	MG/KG	
	MOLYBDENUM	J	0.382	0.523	PQL	MG/KG	
	THALLIUM	J	0.264	0.418	PQL	MG/KG	
SL-545-SA5C-SB-0.0-0.5	ANTIMONY	J	0.236	0.558	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.198	0.558	PQL	MG/KG	
	THALLIUM	J	0.254	0.446	PQL	MG/KG	
SL-545-SA5C-SB-4.0-5.0	ANTIMONY	J	0.259	0.543	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.159	0.543	PQL	MG/KG	
	SILVER	J	0.0559	0.543	PQL	MG/KG	
	THALLIUM	J	0.273	0.434	PQL	MG/KG	
SL-545-SA5C-SB-9.0-10.0	ANTIMONY	J	0.240	0.561	PQL	MG/KG	J (all detects)
	BERYLLIUM	J	0.527	0.561	PQL	MG/KG	
	CADMIUM	J	0.0997	0.561	PQL	MG/KG	
	MOLYBDENUM	J	0.371	0.561	PQL	MG/KG	
	THALLIUM	J	0.192	0.449	PQL	MG/KG	

Project Name and Number: PHASE3 - SSFL PHASE 3

Reporting Limit Outliers

Lab Reporting Batch ID: 12F037 **Laboratory: EMXT**

EDD Filename: 12F037 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 6020
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-551-SA5C-SB-0.0-0.5	ANTIMONY	J	0.213	0.574	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.159	0.574	PQL	MG/KG	
	MOLYBDENUM	J	0.383	0.574	PQL	MG/KG	
	THALLIUM	J	0.225	0.459	PQL	MG/KG	
SL-551-SA5C-SB-4.0-5.0	ANTIMONY	J	0.211	0.530	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.220	0.530	PQL	MG/KG	
	MOLYBDENUM	J	0.379	0.530	PQL	MG/KG	
	THALLIUM	J	0.233	0.424	PQL	MG/KG	
SL-552-SA5C-SB-0.0-0.5	ANTIMONY	J	0.293	0.518	PQL	MG/KG	J (all detects)
	BERYLLIUM	J	0.444	0.518	PQL	MG/KG	
	CADMIUM	J	0.368	0.518	PQL	MG/KG	
	THALLIUM	J	0.221	0.414	PQL	MG/KG	
SL-561-SA5C-SB-0.0-0.5	ANTIMONY	J	0.239	0.553	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.239	0.553	PQL	MG/KG	
	MOLYBDENUM	J	0.369	0.553	PQL	MG/KG	
	SILVER	J	0.0666	0.553	PQL	MG/KG	
	THALLIUM	J	0.307	0.443	PQL	MG/KG	
SL-561-SA5C-SB-5.5-6.5	ANTIMONY	J	0.222	0.507	PQL	MG/KG	J (all detects)
	BERYLLIUM	J	0.441	0.507	PQL	MG/KG	
	CADMIUM	J	0.161	0.507	PQL	MG/KG	
	MOLYBDENUM	J	0.243	0.507	PQL	MG/KG	
	THALLIUM	J	0.228	0.406	PQL	MG/KG	
SL-615-SA5C-SB-4.0-5.0	ANTIMONY	J	0.246	0.550	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.169	0.550	PQL	MG/KG	
	MOLYBDENUM	J	0.542	0.550	PQL	MG/KG	
	SILVER	J	0.0717	0.550	PQL	MG/KG	
	THALLIUM	J	0.265	0.440	PQL	MG/KG	
SL-615-SA5C-SB-9.0-10.0	ANTIMONY	J	0.256	0.551	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.119	0.551	PQL	MG/KG	
	MOLYBDENUM	J	0.396	0.551	PQL	MG/KG	
	SILVER	J	0.142	0.551	PQL	MG/KG	
	THALLIUM	J	0.286	0.441	PQL	MG/KG	

Method: 8015B EFH
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-545-SA5C-SB-4.0-5.0	EFH(C21-C30)	J	3.4	5.7	PQL	MG/KG	J (all detects)
	EFH(C30-C40)	J	6.6	11	PQL	MG/KG	
SL-561-SA5C-SB-0.0-0.5	EFH(C21-C30)	J	3.2	5.7	PQL	MG/KG	J (all detects)

Method: 8270C SIM
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-545-SA5C-SB-0.0-0.5	DIBENZO(A,H)ANTHRACENE	J	9.3	11	PQL	UG/KG	J (all detects)

Project Name and Number: PHASE3 - SSFL PHASE 3

Reporting Limit Outliers

Lab Reporting Batch ID: 12F037 **Laboratory: EMXT**

EDD Filename: 12F037 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: **8270C SIM**

Matrix: **SO**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
SL-545-SA5C-SB-9.0-10.0	CHRYSENE	J	4.9	11	PQL	UG/KG	J (all detects)
SL-552-SA5C-SB-0.0-0.5	BENZO(A)ANTHRACENE	J	23	64	PQL	UG/KG	
	BENZO(A)PYRENE	J	34	64	PQL	UG/KG	
	BENZO(B)FLUORANTHENE	J	38	64	PQL	UG/KG	J (all detects)
	BENZO(G,H,I)PERYLENE	J	29	64	PQL	UG/KG	
	BENZO(K)FLUORANTHENE	J	41	64	PQL	UG/KG	
SL-561-SA5C-SB-5.5-6.5	BENZO(A)ANTHRACENE	J	6.6	11	PQL	UG/KG	
	BENZO(A)PYRENE	J	4.0	11	PQL	UG/KG	
	BENZO(B)FLUORANTHENE	J	4.5	11	PQL	UG/KG	J (all detects)
	BENZO(G,H,I)PERYLENE	J	3.0	11	PQL	UG/KG	
	BENZO(K)FLUORANTHENE	J	5.8	11	PQL	UG/KG	

LDC #: 28578H4
SDG #: 12F037
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 11-6-12
Page: 1 of 1
Reviewer: AL
2nd Reviewer: W

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

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

	Validation Area		Comments
I.	Technical holding times	~	Sampling dates:
II.	ICP/MS Tune	~	
III.	Calibration	~	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	~	
VI.	Matrix Spike Analysis	N	MS/D (see SDG: 12F044)
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	N	LCS/D
IX.	Internal Standard (ICP-MS)	N	
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	A	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	N	
XIV.	Field Duplicates	~	
XV	Field Blanks	SW	FB=1 EB= EB1-060712(12F051)

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	FB-060512 W	11	SL-615-SA5C-SB-9.0-10.0	21		31	
2	SL-545-SA5C-SB-0.0-0.5	12	SL-539-SA5C-SB-0.0-0.5	22		32	
3	SL-545-SA5C-SB-4.0-5.0	13	SL-539-SA5C-SB-6.0-7.0	23		33	
4	SL-545-SA5C-SB-9.0-10.0	14	SL-551-SA5C-SB-0.0-0.5	24		34	
5	SL-543-SA5C-SB-0.0-0.5	15	SL-551-SA5C-SB-4.0-5.0	25		35	
6	SL-543-SA5C-SB-3.5-4.5	16		26		36	
7	SL-552-SA5C-SB-0.0-0.5	17		27		37	
8	SL-561-SA5C-SB-0.0-0.5	18		28		38	
9	SL-561-SA5C-SB-5.5-6.5	19		29		39	
10	SL-615-SA5C-SB-4.0-5.0	20		30		40	

Notes: _____

LDC #: 28578H4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: CL
2nd Reviewer: M

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

Blank units: ug/L **Associated sample units:** mg/Kg

Sampling date: 6/7/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All Soil

Analyte	Blank ID	Sample Identification										
	EB1-060712	Action Limit	No Qualifiers									
Al	0.0449	11.225										
B	0.00577	1.4425										
Ca	0.0314	7.85										
Cu	0.00190	0.475										
Na	0.0803	20.075										

Sampling date: 6/5/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: AllSoil

Analyte	Blank ID	Sample Identification										
	FB-060512	Action Limit	No Qualifiers									
Al	0.0270	6.75										
Ca	0.0263	6.575										
Cu	0.000954	0.2385										

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".

Enclosure II

Level IV Validation Reports

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Santa Susana Field Laboratory
Collection Date:	June 4 through June 5, 2012
LDC Report Date:	November 27, 2012
Matrix:	Soil/Water
Parameters:	Chlorinated Pesticides
Validation Level:	Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	12F037

Sample Identification

FB-060512
SL-615-SA5C-SB-4.0-5.0
SL-615-SA5C-SB-9.0-10.0
SL-615-SA5C-SB-9.0-10.0MS
SL-615-SA5C-SB-9.0-10.0MSD

Introduction

This data review covers 4 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 8081A for Chlorinated Pesticides.

This review follows the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

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

J Indicates an estimated value.

R Quality control indicates the data is not usable.

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

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

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

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

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of single compounds was performed for the primary (quantitation) column and confirmation column as required by this method.

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 EB-060712 (from SDG 12F051) was identified as an equipment blank. No chlorinated pesticide contaminants were found.

Sample FB-00512 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

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

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

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

XI. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XII. Target Compound Identification

All target compound identifications were within validation criteria.

XIII. Compound Quantitation and Reported RLs

All compound quantitation and RLs were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 12F037	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 12F037

SDG	Sample	Compound	Flag	A or P	Reason (Code)
12F037	FB-060512 SL-615-SA5C-SB-4.0-5.0 SL-615-SA5C-SB-9.0-10.0	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (Z)

Santa Susana Field Laboratory
Chlorinated Pesticides - Laboratory Blank Data Qualification Summary - SDG 12F037

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Chlorinated Pesticides - Field Blank Data Qualification Summary - SDG 12F037

No Sample Data Qualified in this SDG

LDC #: 28578H3a **VALIDATION COMPLETENESS WORKSHEET** Date: 11/27/12
SDG #: 12F037 Level IV Page: 1 of 1
Laboratory: EMAX Laboratories, Inc. Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC Chlorinated Pesticides (EPA SW846 Method 8081A)

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

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: ~~5/31/12~~ 6/4 - 6/5/12
II.	GC/ECD Instrument Performance Check	A	
III.	Initial calibration	A	
IV.	Continuing calibration/ICV	A	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS/D
IX.	Regional quality assurance and quality control	N	
X.	Florisil cartridge check	N	
XI.	GPC Calibration	N	
XII.	Target compound identification	A	
XIII.	Compound quantitation/RL/LOQ/LODs	A	
XIV.	Overall assessment of data	A	
XV.	Field duplicates	N	
XVI.	Field blanks	ND	FB = 1 EB = EB' 060712 (SDG #12F037)

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	FB-060512	11	MBLK1W	21		31	
2	SL-615-SA5C-SB-4.0-5.0	12	MBLK1S	22		32	
3	SL-615-SA5C-SB-9.0-10.0	13		23		33	
4	SL-615-SA5C-SB-9.0-10.0MS	14		24		34	
5	SL-615-SA5C-SB-9.0-10.0MSD	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 #: 24578H3a
SDG #: see cover

VALIDATION FINDINGS CHECKLIST

Reviewer: EJ
2nd Reviewer: A

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) ≤ ~~15%.0~~ 20 or percent recoveries ~~85-115%~~ 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?			✓	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			✓	

LDC #: 28578A3a
SDG #: per cover

VALIDATION FINDINGS CHECKLIST

Reviewer: M
2nd Reviewer: C

Validation Area	Yes	No	NA	Findings/Comments
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	✓			
Was a MS/MSD analyzed every 20 samples of each matrix?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	✓			
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Target compound identification				
Were the retention times of reported detects within the RT windows?	✓			
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions, dry weight factors, and clean-up activities applicable to level IV validation?	✓			
XII. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XV. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.		✓		

VALIDATION FINDINGS WORKSHEET

METHOD: Pesticide/PCBs (EPASW 846 Method 8081/8082)

A. alpha-BHC	I. Dieldrin	Q. Endrin ketone	Y. Aroclor-1242	GG.
B. beta-BHC	J. 4,4'-DDE	R. Endrin aldehyde	Z. Aroclor-1248	HH.
C. delta-BHC	K. Endrin	S. alpha-Chlordane	AA. Aroclor-1254	II.
D. gamma-BHC	L. Endosulfan II	T. gamma-Chlordane	BB. Aroclor-1260	JJ.
E. Heptachlor	M. 4,4'-DDD	U. Toxaphene	CC. DB 608	KK.
F. Aldrin	N. Endosulfan sulfate	V. Aroclor-1016	DD. DB 1701	LL.
G. Heptachlor epoxide	O. 4,4'-DDT	W. Aroclor-1221	EE.	MM.
H. Endosulfan I	P. Methoxychlor	X. Aroclor-1232	FF.	NN.

Notes:_____

LDC #: 28578H3a
SDG #: see cover

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

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

METHOD: GC ✓ HPLC ____

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

CF = A/C
average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

A = Area of compound,
C = Concentration of compound,
S = Standard deviation of the CF
X = Mean of the CFs

#	Standard ID	Calibration Date	Compound	Reported CF (100 std)	Recalculated CF (100 std)	Reported Average CF (initial)	Recalculated Average CF (initial)	Reported %RSD	Recalculated %RSD
1	ICAL	6/01/12	endosulfan I STXCLP1	143811	143811	140757.9	140757.9	9.8	9.8
			methoxychlor	57266	57266	58100.8	58100.8	19.9	19.9
			STXCLP2	108822	108822	108672.3	108672.	8.0	8.0
2			↓	49417	49417	50012.1	50012	14.5	14.5
3									
4									

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

LDC #: 28578H3a
SDG #: per cover

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

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

METHOD: GC ✓ HPLC ____

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

% Difference = 100 * (ave. CF - CF)/ave. CF
CF = A/C

Where: ave. CF = initial calibration average CF
CF = continuing calibration CF
A = Area of compound
C = Concentration of compound

#	Standard ID	Calibration Date	Compound	Average CF(Ical)/ CCV Conc.	Reported CF/Conc. CCV	Recalculated CF/Conc. CCV	Reported %D	Recalculated %D
1	RF15015A/B	6/15/12	endosulfan I STD-CLP1	20.0	20.88	20.88	4	4
	16:36		methoxychlor CLP2	200.0	190.99	190.99	5	5
2			↓	↓	20.88	20.88	4	4
					198.21	198.21	1	1
3	RF15036A/B	6/18/12	↓	20	21.29	21.29	6	6
				200	168.35	168.35	16	16
			↓	↓	21.81	21.81	9	9
4			↓	↓	171.93	171.93	14	14

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 #: 28578#3a
SDG #: see cover

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

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

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: #2

Surrogate	Column	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
Tetrachloro-m-xylene						
Tetrachloro-m-xylene	RTX-CLP2	40.0	36.682	91.7	91.7	0
Decachlorobiphenyl	↓	↓	35.091	87.7	87.7	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 #: 28578H3a
SDG #: per cover

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: 1
2nd Reviewer: [illegible]

METHOD: GC Pesticides/PCBs (EPA SW 846 Method 8081/8082)

The percent recoveries (%R) and Relative Percent difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100* (SSC-SC)/SA

Where: SSC = Spiked sample concentration; SA = Spike added; SC = Concentration

RPD = I MS - MSD I * 2/(MS + MSD)

MS = Matrix spike percent recovery; MSD = Matrix spike duplicate percent recovery

MS/MSD samples: 4 & 5

Compound	Spike Added (ug/Kg)		Sample Concentration (ug/Kg)	Spiked Sample Concentration (ug/Kg)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	-	MS	MSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
gamma-BHC	7.35	7.35	ND	7.81	8.09	106	106	110	110	4	4
4,4'-DDT	↓	↓	↓	8.42	8.95	115	115	122	122	6	6

Comments: Refer ot 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 #: 28578T3a
SDG #: per cover

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample/Laboratory Control Sample Duplicate Results Verification

Page: 6 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

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: LCS/D 8011

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	6.67	6.67	7.24	7.21	109	109	108	108	0	0
4,4'-DDT	↓	↓	7.92	7.94	119	119	119	119	0	0

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 #: 28578#3a
SDG #: per cover

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: [illegible]
2nd reviewer: A

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. _____ _____:

Conc. = (_____)
( )

=

ND

#	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:	June 4 through June 5, 2012
LDC Report Date:	November 27, 2012
Matrix:	Soil/Water
Parameters:	Herbicides
Validation Level:	Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	12F037

Sample Identification

FB-060512
SL-615-SA5C-SB-4.0-5.0
SL-615-SA5C-SB-9.0-10.0

Introduction

This data review covers 2 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 8151A for Herbicides.

This review follows the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

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

J Indicates an estimated value.

R Quality control indicates the data is not usable.

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

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

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

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

II. Initial Calibration

Initial calibration of compounds was performed for the primary (quantitation) column and confirmation column as required by this method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Retention time windows were evaluated and considered technically acceptable.

III. Calibration Verification

Calibration verification was performed at the 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.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No herbicide contaminants were found in the method blanks.

Sample EB-060712 (from SDG 12F051) was identified as an equipment blank. No herbicide contaminants were found.

