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 with the following exceptions:

Date	Standard	Column	Compound	%D	Associated Samples	Flag	A or P
4/11/12 (16:48)	CCV	ELITE-CLP	gamma-BHC beta-BHC delta-BHC Heptachlor Methoxychlor	21 22 21 26 24	SL-057-NBZ-SS-0.0-0.5 DUP-02-NBZ-QC-032312 SL-057-NBZ-SS-0.0-0.5MS SL-057-NBZ-SS-0.0-0.5MSD MBLK1S	J (all detects) UJ (all non-detects)	A
4/11/12 (16:48)	CCV	ELITE-CLP2	beta-BHC Heptachlor Methoxychlor	23 21 29	SL-057-NBZ-SS-0.0-0.5 DUP-02-NBZ-QC-032312 SL-057-NBZ-SS-0.0-0.5MS SL-057-NBZ-SS-0.0-0.5MSD MBLK1S	J (all detects) UJ (all non-detects)	A
4/11/12 (23:22)	CCV	ELITE-CLP	alpha-BHC gamma-BHC beta-BHC delta-BHC Heptachlor Aldrin Heptachlor epoxide 4,4'-DDT Methoxychlor	25 28 35 32 33 26 21 21 29	SL-048-NBZ-SS-0.0-0.5	J (all detects) UJ (all non-detects)	P

Date	Standard	Column	Compound	%D	Associated Samples	Flag	A or P
4/11/12 (23:22)	CCV	ELITE-CLP2	alpha-BHC gamma-BHC beta-BHC delta-BHC Heptachlor 4,4'-DDT Methoxychlor	22 22 34 26 28 24 34	SL-048-NBZ-SS-0.0-0.5	J (all detects) UJ (all non-detects)	A

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

Retention times (RT) of all compounds in the calibration standards were within QC limits.

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-NBZ-SS-040412 (from SDG 12D031) was identified as an equipment 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 with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
SL-057-NBZ-SS-0.0-0.5MS/MSD (SL-057-NBZ-SS-0.0-0.5)	beta-BHC Heptachlor delta-BHC Heptachlor epoxide 4,4'-DDE 4,4'-DDT	164 (50-140) - 158 (30-150) 142 (40-140) 153 (50-150) 611 (30-160)	181 (50-140) 143 (20-140) 262 (30-150) 392 (40-140) 167 (50-150) 236 (30-160)	- - - 94 (≤50) - 89 (≤50)	J (all detects)	A

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.

The sample results for detected compounds from the two columns were within 40% relative percent difference (RPD) with the following exceptions:

Sample	Compound	RPD	Flag	A or P
SL-048-NBZ-SS-0.0-0.5	4,4'-DDD Endosulfan sulfate	46 191	J (all detects) J (all detects)	A
SL-057-NBZ-SS-0.0-0.5	4,4'-DDE Dieldrin Endrin Endosulfan sulfate Methoxychlor	43 156 114 156 108	J (all detects) J (all detects) J (all detects) J (all detects) J (all detects)	A
DUP-02-NBZ-QC-032312	Heptachlor epoxide Endosulfan I Endrin	57 95 127	J (all detects) J (all detects) J (all detects)	A

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 12C254	All compounds reported below the RL.	J (all detects)	A

XIV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XV. Field Duplicates

Samples SL-057-NBZ-SS-0.0-0.5 and DUP-02-NBZ-QC-032312 were identified as field duplicates. No chlorinated pesticides were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/Kg)		RPD (Limits)	Flags	A or P
	SL-057-NBZ-SS-0.0-0.5	DUP-02-NBZ-QC-032312			
4,4'-DDE	11	0.36U	200 (≤50)	J (all detects) UJ (all non-detects)	A
Dieldrin	2.6	0.36U	200 (≤50)	J (all detects) UJ (all non-detects)	A
Endrin	0.25	0.27	8 (≤50)	-	-
Endosulfan II	0.89	0.36U	200 (≤50)	J (all detects) UJ (all non-detects)	A
Endrin aldehyde	5.5	0.36U	200 (≤50)	J (all detects) UJ (all non-detects)	A
Endosulfan sulfate	0.32	0.36U	200 (≤50)	J (all detects) UJ (all non-detects)	A
Methoxychlor	2.2	1.8U	200 (≤50)	J (all detects) UJ (all non-detects)	A
Heptachlor epoxide	0.18U	5.6	200 (≤50)	J (all detects) UJ (all non-detects)	A
Endosulfan I	0.18U	1.1	200 (≤50)	J (all detects) UJ (all non-detects)	A

Santa Susana Field Laboratory
Chlorinated Pesticides - Data Qualification Summary - SDG 12C254

SDG	Sample	Compound	Flag	A or P	Reason (Code)
12C254	SL-057-NBZ-SS-0.0-0.5 DUP-02-NBZ-QC-032312	gamma-BHC beta-BHC delta-BHC Heptachlor Methoxychlor	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D) (C)
12C254	SL-048-NBZ-SS-0.0-0.5	alpha-BHC gamma-BHC beta-BHC delta-BHC Heptachlor Aldrin Heptachlor epoxide 4,4'-DDT Methoxychlor	J (all detects) UJ (all non-detects)	P	Continuing calibration (%D) (C)
12C254	SL-048-NBZ-SS-0.0-0.5	alpha-BHC gamma-BHC beta-BHC delta-BHC Heptachlor 4,4'-DDT Methoxychlor	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D) (C)
12C254	SL-057-NBZ-SS-0.0-0.5	beta-BHC Heptachlor delta-BHC 4,4'-DDE	J (all detects) J (all detects) J (all detects) J (all detects)	A	Matrix spike/Matrix spike duplicate (%R) (Q)
12C254	SL-057-NBZ-SS-0.0-0.5	Heptachlor epoxide 4,4'-DDT	J (all detects) J (all detects)	A	Matrix spike/Matrix spike duplicate (%R)(RPD)(Q)
12C254	SL-048-NBZ-SS-0.0-0.5	4,4'-DDD Endosulfan sulfate	J (all detects) J (all detects)	A	Compound quantitation and RLs (RPD) (*XIII)
12C254	SL-057-NBZ-SS-0.0-0.5	4,4'-DDE Dieldrin Endrin Endosulfan sulfate Methoxychlor	J (all detects) J (all detects) J (all detects) J (all detects) J (all detects)	A	Compound quantitation and RLs (RPD) (*XIII)
12C254	DUP-02-NBZ-QC-032312	Heptachlor epoxide Endosulfan I Endrin	J (all detects) J (all detects) J (all detects)	A	Compound quantitation and RLs (RPD) (*XIII)
12C254	SL-048-NBZ-SS-0.0-0.5 SL-057-NBZ-SS-0.0-0.5 DUP-02-NBZ-QC-032312	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (Z)

SDG	Sample	Compound	Flag	A or P	Reason (Code)
12C254	SL-057-NBZ-SS-0.0-0.5 DUP-02-NBZ-QC-032312	4,4'-DDE Dieldrin Endosulfan II Endrin aldehyde Endosulfan sulfate Methoxychlor Heptachlor epoxide Endosulfan I	J (all detects) UJ (all non-detects)	A	Field duplicates (RPD) (FD)

Santa Susana Field Laboratory
Chlorinated Pesticides - Laboratory Blank Data Qualification Summary - SDG 12C254

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Chlorinated Pesticides - Field Blank Data Qualification Summary - SDG 12C254

No Sample Data Qualified in this SDG

LDC #: 28255H3a **VALIDATION COMPLETENESS WORKSHEET** Date: 8/30/12
SDG #: 12C254 Level IV Page: 1 of 1
Laboratory: EMAX Laboratories, Inc. Reviewer:
2nd Reviewer:

METHOD: GC Chlorinated Pesticides (EPA SW846 Method 8081A)

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

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 3/23/12
II.	GC/ECD Instrument Performance Check	A	
III.	Initial calibration	A	% RSD ≤ 20
IV.	Continuing calibration/ICV	SW	ICV / CCV ≤ 20
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	SW	
VIII.	Laboratory control samples	A	LCS / LCSD
IX.	Regional quality assurance and quality control	N	
X.	Florisil cartridge check	N	
XI.	GPC Calibration	N	
XII.	Target compound identification	A	
XIII.	Compound quantitation RL/LOQ/LODs	SW	
XIV.	Overall assessment of data	A	
XV.	Field duplicates	SW	D = 2 + 3
XVI.	Field blanks	ND	EB = EB-NBZ-SS-040412

SDG # 12D031

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-048-NBZ-SS-0.0-0.5	11	MBLK1S	21		31	
2	SL-057-NBZ-SS-0.0-0.5	12		22		32	
3	DUP-02-NBZ-QC-032312	13		23		33	
4	SL-057-NBZ-SS-0.0-0.5MS	14		24		34	
5	SL-057-NBZ-SS-0.0-0.5MSD	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 #: 28255H3a
SDG #: see cover

VALIDATION FINDINGS CHECKLIST

Reviewer: FM
2nd Reviewer: e

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) $\leq$ 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 $\leq$ 15%.0 for individual breakdown in the Evaluation mix standards?	✓			
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) $\leq$ ~~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 #: 28255H3a
SDG #: see cover

VALIDATION FINDINGS CHECKLIST

Reviewer: JM
2nd Reviewer: [illegible]

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 #: 28553#3a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: ✓ GC ___ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
What type of continuing calibration calculation was performed? ___%D or ___RPD
Y N N/A Were continuing calibration standards analyzed at the required frequencies?
Y N N/A Did the continuing calibration standards meet the %D / RPD validation criteria of ≤15.0%?
Level IV Only
Y N N/A Were the retention times for all calibrated compounds within their respective acceptance windows?

#	Date	Standard ID	Detector/ Column	Compound	%D / RPD (Limit ≤ 15.0) 20	RT (limit)	Associated Samples	Qualifications
	4/11/12	CCV	ELITE-clP	D	21	( )	MBLK1S, 2→5	J/UJ/Δ (C)
	16:48			B	22	( )		
				C	21	( )		
				E	26	( )		
				P	24	( )		
			ELITE-clP2	B	23	( )		
				E	21	( )		
				P	29	( )		
						( )		
	4/11/12	CCV	ELITE-clP	A	25	( )	1	J/UJ/P C
	23:22			D	28	( )		
				B	35	( )		
				C	32	( )		
				E	33	( )		
				F	26	( )		
				G	21	( )		
				O	21	( )		
				P	29	( )		
			ELITE-clP2	A	22	( )		J/UJ/Δ C
				P	22	( )		
				B	34	( )		
				C	26	( )		
				E	28	( )		
				O	24	( )		
				P	34			

LDC #: 28255#32

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

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

METHOD: __GC__ HPLC

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

Y N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG?
Y N N/A Was an MS/MSD analyzed every 20 samples for each matrix or whenever a sample extraction was performed?
Y N N/A Were the MS/MSD percent recoveries (%R) and relative percent differences (RPD) within QC limits?

#	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	4 & 5	B	164 (50-140)	181 (50-140)	( )	2	J / Adet (Q)
		E	( )	143 (20-140)	( )		
		C	158 (30-150)	262 (30-150)	( )		
		G	142 (40-140)	392 (40-140)	94 (50)		
		J	153 (50-150)	167 (50-150)	( )		
		O	611 (30-160)	236 (30-160)	89 (50)		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
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			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		

LDC #: 28255113a

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and Reported CRQLs

Reviewer: FT
2nd Reviewer: A

METHOD: ✓ GC __ HPLC

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

Level IV/D Only

* X 111

Y N N/A Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

Y N N/A Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

#	Compound Name	% RPD Bet 2 col ≤40 Finding	Associated Samples	Qualifications
	M	46	1	J / A det
	N	191		
	J	43	2	d
	I	156		
	K	114		
	N	156		
	P	108		
	G	57	3	d
	H	95		
	K	127		

Comments: See sample calculation verification worksheet for recalculations

LDC #: 28285H32

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: FT

2nd reviewer:

METHOD: ___ GC ___ HPLC

Y N N/A Were field duplicate pairs identified in this SDG?

Y N N/A Were target compounds detected in the field duplicate pairs?

Fd

Compound	Concentration (ug/kg)		%RPD Limit 50	Qualification Parent only / All Samples
	2	3		
J	11	0.36 U	200	J/UJ/A
I	2.6	0.36 U	↓	↓
K	0.25	0.27	8	—
L	0.89	0.36 U	200	J/UJ/A
R	5.5	0.36 U		
N	0.32	0.36 U		
P	2.2	1.8 U		
G	0.18 U	5.6	200	
H	0.18 U	1.1	200	

Compound	Concentration ( )		%RPD Limit _____	Qualification Parent only / All Samples

LDC #: 28255113a
SDG #: all cover

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: JMB
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 (10 std)	Recalculated CF (10 std)	Reported Average CF (initial)	Recalculated Average CF (initial)	Reported %RSD	Recalculated %RSD
1	ICAL	4/2/12	endosulfan I CLP1	1.2304	12304	124588.5	124588.5	7.1	7.1
			methoxychlor	52777	52777	50510.1	50510.1	14.5	14.5
			CLP2	56092	56092	56734.8	56734.8	6.3	6.3
2			↓	21234	21234	20697.2	20697.2	16.1	16.1
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 #: 28255T13a
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	ccv 16 ~~21~~:48	4/11/12	endosulfan I cup1	10	10.97	10.97	10	10
			methoxychlor	100.0	123.80	123.80	24	24
			cup2	10.0	10.91	10.91	9	9
2				100.0	128.74	128.74	29	29
3	ccv 23:22	4/11/12	↓	10.0	11.43	11.43	14	14
				100	129.42	129.42	29	29
			↓	10.0	11.23	11.23	12	12
4			↓	100	134.38	134.38	34	34

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

LDC #: 42855T39
SDG #: per cover

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: P
2nd reviewer: C

METHOD: GC Pesticides/PCBs (EPA SW 846 Method 8081/8082)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #1

Surrogate	Column	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
Tetrachloro-m-xylene						
Tetrachloro-m-xylene	cvp1	40.0	49.120	123	123	0
Decachlorobiphenyl	↓	↓	17.155	42.9	42.9	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 #: 28255#3c
SDG #: per cover

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

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

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 (ng/kg)		Sample Concentration (ng/kg)	Spiked Sample Concentration (ng/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	2.88	2.88	ND	4.07	3.94	141	141	137	137	3	3
4,4'-DDT	↓	↓	ND	17.6	6.80	611	611	236	236	89	89

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 #: 28255#3c
SDG #: pw cover

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

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: A

METHOD: GC Pesticides/PCBs (EPA SW 846 Method 8081/8082)

The percent recoveries (%R) and Relative Percent difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100* (SSC-SC)/SA

Where: SSC = Spiked sample concentration
SA = Spike added
SC = Concentration

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

LCS = Laboratory control sample percent recovery
LCSD = Laboratory control sample duplicate percent recovery

LCS/LCSD samples: lcs ID

Compound	Spike Added (ug/kg)		Spiked Sample Concentration (ng/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
gamma-BHC	2.67	2.67	3.091	3.02	116	116	113	113	2	2
4,4'-DDT	↓	↓	3.53	3.38	132	132	127	127	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 #: 28255#3c
SDG #: per cover

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer:
2nd reviewer:

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. #1 endosulfan sulfate

$$\text{Conc.} = \frac{(8157088)(4)}{(123561.5)(30.03)(0.882)}$$

=

= 10 ug/kg

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Note:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Santa Susana Field Laboratory

Collection Date: March 23, 2012

LDC Report Date: August 31, 2012

Matrix: Soil

Parameters: Polychlorinated Biphenyls

Validation Level: Level IV

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 12C254

Sample Identification

SL-048-NBZ-SS-0.0-0.5
SL-048-NBZ-SB-4.0-5.0
SL-049-NBZ-SB-2.0-3.0
SL-051-NBZ-SB-1.5-2.5
SL-057-NBZ-SS-0.0-0.5
DUP-02-NBZ-QC-032312
SL-047-NBZ-SB-4.0-5.0
SL-057-NBZ-SS-0.0-0.5MS
SL-057-NBZ-SS-0.0-0.5MSD

Introduction

This data review covers 9 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 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 with the following exceptions:

Date	Standard	Column	Compound	%D	Associated Samples	Affected Compound	Flag	A or P
4/10/12	KD0934B	ZB-Multiresidue-2	Aroclor-1260	23	SL-057-NBZ-SS-0.0-0.5	Aroclor-1242 Aroclor-1254 Aroclor-1260 Aroclor-1262 Aroclor-1268	J (all detects) UJ (all non-detects)	A

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-NBZ-SS-040412 (from SDG 12D031) was identified as an equipment blank. No polychlorinated biphenyl contaminants were found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. Surrogate recoveries (%R) were not within QC limits for sample SL-057-NBZ-SS-0.0-0.5. Since the samples were diluted out, no data were qualified.

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 not within the QC limits. Since the samples were diluted out, no data were qualified.

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.

The sample results for detected compounds from the two columns were within 40% relative percent difference (RPD) with the following exceptions:

Sample	Compound	RPD	Flag	A or P
SL-057-NBZ-SS-0.0-0.5	Aroclor-1248	42	J (all detects)	A

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 12C254	All compounds reported below the RL.	J (all detects)	A

XIV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XV. Field Duplicates

Samples SL-057-NBZ-SS-0.0-0.5 and DUP-02-NBZ-QC-032312 were identified as field duplicates. No polychlorinated biphenyls were detected in any of the samples.

Compound	Concentration (ug/Kg)		RPD (Limits)	Flags	A or P
	SL-057-NBZ-SS-0.0-0.5	DUP-02-NBZ-QC-032312			
Aroclor-1248	4200	1.8U	200 (≤50)	J (all detects) UJ (all non-detects)	A
Aroclor-1260	1500	1.8U	200 (≤50)	J (all detects) UJ (all non-detects)	A
Aroclor-5460	26	3.5U	200 (≤50)	J (all detects) UJ (all non-detects)	A

Santa Susana Field Laboratory
Polychlorinated Biphenyls - Data Qualification Summary - SDG 12C254

SDG	Sample	Compound	Flag	A or P	Reason (Code)
12C254	SL-057-NBZ-SS-0.0-0.5	Aroclor-1242 Aroclor-1254 Aroclor-1260 Aroclor-1262 Aroclor-1268	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D) (C)
12C254	SL-057-NBZ-SS-0.0-0.5	Aroclor-1248	J (all detects)	A	Compound quantitation and RLs (RPD) (*XIII)
12C254	SL-048-NBZ-SS-0.0-0.5 SL-048-NBZ-SB-4.0-5.0 SL-049-NBZ-SB-2.0-3.0 SL-051-NBZ-SB-1.5-2.5 SL-057-NBZ-SS-0.0-0.5 DUP-02-NBZ-QC-032312 SL-047-NBZ-SB-4.0-5.0	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (Z)
12C254	SL-057-NBZ-SS-0.0-0.5 DUP-02-NBZ-QC-032312	Aroclor-1248 Aroclor-1260 Aroclor-5460	J (all detects) UJ (all non-detects)	A	Field duplicates (RPD) (FD)

Santa Susana Field Laboratory
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 12C254

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 12C254

No Sample Data Qualified in this SDG

LDC #: 28255H3b **VALIDATION COMPLETENESS WORKSHEET** Date: 8/30/12
SDG #: 12C254 Level IV Page: 1 of 1
Laboratory: EMAX Laboratories, Inc. Reviewer: [illegible]
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: 3/23/12
II.	GC/ECD Instrument Performance Check	NA	
III.	Initial calibration	A	%D RSD ≤ 20
IV.	Continuing calibration/ICV	SW	ICV/CCV ≤ 20
V.	Blanks	A	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	SW	
VIII.	Laboratory control samples	A	LCS/D
IX.	Regional quality assurance and quality control	N	
X.	Florisil cartridge check	N	
XI.	GPC Calibration	N	
XII.	Target compound identification	A	
XIII.	Compound quantitation/RL/LOQ/LODs	SW	
XIV.	Overall assessment of data	A	
XV.	Field duplicates	SW	D = 5, 6
XVI.	Field blanks	ND	EB = EB NBZ - SS-040412 SDG 12D031

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-048-NBZ-SS-0.0-0.5	11	MBLK1S	21		31	
2	SL-048-NBZ-SB-4.0-5.0	12		22		32	
3	SL-049-NBZ-SB-2.0-3.0	13		23		33	
4	SL-051-NBZ-SB-1.5-2.5	14		24		34	
5	SL-057-NBZ-SS-0.0-0.5	15		25		35	
6	DUP-02-NBZ-QC-032312	16		26		36	
7	SL-047-NBZ-SB-4.0-5.0	17		27		37	
8	SL-057-NBZ-SS-0.0-0.5MS	18		28		38	
9	SL-057-NBZ-SS-0.0-0.5MSD	19		29		39	
10		20		30		40	

Notes:

.DC #: 28255H3b
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 #: 28255 H3b
SDG #: see cover

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.			✓	

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 #: 28255/136

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: A

METHOD: ✓ GC __ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
What type of continuing calibration calculation was performed? ___%D or ___RPD
Y N N/A Were continuing calibration standards analyzed at the required frequencies?
Y N N/A Did the continuing calibration standards meet the %D / RPD validation criteria of ~~≤15.0%~~ 20?
Level IV Only
Y N N/A Were the retention times for all calibrated compounds within their respective acceptance windows?

(C)

#	Date	Standard ID	Detector/ Column	Compound	%D / RPD (Limit ≤ ~~15.0~~ 20)	RT (limit)	Associated Samples	Qualifications
	4/10/12	KD0934B	ZB-multiresidue -2	BB	23	( )	5	J/UJ/A
						( )	qual	Y, AA, BB,
						( )		Aroclor 1262,
						( )		Aroclor 1268,
						( )		~~Aroclor 5432~~
						( )		~~Aroclor 5442~~
						( )		
						( )		
						( )		
						( )		
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						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
					note: Above has 1248 ccv,			
					~~Aroclor 7460 analyzed on different run~~			(1X)

LDC #: 28255H3b

VALIDATION FINDINDS WORKSHEET
Surrogate Recovery

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

METHOD: ✓ **GC** ___ **HPLC**

Are surrogates required by the method? Yes____ or No____.

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

Y N N/A Were surrogates spiked into all samples and blanks?

Y N N/A Did all surrogate recoveries (%R) meet the QC limits?

#	Sample ID	Detector/ Column	Surrogate Compound	%R (Limits)	Qualifications
	5	ZB-Multiresidue-2	surrogates	were diluted out)	no qual 100 x DL
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	

	Surrogate Compound		Surrogate Compound		Surrogate Compound		Surrogate Compound		
A	Chlorobenzene (CBZ)	G	Octacosane	M	Benzo(e)Pyrene	S	1-Chloro-3-Nitrobenzene	Y	Tetrachloro-m- xylene
B	4-Bromofluorobenzene (BFB)	H	Ortho-Terphenyl	N	Terphenyl-D14	T	3,4-Dinitrotoluene		
C	a,a,a-Trifluorotoluene	I	Fluorobenzene (FBZ)	O	Decachlorobiphenyl (DCB)	U	Tripentyltin		
D	Bromochlorobenene	J	n-Triacontane	P	1-methylnaphthalene	V	Tri-n-propyltin		
E	1,4-Dichlorobutane	K	Hexacosane	Q	Dichlorophenyl Acetic Acid (DCAA)	W	Tributyl Phosphate		
F	1,4-Difluorobenzene (DFB)	L	Bromobenzene	R	4-Nitrophenol	X	Triphenyl Phosphate		

LDC #: 28255H3b

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

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

METHOD: / **__ GC __ HPLC**

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

Y N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG?
Y N N/A Was an MS/MSD analyzed every 20 samples for each matrix or whenever a sample extraction was performed?
Y N N/A Were the MS/MSD percent recoveries (%R) and relative percent differences (RPD) within QC limits?

#	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	8+9	%R	+ %(RSD)	were outside limit			no qual 100XPQL
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
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			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		

LDC #: 28255113b

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and Reported CRQLs

Reviewer: FT
2nd Reviewer: A

METHOD: ___ GC ___ HPLC

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

Level IV/D Only

Y N N/A Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

Y N N/A Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

#	Compound Name	% RPD Between 2 Finding <0 ≤40	Associated Samples	Qualifications
	Aroclor 1248	42	5	J/A dut (*X 111)
	Aroclor 1260		~~7~~	

Comments: See sample calculation verification worksheet for recalculations

LDC #: 28255 #35
SDG #: see cover

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: EJ
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 (5U std)	Recalculated CF (5U std)	Reported Average CF (initial)	Recalculated Average CF (initial)	Reported %RSD	Recalculated %RSD
1	ICAL ZB-multiresidue 1	2/29/12	PCB 1260-1	3697.26	3697.26	3671.742	3671.742	7.5	7.5
2	ZB. multi-2		↓	9860	9860	10079.1	10079.1	18.5	18.5
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 #: 28255113b
SDG #: pw conn

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Page: 1 of 7
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	CCV 21:33	4/10/12	PCB 1260 ch A	500	495.310	495.310	1	1
			ch B	500	385.854	385.854	23	23
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 #: 28255#3b
SDG #: pw conn

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Page: 1 of 7
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	ccv 0551	4/5/12	PCB 1260 ch A	500	524.045	524	5	5
			ch B	500	425.881	426	15	15
2	ccv 15:13	4/6/12	↓	↓	517.329	417	3	3
					418.761	419	16	16
3	ccv 5:12	4/7/12	↓	↓	525.814	526	5	5
					433.438	433	13	13
4	ccv 22:01	4/7/12	↓	↓	560.478	560	12	12
					453.912	454	9	9

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 #: 28 [illegible]

SDG #: see cover

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Page: 1 of 1

Reviewer: FT

2nd reviewer: [illegible]

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: 4

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Decachlorobiphenyl	2B-M-1	40	42.79	107	107	0
Tetrachloro-m-xylene	↓	40	46.36	116	116	0

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 #: [illegible]
SDG #: [illegible]

VALIDATION FINDINGS WORKSHEET

Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: FZ
2nd Reviewer: [illegible]

METHOD: (GC __HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC - SC)/SA Where SSC = Spiked sample concentration SC = Sample concentration
SA = Spike added

RPD =(({SSCMS - SSCMSD} * 2) / (SSCMS + SSCMSD))*100 MS = Matrix spike MSD = Matrix spike duplicate

MS/MSD samples: 8 & 9

Compound	Spike Added (ug/kg)		Sample Conc. (ug/kg)	Spike Sample Concentration (ug/kg)		Matrix spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	---	MS	MSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)											
Diesel (8015)											
Benzene (8021B)											
Methane (RSK-175)											
2,4-D (8151)											
Dinoseb (8151)											
Naphthalene (8310)											
Anthracene (8310)											
HMX (8330)											
2,4,6-Trinitrotoluene (8330)											
Aroclor 1260	71.9	71.9	1500	1210	1230	-403	0	-376	0	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 #: 28255 #34
SDG #: all cover

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

Reviewer: EJ
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: 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)										
Aroclor 1260	66.7	66.7	86.1	74.7	129	129	112	112	14	14

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 #: 28255 TT 3.7
SDG #: [illegible]

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: ✓ GC ___ HPLC

4/30
S = 92.7

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. #5 Compound Name 1260

Concentration = $\frac{(10576.5)(4)}{(30)(0.927)}$

= 1521 ug/kg

#	Sample ID	Compound	Reported Concentrations ( )	Recalculated Results Concentrations ( )	Qualifications
	Aroclor 1260=	11.3725 (100) = 3671.7	3097.34	1260 -1 =	3097.34
				-2 =	3450.66
				-3 =	1016.10
				-4 =	1300.43
				-5 =	1711.98
					10576.5

Comments:

SAMPCALew.wpd

LDC #: 28255#3b

VALIDATION FINDINGS WORKSHEET

Field Duplicates

Page: 1 of 1

Reviewer: FT

2nd reviewer:

METHOD: ✓ GC ___ HPLC

Y N N/A Were field duplicate pairs identified in this SDG?

Y N N/A Were target compounds detected in the field duplicate pairs?

Compound	Concentration (ug/kg)		%RPD Limit ≤ 50	Qualification Parent only / All Samples
	5	6		
Aroclor 1248	4200	1.8 U	200	J/UJ/A (FD)
Aroclor 1260	150 U	1.8 U	200	↓
Aroclor 5460	26	3.5 U	200	↓

Compound	Concentration ( )		%RPD Limit _____	Qualification Parent only / All Samples

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Santa Susana Field Laboratory

Collection Date: March 23, 2012

LDC Report Date: August 29, 2012

Matrix: Soil

Parameters: Metals

Validation Level: Level IV

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 12C254

Sample Identification

SL-048-NBZ-SS-0.0-0.5
SL-048-NBZ-SB-4.0-5.0
SL-049-NBZ-SB-2.0-3.0
SL-051-NBZ-SB-1.5-2.5
SL-057-NBZ-SS-0.0-0.5
DUP-02-NBZ-QC-032312
SL-047-NBZ-SB-4.0-5.0
SL-057-NBZ-SS-0.0-0.5MS
SL-057-NBZ-SS-0.0-0.5MSD

Introduction

This data review covers 9 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6020A and 7471A for Metals. The metals analyzed were Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc, and Zirconium.

This review follows the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

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

J Indicates an estimated value.

R Quality control indicates the data is not usable.

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

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

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

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

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5% .

III. Calibration

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.

Samples EB-NBZ-SS-032112 (from SDG 12C209) and EB-NBZ-SB-032212 (from SDG 12C229) were identified as equipment blanks. No metal contaminants were found with the following exceptions:

Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
EB-NBZ-SB-032212	3/22/12	Aluminum	0.0458 mg/L	SL-048-NBZ-SB-4.0-5.0
		Calcium	0.0365 mg/L	SL-049-NBZ-SB-2.0-3.0
		Chromium	0.000820 mg/L	SL-051-NBZ-SB-1.5-2.5
		Copper	0.00155 mg/Kg	SL-047-NBZ-SB-4.0-5.0
		Iron	0.0177 mg/L	
		Lead	0.000121 mg/L	
		Manganese	0.000213 mg/L	
		Sodium	0.0505 mg/L	

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-057-NBZ-SS-0.0-0.5MS/MSD (All samples in SDG 12C254)	Iron	-	-	21 (≤20)	J (all detects) UJ (all non-detects)	A
	Zirconium	28 (75-125)	29 (75-125)	-	J (all detects) UJ (all non-detects)	

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 12C254	All analytes reported below the RL and above the MDL.	J (all detects)	A

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

Samples SL-057-NBZ-SS-0.0-0.5 and DUP-02-NBZ-QC-032312 were identified as field duplicates. No metals were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD (Limits)	Flags	A or P
	SL-057-NBZ-SS-0.0-0.5	DUP-02-NBZ-QC-032312			
Aluminum	12100	12400	2 (≤50)	-	-
Antimony	0.387	0.325	17 (≤50)	-	-
Arsenic	4.19	3.82	9 (≤50)	-	-
Barium	92.4	84.1	9 (≤50)	-	-
Beryllium	0.488	0.474	3 (≤50)	-	-
Cadmium	0.226	0.188	18 (≤50)	-	-
Calcium	2450	2350	4 (≤50)	-	-
Chromium	19.4	18.1	7 (≤50)	-	-
Cobalt	5.29	5.13	3 (≤50)	-	-
Copper	8.03	7.48	7 (≤50)	-	-
Iron	20100	19200	5 (≤50)	-	-
Lead	9.74	6.74	36 (≤50)	-	-
Magnesium	5370	5560	3 (≤50)	-	-
Manganese	280	266	5 (≤50)	-	-
Molybdenum	0.840	0.708	17 (≤50)	-	-
Nickel	11.8	11.4	3 (≤50)	-	-
Potassium	3570	3410	5 (≤50)	-	-

Analyte	Concentration (mg/Kg)		RPD (Limits)	Flags	A or P
	SL-057-NBZ-SS-0.0-0.5	DUP-02-NBZ-QC-032312			
Sodium	57.9	54.5	6 (≤50)	-	-
Strontium	13.8	13.1	5 (≤50)	-	-
Thallium	0.236	0.232	2 (≤50)	-	-
Titanium	954	937	2 (≤50)	-	-
Vanadium	36.1	35.5	2 (≤50)	-	-
Zinc	53.5	51.0	5 (≤50)	-	-
Lithium	28.8	29.9	4 (≤50)	-	-
Phosphorus	399	379	5 (≤50)	-	-

Santa Susana Field Laboratory
Metals - Data Qualification Summary - SDG 12C254

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
12C254	SL-048-NBZ-SS-0.0-0.5 SL-048-NBZ-SB-4.0-5.0 SL-049-NBZ-SB-2.0-3.0 SL-051-NBZ-SB-1.5-2.5 SL-057-NBZ-SS-0.0-0.5 DUP-02-NBZ-QC-032312 SL-047-NBZ-SB-4.0-5.0	Iron	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (RPD)(E)
12C254	SL-048-NBZ-SS-0.0-0.5 SL-048-NBZ-SB-4.0-5.0 SL-049-NBZ-SB-2.0-3.0 SL-051-NBZ-SB-1.5-2.5 SL-057-NBZ-SS-0.0-0.5 DUP-02-NBZ-QC-032312 SL-047-NBZ-SB-4.0-5.0	Zirconium	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (%R)(Q)
12C254	SL-048-NBZ-SS-0.0-0.5 SL-048-NBZ-SB-4.0-5.0 SL-049-NBZ-SB-2.0-3.0 SL-051-NBZ-SB-1.5-2.5 SL-057-NBZ-SS-0.0-0.5 DUP-02-NBZ-QC-032312 SL-047-NBZ-SB-4.0-5.0	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (Z)

Santa Susana Field Laboratory
Metals - Laboratory Blank Data Qualification Summary - SDG 12C254

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Metals - Field Blank Data Qualification Summary - SDG 12C254

No Sample Data Qualified in this SDG

LDC #: 28255H4
SDG #: 12C254
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET
Level IV

Date: 8/28/12
Page: 1 of 1
Reviewer: CL
2nd Reviewer: LC

METHOD: Metals (EPA SW 846 Method ~~6010~~B/6020~~A~~/~~7000~~) 6020A/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: 3/23/12
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)	~~SW~~ A	
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	A	
XII.	Sample Result Verification	A	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	SW	(5,6)
XV	Field Blanks	SW	EB: EB-NBZ-SS-032112, EB-NBZ-SB-032212 (12C209) (12C229)

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-048-NBZ-SS-0.0-0.5	11		21		31	
2	SL-048-NBZ-SB-4.0-5.0	12		22		32	
3	SL-049-NBZ-SB-2.0-3.0	13		23		33	
4	SL-051-NBZ-SB-1.5-2.5	14		24		34	
5	SL-057-NBZ-SS-0.0-0.5	15		25		35	
6	DUP-02-NBZ-QC-032312	16		26		36	
7	SL-047-NBZ-SB-4.0-5.0	17		27		37	
8	SL-057-NBZ-SS-0.0-0.5MS	18		28		38	
9	SL-057-NBZ-SS-0.0-0.5MSD	19		29		39	
10		20		30		40	

Notes: _____

LDC #: 28255H4

VALIDATION FINDINGS CHECKLIST

Reviewer: CR
2nd Reviewer:

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 #: 28255H9

VALIDATION FINDINGS CHECKLIST

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?	✓	NA		
If the %Rs were outside the criteria, was a reanalysis performed?	✓	NA		
XI. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
XII. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target analytes were detected in the field duplicates.	✓			
XV. Field blanks				
Field blanks were identified in this SDG.	✓			
Target analytes were detected in the field blanks.				

LDC #: 28255A4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: CR
2nd reviewer:

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-7		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

LDC #: 28255H4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer:
2nd Reviewer:

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

Blank units: mg/L **Associated sample units:** mg/Kg
Sampling date: 3/22/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: 2-4, 7

Analyte	Blank ID	Sample Identification										
	EB-NBZ-SB-032212 (SDG: 12C229)	Action Limit	No Qualifiers									
Al	0.0458	11.45										
Ca	0.0365	9.125										
Cr	0.000820	0.205										
Cu	0.00155	0.3875										
Fe	0.0177	4.425										
Pb	0.000121	0.03025										
Mn	0.000213	0.05325										
Na	0.0505	12.625										

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 #: 28655J1

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Page: 1 of 1
Reviewer: AL
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
	8/9	S	Fe			21	All	J/UJ/A (E)
			Zr	28	29		↓	↓ (Q) (PS = 99%)

LDC#: 28255H4

VALIDATION FINDINGS WORKSHEET

Field Duplicates

Page: 1 of 2
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Metals (EPA Method 6010B/7000)

Analyte	Concentration (mg/Kg)		RPD (≤50)	Qualify Parents Only
	5	6		
Aluminum	12100	12400	2	
Antimony	0.387	0.325	17	
Arsenic	4.19	3.82	9	
Barium	92.4	84.1	9	
Beryllium	0.488	0.474	3	
Cadmium	0.226	0.188	18	
Calcium	2450	2350	4	
Chromium	19.4	18.1	7	
Cobalt	5.29	5.13	3	
Copper	8.03	7.48	7	
Iron	20100	19200	5	
Lead	9.74	6.74	36	
Magnesium	5370	5560	3	
Manganese	280	266	5	
Molybdenum	0.840	0.708	17	
Nickel	11.8	11.4	3	
Potassium	3570	3410	5	
Sodium	57.9	54.5	6	
Strontium	13.8	13.1	5	

LDC#: 28255H4

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: AV
2nd Reviewer: V

METHOD: Metals (EPA Method 6010B/7000)

Analyte	Concentration (mg/Kg)		RPD (≤50)	Qualify Parents Only
	5	6		
Thallium	0.236	0.232	2	
Titanium	954	937	2	
Vanadium	36.1	35.5	2	
Zinc	53.5	51.0	5	
Lithium	28.8	29.9	4	
Phosphorus	399	379	5	

LDC #: 28258#5

VALIDATION FINDINGS WORKSHEET
Initial and Continuing Calibration Calculation Verification

Reviewer: CR
2nd Reviewer: ~

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

An initial and continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

%R = Found x 100 / True

Where, Found = concentration (in ug/L) of each analyte measured in the analysis of the ICV or CCV solution
True = concentration (in ug/L) of each analyte in the ICV or CCV source

Standard ID	Type of Analysis	Element	Found (ug/L)	True (ug/L)	Recalculated %R	Reported %R	Acceptable (Y/N)
	ICP (Initial calibration)				-		
ICV	ICP/MS (Initial calibration)	Co	30.0	30.0	100	100	Y
ICV	CVAA (Initial calibration)	Hg	2.1	2	105	—	
	ICP (Continuing calibration)						
CCV3	ICP/MS (Continuing calibration)	Sb	25.06	25	100	100	
CCV5	CVAA (Continuing calibration)	Hg	5.28	5	106	—	↓
	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 #: 28255H9

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Reviewer: AR
2nd Reviewer: [illegible]

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

Percent recoveries (%R) for an ICP interference check sample, a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$\%R = \frac{Found}{True} \times 100$ Where, Found = Concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, Found = SSR (spiked sample result) - SR (sample result).
True = Concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$RPD = \frac{|S-D|}{(S+D)/2} \times 100$ Where, S = Original sample concentration
D = Duplicate sample concentration

An ICP serial dilution percent difference (%D) was recalculated using the following formula:

$\%D = \frac{|I-SDR|}{I} \times 100$ Where, I = Initial Sample Result (mg/L)
SDR = Serial Dilution Result (mg/L) (Instrument Reading x 5)

Sample ID	Type of Analysis	Element	Found / S / I (units)	True / D / SDR (units)	Recalculated %R / RPD / %D	Reported %R / RPD / %D	Acceptable (Y/N)
ICSAB	ICP interference check	Se	20,3	20	102	102	Y
LCS	Laboratory control sample	Cd	25,5	25	102	102	
6	Matrix spike	Ag	(SSR-SR) 25,3	25,7	98	98	
6 | 9	Duplicate	Sr	38,8	39,7	2	2	
5	ICP serial dilution	Ba	92,4	87,5	5	5	

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 #: 26255H4

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

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 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 Cr 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:

$$\frac{100mL(10)(37.4ug/L)}{0.927(2.08)(1000)} = 19.4\ mg/kg$$

#	Sample ID	Analyte	Reported Concentration (mg/kg)	Calculated Concentration (mg/kg)	Acceptable (Y/N)
	5	Al	12100	12100	Y
		Sb	0.387	0.387	
		As	4.19	4.19	
		Ba	92.4	92.4	
		Be	0.488	0.488	
		Cd	0.226	0.226	
		Ca	2450	2450	
		Cr	19.4	19.4	
		Co	5.29	5.29	
		Cu	8.03	8.03	
		Fe	20100	20100	
		Pb	9.74	9.74	
		Mg	5370	5370	
		Mn	280	280	
		Mo	0.841	0.841	
		Ni	11.8	11.8	
		K	3570	3570	
		Na	57.9	57.9	
		Sr	13.8	13.8	
		Tl	0.236	0.236	
		Ti	954	954	
		V	36.1	36.1	
		Zn	53.5	53.5	
		Li	28.8	28.8	
		P	399	399	

Note:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Santa Susana Field Laboratory

Collection Date: March 23, 2012

LDC Report Date: August 31, 2012

Matrix: Soil

Parameters: Herbicides

Validation Level: Level IV

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 12C254

Sample Identification

SL-048-NBZ-SS-0.0-0.5
SL-057-NBZ-SS-0.0-0.5
DUP-02-NBZ-QC-032312
SL-057-NBZ-SS-0.0-0.5MS
SL-057-NBZ-SS-0.0-0.5MSD

Introduction

This data review covers 5 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8151A for Herbicides.

This review follows the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

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

J Indicates an estimated value.

R Quality control indicates the data is not usable.

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

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

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

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

II. Initial Calibration

Initial calibration 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 with the following exceptions:

Date	Standard	Column	Compound	%D	Associated Samples	Flag	A or P
4/2/12	CCV	STX-CLP1	MCPP Dinoseb	41 21	SL-048-NBZ-SS-0.0-0.5	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A
4/2/12	CCV	STX-CLP2	2,4-DB Dinoseb	26 22	SL-048-NBZ-SS-0.0-0.5	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

Retention times (RT) of all compounds in the calibration standards were within QC limits.

IV. Blanks

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

Sample EB-NBZ-SS-040412 (from SDG 12D031) was identified as an equipment blank. No herbicide contaminants were found.

V. Surrogate Recovery

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

VI. Matrix Spike/Matrix Spike Duplicate

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
SL-057-NBZ-SS-0.0-0.5MS/MSD (SL-057-NBZ-SS-0.0-0.5)	2,4-DB	21 (30-160)	-	89 (≤50)	J (all detects) UJ (all non-detects)	A

VII. Laboratory Control Samples

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

VIII. Target Compound Identification

All target compound identifications were within validation criteria.

IX. Compound Quantitation 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 12C254	All compounds reported below the RL.	J (all detects)	A

X. System Performance

The system performance was acceptable.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

Samples SL-057-NBZ-SS-0.0-0.5 and DUP-02-NBZ-QC-032312 were identified as field duplicates. No herbicides were detected in any of the samples.

Santa Susana Field Laboratory
Herbicides - Data Qualification Summary - SDG 12C254

SDG	Sample	Compound	Flag	A or P	Reason (Code)
12C254	SL-048-NBZ-SS-0.0-0.5	MCPP Dinoseb 2,4-DB	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D) (C)
12C254	SL-057-NBZ-SS-0.0-0.5	2,4-DB	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (%R)(RPD) (Q)
12C254	SL-048-NBZ-SS-0.0-0.5 SL-057-NBZ-SS-0.0-0.5 DUP-02-NBZ-QC-032312	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 12C254

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Herbicides - Field Blank Data Qualification Summary - SDG 12C254

No Sample Data Qualified in this SDG

LDC #: 28255H5 **VALIDATION COMPLETENESS WORKSHEET** Date: 8/30/12
SDG #: 12C254 Level IV Page: 1 of 1
Laboratory: EMAX Laboratories, Inc. Reviewer: M
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: 3/23/12
II	Initial calibration	A	% RSD ≤ 20
III.	Calibration verification/ICV	SW	ICV/CCV ≤ 20
IV.	Blanks	A	
V	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	SW	
VII.	Laboratory control samples	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	ND	D = 2, 3
XIII.	Field blanks	ND	EB = EB - NBZ - SS - 0.40412

SDG 12D031

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-048-NBZ-SS-0.0-0.5	11	MB 4/5	21		31	
2	SL-057-NBZ-SS-0.0-0.5	12		22		32	
3	DUP-02-NBZ-QC-032312	13		23		33	
4	SL-057-NBZ-SS-0.0-0.5MS	14		24		34	
5	SL-057-NBZ-SS-0.0-0.5MSD	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 #: 28255H5
SDG #: see cover

VALIDATION FINDINGS CHECKLIST

Page: 1 of 2
Reviewer: FI
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 #: 28255 115
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 #: 28255#5

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: EZ
2nd Reviewer: C

METHOD: ✓ GC ___ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
What type of continuing calibration calculation was performed? ___%D or ___RPD
Y N N/A Were continuing calibration standards analyzed at the required frequencies?
Y N N/A Did the continuing calibration standards meet the %D / RPD validation criteria of ≤15.0%?
Level IV Only
Y N N/A Were the retention times for all calibrated compounds within their respective acceptance windows?

#	Date	Standard ID	Detector/ Column	Compound	%D / RPD (Limit ≤ 15.0)	RT (limit)	Associated Samples	Qualifications
	4/2/12	ccv	STX-CLP1	MCPP	41	( )	# 1	J/UJ/A (C)
	18:15			Dinoseb	21	( )	↓	↓
			STX-CLP2	2,4-DB	26	( )		
				Dinoseb	22	( )		
						( )		
						( )		
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LDC #: 28255HJ

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: FT
2nd Reviewer: A

METHOD: __ GC __ HPLC

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

Y N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG?
Y N N/A Was an MS/MSD analyzed every 20 samples for each matrix or whenever a sample extraction was performed?
Y N N/A Were the MS/MSD percent recoveries (%R) and relative percent differences (RPD) within QC limits?

#	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	4 & 5	2,4-DB	21 (30-160)	( )	89 (50)	2	J/UJ/A (D)
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
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LDC #: 28255#5
SDG #: per report

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: FJ
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 (60 std)	Recalculated CF (60 std)	Reported Average CF (initial)	Recalculated Average CF (initial)	Reported %RSD	Recalculated %RSD
1	ICAL	3/21/12	Dalapon 5TX cvp	914	914	943.6	943.6	6.6	6.6
			Dicamba ↓	1797	1797	1886.3	1886.3	9.6	9.6
2			↓ 5TX cvp2	798	798	785.3	785.3	10.6	10.6
				1895	1895	1992.2	1992.2	7.6	7.6
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.

INIC! C ISB

LDC #: 28255B5
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	CCV 12:12	4/2/12	Dalapon STK CLP	60	51.79	51.79	14	14
			Picamba	↓	57.71	57.71	4	4
2			↓ STK CLP2	↓	55.27	55.27	8	8
			↓	↓	55.07	55.07	8	
3	CCV 18:15	4/2/12	↓	↓	50.83	50.83	15	15
			↓	↓	59.90	59.90	0	0
			↓	↓	68.61	68.61	14	14
4			↓	↓	54.06	54.06	10	10

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

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Page: 1 of 1

Reviewer: FT

2nd reviewer: A

METHOD: ✓ GC ___ HPLC

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #3

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
2,4-DCPAA	ch A	600	494.75	82.5	82.5	0

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 #: [illegible]
SDG #: [illegible]

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: FZ
2nd Reviewer: A

METHOD: ✓ GC __HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC - SC)/SA Where SSC = Spiked sample concentration SC = Sample concentration
SA = Spike added
RPD =(({SSCMS - SSCMSD} * 2) / (SSCMS + SSCMSD))*100 MS = Matrix spike MSD = Matrix spike duplicate

MS/MSD samples: 405

Compound	Spike Added (ug/Kg)		Sample Conc. (ug/Kg)	Spike Sample Concentration (ug/Kg)		Matrix spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	---	MS	MSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)											
Diesel (8015)											
Benzene (8021B)											
Methane (RSK-175)											
2,4-D (8151)	16.2	16.2	ND	11.3	16.9	70	70	104	104	40	40
Dinoseb (8151)	↓	↓	12	23.1	21.2	69	69	57	57	9	9
Naphthalene (8310)											
Anthracene (8310)											
HMX (8330)											
2,4,6-Trinitrotoluene (8330)											

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

LDC #: 28255T5
SDG #: all cores

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

Reviewer: FR
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: 1 & 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)	15	15	15.2	15.8	101	101	105	105	4	4
Dinoseb (8151)	↓	↓	8.68	10.1	58	58	67	67	15	15
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 #: 28255 #5
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._____ Compound Name _____

Concentration = _____

MD

#	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: March 23, 2012

LDC Report Date: August 29, 2012

Matrix: Soil

Parameters: Wet Chemistry

Validation Level: Level IV

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 12C254

Sample Identification

SL-048-NBZ-SS-0.0-0.5
SL-048-NBZ-SB-4.0-5.0
SL-049-NBZ-SB-2.0-3.0
SL-051-NBZ-SB-1.5-2.5
SL-057-NBZ-SS-0.0-0.5
DUP-02-NBZ-QC-032312
SL-047-NBZ-SB-4.0-5.0
SL-057-NBZ-SS-0.0-0.5MS
SL-057-NBZ-SS-0.0-0.5MSD

Introduction

This data review covers 9 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 9010A/9014 for Cyanide, EPA Method 300.0 for Nitrate as Nitrogen and Fluoride, EPA SW 846 Method 7199 for Hexavalent Chromium, and 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 contaminant concentrations were found in the initial, continuing and preparation blanks.

Samples EB-NBZ-SS-032112 (from SDG 12C209) and EB-NBZ-SB-032212 (from SDG 12C229) were identified as equipment blanks. No contaminant concentrations were found.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicates

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 were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 12C254	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

Samples SL-057-NBZ-SS-0.0-0.5 and DUP-02-NBZ-QC-032312 were identified as field duplicates. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD (Limits)	Flags	A or P
	SL-057-NBZ-SS-0.0-0.5	DUP-02-NBZ-QC-032312			
Fluoride	0.652	0.637	2 (≤50)	-	-
Nitrate as N	2.32	1.35	53 (≤50)	J (all detects)	-

Santa Susana Field Laboratory
Wet Chemistry - Data Qualification Summary - SDG 12C254

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
12C254	SL-048-NBZ-SS-0.0-0.5 SL-048-NBZ-SB-4.0-5.0 SL-049-NBZ-SB-2.0-3.0 SL-051-NBZ-SB-1.5-2.5 SL-057-NBZ-SS-0.0-0.5 DUP-02-NBZ-QC-032312 SL-047-NBZ-SB-4.0-5.0	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (Z)
12C254	SL-057-NBZ-SS-0.0-0.5 DUP-02-NBZ-QC-032312	Nitrate as N	J (all detects)	-	Field duplicates (RPD) (FD)

Santa Susana Field Laboratory
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 12C254

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Wet Chemistry - Field Blank Data Qualification Summary - SDG 12C254

No Sample Data Qualified in this SDG

LDC #: 28255H6
SDG #: 12C254
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET
Level IV

Date: 8-28-12
Page: 1 of 1
Reviewer: CR
2nd Reviewer: [signature]

METHOD: (Analyte) Cyanide (EPA SW846 Method 9010A/9014), Nitrate-N, Fluoride (EPA Method 300.0), Hexavalent Chromium (EPA SW846 Method 7199), 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: 3/23/12
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	A	
IV	Matrix Spike/Matrix Spike Duplicates	A	MS/D
V	Duplicates	N	
VI.	Laboratory control samples	A	LCS/D
VII.	Sample result verification	A	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	SW	(5,6)
X	Field blanks	ND	EB= EB-NBZ-SS-032112, EB-NBZ-SB-032312 (12C209) (12C229)

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-048-NBZ-SS-0.0-0.5	11		21		31	
2	SL-048-NBZ-SB-4.0-5.0	12		22		32	
3	SL-049-NBZ-SB-2.0-3.0	13		23		33	
4	SL-051-NBZ-SB-1.5-2.5	14		24		34	
5	SL-057-NBZ-SS-0.0-0.5	15		25		35	
6	DUP-02-NBZ-QC-032312	16		26		36	
7	SL-047-NBZ-SB-4.0-5.0	17		27		37	
8	SL-057-NBZ-SS-0.0-0.5MS	18		28		38	
9	SL-057-NBZ-SS-0.0-0.5MSD	19		29		39	
10		20		30		40	

Notes:

LDC #: 28255#6

VALIDATION FINDINGS CHECKLIST

Reviewer: CR
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 #: 28255H6

VALIDATION FINDINGS CHECKLIST

Reviewer: AZ
2nd Reviewer: W

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 #: 28255H6

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Reviewer: CR
2nd reviewer:

All circled methods are applicable to each sample.

Sample ID	Parameter
1-7	pH TDS Cl (F) (NO_3) NO_2 SO_4 O-PO_4 Alk (CN) NH_3 TKN TOC (Cr6+) (ClO_4)
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
QC: 8,9	pH TDS Cl F (NO_3) NO_2 SO_4 O-PO_4 Alk (CN) NH_3 TKN TOC (Cr6+) (ClO_4)
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4

Comments:

LDC# 28255H6

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: CK
2nd Reviewer:

Inorganics: Method See Cover

Analyte	Concentration (mg/Kg)		RPD (≤50)	Qualifiers: (Parents Only)
	5	6		
Fluoride	0.652	0.637	2	
Nitrate	2.32	1.35	53	Jdet/A

\\LDCFILESERVER\Validation\FIELD DUPLICATES\FD_inorganic\28255H6.wpd

LDC #: 28259H6

Validation Findings Worksheet
Initial and Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: CR
2nd Reviewer: [illegible]

Method: Inorganics, Method See Cover

The correlation coefficient (r) for the calibration of F was recalculated. Calibration date: 3/20/12

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	F	s1	0.05	1.035	*0.999895*	0.999895	Y
		s2	0.1	2.287			
		s3	0.2	4.842			
		s4	0.5	15.07			
		s5	1	30.37			
		s6	2	63.13			
		s7	5	153.9			
Calibration verification	NO_3	ICV	1.0	0.983	98.3	98.3	
Calibration verification	ClO_4	CCV	15	15.844	106	106	
Calibration verification	Gbt	↓	2	1.883	94	94	↓

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 #: 28255tk

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Reviewer: 9R
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	Cd	254	250	102	102	Y
8	Matrix spike sample	Cd	(SSR-SR) 10.4	10.8	97	97	↓
8|9	Duplicate sample	CN	2.96	3.06	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 #: 28554I6

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: QR
2nd reviewer: W

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 NO3 reported with a positive detect were recalculated and verified using the following equation:

Concentration = $0.0213577(A_s) + 0.0376754$

Recalculation: $\frac{(0.0213577(5.817) + 0.0376754)60mL}{20.0067g(0.927)} \times \left(\frac{62}{14}\right) = 2.32$ mg/kg

#	Sample ID	Analyte	Reported Concentration (mg/kg)	Calculated Concentration (mg/kg)	Acceptable (Y/N)
	5	F	0.652	0.652	Y
		NO3	2.32	2.32	↓

Note: _____

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Santa Susana Field Laboratory
Collection Date:	March 23, 2012
LDC Report Date:	September 4, 2012
Matrix:	Soil/Water
Parameters:	Total Petroleum Hydrocarbons as Gasoline
Validation Level:	Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	12C254

Sample Identification

SL-048-NBZ-SB-4.5
SL-049-NBZ-SB-2.5
SL-051-NBZ-SB-2.0
SL-047-NBZ-SB-4.5
TB-032212

Introduction

This data review covers 4 soil 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-032212 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-032212	3/23/12	Gasoline range organics	26 ug/L	All soil samples in SDG 12C254

Sample EB-NBZ-SB-040412 (from SDG 12D031) 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-NBZ-SB-040412	4/4/12	Gasoline range organics	15 ug/L	All soil samples in SDG 12C254

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 12C254	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 12C254

SDG	Sample	Compound	Flag	A or P	Reason (Code)
12C254	SL-048-NBZ-SB-4.5 SL-049-NBZ-SB-2.5 SL-051-NBZ-SB-2.0 SL-047-NBZ-SB-4.5 TB-032212	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 12C254

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Total Petroleum Hydrocarbons as Gasoline - Field Blank Data Qualification Summary - SDG 12C254

No Sample Data Qualified in this SDG

LDC #: 28255H7 **VALIDATION COMPLETENESS WORKSHEET** Date: 8/30/12
SDG #: 12C254 Level IV Page: 1 of 1
Laboratory: EMAX Laboratories, Inc. Reviewer:
2nd Reviewer:

METHOD: GC TPH as Gasoline (EPA SW 846 Method 8015B)

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

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 3/23/12
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 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	SW	TB = 5 EB = EB-NBZ-SB-040412 SDG# 12D031

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-048-NBZ-SB-4.5	11	MBLK1W	21		31	
2	SL-049-NBZ-SB-2.5	12	MBLK1S	22		32	
3	SL-051-NBZ-SB-2.0	13		23		33	
4	SL-047-NBZ-SB-4.5	14		24		34	
5	TB-032212 W	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 #: 28255H7
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?			✓	

.DC #: 28255#7
SDG #: per cover

VALIDATION FINDINGS CHECKLIST

Reviewer: FJ
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 #: 28255A7)
SDG #:

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer: [illegible]
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: 03/23/12
Field blank type: (circle one) Field Blank / Trip Blank / Atmospheric Blank / Ambient Blank
Rinsate / Equipment Rinsate / Equipment Blank / Source Blank / Other: TB

Associated Samples: All soils 7SX

Compound	Blank ID	Blank ID	Sample Identification							
	5									
Gasoline Range Organics	26									
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 #: 28255 H7

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: FT
2nd Reviewer: ✓

METHOD: ✓ GC __ HPLC

EB = EB-NBZ-SB-040412
SDG # 12D03)

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

Sampling date: 4/4/12

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 soil (MD + 7SX)

Compound	Blank ID	Blank ID	Sample Identification							
	EB									
gasoline Range organics	15									
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 #: 28 255H7
SDG #: [illegible]

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 (500 std)	Recalculated CF (500 std)	Reported Average CF (initial)	Recalculated Average CF (initial)	Reported %RSD	Recalculated %RSD
1	1CAL	1/25/12	GRO (C5-C12)	17199	17199	17064.3	17064.3	3.2	3.2
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.

INICLC 1SB

LDC #: 78255 H7
SDG #: pw cover

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: F
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	CCV 01:11	3/22/12	GRO C5 - C12	1000.0	910.12	910.12	9	9
2	CCV 16:33	3/28/12	↓	1000.0	949.28	949.28	5	5
3	CCV 10:47	3/26/12	↓	1000.0	943.64	943.64	6	6
4	CCV 18:27	3/26/12	↓	1000.0	97453	974.53	3	3

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

LDC #: [illegible]

SDG #: see cover

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: FT

2nd reviewer: [illegible]

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	
4BZ B	DB-5	40	32.95	82.4	82.4	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 #: 28255T1
SDG #: [illegible]

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 = 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: LCS 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	22.2	22.0	89	89	88	88	/	/
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 #: 28255H7
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. #1 Compound Name gas

Concentration = $\frac{(1562196)(5)(5)}{(17064.3)(5.28)(0.953)(0.1)(1000)}$

= 4.548 mg/kg

#	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: March 23, 2012

LDC Report Date: September 4, 2012

Matrix: Soil

Parameters: Total Petroleum Hydrocarbons as Extractables

Validation Level: Level IV

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 12C254

Sample Identification

SL-048-NBZ-SS-0.0-0.5
SL-048-NBZ-SB-4.0-5.0
SL-049-NBZ-SB-2.0-3.0
SL-051-NBZ-SB-1.5-2.5
SL-057-NBZ-SS-0.0-0.5
DUP-02-NBZ-QC-032312
SL-047-NBZ-SB-4.0-5.0
SL-057-NBZ-SS-0.0-0.5MS
SL-057-NBZ-SS-0.0-0.5MSD

Introduction

This data review covers 9 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015B for Total Petroleum Hydrocarbons (TPH) as Extractables.

This review follows the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

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

J Indicates an estimated value.

R Quality control indicates the data is not usable.

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

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

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

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

II. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0% .

III. 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 extractable contaminants were found in the method blanks.

Samples EB-NBZ-SB-040412 and EB-NBZ-SS-040412 (both from SDG 12D031) were identified as equipment blanks. No total petroleum hydrocarbons as extractable contaminants were found.

V. Surrogate Recovery

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

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) 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 12C254	All compounds reported below the RL.	J (all detects)	A

X. System Performance

The system performance was acceptable.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

Samples SL-057-NBZ-SS-0.0-0.5 and DUP-02-NBZ-QC-032312 were identified as field duplicates. No total petroleum hydrocarbons as extractables were detected in any of the samples with the following exceptions:

Compound	Concentration (mg/Kg)		RPD (Limits)	Flags	A or P
	SL-057-NBZ-SS-0.0-0.5	DUP-02-NBZ-QC-032312			
EFH (C8-C11)	0.73	0.62	16 (≤50)	-	-
EFH (C15-C20)	0.68	0.67	1 (≤50)	-	-
EFH (C21-C30)	3.0	2.3	26 (≤50)	-	-
EFH (C30-C40)	4.4	2.8	44 (≤50)	-	-
Total EFH (C8-C40)	8.8	6.4	32 (≤50)	-	-

Santa Susana Field Laboratory
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG 12C254

SDG	Sample	Compound	Flag	A or P	Reason (Code)
12C254	SL-048-NBZ-SS-0.0-0.5 SL-048-NBZ-SB-4.0-5.0 SL-049-NBZ-SB-2.0-3.0 SL-051-NBZ-SB-1.5-2.5 SL-057-NBZ-SS-0.0-0.5 DUP-02-NBZ-QC-032312 SL-047-NBZ-SB-4.0-5.0	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (Z)

Santa Susana Field Laboratory
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG 12C254

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG 12C254

No Sample Data Qualified in this SDG

LDC #: 28255H8 **VALIDATION COMPLETENESS WORKSHEET** Date: 8/30/12
SDG #: 12C254 Level IV Page: 1 of 1
Laboratory: EMAX Laboratories, Inc. Reviewer: JP
2nd Reviewer:

METHOD: GC TPH as Extractables (EPA SW 846 Method 8015B)

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

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 3/23/12
II	Initial calibration	A	%D ≤20
III.	Calibration verification/ICV	A	ICV/CCV ≤20
IV.	Blanks	A	
V	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	A	
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	SW	D=5, 6
XIII.	Field blanks	ND	EB = EB-NBZ-SB-040412 } SDG 12D03 1 = EB-NBZ-SS-040412

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-048-NBZ-SS-0.0-0.5	11	MBLK 1 S	21		31	
2	SL-048-NBZ-SB-4.0-5.0	12		22		32	
3	SL-049-NBZ-SB-2.0-3.0	13		23		33	
4	SL-051-NBZ-SB-1.5-2.5	14		24		34	
5	SL-057-NBZ-SS-0.0-0.5	15		25		35	
6	DUP-02-NBZ-QC-032312	16		26		36	
7	SL-047-NBZ-SB-4.0-5.0	17		27		37	
8	SL-057-NBZ-SS-0.0-0.5MS	18		28		38	
9	SL-057-NBZ-SS-0.0-0.5MSD	19		29		39	
10		20		30		40	

Notes:

DC #: 28255118
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?			✓	

DC #: 28255 HY
DG #: 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#: 24255K8

VALIDATION FINDINGS WORKSHEET

Field Duplicates

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

METHOD: GC TPHE (EPA SW 846 Method 8015B)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (mg/Kg)		≤ 50	
	5	6	RPD	
EFH (C8-C11)	0.73	0.62	16	
EFH (C15-C20)	0.68	0.67	1	
EFH (C21-C30)	3.0	2.3	26	
EFH (C30-C40)	4.4	2.8	44	
TOTAL EFH(C8-C40)	8.8	6.4	32	

LDC #: 28255TB
SDG #: per cover

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

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 (SV std)	Recalculated CF (SV std)	Reported Average CF (initial)	Recalculated Average CF (initial)	Reported %RSD	Recalculated %RSD
1	ICAL	2/01/12	EFH	2540	2540	23084	23084	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 #: 28255 #8
SDG #: pw cover

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: F
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	CCV 10:59	3/30/12	Total EFH (8-C40)	500	497.16	497.16	1	1
	CCV 14:22	3/30/12	↓	↓	465.76	465.76	7	7
2								
	CCV 17:45	3/30/12	↓	↓	486.94	486.94	3	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.

SDG #: see cover

VALIDATION FINDINGS WORKSHEET

Surrogate Results Verification

Reviewer: FT

2nd reviewer: A

METHOD: ✓ GC __ HPLC

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #1

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
Bromobenzene	DB-5	100	66.881	66.9	66.9	0
Hexacosane	↓	25	25.969	104	104	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 #: [illegible]
SDG #: [illegible]

VALIDATION FINDINGS WORKSHEET

Matrix Spike/Matrix Spike Duplicates Results Verification

Page: [illegible] of [illegible]
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: __ GC __HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC - SC)/SA Where SSC = Spiked sample concentration SC = Sample concentration
SA = Spike added
RPD =(({SSCMS - SSCMSD} * 2) / (SSCMS + SSCMSD))*100 MS = Matrix spike MSD = Matrix spike duplicate

MS/MSD samples: 8, 9

Compound	Spike Added (mg/kg)		Sample Conc. (mg/kg)	Spike Sample Concentration (mg/kg)		Matrix spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	---	MS	MSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)											
Diesel (8015)											
Benzene (8021B)											
Methane (RSK-175)											
2,4-D (8151)											
Dinoseb (8151)											
Naphthalene (8310)											
Anthracene (8310)											
HMX (8330)											
2,4,6-Trinitrotoluene (8330)											
Total EPH (C8-C40)	53.9	53.9	8.81	53.8	56.3	83	83	88	88	4	4

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

LDC #: 28 255 118
SDG #: [illegible]

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 = 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: LCS ID

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 (c8-c40)	50	50	48.5	48.3	97	97	97	97	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 #: 28255#3
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. #1 Compound Name EFH C15-C20

Concentration = $\frac{517233 \quad (3)}{23084.06471 \quad (30.02) \quad (0.882)}$

= 2.5 mg/kg

#	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: March 23, 2012

LDC Report Date: September 4, 2012

Matrix: Soil

Parameters: Nitroglycerine & PETN

Validation Level: Level IV

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 12C254

Sample Identification

SL-048-NBZ-SS-0.0-0.5
SL-048-NBZ-SB-4.0-5.0
SL-049-NBZ-SB-2.0-3.0
SL-051-NBZ-SB-1.5-2.5
SL-057-NBZ-SS-0.0-0.5
DUP-02-NBZ-QC-032312
SL-047-NBZ-SB-4.0-5.0
SL-057-NBZ-SS-0.0-0.5MS
SL-057-NBZ-SS-0.0-0.5MSD

Introduction

This data review covers 9 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8332 for Nitroglycerine and PETN.

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 the method.

Triplicate injections of the initial calibration were performed.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Retention time windows were evaluated and considered technically acceptable.

III. Continuing Calibration

Continuing calibration was performed at 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.

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 nitroglycerine or PETN was found in the method blanks.

Samples EB-NBZ-SB-040412 and EB-NBZ-SS-040412 (both from SDG 12D031) were identified as equipment blanks. No nitroglycerine or PETN was found.

V. Surrogate Recovery

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

VI. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) 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 12C254	All compounds reported below the RL.	J (all detects)	A

X. System Performance

The system performance was acceptable.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

Samples SL-057-NBZ-SS-0.0-0.5 and DUP-02-NBZ-QC-032312 were identified as field duplicates. No nitroglycerine or PETN was detected in any of the samples.

Santa Susana Field Laboratory
Nitroglycerine & PETN - Data Qualification Summary - SDG 12C254

SDG	Sample	Compound	Flag	A or P	Reason (Code)
12C254	SL-048-NBZ-SS-0.0-0.5 SL-048-NBZ-SB-4.0-5.0 SL-049-NBZ-SB-2.0-3.0 SL-051-NBZ-SB-1.5-2.5 SL-057-NBZ-SS-0.0-0.5 DUP-02-NBZ-QC-032312 SL-047-NBZ-SB-4.0-5.0	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (Z)

Santa Susana Field Laboratory
Nitroglycerine & PETN - Laboratory Blank Data Qualification Summary - SDG 12C254

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Nitroglycerine & PETN - Field Blank Data Qualification Summary - SDG 12C254

No Sample Data Qualified in this SDG

LDC #: 28255H24 **VALIDATION COMPLETENESS WORKSHEET** Date: 8/30/12

SDG #: 12C254 Level IV Page: 1 of 1

Laboratory: EMAX Laboratories, Inc. Reviewer:

2nd Reviewer:

METHOD: HPLC Nitroglycerine & PETN (EPA SW 846 Method 8332)

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: 3/23/12
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	A	
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	ND	D = 5, 6
XIII.	Field blanks	ND	EB = EB-NBZ-SB-040412 / SDG = EB-NBZ-SS-040412 / 12D03

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	1	SL-048-NBZ-SS-0.0-0.5	11	MBLK15	21		31	
3	2	SL-048-NBZ-SB-4.0-5.0	12		22		32	
5	3	SL-049-NBZ-SB-2.0-3.0	13		23		33	
7	4	SL-051-NBZ-SB-1.5-2.5	14		24		34	
8	5	SL-057-NBZ-SS-0.0-0.5 D	15		25		35	
9	6	DUP-02-NBZ-QC-032312 D	16		26		36	
11	7	SL-047-NBZ-SB-4.0-5.0	17		27		37	
	8	SL-057-NBZ-SS-0.0-0.5MS	18		28		38	
	9	SL-057-NBZ-SS-0.0-0.5MSD	19		29		39	
	10		20		30		40	

Notes:

DC #: 28055H24
DG #: per cover

VALIDATION FINDINGS CHECKLIST

Reviewer: F
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?			✓	

DC #: 28255 #24
SDG #: per cover

VALIDATION FINDINGS CHECKLIST

Reviewer: FJ
2nd Reviewer: C

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 #: 28255 H24
SDG #: [illegible]

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 (250 std)	Recalculated CF (252 std)	Reported Average CF (initial)	Recalculated Average CF (initial)	Reported %RSD	Recalculated %RSD
1	ICAL	7/20/11	Nitroglycerin	102	102	101.8	101.8	5.1	5.1
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 #: 28255#84
SDG #: pw 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	ccv 1034	4/2/12	Nitroglycerin	750	743.83	743.83	/	/
2	ccv 13:03	4/2/12	↓	↓	756.53	756.53	/	/
3	ccv 15:36	4/2/12	↓	↓	754.22	754.22	/	/
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.

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	
1,2-Dinitrobenzene	C-18	20 U	249.9	249.9	125	125

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 #:__ VALIDATION FINDINGS WORKSHEET Page:__of__

SDG #: [illegible]

Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: FZ

2nd Reviewer: [illegible]

METHOD: __ GC __ HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC - SC)/SA Where SSC = Spiked sample concentration SC = Sample concentration

SA = Spike added

RPD =(({SSCMS - SSCMSD} * 2) / (SSCMS + SSCMSD))*100 MS = Matrix spike MSD = Matrix spike duplicate

MS/MSD samples: 8 & 9

Compound	Spike Added (ug/Kg)		Sample Conc. (ug/Kg)	Spike Sample Concentration (ug/Kg)		Matrix spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	---	MS	MSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)											
Diesel (8015)											
Benzene (8021B)											
Methane (RSK-175)											
2,4-D (8151)											
Dinoseb (8151)											
Naphthalene (8310)											
Anthracene (8310)											
HMX (8330)											
2,4,6-Trinitrotoluene (8330)											
Nitroglycerin	7500	7500	ND	7640	7470	102	102	100	100	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 #: 28255 H04
SDG #: all cover

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

Reviewer: F
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: 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)										
Nitroglycerin	7500	7500	7820	7970	104	104	106	106	2	2

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 #: 28255 #201
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._____ Compound Name _____

Concentration = _____

MD

#	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: March 23, 2012

LDC Report Date: September 4, 2012

Matrix: Soil

Parameters: Explosives

Validation Level: Level IV

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 12C254

Sample Identification

SL-048-NBZ-SS-0.0-0.5
SL-048-NBZ-SB-4.0-5.0
SL-049-NBZ-SB-2.0-3.0
SL-051-NBZ-SB-1.5-2.5
SL-057-NBZ-SS-0.0-0.5
DUP-02-NBZ-QC-032312
SL-047-NBZ-SB-4.0-5.0
SL-057-NBZ-SS-0.0-0.5MS
SL-057-NBZ-SS-0.0-0.5MSD

Introduction

This data review covers 9 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8330A for Explosives.

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 the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Retention time windows were evaluated and considered technically acceptable.

III. Calibration Verification

Calibration verification was performed at the 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.

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 explosive contaminants were found in the method blanks.

Samples EB-NBZ-SB-040412 and EB-NBZ-SS-040412 (both from SDG 12D031) were identified as equipment blanks. No expolsive contaminants were found.

V. Surrogate Recovery

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

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) 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 12C254	All compounds reported below the RL.	J (all detects)	A

X. System Performance

The system performance was acceptable.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

Samples SL-057-NBZ-SS-0.0-0.5 and DUP-02-NBZ-QC-032312 were identified as field duplicates. No explosives were detected in any of the samples.

Santa Susana Field Laboratory
Explosives - Data Qualification Summary - SDG 12C254

SDG	Sample	Compound	Flag	A or P	Reason (Code)
12C254	SL-048-NBZ-SS-0.0-0.5 SL-048-NBZ-SB-4.0-5.0 SL-049-NBZ-SB-2.0-3.0 SL-051-NBZ-SB-1.5-2.5 SL-057-NBZ-SS-0.0-0.5 DUP-02-NBZ-QC-032312 SL-047-NBZ-SB-4.0-5.0	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (Z)

Santa Susana Field Laboratory
Explosives - Laboratory Blank Data Qualification Summary - SDG 12C254

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Explosives - Field Blank Data Qualification Summary - SDG 12C254

No Sample Data Qualified in this SDG

LDC #: 28255H40

SDG #: 12C254

Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level IV

Date: 8/30/12

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: HPLC Explosives (EPA SW 846 Method 8330A)

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: 3/23/12
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	A	
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	ND	D = 5, 6
XIII.	Field blanks	ND	EB = EB NBZ - SB - 040412 > SDG 12D031

EB = EB NBZ - SS - 040412

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-048-NBZ-SS-0.0-0.5	11	MBLK1S	21		31	
2	SL-048-NBZ-SB-4.0-5.0	12		22		32	
3	SL-049-NBZ-SB-2.0-3.0	13		23		33	
4	SL-051-NBZ-SB-1.5-2.5	14		24		34	
5	SL-057-NBZ-SS-0.0-0.5 D	15		25		35	
6	DUP-02-NBZ-QC-032312 D	16		26		36	
7	SL-047-NBZ-SB-4.0-5.0	17		27		37	
8	SL-057-NBZ-SS-0.0-0.5MS	18		28		38	
9	SL-057-NBZ-SS-0.0-0.5MSD	19		29		39	
10		20		30		40	

Notes:

DC #: 28255HHV
DG #: per cover

VALIDATION FINDINGS CHECKLIST

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?			✓	

DC #: 28255HHU
SDG #: see cover

VALIDATION FINDINGS CHECKLIST

Reviewer: FJ
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 #: 28255H4U
SDG #: see cover

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: FJ
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 (200 std)	Recalculated CF (200 std)	Reported Average CF (initial)	Recalculated Average CF (initial)	Reported %RSD	Recalculated %RSD
1	ICAL	2/24/12	HMX c18	216.35	216.35	215.599	215.599	6.4	6.4
			RDX	196.93	196.93	203.485	203.485	6.3	6.3
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 #: 28255 H4U
SDG #: per cover

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: F
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	CCV 1053	4/2/12	HMX	400.0	400.19	400.19	0	0
			RDX	↓	397.40	397.40	1	1
2	CCV 17:42	4/2/12	↓	↓	415.60	415.60	4	4
					399.17	399.17	0	0
3	CCV 23:56	4/2/12	↓	↓	431.10	431.10	8	8
					395.51	395.51	1	1
4								

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

LDC #: [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: 7

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
1,2-DNB	C-18	200	184.8	92.4	92.4	0

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

LDG #: [illegible]
SDG #: [illegible]

VALIDATION FINDINGS WORKSHEET

Matrix Spike/Matrix Spike Duplicates Results Verification

Page: [illegible] of [illegible]
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: __ GC ✓ HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC - SC)/SA Where SSC = Spiked sample concentration SC = Sample concentration
SA = Spike added
RPD =(({SSCMS - SSCMSD} * 2) / (SSCMS + SSCMSD))*100 MS = Matrix spike MSD = Matrix spike duplicate

MS/MSD samples: 8 + 9

Compound	Spike Added (ug/kg)		Sample Conc. (ug/kg)	Spike Sample Concentration (ug/kg)		Matrix spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	---	MS	MSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)											
Diesel (8015)											
Benzene (8021B)											
Methane (RSK-175)											
2,4-D (8151)											
Dinoseb (8151)											
Naphthalene (8310)											
Anthracene (8310)											
HMX (8330)	2000	1980	ND	2130	2170	107	107	110	110	3	3
2,4,6-Trinitrotoluene (8330)	↓	↓	ND	2070	2070	103	103	105	105	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 #: 28253 TYU
SDG #: [illegible]

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 = 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: LCS 1P

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)	2000	2000	2580	2170	129	129	108	108	17	17
2,4,6-Trinitrotoluene (8330)	↓	↓	2130	2160	106	106	108	108	2	2

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 #: 28255H4U
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._____ Compound Name _____

Concentration = _____

MD

#	Sample ID	Compound	Reported Concentrations ( )	Recalculated Results Concentrations ( )	Qualifications

Comments: _____

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Santa Susana Field Laboratory

Collection Date: March 23, 2012

LDC Report Date: August 31, 2012

Matrix: Soil

Parameters: Alcohols

Validation Level: Level IV

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 12C254

Sample Identification

SL-048-NBZ-SS-0.0-0.5
SL-048-NBZ-SB-4.0-5.0
SL-049-NBZ-SB-2.0-3.0
SL-051-NBZ-SB-1.5-2.5
SL-057-NBZ-SS-0.0-0.5
DUP-02-NBZ-QC-032312
SL-047-NBZ-SB-4.0-5.0
SL-057-NBZ-SS-0.0-0.5MS
SL-057-NBZ-SS-0.0-0.5MSD

Introduction

This data review covers 9 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015B for 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-NBZ-SB-040412 and EB-NBZ-SS-040412 (both from SDG 12D031) were identified as equipment blanks. No alcohol contaminants were found.