Sample FB-060512 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

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 and RLs

All compound quantitation and RLs were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 12F037	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 12F037

SDG	Sample	Compound	Flag	A or P	Reason (Code)
12F037	FB-060512 SL-615-SA5C-SB-4.0-5.0 SL-615-SA5C-SB-9.0-10.0	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (Z)

Santa Susana Field Laboratory
Herbicides - Laboratory Blank Data Qualification Summary - SDG 12F037

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Herbicides - Field Blank Data Qualification Summary - SDG 12F037

No Sample Data Qualified in this SDG

LDC #: 28578H5 **VALIDATION COMPLETENESS WORKSHEET** Date: 11/27/12
SDG #: 12F037 Level IV Page: 6f 7
Laboratory: EMAX Laboratories, Inc. Reviewer: EF
2nd Reviewer: A

METHOD: GC Herbicides (EPA SW 846 Method 8151A)

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

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 6/4 – 6/5/12
II	Initial calibration	A	%RSD ≤ 20
III.	Calibration verification/ICV	A	ICV/CCV ≤ 20
IV.	Blanks	A	
V	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	N	client specified
VII.	Laboratory control samples	A	LCS ID
VIII.	Target compound identification	A	
IX.	Compound quantitation/RL/LOQ/LODs	A	
X.	System Performance	A	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	ND	FB = 1 EB = 060712 SDG # 12F051

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	FB-060512 W	11	MBLK1W	21		31	
2	SL-615-SA5C-SB-4.0-5.0	12	MBLK1S	22		32	
3	SL-615-SA5C-SB-9.0-10.0	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:

.DC #: 28578 #5
SDG #: per cover

VALIDATION FINDINGS CHECKLIST

Reviewer: FM
2nd Reviewer: A

Method: ✓ GC _____ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation?		✓		
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?			✓	
Were the RT windows properly established?	✓			
IV. Continuing calibration				
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20%.0 or percent recoveries 80-120%?	✓			
Were all the retention times within the acceptance windows?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.			✓	
Was a MS/MSD analyzed every 20 samples of each matrix?			✓	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	

LDC #: 28578H5
SDG #: per cover

VALIDATION FINDINGS CHECKLIST

Reviewer: FJ
2nd Reviewer: A

Validation Area	Yes	No	NA	Findings/Comments
X. Target compound identification				
Were the retention times of reported detects within the RT windows?	✓			
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XII. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XV. Field blanks				
Field blanks were identified in this SDG.	✓	✓		
Target compounds were detected in the field blanks.		✓		

LDC #: 28578#5
SDG #: see cover

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: FJ
2nd Reviewer: [illegible]

METHOD: GC ✓ HPLC _____

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

CF = A/C
average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

A = Area of compound,
C = Concentration of compound,
S = Standard deviation of the CF
X = Mean of the CFs

#	Standard ID	Calibration Date	Compound	Reported CF (40std)	Recalculated CF (40std)	Reported Average CF (initial)	Recalculated Average CF (initial)	Reported %RSD	Recalculated %RSD
1	ICAL	6/11/12	2,4-D STX cal1	903	903	818.9	818.9	10.1	10.1
			Dinoseb	2099	2099	1935.8	1935.8	9.3	9.3
			STX cal2	985	985	899.7	899.7	11.2	11.2
2				1872	1872	1790.8	1790.8	4.0	4.0
3									
4									

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

LDC #: 38578#5
SDG #: w cover

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: EJ
2nd Reviewer:

METHOD: GC ✓ HPLC _____

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

% Difference = 100 * (ave. CF - CF)/ave. CF
CF = A/C

Where: ave. CF = initial calibration average CF
CF = continuing calibration CF
A = Area of compound
C = Concentration of compound

#	Standard ID	Calibration Date	Compound	Average CF(ical)/ CCV Conc.	Reported CF/Conc. CCV	Recalculated CF/Conc. CCV	Reported %D	Recalculated %D
1	WF11012A	6/11/12	2,4-D STX-aup1	100	100.34	100.34	0	0
			Dinoseb	100	101.32	101.32	1	1
2	WF11024A	6/11/12	↓	100	99.42	99.42	1	1
				100	95.60	95.60	4	4
3								
4								

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

LDC #: [illegible]

SDG #: see cover

METHOD: ✓ GC ___ HPLC

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: FT

2nd reviewer: [illegible]

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	
2,4-DCPAA	ch A	100	101.82	102	102	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 #: 28578A5
SDG #: all cover

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample/Laboratory Control Sample Duplicate Results Verification

Reviewer: FD
2nd Reviewer: A

METHOD: ✓ GC __HPLC

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
RPD = | LCS - LCSD | * 2/(LCS + LCSD)

Where: SSC = Spiked sample concentration
SA = Spike added
LCS = Laboratory control sample percent recovery
SC = Concentration
LCSD = Laboratory control sample duplicate percent recovery

LCS/LCSD samples: 1051D SOIL

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.
Gasoline (8015)										
Diesel (8015)										
Benzene (8021B)										
Methane (RSK-175)										
2,4-D (8151)	50	50	62.2	58.8	124	124	118	118	6	6
Dinoseb (8151)	50	50	28.4	22.9	57	57	46	46	21	21
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 #: 28528#5
SDG #: [illegible]

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

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

METHOD: ✓ GC __ HPLC

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration= (A)(Fv)(Df) / (RF)(Vs or Ws)(%S/100)

A= Area or height of the compound to be measured
Fv= Final Volume of extract
Df= Dilution Factor
RF= Average response factor of the compound in the initial calibration
Vs= Initial volume of the sample
Ws= Initial weight of the sample
%S= Percent Solid

Example:

Sample ID._____ Compound Name _____

Concentration =_____

ND

#	Sample ID	Compound	Reported Concentrations ( )	Recalculated Results Concentrations ( )	Qualifications

Comments: _____

SAMPLE DELIVERY GROUP

12F044

Attachment I

Sample ID Cross Reference and Data Review Level

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
06-Jun-2012	TB-060612	F044-17	TB	5030B	8015B GRO	III
06-Jun-2012	SL-567-SA5C-SB-0.0-0.5	F044-06	N	3550B	8270C SIM	III
06-Jun-2012	SL-567-SA5C-SB-3.0-4.0	F044-07	N	3550B	8270C SIM	III
06-Jun-2012	SL-546-SA5C-SB-5.0	F044-03	N	5035	8015B GRO	III
06-Jun-2012	SL-546-SA5C-SB-5.0MS	F044-03M	MS	5035	8015B GRO	III
06-Jun-2012	SL-546-SA5C-SB-5.0MSD	F044-03S	MSD	5035	8015B GRO	III
06-Jun-2012	SL-846-SA5C-SB-5.0	F044-12	FD	5035	8015B GRO	III
06-Jun-2012	SL-546-SA5C-SB-0.0-0.5	F044-01	N	3550B	8015B EFH	III
06-Jun-2012	SL-546-SA5C-SB-0.0-0.5	F044-01	N	3550B	8082	III
06-Jun-2012	SL-546-SA5C-SB-0.0-0.5	F044-01	N	3550B	8270C SIM	III
06-Jun-2012	SL-546-SA5C-SB-0.0-0.5	F044-01	N	7471A	7471A	III
06-Jun-2012	SL-546-SA5C-SB-0.0-0.5	F044-01	N	GEN PREP	8015B	III
06-Jun-2012	SL-546-SA5C-SB-0.0-0.5	F044-01	N	GEN PREP	8015M	III
06-Jun-2012	SL-546-SA5C-SB-0.0-0.5	F044-01	N	TOTAL	6020	III
06-Jun-2012	SL-846-SA5C-SB-4.0-5.0	F044-11	FD	3550B	8015B EFH	III
06-Jun-2012	SL-846-SA5C-SB-4.0-5.0	F044-11	FD	3550B	8082	III
06-Jun-2012	SL-846-SA5C-SB-4.0-5.0	F044-11	FD	7471A	7471A	III
06-Jun-2012	SL-846-SA5C-SB-4.0-5.0	F044-11	FD	GEN PREP	8015B	III
06-Jun-2012	SL-846-SA5C-SB-4.0-5.0	F044-11	FD	GEN PREP	8015M	III
06-Jun-2012	SL-846-SA5C-SB-4.0-5.0	F044-11	FD	TOTAL	6020	III
06-Jun-2012	SL-846-SA5C-SB-4.0-5.0	F044-11R	FD	3550B	8270C SIM	III
06-Jun-2012	SL-546-SA5C-SB-4.0-5.0	F044-02	N	3550B	8015B EFH	III
06-Jun-2012	SL-546-SA5C-SB-4.0-5.0	F044-02	N	3550B	8082	III
06-Jun-2012	SL-546-SA5C-SB-4.0-5.0	F044-02	N	3550B	8270C SIM	III
06-Jun-2012	SL-546-SA5C-SB-4.0-5.0	F044-02	N	7471A	7471A	III
06-Jun-2012	SL-546-SA5C-SB-4.0-5.0	F044-02	N	GEN PREP	8015B	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
06-Jun-2012	SL-546-SA5C-SB-4.0-5.0	F044-02	N	GEN PREP	8015M	III
06-Jun-2012	SL-546-SA5C-SB-4.0-5.0	F044-02	N	TOTAL	6020	III
06-Jun-2012	SL-546-SA5C-SB-4.0-5.0MS	F044-02M	MS	3550B	8015B EFH	III
06-Jun-2012	SL-546-SA5C-SB-4.0-5.0MS	F044-02M	MS	3550B	8082	III
06-Jun-2012	SL-546-SA5C-SB-4.0-5.0MS	F044-02M	MS	3550B	8270C SIM	III
06-Jun-2012	SL-546-SA5C-SB-4.0-5.0MS	F044-02M	MS	7471A	7471A	III
06-Jun-2012	SL-546-SA5C-SB-4.0-5.0MS	F044-02M	MS	GEN PREP	8015B	III
06-Jun-2012	SL-546-SA5C-SB-4.0-5.0MS	F044-02M	MS	GEN PREP	8015M	III
06-Jun-2012	SL-546-SA5C-SB-4.0-5.0MS	F044-02M	MS	TOTAL	6020	III
06-Jun-2012	SL-546-SA5C-SB-4.0-5.0MSD	F044-02S	MSD	3550B	8015B EFH	III
06-Jun-2012	SL-546-SA5C-SB-4.0-5.0MSD	F044-02S	MSD	3550B	8082	III
06-Jun-2012	SL-546-SA5C-SB-4.0-5.0MSD	F044-02S	MSD	3550B	8270C SIM	III
06-Jun-2012	SL-546-SA5C-SB-4.0-5.0MSD	F044-02S	MSD	7471A	7471A	III
06-Jun-2012	SL-546-SA5C-SB-4.0-5.0MSD	F044-02S	MSD	GEN PREP	8015B	III
06-Jun-2012	SL-546-SA5C-SB-4.0-5.0MSD	F044-02S	MSD	GEN PREP	8015M	III
06-Jun-2012	SL-546-SA5C-SB-4.0-5.0MSD	F044-02S	MSD	TOTAL	6020	III
06-Jun-2012	SL-546-SA5C-SB-10.0	F044-05	N	5035	8015B GRO	III
06-Jun-2012	SL-546-SA5C-SB-9.0-10.0	F044-04	N	3550B	8015B EFH	III
06-Jun-2012	SL-546-SA5C-SB-9.0-10.0	F044-04	N	3550B	8082	III
06-Jun-2012	SL-546-SA5C-SB-9.0-10.0	F044-04	N	3550B	8270C SIM	III
06-Jun-2012	SL-546-SA5C-SB-9.0-10.0	F044-04	N	7471A	7471A	III
06-Jun-2012	SL-546-SA5C-SB-9.0-10.0	F044-04	N	GEN PREP	8015B	III
06-Jun-2012	SL-546-SA5C-SB-9.0-10.0	F044-04	N	GEN PREP	8015M	III
06-Jun-2012	SL-546-SA5C-SB-9.0-10.0	F044-04	N	TOTAL	6020	III
06-Jun-2012	SL-568-SA5C-SB-0.0-0.5	F044-08	N	3550B	8270C SIM	III
06-Jun-2012	SL-568-SA5C-SB-0.0-0.5	F044-08	N	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
06-Jun-2012	SL-568-SA5C-SB-4.0-5.0	F044-09	N	3550B	8270C SIM	III
06-Jun-2012	SL-568-SA5C-SB-4.0-5.0	F044-09	N	GEN PREP	7199	III
06-Jun-2012	SL-568-SA5C-SB-9.0-10.0	F044-10	N	3550B	8270C SIM	III
06-Jun-2012	SL-568-SA5C-SB-9.0-10.0	F044-10	N	GEN PREP	7199	III
06-Jun-2012	SL-636-SA5C-SB-0.0-0.5	F044-13	N	3550B	8082	III
06-Jun-2012	SL-636-SA5C-SB-0.0-0.5	F044-13I	N	3550B	8082	III
06-Jun-2012	SL-636-SA5C-SB-2.0-3.0	F044-14	N	3550B	8082	III
06-Jun-2012	SL-638-SA5C-SB-0.0-0.5	F044-15	N	3550B	8082	III
06-Jun-2012	SL-638-SA5C-SB-2.0-3.0	F044-16	N	3550B	8082	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 II

Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: 12F044 **Laboratory: EMXT**

EDD Filename: Prep12F044 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: **METALS**

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

Sample ID: **SL-546-SA5C-SB-0.0-0.5** ***Collected:*** **6/6/2012 9:22:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.995**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.279	J	0.112	MDL	0.558	PQL	MG/KG	J	Z
CADMIUM	0.298	J	0.0558	MDL	0.558	PQL	MG/KG	J	Z
MANGANESE	182		0.279	MDL	0.558	PQL	MG/KG	J	E
THALLIUM	0.295	J	0.0558	MDL	0.446	PQL	MG/KG	J	Z

Sample ID: **SL-546-SA5C-SB-4.0-5.0** ***Collected:*** **6/6/2012 9:30:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.995**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.216	J	0.115	MDL	0.577	PQL	MG/KG	J	Z
CADMIUM	0.141	J	0.0577	MDL	0.577	PQL	MG/KG	J	Z, FD
COBALT	5.40		0.0577	MDL	0.577	PQL	MG/KG	J	FD
MANGANESE	198		1.44	MDL	2.89	PQL	MG/KG	J	E, FD
MOLYBDENUM	0.402	J	0.0577	MDL	0.577	PQL	MG/KG	J	Z
NICKEL	11.3		0.231	MDL	0.577	PQL	MG/KG	J	FD
SILVER	0.0624	J	0.0577	MDL	0.577	PQL	MG/KG	J	Z
THALLIUM	0.263	J	0.0577	MDL	0.462	PQL	MG/KG	J	Z

Sample ID: **SL-546-SA5C-SB-9.0-10.0** ***Collected:*** **6/6/2012 9:45:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.990**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.231	J	0.115	MDL	0.574	PQL	MG/KG	J	Z
CADMIUM	0.120	J	0.0574	MDL	0.574	PQL	MG/KG	J	Z
MANGANESE	161		0.287	MDL	0.574	PQL	MG/KG	J	E
MOLYBDENUM	0.393	J	0.0574	MDL	0.574	PQL	MG/KG	J	Z
THALLIUM	0.229	J	0.0574	MDL	0.459	PQL	MG/KG	J	Z

Sample ID: **SL-846-SA5C-SB-4.0-5.0** ***Collected:*** **6/6/2012 9:27:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.948**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.282	J	0.111	MDL	0.555	PQL	MG/KG	J	Z
CADMIUM	0.566		0.0555	MDL	0.555	PQL	MG/KG	J	FD
COBALT	16.6		0.0555	MDL	0.555	PQL	MG/KG	J	FD
MANGANESE	1140		0.278	MDL	0.555	PQL	MG/KG	J	E, FD
NICKEL	24.4		0.222	MDL	0.555	PQL	MG/KG	J	FD
SILVER	0.0715	J	0.0555	MDL	0.555	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12F044 **Laboratory:** EMXT

EDD Filename: Prep12F044 **eQAPP Name:** CDM_SSFL_120730_EMAX

Method Category: METALS

Method: 6020 **Matrix:** SO

Sample ID: SL-846-SA5C-SB-4.0-5.0 **Collected:** 6/6/2012 9:27:00 AM **Analysis Type:** RES/TOT **Dilution:** 0.948

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
THALLIUM	0.404	J	0.0555	MDL	0.444	PQL	MG/KG	J	Z

Method Category: VOA

Method: 8015B GRO **Matrix:** AQ

Sample ID: TB-060612 **Collected:** 6/6/2012 8:00:00 AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
GASOLINE RANGE ORGANICS (C5-C12)	29	J	10	MDL	50	PQL	UG/L	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12F044 **Laboratory: EMXT**

EDD Filename: Prep12F044 **eQAPP Name: CDM_SSFL_120730_EMAX**

Reason Code Legend

Reason Code	*Description*
*XIII	Exceeded Calibration Range
A	ICP Serial Dilution
E	Matrix Spike Precision
FD	Field Duplicate Precision
Q	Matrix Spike Precision
Q	Matrix Spike Upper Estimation
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Enclosure I

Level III ADR Outliers
(including Manual Review Outliers)

Quality Control
Outlier Reports

12F044

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 12F044 **Laboratory: EMXT**

EDD Filename: 12F044 **eQAPP Name: CDM_SSFL_120730_EMAX**

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

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
SL-546-SA5C-SB-4.0-5.0MS (TOT) **SL-546-SA5C-SB-4.0-5.0MSD (TOT)** (SL-546-SA5C-SB-0.0-0.5 SL -546-SA5C-SB-4.0-5.0 SL -546-SA5C-SB-9.0-10.0 SL -846-SA5C-SB-4.0-5.0)	ALUMINUM BARIUM IRON TITANIUM	196 129 160 451	150 187 - 236	75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00	- - - -	ALUMINUM BARIUM IRON TITANIUM	No Qual, >4x
SL-546-SA5C-SB-4.0-5.0MS (TOT) **SL-546-SA5C-SB-4.0-5.0MSD (TOT)** (SL-546-SA5C-SB-0.0-0.5 SL -546-SA5C-SB-4.0-5.0 SL -546-SA5C-SB-9.0-10.0 SL -846-SA5C-SB-4.0-5.0)	MANGANESE	271	1700	75.00-125.00	84 (20.00)	MANGANESE	J(all detects) UJ(all non-detects) No Qual %R, >4x

Project Name and Number: PHASE3 - SSFL PHASE 3

Field Duplicate RPD Report

Lab Reporting Batch ID: 12F044 **Laboratory: EMXT**

EDD Filename: Prep12F044 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 6020
Matrix: SO