V. Surrogate Recovery

Surrogates were not required by the method.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples

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

VIII. Target Compound Identification

All target compound identifications were within validation criteria.

IX. Compound Quantitation 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 12C254	All compounds reported below the RL.	J (all detects)	A

X. System Performance

The system performance was acceptable.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

Samples SL-057-NBZ-SS-0.0-0.5 and DUP-02-NBZ-QC-032312 were identified as field duplicates. No alcohols were detected in any of the samples.

Santa Susana Field Laboratory
Alcohols - Data Qualification Summary - SDG 12C254

SDG	Sample	Compound	Flag	A or P	Reason (Code)
12C254	SL-048-NBZ-SS-0.0-0.5 SL-048-NBZ-SB-4.0-5.0 SL-049-NBZ-SB-2.0-3.0 SL-051-NBZ-SB-1.5-2.5 SL-057-NBZ-SS-0.0-0.5 DUP-02-NBZ-QC-032312 SL-047-NBZ-SB-4.0-5.0	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 12C254

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Alcohols - Field Blank Data Qualification Summary - SDG 12C254

No Sample Data Qualified in this SDG

LDC #: 28255H43 **VALIDATION COMPLETENESS WORKSHEET** Date: 8/30/12

SDG #: 12C254 Level IV Page: 1 of 1

Laboratory: EMAX Laboratories, Inc. Reviewer: [illegible]

2nd Reviewer: [illegible]

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: 3/23/12
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	A	
VII.	Laboratory control samples	A	LCS/P
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	ND	D = 5, 6
XIII.	Field blanks	ND	EB = EB-NBZ-SB-040412 / SDG = EB-NBZ-SS-040412 / 12D03

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-048-NBZ-SS-0.0-0.5	11	MB4S	21		31	
2	SL-048-NBZ-SB-4.0-5.0	12		22		32	
3	SL-049-NBZ-SB-2.0-3.0	13		23		33	
4	SL-051-NBZ-SB-1.5-2.5	14		24		34	
5	SL-057-NBZ-SS-0.0-0.5	15		25		35	
6	DUP-02-NBZ-QC-032312	16		26		36	
7	SL-047-NBZ-SB-4.0-5.0	17		27		37	
8	SL-057-NBZ-SS-0.0-0.5MS	18		28		38	
9	SL-057-NBZ-SS-0.0-0.5MSD	19		29		39	
10		20		30		40	

Notes: _____

DC #: 28255H43
SDG #: per cover

VALIDATION FINDINGS CHECKLIST

Page: 1 of 2
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 #: 28255H43
SDG #: per cover

VALIDATION FINDINGS CHECKLIST

Reviewer: FJ
2nd Reviewer: C

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 #: 28255H43
SDG #: per COC

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: FJ
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 (10 std)	Recalculated CF (10 std)	Reported Average CF (initial)	Recalculated Average CF (initial)	Reported %RSD	Recalculated %RSD
1	ICAL	8/29/11	ethanol	13619	13619	13407.9	13407.9	12.5	12.5
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 #: 28255114/3
SDG #: per cover

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: EJ
2nd Reviewer: CA

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	ccv 07:46	3/27/12	ethanol	10	8.62	8.62	14	14
2	ccv 12:42	3/27/12	ethanol	10	8.75	8.75	12	12
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 #: [illegible]

VALIDATION FINDINGS WORKSHEET

Matrix Spike/Matrix Spike Duplicates Results Verification

Page: 1 of 1
Reviewer: FZ
2nd Reviewer: [illegible]

METHOD: ✓ GC __HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC - SC)/SA Where SSC = Spiked sample concentration SC = Sample concentration
SA = Spike added
RPD =(({SSCMS - SSCMSD} * 2) / (SSCMS + SSCMSD))*100 MS = Matrix spike MSD = Matrix spike duplicate

MS/MSD samples: 8, 9

Compound	Spike Added (ug/kg)		Sample Conc. (ug/kg)	Spike Sample Concentration (ug/kg)		Matrix spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	---	MS	MSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)											
Diesel (8015)											
Benzene (8021B)											
Methane (RSK-175)											
2,4-D (8151)											
Dinoseb (8151)											
Naphthalene (8310)											
Anthracene (8310)											
HMX (8330)											
2,4,6-Trinitrotoluene (8330)											
ethanol	10800	10800	ND	8180	7880	76	76	73	73	4	4

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

LDC #: 28253-443
SDG #: all cores

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

Reviewer: F
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 = 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: las 1h

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)~~ ethano	10000	10000	8640	9480	86	86	95	95	9	9
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 #: 28255H43
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._____ Compound Name _____

Concentration = _____

MD

#	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: March 23, 2012

LDC Report Date: August 31, 2012

Matrix: Soil

Parameters: Glycols

Validation Level: Level IV

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 12C254

Sample Identification

SL-048-NBZ-SS-0.0-0.5
SL-048-NBZ-SB-4.0-5.0
SL-049-NBZ-SB-2.0-3.0
SL-051-NBZ-SB-1.5-2.5
SL-057-NBZ-SS-0.0-0.5
DUP-02-NBZ-QC-032312
SL-047-NBZ-SB-4.0-5.0
SL-057-NBZ-SS-0.0-0.5MS
SL-057-NBZ-SS-0.0-0.5MSD

Introduction

This data review covers 9 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 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-NBZ-SB-040412 and EB-NBZ-SS-040412 (both from SDG 12D031) were identified as equipment blanks. No glycol contaminants were found.

V. Surrogate Recovery

Surrogates were not required by the method.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples

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

VIII. Target Compound Identification

All target compound identifications were within validation criteria.

IX. Compound Quantitation 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 12C254	All compounds reported below the RL.	J (all detects)	A

X. System Performance

The system performance was acceptable.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

Samples SL-057-NBZ-SS-0.0-0.5 and DUP-02-NBZ-QC-032312 were identified as field duplicates. No glycols were detected in any of the samples.

Santa Susana Field Laboratory
Glycols - Data Qualification Summary - SDG 12C254

SDG	Sample	Compound	Flag	A or P	Reason (Code)
12C254	SL-048-NBZ-SS-0.0-0.5 SL-048-NBZ-SB-4.0-5.0 SL-049-NBZ-SB-2.0-3.0 SL-051-NBZ-SB-1.5-2.5 SL-057-NBZ-SS-0.0-0.5 DUP-02-NBZ-QC-032312 SL-047-NBZ-SB-4.0-5.0	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 12C254

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Glycols - Field Blank Data Qualification Summary - SDG 12C254

No Sample Data Qualified in this SDG

LDC #: 28255H45 **VALIDATION COMPLETENESS WORKSHEET** Date: 8/30/12
SDG #: 12C254 Level IV Page: 1 of 1
Laboratory: EMAX Laboratories Inc. Reviewer: F
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: 3/23/12
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	A	
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	ND	D = 5, 6
XIII.	Field blanks	ND	EB = EB-NBZ-SB-040412] SDG = EB-NBZ-SS-040412] 12D03

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-048-NBZ-SS-0.0-0.5	11	MBLK15	21		31	
2	SL-048-NBZ-SB-4.0-5.0	12		22		32	
3	SL-049-NBZ-SB-2.0-3.0	13		23		33	
4	SL-051-NBZ-SB-1.5-2.5	14		24		34	
5	SL-057-NBZ-SS-0.0-0.5	15		25		35	
6	DUP-02-NBZ-QC-032312	16		26		36	
7	SL-047-NBZ-SB-4.0-5.0	17		27		37	
8	SL-057-NBZ-SS-0.0-0.5MS	18		28		38	
9	SL-057-NBZ-SS-0.0-0.5MSD	19		29		39	
10		20		30		40	

Notes:

DC #: 28255 1145
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?	NA		✓	
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 #: 28255 HH5
SDG #: per cover

VALIDATION FINDINGS CHECKLIST

Reviewer: FJ
2nd Reviewer: C

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 #: 28255TM5
SDG #: [illegible]

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 (50 std)	Recalculated CF (50 std)	Reported Average CF (initial)	Recalculated Average CF (initial)	Reported %RSD	Recalculated %RSD
1	ICAL	3/14/12	Diethylene Glycol	4837	4837	5061.4	5061.4	7.9	7.7
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 #: 28255MJ
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	CCV 10:53	3/29/12	Diethylene Glycol	50.0	52.80	52.80	6	6
2	CCV 14:22	3/29/12	↓	↓	48.79	48.79	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 #: [illegible]
SDG #: [illegible]

VALIDATION FINDINGS WORKSHEET

Matrix Spike/Matrix Spike Duplicates Results Verification

Page: 1 of 1
Reviewer: FZ
2nd Reviewer: [illegible]

METHOD: ✓ GC __HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC - SC)/SA Where SSC = Spiked sample concentration SC = Sample concentration
SA = Spike added
RPD =(({SSCMS - SSCMSD} * 2) / (SSCMS + SSCMSD))*100 MS = Matrix spike MSD = Matrix spike duplicate

MS/MSD samples: 8 + 9

Compound	Spike Added (mg/kg)		Sample Conc. (mg/kg)	Spike Sample Concentration (mg/kg)		Matrix spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	—	MS	MSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)											
Diesel (8015)											
Benzene (8021B)											
Methane (RSK-175)											
2,4-D (8151)											
Dinoseb (8151)											
Naphthalene (8310)											
Anthracene (8310)											
HMX (8330)											
2,4,6-Trinitrotoluene (8330)											
Diethylene Glycol	53.9	53.9	ND	55.2	69.4	102	102	129	129	23	23

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 #: 28205H43
SDG #: see 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 = 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: LCS/D

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	53.7	48.7	107	107	97	97	10	10

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 #: 78255H45
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 = _____

ND

#	Sample ID	Compound	Reported Concentrations	Recalculated Results Concentrations	Qualifications

Comments: _____

SAMPCALew.wpd

SAMPLE DELIVERY GROUP

12C261

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
26-Mar-2012	TB-032612	C261-10	TB	5030B	8015B GRO	III
26-Mar-2012	SL-046-NBZ-SS-0.0-0.5	C261-04	N	3550B	8082	III
26-Mar-2012	SL-046-NBZ-SS-0.0-0.5	C261-04	N	3550B	8270C	III
26-Mar-2012	SL-046-NBZ-SS-0.0-0.5	C261-04	N	3550B	8270C SIM	III
26-Mar-2012	SL-046-NBZ-SS-0.0-0.5	C261-04	N	7471A	7471A	III
26-Mar-2012	SL-046-NBZ-SS-0.0-0.5	C261-04	N	GEN PREP	300.0	III
26-Mar-2012	SL-046-NBZ-SS-0.0-0.5	C261-04	N	GEN PREP	314.0	III
26-Mar-2012	SL-046-NBZ-SS-0.0-0.5	C261-04	N	GEN PREP	6020	III
26-Mar-2012	SL-046-NBZ-SS-0.0-0.5	C261-04	N	GEN PREP	7199	III
26-Mar-2012	SL-046-NBZ-SS-0.0-0.5	C261-04	N	GEN PREP	8015B	III
26-Mar-2012	SL-046-NBZ-SS-0.0-0.5	C261-04	N	GEN PREP	8015M	III
26-Mar-2012	SL-046-NBZ-SS-0.0-0.5	C261-04	N	GEN PREP	8151A	III
26-Mar-2012	SL-046-NBZ-SS-0.0-0.5	C261-04	N	GEN PREP	8330A	III
26-Mar-2012	SL-046-NBZ-SS-0.0-0.5	C261-04	N	GEN PREP	8332	III
26-Mar-2012	SL-046-NBZ-SS-0.0-0.5	C261-04	N	GEN PREP	9014	III
26-Mar-2012	SL-046-NBZ-SS-0.0-0.5	C261-04	N	GEN PREP	9045D	III
26-Mar-2012	SL-046-NBZ-SS-0.0-0.5	C261-04R	N	GEN PREP	7199	III
26-Mar-2012	SL-046-NBZ-SS-0.0-0.5	C261-04T	N	3550B	8015B EFH	III
26-Mar-2012	SL-046-NBZ-SS-0.0-0.5	C261-04T	N	3550B	8081A	III
26-Mar-2012	SL-046-NBZ-SB-4.5	C261-05	N	5035	8015B GRO	III
26-Mar-2012	SL-046-NBZ-SB-4.0-5.0	C261-06	N	3550B	8015B EFH	III
26-Mar-2012	SL-046-NBZ-SB-4.0-5.0	C261-06	N	3550B	8082	III
26-Mar-2012	SL-046-NBZ-SB-4.0-5.0	C261-06	N	3550B	8270C	III
26-Mar-2012	SL-046-NBZ-SB-4.0-5.0	C261-06	N	3550B	8270C SIM	III
26-Mar-2012	SL-046-NBZ-SB-4.0-5.0	C261-06	N	7471A	7471A	III
26-Mar-2012	SL-046-NBZ-SB-4.0-5.0	C261-06	N	GEN PREP	300.0	III

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

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
26-Mar-2012	SL-046-NBZ-SB-4.0-5.0	C261-06	N	GEN PREP	314.0	III
26-Mar-2012	SL-046-NBZ-SB-4.0-5.0	C261-06	N	GEN PREP	6020	III
26-Mar-2012	SL-046-NBZ-SB-4.0-5.0	C261-06	N	GEN PREP	7199	III
26-Mar-2012	SL-046-NBZ-SB-4.0-5.0	C261-06	N	GEN PREP	8015B	III
26-Mar-2012	SL-046-NBZ-SB-4.0-5.0	C261-06	N	GEN PREP	8015M	III
26-Mar-2012	SL-046-NBZ-SB-4.0-5.0	C261-06	N	GEN PREP	8330A	III
26-Mar-2012	SL-046-NBZ-SB-4.0-5.0	C261-06	N	GEN PREP	8332	III
26-Mar-2012	SL-046-NBZ-SB-4.0-5.0	C261-06	N	GEN PREP	9014	III
26-Mar-2012	SL-046-NBZ-SB-4.0-5.0	C261-06	N	GEN PREP	9045D	III
26-Mar-2012	SL-046-NBZ-SB-4.0-5.0	C261-06R	N	GEN PREP	7199	III
26-Mar-2012	SL-124-NBZ-SS-0.0-0.5	C261-12	N	3550B	8081A	III
26-Mar-2012	SL-124-NBZ-SS-0.0-0.5	C261-12	N	3550B	8082	III
26-Mar-2012	SL-124-NBZ-SS-0.0-0.5	C261-12	N	3550B	8270C	III
26-Mar-2012	SL-124-NBZ-SS-0.0-0.5	C261-12	N	3550B	8270C SIM	III
26-Mar-2012	SL-124-NBZ-SS-0.0-0.5	C261-12	N	7471A	7471A	III
26-Mar-2012	SL-124-NBZ-SS-0.0-0.5	C261-12	N	GEN PREP	300.0	III
26-Mar-2012	SL-124-NBZ-SS-0.0-0.5	C261-12	N	GEN PREP	314.0	III
26-Mar-2012	SL-124-NBZ-SS-0.0-0.5	C261-12	N	GEN PREP	6020	III
26-Mar-2012	SL-124-NBZ-SS-0.0-0.5	C261-12	N	GEN PREP	7199	III
26-Mar-2012	SL-124-NBZ-SS-0.0-0.5	C261-12	N	GEN PREP	8151A	III
26-Mar-2012	SL-124-NBZ-SS-0.0-0.5	C261-12	N	GEN PREP	9045D	III
26-Mar-2012	SL-124-NBZ-SS-0.0-0.5	C261-12R	N	GEN PREP	7199	III
26-Mar-2012	SL-126-NBZ-SS-0.0-0.5	C261-13	N	3550B	8081A	III
26-Mar-2012	SL-126-NBZ-SS-0.0-0.5	C261-13	N	3550B	8082	III
26-Mar-2012	SL-126-NBZ-SS-0.0-0.5	C261-13	N	3550B	8270C	III
26-Mar-2012	SL-126-NBZ-SS-0.0-0.5	C261-13	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
26-Mar-2012	SL-126-NBZ-SS-0.0-0.5	C261-13	N	7471A	7471A	III
26-Mar-2012	SL-126-NBZ-SS-0.0-0.5	C261-13	N	GEN PREP	300.0	III
26-Mar-2012	SL-126-NBZ-SS-0.0-0.5	C261-13	N	GEN PREP	314.0	III
26-Mar-2012	SL-126-NBZ-SS-0.0-0.5	C261-13	N	GEN PREP	6020	III
26-Mar-2012	SL-126-NBZ-SS-0.0-0.5	C261-13	N	GEN PREP	7199	III
26-Mar-2012	SL-126-NBZ-SS-0.0-0.5	C261-13	N	GEN PREP	8151A	III
26-Mar-2012	SL-126-NBZ-SS-0.0-0.5	C261-13	N	GEN PREP	9045D	III
26-Mar-2012	SL-126-NBZ-SS-0.0-0.5	C261-13R	N	GEN PREP	7199	III
26-Mar-2012	SL-045-NBZ-SS-0.0-0.5	C261-01	N	3550B	8082	III
26-Mar-2012	SL-045-NBZ-SS-0.0-0.5	C261-01	N	3550B	8270C	III
26-Mar-2012	SL-045-NBZ-SS-0.0-0.5	C261-01	N	3550B	8270C SIM	III
26-Mar-2012	SL-045-NBZ-SS-0.0-0.5	C261-01	N	GEN PREP	300.0	III
26-Mar-2012	SL-045-NBZ-SS-0.0-0.5	C261-01	N	GEN PREP	314.0	III
26-Mar-2012	SL-045-NBZ-SS-0.0-0.5	C261-01	N	GEN PREP	6020	III
26-Mar-2012	SL-045-NBZ-SS-0.0-0.5	C261-01	N	GEN PREP	7199	III
26-Mar-2012	SL-045-NBZ-SS-0.0-0.5	C261-01	N	GEN PREP	8015B	III
26-Mar-2012	SL-045-NBZ-SS-0.0-0.5	C261-01	N	GEN PREP	8015M	III
26-Mar-2012	SL-045-NBZ-SS-0.0-0.5	C261-01	N	GEN PREP	8330A	III
26-Mar-2012	SL-045-NBZ-SS-0.0-0.5	C261-01	N	GEN PREP	8332	III
26-Mar-2012	SL-045-NBZ-SS-0.0-0.5	C261-01	N	GEN PREP	9014	III
26-Mar-2012	SL-045-NBZ-SS-0.0-0.5	C261-01	N	GEN PREP	9045D	III
26-Mar-2012	SL-045-NBZ-SS-0.0-0.5MS	C261-01M	MS	3550B	8082	III
26-Mar-2012	SL-045-NBZ-SS-0.0-0.5	C261-01R	N	GEN PREP	7199	III
26-Mar-2012	SL-045-NBZ-SS-0.0-0.5MSD	C261-01S	MSD	3550B	8082	III
26-Mar-2012	SL-045-NBZ-SS-0.0-0.5	C261-01T	N	3550B	8015B EFH	III
26-Mar-2012	SL-045-NBZ-SS-0.0-0.5	C261-01T	N	3550B	8081A	III

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

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
26-Mar-2012	SL-045-NBZ-SS-0.0-0.5	C261-01T	N	7471A	7471A	III
26-Mar-2012	SL-045-NBZ-SS-0.0-0.5	C261-01T	N	GEN PREP	8151A	III
26-Mar-2012	SL-196-NBZ-SS-0.0-0.5	C261-16	N	3550B	8081A	III
26-Mar-2012	SL-196-NBZ-SS-0.0-0.5	C261-16	N	3550B	8082	III
26-Mar-2012	SL-196-NBZ-SS-0.0-0.5	C261-16	N	3550B	8270C	III
26-Mar-2012	SL-196-NBZ-SS-0.0-0.5	C261-16	N	3550B	8270C SIM	III
26-Mar-2012	SL-196-NBZ-SS-0.0-0.5	C261-16	N	7471A	7471A	III
26-Mar-2012	SL-196-NBZ-SS-0.0-0.5	C261-16	N	GEN PREP	300.0	III
26-Mar-2012	SL-196-NBZ-SS-0.0-0.5	C261-16	N	GEN PREP	314.0	III
26-Mar-2012	SL-196-NBZ-SS-0.0-0.5	C261-16	N	GEN PREP	6020	III
26-Mar-2012	SL-196-NBZ-SS-0.0-0.5	C261-16	N	GEN PREP	7199	III
26-Mar-2012	SL-196-NBZ-SS-0.0-0.5	C261-16	N	GEN PREP	8151A	III
26-Mar-2012	SL-196-NBZ-SS-0.0-0.5	C261-16	N	GEN PREP	9045D	III
26-Mar-2012	SL-196-NBZ-SS-0.0-0.5MS	C261-16M	MS	GEN PREP	6020	III
26-Mar-2012	SL-196-NBZ-SS-0.0-0.5	C261-16R	N	GEN PREP	7199	III
26-Mar-2012	SL-196-NBZ-SS-0.0-0.5MSD	C261-16S	MSD	GEN PREP	6020	III
26-Mar-2012	SL-045-NBZ-SB-4.5	C261-02	N	5035	8015B GRO	III
26-Mar-2012	SL-045-NBZ-SB-4.0-5.0	C261-03	N	3550B	8015B EFH	III
26-Mar-2012	SL-045-NBZ-SB-4.0-5.0	C261-03	N	3550B	8082	III
26-Mar-2012	SL-045-NBZ-SB-4.0-5.0	C261-03	N	3550B	8270C	III
26-Mar-2012	SL-045-NBZ-SB-4.0-5.0	C261-03	N	3550B	8270C SIM	III
26-Mar-2012	SL-045-NBZ-SB-4.0-5.0	C261-03	N	7471A	7471A	III
26-Mar-2012	SL-045-NBZ-SB-4.0-5.0	C261-03	N	GEN PREP	300.0	III
26-Mar-2012	SL-045-NBZ-SB-4.0-5.0	C261-03	N	GEN PREP	314.0	III
26-Mar-2012	SL-045-NBZ-SB-4.0-5.0	C261-03	N	GEN PREP	6020	III
26-Mar-2012	SL-045-NBZ-SB-4.0-5.0	C261-03	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
26-Mar-2012	SL-045-NBZ-SB-4.0-5.0	C261-03	N	GEN PREP	8015B	III
26-Mar-2012	SL-045-NBZ-SB-4.0-5.0	C261-03	N	GEN PREP	8015M	III
26-Mar-2012	SL-045-NBZ-SB-4.0-5.0	C261-03	N	GEN PREP	8330A	III
26-Mar-2012	SL-045-NBZ-SB-4.0-5.0	C261-03	N	GEN PREP	8332	III
26-Mar-2012	SL-045-NBZ-SB-4.0-5.0	C261-03	N	GEN PREP	9014	III
26-Mar-2012	SL-045-NBZ-SB-4.0-5.0	C261-03	N	GEN PREP	9045D	III
26-Mar-2012	SL-045-NBZ-SB-4.0-5.0	C261-03R	N	GEN PREP	7199	III
26-Mar-2012	SL-042-NBZ-SS-0.0-0.5	C261-07	N	3550B	8082	III
26-Mar-2012	SL-042-NBZ-SS-0.0-0.5	C261-07	N	3550B	8270C	III
26-Mar-2012	SL-042-NBZ-SS-0.0-0.5	C261-07	N	3550B	8270C SIM	III
26-Mar-2012	SL-042-NBZ-SS-0.0-0.5	C261-07	N	GEN PREP	300.0	III
26-Mar-2012	SL-042-NBZ-SS-0.0-0.5	C261-07	N	GEN PREP	314.0	III
26-Mar-2012	SL-042-NBZ-SS-0.0-0.5	C261-07	N	GEN PREP	6020	III
26-Mar-2012	SL-042-NBZ-SS-0.0-0.5	C261-07	N	GEN PREP	7199	III
26-Mar-2012	SL-042-NBZ-SS-0.0-0.5	C261-07	N	GEN PREP	8015B	III
26-Mar-2012	SL-042-NBZ-SS-0.0-0.5	C261-07	N	GEN PREP	8015M	III
26-Mar-2012	SL-042-NBZ-SS-0.0-0.5	C261-07	N	GEN PREP	8330A	III
26-Mar-2012	SL-042-NBZ-SS-0.0-0.5	C261-07	N	GEN PREP	8332	III
26-Mar-2012	SL-042-NBZ-SS-0.0-0.5	C261-07	N	GEN PREP	9014	III
26-Mar-2012	SL-042-NBZ-SS-0.0-0.5	C261-07	N	GEN PREP	9045D	III
26-Mar-2012	SL-042-NBZ-SS-0.0-0.5DUP	C261-07D	DUP	GEN PREP	7199	III
26-Mar-2012	SL-042-NBZ-SS-0.0-0.5DUP	C261-07D	DUP	GEN PREP	9045D	III
26-Mar-2012	SL-042-NBZ-SS-0.0-0.5MS	C261-07G	MS	GEN PREP	7199	III
26-Mar-2012	SL-042-NBZ-SS-0.0-0.5MS	C261-07G1	MS	GEN PREP	7199	III
26-Mar-2012	SL-042-NBZ-SS-0.0-0.5MS	C261-07M	MS	GEN PREP	7199	III
26-Mar-2012	SL-042-NBZ-SS-0.0-0.5MS	C261-07M1	MS	GEN PREP	7199	III

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

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
26-Mar-2012	SL-042-NBZ-SS-0.0-0.5	C261-07R	N	GEN PREP	7199	III
26-Mar-2012	SL-042-NBZ-SS-0.0-0.5	C261-07T	N	3550B	8015B EFH	III
26-Mar-2012	SL-042-NBZ-SS-0.0-0.5	C261-07T	N	3550B	8081A	III
26-Mar-2012	SL-042-NBZ-SS-0.0-0.5	C261-07T	N	7471A	7471A	III
26-Mar-2012	SL-042-NBZ-SS-0.0-0.5	C261-07T	N	GEN PREP	8151A	III
26-Mar-2012	SL-042-NBZ-SS-0.0-0.5DUP	C261-07Z	DUP	GEN PREP	7199	III
26-Mar-2012	SL-050-NBZ-SS-0.0-0.5	C261-09	N	3550B	8082	III
26-Mar-2012	SL-050-NBZ-SS-0.0-0.5	C261-09	N	3550B	8270C	III
26-Mar-2012	SL-050-NBZ-SS-0.0-0.5	C261-09	N	3550B	8270C SIM	III
26-Mar-2012	SL-050-NBZ-SS-0.0-0.5	C261-09	N	7471A	7471A	III
26-Mar-2012	SL-050-NBZ-SS-0.0-0.5	C261-09	N	GEN PREP	300.0	III
26-Mar-2012	SL-050-NBZ-SS-0.0-0.5	C261-09	N	GEN PREP	314.0	III
26-Mar-2012	SL-050-NBZ-SS-0.0-0.5	C261-09	N	GEN PREP	6020	III
26-Mar-2012	SL-050-NBZ-SS-0.0-0.5	C261-09	N	GEN PREP	7199	III
26-Mar-2012	SL-050-NBZ-SS-0.0-0.5	C261-09	N	GEN PREP	8015B	III
26-Mar-2012	SL-050-NBZ-SS-0.0-0.5	C261-09	N	GEN PREP	8015M	III
26-Mar-2012	SL-050-NBZ-SS-0.0-0.5	C261-09	N	GEN PREP	8330A	III
26-Mar-2012	SL-050-NBZ-SS-0.0-0.5	C261-09	N	GEN PREP	8332	III
26-Mar-2012	SL-050-NBZ-SS-0.0-0.5	C261-09	N	GEN PREP	9014	III
26-Mar-2012	SL-050-NBZ-SS-0.0-0.5	C261-09	N	GEN PREP	9045D	III
26-Mar-2012	SL-050-NBZ-SS-0.0-0.5	C261-09R	N	GEN PREP	7199	III
26-Mar-2012	SL-050-NBZ-SS-0.0-0.5	C261-09T	N	3550B	8015B EFH	III
26-Mar-2012	SL-050-NBZ-SS-0.0-0.5	C261-09T	N	3550B	8081A	III
26-Mar-2012	SL-050-NBZ-SS-0.0-0.5	C261-09T	N	GEN PREP	8151A	III
26-Mar-2012	SL-123-NBZ-SS-0.0-0.5	C261-11	N	3550B	8081A	III
26-Mar-2012	SL-123-NBZ-SS-0.0-0.5	C261-11	N	3550B	8082	III

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

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
26-Mar-2012	SL-123-NBZ-SS-0.0-0.5	C261-11	N	3550B	8270C	III
26-Mar-2012	SL-123-NBZ-SS-0.0-0.5	C261-11	N	3550B	8270C SIM	III
26-Mar-2012	SL-123-NBZ-SS-0.0-0.5	C261-11	N	7471A	7471A	III
26-Mar-2012	SL-123-NBZ-SS-0.0-0.5	C261-11	N	GEN PREP	300.0	III
26-Mar-2012	SL-123-NBZ-SS-0.0-0.5	C261-11	N	GEN PREP	314.0	III
26-Mar-2012	SL-123-NBZ-SS-0.0-0.5	C261-11	N	GEN PREP	6020	III
26-Mar-2012	SL-123-NBZ-SS-0.0-0.5	C261-11	N	GEN PREP	7199	III
26-Mar-2012	SL-123-NBZ-SS-0.0-0.5	C261-11	N	GEN PREP	8151A	III
26-Mar-2012	SL-123-NBZ-SS-0.0-0.5	C261-11	N	GEN PREP	9045D	III
26-Mar-2012	SL-123-NBZ-SS-0.0-0.5	C261-11R	N	GEN PREP	7199	III
26-Mar-2012	SL-133-NBZ-SS-0.0-0.5	C261-14	N	3550B	8081A	III
26-Mar-2012	SL-133-NBZ-SS-0.0-0.5	C261-14	N	3550B	8082	III
26-Mar-2012	SL-133-NBZ-SS-0.0-0.5	C261-14	N	3550B	8270C	III
26-Mar-2012	SL-133-NBZ-SS-0.0-0.5	C261-14	N	3550B	8270C SIM	III
26-Mar-2012	SL-133-NBZ-SS-0.0-0.5	C261-14	N	7471A	7471A	III
26-Mar-2012	SL-133-NBZ-SS-0.0-0.5	C261-14	N	GEN PREP	300.0	III
26-Mar-2012	SL-133-NBZ-SS-0.0-0.5	C261-14	N	GEN PREP	314.0	III
26-Mar-2012	SL-133-NBZ-SS-0.0-0.5	C261-14	N	GEN PREP	6020	III
26-Mar-2012	SL-133-NBZ-SS-0.0-0.5	C261-14	N	GEN PREP	7199	III
26-Mar-2012	SL-133-NBZ-SS-0.0-0.5	C261-14	N	GEN PREP	8151A	III
26-Mar-2012	SL-133-NBZ-SS-0.0-0.5	C261-14	N	GEN PREP	9045D	III
26-Mar-2012	SL-133-NBZ-SS-0.0-0.5	C261-14R	N	GEN PREP	7199	III
26-Mar-2012	SL-043-NBZ-SS-0.0-0.5	C261-08	N	3550B	8015B EFH	III
26-Mar-2012	SL-043-NBZ-SS-0.0-0.5	C261-08	N	3550B	8081A	III
26-Mar-2012	SL-043-NBZ-SS-0.0-0.5	C261-08	N	3550B	8082	III
26-Mar-2012	SL-043-NBZ-SS-0.0-0.5	C261-08	N	3550B	8270C	III

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

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
26-Mar-2012	SL-043-NBZ-SS-0.0-0.5	C261-08	N	3550B	8270C SIM	III
26-Mar-2012	SL-043-NBZ-SS-0.0-0.5	C261-08	N	7471A	7471A	III
26-Mar-2012	SL-043-NBZ-SS-0.0-0.5	C261-08	N	GEN PREP	300.0	III
26-Mar-2012	SL-043-NBZ-SS-0.0-0.5	C261-08	N	GEN PREP	314.0	III
26-Mar-2012	SL-043-NBZ-SS-0.0-0.5	C261-08	N	GEN PREP	6020	III
26-Mar-2012	SL-043-NBZ-SS-0.0-0.5	C261-08	N	GEN PREP	7199	III
26-Mar-2012	SL-043-NBZ-SS-0.0-0.5	C261-08	N	GEN PREP	8015B	III
26-Mar-2012	SL-043-NBZ-SS-0.0-0.5	C261-08	N	GEN PREP	8015M	III
26-Mar-2012	SL-043-NBZ-SS-0.0-0.5	C261-08	N	GEN PREP	8151A	III
26-Mar-2012	SL-043-NBZ-SS-0.0-0.5	C261-08	N	GEN PREP	8330A	III
26-Mar-2012	SL-043-NBZ-SS-0.0-0.5	C261-08	N	GEN PREP	8332	III
26-Mar-2012	SL-043-NBZ-SS-0.0-0.5	C261-08	N	GEN PREP	9014	III
26-Mar-2012	SL-043-NBZ-SS-0.0-0.5	C261-08	N	GEN PREP	9045D	III
26-Mar-2012	SL-043-NBZ-SS-0.0-0.5MS	C261-08M	MS	GEN PREP	300.0	III
26-Mar-2012	SL-043-NBZ-SS-0.0-0.5MS	C261-08M	MS	GEN PREP	314.0	III
26-Mar-2012	SL-043-NBZ-SS-0.0-0.5	C261-08R	N	GEN PREP	7199	III
26-Mar-2012	SL-043-NBZ-SS-0.0-0.5MSD	C261-08S	MSD	GEN PREP	300.0	III
26-Mar-2012	SL-043-NBZ-SS-0.0-0.5MSD	C261-08S	MSD	GEN PREP	314.0	III
26-Mar-2012	SL-195-NBZ-SS-0.0-0.5	C261-15	N	3550B	8081A	III
26-Mar-2012	SL-195-NBZ-SS-0.0-0.5	C261-15	N	3550B	8082	III
26-Mar-2012	SL-195-NBZ-SS-0.0-0.5	C261-15	N	3550B	8270C	III
26-Mar-2012	SL-195-NBZ-SS-0.0-0.5	C261-15	N	3550B	8270C SIM	III
26-Mar-2012	SL-195-NBZ-SS-0.0-0.5	C261-15	N	7471A	7471A	III
26-Mar-2012	SL-195-NBZ-SS-0.0-0.5	C261-15	N	GEN PREP	300.0	III
26-Mar-2012	SL-195-NBZ-SS-0.0-0.5	C261-15	N	GEN PREP	314.0	III
26-Mar-2012	SL-195-NBZ-SS-0.0-0.5	C261-15	N	GEN PREP	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
26-Mar-2012	SL-195-NBZ-SS-0.0-0.5	C261-15	N	GEN PREP	7199	III
26-Mar-2012	SL-195-NBZ-SS-0.0-0.5	C261-15	N	GEN PREP	8151A	III
26-Mar-2012	SL-195-NBZ-SS-0.0-0.5	C261-15	N	GEN PREP	9045D	III
26-Mar-2012	SL-195-NBZ-SS-0.0-0.5	C261-15R	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*

Attachment II

Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: 12C261 **Laboratory: EMXT**

EDD Filename: 12C261R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: GENCHEM

Method: 300.0 **Matrix: SO**

Sample ID: SL-045-NBZ-SB-4.0-5.0 *Collected:* 3/26/2012 11:55:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate-NO3	1.19	J	0.789	MDL	1.58	PQL	MG/KG	J	Z

Sample ID: SL-045-NBZ-SS-0.0-0.5 *Collected:* 3/26/2012 11:41:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate-NO3	2.62		0.813	MDL	1.63	PQL	MG/KG	U	F

Sample ID: SL-046-NBZ-SB-4.0-5.0 *Collected:* 3/26/2012 10:15:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate-NO3	1.03	J	0.793	MDL	1.59	PQL	MG/KG	J	Z

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: SL-042-NBZ-SS-0.0-0.5 *Collected:* 3/26/2012 2:10:00 *Analysis Type:* RES/TOT *Dilution:* 1.00

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	3.61	J	2.91	MDL	5.82	PQL	MG/KG	J	Z
SILVER	0.0653	J	0.0582	MDL	0.116	PQL	MG/KG	J	Z
SODIUM	59.3	J	58.2	MDL	116	PQL	MG/KG	J	Z
Zirconium	5.82	U	2.91	MDL	5.82	PQL	MG/KG	UJ	Q

Sample ID: SL-043-NBZ-SS-0.0-0.5 *Collected:* 3/26/2012 3:35:00 *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	0.197	J	0.110	MDL	0.221	PQL	MG/KG	J	Z
SELENIUM	0.336	J	0.221	MDL	0.441	PQL	MG/KG	J	Z
SILVER	0.0712	J	0.0552	MDL	0.110	PQL	MG/KG	J	Z
Zirconium	5.52	U	2.76	MDL	5.52	PQL	MG/KG	UJ	Q

Sample ID: SL-045-NBZ-SB-4.0-5.0 *Collected:* 3/26/2012 11:55:00 *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	0.163	J	0.101	MDL	0.202	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12C261 **Laboratory: EMXT**

EDD Filename: 12C261R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: **SL-045-NBZ-SB-4.0-5.0** *Collected:* **3/26/2012 11:55:00** *Analysis Type:* **RES/TOT** *Dilution:* **0.962**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.262	J	0.202	MDL	0.405	PQL	MG/KG	J	Z
SILVER	0.0631	J	0.0506	MDL	0.101	PQL	MG/KG	J	Z
SODIUM	86.0	J	50.6	MDL	101	PQL	MG/KG	J	Z
Zirconium	5.06	U	2.53	MDL	5.06	PQL	MG/KG	UJ	Q

Sample ID: **SL-045-NBZ-SS-0.0-0.5** *Collected:* **3/26/2012 11:41:00** *Analysis Type:* **RES/TOT** *Dilution:* **0.976**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SODIUM	64.6	J	52.9	MDL	106	PQL	MG/KG	J	Z
Zirconium	5.29	U	2.64	MDL	5.29	PQL	MG/KG	UJ	Q

Sample ID: **SL-046-NBZ-SB-4.0-5.0** *Collected:* **3/26/2012 10:15:00** *Analysis Type:* **RES/TOT** *Dilution:* **0.985**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.154	J	0.104	MDL	0.208	PQL	MG/KG	J	Z
BORON	2.87	J	2.60	MDL	5.21	PQL	MG/KG	J	Z
Zirconium	5.21	U	2.60	MDL	5.21	PQL	MG/KG	UJ	Q

Sample ID: **SL-046-NBZ-SS-0.0-0.5** *Collected:* **3/26/2012 9:20:00** *Analysis Type:* **RES/TOT** *Dilution:* **0.976**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Zirconium	5.74	U	2.87	MDL	5.74	PQL	MG/KG	UJ	Q

Sample ID: **SL-050-NBZ-SS-0.0-0.5** *Collected:* **3/26/2012 2:30:00** *Analysis Type:* **RES/TOT** *Dilution:* **0.971**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.174	J	0.106	MDL	0.212	PQL	MG/KG	J	Z
SILVER	0.0844	J	0.0530	MDL	0.106	PQL	MG/KG	J	Z
Zirconium	5.30	U	2.65	MDL	5.30	PQL	MG/KG	UJ	Q

Sample ID: **SL-123-NBZ-SS-0.0-0.5** *Collected:* **3/26/2012 2:55:00** *Analysis Type:* **RES/TOT** *Dilution:* **0.922**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.159	J	0.109	MDL	0.217	PQL	MG/KG	J	Z
SODIUM	58.9	J	54.3	MDL	109	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12C261 **Laboratory: EMXT**

EDD Filename: 12C261R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID:*SL-123-NBZ-SS-0.0-0.5** ***Collected: 3/26/2012 2:55:00 ***Analysis Type:*** RES/TOT ***Dilution:*** 0.922

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Zirconium	5.43	U	2.71	MDL	5.43	PQL	MG/KG	UJ	Q

Sample ID:*SL-124-NBZ-SS-0.0-0.5** ***Collected: 3/26/2012 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
SODIUM	82.0	J	65.6	MDL	131	PQL	MG/KG	J	Z
Zirconium	6.56	U	3.28	MDL	6.56	PQL	MG/KG	UJ	Q

Sample ID:*SL-126-NBZ-SS-0.0-0.5** ***Collected: 3/26/2012 11:20:00 ***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	0.215	J	0.120	MDL	0.240	PQL	MG/KG	J	Z
Zirconium	6.00	U	3.00	MDL	6.00	PQL	MG/KG	UJ	Q

Sample ID:*SL-133-NBZ-SS-0.0-0.5** ***Collected: 3/26/2012 3:15:00 ***Analysis Type:*** RES/TOT ***Dilution:*** 0.943

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	2.80	J	2.73	MDL	5.46	PQL	MG/KG	J	Z
Zirconium	5.46	U	2.73	MDL	5.46	PQL	MG/KG	UJ	Q

Sample ID:*SL-195-NBZ-SS-0.0-0.5** ***Collected: 3/26/2012 3:40:00 ***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	0.180	J	0.112	MDL	0.224	PQL	MG/KG	J	Z
Zirconium	5.61	U	2.80	MDL	5.61	PQL	MG/KG	UJ	Q

Sample ID:*SL-196-NBZ-SS-0.0-0.5** ***Collected: 3/26/2012 11:45:00 ***Analysis Type:*** RES/TOT ***Dilution:*** 0.966

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Zirconium	5.86	U	2.93	MDL	5.86	PQL	MG/KG	UJ	Q

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12C261 **Laboratory: EMXT**

EDD Filename: 12C261R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

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

Sample ID: SL-043-NBZ-SS-0.0-0.5 *Collected:* 3/26/2012 3:35:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH(C12-C14)	0.72	J	0.56	MDL	1.1	PQL	MG/KG	J	Z
EFH(C8-C11)	0.93	J	0.56	MDL	1.1	PQL	MG/KG	J	Z

Sample ID: SL-046-NBZ-SB-4.0-5.0 *Collected:* 3/26/2012 10:15:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH(C12-C14)	0.73	J	0.53	MDL	1.1	PQL	MG/KG	J	Z
EFH(C15-C20)	0.73	J	0.53	MDL	1.1	PQL	MG/KG	J	Z
EFH(C8-C11)	0.86	J	0.53	MDL	1.1	PQL	MG/KG	J	Z

Method Category: SVOA

Method: 8081A **Matrix: SO**

Sample ID: SL-042-NBZ-SS-0.0-0.5 *Collected:* 3/26/2012 2:10:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDT	3.3	J	2.0	MDL	4.0	PQL	UG/KG	J	Z

Sample ID: SL-043-NBZ-SS-0.0-0.5 *Collected:* 3/26/2012 3:35:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDE	1.7		0.19	MDL	0.38	PQL	UG/KG	J	S
4,4'-DDT	3.5		0.19	MDL	0.38	PQL	UG/KG	J	S

Sample ID: SL-046-NBZ-SS-0.0-0.5 *Collected:* 3/26/2012 9:20:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDT	1.8	J	1.0	MDL	2.0	PQL	UG/KG	J	Z

Sample ID: SL-126-NBZ-SS-0.0-0.5 *Collected:* 3/26/2012 11:20:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
HEPTACHLOR EPOXIDE	0.12	J	0.10	MDL	0.20	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12C261 **Laboratory: EMXT**

EDD Filename: 12C261R **eQAPP Name: CDM_SSFL_120730_EMAX**

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

Sample ID: **SL-133-NBZ-SS-0.0-0.5** ***Collected:*** **3/26/2012 3:15:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
METHOXYCHLOR	1.4	J	0.98	MDL	2.0	PQL	UG/KG	J	Z

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

Sample ID: **SL-043-NBZ-SS-0.0-0.5** ***Collected:*** **3/26/2012 3:35:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Aroclor 5460	2.5	J	1.9	MDL	3.7	PQL	UG/KG	J	Z

Sample ID: **SL-046-NBZ-SS-0.0-0.5** ***Collected:*** **3/26/2012 9:20:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Aroclor 5460	3.5	J	2.0	MDL	3.9	PQL	UG/KG	J	Z

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

Sample ID: **SL-042-NBZ-SS-0.0-0.5** ***Collected:*** **3/26/2012 2:10:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACENAPHTHENE	2.9	J	2.0	MDL	4.0	PQL	UG/KG	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	28	J	20	MDL	39	PQL	UG/KG	J	Z

Sample ID: **SL-043-NBZ-SS-0.0-0.5** ***Collected:*** **3/26/2012 3:35:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NAPHTHALENE	1.1	J	0.95	MDL	1.9	PQL	UG/KG	J	Z

Sample ID: **SL-045-NBZ-SB-4.0-5.0** ***Collected:*** **3/26/2012 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
BENZO(A)ANTHRACENE	1.3	J	0.89	MDL	1.8	PQL	UG/KG	J	Z
CHRYSENE	1.7	J	0.89	MDL	1.8	PQL	UG/KG	J	Z
DIBENZO(A,H)ANTHRACENE	1.6	J	0.89	MDL	1.8	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12C261 **Laboratory:** EMXT

EDD Filename: 12C261R **eQAPP Name:** CDM_SSFL_120730_EMAX

Method Category: SVOA

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

Sample ID: SL-045-NBZ-SB-4.0-5.0 ***Collected:*** 3/26/2012 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
FLUORANTHENE	1.5	J	0.89	MDL	1.8	PQL	UG/KG	J	Z
INDENO(1,2,3-CD)PYRENE	1.7	J	0.89	MDL	1.8	PQL	UG/KG	J	Z
PYRENE	1.4	J	0.89	MDL	1.8	PQL	UG/KG	J	Z

Sample ID: SL-124-NBZ-SS-0.0-0.5 ***Collected:*** 3/26/2012 10:20:00 ***Analysis Type:*** RES-BASE/NEUTRAL ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)ANTHRACENE	2.2	J	1.1	MDL	2.3	PQL	UG/KG	J	Z
BENZO(K)FLUORANTHENE	2.1	J	1.1	MDL	2.3	PQL	UG/KG	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	21	J	11	MDL	22	PQL	UG/KG	J	Z
Butylbenzylphthalate	14	J	11	MDL	22	PQL	UG/KG	J	Z

Sample ID: SL-126-NBZ-SS-0.0-0.5 ***Collected:*** 3/26/2012 11:20:00 ***Analysis Type:*** RES-BASE/NEUTRAL ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BIS(2-ETHYLHEXYL)PHTHALATE	16	J	10	MDL	20	PQL	UG/KG	J	Z
Butylbenzylphthalate	13	J	10	MDL	20	PQL	UG/KG	J	Z
PHENANTHRENE	1.9	J	1.0	MDL	2.0	PQL	UG/KG	J	Z

Sample ID: SL-133-NBZ-SS-0.0-0.5 ***Collected:*** 3/26/2012 3:15:00 ***Analysis Type:*** RES-BASE/NEUTRAL ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PYRENE	1.9	J	0.98	MDL	2.0	PQL	UG/KG	J	Z

Sample ID: SL-195-NBZ-SS-0.0-0.5 ***Collected:*** 3/26/2012 3:40:00 ***Analysis Type:*** RES-BASE/NEUTRAL ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Butylbenzylphthalate	12	J	9.5	MDL	19	PQL	UG/KG	J	Z

Sample ID: SL-196-NBZ-SS-0.0-0.5 ***Collected:*** 3/26/2012 11:45:00 ***Analysis Type:*** RES-BASE/NEUTRAL ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)ANTHRACENE	1.3	J	1.0	MDL	2.1	PQL	UG/KG	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	12	J	10	MDL	20	PQL	UG/KG	J	Z
CHRYSENE	1.1	J	1.0	MDL	2.1	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12C261 **Laboratory: EMXT**

EDD Filename: 12C261R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

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

Sample ID: **SL-196-NBZ-SS-0.0-0.5** ***Collected:*** **3/26/2012 11:45:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PHENANTHRENE	1.4	J	1.0	MDL	2.1	PQL	UG/KG	J	Z

Method Category: VOA

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

Sample ID: **TB-032612** ***Collected:*** **3/26/2012 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: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12C261 **Laboratory: EMXT**

EDD Filename: 12C261R **eQAPP Name: CDM_SSFL_120730_EMAX**

Reason Code Legend

Reason Code	*Description*
F	Equipment Blank Contamination
Q	Matrix Spike Lower Estimation
Q	Matrix Spike Lower Rejection
Q	Matrix Spike Upper Estimation
S	Surrogate/Tracer Recovery Lower Estimation
S	Surrogate/Tracer Recovery Upper Estimation
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Enclosure I

Level III ADR Outliers
(including Manual Review Outliers)

Quality Control Outlier Reports

12C261

Equipment Rinsate Blank Outlier Report

Lab Reporting Batch ID: 12C261 **Laboratory: EMXT**

EDD Filename: 12C261R **eQAPP Name: CDM_SSFL_120730_EMAX**

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

Equipment Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
EB-NBZ-SS-032912(RES)	3/29/2012 3:45:00 PM	Nitrate-NO3	0.799 MG/L	SL-042-NBZ-SS-0.0-0.5 SL-043-NBZ-SS-0.0-0.5 SL-045-NBZ-SS-0.0-0.5 SL-046-NBZ-SS-0.0-0.5 SL-050-NBZ-SS-0.0-0.5

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

Sample ID	Analyte	Reported Result	Modified Final Result
SL-045-NBZ-SS-0.0-0.5(RES)	Nitrate-NO3	2.62 MG/KG	2.62U MG/KG

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Surrogate Outlier Report

Lab Reporting Batch ID: 12C261 **Laboratory: EMXT**

EDD Filename: 12C261R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 8015B EFH
Matrix: SO

Sample ID (Analysis Type)	Surrogate	Sample % Recovery	% Recovery Limits	Affected Compounds	Flag
SL-045-NBZ-SS-0.0-0.5	BROMOBENZENE Hexacosane	0 0	50.00-150.00 50.00-150.00	All Target Analytes	No Qual, Diluted Out
SL-046-NBZ-SS-0.0-0.5	BROMOBENZENE Hexacosane	0 0	50.00-150.00 50.00-150.00	All Target Analytes	No Qual, Diluted Out

Method: 8081A
Matrix: SO

Sample ID (Analysis Type)	Surrogate	Sample % Recovery	% Recovery Limits	Affected Compounds	Flag
SL-043-NBZ-SS-0.0-0.5	TETRACHLORO-M-XYLENE	139	50.00-130.00	All Target Analytes	J (all detects)

Method: 8270C
Matrix: SO

Sample ID (Analysis Type)	Surrogate	Sample % Recovery	% Recovery Limits	Affected Compounds	Flag
SL-046-NBZ-SB-4.0-5.0	2-FLUOROBIPHENYL	36.5	45.00-130.00	No Affected Compounds	

Method: 8270C SIM
Matrix: SO

Sample ID (Analysis Type)	Surrogate	Sample % Recovery	% Recovery Limits	Affected Compounds	Flag
SL-046-NBZ-SB-4.0-5.0	2-FLUOROBIPHENYL	39.5	45.00-130.00	No Affected Compounds	

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 12C261 **Laboratory: EMXT**

EDD Filename: 12C261R **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-196-NBZ-SS-0.0-0.5MS (TOT) **SL-196-NBZ-SS-0.0-0.5MSD (TOT)** (SL-042-NBZ-SS-0.0-0.5 SL -043-NBZ-SS-0.0-0.5 SL -045-NBZ-SB-4.0-5.0 SL -045-NBZ-SS-0.0-0.5 SL -046-NBZ-SB-4.0-5.0 SL -046-NBZ-SS-0.0-0.5 SL -050-NBZ-SS-0.0-0.5 SL -123-NBZ-SS-0.0-0.5 SL -124-NBZ-SS-0.0-0.5 SL -126-NBZ-SS-0.0-0.5 SL -133-NBZ-SS-0.0-0.5 SL -195-NBZ-SS-0.0-0.5 SL -196-NBZ-SS-0.0-0.5)	TITANIUM	129	-7	75.00-125.00	-	TITANIUM	No Qual, >4x
SL-196-NBZ-SS-0.0-0.5MS (TOT) **SL-196-NBZ-SS-0.0-0.5MSD (TOT)** (SL-042-NBZ-SS-0.0-0.5 SL -043-NBZ-SS-0.0-0.5 SL -045-NBZ-SB-4.0-5.0 SL -045-NBZ-SS-0.0-0.5 SL -046-NBZ-SB-4.0-5.0 SL -046-NBZ-SS-0.0-0.5 SL -050-NBZ-SS-0.0-0.5 SL -123-NBZ-SS-0.0-0.5 SL -124-NBZ-SS-0.0-0.5 SL -126-NBZ-SS-0.0-0.5 SL -133-NBZ-SS-0.0-0.5 SL -195-NBZ-SS-0.0-0.5 SL -196-NBZ-SS-0.0-0.5)	IRON MANGANESE Zirconium	62 - 43	64 64 42	75.00-125.00 75.00-125.00 75.00-125.00	- - -	IRON MANGANESE Zirconium	J(all detects) UJ(all non-detects) Fe, Mn, No Qual, >4x

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Reporting Limit Outliers

Lab Reporting Batch ID: 12C261 **Laboratory: EMXT**

EDD Filename: 12C261R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 8015B GRO
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TB-032612	GASOLINE RANGE ORGANICS (C5-C12)	J	27	50	PQL	UG/L	J (all detects)

Method: 300.0
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-045-NBZ-SB-4.0-5.0	Nitrate-NO3	J	1.19	1.58	PQL	MG/KG	J (all detects)
SL-046-NBZ-SB-4.0-5.0	Nitrate-NO3	J	1.03	1.59	PQL	MG/KG	J (all detects)

Method: 6020
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-042-NBZ-SS-0.0-0.5	BORON	J	3.61	5.82	PQL	MG/KG	J (all detects)
	SILVER	J	0.0653	0.116	PQL	MG/KG	
	SODIUM	J	59.3	116	PQL	MG/KG	
SL-043-NBZ-SS-0.0-0.5	ANTIMONY	J	0.197	0.221	PQL	MG/KG	J (all detects)
	SELENIUM	J	0.336	0.441	PQL	MG/KG	
	SILVER	J	0.0712	0.110	PQL	MG/KG	
SL-045-NBZ-SB-4.0-5.0	ANTIMONY	J	0.163	0.202	PQL	MG/KG	J (all detects)
	SELENIUM	J	0.262	0.405	PQL	MG/KG	
	SILVER	J	0.0631	0.101	PQL	MG/KG	
	SODIUM	J	86.0	101	PQL	MG/KG	
SL-045-NBZ-SS-0.0-0.5	SODIUM	J	64.6	106	PQL	MG/KG	J (all detects)
SL-046-NBZ-SB-4.0-5.0	ANTIMONY	J	0.154	0.208	PQL	MG/KG	J (all detects)
	BORON	J	2.87	5.21	PQL	MG/KG	
SL-050-NBZ-SS-0.0-0.5	ANTIMONY	J	0.174	0.212	PQL	MG/KG	J (all detects)
	SILVER	J	0.0844	0.106	PQL	MG/KG	
SL-123-NBZ-SS-0.0-0.5	ANTIMONY	J	0.159	0.217	PQL	MG/KG	J (all detects)
	SODIUM	J	58.9	109	PQL	MG/KG	
SL-124-NBZ-SS-0.0-0.5	SODIUM	J	82.0	131	PQL	MG/KG	J (all detects)
SL-126-NBZ-SS-0.0-0.5	ANTIMONY	J	0.215	0.240	PQL	MG/KG	J (all detects)
SL-133-NBZ-SS-0.0-0.5	BORON	J	2.80	5.46	PQL	MG/KG	J (all detects)
SL-195-NBZ-SS-0.0-0.5	ANTIMONY	J	0.180	0.224	PQL	MG/KG	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: 12C261 **Laboratory: EMXT**

EDD Filename: 12C261R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 8015B EFH
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-043-NBZ-SS-0.0-0.5	EFH(C12-C14)	J	0.72	1.1	PQL	MG/KG	J (all detects)
	EFH(C8-C11)	J	0.93	1.1	PQL	MG/KG	
SL-046-NBZ-SB-4.0-5.0	EFH(C12-C14)	J	0.73	1.1	PQL	MG/KG	J (all detects)
	EFH(C15-C20)	J	0.73	1.1	PQL	MG/KG	
	EFH(C8-C11)	J	0.86	1.1	PQL	MG/KG	

Method: 8081A
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-042-NBZ-SS-0.0-0.5	4,4'-DDT	J	3.3	4.0	PQL	UG/KG	J (all detects)
SL-046-NBZ-SS-0.0-0.5	4,4'-DDT	J	1.8	2.0	PQL	UG/KG	J (all detects)
SL-126-NBZ-SS-0.0-0.5	HEPTACHLOR EPOXIDE	J	0.12	0.20	PQL	UG/KG	J (all detects)
SL-133-NBZ-SS-0.0-0.5	METHOXYCHLOR	J	1.4	2.0	PQL	UG/KG	J (all detects)

Method: 8082
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-043-NBZ-SS-0.0-0.5	Aroclor 5460	J	2.5	3.7	PQL	UG/KG	J (all detects)
SL-046-NBZ-SS-0.0-0.5	Aroclor 5460	J	3.5	3.9	PQL	UG/KG	J (all detects)

Method: 8270C SIM
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-042-NBZ-SS-0.0-0.5	ACENAPHTHENE	J	2.9	4.0	PQL	UG/KG	J (all detects)
	BIS(2-ETHYLHEXYL)PHTHALATE	J	28	39	PQL	UG/KG	
SL-043-NBZ-SS-0.0-0.5	NAPHTHALENE	J	1.1	1.9	PQL	UG/KG	J (all detects)
SL-045-NBZ-SB-4.0-5.0	BENZO(A)ANTHRACENE	J	1.3	1.8	PQL	UG/KG	J (all detects)
	CHRYSENE	J	1.7	1.8	PQL	UG/KG	
	DIBENZO(A,H)ANTHRACENE	J	1.6	1.8	PQL	UG/KG	
	FLUORANTHENE	J	1.5	1.8	PQL	UG/KG	
	INDENO(1,2,3-CD)PYRENE	J	1.7	1.8	PQL	UG/KG	
	PYRENE	J	1.4	1.8	PQL	UG/KG	
SL-124-NBZ-SS-0.0-0.5	BENZO(A)ANTHRACENE	J	2.2	2.3	PQL	UG/KG	J (all detects)
	BENZO(K)FLUORANTHENE	J	2.1	2.3	PQL	UG/KG	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	21	22	PQL	UG/KG	
	Butylbenzylphthalate	J	14	22	PQL	UG/KG	

Reporting Limit Outliers

Lab Reporting Batch ID: 12C261 **Laboratory: EMXT**

EDD Filename: 12C261R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 8270C SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-126-NBZ-SS-0.0-0.5	BIS(2-ETHYLHEXYL)PHTHALATE	J	16	20	PQL	UG/KG	J (all detects)
	Butylbenzylphthalate	J	13	20	PQL	UG/KG	
	PHENANTHRENE	J	1.9	2.0	PQL	UG/KG	
SL-133-NBZ-SS-0.0-0.5	PYRENE	J	1.9	2.0	PQL	UG/KG	J (all detects)
SL-195-NBZ-SS-0.0-0.5	Butylbenzylphthalate	J	12	19	PQL	UG/KG	J (all detects)
SL-196-NBZ-SS-0.0-0.5	BENZO(A)ANTHRACENE	J	1.3	2.1	PQL	UG/KG	J (all detects)
	BIS(2-ETHYLHEXYL)PHTHALATE	J	12	20	PQL	UG/KG	
	CHRYSENE	J	1.1	2.1	PQL	UG/KG	
	PHENANTHRENE	J	1.4	2.1	PQL	UG/KG	

LDC #: 28255I4
SDG #: 12C261
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET

ADR

7471A

Date: 8-29-12
Page: 1 of 1
Reviewer: AL
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: 3/26/12
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-NBZ-SB-032712 > 12C273; EB-NBZ-SS-032712; EB-NBZ-SB-032912 > 12C305; EB-NBZ-SS-032912

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: Sol.

1	SL-045-NBZ-SS-0.0-0.5	11	SL-133-NBZ-SS-0.0-0.5	21		31	
2	SL-045-NBZ-SB-4.0-5.0	12	SL-195-NBZ-SS-0.0-0.5	22		32	
3	SL-046-NBZ-SS-0.0-0.5	13	SL-196-NBZ-SS-0.0-0.5	23		33	
4	SL-046-NBZ-SB-4.0-5.0	14	SL-196-NBZ-SS-0.0-0.5MS	24		34	
5	SL-042-NBZ-SS-0.0-0.5	15	SL-196-NBZ-SS-0.0-0.5MSD	25		35	
6	SL-043-NBZ-SS-0.0-0.5	16		26		36	
7	SL-050-NBZ-SS-0.0-0.5	17		27		37	
8	SL-123-NBZ-SS-0.0-0.5	18		28		38	
9	SL-124-NBZ-SS-0.0-0.5	19		29		39	
10	SL-126-NBZ-SS-0.0-0.5	20		30		40	

Notes:

LDC #: 28255II4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: CL
2nd Reviewer: W

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

Blank units: mg/L **Associated sample units:** mg/Kg
Sampling date: 3/27/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: 2, 4

Analyte	Blank ID	Sample Identification											
	EB-NBZ-SB-032712 (SDG: 12C273)	Action Limit	No Qualifiers										
Al	0.0368	9.2											
Cu	0.00137	0.3425											
Na	0.200	50											

Sampling date: 3/27/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: 1, 3, 5-13

Analyte	Blank ID	Sample Identification											
	EB-NBZ-SS-032712 (SDG: 12C273)	Action Limit	No Qualifiers										
Cu	0.000807	0.20175											

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 #: 28255I4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: AL
2nd Reviewer: MV

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

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

Sampling date: 3/29/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: 1, 3, 5-13

Analyte	Blank ID	Sample Identification										
	EB-NBZ-SS-032912 (SDG: 12C305)	Action Limit	No Qualifiers									
Al	0.0266	6.65										
Cu	0.00108	0.27										
Na	0.112	28										

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

12C273

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
27-Mar-2012	TB-032712	C273-13	TB	5030B	8015B GRO	III
27-Mar-2012	TB-032712	C273-13	TB	5030B	8260B	III
27-Mar-2012	TB-032712	C273-13	TB	5030B	8260B SIM	III
27-Mar-2012	SL-078-NBZ-SS-0.0-0.5	C273-06	N	3550B	8015B EFH	III
27-Mar-2012	SL-078-NBZ-SS-0.0-0.5	C273-06	N	3550B	8081A	III
27-Mar-2012	SL-078-NBZ-SS-0.0-0.5	C273-06	N	3550B	8082	III
27-Mar-2012	SL-078-NBZ-SS-0.0-0.5	C273-06	N	3550B	8270C	III
27-Mar-2012	SL-078-NBZ-SS-0.0-0.5	C273-06	N	7471A	7471A	III
27-Mar-2012	SL-078-NBZ-SS-0.0-0.5	C273-06	N	GEN PREP	300.0	III
27-Mar-2012	SL-078-NBZ-SS-0.0-0.5	C273-06	N	GEN PREP	314.0	III
27-Mar-2012	SL-078-NBZ-SS-0.0-0.5	C273-06	N	GEN PREP	6020	III
27-Mar-2012	SL-078-NBZ-SS-0.0-0.5	C273-06	N	GEN PREP	7199	III
27-Mar-2012	SL-078-NBZ-SS-0.0-0.5	C273-06	N	GEN PREP	8151A	III
27-Mar-2012	SL-078-NBZ-SS-0.0-0.5	C273-06	N	GEN PREP	8330A	III
27-Mar-2012	SL-078-NBZ-SS-0.0-0.5	C273-06	N	GEN PREP	8332	III
27-Mar-2012	SL-078-NBZ-SS-0.0-0.5	C273-06	N	GEN PREP	9014	III
27-Mar-2012	SL-078-NBZ-SS-0.0-0.5	C273-06	N	GEN PREP	9045D	III
27-Mar-2012	SL-078-NBZ-SS-0.0-0.5	C273-06R	N	3550B	8270C SIM	III
27-Mar-2012	SL-078-NBZ-SS-0.0-0.5	C273-06R	N	GEN PREP	7199	III
27-Mar-2012	SL-095-NBZ-SS-0.0-0.5	C273-07	N	3550B	8081A	III
27-Mar-2012	SL-095-NBZ-SS-0.0-0.5	C273-07	N	3550B	8082	III
27-Mar-2012	SL-095-NBZ-SS-0.0-0.5	C273-07	N	3550B	8270C	III
27-Mar-2012	SL-095-NBZ-SS-0.0-0.5	C273-07	N	7471A	7471A	III
27-Mar-2012	SL-095-NBZ-SS-0.0-0.5	C273-07	N	GEN PREP	300.0	III
27-Mar-2012	SL-095-NBZ-SS-0.0-0.5	C273-07	N	GEN PREP	314.0	III
27-Mar-2012	SL-095-NBZ-SS-0.0-0.5	C273-07	N	GEN PREP	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
27-Mar-2012	SL-095-NBZ-SS-0.0-0.5	C273-07	N	GEN PREP	6850	III
27-Mar-2012	SL-095-NBZ-SS-0.0-0.5	C273-07	N	GEN PREP	7199	III
27-Mar-2012	SL-095-NBZ-SS-0.0-0.5	C273-07	N	GEN PREP	8151A	III
27-Mar-2012	SL-095-NBZ-SS-0.0-0.5	C273-07	N	GEN PREP	9045D	III
27-Mar-2012	SL-095-NBZ-SS-0.0-0.5	C273-07R	N	3550B	8270C SIM	III
27-Mar-2012	SL-095-NBZ-SS-0.0-0.5	C273-07R	N	GEN PREP	7199	III
27-Mar-2012	SL-130-NBZ-SS-0.0-0.5	C273-12	N	3550B	8081A	III
27-Mar-2012	SL-130-NBZ-SS-0.0-0.5	C273-12	N	3550B	8082	III
27-Mar-2012	SL-130-NBZ-SS-0.0-0.5	C273-12	N	7471A	7471A	III
27-Mar-2012	SL-130-NBZ-SS-0.0-0.5	C273-12	N	GEN PREP	300.0	III
27-Mar-2012	SL-130-NBZ-SS-0.0-0.5	C273-12	N	GEN PREP	314.0	III
27-Mar-2012	SL-130-NBZ-SS-0.0-0.5	C273-12	N	GEN PREP	6020	III
27-Mar-2012	SL-130-NBZ-SS-0.0-0.5	C273-12	N	GEN PREP	6850	III
27-Mar-2012	SL-130-NBZ-SS-0.0-0.5	C273-12	N	GEN PREP	7199	III
27-Mar-2012	SL-130-NBZ-SS-0.0-0.5	C273-12	N	GEN PREP	8151A	III
27-Mar-2012	SL-130-NBZ-SS-0.0-0.5	C273-12	N	GEN PREP	9045D	III
27-Mar-2012	SL-130-NBZ-SS-0.0-0.5	C273-12R	N	3550B	8270C	III
27-Mar-2012	SL-130-NBZ-SS-0.0-0.5	C273-12R	N	3550B	8270C SIM	III
27-Mar-2012	SL-130-NBZ-SS-0.0-0.5	C273-12R	N	GEN PREP	7199	III
27-Mar-2012	SL-119-NBZ-SS-0.0-0.5	C273-10	N	3550B	8081A	III
27-Mar-2012	SL-119-NBZ-SS-0.0-0.5	C273-10	N	3550B	8082	III
27-Mar-2012	SL-119-NBZ-SS-0.0-0.5	C273-10	N	3550B	8270C	III
27-Mar-2012	SL-119-NBZ-SS-0.0-0.5	C273-10	N	7471A	7471A	III
27-Mar-2012	SL-119-NBZ-SS-0.0-0.5	C273-10	N	GEN PREP	300.0	III
27-Mar-2012	SL-119-NBZ-SS-0.0-0.5	C273-10	N	GEN PREP	314.0	III
27-Mar-2012	SL-119-NBZ-SS-0.0-0.5	C273-10	N	GEN PREP	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
27-Mar-2012	SL-119-NBZ-SS-0.0-0.5	C273-10	N	GEN PREP	6850	III
27-Mar-2012	SL-119-NBZ-SS-0.0-0.5	C273-10	N	GEN PREP	7199	III
27-Mar-2012	SL-119-NBZ-SS-0.0-0.5	C273-10	N	GEN PREP	8151A	III
27-Mar-2012	SL-119-NBZ-SS-0.0-0.5	C273-10	N	GEN PREP	9045D	III
27-Mar-2012	SL-119-NBZ-SS-0.0-0.5	C273-10R	N	3550B	8270C SIM	III
27-Mar-2012	SL-119-NBZ-SS-0.0-0.5	C273-10R	N	GEN PREP	7199	III
27-Mar-2012	SL-038-NBZ-SS-0.0-0.5	C273-05	N	3550B	8015B EFH	III
27-Mar-2012	SL-038-NBZ-SS-0.0-0.5	C273-05	N	3550B	8270C	III
27-Mar-2012	SL-038-NBZ-SS-0.0-0.5	C273-05	N	7471A	7471A	III
27-Mar-2012	SL-038-NBZ-SS-0.0-0.5	C273-05	N	GEN PREP	300.0	III
27-Mar-2012	SL-038-NBZ-SS-0.0-0.5	C273-05	N	GEN PREP	314.0	III
27-Mar-2012	SL-038-NBZ-SS-0.0-0.5	C273-05	N	GEN PREP	6020	III
27-Mar-2012	SL-038-NBZ-SS-0.0-0.5	C273-05	N	GEN PREP	7199	III
27-Mar-2012	SL-038-NBZ-SS-0.0-0.5	C273-05	N	GEN PREP	8330A	III
27-Mar-2012	SL-038-NBZ-SS-0.0-0.5	C273-05	N	GEN PREP	8332	III
27-Mar-2012	SL-038-NBZ-SS-0.0-0.5	C273-05	N	GEN PREP	9014	III
27-Mar-2012	SL-038-NBZ-SS-0.0-0.5	C273-05	N	GEN PREP	9045D	III
27-Mar-2012	SL-038-NBZ-SS-0.0-0.5	C273-05I	N	GEN PREP	8151A	III
27-Mar-2012	SL-038-NBZ-SS-0.0-0.5	C273-05J	N	3550B	8081A	III
27-Mar-2012	SL-038-NBZ-SS-0.0-0.5	C273-05R	N	3550B	8270C SIM	III
27-Mar-2012	SL-038-NBZ-SS-0.0-0.5	C273-05R	N	GEN PREP	7199	III
27-Mar-2012	SL-038-NBZ-SS-0.0-0.5	C273-05T	N	3550B	8082	III
27-Mar-2012	SL-102-NBZ-SS-0.0-0.5	C273-08	N	3550B	8081A	III
27-Mar-2012	SL-102-NBZ-SS-0.0-0.5	C273-08	N	3550B	8082	III
27-Mar-2012	SL-102-NBZ-SS-0.0-0.5	C273-08	N	3550B	8270C	III
27-Mar-2012	SL-102-NBZ-SS-0.0-0.5	C273-08	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
27-Mar-2012	SL-102-NBZ-SS-0.0-0.5	C273-08	N	GEN PREP	300.0	III
27-Mar-2012	SL-102-NBZ-SS-0.0-0.5	C273-08	N	GEN PREP	314.0	III
27-Mar-2012	SL-102-NBZ-SS-0.0-0.5	C273-08	N	GEN PREP	6020	III
27-Mar-2012	SL-102-NBZ-SS-0.0-0.5	C273-08	N	GEN PREP	6850	III
27-Mar-2012	SL-102-NBZ-SS-0.0-0.5	C273-08	N	GEN PREP	7199	III
27-Mar-2012	SL-102-NBZ-SS-0.0-0.5	C273-08	N	GEN PREP	8151A	III
27-Mar-2012	SL-102-NBZ-SS-0.0-0.5	C273-08	N	GEN PREP	9045D	III
27-Mar-2012	SL-102-NBZ-SS-0.0-0.5	C273-08R	N	3550B	8270C SIM	III
27-Mar-2012	SL-102-NBZ-SS-0.0-0.5	C273-08R	N	GEN PREP	7199	III
27-Mar-2012	SL-039-NBZ-SB-2.5	C273-03	N	5035	8015B GRO	III
27-Mar-2012	SL-039-NBZ-SB-2.5	C273-03	N	5035	8260B	III
27-Mar-2012	SL-039-NBZ-SB-2.5	C273-03	N	5035	8260B SIM	III
27-Mar-2012	SL-039-NBZ-SB-2.0-3.0	C273-04	N	3550B	8015B EFH	III
27-Mar-2012	SL-039-NBZ-SB-2.0-3.0	C273-04	N	3550B	8270C	III
27-Mar-2012	SL-039-NBZ-SB-2.0-3.0	C273-04	N	7471A	7471A	III
27-Mar-2012	SL-039-NBZ-SB-2.0-3.0	C273-04	N	GEN PREP	300.0	III
27-Mar-2012	SL-039-NBZ-SB-2.0-3.0	C273-04	N	GEN PREP	314.0	III
27-Mar-2012	SL-039-NBZ-SB-2.0-3.0	C273-04	N	GEN PREP	6020	III
27-Mar-2012	SL-039-NBZ-SB-2.0-3.0	C273-04	N	GEN PREP	7199	III
27-Mar-2012	SL-039-NBZ-SB-2.0-3.0	C273-04	N	GEN PREP	8015B	III
27-Mar-2012	SL-039-NBZ-SB-2.0-3.0	C273-04	N	GEN PREP	8015M	III
27-Mar-2012	SL-039-NBZ-SB-2.0-3.0	C273-04	N	GEN PREP	8330A	III
27-Mar-2012	SL-039-NBZ-SB-2.0-3.0	C273-04	N	GEN PREP	8332	III
27-Mar-2012	SL-039-NBZ-SB-2.0-3.0	C273-04	N	GEN PREP	9014	III
27-Mar-2012	SL-039-NBZ-SB-2.0-3.0	C273-04	N	GEN PREP	9045D	III
27-Mar-2012	SL-039-NBZ-SB-2.0-3.0DUP	C273-04D	DUP	GEN PREP	9045D	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
27-Mar-2012	SL-039-NBZ-SB-2.0-3.0	C273-04N	N	3550B	8270C SIM	III
27-Mar-2012	SL-039-NBZ-SB-2.0-3.0	C273-04R	N	GEN PREP	7199	III
27-Mar-2012	SL-039-NBZ-SB-2.0-3.0	C273-04T	N	3550B	8082	III
27-Mar-2012	SL-129-NBZ-SS-0.0-0.5	C273-11	N	3550B	8081A	III
27-Mar-2012	SL-129-NBZ-SS-0.0-0.5	C273-11	N	3550B	8082	III
27-Mar-2012	SL-129-NBZ-SS-0.0-0.5	C273-11	N	3550B	8270C	III
27-Mar-2012	SL-129-NBZ-SS-0.0-0.5	C273-11	N	7471A	7471A	III
27-Mar-2012	SL-129-NBZ-SS-0.0-0.5	C273-11	N	GEN PREP	300.0	III
27-Mar-2012	SL-129-NBZ-SS-0.0-0.5	C273-11	N	GEN PREP	314.0	III
27-Mar-2012	SL-129-NBZ-SS-0.0-0.5	C273-11	N	GEN PREP	6020	III
27-Mar-2012	SL-129-NBZ-SS-0.0-0.5	C273-11	N	GEN PREP	6850	III
27-Mar-2012	SL-129-NBZ-SS-0.0-0.5	C273-11	N	GEN PREP	7199	III
27-Mar-2012	SL-129-NBZ-SS-0.0-0.5	C273-11	N	GEN PREP	8151A	III
27-Mar-2012	SL-129-NBZ-SS-0.0-0.5	C273-11	N	GEN PREP	9045D	III
27-Mar-2012	SL-129-NBZ-SS-0.0-0.5	C273-11R	N	3550B	8270C SIM	III
27-Mar-2012	SL-129-NBZ-SS-0.0-0.5	C273-11R	N	GEN PREP	7199	III
27-Mar-2012	SL-109-NBZ-SS-0.0-0.5	C273-09	N	3550B	8081A	III
27-Mar-2012	SL-109-NBZ-SS-0.0-0.5	C273-09	N	3550B	8082	III
27-Mar-2012	SL-109-NBZ-SS-0.0-0.5	C273-09	N	7471A	7471A	III
27-Mar-2012	SL-109-NBZ-SS-0.0-0.5	C273-09	N	GEN PREP	300.0	III
27-Mar-2012	SL-109-NBZ-SS-0.0-0.5	C273-09	N	GEN PREP	6020	III
27-Mar-2012	SL-109-NBZ-SS-0.0-0.5	C273-09	N	GEN PREP	6850	III
27-Mar-2012	SL-109-NBZ-SS-0.0-0.5	C273-09	N	GEN PREP	7199	III
27-Mar-2012	SL-109-NBZ-SS-0.0-0.5	C273-09	N	GEN PREP	8151A	III
27-Mar-2012	SL-109-NBZ-SS-0.0-0.5	C273-09	N	GEN PREP	9045D	III
27-Mar-2012	SL-109-NBZ-SS-0.0-0.5	C273-09R	N	3550B	8270C	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
27-Mar-2012	SL-109-NBZ-SS-0.0-0.5	C273-09R	N	3550B	8270C SIM	III
27-Mar-2012	SL-109-NBZ-SS-0.0-0.5	C273-09R	N	GEN PREP	7199	III
27-Mar-2012	SL-109-NBZ-SS-0.0-0.5	C273-09W	N	GEN PREP	314.0	III
27-Mar-2012	EB-NBZ-SB-032712	C273-01	EB	3520C	8015B EFH	III
27-Mar-2012	EB-NBZ-SB-032712	C273-01	EB	3520C	8082	III
27-Mar-2012	EB-NBZ-SB-032712	C273-01	EB	3520C	8270C	III
27-Mar-2012	EB-NBZ-SB-032712	C273-01	EB	7470A	7470A	III
27-Mar-2012	EB-NBZ-SB-032712	C273-01	EB	GEN PREP	300.0	III
27-Mar-2012	EB-NBZ-SB-032712	C273-01	EB	GEN PREP	314.0	III
27-Mar-2012	EB-NBZ-SB-032712	C273-01	EB	GEN PREP	6020	III
27-Mar-2012	EB-NBZ-SB-032712	C273-01	EB	GEN PREP	7199	III
27-Mar-2012	EB-NBZ-SB-032712	C273-01	EB	GEN PREP	8015B	III
27-Mar-2012	EB-NBZ-SB-032712	C273-01	EB	GEN PREP	8015M	III
27-Mar-2012	EB-NBZ-SB-032712	C273-01	EB	GEN PREP	8330A	III
27-Mar-2012	EB-NBZ-SB-032712	C273-01	EB	GEN PREP	8332	III
27-Mar-2012	EB-NBZ-SB-032712	C273-01	EB	GEN PREP	9014	III
27-Mar-2012	EB-NBZ-SB-032712	C273-01	EB	GEN PREP	9040C	III
27-Mar-2012	EB-NBZ-SB-032712	C273-01R	EB	GEN PREP	7199	III
27-Mar-2012	EB-NBZ-SS-032712	C273-02	EB	3520C	8015B EFH	III
27-Mar-2012	EB-NBZ-SS-032712	C273-02	EB	3520C	8081A	III
27-Mar-2012	EB-NBZ-SS-032712	C273-02	EB	3520C	8082	III
27-Mar-2012	EB-NBZ-SS-032712	C273-02	EB	3520C	8270C	III
27-Mar-2012	EB-NBZ-SS-032712	C273-02	EB	7470A	7470A	III
27-Mar-2012	EB-NBZ-SS-032712	C273-02	EB	GEN PREP	300.0	III
27-Mar-2012	EB-NBZ-SS-032712	C273-02	EB	GEN PREP	314.0	III
27-Mar-2012	EB-NBZ-SS-032712	C273-02	EB	GEN PREP	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
27-Mar-2012	EB-NBZ-SS-032712	C273-02	EB	GEN PREP	7199	III
27-Mar-2012	EB-NBZ-SS-032712	C273-02	EB	GEN PREP	8015B	III
27-Mar-2012	EB-NBZ-SS-032712	C273-02	EB	GEN PREP	8015M	III
27-Mar-2012	EB-NBZ-SS-032712	C273-02	EB	GEN PREP	8151A	III
27-Mar-2012	EB-NBZ-SS-032712	C273-02	EB	GEN PREP	8330A	III
27-Mar-2012	EB-NBZ-SS-032712	C273-02	EB	GEN PREP	8332	III
27-Mar-2012	EB-NBZ-SS-032712	C273-02	EB	GEN PREP	9014	III
27-Mar-2012	EB-NBZ-SS-032712	C273-02	EB	GEN PREP	9040C	III
27-Mar-2012	EB-NBZ-SS-032712DUP	C273-02D	DUP	GEN PREP	9040C	III
27-Mar-2012	EB-NBZ-SS-032712	C273-02R	EB	GEN PREP	7199	III