Analyte	Concentration (MG/KG)		Sample RPD	eQAPP RPD	Flag
	SL-546-SA5C-SB-4.0-5.0 (TOT)	SL-846-SA5C-SB-4.0-5.0 (TOT)			
ALUMINUM	18300	22600	21	50.00	
ANTIMONY	0.216	0.282	27	50.00	
ARSENIC	4.92	6.22	23	50.00	
BARIUM	151	224	39	50.00	
BERYLLIUM	0.809	0.943	15	50.00	
CALCIUM	3280	3940	18	50.00	
CHROMIUM	21.0	25.7	20	50.00	
COPPER	7.13	10.5	38	50.00	
IRON	23300	26800	14	50.00	
LEAD	6.99	9.74	33	50.00	
LITHIUM	16.5	21.4	26	50.00	
MAGNESIUM	4470	5290	17	50.00	No Qualifiers Applied
MOLYBDENUM	0.402	0.579	36	50.00	
PHOSPHORUS	95.6	120	23	50.00	
POTASSIUM	1720	1880	9	50.00	
SILVER	0.0624	0.0715	14	50.00	
SODIUM	156	175	11	50.00	
STRONTIUM	33.4	41.0	20	50.00	
THALLIUM	0.263	0.404	42	50.00	
TITANIUM	768	732	5	50.00	
VANADIUM	41.3	48.8	17	50.00	
ZINC	43.0	50.9	17	50.00	
CADMIUM	0.141	0.566	120	50.00	
COBALT	5.40	16.6	102	50.00	J(all detects)
MANGANESE	198	1140	141	50.00	
NICKEL	11.3	24.4	73	50.00	

Method: 9045D
Matrix: SO

Analyte	Concentration (PH UNIT)		Sample RPD	eQAPP RPD	Flag
	SL-546-SA5C-SB-4.0-5.0	SL-846-SA5C-SB-4.0-5.0			
PH	7.61	7.38	3		No Qualifiers Applied

Project Name and Number: PHASE3 - SSFL PHASE 3

Reporting Limit Outliers

Lab Reporting Batch ID: 12F044 **Laboratory: EMXT**

EDD Filename: 12F044 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 8015B GRO
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TB-060612	GASOLINE RANGE ORGANICS (C5-C12)	J	29	50	PQL	UG/L	J (all detects)

Method: 6020
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-546-SA5C-SB-0.0-0.5	ANTIMONY	J	0.279	0.558	PQL	MG/KG	
	CADMIUM	J	0.298	0.558	PQL	MG/KG	J (all detects)
	THALLIUM	J	0.295	0.446	PQL	MG/KG	
SL-546-SA5C-SB-4.0-5.0	ANTIMONY	J	0.216	0.577	PQL	MG/KG	
	CADMIUM	J	0.141	0.577	PQL	MG/KG	
	MOLYBDENUM	J	0.402	0.577	PQL	MG/KG	J (all detects)
	SILVER	J	0.0624	0.577	PQL	MG/KG	
	THALLIUM	J	0.263	0.462	PQL	MG/KG	
SL-546-SA5C-SB-9.0-10.0	ANTIMONY	J	0.231	0.574	PQL	MG/KG	
	CADMIUM	J	0.120	0.574	PQL	MG/KG	J (all detects)
	MOLYBDENUM	J	0.393	0.574	PQL	MG/KG	
	THALLIUM	J	0.229	0.459	PQL	MG/KG	
SL-846-SA5C-SB-4.0-5.0	ANTIMONY	J	0.282	0.555	PQL	MG/KG	
	SILVER	J	0.0715	0.555	PQL	MG/KG	J (all detects)
	THALLIUM	J	0.404	0.444	PQL	MG/KG	

LDC #: 28578I4
SDG #: 12F044
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 11-6-12
Page: 1 of 1
Reviewer:
2nd Reviewer:

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

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

	Validation Area		Comments
I.	Technical holding times	✓	Sampling dates:
II.	ICP/MS Tune	✓	
III.	Calibration	✓	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	✓	
VI.	Matrix Spike Analysis	N	MS/D (Al, Ba, Fe, Mn, Ti 74X) → RPD out
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	N	LCS/D
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: EB1-060712 (12F051) ~~EB2-060712~~ FB: FB060512 (12F057)

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-546-SA5C-SB-0.0-0.5	11		21		31	
2	SL-546-SA5C-SB-4.0-5.0	12		22		32	
3	SL-546-SA5C-SB-9.0-10.0	13		23		33	
4	SL-846-SA5C-SB-4.0-5.0	14		24		34	
5	SL-546-SA5C-SB-4.0-5.0MS	15		25		35	
6	SL-546-SA5C-SB-4.0-5.0MSD	16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 28578I4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: AR
2nd Reviewer: [signature]

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

Blank units: ug/L **Associated sample units:** mg/Kg

Sampling date: 6/7/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: All

Analyte	Blank ID	Sample Identification										
	EB1-060712	Action Limit	No Qualifiers									
Al	0.0449	11.225										
B	0.00577	1.4425										
Ca	0.0314	7.85										
Cu	0.00190	0.475										
Na	0.0803	20.075										

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 #: 28578I4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: CR
2nd Reviewer: L

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

Blank units: ug/L **Associated sample units:** mg/Kg

Sampling date: 6/5/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: AllSoil

Analyte	Blank ID	Sample Identification										
	FB-060512	Action Limit	No Qualifiers									
Al	0.0270	6.75										
Ca	0.0263	6.575										
Cu	0.000954	0.2385										

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 #: 29578

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Reviewer: APL
2nd Reviewer: A

METHOD: GC SW 8410 Method 8082 PCBs

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

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

Y N N/A Was the overall quality and usability of the data acceptable?

#	Date	Sample ID	Finding	Associated Samples	Qualifications
		SL-636-SA5C-SB-0.0-0.5 RES	Aroclor 1260 exceeded Calib. Range		J/A
		SL-636-SA5C-SB-0.0-0.5 DL	All except Aroclor 1260		

Comments: _____

SAMPLE DELIVERY GROUP

12F051

Attachment I

Sample ID Cross Reference and Data Review Level

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
06-Jun-2012	SL-639-SA5C-SB-0.0-0.5	F051-05	N	3550B	8082	III
06-Jun-2012	SL-637-SA5C-SB-0.0-0.5	F051-03	N	3550B	8082	III
06-Jun-2012	SL-637-SA5C-SB-2.0-3.0	F051-04	N	3550B	8082	III
07-Jun-2012	TB-060712	F051-28	TB	5030B	8015B GRO	III
07-Jun-2012	SL-559-SA5C-SB-3.0	F051-20	N	5035	8015B GRO	III
07-Jun-2012	SL-559-SA5C-SB-8.0	F051-22	N	5035	8015B GRO	III
07-Jun-2012	SL-559-SA5C-SB-0.0-0.5	F051-18	N	3550B	8015B EFH	III
07-Jun-2012	SL-559-SA5C-SB-0.0-0.5	F051-18	N	3550B	8082	III
07-Jun-2012	SL-559-SA5C-SB-0.0-0.5	F051-18	N	3550B	8270C SIM	III
07-Jun-2012	SL-559-SA5C-SB-0.0-0.5	F051-18	N	7471A	7471A	III
07-Jun-2012	SL-559-SA5C-SB-0.0-0.5	F051-18	N	GEN PREP	8015B	III
07-Jun-2012	SL-559-SA5C-SB-0.0-0.5	F051-18	N	GEN PREP	8015M	III
07-Jun-2012	SL-559-SA5C-SB-0.0-0.5	F051-18	N	TOTAL	6020	III
07-Jun-2012	SL-559-SA5C-SB-0.0-0.5MS	F051-18M	MS	7471A	7471A	III
07-Jun-2012	SL-559-SA5C-SB-0.0-0.5MSD	F051-18S	MSD	7471A	7471A	III
07-Jun-2012	SL-559-SA5C-SB-2.0-3.0	F051-19	N	3550B	8015B EFH	III
07-Jun-2012	SL-559-SA5C-SB-2.0-3.0	F051-19	N	3550B	8082	III
07-Jun-2012	SL-559-SA5C-SB-2.0-3.0	F051-19	N	3550B	8270C SIM	III
07-Jun-2012	SL-559-SA5C-SB-2.0-3.0	F051-19	N	7471A	7471A	III
07-Jun-2012	SL-559-SA5C-SB-2.0-3.0	F051-19	N	GEN PREP	8015B	III
07-Jun-2012	SL-559-SA5C-SB-2.0-3.0	F051-19	N	GEN PREP	8015M	III
07-Jun-2012	SL-559-SA5C-SB-2.0-3.0	F051-19	N	TOTAL	6020	III
07-Jun-2012	SL-559-SA5C-SB-7.0-8.0	F051-21	N	3550B	8015B EFH	III
07-Jun-2012	SL-559-SA5C-SB-7.0-8.0	F051-21	N	3550B	8082	III
07-Jun-2012	SL-559-SA5C-SB-7.0-8.0	F051-21	N	7471A	7471A	III
07-Jun-2012	SL-559-SA5C-SB-7.0-8.0	F051-21	N	GEN PREP	8015B	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-Jun-2012	SL-559-SA5C-SB-7.0-8.0	F051-21	N	GEN PREP	8015M	III
07-Jun-2012	SL-559-SA5C-SB-7.0-8.0	F051-21	N	TOTAL	6020	III
07-Jun-2012	SL-559-SA5C-SB-7.0-8.0MS	F051-21M	MS	3550B	8270C SIM	III
07-Jun-2012	SL-559-SA5C-SB-7.0-8.0	F051-21R	N	3550B	8270C SIM	III
07-Jun-2012	SL-559-SA5C-SB-7.0-8.0MSD	F051-21S	MSD	3550B	8270C SIM	III
07-Jun-2012	SL-537-SA5C-SB-0.0-0.5	F051-06	N	3550B	8015B EFH	III
07-Jun-2012	SL-537-SA5C-SB-0.0-0.5	F051-06	N	3550B	8082	III
07-Jun-2012	SL-537-SA5C-SB-0.0-0.5	F051-06	N	3550B	8270C SIM	III
07-Jun-2012	SL-537-SA5C-SB-0.0-0.5	F051-06	N	7471A	7471A	III
07-Jun-2012	SL-537-SA5C-SB-0.0-0.5	F051-06	N	GEN PREP	8015B	III
07-Jun-2012	SL-537-SA5C-SB-0.0-0.5	F051-06	N	GEN PREP	8015M	III
07-Jun-2012	SL-537-SA5C-SB-0.0-0.5	F051-06	N	TOTAL	6020	III
07-Jun-2012	SL-537-SA5C-SB-4.0-5.0	F051-07	N	3550B	8015B EFH	III
07-Jun-2012	SL-537-SA5C-SB-4.0-5.0	F051-07	N	3550B	8082	III
07-Jun-2012	SL-537-SA5C-SB-4.0-5.0	F051-07	N	3550B	8270C SIM	III
07-Jun-2012	SL-537-SA5C-SB-4.0-5.0	F051-07	N	7471A	7471A	III
07-Jun-2012	SL-537-SA5C-SB-4.0-5.0	F051-07	N	GEN PREP	8015B	III
07-Jun-2012	SL-537-SA5C-SB-4.0-5.0	F051-07	N	GEN PREP	8015M	III
07-Jun-2012	SL-537-SA5C-SB-4.0-5.0	F051-07	N	TOTAL	6020	III
07-Jun-2012	SL-537-SA5C-SB-5.0	F051-08	N	5035	8015B GRO	III
07-Jun-2012	SL-537-SA5C-SB-9.0-10.0	F051-09	N	3550B	8015B EFH	III
07-Jun-2012	SL-537-SA5C-SB-9.0-10.0	F051-09	N	3550B	8082	III
07-Jun-2012	SL-537-SA5C-SB-9.0-10.0	F051-09	N	7471A	7471A	III
07-Jun-2012	SL-537-SA5C-SB-9.0-10.0	F051-09	N	GEN PREP	8015B	III
07-Jun-2012	SL-537-SA5C-SB-9.0-10.0	F051-09	N	GEN PREP	8015M	III
07-Jun-2012	SL-537-SA5C-SB-9.0-10.0	F051-09	N	TOTAL	6020	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-Jun-2012	SL-537-SA5C-SB-9.0-10.0	F051-09R	N	3550B	8270C SIM	III
07-Jun-2012	SL-537-SA5C-SB-10.0	F051-10	N	5035	8015B GRO	III
07-Jun-2012	SL-548-SA5C-SB-5.0	F051-16	N	5035	8015B GRO	III
07-Jun-2012	SL-548-SA5C-SB-4.0-5.0	F051-15	N	3550B	8015B EFH	III
07-Jun-2012	SL-548-SA5C-SB-4.0-5.0	F051-15	N	3550B	8082	III
07-Jun-2012	SL-548-SA5C-SB-4.0-5.0	F051-15	N	3550B	8270C SIM	III
07-Jun-2012	SL-548-SA5C-SB-4.0-5.0	F051-15	N	7471A	7471A	III
07-Jun-2012	SL-548-SA5C-SB-4.0-5.0	F051-15	N	GEN PREP	7199	III
07-Jun-2012	SL-548-SA5C-SB-4.0-5.0	F051-15	N	GEN PREP	8015B	III
07-Jun-2012	SL-548-SA5C-SB-4.0-5.0	F051-15	N	GEN PREP	8015M	III
07-Jun-2012	SL-548-SA5C-SB-4.0-5.0	F051-15	N	TOTAL	6020	III
07-Jun-2012	SL-548-SA5C-SB-10.0	F051-17	N	5035	8015B GRO	III
07-Jun-2012	SL-548-SA5C-SB-9.0-10.0	F051-23	N	3550B	8015B EFH	III
07-Jun-2012	SL-548-SA5C-SB-9.0-10.0	F051-23	N	3550B	8082	III
07-Jun-2012	SL-548-SA5C-SB-9.0-10.0	F051-23	N	3550B	8270C SIM	III
07-Jun-2012	SL-548-SA5C-SB-9.0-10.0	F051-23	N	7471A	7471A	III
07-Jun-2012	SL-548-SA5C-SB-9.0-10.0	F051-23	N	GEN PREP	7199	III
07-Jun-2012	SL-548-SA5C-SB-9.0-10.0	F051-23	N	GEN PREP	8015M	III
07-Jun-2012	SL-548-SA5C-SB-9.0-10.0	F051-23	N	TOTAL	6020	III
07-Jun-2012	SL-548-SA5C-SB-9.0-10.0MS	F051-23M	MS	3550B	8082	III
07-Jun-2012	SL-548-SA5C-SB-9.0-10.0	F051-23W	N	GEN PREP	8015B	III
07-Jun-2012	SL-547-SA5C-SB-10.0	F051-14	N	5035	8015B GRO	III
07-Jun-2012	SL-547-SA5C-SB-9.0-10.0	F051-13	N	3550B	8015B EFH	III
07-Jun-2012	SL-547-SA5C-SB-9.0-10.0	F051-13	N	3550B	8082	III
07-Jun-2012	SL-547-SA5C-SB-9.0-10.0	F051-13	N	3550B	8270C SIM	III
07-Jun-2012	SL-547-SA5C-SB-9.0-10.0	F051-13	N	7471A	7471A	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-Jun-2012	SL-547-SA5C-SB-9.0-10.0	F051-13	N	GEN PREP	7199	III
07-Jun-2012	SL-547-SA5C-SB-9.0-10.0	F051-13	N	GEN PREP	8015B	III
07-Jun-2012	SL-547-SA5C-SB-9.0-10.0	F051-13	N	GEN PREP	8015M	III
07-Jun-2012	SL-547-SA5C-SB-9.0-10.0	F051-13	N	TOTAL	6020	III
07-Jun-2012	SL-547-SA5C-SB-5.0	F051-12	N	5035	8015B GRO	III
07-Jun-2012	SL-547-SA5C-SB-4.0-5.0	F051-11	N	3550B	8015B EFH	III
07-Jun-2012	SL-547-SA5C-SB-4.0-5.0	F051-11	N	3550B	8082	III
07-Jun-2012	SL-547-SA5C-SB-4.0-5.0	F051-11	N	3550B	8270C SIM	III
07-Jun-2012	SL-547-SA5C-SB-4.0-5.0	F051-11	N	7471A	7471A	III
07-Jun-2012	SL-547-SA5C-SB-4.0-5.0	F051-11	N	GEN PREP	7199	III
07-Jun-2012	SL-547-SA5C-SB-4.0-5.0	F051-11	N	GEN PREP	8015B	III
07-Jun-2012	SL-547-SA5C-SB-4.0-5.0	F051-11	N	GEN PREP	8015M	III
07-Jun-2012	SL-547-SA5C-SB-4.0-5.0	F051-11	N	TOTAL	6020	III
07-Jun-2012	SL-571-SA5C-SB-5.0	F051-25	N	5035	8015B GRO	III
07-Jun-2012	SL-571-SA5C-SB-4.0-5.0	F051-24	N	3550B	8015B EFH	III
07-Jun-2012	SL-571-SA5C-SB-4.0-5.0	F051-24	N	7471A	7471A	III
07-Jun-2012	SL-571-SA5C-SB-4.0-5.0	F051-24	N	GEN PREP	6850	III
07-Jun-2012	SL-571-SA5C-SB-4.0-5.0	F051-24	N	GEN PREP	8015B	III
07-Jun-2012	SL-571-SA5C-SB-4.0-5.0	F051-24	N	GEN PREP	8015M	III
07-Jun-2012	SL-571-SA5C-SB-4.0-5.0	F051-24	N	TOTAL	6020	III
07-Jun-2012	SL-571-SA5C-SB-10.0	F051-27	N	5035	8015B GRO	III
07-Jun-2012	SL-571-SA5C-SB-9.0-10.0	F051-26	N	3550B	8015B EFH	III
07-Jun-2012	SL-571-SA5C-SB-9.0-10.0	F051-26	N	7471A	7471A	III
07-Jun-2012	SL-571-SA5C-SB-9.0-10.0	F051-26	N	GEN PREP	6850	III
07-Jun-2012	SL-571-SA5C-SB-9.0-10.0	F051-26	N	GEN PREP	8015B	III
07-Jun-2012	SL-571-SA5C-SB-9.0-10.0	F051-26	N	GEN PREP	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
07-Jun-2012	SL-571-SA5C-SB-9.0-10.0	F051-26	N	TOTAL	6020	III
07-Jun-2012	SL-571-SA5C-SB-9.0-10.0MS	F051-26M	MS	TOTAL	6020	III
07-Jun-2012	EB2-060712	F051-02	EB	3520C	8015B EFH	III
07-Jun-2012	EB2-060712	F051-02	EB	3520C	8082	III
07-Jun-2012	EB2-060712	F051-02	EB	3520C	8270C SIM	III
07-Jun-2012	EB2-060712	F051-02	EB	5030B	8015B GRO	III
07-Jun-2012	EB2-060712	F051-02	EB	7470A	7470A	III
07-Jun-2012	EB2-060712	F051-02	EB	GEN PREP	8015B	III
07-Jun-2012	EB2-060712	F051-02	EB	GEN PREP	8015M	III
07-Jun-2012	EB2-060712	F051-02	EB	TOTAL	6020	III
07-Jun-2012	EB1-060712	F051-01	EB	3520C	8015B EFH	III
07-Jun-2012	EB1-060712	F051-01	EB	3520C	8081A	III
07-Jun-2012	EB1-060712	F051-01	EB	3520C	8082	III
07-Jun-2012	EB1-060712	F051-01	EB	3520C	8270C SIM	III
07-Jun-2012	EB1-060712	F051-01	EB	5030B	8015B GRO	III
07-Jun-2012	EB1-060712	F051-01	EB	7470A	7470A	III
07-Jun-2012	EB1-060712	F051-01	EB	GEN PREP	6850	III
07-Jun-2012	EB1-060712	F051-01	EB	GEN PREP	7199	III
07-Jun-2012	EB1-060712	F051-01	EB	GEN PREP	8015B	III
07-Jun-2012	EB1-060712	F051-01	EB	GEN PREP	8015M	III
07-Jun-2012	EB1-060712	F051-01	EB	GEN PREP	8151A	III
07-Jun-2012	EB1-060712	F051-01	EB	TOTAL	6020	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 II

Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: 12F051 **Laboratory: EMXT**

EDD Filename: 12F051 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: EB1-060712 *Collected:* 6/7/2012 3:00:00 PM *Analysis Type:* RES/TOT *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	0.0449	J	0.0200	MDL	0.100	PQL	MG/L	J	Z
BORON	0.00577	J	0.00500	MDL	0.0100	PQL	MG/L	J	Z
CALCIUM	0.0314	J	0.0250	MDL	0.100	PQL	MG/L	J	Z
SODIUM	0.0803	J	0.0500	MDL	0.100	PQL	MG/L	J	Z

Sample ID: EB2-060712 *Collected:* 6/7/2012 2:30:00 PM *Analysis Type:* RES/TOT *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	0.000605	J	0.000500	MDL	0.00100	PQL	MG/L	J	Z
BORON	0.00592	J	0.00500	MDL	0.0100	PQL	MG/L	J	Z
CALCIUM	0.0496	J	0.0250	MDL	0.100	PQL	MG/L	J	Z
MANGANESE	0.000211	J	0.000200	MDL	0.00100	PQL	MG/L	J	Z
NICKEL	0.000336	J	0.000200	MDL	0.00100	PQL	MG/L	J	Z

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: SL-537-SA5C-SB-0.0-0.5 *Collected:* 6/7/2012 9:20:00 AM *Analysis Type:* RES/TOT *Dilution:* 0.962

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.264	J	0.109	MDL	0.546	PQL	MG/KG	J	Z, Q
CADMIUM	0.301	J	0.0546	MDL	0.546	PQL	MG/KG	J	Z
SELENIUM	0.253	J	0.218	MDL	0.546	PQL	MG/KG	J	Z
SILVER	0.0805	J	0.0546	MDL	0.546	PQL	MG/KG	J	Z
THALLIUM	0.341	J	0.0546	MDL	0.437	PQL	MG/KG	J	Z

Sample ID: SL-537-SA5C-SB-4.0-5.0 *Collected:* 6/7/2012 9:45:00 AM *Analysis Type:* RES/TOT *Dilution:* 0.957

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.220	J	0.111	MDL	0.555	PQL	MG/KG	J	Z, Q
CADMIUM	0.254	J	0.0555	MDL	0.555	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12F051 **Laboratory: EMXT**

EDD Filename: 12F051 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: **SL-537-SA5C-SB-4.0-5.0** ***Collected:*** **6/7/2012 9:45:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.957**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.321	J	0.0555	MDL	0.555	PQL	MG/KG	J	Z
SILVER	0.0797	J	0.0555	MDL	0.555	PQL	MG/KG	J	Z
THALLIUM	0.294	J	0.0555	MDL	0.444	PQL	MG/KG	J	Z
Zirconium	3.64	J	2.78	MDL	5.55	PQL	MG/KG	J	Z

Sample ID: **SL-537-SA5C-SB-9.0-10.0** ***Collected:*** **6/7/2012 10:10:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.957**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.207	J	0.111	MDL	0.556	PQL	MG/KG	J	Z, Q
CADMIUM	0.153	J	0.0556	MDL	0.556	PQL	MG/KG	J	Z
MOLYBDENUM	0.279	J	0.0556	MDL	0.556	PQL	MG/KG	J	Z
THALLIUM	0.226	J	0.0556	MDL	0.445	PQL	MG/KG	J	Z

Sample ID: **SL-547-SA5C-SB-4.0-5.0** ***Collected:*** **6/7/2012 12:00:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1.00**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.213	J	0.111	MDL	0.553	PQL	MG/KG	J	Z, Q
CADMIUM	0.208	J	0.0553	MDL	0.553	PQL	MG/KG	J	Z
MOLYBDENUM	0.432	J	0.0553	MDL	0.553	PQL	MG/KG	J	Z
THALLIUM	0.201	J	0.0553	MDL	0.442	PQL	MG/KG	J	Z

Sample ID: **SL-547-SA5C-SB-9.0-10.0** ***Collected:*** **6/7/2012 11:44:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.966**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.183	J	0.105	MDL	0.523	PQL	MG/KG	J	Z, Q
BERYLLIUM	0.513	J	0.0523	MDL	0.523	PQL	MG/KG	J	Z
CADMIUM	0.201	J	0.0523	MDL	0.523	PQL	MG/KG	J	Z
SELENIUM	0.313	J	0.209	MDL	0.523	PQL	MG/KG	J	Z
THALLIUM	0.196	J	0.0523	MDL	0.419	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12F051 **Laboratory: EMXT**

EDD Filename: 12F051 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: **SL-548-SA5C-SB-4.0-5.0** ***Collected:*** **6/7/2012 10:42:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.980**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.260	J	0.113	MDL	0.565	PQL	MG/KG	J	Z, Q
CADMIUM	0.228	J	0.0565	MDL	0.565	PQL	MG/KG	J	Z
MOLYBDENUM	0.440	J	0.0565	MDL	0.565	PQL	MG/KG	J	Z
SILVER	0.0767	J	0.0565	MDL	0.565	PQL	MG/KG	J	Z
THALLIUM	0.261	J	0.0565	MDL	0.452	PQL	MG/KG	J	Z

Sample ID: **SL-548-SA5C-SB-9.0-10.0** ***Collected:*** **6/7/2012 10:53:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.995**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.412	J	0.113	MDL	0.563	PQL	MG/KG	J	Z, Q
CADMIUM	0.243	J	0.0563	MDL	0.563	PQL	MG/KG	J	Z
SILVER	0.0970	J	0.0563	MDL	0.563	PQL	MG/KG	J	Z
THALLIUM	0.286	J	0.0563	MDL	0.451	PQL	MG/KG	J	Z

Sample ID: **SL-559-SA5C-SB-0.0-0.5** ***Collected:*** **6/7/2012 8:35:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.971**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.302	J	0.113	MDL	0.565	PQL	MG/KG	J	Z, Q
MOLYBDENUM	0.532	J	0.0565	MDL	0.565	PQL	MG/KG	J	Z
SODIUM	106	J	56.5	MDL	113	PQL	MG/KG	J	Z
THALLIUM	0.236	J	0.0565	MDL	0.452	PQL	MG/KG	J	Z

Sample ID: **SL-559-SA5C-SB-2.0-3.0** ***Collected:*** **6/7/2012 8:40:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1.00**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.229	J	0.117	MDL	0.585	PQL	MG/KG	J	Z, Q
CADMIUM	0.183	J	0.0585	MDL	0.585	PQL	MG/KG	J	Z
MOLYBDENUM	0.450	J	0.0585	MDL	0.585	PQL	MG/KG	J	Z
THALLIUM	0.233	J	0.0585	MDL	0.468	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12F051 **Laboratory: EMXT**

EDD Filename: 12F051 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: SL-559-SA5C-SB-7.0-8.0 *Collected:* 6/7/2012 8:45:00 AM *Analysis Type:* RES/TOT *Dilution:* 0.962

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.175	J	0.111	MDL	0.555	PQL	MG/KG	J	Z, Q
CADMIUM	0.129	J	0.0555	MDL	0.555	PQL	MG/KG	J	Z
MOLYBDENUM	0.310	J	0.0555	MDL	0.555	PQL	MG/KG	J	Z
THALLIUM	0.228	J	0.0555	MDL	0.444	PQL	MG/KG	J	Z

Sample ID: SL-571-SA5C-SB-4.0-5.0 *Collected:* 6/7/2012 2:02:00 PM *Analysis Type:* RES/TOT *Dilution:* 0.962

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.335	J	0.108	MDL	0.538	PQL	MG/KG	J	Z, Q
CADMIUM	0.344	J	0.0538	MDL	0.538	PQL	MG/KG	J	Z
THALLIUM	0.253	J	0.0538	MDL	0.430	PQL	MG/KG	J	Z

Sample ID: SL-571-SA5C-SB-9.0-10.0 *Collected:* 6/7/2012 2:10:00 PM *Analysis Type:* RES/TOT *Dilution:* 0.995

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.244	J	0.112	MDL	0.558	PQL	MG/KG	J	Z, Q
CADMIUM	0.141	J	0.0558	MDL	0.558	PQL	MG/KG	J	Z
THALLIUM	0.273	J	0.0558	MDL	0.446	PQL	MG/KG	J	Z

Method Category: SVOA

Method: 8082 **Matrix: SO**

Sample ID: SL-559-SA5C-SB-0.0-0.5 *Collected:* 6/7/2012 8:35:00 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
AROCLOR 1260	17	J	12	MDL	23	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12F051 **Laboratory: EMXT**

EDD Filename: 12F051 **eQAPP Name; CDM_SSFL_120730_EMAX**

Method Category: SVOA

Method: 8270C SIM **Matrix: SO**

Sample ID:*SL-537-SA5C-SB-0.0-0.5** ***Collected: 6/7/2012 9:20:00 AM ***Analysis Type:*** RES-BASE/NEUTRAL ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)ANTHRACENE	4.1	J	2.8	MDL	11	PQL	UG/KG	J	Z
BENZO(A)PYRENE	3.8	J	2.8	MDL	11	PQL	UG/KG	J	Z
BENZO(B)FLUORANTHENE	4.5	J	2.8	MDL	11	PQL	UG/KG	J	Z
CHRYSENE	3.5	J	2.8	MDL	11	PQL	UG/KG	J	Z
FLUORANTHENE	8.8	J	2.8	MDL	11	PQL	UG/KG	J	Z
PHENANTHRENE	5.0	J	2.8	MDL	11	PQL	UG/KG	J	Z
PYRENE	8.6	J	2.8	MDL	11	PQL	UG/KG	J	Z

Sample ID:*SL-548-SA5C-SB-9.0-10.0** ***Collected: 6/7/2012 10:53:00 ***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	3.5	J	2.8	MDL	11	PQL	UG/KG	J	Z
FLUORANTHENE	6.0	J	2.8	MDL	11	PQL	UG/KG	J	Z
PHENANTHRENE	4.8	J	2.8	MDL	11	PQL	UG/KG	J	Z
PYRENE	6.2	J	2.8	MDL	11	PQL	UG/KG	J	Z

Sample ID:*SL-559-SA5C-SB-0.0-0.5** ***Collected: 6/7/2012 8:35:00 AM ***Analysis Type:*** RES-BASE/NEUTRAL ***Dilution:*** 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)ANTHRACENE	15	J	5.8	MDL	23	PQL	UG/KG	J	Z
BENZO(A)PYRENE	6.8	J	5.8	MDL	23	PQL	UG/KG	J	Z
BENZO(B)FLUORANTHENE	9.9	J	5.8	MDL	23	PQL	UG/KG	J	Z
BENZO(E)PYRENE	10	J	5.8	MDL	12	PQL	UG/KG	J	Z
BENZO(K)FLUORANTHENE	7.2	J	5.8	MDL	23	PQL	UG/KG	J	Z
FLUORANTHENE	6.0	J	5.8	MDL	23	PQL	UG/KG	J	Z
PYRENE	7.2	J	5.8	MDL	23	PQL	UG/KG	J	Z

Sample ID:*SL-559-SA5C-SB-2.0-3.0** ***Collected: 6/7/2012 8:40:00 AM ***Analysis Type:*** RES-BASE/NEUTRAL ***Dilution:*** 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)ANTHRACENE	8.4	J	5.9	MDL	23	PQL	UG/KG	J	Z
BENZO(B)FLUORANTHENE	6.7	J	5.9	MDL	23	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12F051 **Laboratory: EMXT**

EDD Filename: 12F051 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: **SVOA**

Method: **8270C SIM** ***Matrix:*** **SO**

Sample ID: **SL-559-SA5C-SB-2.0-3.0** ***Collected:*** **6/7/2012 8:40:00 AM** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(E)PYRENE	7.4	J	5.9	MDL	12	PQL	UG/KG	J	Z

Method Category: **VOA**

Method: **8015B GRO** ***Matrix:*** **AQ**

Sample ID: **EB1-060712** ***Collected:*** **6/7/2012 3:00:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
GASOLINE RANGE ORGANICS (C5-C12)	18	J	10	MDL	50	PQL	UG/L	J	Z

Sample ID: **EB2-060712** ***Collected:*** **6/7/2012 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
GASOLINE RANGE ORGANICS (C5-C12)	20	J	10	MDL	50	PQL	UG/L	J	Z

Sample ID: **TB-060712** ***Collected:*** **6/7/2012 8:00:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
GASOLINE RANGE ORGANICS (C5-C12)	23	J	10	MDL	50	PQL	UG/L	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12F051 **Laboratory: EMXT**

EDD Filename: 12F051 **eQAPP Name: CDM_SSFL_120730_EMAX**

Reason Code Legend

Reason Code	*Description*
Q	Matrix Spike Lower Estimation
Q	Matrix Spike Upper Estimation
S	Surrogate/Tracer Recovery Lower Estimation
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Enclosure I

Level III ADR Outliers
(including Manual Review Outliers)

Quality Control
Outlier Reports

12F051

Surrogate Outlier Report

Lab Reporting Batch ID: 12F051 **Laboratory: EMXT**

EDD Filename: 12F051 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 8270C SIM
Matrix: SO

Sample ID (Analysis Type)	Surrogate	Sample % Recovery	% Recovery Limits	Affected Compounds	Flag
SL-547-SA5C-SB-4.0-5.0	2-FLUOROBIPHENYL	41.8	45.00-130.00	No Affected Compounds	
SL-559-SA5C-SB-0.0-0.5	2-FLUOROBIPHENYL	40.7	45.00-130.00	No Affected Compounds	
SL-559-SA5C-SB-2.0-3.0	2-FLUOROBIPHENYL	38.2	45.00-130.00	No Affected Compounds	

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 12F051 **Laboratory: EMXT**

EDD Filename: 12F051 **eQAPP Name: CDM_SSFL_120730_EMAX**

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

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
SL-571-SA5C-SB-9.0-10.0MS (TOT) **SL-571-SA5C-SB-9.0-10.0MSD (TOT)** (SL-537-SA5C-SB-0.0-0.5 SL-537-SA5C-SB-4.0-5.0 SL-537-SA5C-SB-9.0-10.0 SL-547-SA5C-SB-4.0-5.0 SL-547-SA5C-SB-9.0-10.0 SL-548-SA5C-SB-4.0-5.0 SL-548-SA5C-SB-9.0-10.0 SL-559-SA5C-SB-0.0-0.5 SL-559-SA5C-SB-2.0-3.0 SL-559-SA5C-SB-7.0-8.0 SL-571-SA5C-SB-4.0-5.0 SL-571-SA5C-SB-9.0-10.0)	ALUMINUM IRON MANGANESE TITANIUM	166 - - 423	165 179 127 425	75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00	- - - -	ALUMINUM IRON MANGANESE TITANIUM	No Qual, >4x
SL-571-SA5C-SB-9.0-10.0MSD (TOT) (SL-537-SA5C-SB-0.0-0.5 SL-537-SA5C-SB-4.0-5.0 SL-537-SA5C-SB-9.0-10.0 SL-547-SA5C-SB-4.0-5.0 SL-547-SA5C-SB-9.0-10.0 SL-548-SA5C-SB-4.0-5.0 SL-548-SA5C-SB-9.0-10.0 SL-559-SA5C-SB-0.0-0.5 SL-559-SA5C-SB-2.0-3.0 SL-559-SA5C-SB-7.0-8.0 SL-571-SA5C-SB-4.0-5.0 SL-571-SA5C-SB-9.0-10.0)	ANTIMONY	-	74	75.00-125.00	-	ANTIMONY	J(all detects) UJ(all non-detects)