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

Attachment II

Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: 12C273 **Laboratory: EMXT**

EDD Filename: 12C273R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: GENCHEM
Method: 300.0 **Matrix: SO**

Sample ID: SL-038-NBZ-SS-0.0-0.5 *Collected:* 3/27/2012 11:10:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORIDE	0.860	J	0.603	MDL	1.21	PQL	MG/KG	J	Z

Sample ID: SL-039-NBZ-SB-2.0-3.0 *Collected:* 3/27/2012 2:35:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate-NO3	1.63	J	0.855	MDL	1.71	PQL	MG/KG	J	Z

Method Category: METALS
Method: 6020 **Matrix: AQ**

Sample ID: EB-NBZ-SB-032712 *Collected:* 3/27/2012 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	0.0368	J	0.0200	MDL	0.100	PQL	MG/L	J	Z

Sample ID: EB-NBZ-SS-032712 *Collected:* 3/27/2012 3:30:00 *Analysis Type:* RES/TOT *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	0.000807	J	0.000500	MDL	0.00100	PQL	MG/L	J	Z

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

Sample ID: SL-038-NBZ-SS-0.0-0.5 *Collected:* 3/27/2012 11:10:00 *Analysis Type:* RES/TOT *Dilution:* 0.962

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.434		0.116	MDL	0.232	PQL	MG/KG	J	Q
BORON	5.67	J	2.90	MDL	5.80	PQL	MG/KG	J	Z
SELENIUM	0.266	J	0.232	MDL	0.464	PQL	MG/KG	J	Z
SODIUM	88.4	J	58.0	MDL	116	PQL	MG/KG	J	Z

Sample ID: SL-039-NBZ-SB-2.0-3.0 *Collected:* 3/27/2012 2:35:00 *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	0.184	J	0.114	MDL	0.228	PQL	MG/KG	J	Z, Q

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12C273 **Laboratory: EMXT**

EDD Filename: 12C273R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: **METALS**

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

Sample ID: **SL-039-NBZ-SB-2.0-3.0** ***Collected:*** **3/27/2012 2:35:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1.00**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	5.10	J	2.85	MDL	5.70	PQL	MG/KG	J	Z
SELENIUM	0.341	J	0.228	MDL	0.456	PQL	MG/KG	J	Z
SILVER	0.0590	J	0.0570	MDL	0.114	PQL	MG/KG	J	Z
SODIUM	97.8	J	57.0	MDL	114	PQL	MG/KG	J	Z

Sample ID: **SL-078-NBZ-SS-0.0-0.5** ***Collected:*** **3/27/2012 9:40:00** ***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	0.119	J	0.111	MDL	0.223	PQL	MG/KG	J	Z, Q

Sample ID: **SL-095-NBZ-SS-0.0-0.5** ***Collected:*** **3/27/2012 10:17:00** ***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	0.158	J	0.114	MDL	0.227	PQL	MG/KG	J	Z, Q

Sample ID: **SL-102-NBZ-SS-0.0-0.5** ***Collected:*** **3/27/2012 1:55:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **0.980**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.164	J	0.114	MDL	0.227	PQL	MG/KG	J	Z, Q
SODIUM	65.9	J	56.8	MDL	114	PQL	MG/KG	J	Z

Sample ID: **SL-109-NBZ-SS-0.0-0.5** ***Collected:*** **3/27/2012 2:55:00** ***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	0.246		0.110	MDL	0.221	PQL	MG/KG	J	Q
SODIUM	76.0	J	55.2	MDL	110	PQL	MG/KG	J	Z

Sample ID: **SL-119-NBZ-SS-0.0-0.5** ***Collected:*** **3/27/2012 10:50:00** ***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	0.134	J	0.112	MDL	0.225	PQL	MG/KG	J	Z, Q

Sample ID: **SL-129-NBZ-SS-0.0-0.5** ***Collected:*** **3/27/2012 2:35:00** ***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	0.120	MDL	0.239	PQL	MG/KG	J	Q

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12C273 **Laboratory: EMXT**

EDD Filename: 12C273R **eQAPP Name: CDM_SSFL_120730_EMAX**

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

Sample ID: SL-129-NBZ-SS-0.0-0.5 *Collected:* 3/27/2012 2:35:00 *Analysis Type:* RES/TOT *Dilution:* 0.957

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	4.21	J	2.99	MDL	5.98	PQL	MG/KG	J	Z

Sample ID: SL-130-NBZ-SS-0.0-0.5 *Collected:* 3/27/2012 10:20:00 *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	0.138	J	0.119	MDL	0.238	PQL	MG/KG	J	Z, Q

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

Sample ID: SL-039-NBZ-SB-2.0-3.0 *Collected:* 3/27/2012 2:35:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH(C8-C11)	0.73	J	0.57	MDL	1.1	PQL	MG/KG	J	Z

Sample ID: SL-078-NBZ-SS-0.0-0.5 *Collected:* 3/27/2012 9:40:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH(C15-C20)	0.75	J	0.56	MDL	1.1	PQL	MG/KG	J	Z
EFH(C8-C11)	0.60	J	0.56	MDL	1.1	PQL	MG/KG	J	Z

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

Sample ID: SL-078-NBZ-SS-0.0-0.5 *Collected:* 3/27/2012 9:40:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDE	0.24	J	0.19	MDL	0.38	PQL	UG/KG	J	Z
4,4'-DDT	0.31	J	0.19	MDL	0.38	PQL	UG/KG	J	Z

Sample ID: SL-095-NBZ-SS-0.0-0.5 *Collected:* 3/27/2012 10:17:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDT	0.25	J	0.19	MDL	0.39	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12C273 **Laboratory: EMXT**

EDD Filename: 12C273R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

Method: 8081A **Matrix: SO**

Sample ID:*SL-119-NBZ-SS-0.0-0.5** ***Collected: 3/27/2012 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
4,4'-DDT	0.33	J	0.19	MDL	0.38	PQL	UG/KG	J	Z

Sample ID:*SL-130-NBZ-SS-0.0-0.5** ***Collected: 3/27/2012 10:20:00 ***Analysis Type:*** RES-BASE/NEUTRAL ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDT	0.32	J	0.20	MDL	0.41	PQL	UG/KG	J	Z

Method Category: SVOA

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

Sample ID:*SL-095-NBZ-SS-0.0-0.5** ***Collected: 3/27/2012 10:17:00 ***Analysis Type:*** RES-BASE/NEUTRAL ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BIS(2-ETHYLHEXYL)PHTHALATE	15	J	9.5	MDL	19	PQL	UG/KG	J	Z

Sample ID:*SL-109-NBZ-SS-0.0-0.5** ***Collected: 3/27/2012 2:55:00 ***Analysis Type:*** RES-BASE/NEUTRAL ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BIS(2-ETHYLHEXYL)PHTHALATE	17	J	9.6	MDL	19	PQL	UG/KG	J	Z

Sample ID:*SL-119-NBZ-SS-0.0-0.5** ***Collected: 3/27/2012 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
BENZO(G,H,I)PERYLENE	1.1	J	0.96	MDL	1.9	PQL	UG/KG	J	Z
FLUORANTHENE	1.2	J	0.96	MDL	1.9	PQL	UG/KG	J	Z
PYRENE	1.2	J	0.96	MDL	1.9	PQL	UG/KG	J	Z

Sample ID:*SL-129-NBZ-SS-0.0-0.5** ***Collected: 3/27/2012 2:35:00 ***Analysis Type:*** RES-BASE/NEUTRAL ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Butylbenzylphthalate	18	J	11	MDL	21	PQL	UG/KG	J	Z
Di-n-butylphthalate	15	J	11	MDL	21	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12C273 **Laboratory:** EMXT

EDD Filename: 12C273R **eQAPP Name:** CDM_SSFL_120730_EMAX

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

Sample ID: SL-130-NBZ-SS-0.0-0.5 *Collected:* 3/27/2012 10:20:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)PYRENE	1.3	J	1.0	MDL	2.0	PQL	UG/KG	J	Z
PHENANTHRENE	1.1	J	1.0	MDL	2.0	PQL	UG/KG	J	Z

Method Category: SVOA **Method:** 8330A **Matrix:** AQ

Sample ID: EB-NBZ-SB-032712 *Collected:* 3/27/2012 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
HMX	0.25	J	0.20	MDL	1.0	PQL	UG/L	J	Z

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

Sample ID: TB-032712 *Collected:* 3/27/2012 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)	24	J	10	MDL	50	PQL	UG/L	J	Z

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

Sample ID: TB-032712 *Collected:* 3/27/2012 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
METHYLENE CHLORIDE	0.53	J	0.50	MDL	1.0	PQL	UG/L	J	Z

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12C273 **Laboratory: EMXT**

EDD Filename: 12C273R **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: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Enclosure I

Level III ADR Outliers
(including Manual Review Outliers)

Quality Control
Outlier Reports

12C273

Reporting Limit Outliers

Lab Reporting Batch ID: 12C273 | Laboratory: EMXT

EDD Filename: 12C273R | eQAPP Name: CDM_SSFL_120730_EMAX

Method: 6020
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-NBZ-SB-032712	ALUMINUM	J	0.0368	0.100	PQL	MG/L	J (all detects)
EB-NBZ-SS-032712	COPPER	J	0.000807	0.00100	PQL	MG/L	J (all detects)

Method: 8015B GRO
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TB-032712	GASOLINE RANGE ORGANICS (C5-C12)	J	24	50	PQL	UG/L	J (all detects)

Method: 8260B
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TB-032712	METHYLENE CHLORIDE	J	0.53	1.0	PQL	UG/L	J (all detects)

Method: 8330A
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-NBZ-SB-032712	HMX	J	0.25	1.0	PQL	UG/L	J (all detects)

Method: 300.0
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-038-NBZ-SS-0.0-0.5	FLUORIDE	J	0.860	1.21	PQL	MG/KG	J (all detects)
SL-039-NBZ-SB-2.0-3.0	Nitrate-NO3	J	1.63	1.71	PQL	MG/KG	J (all detects)

Method: 6020
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-038-NBZ-SS-0.0-0.5	BORON	J	5.67	5.80	PQL	MG/KG	
	SELENIUM	J	0.266	0.464	PQL	MG/KG	J (all detects)
	SODIUM	J	88.4	116	PQL	MG/KG	

Reporting Limit Outliers

Lab Reporting Batch ID: 12C273 **Laboratory: EMXT**

EDD Filename: 12C273R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 6020
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-039-NBZ-SB-2.0-3.0	ANTIMONY BORON SELENIUM SILVER SODIUM	J J J J J	0.184 5.10 0.341 0.0590 97.8	0.228 5.70 0.456 0.114 114	PQL PQL PQL PQL PQL	MG/KG MG/KG MG/KG MG/KG MG/KG	J (all detects)
SL-078-NBZ-SS-0.0-0.5	ANTIMONY	J	0.119	0.223	PQL	MG/KG	J (all detects)
SL-095-NBZ-SS-0.0-0.5	ANTIMONY	J	0.158	0.227	PQL	MG/KG	J (all detects)
SL-102-NBZ-SS-0.0-0.5	ANTIMONY SODIUM	J J	0.164 65.9	0.227 114	PQL PQL	MG/KG MG/KG	J (all detects)
SL-109-NBZ-SS-0.0-0.5	SODIUM	J	76.0	110	PQL	MG/KG	J (all detects)
SL-119-NBZ-SS-0.0-0.5	ANTIMONY	J	0.134	0.225	PQL	MG/KG	J (all detects)
SL-129-NBZ-SS-0.0-0.5	BORON	J	4.21	5.98	PQL	MG/KG	J (all detects)
SL-130-NBZ-SS-0.0-0.5	ANTIMONY	J	0.138	0.238	PQL	MG/KG	J (all detects)

Method: 8015B EFH
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-039-NBZ-SB-2.0-3.0	EFH(C8-C11)	J	0.73	1.1	PQL	MG/KG	J (all detects)
SL-078-NBZ-SS-0.0-0.5	EFH(C15-C20) EFH(C8-C11)	J J	0.75 0.60	1.1 1.1	PQL PQL	MG/KG MG/KG	J (all detects)

Method: 8081A
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-078-NBZ-SS-0.0-0.5	4,4'-DDE 4,4'-DDT	J J	0.24 0.31	0.38 0.38	PQL PQL	UG/KG UG/KG	J (all detects)
SL-095-NBZ-SS-0.0-0.5	4,4'-DDT	J	0.25	0.39	PQL	UG/KG	J (all detects)
SL-119-NBZ-SS-0.0-0.5	4,4'-DDT	J	0.33	0.38	PQL	UG/KG	J (all detects)
SL-130-NBZ-SS-0.0-0.5	4,4'-DDT	J	0.32	0.41	PQL	UG/KG	J (all detects)

Method: 8270C SIM
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-095-NBZ-SS-0.0-0.5	BIS(2-ETHYLHEXYL)PHTHALATE	J	15	19	PQL	UG/KG	J (all detects)
SL-109-NBZ-SS-0.0-0.5	BIS(2-ETHYLHEXYL)PHTHALATE	J	17	19	PQL	UG/KG	J (all detects)

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Reporting Limit Outliers

Lab Reporting Batch ID: 12C273 **Laboratory: EMXT**

EDD Filename: 12C273R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 8270C SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-119-NBZ-SS-0.0-0.5	BENZO(G,H,I)PERYLENE	J	1.1	1.9	PQL	UG/KG	J (all detects)
	FLUORANTHENE	J	1.2	1.9	PQL	UG/KG	
	PYRENE	J	1.2	1.9	PQL	UG/KG	
SL-129-NBZ-SS-0.0-0.5	Butylbenzylphthalate	J	18	21	PQL	UG/KG	J (all detects)
	Di-n-butylphthalate	J	15	21	PQL	UG/KG	
SL-130-NBZ-SS-0.0-0.5	BENZO(A)PYRENE	J	1.3	2.0	PQL	UG/KG	J (all detects)
	PHENANTHRENE	J	1.1	2.0	PQL	UG/KG	

LDC #: 28255J4
SDG #: 12C273
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET

ADR

7471A/7470A

Date: 8-29-12
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: 3/27/12
II.	ICP/MS Tune	—	
III.	Calibration	—	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	—	
VI.	Matrix Spike Analysis	N	MS/D (from 12C305)
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, EB-NBZ-SB-032912/12C305 EB-NBZ-SS-032912/

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-NBZ-SB-032712 W	11	SL-130-NBZ-SS-0.0-0.5	21		31	
2	EB-NBZ-SS-032712 ✓	12		22		32	
3	SL-039-NBZ-SB-2.0-3.0	13		23		33	
4	SL-038-NBZ-SS-0.0-0.5	14		24		34	
5	SL-078-NBZ-SS-0.0-0.5	15		25		35	
6	SL-095-NBZ-SS-0.0-0.5	16		26		36	
7	SL-102-NBZ-SS-0.0-0.5	17		27		37	
8	SL-109-NBZ-SS-0.0-0.5	18		28		38	
9	SL-119-NBZ-SS-0.0-0.5	19		29		39	
10	SL-129-NBZ-SS-0.0-0.5	20		30		40	

Notes: _____

LDC #: 28255J4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: CR
2nd Reviewer: W

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

Blank units: mg/L **Associated sample units:** mg/Kg
Sampling date: 3/27/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: 3

Analyte	Blank ID	Sample Identification										
	EB-NBZ-SB-032712 (SDG: 12C273)	Action Limit	No Qualifiers									
Al	0.0368	9.2										
Cu	0.00137	0.3425										
Na	0.200	50										

Sampling date: 3/27/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: 4-11

Analyte	Blank ID	Sample Identification										
	EB-NBZ-SS-032712 (SDG: 12C273)	Action Limit	No Qualifiers									
Cu	0.000807	0.20175										

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 #: 28255J4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer: [signature]
2nd Reviewer: [signature]

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

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

Sampling date: 3/29/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other:_____ Associated Samples: 4-11

Analyte	Blank ID	Sample Identification										
	EB-NBZ-SS-032912 (SDG: 12C305)	Action Limit	No Qualifiers									
Al	0.0266	6.65										
Cu	0.00108	0.27										
Na	0.112	28										

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

12C285

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
28-Mar-2012	TB-032812	C285-18	TB	5030B	8015B GRO	III
28-Mar-2012	SL-040-NBZ-SS-0.0-0.5	C285-01	N	3550B	8015B EFH	III
28-Mar-2012	SL-040-NBZ-SS-0.0-0.5	C285-01	N	3550B	8270C	III
28-Mar-2012	SL-040-NBZ-SS-0.0-0.5	C285-01	N	3550B	8270C SIM	III
28-Mar-2012	SL-040-NBZ-SS-0.0-0.5	C285-01	N	7471A	7471A	III
28-Mar-2012	SL-040-NBZ-SS-0.0-0.5	C285-01	N	GEN PREP	300.0	III
28-Mar-2012	SL-040-NBZ-SS-0.0-0.5	C285-01	N	GEN PREP	314.0	III
28-Mar-2012	SL-040-NBZ-SS-0.0-0.5	C285-01	N	GEN PREP	6020	III
28-Mar-2012	SL-040-NBZ-SS-0.0-0.5	C285-01	N	GEN PREP	7199	III
28-Mar-2012	SL-040-NBZ-SS-0.0-0.5	C285-01	N	GEN PREP	8015B	III
28-Mar-2012	SL-040-NBZ-SS-0.0-0.5	C285-01	N	GEN PREP	8015M	III
28-Mar-2012	SL-040-NBZ-SS-0.0-0.5	C285-01	N	GEN PREP	8330A	III
28-Mar-2012	SL-040-NBZ-SS-0.0-0.5	C285-01	N	GEN PREP	8332	III
28-Mar-2012	SL-040-NBZ-SS-0.0-0.5	C285-01	N	GEN PREP	9014	III
28-Mar-2012	SL-040-NBZ-SS-0.0-0.5	C285-01	N	GEN PREP	9045D	III
28-Mar-2012	SL-040-NBZ-SS-0.0-0.5	C285-01I	N	3550B	8081A	III
28-Mar-2012	SL-040-NBZ-SS-0.0-0.5	C285-01I	N	GEN PREP	8151A	III
28-Mar-2012	SL-040-NBZ-SS-0.0-0.5	C285-01R	N	GEN PREP	7199	III
28-Mar-2012	SL-040-NBZ-SS-0.0-0.5	C285-01T	N	3550B	8082	III
28-Mar-2012	SL-141-NBZ-SS-0.0-0.5	C285-07	N	3550B	8081A	III
28-Mar-2012	SL-141-NBZ-SS-0.0-0.5	C285-07	N	3550B	8082	III
28-Mar-2012	SL-141-NBZ-SS-0.0-0.5	C285-07	N	3550B	8270C	III
28-Mar-2012	SL-141-NBZ-SS-0.0-0.5	C285-07	N	3550B	8270C SIM	III
28-Mar-2012	SL-141-NBZ-SS-0.0-0.5	C285-07	N	7471A	7471A	III
28-Mar-2012	SL-141-NBZ-SS-0.0-0.5	C285-07	N	GEN PREP	300.0	III
28-Mar-2012	SL-141-NBZ-SS-0.0-0.5	C285-07	N	GEN PREP	314.0	III

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

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
28-Mar-2012	SL-141-NBZ-SS-0.0-0.5	C285-07	N	GEN PREP	6020	III
28-Mar-2012	SL-141-NBZ-SS-0.0-0.5	C285-07	N	GEN PREP	7199	III
28-Mar-2012	SL-141-NBZ-SS-0.0-0.5	C285-07	N	GEN PREP	8151A	III
28-Mar-2012	SL-141-NBZ-SS-0.0-0.5	C285-07	N	GEN PREP	9045D	III
28-Mar-2012	SL-141-NBZ-SS-0.0-0.5	C285-07R	N	GEN PREP	7199	III
28-Mar-2012	SL-096-NBZ-SS-0.0-0.5	C285-03	N	3550B	8081A	III
28-Mar-2012	SL-096-NBZ-SS-0.0-0.5	C285-03	N	3550B	8082	III
28-Mar-2012	SL-096-NBZ-SS-0.0-0.5	C285-03	N	3550B	8270C	III
28-Mar-2012	SL-096-NBZ-SS-0.0-0.5	C285-03	N	3550B	8270C SIM	III
28-Mar-2012	SL-096-NBZ-SS-0.0-0.5	C285-03	N	7471A	7471A	III
28-Mar-2012	SL-096-NBZ-SS-0.0-0.5	C285-03	N	GEN PREP	300.0	III
28-Mar-2012	SL-096-NBZ-SS-0.0-0.5	C285-03	N	GEN PREP	314.0	III
28-Mar-2012	SL-096-NBZ-SS-0.0-0.5	C285-03	N	GEN PREP	6020	III
28-Mar-2012	SL-096-NBZ-SS-0.0-0.5	C285-03	N	GEN PREP	7199	III
28-Mar-2012	SL-096-NBZ-SS-0.0-0.5	C285-03	N	GEN PREP	8151A	III
28-Mar-2012	SL-096-NBZ-SS-0.0-0.5	C285-03	N	GEN PREP	9045D	III
28-Mar-2012	SL-096-NBZ-SS-0.0-0.5	C285-03R	N	GEN PREP	7199	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5	C285-14	N	3550B	8015B EFH	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5	C285-14	N	3550B	8270C	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5	C285-14	N	3550B	8270C SIM	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5	C285-14	N	7471A	7471A	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5	C285-14	N	GEN PREP	300.0	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5	C285-14	N	GEN PREP	314.0	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5	C285-14	N	GEN PREP	6020	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5	C285-14	N	GEN PREP	7199	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5	C285-14	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
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5	C285-14	N	GEN PREP	8015M	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5	C285-14	N	GEN PREP	8330A	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5	C285-14	N	GEN PREP	8332	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5	C285-14	N	GEN PREP	9014	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5	C285-14	N	GEN PREP	9045D	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5DUP	C285-14D	DUP	GEN PREP	9045D	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5MS	C285-14G	MS	GEN PREP	7199	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5MS	C285-14G1	MS	GEN PREP	7199	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5MSD	C285-14H	MSD	GEN PREP	7199	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5MSD	C285-14H1	MSD	GEN PREP	7199	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5	C285-14I	N	3550B	8082	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5MS	C285-14M	MS	3550B	8015B EFH	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5MS	C285-14M	MS	3550B	8082	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5MS	C285-14M	MS	3550B	8270C	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5MS	C285-14M	MS	3550B	8270C SIM	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5MS	C285-14M	MS	7471A	7471A	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5MS	C285-14M	MS	GEN PREP	300.0	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5MS	C285-14M	MS	GEN PREP	314.0	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5MS	C285-14M	MS	GEN PREP	6020	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5MS	C285-14M	MS	GEN PREP	7199	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5MS	C285-14M	MS	GEN PREP	8015B	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5MS	C285-14M	MS	GEN PREP	8015M	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5MS	C285-14M	MS	GEN PREP	8330A	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5MS	C285-14M	MS	GEN PREP	8332	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5MS	C285-14M	MS	GEN PREP	9014	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5MS	C285-14M1	MS	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
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5	C285-14R	N	GEN PREP	7199	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5MSD	C285-14S	MSD	3550B	8015B EFH	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5MSD	C285-14S	MSD	3550B	8082	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5MSD	C285-14S	MSD	3550B	8270C	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5MSD	C285-14S	MSD	3550B	8270C SIM	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5MSD	C285-14S	MSD	7471A	7471A	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5MSD	C285-14S	MSD	GEN PREP	300.0	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5MSD	C285-14S	MSD	GEN PREP	314.0	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5MSD	C285-14S	MSD	GEN PREP	6020	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5MSD	C285-14S	MSD	GEN PREP	7199	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5MSD	C285-14S	MSD	GEN PREP	8015B	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5MSD	C285-14S	MSD	GEN PREP	8015M	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5MSD	C285-14S	MSD	GEN PREP	8330A	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5MSD	C285-14S	MSD	GEN PREP	8332	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5MSD	C285-14S	MSD	GEN PREP	9014	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5MSD	C285-14S1	MSD	GEN PREP	7199	III
28-Mar-2012	SL-040-NBZ-SB-2.5-3.5	C285-14T	N	3550B	8082	III
28-Mar-2012	SL-040-NBZ-SB-3.0	C285-13	N	5035	8015B GRO	III
28-Mar-2012	SL-040-NBZ-SB-3.0MS	C285-13M	MS	5035	8015B GRO	III
28-Mar-2012	SL-040-NBZ-SB-3.0MSD	C285-13S	MSD	5035	8015B GRO	III
28-Mar-2012	DUP-03-NBZ-QC-032812	C285-17	FD	3550B	8015B EFH	III
28-Mar-2012	DUP-03-NBZ-QC-032812	C285-17	FD	3550B	8270C	III
28-Mar-2012	DUP-03-NBZ-QC-032812	C285-17	FD	3550B	8270C SIM	III
28-Mar-2012	DUP-03-NBZ-QC-032812	C285-17	FD	5035	8015B GRO	III
28-Mar-2012	DUP-03-NBZ-QC-032812	C285-17	FD	7471A	7471A	III
28-Mar-2012	DUP-03-NBZ-QC-032812	C285-17	FD	GEN PREP	300.0	III

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

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
28-Mar-2012	DUP-03-NBZ-QC-032812	C285-17	FD	GEN PREP	314.0	III
28-Mar-2012	DUP-03-NBZ-QC-032812	C285-17	FD	GEN PREP	6020	III
28-Mar-2012	DUP-03-NBZ-QC-032812	C285-17	FD	GEN PREP	7199	III
28-Mar-2012	DUP-03-NBZ-QC-032812	C285-17	FD	GEN PREP	8015B	III
28-Mar-2012	DUP-03-NBZ-QC-032812	C285-17	FD	GEN PREP	8015M	III
28-Mar-2012	DUP-03-NBZ-QC-032812	C285-17	FD	GEN PREP	8330A	III
28-Mar-2012	DUP-03-NBZ-QC-032812	C285-17	FD	GEN PREP	8332	III
28-Mar-2012	DUP-03-NBZ-QC-032812	C285-17	FD	GEN PREP	9014	III
28-Mar-2012	DUP-03-NBZ-QC-032812	C285-17	FD	GEN PREP	9045D	III
28-Mar-2012	DUP-03-NBZ-QC-032812	C285-17R	FD	GEN PREP	7199	III
28-Mar-2012	DUP-03-NBZ-QC-032812	C285-17T	FD	3550B	8082	III
28-Mar-2012	SL-135-NBZ-SS-0.0-0.5	C285-04	N	3550B	8081A	III
28-Mar-2012	SL-135-NBZ-SS-0.0-0.5	C285-04	N	3550B	8082	III
28-Mar-2012	SL-135-NBZ-SS-0.0-0.5	C285-04	N	3550B	8270C	III
28-Mar-2012	SL-135-NBZ-SS-0.0-0.5	C285-04	N	3550B	8270C SIM	III
28-Mar-2012	SL-135-NBZ-SS-0.0-0.5	C285-04	N	7471A	7471A	III
28-Mar-2012	SL-135-NBZ-SS-0.0-0.5	C285-04	N	GEN PREP	300.0	III
28-Mar-2012	SL-135-NBZ-SS-0.0-0.5	C285-04	N	GEN PREP	314.0	III
28-Mar-2012	SL-135-NBZ-SS-0.0-0.5	C285-04	N	GEN PREP	6020	III
28-Mar-2012	SL-135-NBZ-SS-0.0-0.5	C285-04	N	GEN PREP	7199	III
28-Mar-2012	SL-135-NBZ-SS-0.0-0.5	C285-04	N	GEN PREP	8151A	III
28-Mar-2012	SL-135-NBZ-SS-0.0-0.5	C285-04	N	GEN PREP	9045D	III
28-Mar-2012	SL-135-NBZ-SS-0.0-0.5	C285-04R	N	GEN PREP	7199	III
28-Mar-2012	SL-036-NBZ-SB-4.5	C285-09	N	5035	8015B GRO	III
28-Mar-2012	SL-036-NBZ-SB-4.0-5.0	C285-10	N	3550B	8015B EFH	III
28-Mar-2012	SL-036-NBZ-SB-4.0-5.0	C285-10	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
28-Mar-2012	SL-036-NBZ-SB-4.0-5.0	C285-10	N	3550B	8270C	III
28-Mar-2012	SL-036-NBZ-SB-4.0-5.0	C285-10	N	3550B	8270C SIM	III
28-Mar-2012	SL-036-NBZ-SB-4.0-5.0	C285-10	N	7471A	7471A	III
28-Mar-2012	SL-036-NBZ-SB-4.0-5.0	C285-10	N	GEN PREP	300.0	III
28-Mar-2012	SL-036-NBZ-SB-4.0-5.0	C285-10	N	GEN PREP	314.0	III
28-Mar-2012	SL-036-NBZ-SB-4.0-5.0	C285-10	N	GEN PREP	6020	III
28-Mar-2012	SL-036-NBZ-SB-4.0-5.0	C285-10	N	GEN PREP	7199	III
28-Mar-2012	SL-036-NBZ-SB-4.0-5.0	C285-10	N	GEN PREP	8015B	III
28-Mar-2012	SL-036-NBZ-SB-4.0-5.0	C285-10	N	GEN PREP	8015M	III
28-Mar-2012	SL-036-NBZ-SB-4.0-5.0	C285-10	N	GEN PREP	8330A	III
28-Mar-2012	SL-036-NBZ-SB-4.0-5.0	C285-10	N	GEN PREP	8332	III
28-Mar-2012	SL-036-NBZ-SB-4.0-5.0	C285-10	N	GEN PREP	9014	III
28-Mar-2012	SL-036-NBZ-SB-4.0-5.0	C285-10	N	GEN PREP	9045D	III
28-Mar-2012	SL-036-NBZ-SB-4.0-5.0	C285-10R	N	GEN PREP	7199	III
28-Mar-2012	SL-036-NBZ-SB-7.5-8.5	C285-16	N	3550B	8015B EFH	III
28-Mar-2012	SL-036-NBZ-SB-7.5-8.5	C285-16	N	3550B	8270C	III
28-Mar-2012	SL-036-NBZ-SB-7.5-8.5	C285-16	N	3550B	8270C SIM	III
28-Mar-2012	SL-036-NBZ-SB-7.5-8.5	C285-16	N	7471A	7471A	III
28-Mar-2012	SL-036-NBZ-SB-7.5-8.5	C285-16	N	GEN PREP	300.0	III
28-Mar-2012	SL-036-NBZ-SB-7.5-8.5	C285-16	N	GEN PREP	314.0	III
28-Mar-2012	SL-036-NBZ-SB-7.5-8.5	C285-16	N	GEN PREP	6020	III
28-Mar-2012	SL-036-NBZ-SB-7.5-8.5	C285-16	N	GEN PREP	7199	III
28-Mar-2012	SL-036-NBZ-SB-7.5-8.5	C285-16	N	GEN PREP	8015B	III
28-Mar-2012	SL-036-NBZ-SB-7.5-8.5	C285-16	N	GEN PREP	8015M	III
28-Mar-2012	SL-036-NBZ-SB-7.5-8.5	C285-16	N	GEN PREP	8330A	III
28-Mar-2012	SL-036-NBZ-SB-7.5-8.5	C285-16	N	GEN PREP	8332	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
28-Mar-2012	SL-036-NBZ-SB-7.5-8.5	C285-16	N	GEN PREP	9014	III
28-Mar-2012	SL-036-NBZ-SB-7.5-8.5	C285-16	N	GEN PREP	9045D	III
28-Mar-2012	SL-036-NBZ-SB-7.5-8.5	C285-16I	N	3550B	8082	III
28-Mar-2012	SL-036-NBZ-SB-7.5-8.5	C285-16R	N	GEN PREP	7199	III
28-Mar-2012	SL-036-NBZ-SB-8.0	C285-15	N	5035	8015B GRO	III
28-Mar-2012	SL-136-NBZ-SS-0.0-0.5	C285-05	N	3550B	8081A	III
28-Mar-2012	SL-136-NBZ-SS-0.0-0.5	C285-05	N	3550B	8082	III
28-Mar-2012	SL-136-NBZ-SS-0.0-0.5	C285-05	N	3550B	8270C	III
28-Mar-2012	SL-136-NBZ-SS-0.0-0.5	C285-05	N	3550B	8270C SIM	III
28-Mar-2012	SL-136-NBZ-SS-0.0-0.5	C285-05	N	7471A	7471A	III
28-Mar-2012	SL-136-NBZ-SS-0.0-0.5	C285-05	N	GEN PREP	300.0	III
28-Mar-2012	SL-136-NBZ-SS-0.0-0.5	C285-05	N	GEN PREP	314.0	III
28-Mar-2012	SL-136-NBZ-SS-0.0-0.5	C285-05	N	GEN PREP	6020	III
28-Mar-2012	SL-136-NBZ-SS-0.0-0.5	C285-05	N	GEN PREP	7199	III
28-Mar-2012	SL-136-NBZ-SS-0.0-0.5	C285-05	N	GEN PREP	8151A	III
28-Mar-2012	SL-136-NBZ-SS-0.0-0.5	C285-05	N	GEN PREP	9045D	III
28-Mar-2012	SL-136-NBZ-SS-0.0-0.5	C285-05R	N	GEN PREP	7199	III
28-Mar-2012	SL-094-NBZ-SS-0.0-0.5	C285-02	N	3550B	8081A	III
28-Mar-2012	SL-094-NBZ-SS-0.0-0.5	C285-02	N	3550B	8082	III
28-Mar-2012	SL-094-NBZ-SS-0.0-0.5	C285-02	N	3550B	8270C	III
28-Mar-2012	SL-094-NBZ-SS-0.0-0.5	C285-02	N	3550B	8270C SIM	III
28-Mar-2012	SL-094-NBZ-SS-0.0-0.5	C285-02	N	7471A	7471A	III
28-Mar-2012	SL-094-NBZ-SS-0.0-0.5	C285-02	N	GEN PREP	300.0	III
28-Mar-2012	SL-094-NBZ-SS-0.0-0.5	C285-02	N	GEN PREP	314.0	III
28-Mar-2012	SL-094-NBZ-SS-0.0-0.5	C285-02	N	GEN PREP	6020	III
28-Mar-2012	SL-094-NBZ-SS-0.0-0.5	C285-02	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
28-Mar-2012	SL-094-NBZ-SS-0.0-0.5	C285-02	N	GEN PREP	8151A	III
28-Mar-2012	SL-094-NBZ-SS-0.0-0.5	C285-02	N	GEN PREP	9045D	III
28-Mar-2012	SL-094-NBZ-SS-0.0-0.5	C285-02R	N	GEN PREP	7199	III
28-Mar-2012	SL-143-NBZ-SS-0.0-0.5	C285-08	N	3550B	8081A	III
28-Mar-2012	SL-143-NBZ-SS-0.0-0.5	C285-08	N	3550B	8082	III
28-Mar-2012	SL-143-NBZ-SS-0.0-0.5	C285-08	N	3550B	8270C	III
28-Mar-2012	SL-143-NBZ-SS-0.0-0.5	C285-08	N	3550B	8270C SIM	III
28-Mar-2012	SL-143-NBZ-SS-0.0-0.5	C285-08	N	7471A	7471A	III
28-Mar-2012	SL-143-NBZ-SS-0.0-0.5	C285-08	N	GEN PREP	300.0	III
28-Mar-2012	SL-143-NBZ-SS-0.0-0.5	C285-08	N	GEN PREP	314.0	III
28-Mar-2012	SL-143-NBZ-SS-0.0-0.5	C285-08	N	GEN PREP	6020	III
28-Mar-2012	SL-143-NBZ-SS-0.0-0.5	C285-08	N	GEN PREP	7199	III
28-Mar-2012	SL-143-NBZ-SS-0.0-0.5	C285-08	N	GEN PREP	8151A	III
28-Mar-2012	SL-143-NBZ-SS-0.0-0.5	C285-08	N	GEN PREP	9045D	III
28-Mar-2012	SL-143-NBZ-SS-0.0-0.5	C285-08R	N	GEN PREP	7199	III
28-Mar-2012	SL-037-NBZ-SB-3.0-4.0	C285-12	N	3550B	8015B EFH	III
28-Mar-2012	SL-037-NBZ-SB-3.0-4.0	C285-12	N	3550B	8082	III
28-Mar-2012	SL-037-NBZ-SB-3.0-4.0	C285-12	N	3550B	8270C	III
28-Mar-2012	SL-037-NBZ-SB-3.0-4.0	C285-12	N	3550B	8270C SIM	III
28-Mar-2012	SL-037-NBZ-SB-3.0-4.0	C285-12	N	7471A	7471A	III
28-Mar-2012	SL-037-NBZ-SB-3.0-4.0	C285-12	N	GEN PREP	300.0	III
28-Mar-2012	SL-037-NBZ-SB-3.0-4.0	C285-12	N	GEN PREP	314.0	III
28-Mar-2012	SL-037-NBZ-SB-3.0-4.0	C285-12	N	GEN PREP	6020	III
28-Mar-2012	SL-037-NBZ-SB-3.0-4.0	C285-12	N	GEN PREP	7199	III
28-Mar-2012	SL-037-NBZ-SB-3.0-4.0	C285-12	N	GEN PREP	8015B	III
28-Mar-2012	SL-037-NBZ-SB-3.0-4.0	C285-12	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
28-Mar-2012	SL-037-NBZ-SB-3.0-4.0	C285-12	N	GEN PREP	8330A	III
28-Mar-2012	SL-037-NBZ-SB-3.0-4.0	C285-12	N	GEN PREP	8332	III
28-Mar-2012	SL-037-NBZ-SB-3.0-4.0	C285-12	N	GEN PREP	9014	III
28-Mar-2012	SL-037-NBZ-SB-3.0-4.0	C285-12	N	GEN PREP	9045D	III
28-Mar-2012	SL-037-NBZ-SB-3.0-4.0	C285-12R	N	GEN PREP	7199	III
28-Mar-2012	SL-139-NBZ-SS-0.0-0.5	C285-06	N	3550B	8081A	III
28-Mar-2012	SL-139-NBZ-SS-0.0-0.5	C285-06	N	3550B	8082	III
28-Mar-2012	SL-139-NBZ-SS-0.0-0.5	C285-06	N	3550B	8270C	III
28-Mar-2012	SL-139-NBZ-SS-0.0-0.5	C285-06	N	3550B	8270C SIM	III
28-Mar-2012	SL-139-NBZ-SS-0.0-0.5	C285-06	N	7471A	7471A	III
28-Mar-2012	SL-139-NBZ-SS-0.0-0.5	C285-06	N	GEN PREP	300.0	III
28-Mar-2012	SL-139-NBZ-SS-0.0-0.5	C285-06	N	GEN PREP	314.0	III
28-Mar-2012	SL-139-NBZ-SS-0.0-0.5	C285-06	N	GEN PREP	6020	III
28-Mar-2012	SL-139-NBZ-SS-0.0-0.5	C285-06	N	GEN PREP	7199	III
28-Mar-2012	SL-139-NBZ-SS-0.0-0.5	C285-06	N	GEN PREP	8151A	III
28-Mar-2012	SL-139-NBZ-SS-0.0-0.5	C285-06	N	GEN PREP	9045D	III
28-Mar-2012	SL-139-NBZ-SS-0.0-0.5	C285-06R	N	GEN PREP	7199	III
28-Mar-2012	SL-037-NBZ-SB-3.5	C285-11	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: 12C285 **Laboratory: EMXT**

EDD Filename: 12C285R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: GENCHEM

Method: 300.0 **Matrix: SO**

Sample ID: SL-139-NBZ-SS-0.0-0.5 *Collected:* 3/28/2012 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
FLUORIDE	0.635	J	0.597	MDL	1.19	PQL	MG/KG	J	Z

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: DUP-03-NBZ-QC-032812 *Collected:* 3/28/2012 10:10:00 *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	8650		12.4	MDL	24.9	PQL	MG/KG	J	Q
BORON	5.19	U	2.59	MDL	5.19	PQL	MG/KG	UJ	FD
SELENIUM	0.508		0.207	MDL	0.415	PQL	MG/KG	J	FD
SILVER	0.0639	J	0.0519	MDL	0.104	PQL	MG/KG	J	Z, FD
SODIUM	61.2	J	51.9	MDL	104	PQL	MG/KG	J	Z
Zirconium	5.19	U	2.59	MDL	5.19	PQL	MG/KG	UJ	Q

Sample ID: SL-036-NBZ-SB-4.0-5.0 *Collected:* 3/28/2012 11:03:00 *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	11400		13.4	MDL	26.8	PQL	MG/KG	J	Q
CADMIUM	0.0667	J	0.0558	MDL	0.112	PQL	MG/KG	J	Z
Zirconium	5.58	U	2.79	MDL	5.58	PQL	MG/KG	UJ	Q

Sample ID: SL-036-NBZ-SB-7.5-8.5 *Collected:* 3/28/2012 12:30:00 *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	12400		15.3	MDL	30.7	PQL	MG/KG	J	Q
CADMIUM	0.0731	J	0.0639	MDL	0.128	PQL	MG/KG	J	Z
SILVER	0.0648	J	0.0639	MDL	0.128	PQL	MG/KG	J	Z
Zirconium	6.39	U	3.19	MDL	6.39	PQL	MG/KG	UJ	Q

Sample ID: SL-037-NBZ-SB-3.0-4.0 *Collected:* 3/28/2012 3:12:00 *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	12900		13.0	MDL	26.0	PQL	MG/KG	J	Q
BORON	2.85	J	2.70	MDL	5.41	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12C285 **Laboratory: EMXT**

EDD Filename: 12C285R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: SL-037-NBZ-SB-3.0-4.0 *Collected:* 3/28/2012 3:12:00 *Analysis Type:* RES/TOT *Dilution:* 0.971

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0589	J	0.0541	MDL	0.108	PQL	MG/KG	J	Z
Zirconium	5.41	U	2.70	MDL	5.41	PQL	MG/KG	UJ	Q

Sample ID: SL-040-NBZ-SB-2.5-3.5 *Collected:* 3/28/2012 10:00:00 *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	9610		12.4	MDL	24.9	PQL	MG/KG	J	Q
ANTIMONY	0.193	J	0.104	MDL	0.207	PQL	MG/KG	J	Z
BORON	2.71	J	2.59	MDL	5.18	PQL	MG/KG	J	Z, FD
SELENIUM	0.415	U	0.207	MDL	0.415	PQL	MG/KG	UJ	FD
SILVER	0.104	U	0.0518	MDL	0.104	PQL	MG/KG	UJ	FD
SODIUM	68.4	J	51.8	MDL	104	PQL	MG/KG	J	Z
Zirconium	5.18	U	2.59	MDL	5.18	PQL	MG/KG	UJ	Q

Sample ID: SL-040-NBZ-SS-0.0-0.5 *Collected:* 3/28/2012 8:51:00 *Analysis Type:* RES/TOT *Dilution:* 0.971

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	8830		13.1	MDL	26.2	PQL	MG/KG	J	Q
ANTIMONY	0.146	J	0.109	MDL	0.218	PQL	MG/KG	J	Z
Zirconium	5.46	U	2.73	MDL	5.46	PQL	MG/KG	UJ	Q

Sample ID: SL-094-NBZ-SS-0.0-0.5 *Collected:* 3/28/2012 2:20:00 *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	10900		13.4	MDL	26.8	PQL	MG/KG	J	Q
ANTIMONY	0.193	J	0.112	MDL	0.224	PQL	MG/KG	J	Z
SODIUM	58.2	J	55.9	MDL	112	PQL	MG/KG	J	Z
Zirconium	5.59	U	2.80	MDL	5.59	PQL	MG/KG	UJ	Q

Sample ID: SL-096-NBZ-SS-0.0-0.5 *Collected:* 3/28/2012 9:45:00 *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	9330		13.8	MDL	27.7	PQL	MG/KG	J	Q
ANTIMONY	0.221	J	0.115	MDL	0.231	PQL	MG/KG	J	Z
Zirconium	5.76	U	2.88	MDL	5.76	PQL	MG/KG	UJ	Q

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12C285 **Laboratory: EMXT**

EDD Filename: 12C285R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: SL-135-NBZ-SS-0.0-0.5 *Collected:* 3/28/2012 10:50:00 *Analysis Type:* RES/TOT *Dilution:* 1.00

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	13400		13.8	MDL	27.5	PQL	MG/KG	J	Q
SELENIUM	0.280	J	0.229	MDL	0.459	PQL	MG/KG	J	Z
SILVER	0.0666	J	0.0573	MDL	0.115	PQL	MG/KG	J	Z
SODIUM	72.5	J	57.3	MDL	115	PQL	MG/KG	J	Z
Zirconium	5.73	U	2.87	MDL	5.73	PQL	MG/KG	UJ	Q

Sample ID: SL-136-NBZ-SS-0.0-0.5 *Collected:* 3/28/2012 1:45:00 *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	8090		12.8	MDL	25.6	PQL	MG/KG	J	Q
CADMIUM	0.0848	J	0.0533	MDL	0.107	PQL	MG/KG	J	Z
SODIUM	62.1	J	53.3	MDL	107	PQL	MG/KG	J	Z
Zirconium	5.33	U	2.66	MDL	5.33	PQL	MG/KG	UJ	Q

Sample ID: SL-139-NBZ-SS-0.0-0.5 *Collected:* 3/28/2012 3:15:00 *Analysis Type:* RES/TOT *Dilution:* 0.985

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	9870		14.1	MDL	28.2	PQL	MG/KG	J	Q
ANTIMONY	0.205	J	0.118	MDL	0.235	PQL	MG/KG	J	Z
Zirconium	5.88	U	2.94	MDL	5.88	PQL	MG/KG	UJ	Q

Sample ID: SL-141-NBZ-SS-0.0-0.5 *Collected:* 3/28/2012 9:15:00 *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	11400		13.3	MDL	26.7	PQL	MG/KG	J	Q
ANTIMONY	0.130	J	0.111	MDL	0.222	PQL	MG/KG	J	Z
CADMIUM	0.0938	J	0.0556	MDL	0.111	PQL	MG/KG	J	Z
SODIUM	72.0	J	55.6	MDL	111	PQL	MG/KG	J	Z
Zirconium	5.56	U	2.78	MDL	5.56	PQL	MG/KG	UJ	Q

Sample ID: SL-143-NBZ-SS-0.0-0.5 *Collected:* 3/28/2012 2:50:00 *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	10600		12.5	MDL	25.0	PQL	MG/KG	J	Q
ANTIMONY	0.171	J	0.104	MDL	0.209	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12C285 **Laboratory:** EMXT

EDD Filename: 12C285R **eQAPP Name:** CDM_SSFL_120730_EMAX

Method Category: METALS

Method: 6020 **Matrix:** SO

Sample ID: SL-143-NBZ-SS-0.0-0.5 *Collected:* 3/28/2012 2:50:00 *Analysis Type:* RES/TOT *Dilution:* 0.962

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SODIUM	53.4	J	52.2	MDL	104	PQL	MG/KG	J	Z
Zirconium	5.22	U	2.61	MDL	5.22	PQL	MG/KG	UJ	Q

Method Category: SVOA

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

Sample ID: DUP-03-NBZ-QC-032812 *Collected:* 3/28/2012 10:10:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH(C12-C14)	0.90	J	0.53	MDL	1.1	PQL	MG/KG	J	Z
EFH(C8-C11)	0.55	J	0.53	MDL	1.1	PQL	MG/KG	J	Z

Sample ID: SL-036-NBZ-SB-4.0-5.0 *Collected:* 3/28/2012 11:03:00 *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)	0.68	J	0.57	MDL	1.1	PQL	MG/KG	J	Z
EFH(C8-C11)	0.80	J	0.57	MDL	1.1	PQL	MG/KG	J	Z

Sample ID: SL-036-NBZ-SB-7.5-8.5 *Collected:* 3/28/2012 12:30:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH(C30-C40)	0.76	J	0.65	MDL	1.3	PQL	MG/KG	J	Z
TOTAL EFH(C8-C40)	0.76	J	0.65	MDL	1.3	PQL	MG/KG	J	Z

Sample ID: SL-037-NBZ-SB-3.0-4.0 *Collected:* 3/28/2012 3:12:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH(C8-C11)	0.95	J	0.56	MDL	1.1	PQL	MG/KG	J	Z

Sample ID: SL-040-NBZ-SB-2.5-3.5 *Collected:* 3/28/2012 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(C12-C14)	0.85	J	0.52	MDL	1.0	PQL	MG/KG	J	Z
EFH(C8-C11)	0.53	J	0.52	MDL	1.0	PQL	MG/KG	J	Z
TOTAL EFH(C8-C40)	92		0.52	MDL	1.0	PQL	MG/KG	J	Q

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12C285 **Laboratory: EMXT**

EDD Filename: 12C285R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

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

Sample ID: SL-040-NBZ-SS-0.0-0.5 *Collected:* 3/28/2012 8:51:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH(C8-C11)	0.96	J	0.56	MDL	1.1	PQL	MG/KG	J	Z

Method Category: SVOA

Method: 8082 **Matrix: SO**

Sample ID: SL-096-NBZ-SS-0.0-0.5 *Collected:* 3/28/2012 9:45:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Aroclor 5460	3.1	J	2.0	MDL	3.8	PQL	UG/KG	J	Z

Method Category: SVOA

Method: 8270C **Matrix: SO**

Sample ID: DUP-03-NBZ-QC-032812 *Collected:* 3/28/2012 10:10:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,3'-DICHLOROBENZIDINE	180	U	89	MDL	180	PQL	UG/KG	UJ	E

Sample ID: SL-036-NBZ-SB-4.0-5.0 *Collected:* 3/28/2012 11:03:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,3'-DICHLOROBENZIDINE	190	U	95	MDL	190	PQL	UG/KG	UJ	E

Sample ID: SL-036-NBZ-SB-7.5-8.5 *Collected:* 3/28/2012 12:30:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,3'-DICHLOROBENZIDINE	220	U	110	MDL	220	PQL	UG/KG	UJ	E

Sample ID: SL-037-NBZ-SB-3.0-4.0 *Collected:* 3/28/2012 3:12:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,3'-DICHLOROBENZIDINE	190	U	94	MDL	190	PQL	UG/KG	UJ	E

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12C285 **Laboratory: EMXT**

EDD Filename: 12C285R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

Method: 8270C **Matrix: SO**

Sample ID: SL-040-NBZ-SB-2.5-3.5 *Collected:* 3/28/2012 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
1,3-DICHLOROBENZENE	170	U	88	MDL	170	PQL	UG/KG	UJ	Q
3,3'-DICHLOROBENZIDINE	170	U	88	MDL	170	PQL	UG/KG	UJ	E
HEXACHLOROETHANE	170	U	88	MDL	170	PQL	UG/KG	UJ	Q

Sample ID: SL-040-NBZ-SS-0.0-0.5 *Collected:* 3/28/2012 8:51:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,3'-DICHLOROBENZIDINE	190	U	94	MDL	190	PQL	UG/KG	UJ	E

Sample ID: SL-094-NBZ-SS-0.0-0.5 *Collected:* 3/28/2012 2:20:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,3'-DICHLOROBENZIDINE	190	U	97	MDL	190	PQL	UG/KG	UJ	E

Sample ID: SL-096-NBZ-SS-0.0-0.5 *Collected:* 3/28/2012 9:45:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,3'-DICHLOROBENZIDINE	190	U	97	MDL	190	PQL	UG/KG	UJ	E

Sample ID: SL-135-NBZ-SS-0.0-0.5 *Collected:* 3/28/2012 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
3,3'-DICHLOROBENZIDINE	190	U	96	MDL	190	PQL	UG/KG	UJ	E

Sample ID: SL-136-NBZ-SS-0.0-0.5 *Collected:* 3/28/2012 1:45:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,3'-DICHLOROBENZIDINE	180	U	93	MDL	180	PQL	UG/KG	UJ	E

Sample ID: SL-139-NBZ-SS-0.0-0.5 *Collected:* 3/28/2012 3:15:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,3'-DICHLOROBENZIDINE	200	U	100	MDL	200	PQL	UG/KG	UJ	E

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12C285 **Laboratory: EMXT**

EDD Filename: 12C285R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

Method: 8270C **Matrix: SO**

Sample ID: SL-141-NBZ-SS-0.0-0.5 *Collected:* 3/28/2012 9:15:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,3'-DICHLOROBENZIDINE	190	U	94	MDL	190	PQL	UG/KG	UJ	E

Sample ID: SL-143-NBZ-SS-0.0-0.5 *Collected:* 3/28/2012 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
3,3'-DICHLOROBENZIDINE	180	U	91	MDL	180	PQL	UG/KG	UJ	E

Method Category: SVOA

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

Sample ID: DUP-03-NBZ-QC-032812 *Collected:* 3/28/2012 10:10:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(G,H,I)PERYLENE	1.3	J	0.90	MDL	1.8	PQL	UG/KG	J	Z, FD
BIS(2-ETHYLHEXYL)PHTHALATE	65		8.9	MDL	18	PQL	UG/KG	J	FD
Dimethylphthalate	26		8.9	MDL	18	PQL	UG/KG	J	FD

Sample ID: SL-036-NBZ-SB-4.0-5.0 *Collected:* 3/28/2012 11:03:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BIS(2-ETHYLHEXYL)PHTHALATE	16	J	9.5	MDL	19	PQL	UG/KG	J	Z

Sample ID: SL-037-NBZ-SB-3.0-4.0 *Collected:* 3/28/2012 3:12:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BIS(2-ETHYLHEXYL)PHTHALATE	17	J	9.4	MDL	19	PQL	UG/KG	J	Z

Sample ID: SL-040-NBZ-SB-2.5-3.5 *Collected:* 3/28/2012 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
BENZO(G,H,I)PERYLENE	1.8	U	0.89	MDL	1.8	PQL	UG/KG	UJ	FD
BIS(2-ETHYLHEXYL)PHTHALATE	250		8.8	MDL	17	PQL	UG/KG	J	Q, FD
Dimethylphthalate	50		8.8	MDL	17	PQL	UG/KG	J	FD

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12C285 **Laboratory: EMXT**

EDD Filename: 12C285R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

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

Sample ID: **SL-040-NBZ-SS-0.0-0.5** *Collected:* **3/28/2012 8:51:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTHRACENE	1.2	J	0.96	MDL	1.9	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	1.6	J	0.96	MDL	1.9	PQL	UG/KG	J	Z
PHENANTHRENE	1.5	J	0.96	MDL	1.9	PQL	UG/KG	J	Z

Sample ID: **SL-094-NBZ-SS-0.0-0.5** *Collected:* **3/28/2012 2:20:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHRYSENE	1.1	J	0.98	MDL	2.0	PQL	UG/KG	J	Z
PYRENE	1.1	J	0.98	MDL	2.0	PQL	UG/KG	J	Z

Sample ID: **SL-096-NBZ-SS-0.0-0.5** *Collected:* **3/28/2012 9:45:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHRYSENE	1.5	J	0.98	MDL	2.0	PQL	UG/KG	J	Z
PYRENE	1.5	J	0.98	MDL	2.0	PQL	UG/KG	J	Z

Sample ID: **SL-139-NBZ-SS-0.0-0.5** *Collected:* **3/28/2012 3:15:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1-METHYLNAPHTHALENE	1.2	J	1.0	MDL	2.0	PQL	UG/KG	J	Z
2-METHYLNAPHTHALENE	1.3	J	1.0	MDL	2.0	PQL	UG/KG	J	Z
ACENAPHTHENE	1.1	J	1.0	MDL	2.0	PQL	UG/KG	J	Z
ACENAPHTHYLENE	1.2	J	1.0	MDL	2.0	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	1.2	J	1.0	MDL	2.0	PQL	UG/KG	J	Z
FLUORENE	1.1	J	1.0	MDL	2.0	PQL	UG/KG	J	Z
NAPHTHALENE	1.3	J	1.0	MDL	2.0	PQL	UG/KG	J	Z
PYRENE	1.2	J	1.0	MDL	2.0	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12C285 **Laboratory: EMXT**

EDD Filename: 12C285R **eQAPP Name: CDM_SSFL_120730_EMAX**

Reason Code Legend

Reason Code	*Description*
E	Laboratory Control Precision
E	Matrix Spike Precision
FD	Field Duplicate Precision
L	Laboratory Control Precision
Q	Matrix Spike Lower Estimation
Q	Matrix Spike Lower Rejection
Q	Matrix Spike Precision
Q	Matrix Spike Upper Estimation
S	Surrogate/Tracer Recovery Lower Estimation
S	Surrogate/Tracer Recovery Lower Rejection
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Enclosure I

Level III ADR Outliers
(including Manual Review Outliers)

Quality Control
Outlier Reports

12C285

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 12C285 Laboratory: EMXT

EDD Filename: 12C285R eQAPP Name: CDM_SSFL_120730_EMAX

Method: 8082
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-040-NBZ-SB-2.5-3.5MS SL-040-NBZ-SB-2.5-3.5MSD (SL-040-NBZ-SB-2.5-3.5)	AROCLOR 1016 AROCLOR 1260 Aroclor 5460	0 0 0	0 0 0	20.00-160.00 20.00-160.00 20.00-160.00	- - -	AROCLOR 1016 AROCLOR 1260 Aroclor 5460	No Qual, Diluted Out

Method: 8015B EFH
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-040-NBZ-SB-2.5-3.5MS (SL-040-NBZ-SB-2.5-3.5)	TOTAL EFH(C8-C40)	181	-	50.00-150.00	-	TOTAL EFH(C8-C40)	J(all detects)

Method: 6020
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-040-NBZ-SB-2.5-3.5MS (TOT) SL-040-NBZ-SB-2.5-3.5MSD (TOT) (DUP-03-NBZ-QC-032812 -036-NBZ-SB-4.0-5.0 SL -036-NBZ-SB-7.5-8.5 SL -037-NBZ-SB-3.0-4.0 SL -040-NBZ-SB-2.5-3.5 SL -040-NBZ-SS-0.0-0.5 SL -094-NBZ-SS-0.0-0.5 SL -096-NBZ-SS-0.0-0.5 SL -135-NBZ-SS-0.0-0.5 SL -136-NBZ-SS-0.0-0.5 SL -139-NBZ-SS-0.0-0.5 SL -141-NBZ-SS-0.0-0.5 SL -143-NBZ-SS-0.0-0.5) SL	MANGANESE TITANIUM	15 -183	24 -95	75.00-125.00 75.00-125.00	- -	MANGANESE TITANIUM	No Qual, >4x
SL-040-NBZ-SB-2.5-3.5MS (TOT) SL-040-NBZ-SB-2.5-3.5MSD (TOT) (DUP-03-NBZ-QC-032812 -036-NBZ-SB-4.0-5.0 SL -036-NBZ-SB-7.5-8.5 SL -037-NBZ-SB-3.0-4.0 SL -040-NBZ-SB-2.5-3.5 SL -040-NBZ-SS-0.0-0.5 SL -094-NBZ-SS-0.0-0.5 SL -096-NBZ-SS-0.0-0.5 SL -135-NBZ-SS-0.0-0.5 SL -136-NBZ-SS-0.0-0.5 SL -139-NBZ-SS-0.0-0.5 SL -141-NBZ-SS-0.0-0.5 SL -143-NBZ-SS-0.0-0.5) SL	ALUMINUM IRON Zirconium	61 69 63	- - 63	75.00-125.00 75.00-125.00 75.00-125.00	- - -	ALUMINUM IRON Zirconium	J(all detects) UJ(all non-detects) Fe, No Qual, >4x

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 12C285 **Laboratory: EMXT**

EDD Filename: 12C285R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 8270C
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-040-NBZ-SB-2.5-3.5MSD (SL-040-NBZ-SB-2.5-3.5)	2,6-DINITROTOLUENE 2-NITROPHENOL	- -	133 -	30.00-130.00 30.00-130.00	- 51 (50.00)	2,6-DINITROTOLUENE 2-NITROPHENOL	J(all detects)
SL-040-NBZ-SB-2.5-3.5MS SL-040-NBZ-SB-2.5-3.5MSD (SL-040-NBZ-SB-2.5-3.5)	1,3-DICHLOROBENZENE HEXACHLOROETHANE	27 16	- -	30.00-130.00 20.00-130.00	- 66 (50.00)	1,3-DICHLOROBENZENE HEXACHLOROETHANE	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-040-NBZ-SB-2.5-3.5MS SL-040-NBZ-SB-2.5-3.5MSD (SL-040-NBZ-SB-2.5-3.5)	BIS(2-ETHYLHEXYL)PHTHALAT	164	196	20.00-150.00	-	BIS(2-ETHYLHEXYL)PHTHALA	J(all detects)

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: 12C285 **Laboratory: EMXT**

EDD Filename: 12C285R **eQAPP Name: CDM_SSFL_120730_EMAX**

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

QC Sample ID (Associated Samples)	*Compound*	*LCS %R*	*LCSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
SVD016SC (DUP-03-NBZ-QC-032812 SL-036-NBZ-SB-4.0-5.0 SL-036-NBZ-SB-7.5-8.5 SL-037-NBZ-SB-3.0-4.0 SL-040-NBZ-SB-2.5-3.5 SL-040-NBZ-SS-0.0-0.5 SL-094-NBZ-SS-0.0-0.5 SL-096-NBZ-SS-0.0-0.5 SL-135-NBZ-SS-0.0-0.5 SL-136-NBZ-SS-0.0-0.5 SL-139-NBZ-SS-0.0-0.5 SL-141-NBZ-SS-0.0-0.5 SL-143-NBZ-SS-0.0-0.5)	3,3'-DICHLOROBENZIDINE	-	-	50.00-130.00	55 (50.00)	3,3'-DICHLOROBENZIDINE	J (all detects) UJ (all non-detects)

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Field Duplicate RPD Report

Lab Reporting Batch ID: 12C285 **Laboratory: EMXT**

EDD Filename: 12C285R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 300.0
Matrix: SO

Analyte	Concentration (MG/KG)		Sample RPD	eQAPP RPD	Flag
	SL-040-NBZ-SB-2.5-3.5	DUP-03-NBZ-QC-032812			
FLUORIDE	1.52	1.32	14	50.00	No Qualifiers Applied
Nitrate-NO3	4.81	4.53	6	50.00	

Method: 6020
Matrix: SO

Analyte	Concentration (MG/KG)		Sample RPD	eQAPP RPD	Flag
	SL-040-NBZ-SB-2.5-3.5 (TOT)	DUP-03-NBZ-QC-032812 (TOT)			
ALUMINUM	9610	8650	11	50.00	No Qualifiers Applied
ANTIMONY	0.193	0.213	10	50.00	
ARSENIC	4.03	3.93	3	50.00	
BARIUM	60.3	63.5	5	50.00	
BERYLLIUM	0.454	0.395	14	50.00	
CADMIUM	0.178	0.202	13	50.00	
CALCIUM	2560	2860	11	50.00	
CHROMIUM	13.2	13.1	1	50.00	
COBALT	4.74	4.16	13	50.00	
COPPER	5.47	5.56	2	50.00	
IRON	18000	17400	3	50.00	
LEAD	8.02	7.45	7	50.00	
LITHIUM	22.6	19.3	16	50.00	
MAGNESIUM	3870	3710	4	50.00	
MANGANESE	252	225	11	50.00	
MOLYBDENUM	0.464	0.424	9	50.00	
NICKEL	7.63	7.47	2	50.00	
PHOSPHORUS	289	284	2	50.00	
POTASSIUM	2830	2550	10	50.00	
SODIUM	68.4	61.2	11	50.00	
STRONTIUM	12.1	13.1	8	50.00	
THALLIUM	0.247	0.222	11	50.00	
TITANIUM	882	776	13	50.00	
VANADIUM	27.6	26.9	3	50.00	
ZINC	59.4	55.4	7	50.00	
BORON	2.71	5.19 U	200	50.00	J(all detects) UJ(all non-detects)
SELENIUM	0.415 U	0.508	200	50.00	
SILVER	0.104 U	0.0639	200	50.00	

Method: 8015B EFH
Matrix: SO

Analyte	Concentration (MG/KG)		Sample RPD	eQAPP RPD	Flag
	SL-040-NBZ-SB-2.5-3.5	DUP-03-NBZ-QC-032812			
EFH(C12-C14)	0.85	0.90	6	50.00	No Qualifiers Applied
EFH(C15-C20)	38	37	3	50.00	
EFH(C21-C30)	41	43	5	50.00	
EFH(C30-C40)	12	8.3	36	50.00	
EFH(C8-C11)	0.53	0.55	4	50.00	
TOTAL EFH(C8-C40)	92	90	2	50.00	

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Field Duplicate RPD Report

Lab Reporting Batch ID: 12C285 **Laboratory: EMXT**

EDD Filename: 12C285R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 8270C SIM
Matrix: SO

Analyte	Concentration (UG/KG)		Sample RPD	eQAPP RPD	Flag
	SL-040-NBZ-SB-2.5-3.5	DUP-03-NBZ-QC-032812			
BENZO(G,H,I)PERYLENE	1.8 U	1.3	200	50.00	J(all detects) UJ(all non-detects)
BIS(2-ETHYLHEXYL)PHTHALATE	250	65	117	50.00	
Dimethylphthalate	50	26	63	50.00	

Method: 9045D
Matrix: SO

Analyte	Concentration (PH UNIT)		Sample RPD	eQAPP RPD	Flag
	SL-040-NBZ-SB-2.5-3.5	DUP-03-NBZ-QC-032812			
PH	7.64	8.15	6		No Qualifiers Applied

Reporting Limit Outliers

Lab Reporting Batch ID: 12C285 **Laboratory: EMXT**

EDD Filename: 12C285R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 300.0
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-139-NBZ-SS-0.0-0.5	FLUORIDE	J	0.635	1.19	PQL	MG/KG	J (all detects)

Method: 6020
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
DUP-03-NBZ-QC-032812	SILVER SODIUM	J J	0.0639 61.2	0.104 104	PQL PQL	MG/KG MG/KG	J (all detects)
SL-036-NBZ-SB-4.0-5.0	CADMIUM	J	0.0667	0.112	PQL	MG/KG	J (all detects)
SL-036-NBZ-SB-7.5-8.5	CADMIUM SILVER	J J	0.0731 0.0648	0.128 0.128	PQL PQL	MG/KG MG/KG	J (all detects)
SL-037-NBZ-SB-3.0-4.0	BORON SILVER	J J	2.85 0.0589	5.41 0.108	PQL PQL	MG/KG MG/KG	J (all detects)
SL-040-NBZ-SB-2.5-3.5	ANTIMONY BORON SODIUM	J J J	0.193 2.71 68.4	0.207 5.18 104	PQL PQL PQL	MG/KG MG/KG MG/KG	J (all detects)
SL-040-NBZ-SS-0.0-0.5	ANTIMONY	J	0.146	0.218	PQL	MG/KG	J (all detects)
SL-094-NBZ-SS-0.0-0.5	ANTIMONY SODIUM	J J	0.193 58.2	0.224 112	PQL PQL	MG/KG MG/KG	J (all detects)
SL-096-NBZ-SS-0.0-0.5	ANTIMONY	J	0.221	0.231	PQL	MG/KG	J (all detects)
SL-135-NBZ-SS-0.0-0.5	SELENIUM SILVER SODIUM	J J J	0.280 0.0666 72.5	0.459 0.115 115	PQL PQL PQL	MG/KG MG/KG MG/KG	J (all detects)
SL-136-NBZ-SS-0.0-0.5	CADMIUM SODIUM	J J	0.0848 62.1	0.107 107	PQL PQL	MG/KG MG/KG	J (all detects)
SL-139-NBZ-SS-0.0-0.5	ANTIMONY	J	0.205	0.235	PQL	MG/KG	J (all detects)
SL-141-NBZ-SS-0.0-0.5	ANTIMONY CADMIUM SODIUM	J J J	0.130 0.0938 72.0	0.222 0.111 111	PQL PQL PQL	MG/KG MG/KG MG/KG	J (all detects)
SL-143-NBZ-SS-0.0-0.5	ANTIMONY SODIUM	J J	0.171 53.4	0.209 104	PQL PQL	MG/KG MG/KG	J (all detects)

Method: 8015B EFH
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
DUP-03-NBZ-QC-032812	EFH(C12-C14) EFH(C8-C11)	J J	0.90 0.55	1.1 1.1	PQL PQL	MG/KG MG/KG	J (all detects)
SL-036-NBZ-SB-4.0-5.0	EFH(C21-C30) EFH(C8-C11)	J J	0.68 0.80	1.1 1.1	PQL PQL	MG/KG MG/KG	J (all detects)
SL-036-NBZ-SB-7.5-8.5	EFH(C30-C40) TOTAL EFH(C8-C40)	J J	0.76 0.76	1.3 1.3	PQL PQL	MG/KG MG/KG	J (all detects)

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Reporting Limit Outliers

Lab Reporting Batch ID: 12C285 **Laboratory: EMXT**

EDD Filename: 12C285R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 8015B EFH