Project Name and Number: PHASE3 - SSFL PHASE 3

Reporting Limit Outliers

Lab Reporting Batch ID: 12F051 **Laboratory: EMXT**

EDD Filename: 12F051 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 6020
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB1-060712	ALUMINUM	J	0.0449	0.100	PQL	MG/L	J (all detects)
	BORON	J	0.00577	0.0100	PQL	MG/L	
	CALCIUM	J	0.0314	0.100	PQL	MG/L	
	SODIUM	J	0.0803	0.100	PQL	MG/L	
EB2-060712	BARIUM	J	0.000605	0.00100	PQL	MG/L	J (all detects)
	BORON	J	0.00592	0.0100	PQL	MG/L	
	CALCIUM	J	0.0496	0.100	PQL	MG/L	
	MANGANESE	J	0.000211	0.00100	PQL	MG/L	
	NICKEL	J	0.000336	0.00100	PQL	MG/L	

Method: 8015B GRO
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB1-060712	GASOLINE RANGE ORGANICS (C5-C12)	J	18	50	PQL	UG/L	J (all detects)
EB2-060712	GASOLINE RANGE ORGANICS (C5-C12)	J	20	50	PQL	UG/L	J (all detects)
TB-060712	GASOLINE RANGE ORGANICS (C5-C12)	J	23	50	PQL	UG/L	J (all detects)

Method: 6020
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-537-SA5C-SB-0.0-0.5	ANTIMONY	J	0.264	0.546	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.301	0.546	PQL	MG/KG	
	SELENIUM	J	0.253	0.546	PQL	MG/KG	
	SILVER	J	0.0805	0.546	PQL	MG/KG	
	THALLIUM	J	0.341	0.437	PQL	MG/KG	
SL-537-SA5C-SB-4.0-5.0	ANTIMONY	J	0.220	0.555	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.254	0.555	PQL	MG/KG	
	MOLYBDENUM	J	0.321	0.555	PQL	MG/KG	
	SILVER	J	0.0797	0.555	PQL	MG/KG	
	THALLIUM	J	0.294	0.444	PQL	MG/KG	
	Zirconium	J	3.64	5.55	PQL	MG/KG	
SL-537-SA5C-SB-9.0-10.0	ANTIMONY	J	0.207	0.556	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.153	0.556	PQL	MG/KG	
	MOLYBDENUM	J	0.279	0.556	PQL	MG/KG	
	THALLIUM	J	0.226	0.445	PQL	MG/KG	
SL-547-SA5C-SB-4.0-5.0	ANTIMONY	J	0.213	0.553	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.208	0.553	PQL	MG/KG	
	MOLYBDENUM	J	0.432	0.553	PQL	MG/KG	
	THALLIUM	J	0.201	0.442	PQL	MG/KG	
SL-547-SA5C-SB-9.0-10.0	ANTIMONY	J	0.183	0.523	PQL	MG/KG	J (all detects)
	BERYLLIUM	J	0.513	0.523	PQL	MG/KG	
	CADMIUM	J	0.201	0.523	PQL	MG/KG	
	SELENIUM	J	0.313	0.523	PQL	MG/KG	
	THALLIUM	J	0.196	0.419	PQL	MG/KG	

Project Name and Number: PHASE3 - SSFL PHASE 3

Reporting Limit Outliers

Lab Reporting Batch ID: 12F051 **Laboratory: EMXT**

EDD Filename: 12F051 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 6020

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-548-SA5C-SB-4.0-5.0	ANTIMONY	J	0.260	0.565	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.228	0.565	PQL	MG/KG	
	MOLYBDENUM	J	0.440	0.565	PQL	MG/KG	
	SILVER	J	0.0767	0.565	PQL	MG/KG	
	THALLIUM	J	0.261	0.452	PQL	MG/KG	
SL-548-SA5C-SB-9.0-10.0	ANTIMONY	J	0.412	0.563	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.243	0.563	PQL	MG/KG	
	SILVER	J	0.0970	0.563	PQL	MG/KG	
	THALLIUM	J	0.286	0.451	PQL	MG/KG	
SL-559-SA5C-SB-0.0-0.5	ANTIMONY	J	0.302	0.565	PQL	MG/KG	J (all detects)
	MOLYBDENUM	J	0.532	0.565	PQL	MG/KG	
	SODIUM	J	106	113	PQL	MG/KG	
	THALLIUM	J	0.236	0.452	PQL	MG/KG	
SL-559-SA5C-SB-2.0-3.0	ANTIMONY	J	0.229	0.585	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.183	0.585	PQL	MG/KG	
	MOLYBDENUM	J	0.450	0.585	PQL	MG/KG	
	THALLIUM	J	0.233	0.468	PQL	MG/KG	
SL-559-SA5C-SB-7.0-8.0	ANTIMONY	J	0.175	0.555	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.129	0.555	PQL	MG/KG	
	MOLYBDENUM	J	0.310	0.555	PQL	MG/KG	
	THALLIUM	J	0.228	0.444	PQL	MG/KG	
SL-571-SA5C-SB-4.0-5.0	ANTIMONY	J	0.335	0.538	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.344	0.538	PQL	MG/KG	
	THALLIUM	J	0.253	0.430	PQL	MG/KG	
SL-571-SA5C-SB-9.0-10.0	ANTIMONY	J	0.244	0.558	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.141	0.558	PQL	MG/KG	
	THALLIUM	J	0.273	0.446	PQL	MG/KG	

Method: 8082

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-559-SA5C-SB-0.0-0.5	AROCLOR 1260	J	17	23	PQL	UG/KG	J (all detects)

Method: 8270C SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-537-SA5C-SB-0.0-0.5	BENZO(A)ANTHRACENE	J	4.1	11	PQL	UG/KG	J (all detects)
	BENZO(A)PYRENE	J	3.8	11	PQL	UG/KG	
	BENZO(B)FLUORANTHENE	J	4.5	11	PQL	UG/KG	
	CHRYSENE	J	3.5	11	PQL	UG/KG	
	FLUORANTHENE	J	8.8	11	PQL	UG/KG	
	PHENANTHRENE	J	5.0	11	PQL	UG/KG	
	PYRENE	J	8.6	11	PQL	UG/KG	

Reporting Limit Outliers

Lab Reporting Batch ID: 12F051 **Laboratory: EMXT**

EDD Filename: 12F051 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: **8270C SIM**

Matrix: **SO**

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-548-SA5C-SB-9.0-10.0	BENZO(B)FLUORANTHENE	J	3.5	11	PQL	UG/KG	J (all detects)
	FLUORANTHENE	J	6.0	11	PQL	UG/KG	
	PHENANTHRENE	J	4.8	11	PQL	UG/KG	
	PYRENE	J	6.2	11	PQL	UG/KG	
SL-559-SA5C-SB-0.0-0.5	BENZO(A)ANTHRACENE	J	15	23	PQL	UG/KG	J (all detects)
	BENZO(A)PYRENE	J	6.8	23	PQL	UG/KG	
	BENZO(B)FLUORANTHENE	J	9.9	23	PQL	UG/KG	
	BENZO(E)PYRENE	J	10	12	PQL	UG/KG	
	BENZO(K)FLUORANTHENE	J	7.2	23	PQL	UG/KG	
	FLUORANTHENE	J	6.0	23	PQL	UG/KG	
	PYRENE	J	7.2	23	PQL	UG/KG	
SL-559-SA5C-SB-2.0-3.0	BENZO(A)ANTHRACENE	J	8.4	23	PQL	UG/KG	J (all detects)
	BENZO(B)FLUORANTHENE	J	6.7	23	PQL	UG/KG	
	BENZO(E)PYRENE	J	7.4	12	PQL	UG/KG	

LDC #: 28578J4
SDG #: 12F051
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 11-6-12
Page: 1 of 1
Reviewer:
2nd Reviewer:

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

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

	Validation Area		Comments
I.	Technical holding times	✓	Sampling dates:
II.	ICP/MS Tune	✓	
III.	Calibration	✓	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	✓	
VI.	Matrix Spike Analysis	N	MS/D (Al, Fe, Mn, Ti >4X)
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	N	LCS/D
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-060512 (12F037)

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	EB1-060712 W	11	SL-559-SA5C-SB-7.0-8.0	21		31	
2	EB2-060712 ↓	12	SL-548-SA5C-SB-9.0-10.0	22		32	
3	SL-537-SA5C-SB-0.0-0.5	13	SL-571-SA5C-SB-4.0-5.0	23		33	
4	SL-537-SA5C-SB-4.0-5.0	14	SL-571-SA5C-SB-9.0-10.0	24		34	
5	SL-537-SA5C-SB-9.0-10.0	15	SL-559-SA5C-SB-0.0-0.5MS	25		35	
6	SL-547-SA5C-SB-4.0-5.0	16	SL-559-SA5C-SB-0.0-0.5MSD	26		36	
7	SL-547-SA5C-SB-9.0-10.0	17	SL-571-SA5C-SB-9.0-10.0MS	27		37	
8	SL-548-SA5C-SB-4.0-5.0	18	SL-571-SA5C-SB-9.0-10.0MSD	28		38	
9	SL-559-SA5C-SB-0.0-0.5	19		29		39	
10	SL-559-SA5C-SB-2.0-3.0	20		30		40	

Notes:

LDC #: 28578J4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: 2
2nd Reviewer:

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

Blank units: ug/L **Associated sample units:** mg/Kg

Sampling date: 6/7/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: ~~All Soil~~ 6-14

Analyte	Blank ID	Sample Identification											
	EB1-060712	Action Limit	No Qualifiers										
Al	0.0449	11.225											
B	0.00577	1.4425											
Ca	0.0314	7.85											
Cu	0.00190	0.475											
Na	0.0803	20.075											

Sampling date: 6/7/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: ~~None~~ 1-3-5

Analyte	Blank ID	Sample Identification											
	EB2-060712	Action Limit	No Qualifiers										
Ba	0.000605	0.15125											
B	0.00592	1.48											
Ca	0.0496	12.4											
Mn	0.000211	0.05275											
Ni	0.000336	0.084											

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 #: 28578H4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: CR
2nd Reviewer: W

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

Blank units: ug/L **Associated sample units:** mg/Kg

Sampling date: 6/5/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: AllSoil

Analyte	Blank ID	Sample Identification											
	FB-060512	Action Limit	No Qualifiers										
Al	0.0270	6.75											
Ca	0.0263	6.575											
Cu	0.000954	0.2385											

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

12F071

Attachment I

Sample ID Cross Reference and Data Review Level

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
11-Jun-2012	SL-809-SA5C-SB-4.0-5.0	F071-05	FD	3550B	8082	IV
11-Jun-2012	SL-809-SA5C-SB-4.0-5.0	F071-05	FD	3550B	8270C SIM	IV
11-Jun-2012	SL-809-SA5C-SB-4.0-5.0	F071-05	FD	7471A	7471A	IV
11-Jun-2012	SL-809-SA5C-SB-4.0-5.0	F071-05	FD	GEN PREP	6850	IV
11-Jun-2012	SL-809-SA5C-SB-4.0-5.0	F071-05	FD	TOTAL	6020	IV
11-Jun-2012	SL-509-SA5C-SB-9.0-10.0	F071-03	N	3550B	8082	IV
11-Jun-2012	SL-509-SA5C-SB-9.0-10.0	F071-03	N	3550B	8270C SIM	IV
11-Jun-2012	SL-509-SA5C-SB-9.0-10.0	F071-03	N	7471A	7471A	IV
11-Jun-2012	SL-509-SA5C-SB-9.0-10.0	F071-03	N	GEN PREP	6850	IV
11-Jun-2012	SL-509-SA5C-SB-9.0-10.0	F071-03	N	TOTAL	6020	IV
11-Jun-2012	SL-509-SA5C-SB-4.0-5.0	F071-04	N	3550B	8082	IV
11-Jun-2012	SL-509-SA5C-SB-4.0-5.0	F071-04	N	3550B	8270C SIM	IV
11-Jun-2012	SL-509-SA5C-SB-4.0-5.0	F071-04	N	7471A	7471A	IV
11-Jun-2012	SL-509-SA5C-SB-4.0-5.0	F071-04	N	GEN PREP	6850	IV
11-Jun-2012	SL-509-SA5C-SB-4.0-5.0	F071-04	N	TOTAL	6020	IV
11-Jun-2012	SL-509-SA5C-SB-4.0-5.0MS	F071-04M	MS	3550B	8082	IV
11-Jun-2012	SL-509-SA5C-SB-4.0-5.0MS	F071-04M	MS	3550B	8270C SIM	IV
11-Jun-2012	SL-509-SA5C-SB-4.0-5.0MS	F071-04M	MS	7471A	7471A	IV
11-Jun-2012	SL-509-SA5C-SB-4.0-5.0MS	F071-04M	MS	GEN PREP	6850	IV
11-Jun-2012	SL-509-SA5C-SB-4.0-5.0MS	F071-04M	MS	TOTAL	6020	IV
11-Jun-2012	SL-509-SA5C-SB-4.0-5.0MSD	F071-04S	MSD	3550B	8082	IV
11-Jun-2012	SL-509-SA5C-SB-4.0-5.0MSD	F071-04S	MSD	3550B	8270C SIM	IV
11-Jun-2012	SL-509-SA5C-SB-4.0-5.0MSD	F071-04S	MSD	7471A	7471A	IV
11-Jun-2012	SL-509-SA5C-SB-4.0-5.0MSD	F071-04S	MSD	GEN PREP	6850	IV
11-Jun-2012	SL-509-SA5C-SB-4.0-5.0MSD	F071-04S	MSD	TOTAL	6020	IV
11-Jun-2012	SL-518-SA5C-SB-4.0-5.0	F071-01	N	3550B	8082	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
11-Jun-2012	SL-518-SA5C-SB-4.0-5.0	F071-01	N	3550B	8270C SIM	IV
11-Jun-2012	SL-518-SA5C-SB-4.0-5.0	F071-01	N	7471A	7471A	IV
11-Jun-2012	SL-518-SA5C-SB-4.0-5.0	F071-01	N	GEN PREP	6850	IV
11-Jun-2012	SL-518-SA5C-SB-4.0-5.0	F071-01	N	TOTAL	6020	IV
11-Jun-2012	SL-518-SA5C-SB-9.0-10.0	F071-02	N	3550B	8082	IV
11-Jun-2012	SL-518-SA5C-SB-9.0-10.0	F071-02	N	7471A	7471A	IV
11-Jun-2012	SL-518-SA5C-SB-9.0-10.0	F071-02	N	GEN PREP	6850	IV
11-Jun-2012	SL-518-SA5C-SB-9.0-10.0	F071-02	N	TOTAL	6020	IV
11-Jun-2012	SL-518-SA5C-SB-9.0-10.0	F071-02R	N	3550B	8270C SIM	IV
11-Jun-2012	SL-508-SA5C-SB-4.0-5.0	F071-08	N	3550B	8082	IV
11-Jun-2012	SL-508-SA5C-SB-4.0-5.0	F071-08	N	3550B	8270C SIM	IV
11-Jun-2012	SL-508-SA5C-SB-4.0-5.0	F071-08	N	7471A	7471A	IV
11-Jun-2012	SL-508-SA5C-SB-4.0-5.0	F071-08	N	GEN PREP	6850	IV
11-Jun-2012	SL-508-SA5C-SB-4.0-5.0	F071-08	N	TOTAL	6020	IV
11-Jun-2012	SL-508-SA5C-SB-6.5-7.5	F071-09	N	3550B	8082	IV
11-Jun-2012	SL-508-SA5C-SB-6.5-7.5	F071-09	N	3550B	8270C SIM	IV
11-Jun-2012	SL-508-SA5C-SB-6.5-7.5	F071-09	N	7471A	7471A	IV
11-Jun-2012	SL-508-SA5C-SB-6.5-7.5	F071-09	N	GEN PREP	6850	IV
11-Jun-2012	SL-508-SA5C-SB-6.5-7.5	F071-09	N	TOTAL	6020	IV
11-Jun-2012	SL-574-SA5C-SB-4.0-5.0	F071-07	N	3550B	8082	IV
11-Jun-2012	SL-574-SA5C-SB-4.0-5.0	F071-07	N	3550B	8270C SIM	IV
11-Jun-2012	SL-574-SA5C-SB-4.0-5.0	F071-07	N	7471A	7471A	IV
11-Jun-2012	SL-574-SA5C-SB-4.0-5.0	F071-07	N	GEN PREP	6850	IV
11-Jun-2012	SL-574-SA5C-SB-4.0-5.0	F071-07	N	TOTAL	6020	IV
11-Jun-2012	SL-574-SA5C-SB-9.0-10.0	F071-06	N	3550B	8082	IV
11-Jun-2012	SL-574-SA5C-SB-9.0-10.0	F071-06	N	3550B	8270C SIM	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
11-Jun-2012	SL-574-SA5C-SB-9.0-10.0	F071-06	N	7471A	7471A	IV
11-Jun-2012	SL-574-SA5C-SB-9.0-10.0	F071-06	N	GEN PREP	6850	IV
11-Jun-2012	SL-574-SA5C-SB-9.0-10.0	F071-06	N	TOTAL	6020	IV
11-Jun-2012	SL-507-SA5C-SB-2.5-3.5	F071-10	N	3550B	8082	IV
11-Jun-2012	SL-507-SA5C-SB-2.5-3.5	F071-10	N	3550B	8270C SIM	IV
11-Jun-2012	SL-507-SA5C-SB-2.5-3.5	F071-10	N	7471A	7471A	IV
11-Jun-2012	SL-507-SA5C-SB-2.5-3.5	F071-10	N	GEN PREP	6850	IV
11-Jun-2012	SL-507-SA5C-SB-2.5-3.5	F071-10	N	TOTAL	6020	IV
11-Jun-2012	SL-520-SA5C-SB-6.5-7.5	F071-11	N	3550B	8082	IV
11-Jun-2012	SL-520-SA5C-SB-6.5-7.5	F071-11	N	3550B	8270C SIM	IV
11-Jun-2012	SL-520-SA5C-SB-6.5-7.5	F071-11	N	7471A	7471A	IV
11-Jun-2012	SL-520-SA5C-SB-6.5-7.5	F071-11	N	GEN PREP	6850	IV
11-Jun-2012	SL-520-SA5C-SB-6.5-7.5	F071-11	N	GEN PREP	7199	IV
11-Jun-2012	SL-520-SA5C-SB-6.5-7.5	F071-11	N	TOTAL	6020	IV
11-Jun-2012	SL-521-SA5C-SB-0.0-0.5	F071-12	N	3550B	8082	IV
11-Jun-2012	SL-521-SA5C-SB-0.0-0.5	F071-12	N	7471A	7471A	IV
11-Jun-2012	SL-521-SA5C-SB-0.0-0.5	F071-12	N	GEN PREP	6850	IV
11-Jun-2012	SL-521-SA5C-SB-0.0-0.5	F071-12	N	GEN PREP	7199	IV
11-Jun-2012	SL-521-SA5C-SB-0.0-0.5	F071-12	N	TOTAL	6020	IV
11-Jun-2012	SL-521-SA5C-SB-0.0-0.5	F071-12W	N	3550B	8270C SIM	IV
11-Jun-2012	SL-521-SA5C-SB-4.0-5.0	F071-13	N	3550B	8082	IV
11-Jun-2012	SL-521-SA5C-SB-4.0-5.0	F071-13	N	3550B	8270C SIM	IV
11-Jun-2012	SL-521-SA5C-SB-4.0-5.0	F071-13	N	7471A	7471A	IV
11-Jun-2012	SL-521-SA5C-SB-4.0-5.0	F071-13	N	GEN PREP	6850	IV
11-Jun-2012	SL-521-SA5C-SB-4.0-5.0	F071-13	N	GEN PREP	7199	IV
11-Jun-2012	SL-521-SA5C-SB-4.0-5.0	F071-13	N	TOTAL	6020	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
11-Jun-2012	SL-521-SA5C-SB-9.0-10.0	F071-14	N	3550B	8082	IV
11-Jun-2012	SL-521-SA5C-SB-9.0-10.0	F071-14	N	3550B	8270C SIM	IV
11-Jun-2012	SL-521-SA5C-SB-9.0-10.0	F071-14	N	7471A	7471A	IV
11-Jun-2012	SL-521-SA5C-SB-9.0-10.0	F071-14	N	GEN PREP	6850	IV
11-Jun-2012	SL-521-SA5C-SB-9.0-10.0	F071-14	N	GEN PREP	7199	IV
11-Jun-2012	SL-521-SA5C-SB-9.0-10.0	F071-14	N	TOTAL	6020	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 II

Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: 12F071 **Laboratory: EMXT**

EDD Filename: Prep12F071 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: **METALS**

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

Sample ID: **SL-507-SA5C-SB-2.5-3.5** ***Collected:*** **6/11/2012 1:30:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.990**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.232	J	0.108	MDL	0.539	PQL	MG/KG	J	Z, Q
BORON	3.47	J	2.70	MDL	5.39	PQL	MG/KG	J	Z
CADMIUM	0.365	J	0.0539	MDL	0.539	PQL	MG/KG	J	Z
CALCIUM	3870		10.8	MDL	21.6	PQL	MG/KG	J	Q, Q, E
MOLYBDENUM	0.427	J	0.0539	MDL	0.539	PQL	MG/KG	J	Z
PHOSPHORUS	178		6.47	MDL	12.9	PQL	MG/KG	J	Q
SILVER	0.0573	J	0.0539	MDL	0.539	PQL	MG/KG	J	Z
THALLIUM	0.277	J	0.0539	MDL	0.431	PQL	MG/KG	J	Z

Sample ID: **SL-508-SA5C-SB-4.0-5.0** ***Collected:*** **6/11/2012 10:50:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.971**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.223	J	0.107	MDL	0.535	PQL	MG/KG	J	Z, Q
BORON	3.40	J	2.67	MDL	5.35	PQL	MG/KG	J	Z
CADMIUM	0.315	J	0.0535	MDL	0.535	PQL	MG/KG	J	Z
CALCIUM	4750		10.7	MDL	21.4	PQL	MG/KG	J	Q, Q, E
MOLYBDENUM	0.368	J	0.0535	MDL	0.535	PQL	MG/KG	J	Z
PHOSPHORUS	180		6.42	MDL	12.8	PQL	MG/KG	J	Q
SILVER	0.0627	J	0.0535	MDL	0.535	PQL	MG/KG	J	Z
THALLIUM	0.262	J	0.0535	MDL	0.428	PQL	MG/KG	J	Z
Zirconium	3.53	J	2.67	MDL	5.35	PQL	MG/KG	J	Z

Sample ID: **SL-508-SA5C-SB-6.5-7.5** ***Collected:*** **6/11/2012 10:55:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.966**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.185	J	0.103	MDL	0.517	PQL	MG/KG	J	Z, Q
CADMIUM	0.240	J	0.0517	MDL	0.517	PQL	MG/KG	J	Z
CALCIUM	4900		10.3	MDL	20.7	PQL	MG/KG	J	Q, Q, E
PHOSPHORUS	308		6.20	MDL	12.4	PQL	MG/KG	J	Q
THALLIUM	0.227	J	0.0517	MDL	0.413	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12F071 **Laboratory: EMXT**

EDD Filename: Prep12F071 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix:** SO

Sample ID: SL-509-SA5C-SB-4.0-5.0 ***Collected:*** 6/11/2012 8:43:00 ***Analysis Type:*** RES/TOT ***Dilution:*** 0.957

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.239	J	0.104	MDL	0.520	PQL	MG/KG	J	Z, Q
BORON	3.66	J	2.60	MDL	5.20	PQL	MG/KG	J	Z
CADMIUM	0.374	J	0.0520	MDL	0.520	PQL	MG/KG	J	Z
CALCIUM	9190		10.4	MDL	20.8	PQL	MG/KG	J	Q, Q, E, FD
LEAD	23.0		0.104	MDL	0.520	PQL	MG/KG	J	FD
MOLYBDENUM	0.509	J	0.0520	MDL	0.520	PQL	MG/KG	J	Z
PHOSPHORUS	153		6.23	MDL	12.5	PQL	MG/KG	J	Q
SILVER	0.0620	J	0.0520	MDL	0.520	PQL	MG/KG	J	Z
THALLIUM	0.263	J	0.0520	MDL	0.416	PQL	MG/KG	J	Z
Zirconium	2.91	J	2.60	MDL	5.20	PQL	MG/KG	J	Z

Sample ID: SL-509-SA5C-SB-9.0-10.0 ***Collected:*** 6/11/2012 8:38:00 ***Analysis Type:*** RES/TOT ***Dilution:*** 0.952

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.194	J	0.104	MDL	0.518	PQL	MG/KG	J	Z, Q
CADMIUM	0.188	J	0.0518	MDL	0.518	PQL	MG/KG	J	Z
CALCIUM	3090		10.4	MDL	20.7	PQL	MG/KG	J	Q, Q, E
MOLYBDENUM	0.254	J	0.0518	MDL	0.518	PQL	MG/KG	J	Z
PHOSPHORUS	305		6.22	MDL	12.4	PQL	MG/KG	J	Q
THALLIUM	0.270	J	0.0518	MDL	0.414	PQL	MG/KG	J	Z

Sample ID: SL-518-SA5C-SB-4.0-5.0 ***Collected:*** 6/11/2012 9:24:00 ***Analysis Type:*** RES/TOT ***Dilution:*** 0.985

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.173	J	0.110	MDL	0.551	PQL	MG/KG	J	Z, Q
BORON	3.64	J	2.75	MDL	5.51	PQL	MG/KG	J	Z
CADMIUM	0.355	J	0.0551	MDL	0.551	PQL	MG/KG	J	Z
CALCIUM	60900		11.0	MDL	22.0	PQL	MG/KG	J	Q, Q, E
MOLYBDENUM	0.327	J	0.0551	MDL	0.551	PQL	MG/KG	J	Z
PHOSPHORUS	121		6.61	MDL	13.2	PQL	MG/KG	J	Q
SILVER	0.0598	J	0.0551	MDL	0.551	PQL	MG/KG	J	Z
THALLIUM	0.243	J	0.0551	MDL	0.441	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12F071 **Laboratory: EMXT**

EDD Filename: Prep12F071 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: SL-518-SA5C-SB-4.0-5.0 *Collected:* 6/11/2012 9:24:00 *Analysis Type:* RES/TOT *Dilution:* 0.985

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Zirconium	3.66	J	2.75	MDL	5.51	PQL	MG/KG	J	Z

Sample ID: SL-518-SA5C-SB-9.0-10.0 *Collected:* 6/11/2012 9:28:00 *Analysis Type:* RES/TOT *Dilution:* 0.990

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.239	J	0.108	MDL	0.539	PQL	MG/KG	J	Z, Q
CADMIUM	0.334	J	0.0539	MDL	0.539	PQL	MG/KG	J	Z
CALCIUM	11600		10.8	MDL	21.6	PQL	MG/KG	J	Q, Q, E
MOLYBDENUM	0.442	J	0.0539	MDL	0.539	PQL	MG/KG	J	Z
PHOSPHORUS	444		6.47	MDL	12.9	PQL	MG/KG	J	Q
SILVER	0.196	J	0.0539	MDL	0.539	PQL	MG/KG	J	Z
THALLIUM	0.339	J	0.0539	MDL	0.431	PQL	MG/KG	J	Z
Zirconium	3.28	J	2.70	MDL	5.39	PQL	MG/KG	J	Z

Sample ID: SL-520-SA5C-SB-6.5-7.5 *Collected:* 6/11/2012 2:50:00 *Analysis Type:* RES/TOT *Dilution:* 0.966

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.115	J	0.103	MDL	0.515	PQL	MG/KG	J	Z, Q
CADMIUM	0.205	J	0.0515	MDL	0.515	PQL	MG/KG	J	Z
CALCIUM	5130		10.3	MDL	20.6	PQL	MG/KG	J	Q, Q, E
MOLYBDENUM	0.230	J	0.0515	MDL	0.515	PQL	MG/KG	J	Z
PHOSPHORUS	249		6.18	MDL	12.4	PQL	MG/KG	J	Q
THALLIUM	0.197	J	0.0515	MDL	0.412	PQL	MG/KG	J	Z

Sample ID: SL-521-SA5C-SB-0.0-0.5 *Collected:* 6/11/2012 3:20:00 *Analysis Type:* RES/TOT *Dilution:* 0.962

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.177	J	0.110	MDL	0.548	PQL	MG/KG	J	Z, Q
CADMIUM	0.270	J	0.0548	MDL	0.548	PQL	MG/KG	J	Z
CALCIUM	2810		11.0	MDL	21.9	PQL	MG/KG	J	Q, Q, E
PHOSPHORUS	169		6.57	MDL	13.1	PQL	MG/KG	J	Q
SODIUM	106	J	54.8	MDL	110	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12F071 **Laboratory: EMXT**

EDD Filename: Prep12F071 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: SL-521-SA5C-SB-0.0-0.5 *Collected:* 6/11/2012 3:20:00 *Analysis Type:* RES/TOT *Dilution:* 0.962

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
THALLIUM	0.249	J	0.0548	MDL	0.438	PQL	MG/KG	J	Z

Sample ID: SL-521-SA5C-SB-4.0-5.0 *Collected:* 6/11/2012 3:25:00 *Analysis Type:* RES/TOT *Dilution:* 0.971

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.206	J	0.110	MDL	0.549	PQL	MG/KG	J	Z, Q
BORON	2.81	J	2.75	MDL	5.49	PQL	MG/KG	J	Z
CADMIUM	0.219	J	0.0549	MDL	0.549	PQL	MG/KG	J	Z
CALCIUM	41800		11.0	MDL	22.0	PQL	MG/KG	J	Q, Q, E
MOLYBDENUM	0.275	J	0.0549	MDL	0.549	PQL	MG/KG	J	Z
PHOSPHORUS	106		6.59	MDL	13.2	PQL	MG/KG	J	Q
THALLIUM	0.225	J	0.0549	MDL	0.439	PQL	MG/KG	J	Z
Zirconium	3.00	J	2.75	MDL	5.49	PQL	MG/KG	J	Z

Sample ID: SL-521-SA5C-SB-9.0-10.0 *Collected:* 6/11/2012 3:30:00 *Analysis Type:* RES/TOT *Dilution:* 0.980

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.149	J	0.111	MDL	0.556	PQL	MG/KG	J	Z, Q
CADMIUM	0.339	J	0.0556	MDL	0.556	PQL	MG/KG	J	Z
CALCIUM	11700		11.1	MDL	22.2	PQL	MG/KG	J	Q, Q, E
MOLYBDENUM	0.321	J	0.0556	MDL	0.556	PQL	MG/KG	J	Z
PHOSPHORUS	258		6.67	MDL	13.3	PQL	MG/KG	J	Q
THALLIUM	0.245	J	0.0556	MDL	0.445	PQL	MG/KG	J	Z
Zirconium	3.32	J	2.78	MDL	5.56	PQL	MG/KG	J	Z

Sample ID: SL-574-SA5C-SB-4.0-5.0 *Collected:* 6/11/2012 11:25:00 *Analysis Type:* RES/TOT *Dilution:* 0.985

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.234	J	0.109	MDL	0.544	PQL	MG/KG	J	Z, Q
CADMIUM	0.335	J	0.0544	MDL	0.544	PQL	MG/KG	J	Z
CALCIUM	6270		10.9	MDL	21.8	PQL	MG/KG	J	Q, Q, E
MOLYBDENUM	0.353	J	0.0544	MDL	0.544	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12F071 **Laboratory: EMXT**

EDD Filename: Prep12F071 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: **METALS**

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

Sample ID: **SL-574-SA5C-SB-4.0-5.0** ***Collected:*** **6/11/2012 11:25:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.985**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PHOSPHORUS	187		6.53	MDL	13.1	PQL	MG/KG	J	Q
SILVER	0.0558	J	0.0544	MDL	0.544	PQL	MG/KG	J	Z
THALLIUM	0.311	J	0.0544	MDL	0.435	PQL	MG/KG	J	Z
Zirconium	3.86	J	2.72	MDL	5.44	PQL	MG/KG	J	Z

Sample ID: **SL-574-SA5C-SB-9.0-10.0** ***Collected:*** **6/11/2012 11:30:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.985**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.266	J	0.113	MDL	0.564	PQL	MG/KG	J	Z, Q
BORON	3.85	J	2.82	MDL	5.64	PQL	MG/KG	J	Z
CADMIUM	0.321	J	0.0564	MDL	0.564	PQL	MG/KG	J	Z
CALCIUM	4870		11.3	MDL	22.5	PQL	MG/KG	J	Q, Q, E
MOLYBDENUM	0.456	J	0.0564	MDL	0.564	PQL	MG/KG	J	Z
PHOSPHORUS	260		6.76	MDL	13.5	PQL	MG/KG	J	Q
SILVER	0.0641	J	0.0564	MDL	0.564	PQL	MG/KG	J	Z
THALLIUM	0.270	J	0.0564	MDL	0.451	PQL	MG/KG	J	Z
Zirconium	3.55	J	2.82	MDL	5.64	PQL	MG/KG	J	Z

Sample ID: **SL-809-SA5C-SB-4.0-5.0** ***Collected:*** **6/11/2012 8:30:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1.00**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.190	J	0.110	MDL	0.548	PQL	MG/KG	J	Z, Q
BORON	3.35	J	2.74	MDL	5.48	PQL	MG/KG	J	Z
CADMIUM	0.297	J	0.0548	MDL	0.548	PQL	MG/KG	J	Z
CALCIUM	20600		11.0	MDL	21.9	PQL	MG/KG	J	Q, Q, E, FD
LEAD	8.27		0.110	MDL	0.548	PQL	MG/KG	J	FD
MOLYBDENUM	0.358	J	0.0548	MDL	0.548	PQL	MG/KG	J	Z
PHOSPHORUS	115		6.58	MDL	13.2	PQL	MG/KG	J	Q
SILVER	0.0608	J	0.0548	MDL	0.548	PQL	MG/KG	J	Z
THALLIUM	0.265	J	0.0548	MDL	0.439	PQL	MG/KG	J	Z
Zirconium	3.28	J	2.74	MDL	5.48	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12F071 **Laboratory: EMXT**

EDD Filename: Prep12F071 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

Method: 8082 **Matrix:** SO

Sample ID: SL-507-SA5C-SB-2.5-3.5 *Collected:* 6/11/2012 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
AROCLOR 1016	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1221	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1232	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1242	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1248	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1254	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1260	22	U	11	MDL	22	PQL	UG/KG	UJ	C
Aroclor 1262	22	U	11	MDL	22	PQL	UG/KG	UJ	C
Aroclor 1268	22	U	11	MDL	22	PQL	UG/KG	UJ	C
Aroclor 5432	44	U	22	MDL	44	PQL	UG/KG	UJ	C
Aroclor 5442	44	U	22	MDL	44	PQL	UG/KG	UJ	C
Aroclor 5460	44	U	22	MDL	44	PQL	UG/KG	UJ	C

Sample ID: SL-508-SA5C-SB-4.0-5.0 *Collected:* 6/11/2012 10:50:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1016	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1221	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1232	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1242	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1248	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1254	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1260	22	U	11	MDL	22	PQL	UG/KG	UJ	C
Aroclor 1262	22	U	11	MDL	22	PQL	UG/KG	UJ	C
Aroclor 1268	22	U	11	MDL	22	PQL	UG/KG	UJ	C
Aroclor 5432	44	U	22	MDL	44	PQL	UG/KG	UJ	C
Aroclor 5442	44	U	22	MDL	44	PQL	UG/KG	UJ	C
Aroclor 5460	44	U	22	MDL	44	PQL	UG/KG	UJ	C

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12F071 **Laboratory: EMXT**

EDD Filename: Prep12F071 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

Method: 8082 **Matrix:** SO

Sample ID: SL-508-SA5C-SB-6.5-7.5 *Collected:* 6/11/2012 10:55:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1016	21	U	11	MDL	21	PQL	UG/KG	UJ	C
AROCLOR 1221	21	U	11	MDL	21	PQL	UG/KG	UJ	C
AROCLOR 1232	21	U	11	MDL	21	PQL	UG/KG	UJ	C
AROCLOR 1242	21	U	11	MDL	21	PQL	UG/KG	UJ	C
AROCLOR 1248	21	U	11	MDL	21	PQL	UG/KG	UJ	C
AROCLOR 1254	21	U	11	MDL	21	PQL	UG/KG	UJ	C
AROCLOR 1260	21	U	11	MDL	21	PQL	UG/KG	UJ	C
Aroclor 1262	21	U	11	MDL	21	PQL	UG/KG	UJ	C
Aroclor 1268	21	U	11	MDL	21	PQL	UG/KG	UJ	C
Aroclor 5432	43	U	21	MDL	43	PQL	UG/KG	UJ	C
Aroclor 5442	43	U	21	MDL	43	PQL	UG/KG	UJ	C
Aroclor 5460	43	U	21	MDL	43	PQL	UG/KG	UJ	C

Sample ID: SL-509-SA5C-SB-4.0-5.0 *Collected:* 6/11/2012 8:43:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1016	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1221	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1232	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1242	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1248	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1254	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1260	22	U	11	MDL	22	PQL	UG/KG	UJ	C
Aroclor 1262	22	U	11	MDL	22	PQL	UG/KG	UJ	C
Aroclor 1268	22	U	11	MDL	22	PQL	UG/KG	UJ	C
Aroclor 5432	43	U	22	MDL	43	PQL	UG/KG	UJ	C
Aroclor 5442	43	U	22	MDL	43	PQL	UG/KG	UJ	C
Aroclor 5460	43	U	22	MDL	43	PQL	UG/KG	UJ	C

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12F071 **Laboratory: EMXT**

EDD Filename: Prep12F071 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

Method: 8082 **Matrix:** SO

Sample ID: SL-509-SA5C-SB-9.0-10.0 *Collected:* 6/11/2012 8:38:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1016	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1221	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1232	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1242	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1248	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1254	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1260	22	U	11	MDL	22	PQL	UG/KG	UJ	C
Aroclor 1262	22	U	11	MDL	22	PQL	UG/KG	UJ	C
Aroclor 1268	22	U	11	MDL	22	PQL	UG/KG	UJ	C
Aroclor 5432	44	U	22	MDL	44	PQL	UG/KG	UJ	C
Aroclor 5442	44	U	22	MDL	44	PQL	UG/KG	UJ	C
Aroclor 5460	44	U	22	MDL	44	PQL	UG/KG	UJ	C

Sample ID: SL-518-SA5C-SB-4.0-5.0 *Collected:* 6/11/2012 9:24:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1016	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1221	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1232	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1242	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1248	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1254	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1260	22	U	11	MDL	22	PQL	UG/KG	UJ	C
Aroclor 1262	22	U	11	MDL	22	PQL	UG/KG	UJ	C
Aroclor 1268	22	U	11	MDL	22	PQL	UG/KG	UJ	C
Aroclor 5432	45	U	22	MDL	45	PQL	UG/KG	UJ	C
Aroclor 5442	45	U	22	MDL	45	PQL	UG/KG	UJ	C
Aroclor 5460	45	U	22	MDL	45	PQL	UG/KG	UJ	C

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12F071 **Laboratory: EMXT**

EDD Filename: Prep12F071 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

Method: 8082 **Matrix: SO**

Sample ID: SL-518-SA5C-SB-9.0-10.0 *Collected:* 6/11/2012 9:28:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1016	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1221	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1232	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1242	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1248	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1254	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1260	22	U	11	MDL	22	PQL	UG/KG	UJ	C
Aroclor 1262	22	U	11	MDL	22	PQL	UG/KG	UJ	C
Aroclor 1268	22	U	11	MDL	22	PQL	UG/KG	UJ	C
Aroclor 5432	44	U	22	MDL	44	PQL	UG/KG	UJ	C
Aroclor 5442	44	U	22	MDL	44	PQL	UG/KG	UJ	C
Aroclor 5460	44	U	22	MDL	44	PQL	UG/KG	UJ	C

Sample ID: SL-520-SA5C-SB-6.5-7.5 *Collected:* 6/11/2012 2:50:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1016	21	U	11	MDL	21	PQL	UG/KG	UJ	C
AROCLOR 1221	21	U	11	MDL	21	PQL	UG/KG	UJ	C
AROCLOR 1232	21	U	11	MDL	21	PQL	UG/KG	UJ	C
AROCLOR 1242	21	U	11	MDL	21	PQL	UG/KG	UJ	C
AROCLOR 1248	21	U	11	MDL	21	PQL	UG/KG	UJ	C
AROCLOR 1254	21	U	11	MDL	21	PQL	UG/KG	UJ	C
AROCLOR 1260	21	U	11	MDL	21	PQL	UG/KG	UJ	C
Aroclor 1262	21	U	11	MDL	21	PQL	UG/KG	UJ	C
Aroclor 1268	21	U	11	MDL	21	PQL	UG/KG	UJ	C
Aroclor 5432	43	U	21	MDL	43	PQL	UG/KG	UJ	C
Aroclor 5442	43	U	21	MDL	43	PQL	UG/KG	UJ	C
Aroclor 5460	43	U	21	MDL	43	PQL	UG/KG	UJ	C

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12F071 **Laboratory: EMXT**

EDD Filename: Prep12F071 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

Method: 8082 **Matrix:** SO

Sample ID: SL-521-SA5C-SB-0.0-0.5 *Collected:* 6/11/2012 3:20:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1016	23	U	11	MDL	23	PQL	UG/KG	UJ	C
AROCLOR 1221	23	U	11	MDL	23	PQL	UG/KG	UJ	C
AROCLOR 1232	23	U	11	MDL	23	PQL	UG/KG	UJ	C
AROCLOR 1242	23	U	11	MDL	23	PQL	UG/KG	UJ	C
AROCLOR 1248	23	U	11	MDL	23	PQL	UG/KG	UJ	C
AROCLOR 1254	23	U	11	MDL	23	PQL	UG/KG	UJ	C
AROCLOR 1260	23	U	11	MDL	23	PQL	UG/KG	UJ	C
Aroclor 1262	23	U	11	MDL	23	PQL	UG/KG	UJ	C
Aroclor 1268	23	U	11	MDL	23	PQL	UG/KG	UJ	C
Aroclor 5432	46	U	23	MDL	46	PQL	UG/KG	UJ	C
Aroclor 5442	46	U	23	MDL	46	PQL	UG/KG	UJ	C
Aroclor 5460	46	U	23	MDL	46	PQL	UG/KG	UJ	C

Sample ID: SL-521-SA5C-SB-4.0-5.0 *Collected:* 6/11/2012 3:25:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1016	23	U	11	MDL	23	PQL	UG/KG	UJ	C
AROCLOR 1221	23	U	11	MDL	23	PQL	UG/KG	UJ	C
AROCLOR 1232	23	U	11	MDL	23	PQL	UG/KG	UJ	C
AROCLOR 1242	23	U	11	MDL	23	PQL	UG/KG	UJ	C
AROCLOR 1248	23	U	11	MDL	23	PQL	UG/KG	UJ	C
AROCLOR 1254	23	U	11	MDL	23	PQL	UG/KG	UJ	C
AROCLOR 1260	23	U	11	MDL	23	PQL	UG/KG	UJ	C
Aroclor 1262	23	U	11	MDL	23	PQL	UG/KG	UJ	C
Aroclor 1268	23	U	11	MDL	23	PQL	UG/KG	UJ	C
Aroclor 5432	45	U	23	MDL	45	PQL	UG/KG	UJ	C
Aroclor 5442	45	U	23	MDL	45	PQL	UG/KG	UJ	C
Aroclor 5460	45	U	23	MDL	45	PQL	UG/KG	UJ	C

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12F071 **Laboratory: EMXT**

EDD Filename: Prep12F071 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

Method: 8082 **Matrix:** SO

Sample ID: SL-574-SA5C-SB-4.0-5.0 *Collected:* 6/11/2012 11:25:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1016	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1221	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1232	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1242	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1248	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1254	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1260	22	U	11	MDL	22	PQL	UG/KG	UJ	C
Aroclor 1262	22	U	11	MDL	22	PQL	UG/KG	UJ	C
Aroclor 1268	22	U	11	MDL	22	PQL	UG/KG	UJ	C
Aroclor 5432	44	U	22	MDL	44	PQL	UG/KG	UJ	C
Aroclor 5442	44	U	22	MDL	44	PQL	UG/KG	UJ	C
Aroclor 5460	44	U	22	MDL	44	PQL	UG/KG	UJ	C

Sample ID: SL-574-SA5C-SB-9.0-10.0 *Collected:* 6/11/2012 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
AROCLOR 1016	23	U	11	MDL	23	PQL	UG/KG	UJ	C
AROCLOR 1221	23	U	11	MDL	23	PQL	UG/KG	UJ	C
AROCLOR 1232	23	U	11	MDL	23	PQL	UG/KG	UJ	C
AROCLOR 1242	23	U	11	MDL	23	PQL	UG/KG	UJ	C
AROCLOR 1248	23	U	11	MDL	23	PQL	UG/KG	UJ	C
AROCLOR 1254	23	U	11	MDL	23	PQL	UG/KG	UJ	C
AROCLOR 1260	23	U	11	MDL	23	PQL	UG/KG	UJ	C
Aroclor 1262	23	U	11	MDL	23	PQL	UG/KG	UJ	C
Aroclor 1268	23	U	11	MDL	23	PQL	UG/KG	UJ	C
Aroclor 5432	46	U	23	MDL	46	PQL	UG/KG	UJ	C
Aroclor 5442	46	U	23	MDL	46	PQL	UG/KG	UJ	C
Aroclor 5460	46	U	23	MDL	46	PQL	UG/KG	UJ	C

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12F071 **Laboratory: EMXT**

EDD Filename: Prep12F071 **eQAPP Name: CDM_SSFL_120730_EMAX**

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

Sample ID: SL-809-SA5C-SB-4.0-5.0 *Collected:* 6/11/2012 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
AROCLOR 1016	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1221	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1232	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1242	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1248	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1254	22	U	11	MDL	22	PQL	UG/KG	UJ	C
AROCLOR 1260	22	U	11	MDL	22	PQL	UG/KG	UJ	C
Aroclor 1262	22	U	11	MDL	22	PQL	UG/KG	UJ	C
Aroclor 1268	22	U	11	MDL	22	PQL	UG/KG	UJ	C
Aroclor 5432	44	U	22	MDL	44	PQL	UG/KG	UJ	C
Aroclor 5442	44	U	22	MDL	44	PQL	UG/KG	UJ	C
Aroclor 5460	44	U	22	MDL	44	PQL	UG/KG	UJ	C

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

Sample ID: SL-509-SA5C-SB-4.0-5.0 *Collected:* 6/11/2012 8:43:00 *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	3.3	J	2.7	MDL	11	PQL	UG/KG	J	Z, FD
BENZO(A)PYRENE	3.3	J	2.7	MDL	11	PQL	UG/KG	J	Z, FD
BENZO(B)FLUORANTHENE	5.7	J	2.7	MDL	11	PQL	UG/KG	J	Z, FD
BENZO(E)PYRENE	3.0	J	2.7	MDL	5.4	PQL	UG/KG	J	Z, FD
FLUORANTHENE	5.7	J	2.7	MDL	11	PQL	UG/KG	J	Z, FD
PYRENE	5.1	J	2.7	MDL	11	PQL	UG/KG	J	Z, FD

Sample ID: SL-518-SA5C-SB-4.0-5.0 *Collected:* 6/11/2012 9:24:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)ANTHRACENE	21	J	5.6	MDL	22	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	8.8	J	5.6	MDL	22	PQL	UG/KG	J	Z
BENZO(K)FLUORANTHENE	16	J	5.6	MDL	22	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12F071 **Laboratory: EMXT**

EDD Filename: Prep12F071 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

Method: 8270C SIM **Matrix: SO**

Sample ID: SL-518-SA5C-SB-4.0-5.0 *Collected:* 6/11/2012 9:24:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHRYSENE	19	J	5.6	MDL	22	PQL	UG/KG	J	Z
INDENO(1,2,3-CD)PYRENE	9.6	J	5.6	MDL	22	PQL	UG/KG	J	Z

Sample ID: SL-520-SA5C-SB-6.5-7.5 *Collected:* 6/11/2012 2:50:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(E)PYRENE	8.3	J	5.3	MDL	11	PQL	UG/KG	J	Z
BENZO(K)FLUORANTHENE	6.1	J	5.3	MDL	21	PQL	UG/KG	J	Z

Sample ID: SL-521-SA5C-SB-0.0-0.5 *Collected:* 6/11/2012 3:20:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 3

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(E)PYRENE	11	J	8.5	MDL	17	PQL	UG/KG	J	Z
BENZO(K)FLUORANTHENE	10	J	8.5	MDL	34	PQL	UG/KG	J	Z

Sample ID: SL-574-SA5C-SB-9.0-10.0 *Collected:* 6/11/2012 11:30:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)ANTHRACENE	3.0	J	2.9	MDL	11	PQL	UG/KG	J	Z
BENZO(E)PYRENE	3.8	J	2.9	MDL	5.7	PQL	UG/KG	J	Z

Sample ID: SL-809-SA5C-SB-4.0-5.0 *Collected:* 6/11/2012 8:30:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)ANTHRACENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	FD
BENZO(A)PYRENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	FD
BENZO(B)FLUORANTHENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	FD
BENZO(E)PYRENE	5.5	U	2.7	MDL	5.5	PQL	UG/KG	UJ	FD
FLUORANTHENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	FD
PYRENE	11	U	2.7	MDL	11	PQL	UG/KG	UJ	FD

* denotes a non-reportable result

Project Name and Number: PHASE3 - SSFL PHASE 3

Data Qualifier Summary

Lab Reporting Batch ID: 12F071 **Laboratory: EMXT**

EDD Filename: Prep12F071 **eQAPP Name: CDM_SSFL_120730_EMAX**

Reason Code Legend

Reason Code	*Description*
C	Continuing Calibration Verification Percent Difference Lower Estimation
E	Matrix Spike Precision
FD	Field 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: PHASE3 - SSFL PHASE 3

Enclosure I

Level III ADR Outliers
(including Manual Review Outliers)

Quality Control
Outlier Reports

12F071

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 12F071 **Laboratory: EMXT**

EDD Filename: 12F071 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 6020
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-509-SA5C-SB-4.0-5.0MS (TOT) (SL-507-SA5C-SB-2.5-3.5 SL-508-SA5C-SB-4.0-5.0 SL-508-SA5C-SB-6.5-7.5 SL-509-SA5C-SB-4.0-5.0 SL-509-SA5C-SB-9.0-10.0 SL-518-SA5C-SB-4.0-5.0 SL-518-SA5C-SB-9.0-10.0 SL-520-SA5C-SB-6.5-7.5 SL-521-SA5C-SB-0.0-0.5 SL-521-SA5C-SB-4.0-5.0 SL-521-SA5C-SB-9.0-10.0 SL-574-SA5C-SB-4.0-5.0 SL-574-SA5C-SB-9.0-10.0 SL-809-SA5C-SB-4.0-5.0)	MANGANESE	138	-	75.00-125.00	-	MANGANESE	No Qual, >4x
SL-509-SA5C-SB-4.0-5.0MS (TOT) **SL-509-SA5C-SB-4.0-5.0MSD (TOT)** (SL-507-SA5C-SB-2.5-3.5 SL-508-SA5C-SB-4.0-5.0 SL-508-SA5C-SB-6.5-7.5 SL-509-SA5C-SB-4.0-5.0 SL-509-SA5C-SB-9.0-10.0 SL-518-SA5C-SB-4.0-5.0 SL-518-SA5C-SB-9.0-10.0 SL-520-SA5C-SB-6.5-7.5 SL-521-SA5C-SB-0.0-0.5 SL-521-SA5C-SB-4.0-5.0 SL-521-SA5C-SB-9.0-10.0 SL-574-SA5C-SB-4.0-5.0 SL-574-SA5C-SB-9.0-10.0 SL-809-SA5C-SB-4.0-5.0)	TITANIUM	55	-34	75.00-125.00	-	TITANIUM	No Qual, >4x
SL-509-SA5C-SB-4.0-5.0MS (TOT) **SL-509-SA5C-SB-4.0-5.0MSD (TOT)** (SL-507-SA5C-SB-2.5-3.5 SL-508-SA5C-SB-4.0-5.0 SL-508-SA5C-SB-6.5-7.5 SL-509-SA5C-SB-4.0-5.0 SL-509-SA5C-SB-9.0-10.0 SL-518-SA5C-SB-4.0-5.0 SL-518-SA5C-SB-9.0-10.0 SL-520-SA5C-SB-6.5-7.5 SL-521-SA5C-SB-0.0-0.5 SL-521-SA5C-SB-4.0-5.0 SL-521-SA5C-SB-9.0-10.0 SL-574-SA5C-SB-4.0-5.0 SL-574-SA5C-SB-9.0-10.0 SL-809-SA5C-SB-4.0-5.0)	ANTIMONY BARIUM CALCIUM PHOSPHORUS	72 62 132 -	67 44 40 74	75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00	- - 22 (20.00) -	ANTIMONY BARIUM CALCIUM PHOSPHORUS	J(all detects) UJ(all non-detects) Ba, No Qual, >4x