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-037-NBZ-SB-3.0-4.0	EFH(C8-C11)	J	0.95	1.1	PQL	MG/KG	J (all detects)
SL-040-NBZ-SB-2.5-3.5	EFH(C12-C14) EFH(C8-C11)	J J	0.85 0.53	1.0 1.0	PQL PQL	MG/KG MG/KG	J (all detects)
SL-040-NBZ-SS-0.0-0.5	EFH(C8-C11)	J	0.96	1.1	PQL	MG/KG	J (all detects)

Method: 8082

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-096-NBZ-SS-0.0-0.5	Aroclor 5460	J	3.1	3.8	PQL	UG/KG	J (all detects)

Method: 8270C SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
DUP-03-NBZ-QC-032812	BENZO(G,H,I)PERYLENE	J	1.3	1.8	PQL	UG/KG	J (all detects)
SL-036-NBZ-SB-4.0-5.0	BIS(2-ETHYLHEXYL)PHTHALATE	J	16	19	PQL	UG/KG	J (all detects)
SL-037-NBZ-SB-3.0-4.0	BIS(2-ETHYLHEXYL)PHTHALATE	J	17	19	PQL	UG/KG	J (all detects)
SL-040-NBZ-SS-0.0-0.5	ANTHRACENE BENZO(G,H,I)PERYLENE PHENANTHRENE	J J J	1.2 1.6 1.5	1.9 1.9 1.9	PQL PQL PQL	UG/KG UG/KG UG/KG	J (all detects)
SL-094-NBZ-SS-0.0-0.5	CHRYSENE PYRENE	J J	1.1 1.1	2.0 2.0	PQL PQL	UG/KG UG/KG	J (all detects)
SL-096-NBZ-SS-0.0-0.5	CHRYSENE PYRENE	J J	1.5 1.5	2.0 2.0	PQL PQL	UG/KG UG/KG	J (all detects)
SL-139-NBZ-SS-0.0-0.5	1-METHYLNAPHTHALENE 2-METHYLNAPHTHALENE ACENAPHTHENE ACENAPHTHYLENE BENZO(G,H,I)PERYLENE FLUORENE NAPHTHALENE PYRENE	J J J J J J J J	1.2 1.3 1.1 1.2 1.2 1.1 1.3 1.2	2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0	PQL PQL PQL PQL PQL PQL PQL PQL	UG/KG UG/KG UG/KG UG/KG UG/KG UG/KG UG/KG UG/KG	J (all detects)

LDC #: 28255K4
SDG #: 12C285
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 8-29-12
Page: 1 of 1
Reviewer: CL
2nd Reviewer: [illegible]

METHOD: Metals (EPA SW 846 Method ~~6010B~~/6020A/~~7000~~ 7471A)

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

	Validation Area		Comments
I.	Technical holding times	—	Sampling dates: 3/28/12
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-NBZ-SB-032712 > 12C273 EB-NBZ-SS-032712 / EB-NBZ-SB-032912 > 12C3(EB-NBZ-SS-032912

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: SW

1	SL-040-NBZ-SS-0.0-0.5	11	SL-040-NBZ-SB-2.5-3.5	21		31	
2	SL-094-BNZ-SS-0.0-0.5	12	SL-036-NBZ-SB-7.5-8.5	22		32	
3	SL-096-NBZ-SS-0.0-0.5	13	DUP-03-NBZ-QC-032812	23		33	
4	SL-135-NBZ-SS-0.0-0.5	14	SL-040-NBZ-SB-2.5-3.5MS	24		34	
5	SL-136-NBZ-SS-0.0-0.5	15	SL-040-NBZ-SB-2.5-3.5MSD	25		35	
6	SL-139-NBZ-SS-0.0-0.5	16		26		36	
7	SL-141-NBZ-SS-0.0-0.5	17		27		37	
8	SL-143-NBZ-SS-0.0-0.5	18		28		38	
9	SL-036-NBZ-SB-4.0-5.0	19		29		39	
10	SL-037-NBZ-SB-3.0-4.0	20		30		40	

Notes: _____

LDC #: 28255K4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: OR
2nd Reviewer: [illegible]

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

Blank units: mg/L **Associated sample units:** mg/Kg
Sampling date: 3/27/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: 9-13

Analyte	Blank ID	Sample Identification										
	EB-NBZ-SB-032712 (SDG: 12C273)	Action Limit	No Qualifiers									
Al	0.0368	9.2										
Cu	0.00137	0.3425										
Na	0.200	50										

Sampling date: 3/27/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: 1-8

Analyte	Blank ID	Sample Identification										
	EB-NBZ-SS-032712 (SDG: 12C273)	Action Limit	No Qualifiers									
Cu	0.000807	0.20175										

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 #: 28255K4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: ar
2nd Reviewer: h

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

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

Sampling date: 3/29/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: 1-8

Analyte	Blank ID	Sample Identification										
	EB-NBZ-SS-032912 (SDG: 12C305)	Action Limit	No Qualifiers									
Al	0.0266	6.65										
Cu	0.00108	0.27										
Na	0.112	28										

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

12C305

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-Mar-2012	TB-032912	C305-15	TB	5030B	8015B GRO	III
29-Mar-2012	SL-091-NBZ-SS-0.0-0.5	C305-04	N	3550B	8015B EFH	III
29-Mar-2012	SL-091-NBZ-SS-0.0-0.5	C305-04	N	3550B	8081A	III
29-Mar-2012	SL-091-NBZ-SS-0.0-0.5	C305-04	N	3550B	8270C	III
29-Mar-2012	SL-091-NBZ-SS-0.0-0.5	C305-04	N	3550B	8270C SIM	III
29-Mar-2012	SL-091-NBZ-SS-0.0-0.5	C305-04	N	7471A	7471A	III
29-Mar-2012	SL-091-NBZ-SS-0.0-0.5	C305-04	N	GEN PREP	300.0	III
29-Mar-2012	SL-091-NBZ-SS-0.0-0.5	C305-04	N	GEN PREP	314.0	III
29-Mar-2012	SL-091-NBZ-SS-0.0-0.5	C305-04	N	GEN PREP	6020	III
29-Mar-2012	SL-091-NBZ-SS-0.0-0.5	C305-04	N	GEN PREP	7199	III
29-Mar-2012	SL-091-NBZ-SS-0.0-0.5	C305-04	N	GEN PREP	8151A	III
29-Mar-2012	SL-091-NBZ-SS-0.0-0.5	C305-04	N	GEN PREP	8330A	III
29-Mar-2012	SL-091-NBZ-SS-0.0-0.5	C305-04	N	GEN PREP	8332	III
29-Mar-2012	SL-091-NBZ-SS-0.0-0.5	C305-04	N	GEN PREP	9014	III
29-Mar-2012	SL-091-NBZ-SS-0.0-0.5	C305-04	N	GEN PREP	9045D	III
29-Mar-2012	SL-091-NBZ-SS-0.0-0.5	C305-04R	N	GEN PREP	7199	III
29-Mar-2012	SL-091-NBZ-SS-0.0-0.5	C305-04W	N	3550B	8082	III
29-Mar-2012	SL-103-NBZ-SS-0.0-0.5	C305-07	N	3550B	8081A	III
29-Mar-2012	SL-103-NBZ-SS-0.0-0.5	C305-07	N	3550B	8082	III
29-Mar-2012	SL-103-NBZ-SS-0.0-0.5	C305-07	N	3550B	8270C	III
29-Mar-2012	SL-103-NBZ-SS-0.0-0.5	C305-07	N	3550B	8270C SIM	III
29-Mar-2012	SL-103-NBZ-SS-0.0-0.5	C305-07	N	7471A	7471A	III
29-Mar-2012	SL-103-NBZ-SS-0.0-0.5	C305-07	N	GEN PREP	300.0	III
29-Mar-2012	SL-103-NBZ-SS-0.0-0.5	C305-07	N	GEN PREP	314.0	III
29-Mar-2012	SL-103-NBZ-SS-0.0-0.5	C305-07	N	GEN PREP	6020	III
29-Mar-2012	SL-103-NBZ-SS-0.0-0.5	C305-07	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
29-Mar-2012	SL-103-NBZ-SS-0.0-0.5	C305-07	N	GEN PREP	8151A	III
29-Mar-2012	SL-103-NBZ-SS-0.0-0.5	C305-07	N	GEN PREP	9045D	III
29-Mar-2012	SL-103-NBZ-SS-0.0-0.5	C305-07R	N	GEN PREP	7199	III
29-Mar-2012	SL-101-NBZ-SS-0.0-0.5	C305-06	N	3550B	8081A	III
29-Mar-2012	SL-101-NBZ-SS-0.0-0.5	C305-06	N	3550B	8082	III
29-Mar-2012	SL-101-NBZ-SS-0.0-0.5	C305-06	N	3550B	8270C	III
29-Mar-2012	SL-101-NBZ-SS-0.0-0.5	C305-06	N	3550B	8270C SIM	III
29-Mar-2012	SL-101-NBZ-SS-0.0-0.5	C305-06	N	7471A	7471A	III
29-Mar-2012	SL-101-NBZ-SS-0.0-0.5	C305-06	N	GEN PREP	300.0	III
29-Mar-2012	SL-101-NBZ-SS-0.0-0.5	C305-06	N	GEN PREP	314.0	III
29-Mar-2012	SL-101-NBZ-SS-0.0-0.5	C305-06	N	GEN PREP	6020	III
29-Mar-2012	SL-101-NBZ-SS-0.0-0.5	C305-06	N	GEN PREP	7199	III
29-Mar-2012	SL-101-NBZ-SS-0.0-0.5	C305-06	N	GEN PREP	8151A	III
29-Mar-2012	SL-101-NBZ-SS-0.0-0.5	C305-06	N	GEN PREP	9045D	III
29-Mar-2012	SL-101-NBZ-SS-0.0-0.5	C305-06R	N	GEN PREP	7199	III
29-Mar-2012	SL-091-NBZ-SB-4.0-5.0	C305-12	N	3550B	8015B EFH	III
29-Mar-2012	SL-091-NBZ-SB-4.0-5.0	C305-12	N	3550B	8082	III
29-Mar-2012	SL-091-NBZ-SB-4.0-5.0	C305-12	N	GEN PREP	300.0	III
29-Mar-2012	SL-091-NBZ-SB-4.0-5.0	C305-12	N	GEN PREP	314.0	III
29-Mar-2012	SL-091-NBZ-SB-4.0-5.0	C305-12	N	GEN PREP	6020	III
29-Mar-2012	SL-091-NBZ-SB-4.0-5.0	C305-12	N	GEN PREP	7199	III
29-Mar-2012	SL-091-NBZ-SB-4.0-5.0	C305-12	N	GEN PREP	8330A	III
29-Mar-2012	SL-091-NBZ-SB-4.0-5.0	C305-12	N	GEN PREP	8332	III
29-Mar-2012	SL-091-NBZ-SB-4.0-5.0	C305-12	N	GEN PREP	9014	III
29-Mar-2012	SL-091-NBZ-SB-4.0-5.0	C305-12	N	GEN PREP	9045D	III
29-Mar-2012	SL-091-NBZ-SS-4.0-5.0	C305-12	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
29-Mar-2012	SL-091-NBZ-SB-4.0-5.0	C305-12R	N	GEN PREP	7199	III
29-Mar-2012	SL-091-NBZ-SB-4.0-5.0	C305-12W	N	3550B	8270C	III
29-Mar-2012	SL-091-NBZ-SB-4.0-5.0	C305-12W	N	3550B	8270C SIM	III
29-Mar-2012	SL-091-NBZ-SB-4.5	C305-11	N	5035	8015B GRO	III
29-Mar-2012	SL-130-NBZ-SS-0.0-0.5	C305-09	N	3550B	8081A	III
29-Mar-2012	SL-130-NBZ-SS-0.0-0.5	C305-09	N	3550B	8082	III
29-Mar-2012	SL-130-NBZ-SS-0.0-0.5	C305-09	N	3550B	8270C	III
29-Mar-2012	SL-130-NBZ-SS-0.0-0.5	C305-09	N	3550B	8270C SIM	III
29-Mar-2012	SL-130-NBZ-SS-0.0-0.5	C305-09	N	7471A	7471A	III
29-Mar-2012	SL-130-NBZ-SS-0.0-0.5	C305-09	N	GEN PREP	300.0	III
29-Mar-2012	SL-130-NBZ-SS-0.0-0.5	C305-09	N	GEN PREP	314.0	III
29-Mar-2012	SL-130-NBZ-SS-0.0-0.5	C305-09	N	GEN PREP	7199	III
29-Mar-2012	SL-130-NBZ-SS-0.0-0.5	C305-09	N	GEN PREP	8151A	III
29-Mar-2012	SL-130-NBZ-SS-0.0-0.5	C305-09	N	GEN PREP	9045D	III
29-Mar-2012	SL-130-NBZ-SS-0.0-0.5	C305-09R	N	GEN PREP	6020	III
29-Mar-2012	SL-130-NBZ-SS-0.0-0.5	C305-09R	N	GEN PREP	7199	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5	C305-05	N	3550B	8015B EFH	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5	C305-05	N	3550B	8081A	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5	C305-05	N	3550B	8082	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5	C305-05	N	3550B	8270C	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5	C305-05	N	3550B	8270C SIM	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5	C305-05	N	7471A	7471A	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5	C305-05	N	GEN PREP	300.0	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5	C305-05	N	GEN PREP	314.0	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5	C305-05	N	GEN PREP	6020	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5	C305-05	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
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5	C305-05	N	GEN PREP	8151A	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5	C305-05	N	GEN PREP	8330A	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5	C305-05	N	GEN PREP	8332	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5	C305-05	N	GEN PREP	9014	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5	C305-05	N	GEN PREP	9045D	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5DUP	C305-05D	DUP	GEN PREP	9045D	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5MS	C305-05G	MS	GEN PREP	7199	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5MS	C305-05G1	MS	GEN PREP	7199	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5MSD	C305-05H	MSD	GEN PREP	7199	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5MSD	C305-05H1	MSD	GEN PREP	7199	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5MS	C305-05M	MS	3550B	8015B EFH	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5MS	C305-05M	MS	3550B	8081A	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5MS	C305-05M	MS	3550B	8082	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5MS	C305-05M	MS	3550B	8270C	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5MS	C305-05M	MS	3550B	8270C SIM	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5MS	C305-05M	MS	7471A	7471A	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5MS	C305-05M	MS	GEN PREP	300.0	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5MS	C305-05M	MS	GEN PREP	314.0	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5MS	C305-05M	MS	GEN PREP	6020	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5MS	C305-05M	MS	GEN PREP	7199	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5MS	C305-05M	MS	GEN PREP	8151A	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5MS	C305-05M	MS	GEN PREP	8330A	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5MS	C305-05M	MS	GEN PREP	8332	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5MS	C305-05M	MS	GEN PREP	9014	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5MS	C305-05M1	MS	GEN PREP	7199	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5	C305-05R	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
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5MSD	C305-05S	MSD	3550B	8015B EFH	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5MSD	C305-05S	MSD	3550B	8081A	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5MSD	C305-05S	MSD	3550B	8082	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5MSD	C305-05S	MSD	3550B	8270C	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5MSD	C305-05S	MSD	3550B	8270C SIM	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5MSD	C305-05S	MSD	7471A	7471A	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5MSD	C305-05S	MSD	GEN PREP	300.0	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5MSD	C305-05S	MSD	GEN PREP	314.0	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5MSD	C305-05S	MSD	GEN PREP	6020	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5MSD	C305-05S	MSD	GEN PREP	7199	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5MSD	C305-05S	MSD	GEN PREP	8151A	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5MSD	C305-05S	MSD	GEN PREP	8330A	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5MSD	C305-05S	MSD	GEN PREP	8332	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5MSD	C305-05S	MSD	GEN PREP	9014	III
29-Mar-2012	SL-092-NBZ-SS-0.0-0.5MSD	C305-05S1	MSD	GEN PREP	7199	III
29-Mar-2012	DUP-05-NBZ-QC-032912	C305-13	FD	3550B	8015B EFH	III
29-Mar-2012	DUP-05-NBZ-QC-032912	C305-13	FD	3550B	8081A	III
29-Mar-2012	DUP-05-NBZ-QC-032912	C305-13	FD	3550B	8082	III
29-Mar-2012	DUP-05-NBZ-QC-032912	C305-13	FD	3550B	8270C	III
29-Mar-2012	DUP-05-NBZ-QC-032912	C305-13	FD	3550B	8270C SIM	III
29-Mar-2012	DUP-05-NBZ-QC-032912	C305-13	FD	7471A	7471A	III
29-Mar-2012	DUP-05-NBZ-QC-032912	C305-13	FD	GEN PREP	300.0	III
29-Mar-2012	DUP-05-NBZ-QC-032912	C305-13	FD	GEN PREP	314.0	III
29-Mar-2012	DUP-05-NBZ-QC-032912	C305-13	FD	GEN PREP	6020	III
29-Mar-2012	DUP-05-NBZ-QC-032912	C305-13	FD	GEN PREP	7199	III
29-Mar-2012	DUP-05-NBZ-QC-032912	C305-13	FD	GEN PREP	8151A	III

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

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
29-Mar-2012	DUP-05-NBZ-QC-032912	C305-13	FD	GEN PREP	8330A	III
29-Mar-2012	DUP-05-NBZ-QC-032912	C305-13	FD	GEN PREP	8332	III
29-Mar-2012	DUP-05-NBZ-QC-032912	C305-13	FD	GEN PREP	9014	III
29-Mar-2012	DUP-05-NBZ-QC-032912	C305-13	FD	GEN PREP	9045D	III
29-Mar-2012	DUP-05-NBZ-QC-032912	C305-13R	FD	GEN PREP	7199	III
29-Mar-2012	SL-044-NBZ-SS-0.0-0.5	C305-03	N	3550B	8082	III
29-Mar-2012	SL-044-NBZ-SS-0.0-0.5	C305-03	N	3550B	8270C	III
29-Mar-2012	SL-044-NBZ-SS-0.0-0.5	C305-03	N	3550B	8270C SIM	III
29-Mar-2012	SL-044-NBZ-SS-0.0-0.5	C305-03	N	GEN PREP	300.0	III
29-Mar-2012	SL-044-NBZ-SS-0.0-0.5	C305-03	N	GEN PREP	314.0	III
29-Mar-2012	SL-044-NBZ-SS-0.0-0.5	C305-03	N	GEN PREP	6020	III
29-Mar-2012	SL-044-NBZ-SS-0.0-0.5	C305-03	N	GEN PREP	7199	III
29-Mar-2012	SL-044-NBZ-SS-0.0-0.5	C305-03	N	GEN PREP	8015B	III
29-Mar-2012	SL-044-NBZ-SS-0.0-0.5	C305-03	N	GEN PREP	8015M	III
29-Mar-2012	SL-044-NBZ-SS-0.0-0.5	C305-03	N	GEN PREP	8330A	III
29-Mar-2012	SL-044-NBZ-SS-0.0-0.5	C305-03	N	GEN PREP	8332	III
29-Mar-2012	SL-044-NBZ-SS-0.0-0.5	C305-03	N	GEN PREP	9014	III
29-Mar-2012	SL-044-NBZ-SS-0.0-0.5	C305-03	N	GEN PREP	9045D	III
29-Mar-2012	SL-044-NBZ-SS-0.0-0.5	C305-03R	N	GEN PREP	7199	III
29-Mar-2012	SL-044-NBZ-SS-0.0-0.5	C305-03T	N	3550B	8015B EFH	III
29-Mar-2012	SL-044-NBZ-SS-0.0-0.5	C305-03T	N	3550B	8081A	III
29-Mar-2012	SL-044-NBZ-SS-0.0-0.5	C305-03T	N	3550B	8082	III
29-Mar-2012	SL-044-NBZ-SS-0.0-0.5	C305-03T	N	7471A	7471A	III
29-Mar-2012	SL-044-NBZ-SS-0.0-0.5	C305-03T	N	GEN PREP	6020	III
29-Mar-2012	SL-044-NBZ-SS-0.0-0.5	C305-03T	N	GEN PREP	8151A	III
29-Mar-2012	SL-197-NBZ-SS-0.0-0.5	C305-10	N	3550B	8081A	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-Mar-2012	SL-197-NBZ-SS-0.0-0.5	C305-10	N	3550B	8082	III
29-Mar-2012	SL-197-NBZ-SS-0.0-0.5	C305-10	N	3550B	8270C	III
29-Mar-2012	SL-197-NBZ-SS-0.0-0.5	C305-10	N	3550B	8270C SIM	III
29-Mar-2012	SL-197-NBZ-SS-0.0-0.5	C305-10	N	7471A	7471A	III
29-Mar-2012	SL-197-NBZ-SS-0.0-0.5	C305-10	N	GEN PREP	300.0	III
29-Mar-2012	SL-197-NBZ-SS-0.0-0.5	C305-10	N	GEN PREP	314.0	III
29-Mar-2012	SL-197-NBZ-SS-0.0-0.5	C305-10	N	GEN PREP	6020	III
29-Mar-2012	SL-197-NBZ-SS-0.0-0.5	C305-10	N	GEN PREP	7199	III
29-Mar-2012	SL-197-NBZ-SS-0.0-0.5	C305-10	N	GEN PREP	8151A	III
29-Mar-2012	SL-197-NBZ-SS-0.0-0.5	C305-10	N	GEN PREP	9045D	III
29-Mar-2012	SL-197-NBZ-SS-0.0-0.5	C305-10R	N	GEN PREP	7199	III
29-Mar-2012	EB-NBZ-SB-032912	C305-01	EB	3520C	8015B EFH	III
29-Mar-2012	EB-NBZ-SB-032912	C305-01	EB	3520C	8082	III
29-Mar-2012	EB-NBZ-SB-032912	C305-01	EB	3520C	8270C	III
29-Mar-2012	EB-NBZ-SB-032912	C305-01	EB	5030B	8015B GRO	III
29-Mar-2012	EB-NBZ-SB-032912	C305-01	EB	5030B	8260B	III
29-Mar-2012	EB-NBZ-SB-032912	C305-01	EB	5030B	8260B SIM	III
29-Mar-2012	EB-NBZ-SB-032912	C305-01	EB	7470A	7470A	III
29-Mar-2012	EB-NBZ-SB-032912	C305-01	EB	GEN PREP	300.0	III
29-Mar-2012	EB-NBZ-SB-032912	C305-01	EB	GEN PREP	314.0	III
29-Mar-2012	EB-NBZ-SB-032912	C305-01	EB	GEN PREP	6020	III
29-Mar-2012	EB-NBZ-SB-032912	C305-01	EB	GEN PREP	7199	III
29-Mar-2012	EB-NBZ-SB-032912	C305-01	EB	GEN PREP	8015B	III
29-Mar-2012	EB-NBZ-SB-032912	C305-01	EB	GEN PREP	8015M	III
29-Mar-2012	EB-NBZ-SB-032912	C305-01	EB	GEN PREP	8330A	III
29-Mar-2012	EB-NBZ-SB-032912	C305-01	EB	GEN PREP	8332	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-Mar-2012	EB-NBZ-SB-032912	C305-01	EB	GEN PREP	9014	III
29-Mar-2012	EB-NBZ-SB-032912	C305-01	EB	GEN PREP	9040C	III
29-Mar-2012	EB-NBZ-SB-032912	C305-01R	EB	GEN PREP	7199	III
29-Mar-2012	SL-118-NBZ-SS-0.0-0.5	C305-08	N	3550B	8081A	III
29-Mar-2012	SL-118-NBZ-SS-0.0-0.5	C305-08	N	3550B	8082	III
29-Mar-2012	SL-118-NBZ-SS-0.0-0.5	C305-08	N	3550B	8270C	III
29-Mar-2012	SL-118-NBZ-SS-0.0-0.5	C305-08	N	3550B	8270C SIM	III
29-Mar-2012	SL-118-NBZ-SS-0.0-0.5	C305-08	N	7471A	7471A	III
29-Mar-2012	SL-118-NBZ-SS-0.0-0.5	C305-08	N	GEN PREP	300.0	III
29-Mar-2012	SL-118-NBZ-SS-0.0-0.5	C305-08	N	GEN PREP	314.0	III
29-Mar-2012	SL-118-NBZ-SS-0.0-0.5	C305-08	N	GEN PREP	6020	III
29-Mar-2012	SL-118-NBZ-SS-0.0-0.5	C305-08	N	GEN PREP	7199	III
29-Mar-2012	SL-118-NBZ-SS-0.0-0.5	C305-08	N	GEN PREP	8151A	III
29-Mar-2012	SL-118-NBZ-SS-0.0-0.5	C305-08	N	GEN PREP	9045D	III
29-Mar-2012	SL-118-NBZ-SS-0.0-0.5DUP	C305-08D	DUP	GEN PREP	9045D	III
29-Mar-2012	SL-118-NBZ-SS-0.0-0.5MS	C305-08G	MS	GEN PREP	7199	III
29-Mar-2012	SL-118-NBZ-SS-0.0-0.5MS	C305-08G1	MS	GEN PREP	7199	III
29-Mar-2012	SL-118-NBZ-SS-0.0-0.5MSD	C305-08H	MSD	GEN PREP	7199	III
29-Mar-2012	SL-118-NBZ-SS-0.0-0.5MSD	C305-08H1	MSD	GEN PREP	7199	III
29-Mar-2012	SL-118-NBZ-SS-0.0-0.5MS	C305-08M	MS	3550B	8081A	III
29-Mar-2012	SL-118-NBZ-SS-0.0-0.5MS	C305-08M	MS	3550B	8082	III
29-Mar-2012	SL-118-NBZ-SS-0.0-0.5MS	C305-08M	MS	3550B	8270C	III
29-Mar-2012	SL-118-NBZ-SS-0.0-0.5MS	C305-08M	MS	3550B	8270C SIM	III
29-Mar-2012	SL-118-NBZ-SS-0.0-0.5MS	C305-08M	MS	7471A	7471A	III
29-Mar-2012	SL-118-NBZ-SS-0.0-0.5MS	C305-08M	MS	GEN PREP	300.0	III
29-Mar-2012	SL-118-NBZ-SS-0.0-0.5MS	C305-08M	MS	GEN PREP	314.0	III

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

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
29-Mar-2012	SL-118-NBZ-SS-0.0-0.5MS	C305-08M	MS	GEN PREP	6020	III
29-Mar-2012	SL-118-NBZ-SS-0.0-0.5MS	C305-08M	MS	GEN PREP	7199	III
29-Mar-2012	SL-118-NBZ-SS-0.0-0.5MS	C305-08M	MS	GEN PREP	8151A	III
29-Mar-2012	SL-118-NBZ-SS-0.0-0.5MS	C305-08M1	MS	GEN PREP	7199	III
29-Mar-2012	SL-118-NBZ-SS-0.0-0.5	C305-08R	N	GEN PREP	7199	III
29-Mar-2012	SL-118-NBZ-SS-0.0-0.5MSD	C305-08S	MSD	3550B	8081A	III
29-Mar-2012	SL-118-NBZ-SS-0.0-0.5MSD	C305-08S	MSD	3550B	8082	III
29-Mar-2012	SL-118-NBZ-SS-0.0-0.5MSD	C305-08S	MSD	3550B	8270C	III
29-Mar-2012	SL-118-NBZ-SS-0.0-0.5MSD	C305-08S	MSD	3550B	8270C SIM	III
29-Mar-2012	SL-118-NBZ-SS-0.0-0.5MSD	C305-08S	MSD	7471A	7471A	III
29-Mar-2012	SL-118-NBZ-SS-0.0-0.5MSD	C305-08S	MSD	GEN PREP	300.0	III
29-Mar-2012	SL-118-NBZ-SS-0.0-0.5MSD	C305-08S	MSD	GEN PREP	314.0	III
29-Mar-2012	SL-118-NBZ-SS-0.0-0.5MSD	C305-08S	MSD	GEN PREP	6020	III
29-Mar-2012	SL-118-NBZ-SS-0.0-0.5MSD	C305-08S	MSD	GEN PREP	7199	III
29-Mar-2012	SL-118-NBZ-SS-0.0-0.5MSD	C305-08S	MSD	GEN PREP	8151A	III
29-Mar-2012	SL-118-NBZ-SS-0.0-0.5MSD	C305-08S1	MSD	GEN PREP	7199	III
29-Mar-2012	DUP-04-NBZ-QC-032912	C305-14	FD	3550B	8081A	III
29-Mar-2012	DUP-04-NBZ-QC-032912	C305-14	FD	3550B	8082	III
29-Mar-2012	DUP-04-NBZ-QC-032912	C305-14	FD	3550B	8270C	III
29-Mar-2012	DUP-04-NBZ-QC-032912	C305-14	FD	3550B	8270C SIM	III
29-Mar-2012	DUP-04-NBZ-QC-032912	C305-14	FD	7471A	7471A	III
29-Mar-2012	DUP-04-NBZ-QC-032912	C305-14	FD	GEN PREP	300.0	III
29-Mar-2012	DUP-04-NBZ-QC-032912	C305-14	FD	GEN PREP	314.0	III
29-Mar-2012	DUP-04-NBZ-QC-032912	C305-14	FD	GEN PREP	6020	III
29-Mar-2012	DUP-04-NBZ-QC-032912	C305-14	FD	GEN PREP	7199	III
29-Mar-2012	DUP-04-NBZ-QC-032912	C305-14	FD	GEN PREP	8151A	III

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Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
29-Mar-2012	DUP-04-NBZ-QC-032912	C305-14	FD	GEN PREP	9045D	III
29-Mar-2012	DUP-04-NBZ-QC-032912	C305-14R	FD	GEN PREP	7199	III
29-Mar-2012	EB-NBZ-SS-032912	C305-02	EB	3520C	8015B EFH	III
29-Mar-2012	EB-NBZ-SS-032912	C305-02	EB	3520C	8081A	III
29-Mar-2012	EB-NBZ-SS-032912	C305-02	EB	3520C	8082	III
29-Mar-2012	EB-NBZ-SS-032912	C305-02	EB	3520C	8270C	III
29-Mar-2012	EB-NBZ-SS-032912	C305-02	EB	7470A	7470A	III
29-Mar-2012	EB-NBZ-SS-032912	C305-02	EB	GEN PREP	300.0	III
29-Mar-2012	EB-NBZ-SS-032912	C305-02	EB	GEN PREP	314.0	III
29-Mar-2012	EB-NBZ-SS-032912	C305-02	EB	GEN PREP	6020	III
29-Mar-2012	EB-NBZ-SS-032912	C305-02	EB	GEN PREP	7199	III
29-Mar-2012	EB-NBZ-SS-032912	C305-02	EB	GEN PREP	8015B	III
29-Mar-2012	EB-NBZ-SS-032912	C305-02	EB	GEN PREP	8015M	III
29-Mar-2012	EB-NBZ-SS-032912	C305-02	EB	GEN PREP	8151A	III
29-Mar-2012	EB-NBZ-SS-032912	C305-02	EB	GEN PREP	8330A	III
29-Mar-2012	EB-NBZ-SS-032912	C305-02	EB	GEN PREP	8332	III
29-Mar-2012	EB-NBZ-SS-032912	C305-02	EB	GEN PREP	9014	III
29-Mar-2012	EB-NBZ-SS-032912	C305-02	EB	GEN PREP	9040C	III
29-Mar-2012	EB-NBZ-SS-032912DUP	C305-02D	DUP	GEN PREP	9040C	III
29-Mar-2012	EB-NBZ-SS-032912	C305-02R	EB	GEN PREP	7199	III

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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: 12C305 Laboratory: EMXT

EDD Filename: Prep12C305R eQAPP Name: CDM_SSFL_120730_EMAX

Method Category: GENCHEM
Method: 300.0 **Matrix:** AQ

Sample ID: EB-NBZ-SB-032912 *Collected:* 3/29/2012 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
Nitrate-NO3	0.275	J	0.222	MDL	0.443	PQL	MG/L	J	Z

Method Category: GENCHEM
Method: 300.0 **Matrix:** SO

Sample ID: SL-044-NBZ-SS-0.0-0.5 *Collected:* 3/29/2012 1:11:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORIDE	0.769	J	0.500	MDL	1.00	PQL	MG/KG	J	Z

Sample ID: SL-091-NBZ-SS-0.0-0.5 *Collected:* 3/29/2012 9:09:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORIDE	0.529	J	0.500	MDL	1.00	PQL	MG/KG	J	Z

Sample ID: SL-197-NBZ-SS-0.0-0.5 *Collected:* 3/29/2012 1:55:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORIDE	0.570	J	0.500	MDL	1.00	PQL	MG/KG	J	Z

Method Category: METALS
Method: 6020 **Matrix:** AQ

Sample ID: EB-NBZ-SS-032912 *Collected:* 3/29/2012 3:45:00 *Analysis Type:* RES/TOT *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	0.0266	J	0.0200	MDL	0.100	PQL	MG/L	J	Z

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

Sample ID: DUP-04-NBZ-QC-032912 *Collected:* 3/29/2012 3:10:00 *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	0.199	J	0.110	MDL	0.219	PQL	MG/KG	J	Z, Q

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12C305 Laboratory: EMXT

EDD Filename: Prep12C305R eQAPP Name: CDM_SSFL_120730_EMAX

Method Category: METALS

Method: 6020 **Matrix:** SO

Sample ID: DUP-04-NBZ-QC-032912 ***Collected:*** 3/29/2012 3:10:00 ***Analysis Type:*** RES/TOT ***Dilution:*** 1.00

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SODIUM	56.0	J	54.8	MDL	110	PQL	MG/KG	J	Z

Sample ID: DUP-05-NBZ-QC-032912 ***Collected:*** 3/29/2012 12:09:00 ***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	0.158	J	0.116	MDL	0.232	PQL	MG/KG	J	Z, Q
SELENIUM	0.464	U	0.232	MDL	0.464	PQL	MG/KG	UJ	FD
SODIUM	79.7	J	58.0	MDL	116	PQL	MG/KG	J	Z

Sample ID: SL-044-NBZ-SS-0.0-0.5 ***Collected:*** 3/29/2012 1:11:00 ***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	8.25		0.103	MDL	0.205	PQL	MG/KG	J	Q
BORON	4.80	J	2.56	MDL	5.13	PQL	MG/KG	J	Z
SELENIUM	0.227	J	0.205	MDL	0.410	PQL	MG/KG	J	Z
SODIUM	88.1	J	51.3	MDL	103	PQL	MG/KG	J	Z
TIN	6.86	J	5.13	MDL	10.3	PQL	MG/KG	J	Z

Sample ID: SL-091-NBZ-SB-4.0-5.0 ***Collected:*** 3/29/2012 10:20:00 ***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	0.300		0.119	MDL	0.237	PQL	MG/KG	J	Q
SELENIUM	0.284	J	0.237	MDL	0.475	PQL	MG/KG	J	Z
SILVER	0.0646	J	0.0593	MDL	0.119	PQL	MG/KG	J	Z

Sample ID: SL-091-NBZ-SS-0.0-0.5 ***Collected:*** 3/29/2012 9:09:00 ***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	0.182	J	0.118	MDL	0.236	PQL	MG/KG	J	Z, Q
BORON	3.05	J	2.95	MDL	5.90	PQL	MG/KG	J	Z
SODIUM	69.9	J	59.0	MDL	118	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12C305 Laboratory: EMXT

EDD Filename: Prep12C305R eQAPP Name: CDM_SSFL_120730_EMAX

Method Category: METALS

Method: 6020 **Matrix:** SO

Sample ID: SL-092-NBZ-SS-0.0-0.5 *Collected:* 3/29/2012 11:43:00 *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	0.215	J	0.114	MDL	0.227	PQL	MG/KG	J	Z, Q
BARIUM	83.6		0.227	MDL	0.455	PQL	MG/KG	J	Q, E
MANGANESE	294		0.284	MDL	0.569	PQL	MG/KG	J	E
SELENIUM	0.228	J	0.227	MDL	0.455	PQL	MG/KG	J	Z, FD
SODIUM	81.8	J	56.9	MDL	114	PQL	MG/KG	J	Z
Zirconium	5.69	U	2.84	MDL	5.69	PQL	MG/KG	UJ	Q

Sample ID: SL-101-NBZ-SS-0.0-0.5 *Collected:* 3/29/2012 10:05:00 *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	0.245		0.112	MDL	0.224	PQL	MG/KG	J	Q
SODIUM	61.2	J	56.0	MDL	112	PQL	MG/KG	J	Z

Sample ID: SL-103-NBZ-SS-0.0-0.5 *Collected:* 3/29/2012 9:25:00 *Analysis Type:* RES/TOT *Dilution:* 0.980

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.196	J	0.112	MDL	0.225	PQL	MG/KG	J	Z, Q

Sample ID: SL-118-NBZ-SS-0.0-0.5 *Collected:* 3/29/2012 3:10:00 *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	0.226		0.105	MDL	0.209	PQL	MG/KG	J	Q
PHOSPHORUS	458		6.27	MDL	12.5	PQL	MG/KG	J	Q
SODIUM	55.8	J	52.3	MDL	105	PQL	MG/KG	J	Z

Sample ID: SL-130-NBZ-SS-0.0-0.5 *Collected:* 3/29/2012 10:35:00 *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	0.108	MDL	0.216	PQL	MG/KG	J	Z
Zirconium	5.41	U	2.71	MDL	5.41	PQL	MG/KG	UJ	Q

Sample ID: SL-197-NBZ-SS-0.0-0.5 *Collected:* 3/29/2012 1:55:00 *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	0.205	J	0.115	MDL	0.230	PQL	MG/KG	J	Z, Q

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12C305 Laboratory: EMXT

EDD Filename: Prep12C305R eQAPP Name: CDM_SSFL_120730_EMAX

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

Sample ID: DUP-05-NBZ-QC-032912 ***Collected:*** 3/29/2012 12:09:00 ***Analysis Type:*** RES ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH(C12-C14)	1.2	U	0.59	MDL	1.2	PQL	MG/KG	UJ	FD
EFH(C15-C20)	1.2	U	0.59	MDL	1.2	PQL	MG/KG	UJ	FD
EFH(C8-C11)	0.61	J	0.59	MDL	1.2	PQL	MG/KG	J	Z, FD

Sample ID: SL-091-NBZ-SB-4.0-5.0 ***Collected:*** 3/29/2012 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)	0.81	J	0.61	MDL	1.2	PQL	MG/KG	J	Z
EFH(C8-C11)	0.70	J	0.61	MDL	1.2	PQL	MG/KG	J	Z