Project Name and Number: PHASE3 - SSFL PHASE 3

Field Duplicate RPD Report

Lab Reporting Batch ID: 12F071 **Laboratory: EMXT**

EDD Filename: Prep12F071 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 6020
Matrix: SO

Analyte	Concentration (MG/KG)		Sample RPD	eQAPP RPD	Flag
	SL-509-SA5C-SB-4.0-5.0 (TOT)	SL-809-SA5C-SB-4.0-5.0 (TOT)			
ALUMINUM	20100	21000	4	50.00	
ANTIMONY	0.239	0.190	23	50.00	
ARSENIC	5.59	5.96	6	50.00	
BARIUM	137	132	4	50.00	
BERYLLIUM	0.820	0.898	9	50.00	
BORON	3.66	3.35	9	50.00	
CADMIUM	0.374	0.297	23	50.00	
CHROMIUM	26.5	24.4	8	50.00	
COBALT	6.65	6.62	0	50.00	
COPPER	10.3	9.79	5	50.00	
IRON	23400	23800	2	50.00	
LITHIUM	19.8	20.4	3	50.00	
MAGNESIUM	4680	5070	8	50.00	
MANGANESE	214	204	5	50.00	No Qualifiers Applied
MOLYBDENUM	0.509	0.358	35	50.00	
NICKEL	14.4	13.2	9	50.00	
PHOSPHORUS	153	115	28	50.00	
POTASSIUM	2500	2280	9	50.00	
SILVER	0.0620	0.0608	2	50.00	
SODIUM	339	386	13	50.00	
STRONTIUM	29.9	35.7	18	50.00	
THALLIUM	0.263	0.265	1	50.00	
TITANIUM	904	880	3	50.00	
VANADIUM	43.2	45.3	5	50.00	
ZINC	49.7	46.0	8	50.00	
Zirconium	2.91	3.28	12	50.00	
CALCIUM	9190	20600	77	50.00	J(all detects)
LEAD	23.0	8.27	94	50.00	

Method: 8270C SIM
Matrix: SO

Analyte	Concentration (UG/KG)		Sample RPD	eQAPP RPD	Flag
	SL-509-SA5C-SB-4.0-5.0	SL-809-SA5C-SB-4.0-5.0			
BENZO(A)ANTHRACENE	3.3	11 U	200	50.00	
BENZO(A)PYRENE	3.3	11 U	200	50.00	
BENZO(B)FLUORANTHENE	5.7	11 U	200	50.00	J(all detects)
BENZO(E)PYRENE	3.0	5.5 U	200	50.00	UJ(all non-detects)
FLUORANTHENE	5.7	11 U	200	50.00	
PYRENE	5.1	11 U	200	50.00	

Method: 9045D
Matrix: SO

Analyte	Concentration (PH UNIT)		Sample RPD	eQAPP RPD	Flag
	SL-509-SA5C-SB-4.0-5.0	SL-809-SA5C-SB-4.0-5.0			
PH	8.21	8.36	2		No Qualifiers Applied

Project Name and Number: PHASE3 - SSFL PHASE 3

Reporting Limit Outliers

Lab Reporting Batch ID: 12F071 **Laboratory: EMXT**

EDD Filename: 12F071 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 6020
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-507-SA5C-SB-2.5-3.5	ANTIMONY	J	0.232	0.539	PQL	MG/KG	J (all detects)
	BORON	J	3.47	5.39	PQL	MG/KG	
	CADMIUM	J	0.365	0.539	PQL	MG/KG	
	MOLYBDENUM	J	0.427	0.539	PQL	MG/KG	
	SILVER	J	0.0573	0.539	PQL	MG/KG	
	THALLIUM	J	0.277	0.431	PQL	MG/KG	
SL-508-SA5C-SB-4.0-5.0	ANTIMONY	J	0.223	0.535	PQL	MG/KG	J (all detects)
	BORON	J	3.40	5.35	PQL	MG/KG	
	CADMIUM	J	0.315	0.535	PQL	MG/KG	
	MOLYBDENUM	J	0.368	0.535	PQL	MG/KG	
	SILVER	J	0.0627	0.535	PQL	MG/KG	
	THALLIUM	J	0.262	0.428	PQL	MG/KG	
	Zirconium	J	3.53	5.35	PQL	MG/KG	
SL-508-SA5C-SB-6.5-7.5	ANTIMONY	J	0.185	0.517	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.240	0.517	PQL	MG/KG	
	THALLIUM	J	0.227	0.413	PQL	MG/KG	
SL-509-SA5C-SB-4.0-5.0	ANTIMONY	J	0.239	0.520	PQL	MG/KG	J (all detects)
	BORON	J	3.66	5.20	PQL	MG/KG	
	CADMIUM	J	0.374	0.520	PQL	MG/KG	
	MOLYBDENUM	J	0.509	0.520	PQL	MG/KG	
	SILVER	J	0.0620	0.520	PQL	MG/KG	
	THALLIUM	J	0.263	0.416	PQL	MG/KG	
	Zirconium	J	2.91	5.20	PQL	MG/KG	
SL-509-SA5C-SB-9.0-10.0	ANTIMONY	J	0.194	0.518	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.188	0.518	PQL	MG/KG	
	MOLYBDENUM	J	0.254	0.518	PQL	MG/KG	
	THALLIUM	J	0.270	0.414	PQL	MG/KG	
SL-518-SA5C-SB-4.0-5.0	ANTIMONY	J	0.173	0.551	PQL	MG/KG	J (all detects)
	BORON	J	3.64	5.51	PQL	MG/KG	
	CADMIUM	J	0.355	0.551	PQL	MG/KG	
	MOLYBDENUM	J	0.327	0.551	PQL	MG/KG	
	SILVER	J	0.0598	0.551	PQL	MG/KG	
	THALLIUM	J	0.243	0.441	PQL	MG/KG	
	Zirconium	J	3.66	5.51	PQL	MG/KG	
SL-518-SA5C-SB-9.0-10.0	ANTIMONY	J	0.239	0.539	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.334	0.539	PQL	MG/KG	
	MOLYBDENUM	J	0.442	0.539	PQL	MG/KG	
	SILVER	J	0.196	0.539	PQL	MG/KG	
	THALLIUM	J	0.339	0.431	PQL	MG/KG	
	Zirconium	J	3.28	5.39	PQL	MG/KG	
SL-520-SA5C-SB-6.5-7.5	ANTIMONY	J	0.115	0.515	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.205	0.515	PQL	MG/KG	
	MOLYBDENUM	J	0.230	0.515	PQL	MG/KG	
	THALLIUM	J	0.197	0.412	PQL	MG/KG	
SL-521-SA5C-SB-0.0-0.5	ANTIMONY	J	0.177	0.548	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.270	0.548	PQL	MG/KG	
	SODIUM	J	106	110	PQL	MG/KG	
	THALLIUM	J	0.249	0.438	PQL	MG/KG	

Project Name and Number: PHASE3 - SSFL PHASE 3

Reporting Limit Outliers

Lab Reporting Batch ID: 12F071 **Laboratory: EMXT**

EDD Filename: 12F071 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 6020

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-521-SA5C-SB-4.0-5.0	ANTIMONY	J	0.206	0.549	PQL	MG/KG	J (all detects)
	BORON	J	2.81	5.49	PQL	MG/KG	
	CADMIUM	J	0.219	0.549	PQL	MG/KG	
	MOLYBDENUM	J	0.275	0.549	PQL	MG/KG	
	THALLIUM	J	0.225	0.439	PQL	MG/KG	
	Zirconium	J	3.00	5.49	PQL	MG/KG	
SL-521-SA5C-SB-9.0-10.0	ANTIMONY	J	0.149	0.556	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.339	0.556	PQL	MG/KG	
	MOLYBDENUM	J	0.321	0.556	PQL	MG/KG	
	THALLIUM	J	0.245	0.445	PQL	MG/KG	
	Zirconium	J	3.32	5.56	PQL	MG/KG	
SL-574-SA5C-SB-4.0-5.0	ANTIMONY	J	0.234	0.544	PQL	MG/KG	J (all detects)
	CADMIUM	J	0.335	0.544	PQL	MG/KG	
	MOLYBDENUM	J	0.353	0.544	PQL	MG/KG	
	SILVER	J	0.0558	0.544	PQL	MG/KG	
	THALLIUM	J	0.311	0.435	PQL	MG/KG	
	Zirconium	J	3.86	5.44	PQL	MG/KG	
SL-574-SA5C-SB-9.0-10.0	ANTIMONY	J	0.266	0.564	PQL	MG/KG	J (all detects)
	BORON	J	3.85	5.64	PQL	MG/KG	
	CADMIUM	J	0.321	0.564	PQL	MG/KG	
	MOLYBDENUM	J	0.456	0.564	PQL	MG/KG	
	SILVER	J	0.0641	0.564	PQL	MG/KG	
	THALLIUM	J	0.270	0.451	PQL	MG/KG	
	Zirconium	J	3.55	5.64	PQL	MG/KG	
SL-809-SA5C-SB-4.0-5.0	ANTIMONY	J	0.190	0.548	PQL	MG/KG	J (all detects)
	BORON	J	3.35	5.48	PQL	MG/KG	
	CADMIUM	J	0.297	0.548	PQL	MG/KG	
	MOLYBDENUM	J	0.358	0.548	PQL	MG/KG	
	SILVER	J	0.0608	0.548	PQL	MG/KG	
	THALLIUM	J	0.265	0.439	PQL	MG/KG	
	Zirconium	J	3.28	5.48	PQL	MG/KG	

Method: 8270C SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-509-SA5C-SB-4.0-5.0	BENZO(A)ANTHRACENE	J	3.3	11	PQL	UG/KG	J (all detects)
	BENZO(A)PYRENE	J	3.3	11	PQL	UG/KG	
	BENZO(B)FLUORANTHENE	J	5.7	11	PQL	UG/KG	
	BENZO(E)PYRENE	J	3.0	5.4	PQL	UG/KG	
	FLUORANTHENE	J	5.7	11	PQL	UG/KG	
	PYRENE	J	5.1	11	PQL	UG/KG	
SL-518-SA5C-SB-4.0-5.0	BENZO(A)ANTHRACENE	J	21	22	PQL	UG/KG	J (all detects)
	BENZO(G,H,I)PERYLENE	J	8.8	22	PQL	UG/KG	
	BENZO(K)FLUORANTHENE	J	16	22	PQL	UG/KG	
	CHRYSENE	J	19	22	PQL	UG/KG	
	INDENO(1,2,3-CD)PYRENE	J	9.6	22	PQL	UG/KG	
SL-520-SA5C-SB-6.5-7.5	BENZO(E)PYRENE	J	8.3	11	PQL	UG/KG	J (all detects)
	BENZO(K)FLUORANTHENE	J	6.1	21	PQL	UG/KG	

Project Name and Number: PHASE3 - SSFL PHASE 3

Reporting Limit Outliers

Lab Reporting Batch ID: 12F071 **Laboratory: EMXT**

EDD Filename: 12F071 **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: **8270C SIM**

Matrix: **SO**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
SL-521-SA5C-SB-0.0-0.5	BENZO(E)PYRENE	J	11	17	PQL	UG/KG	J (all detects)
	BENZO(K)FLUORANTHENE	J	10	34	PQL	UG/KG	
SL-574-SA5C-SB-9.0-10.0	BENZO(A)ANTHRACENE	J	3.0	11	PQL	UG/KG	J (all detects)
	BENZO(E)PYRENE	J	3.8	5.7	PQL	UG/KG	

Enclosure II

Level IV Validation Reports

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Santa Susana Field Laboratory

Collection Date: June 11, 2012

LDC Report Date: October 25, 2012

Matrix: Soil

Parameters: Semivolatiles

Validation Level: Level IV

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 12F071

Sample Identification

SL-518-SA5C-SB-4.0-5.0
SL-518-SA5C-SB-9.0-10.0
SL-509-SA5C-SB-9.0-10.0
SL-509-SA5C-SB-4.0-5.0
SL-809-SA5C-SB-4.0-5.0
SL-574-SA5C-SB-9.0-10.0
SL-574-SA5C-SB-4.0-5.0
SL-508-SA5C-SB-4.0-5.0
SL-508-SA5C-SB-6.5-7.5
SL-507-SA5C-SB-2.5-3.5
SL-520-SA5C-SB-6.5-7.5
SL-521-SA5C-SB-0.0-0.5
SL-521-SA5C-SB-4.0-5.0
SL-521-SA5C-SB-9.0-10.0
SL-509-SA5C-SB-4.0-5.0MS
SL-509-SA5C-SB-4.0-5.0MSD

Introduction

This data review covers 16 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C using Selected Ion Monitoring (SIM) for Semivolatiles.

This review follows the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

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

J Indicates an estimated value.

R Quality control indicates the data is not usable.

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

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

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

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

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990 .

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs) and 25.0% for all other compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

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.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

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

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

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

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. 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 and RLs

All compound quantitation and RLs were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 12F071	All compounds reported below the RL.	J (all detects)	A

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples SL-509-SA5C-SB-4.0-5.0 and SL-809-SA5C-SB-4.0-5.0 were identified as field duplicates. No polychlorinated biphenyls were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/Kg)		RPD (Limits)	Difference (Limits)	Flag	A or P
	SL-509-SA5C-SB-4.0-5.0	SL-809-SA5C-SB-4.0-5.0				
Benzo(a)anthracene	3.3	11U	200 (≤50)	-	J (all detects) UJ (all non-detects)	A
Benzo(a)pyrene	3.3	11U	200 (≤50)	-	J (all detects) UJ (all non-detects)	A
Benzo(b)fluoranthene	5.7	11U	200 (≤50)	-	J (all detects) UJ (all non-detects)	A
Fluoranthene	5.7	11U	200 (≤50)	-	J (all detects) UJ (all non-detects)	A
Pyrene	5.1	11U	200 (≤50)	-	J (all detects) UJ (all non-detects)	A
Benzo(e)pyrene	3.0	5.5U	200 (≤50)	-	J (all detects) UJ (all non-detects)	A

Santa Susana Field Laboratory
Semivolatiles - Data Qualification Summary - SDG 12F071

SDG	Sample	Compound	Flag	A or P	Reason (Code)
12F071	SL-518-SA5C-SB-4.0-5.0 SL-518-SA5C-SB-9.0-10.0 SL-509-SA5C-SB-9.0-10.0 SL-509-SA5C-SB-4.0-5.0 SL-809-SA5C-SB-4.0-5.0 SL-574-SA5C-SB-9.0-10.0 SL-574-SA5C-SB-4.0-5.0 SL-508-SA5C-SB-4.0-5.0 SL-508-SA5C-SB-6.5-7.5 SL-507-SA5C-SB-2.5-3.5 SL-520-SA5C-SB-6.5-7.5 SL-521-SA5C-SB-0.0-0.5 SL-521-SA5C-SB-4.0-5.0 SL-521-SA5C-SB-9.0-10.0	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (Z)
12F071	SL-509-SA5C-SB-4.0-5.0 SL-809-SA5C-SB-4.0-5.0	Benzo(a)anthracene Benzo(a)pyrene Benzo(b)fluoranthene Fluoranthene Pyrene Benzo(e)pyrene	J (all detects) UJ (all non-detects)	A	Field duplicates (RPD)(FD)

Santa Susana Field Laboratory
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 12F071

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Semivolatiles - Field Blank Data Qualification Summary - SDG 12F071

No Sample Data Qualified in this SDG

LDC #: 28578L2b **VALIDATION COMPLETENESS WORKSHEET** Date: 10/22/12

SDG #: 12F071 Level IV Page: 1 of 1

Laboratory: EMAX Laboratories, Inc. Reviewer: [illegible]

SUOA 2nd Reviewer: [illegible]

METHOD: GC/MS ~~Polynuclear Aromatic Hydrocarbons~~ (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: 6/11/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	%RSD ≤ 30, r²
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 25
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	A	
XII.	Compound quantitation/RL/LOQ/LODs	A	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	A	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	D = 4+5
XVII.	Field blanks	ND	EB = EB-061412 (SDG 12F102) FB = FB-060512 (SDG 12F037)

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-SA5C-SB-4.0-5.0	11	SL-520-SA5C-SB-6.5-7.5	21	MBLK1S	31	
2	SL-518-SA5C-SB-9.0-10.0	12	SL-521-SA5C-SB-0.0-0.5	22	MBLK2S	32	
3	SL-509-SA5C-SB-9.0-10.0	13	SL-521-SA5C-SB-4.0-5.0	23		33	
4	SL-509-SA5C-SB-4.0-5.0	14	SL-521-SA5C-SB-9.0-10.0	24		34	
5	SL-809-SA5C-SB-4.0-5.0	15	SL-509-SA5C-SB-4.0-5.0MS	25		35	
6	SL-574-SA5C-SB-9.0-10.0	16	SL-509-SA5C-SB-4.0-5.0MSD	26		36	
7	SL-574-SA5C-SB-4.0-5.0	17		27		37	
8	SL-508-SA5C-SB-4.0-5.0	18		28		38	
9	SL-508-SA5C-SB-6.5-7.5	19		29		39	
10	SL-507-SA5C-SB-2.5-3.5	20		30		40	

LDC #: 28578126

VALIDATION FINDINGS CHECKLIST

Reviewer: FT
2nd Reviewer: A

Method: Semivolatiles (EPA SW 846 Method 8270C)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/MS instrument performance check				
Were the DFTPP performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Was a curve fit used for evaluation?	✓			
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?	✓			
Were all percent relative standard deviations (%RSD) ≤ 30% and relative response factors (RRF) > 0.05?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Were all percent differences (%D) ≤ 25% and relative response factors (RRF) ≥ 0.05?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.				
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	✓			
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?	✓			