Sample ID: SL-091-NBZ-SS-0.0-0.5 ***Collected:*** 3/29/2012 9:09:00 ***Analysis Type:*** RES ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH(C8-C11)	0.87	J	0.61	MDL	1.2	PQL	MG/KG	J	Z

Sample ID: SL-092-NBZ-SS-0.0-0.5 ***Collected:*** 3/29/2012 11:43:00 ***Analysis Type:*** RES ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH(C12-C14)	1.9		0.59	MDL	1.2	PQL	MG/KG	J	FD
EFH(C15-C20)	0.84	J	0.59	MDL	1.2	PQL	MG/KG	J	Z, FD
EFH(C8-C11)	1.7		0.59	MDL	1.2	PQL	MG/KG	J	FD

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

Sample ID: DUP-04-NBZ-QC-032912 ***Collected:*** 3/29/2012 3:10:00 ***Analysis Type:*** RES_PR- ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDE	0.75		0.19	MDL	0.37	PQL	UG/KG	J	FD
4,4'-DDT	2.6		0.19	MDL	0.37	PQL	UG/KG	J	FD

Sample ID: SL-091-NBZ-SS-0.0-0.5 ***Collected:*** 3/29/2012 9:09:00 ***Analysis Type:*** RES_PR- ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDE	0.27	J	0.21	MDL	0.41	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12C305 Laboratory: EMXT

EDD Filename: Prep12C305R eQAPP Name: CDM_SSFL_120730_EMAX

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

Sample ID: SL-101-NBZ-SS-0.0-0.5 **Collected:** 3/29/2012 10:05:00 **Analysis Type:** RES_PR- **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDD	0.21	J	0.19	MDL	0.39	PQL	UG/KG	J	Z

Sample ID: SL-118-NBZ-SS-0.0-0.5 **Collected:** 3/29/2012 3:10:00 **Analysis Type:** RES_PR- **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDE	0.23	J	0.19	MDL	0.37	PQL	UG/KG	J	Z, FD
4,4'-DDT	0.37	U	0.19	MDL	0.37	PQL	UG/KG	UJ	FD

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

Sample ID: DUP-05-NBZ-QC-032912 **Collected:** 3/29/2012 12:09:00 **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	3.3		1.0	MDL	2.0	PQL	UG/KG	J	FD
Aroclor 5460	5.6		2.0	MDL	3.9	PQL	UG/KG	J	FD

Sample ID: SL-091-NBZ-SS-0.0-0.5 **Collected:** 3/29/2012 9:09:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Aroclor 5460	2.1	J	2.1	MDL	4.0	PQL	UG/KG	J	Z

Sample ID: SL-092-NBZ-SS-0.0-0.5 **Collected:** 3/29/2012 11:43:00 **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 1260	2.0	U	1.0	MDL	2.0	PQL	UG/KG	UJ	FD
Aroclor 5460	3.9	U	2.0	MDL	3.9	PQL	UG/KG	UJ	FD

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

Sample ID: SL-092-NBZ-SS-0.0-0.5 **Collected:** 3/29/2012 11:43:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
DICAMBA	1.4	U	0.70	MDL	1.4	PQL	UG/KG	UJ	Q

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12C305 Laboratory: EMXT

EDD Filename: Prep12C305R eQAPP Name: CDM_SSFL_120730_EMAX

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

Sample ID: SL-118-NBZ-SS-0.0-0.5 *Collected:* 3/29/2012 3:10:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
DICAMBA	1.3	U	0.66	MDL	1.3	PQL	UG/KG	UJ	Q

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

Sample ID: EB-NBZ-SB-032912 *Collected:* 3/29/2012 3:00:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1.08

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZIDINE	54	U	22	MDL	54	PQL	UG/L	R	L
BENZOIC ACID	43	U	22	MDL	43	PQL	UG/L	UJ	E

Sample ID: EB-NBZ-SS-032912 *Collected:* 3/29/2012 3:45:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1.01

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZIDINE	50	U	20	MDL	50	PQL	UG/L	R	L
BENZOIC ACID	40	U	20	MDL	40	PQL	UG/L	UJ	E

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

Sample ID: SL-092-NBZ-SS-0.0-0.5 *Collected:* 3/29/2012 11:43:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3-DICHLOROBENZENE	200	U	98	MDL	200	PQL	UG/KG	UJ	Q
BENZIDINE	970	U	490	MDL	970	PQL	UG/KG	UJ	Q

Sample ID: SL-118-NBZ-SS-0.0-0.5 *Collected:* 3/29/2012 3:10:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZIDINE	910	U	460	MDL	910	PQL	UG/KG	UJ	Q

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12C305 Laboratory: EMXT

EDD Filename: Prep12C305R eQAPP Name: CDM_SSFL_120730_EMAX

Method Category: SVOA

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

Sample ID: DUP-04-NBZ-QC-032912 ***Collected:*** 3/29/2012 3:10:00 ***Analysis Type:*** RES-BASE/NEUTRAL ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORANTHENE	1.2	J	0.93	MDL	1.9	PQL	UG/KG	J	Z, FD
PYRENE	1.2	J	0.93	MDL	1.9	PQL	UG/KG	J	Z, FD

Sample ID: DUP-05-NBZ-QC-032912 ***Collected:*** 3/29/2012 12:09:00 ***Analysis Type:*** RES-BASE/NEUTRAL ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BIS(2-ETHYLHEXYL)PHTHALATE	17	J	10	MDL	20	PQL	UG/KG	J	Z

Sample ID: SL-091-NBZ-SB-4.0-5.0 ***Collected:*** 3/29/2012 10:20:00 ***Analysis Type:*** RES-BASE/NEUTRAL ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BIS(2-ETHYLHEXYL)PHTHALATE	13	J	10	MDL	21	PQL	UG/KG	J	Z

Sample ID: SL-091-NBZ-SS-0.0-0.5 ***Collected:*** 3/29/2012 9:09:00 ***Analysis Type:*** RES-BASE/NEUTRAL ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(B)FLUORANTHENE	1.0	J	1.0	MDL	2.1	PQL	UG/KG	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	17	J	10	MDL	20	PQL	UG/KG	J	Z
PYRENE	1.2	J	1.0	MDL	2.1	PQL	UG/KG	J	Z

Sample ID: SL-092-NBZ-SS-0.0-0.5 ***Collected:*** 3/29/2012 11:43:00 ***Analysis Type:*** RES-BASE/NEUTRAL ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BIS(2-ETHYLHEXYL)PHTHALATE	16	J	9.8	MDL	20	PQL	UG/KG	J	Z

Sample ID: SL-101-NBZ-SS-0.0-0.5 ***Collected:*** 3/29/2012 10:05:00 ***Analysis Type:*** RES-BASE/NEUTRAL ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACENAPHTHENE	1.5	J	0.97	MDL	1.9	PQL	UG/KG	J	Z
ACENAPHTHYLENE	1.7	J	0.97	MDL	1.9	PQL	UG/KG	J	Z
BENZO(A)ANTHRACENE	1.4	J	0.97	MDL	1.9	PQL	UG/KG	J	Z
BENZO(A)PYRENE	1.1	J	0.97	MDL	1.9	PQL	UG/KG	J	Z
CHRYSENE	1.8	J	0.97	MDL	1.9	PQL	UG/KG	J	Z
FLUORENE	1.5	J	0.97	MDL	1.9	PQL	UG/KG	J	Z
INDENO(1,2,3-CD)PYRENE	1.8	J	0.97	MDL	1.9	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12C305 Laboratory: EMXT

EDD Filename: Prep12C305R eQAPP Name: CDM_SSFL_120730_EMAX

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

Sample ID: SL-103-NBZ-SS-0.0-0.5 *Collected:* 3/29/2012 9:25:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(G,H,I)PERYLENE	1.1	J	0.97	MDL	1.9	PQL	UG/KG	J	Z
FLUORANTHENE	1.1	J	0.97	MDL	1.9	PQL	UG/KG	J	Z
PYRENE	1.1	J	0.97	MDL	1.9	PQL	UG/KG	J	Z

Sample ID: SL-118-NBZ-SS-0.0-0.5 *Collected:* 3/29/2012 3:10:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORANTHENE	1.9	U	0.93	MDL	1.9	PQL	UG/KG	UJ	FD
PYRENE	1.9	U	0.93	MDL	1.9	PQL	UG/KG	UJ	FD

Sample ID: SL-130-NBZ-SS-0.0-0.5 *Collected:* 3/29/2012 10:35:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Butylbenzylphthalate	14	J	9.1	MDL	18	PQL	UG/KG	J	Z

Sample ID: SL-197-NBZ-SS-0.0-0.5 *Collected:* 3/29/2012 1:55:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)ANTHRACENE	1.9	J	0.99	MDL	2.0	PQL	UG/KG	J	Z
BENZO(A)PYRENE	1.2	J	0.99	MDL	2.0	PQL	UG/KG	J	Z
BENZO(B)FLUORANTHENE	1.8	J	0.99	MDL	2.0	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	1.6	J	0.99	MDL	2.0	PQL	UG/KG	J	Z
CHRYSENE	1.5	J	0.99	MDL	2.0	PQL	UG/KG	J	Z
INDENO(1,2,3-CD)PYRENE	1.1	J	0.99	MDL	2.0	PQL	UG/KG	J	Z
PHENANTHRENE	1.1	J	0.99	MDL	2.0	PQL	UG/KG	J	Z

Method Category: SVOA **Method:** 8330A **Matrix:** AQ

Sample ID: EB-NBZ-SS-032912 *Collected:* 3/29/2012 3:45:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
HMX	0.29	J	0.20	MDL	1.0	PQL	UG/L	J	Z

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12C305 Laboratory: EMXT

EDD Filename: Prep12C305R eQAPP Name: CDM_SSFL_120730_EMAX

Method Category: VOA

Method: 8015B GRO *Matrix:* AQ

Sample ID: EB-NBZ-SB-032912 *Collected:* 3/29/2012 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)	18	J	10	MDL	50	PQL	UG/L	U	T

Sample ID: TB-032912 *Collected:* 3/29/2012 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)	15	J	10	MDL	50	PQL	UG/L	J	Z

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12C305 **Laboratory: EMXT**

EDD Filename: Prep12C305R **eQAPP Name: CDM_SSFL_120730_EMAX**

Reason Code Legend

Reason Code	*Description*
E	Laboratory Control Precision
E	Matrix Spike Precision
FD	Field Duplicate Precision
L	Laboratory Control Precision
L	Laboratory Control Spike Lower Estimation
L	Laboratory Control Spike Lower Rejection
Q	Matrix Spike Lower Estimation
Q	Matrix Spike Precision
Q	Matrix Spike Upper 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: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Enclosure I

Level III ADR Outliers
(including Manual Review Outliers)

Quality Control
Outlier Reports

12C305

Trip Blank Outlier Report

Lab Reporting Batch ID: 12C305 **Laboratory: EMXT**

EDD Filename: 12C305R **eQAPP Name: CDM_SSFL_120730_EMAX**

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

Trip Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
TB-032912(RES)	3/29/2012 8:00:00 AM	GASOLINE RANGE ORGANICS (C5-C12)	15 UG/L	DUP-04-NBZ-QC-032912 DUP-05-NBZ-QC-032912 EB-NBZ-SB-032912 EB-NBZ-SS-032912 SL-044-NBZ-SS-0.0-0.5 SL-091-NBZ-SB-4.0-5.0 SL-091-NBZ-SB-4.5 SL-091-NBZ-SS-0.0-0.5 SL-091-NBZ-SS-4.0-5.0 SL-092-NBZ-SS-0.0-0.5 SL-101-NBZ-SS-0.0-0.5 SL-103-NBZ-SS-0.0-0.5 SL-118-NBZ-SS-0.0-0.5 SL-130-NBZ-SS-0.0-0.5 SL-197-NBZ-SS-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-NBZ-SB-032912(RES)	GASOLINE RANGE ORGANICS (C5-C12)	18 UG/L	50U UG/L

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Surrogate Outlier Report

Lab Reporting Batch ID: 12C305 **Laboratory: EMXT**

EDD Filename: 12C305R **eQAPP Name: CDM_SSFL_120730_EMAX**

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

Sample ID (Analysis Type)	*Surrogate*	*Sample % Recovery*	*% Recovery Limits*	*Affected Compounds*	*Flag*
EB-NBZ-SB-032912	2-FLUOROBIPHENYL	43.9	45.00-130.00	No Affected Compounds	

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 12C305 | Laboratory: EMXT

EDD Filename: 12C305R | eQAPP Name: CDM_SSFL_120730_EMAX

Method: 8151A
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-092-NBZ-SS-0.0-0.5MSD (SL-092-NBZ-SS-0.0-0.5)	DICHLOROPROP	-	213	60.00-150.00	85 (50.00)	DICHLOROPROP	J (all detects)
SL-092-NBZ-SS-0.0-0.5MS SL-092-NBZ-SS-0.0-0.5MSD (SL-092-NBZ-SS-0.0-0.5)	DICAMBA	34	38	50.00-130.00	-	DICAMBA	J(all detects) UJ(all non-detects)
SL-118-NBZ-SS-0.0-0.5MSD (SL-118-NBZ-SS-0.0-0.5)	DICHLOROPROP	-	167	60.00-150.00	-	DICHLOROPROP	J(all detects)
SL-118-NBZ-SS-0.0-0.5MS SL-118-NBZ-SS-0.0-0.5MSD (SL-118-NBZ-SS-0.0-0.5)	DICAMBA	32	33	50.00-130.00	-	DICAMBA	J(all detects) UJ(all non-detects)

Method: 6020
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-092-NBZ-SS-0.0-0.5MS (TOT) SL-092-NBZ-SS-0.0-0.5MSD (TOT) (DUP-04-NBZ-QC-032912 DUP -05-NBZ-QC-032912 SL -044-NBZ-SS-0.0-0.5 SL -091-NBZ-SB-4.0-5.0 SL -091-NBZ-SS-0.0-0.5 SL -092-NBZ-SS-0.0-0.5 SL -101-NBZ-SS-0.0-0.5 SL -103-NBZ-SS-0.0-0.5 SL -118-NBZ-SS-0.0-0.5 SL -197-NBZ-SS-0.0-0.5)	IRON TITANIUM	132 190	- 329	75.00-125.00 75.00-125.00	- -	IRON TITANIUM	No Qual, >4x
SL-092-NBZ-SS-0.0-0.5MS (TOT) SL-092-NBZ-SS-0.0-0.5MSD (TOT) (DUP-04-NBZ-QC-032912 DUP -05-NBZ-QC-032912 SL -044-NBZ-SS-0.0-0.5 SL -091-NBZ-SB-4.0-5.0 SL -091-NBZ-SS-0.0-0.5 SL -092-NBZ-SS-0.0-0.5 SL -101-NBZ-SS-0.0-0.5 SL -103-NBZ-SS-0.0-0.5 SL -118-NBZ-SS-0.0-0.5 SL -197-NBZ-SS-0.0-0.5)	ANTIMONY BARIUM MANGANESE Zirconium	73 229 1938 40	- 128 270 42	75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00	- 23 (20.00) 79 (20.00) -	ANTIMONY BARIUM MANGANESE Zirconium	J(all detects) UJ(all non-detects) Mn, No Qual %R, >4x Ba, Zr, Mn, Qual Parent Only
SL-118-NBZ-SS-0.0-0.5MS (TOT) SL-118-NBZ-SS-0.0-0.5MSD (TOT) (DUP-04-NBZ-QC-032912 DUP -05-NBZ-QC-032912 SL -044-NBZ-SS-0.0-0.5 SL -091-NBZ-SB-4.0-5.0 SL -091-NBZ-SS-0.0-0.5 SL -092-NBZ-SS-0.0-0.5 SL -101-NBZ-SS-0.0-0.5 SL -103-NBZ-SS-0.0-0.5 SL -118-NBZ-SS-0.0-0.5 SL -197-NBZ-SS-0.0-0.5)	ANTIMONY MANGANESE PHOSPHORUS TITANIUM	- - 74 176	74 62 - 47	75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00	- - - -	ANTIMONY MANGANESE PHOSPHORUS TITANIUM	J(all detects) UJ(all non-detects) Mn, Ti, No Qual, >4x P, Qual Parent Only

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 12C305 **Laboratory: EMXT**

EDD Filename: 12C305R **eQAPP Name: CDM_SSFL_120730_EMAX**

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

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
SL-092-NBZ-SS-0.0-0.5MS **SL-092-NBZ-SS-0.0-0.5MSD** (SL-092-NBZ-SS-0.0-0.5)	1,3-DICHLOROBENZENE BENZIDINE	28 8	- 7	30.00-130.00 10.00-150.00	- -	1,3-DICHLOROBENZENE BENZIDINE	J(all detects) UJ(all non-detects)
SL-118-NBZ-SS-0.0-0.5MS **SL-118-NBZ-SS-0.0-0.5MSD** (SL-118-NBZ-SS-0.0-0.5)	BENZIDINE	4	4	10.00-150.00	-	BENZIDINE	J(all detects) UJ(all non-detects)

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: 12C305 **Laboratory: EMXT**

EDD Filename: 12C305R **eQAPP Name: CDM_SSFL_120730_EMAX**

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

QC Sample ID (Associated Samples)	*Compound*	*LCS %R*	*LCSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
SVD004WC **SVD004WL** (EB-NBZ-SB-032912 EB-NBZ-SS-032912)	BENZIDINE	0	11	20.00-130.00	200 (30.00)	BENZIDINE	J (all detects) R (all non-detects)
SVD004WC (EB-NBZ-SB-032912 EB-NBZ-SS-032912)	BENZOIC ACID	-	-	10.00-130.00	40 (30.00)	BENZOIC ACID	J(all detects) UJ(all non-detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: 12C305 Laboratory: EMXT

EDD Filename: 12C305R eQAPP Name: CDM_SSFL_120730_EMAX

Method: 300.0
Matrix: SO

Analyte	Concentration (MG/KG)		Sample RPD	eQAPP RPD	Flag
	SL-092-NBZ-SS-0.0-0.5	DUP-05-NBZ-QC-032912			
Nitrate-NO3	3.42	3.86	12	50.00	No Qualifiers Applied

Method: 6020
Matrix: SO

Analyte	Concentration (MG/KG)		Sample RPD	eQAPP RPD	Flag
	SL-118-NBZ-SS-0.0-0.5 (TOT)	DUP-04-NBZ-QC-032912 (TOT)			
ALUMINUM	11000	11300	3	50.00	
ANTIMONY	0.226	0.199	13	50.00	
ARSENIC	4.10	4.36	6	50.00	
BARIUM	78.0	72.2	8	50.00	
BERYLLIUM	0.395	0.399	1	50.00	
CADMIUM	0.213	0.201	6	50.00	
CALCIUM	2930	2580	13	50.00	
CHROMIUM	17.0	17.8	5	50.00	
COBALT	4.97	4.96	0	50.00	
COPPER	7.96	7.81	2	50.00	
IRON	19300	19100	1	50.00	
LEAD	10.2	9.09	12	50.00	
LITHIUM	25.7	25.4	1	50.00	No Qualifiers Applied
MAGNESIUM	5680	5680	0	50.00	
MANGANESE	255	247	3	50.00	
MOLYBDENUM	0.398	0.376	6	50.00	
NICKEL	10.8	10.9	1	50.00	
PHOSPHORUS	458	349	27	50.00	
POTASSIUM	3130	2850	9	50.00	
SODIUM	55.8	56.0	0	50.00	
STRONTIUM	13.6	11.8	14	50.00	
THALLIUM	0.232	0.230	1	50.00	
TITANIUM	1040	1040	0	50.00	
VANADIUM	37.4	38.6	3	50.00	
ZINC	54.8	51.6	6	50.00	

Analyte	Concentration (MG/KG)		Sample RPD	eQAPP RPD	Flag
	SL-092-NBZ-SS-0.0-0.5 (TOT)	DUP-05-NBZ-QC-032912 (TOT)			

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Field Duplicate RPD Report

Lab Reporting Batch ID: 12C305 **Laboratory: EMXT**

EDD Filename: 12C305R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 6020
Matrix: SO

ALUMINUM	12400	12400	0	50.00	
ANTIMONY	0.215	0.158	31	50.00	
ARSENIC	4.10	4.25	4	50.00	
BARIUM	83.6	84.2	1	50.00	
BERYLLIUM	0.457	0.466	2	50.00	
CADMIUM	0.215	0.198	8	50.00	
CALCIUM	2690	2730	1	50.00	
CHROMIUM	16.3	16.3	0	50.00	
COBALT	4.36	4.51	3	50.00	
COPPER	6.33	6.16	3	50.00	
IRON	17700	18000	2	50.00	
LEAD	6.38	6.26	2	50.00	
LITHIUM	30.1	30.4	1	50.00	No Qualifiers Applied
MAGNESIUM	4310	4400	2	50.00	
MANGANESE	294	311	6	50.00	
MOLYBDENUM	0.458	0.479	4	50.00	
NICKEL	9.68	9.57	1	50.00	
PHOSPHORUS	283	300	6	50.00	
POTASSIUM	2930	2950	1	50.00	
SODIUM	81.8	79.7	3	50.00	
STRONTIUM	20.0	20.2	1	50.00	
THALLIUM	0.212	0.216	2	50.00	
TITANIUM	858	875	2	50.00	
VANADIUM	31.3	31.6	1	50.00	
ZINC	43.7	44.4	2	50.00	
SELENIUM	0.228	0.464 U	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-092-NBZ-SS-0.0-0.5	DUP-05-NBZ-QC-032912			
EFH(C21-C30)	6.6	4.2	44	50.00	
EFH(C30-C40)	9.7	8.6	12	50.00	No Qualifiers Applied
TOTAL EFH(C8-C40)	21	13	47	50.00	
EFH(C12-C14)	1.9	1.2 U	200	50.00	
EFH(C15-C20)	0.84	1.2 U	200	50.00	J(all detects) UJ(all non-detects)
EFH(C8-C11)	1.7	0.61	94	50.00	

Method: 8081A
Matrix: SO

Analyte	Concentration (UG/KG)		Sample RPD	eQAPP RPD	Flag
	SL-118-NBZ-SS-0.0-0.5	DUP-04-NBZ-QC-032912			
4,4'-DDE	0.23	0.75	106	50.00	J(all detects)
4,4'-DDT	0.37 U	2.6	200	50.00	UJ(all non-detects)

Method: 8082
Matrix: SO

Analyte	Concentration (UG/KG)		Sample RPD	eQAPP RPD	Flag
	SL-092-NBZ-SS-0.0-0.5	DUP-05-NBZ-QC-032912			
AROCLOR 1260	2.0 U	3.3	200	50.00	J(all detects)
Aroclor 5460	3.9 U	5.6	200	50.00	UJ(all non-detects)

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Field Duplicate RPD Report

Lab Reporting Batch ID: 12C305 **Laboratory: EMXT**

EDD Filename: 12C305R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 8270C SIM
Matrix: SO

Analyte	Concentration (UG/KG)		Sample RPD	eQAPP RPD	Flag
	SL-118-NBZ-SS-0.0-0.5	DUP-04-NBZ-QC-032912			
BIS(2-ETHYLHEXYL)PHTHALATE	22	21	5	50.00	No Qualifiers Applied
FLUORANTHENE	1.9 U	1.2	200	50.00	J(all detects)
PYRENE	1.9 U	1.2	200	50.00	UJ(all non-detects)

Analyte	Concentration (UG/KG)		Sample RPD	eQAPP RPD	Flag
	SL-092-NBZ-SS-0.0-0.5	DUP-05-NBZ-QC-032912			
BIS(2-ETHYLHEXYL)PHTHALATE	16	17	6	50.00	No Qualifiers Applied

Reporting Limit Outliers

Lab Reporting Batch ID: 12C305 | Laboratory: EMXT

EDD Filename: 12C305R | eQAPP Name: CDM_SSFL_120730_EMAX

Method: 300.0
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-NBZ-SB-032912	Nitrate-NO3	J	0.275	0.443	PQL	MG/L	J (all detects)

Method: 6020
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-NBZ-SS-032912	ALUMINUM	J	0.0266	0.100	PQL	MG/L	J (all detects)

Method: 8015B GRO
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-NBZ-SB-032912	GASOLINE RANGE ORGANICS (C5-C12)	J	18	50	PQL	UG/L	J (all detects)
TB-032912	GASOLINE RANGE ORGANICS (C5-C12)	J	15	50	PQL	UG/L	J (all detects)

Method: 8330A
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-NBZ-SS-032912	HMX	J	0.29	1.0	PQL	UG/L	J (all detects)

Method: 300.0
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-044-NBZ-SS-0.0-0.5	FLUORIDE	J	0.769	1.00	PQL	MG/KG	J (all detects)
SL-091-NBZ-SS-0.0-0.5	FLUORIDE	J	0.529	1.00	PQL	MG/KG	J (all detects)
SL-197-NBZ-SS-0.0-0.5	FLUORIDE	J	0.570	1.00	PQL	MG/KG	J (all detects)

Method: 6020
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
DUP-04-NBZ-QC-032912	ANTIMONY SODIUM	J J	0.199 56.0	0.219 110	PQL PQL	MG/KG MG/KG	J (all detects)
DUP-05-NBZ-QC-032912	ANTIMONY SODIUM	J J	0.158 79.7	0.232 116	PQL PQL	MG/KG MG/KG	J (all detects)

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Reporting Limit Outliers

Lab Reporting Batch ID: 12C305 **Laboratory: EMXT**

EDD Filename: 12C305R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 6020
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-044-NBZ-SS-0.0-0.5	BORON	J	4.80	5.13	PQL	MG/KG	J (all detects)
	SELENIUM	J	0.227	0.410	PQL	MG/KG	
	SODIUM	J	88.1	103	PQL	MG/KG	
	TIN	J	6.86	10.3	PQL	MG/KG	
SL-091-NBZ-SB-4.0-5.0	SELENIUM	J	0.284	0.475	PQL	MG/KG	J (all detects)
	SILVER	J	0.0646	0.119	PQL	MG/KG	
SL-091-NBZ-SS-0.0-0.5	ANTIMONY	J	0.182	0.236	PQL	MG/KG	J (all detects)
	BORON	J	3.05	5.90	PQL	MG/KG	
	SODIUM	J	69.9	118	PQL	MG/KG	
SL-092-NBZ-SS-0.0-0.5	ANTIMONY	J	0.215	0.227	PQL	MG/KG	J (all detects)
	SELENIUM	J	0.228	0.455	PQL	MG/KG	
	SODIUM	J	81.8	114	PQL	MG/KG	
SL-101-NBZ-SS-0.0-0.5	SODIUM	J	61.2	112	PQL	MG/KG	J (all detects)
SL-103-NBZ-SS-0.0-0.5	ANTIMONY	J	0.196	0.225	PQL	MG/KG	J (all detects)
SL-118-NBZ-SS-0.0-0.5	SODIUM	J	55.8	105	PQL	MG/KG	J (all detects)
SL-130-NBZ-SS-0.0-0.5	ANTIMONY	J	0.190	0.216	PQL	MG/KG	J (all detects)
SL-197-NBZ-SS-0.0-0.5	ANTIMONY	J	0.205	0.230	PQL	MG/KG	J (all detects)

Method: 8015B EFH
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
DUP-05-NBZ-QC-032912	EFH(C8-C11)	J	0.61	1.2	PQL	MG/KG	J (all detects)
SL-091-NBZ-SB-4.0-5.0	EFH(C21-C30)	J	0.81	1.2	PQL	MG/KG	J (all detects)
	EFH(C8-C11)	J	0.70	1.2	PQL	MG/KG	
SL-091-NBZ-SS-0.0-0.5	EFH(C8-C11)	J	0.87	1.2	PQL	MG/KG	J (all detects)
SL-092-NBZ-SS-0.0-0.5	EFH(C15-C20)	J	0.84	1.2	PQL	MG/KG	J (all detects)

Method: 8081A
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-091-NBZ-SS-0.0-0.5	4,4'-DDE	J	0.27	0.41	PQL	UG/KG	J (all detects)
SL-101-NBZ-SS-0.0-0.5	4,4'-DDD	J	0.21	0.39	PQL	UG/KG	J (all detects)
SL-118-NBZ-SS-0.0-0.5	4,4'-DDE	J	0.23	0.37	PQL	UG/KG	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: 12C305 **Laboratory: EMXT**

EDD Filename: 12C305R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 8082
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-091-NBZ-SS-0.0-0.5	Aroclor 5460	J	2.1	4.0	PQL	UG/KG	J (all detects)

Method: 8270C SIM
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
DUP-04-NBZ-QC-032912	FLUORANTHENE	J	1.2	1.9	PQL	UG/KG	J (all detects)
	PYRENE	J	1.2	1.9	PQL	UG/KG	
DUP-05-NBZ-QC-032912	BIS(2-ETHYLHEXYL)PHTHALATE	J	17	20	PQL	UG/KG	J (all detects)
SL-091-NBZ-SB-4.0-5.0	BIS(2-ETHYLHEXYL)PHTHALATE	J	13	21	PQL	UG/KG	J (all detects)
SL-091-NBZ-SS-0.0-0.5	BENZO(B)FLUORANTHENE	J	1.0	2.1	PQL	UG/KG	J (all detects)
	BIS(2-ETHYLHEXYL)PHTHALATE	J	17	20	PQL	UG/KG	
	PYRENE	J	1.2	2.1	PQL	UG/KG	
SL-092-NBZ-SS-0.0-0.5	BIS(2-ETHYLHEXYL)PHTHALATE	J	16	20	PQL	UG/KG	J (all detects)
SL-101-NBZ-SS-0.0-0.5	ACENAPHTHENE	J	1.5	1.9	PQL	UG/KG	J (all detects)
	ACENAPHTHYLENE	J	1.7	1.9	PQL	UG/KG	
	BENZO(A)ANTHRACENE	J	1.4	1.9	PQL	UG/KG	
	BENZO(A)PYRENE	J	1.1	1.9	PQL	UG/KG	
	CHRYSENE	J	1.8	1.9	PQL	UG/KG	
	FLUORENE	J	1.5	1.9	PQL	UG/KG	
	INDENO(1,2,3-CD)PYRENE	J	1.8	1.9	PQL	UG/KG	
SL-103-NBZ-SS-0.0-0.5	BENZO(G,H,I)PERYLENE	J	1.1	1.9	PQL	UG/KG	J (all detects)
	FLUORANTHENE	J	1.1	1.9	PQL	UG/KG	
	PYRENE	J	1.1	1.9	PQL	UG/KG	
SL-130-NBZ-SS-0.0-0.5	Butylbenzylphthalate	J	14	18	PQL	UG/KG	J (all detects)
SL-197-NBZ-SS-0.0-0.5	BENZO(A)ANTHRACENE	J	1.9	2.0	PQL	UG/KG	J (all detects)
	BENZO(A)PYRENE	J	1.2	2.0	PQL	UG/KG	
	BENZO(B)FLUORANTHENE	J	1.8	2.0	PQL	UG/KG	
	BENZO(G,H,I)PERYLENE	J	1.6	2.0	PQL	UG/KG	
	CHRYSENE	J	1.5	2.0	PQL	UG/KG	
	INDENO(1,2,3-CD)PYRENE	J	1.1	2.0	PQL	UG/KG	
	PHENANTHRENE	J	1.1	2.0	PQL	UG/KG	

LDC #: 28255M4
SDG #: 12C305
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 8-29-12
Page: 1 of 1
Reviewer: AL
2nd Reviewer: W

METHOD: Metals (EPA SW 846 Method ~~6010B~~/6020A/~~7000~~ 7471A/7470A)

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: 3/29/12
II.	ICP/MS Tune	—	
III.	Calibration	—	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	—	
VI.	Matrix Spike Analysis	N	14/15: RPD only 16/17: MS/D (Fe, Mn, Ti 74x) (Mn, Ti 74x) *see below
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, EB-NBZ-SS-032712 > 12C273 EB-NBZ-SB-032712

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-NBZ-SB-032912 W	11	SL-091-NBZ-SB-4.0-5.0	21		31	
2	EB-NBZ-SS-032912 ↓	12	DUP-05-NBZ-QC-032912	22		32	
3	SL-044-NBZ-SS-0.0-0.5	13	DUP-04-NBZ-QC-032912	23		33	
4	SL-091-NBZ-SS-0.0-0.5	14	SL-092-NBZ-SS-0.0-0.5MS	24		34	
5	SL-092-NBZ-SS-0.0-0.5	15	SL-092-NBZ-SS-0.0-0.5MSD	25		35	
6	SL-101-NBZ-SS-0.0-0.5	16	SL-118-NBZ-SS-0.0-0.5MS	26		36	
7	SL-103-NBZ-SS-0.0-0.5	17	SL-118-NBZ-SS-0.0-0.5MSD	27		37	
8	SL-118-NBZ-SS-0.0-0.5	18		28		38	
9	SL-130-NBZ-SS-0.0-0.5	19		29		39	
10	SL-197-NBZ-SS-0.0-0.5	20		30		40	

Notes: * 14/15, 16/17 from same batch CSb, ~~Mn RPD~~, Zr quals all in batch)
14/15 Ba, Mn RPD, Zr
16/17 EP > qualifies parents only
** #39 associates w/ MS/D from 12D084 and 12D092 (only Zr qualified)

SAMPLE DELIVERY GROUP

12C321

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-Mar-2012	SL-079-NBZ-SS-0.0-0.5	C321-01	N	3550B	8015B EFH	III
30-Mar-2012	SL-079-NBZ-SS-0.0-0.5	C321-01	N	3550B	8081A	III
30-Mar-2012	SL-079-NBZ-SS-0.0-0.5	C321-01	N	3550B	8082	III
30-Mar-2012	SL-079-NBZ-SS-0.0-0.5	C321-01	N	3550B	8270C	III
30-Mar-2012	SL-079-NBZ-SS-0.0-0.5	C321-01	N	3550B	8270C SIM	III
30-Mar-2012	SL-079-NBZ-SS-0.0-0.5	C321-01	N	7471A	7471A	III
30-Mar-2012	SL-079-NBZ-SS-0.0-0.5	C321-01	N	GEN PREP	300.0	III
30-Mar-2012	SL-079-NBZ-SS-0.0-0.5	C321-01	N	GEN PREP	314.0	III
30-Mar-2012	SL-079-NBZ-SS-0.0-0.5	C321-01	N	GEN PREP	6020	III
30-Mar-2012	SL-079-NBZ-SS-0.0-0.5	C321-01	N	GEN PREP	7199	III
30-Mar-2012	SL-079-NBZ-SS-0.0-0.5	C321-01	N	GEN PREP	8151A	III
30-Mar-2012	SL-079-NBZ-SS-0.0-0.5	C321-01	N	GEN PREP	8330A	III
30-Mar-2012	SL-079-NBZ-SS-0.0-0.5	C321-01	N	GEN PREP	8332	III
30-Mar-2012	SL-079-NBZ-SS-0.0-0.5	C321-01	N	GEN PREP	9014	III
30-Mar-2012	SL-079-NBZ-SS-0.0-0.5	C321-01	N	GEN PREP	9045D	III
30-Mar-2012	SL-079-NBZ-SS-0.0-0.5	C321-01R	N	GEN PREP	7199	III
30-Mar-2012	SL-134-NBZ-SS-0.0-0.5	C321-03	N	3550B	8081A	III
30-Mar-2012	SL-134-NBZ-SS-0.0-0.5	C321-03	N	3550B	8082	III
30-Mar-2012	SL-134-NBZ-SS-0.0-0.5	C321-03	N	3550B	8270C	III
30-Mar-2012	SL-134-NBZ-SS-0.0-0.5	C321-03	N	3550B	8270C SIM	III
30-Mar-2012	SL-134-NBZ-SS-0.0-0.5	C321-03	N	7471A	7471A	III
30-Mar-2012	SL-134-NBZ-SS-0.0-0.5	C321-03	N	GEN PREP	300.0	III
30-Mar-2012	SL-134-NBZ-SS-0.0-0.5	C321-03	N	GEN PREP	314.0	III
30-Mar-2012	SL-134-NBZ-SS-0.0-0.5	C321-03	N	GEN PREP	6020	III
30-Mar-2012	SL-134-NBZ-SS-0.0-0.5	C321-03	N	GEN PREP	7199	III
30-Mar-2012	SL-134-NBZ-SS-0.0-0.5	C321-03	N	GEN PREP	8151A	III

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

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
30-Mar-2012	SL-134-NBZ-SS-0.0-0.5	C321-03	N	GEN PREP	9045D	III
30-Mar-2012	SL-134-NBZ-SS-0.0-0.5	C321-03R	N	GEN PREP	7199	III
30-Mar-2012	SL-121-NBZ-SS-0.0-0.5	C321-02	N	3550B	8081A	III
30-Mar-2012	SL-121-NBZ-SS-0.0-0.5	C321-02	N	3550B	8082	III
30-Mar-2012	SL-121-NBZ-SS-0.0-0.5	C321-02	N	3550B	8270C	III
30-Mar-2012	SL-121-NBZ-SS-0.0-0.5	C321-02	N	3550B	8270C SIM	III
30-Mar-2012	SL-121-NBZ-SS-0.0-0.5	C321-02	N	7471A	7471A	III
30-Mar-2012	SL-121-NBZ-SS-0.0-0.5	C321-02	N	GEN PREP	300.0	III
30-Mar-2012	SL-121-NBZ-SS-0.0-0.5	C321-02	N	GEN PREP	314.0	III
30-Mar-2012	SL-121-NBZ-SS-0.0-0.5	C321-02	N	GEN PREP	6020	III
30-Mar-2012	SL-121-NBZ-SS-0.0-0.5	C321-02	N	GEN PREP	7199	III
30-Mar-2012	SL-121-NBZ-SS-0.0-0.5	C321-02	N	GEN PREP	8151A	III
30-Mar-2012	SL-121-NBZ-SS-0.0-0.5	C321-02	N	GEN PREP	9045D	III
30-Mar-2012	SL-121-NBZ-SS-0.0-0.5	C321-02R	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*

Attachment II

Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: 12C321 **Laboratory:** EMXT

EDD Filename: 12C321R **eQAPP Name:** CDM_SSFL_120730_EMAX

Method Category: METALS

Method: 6020 **Matrix:** SO

Sample ID: SL-079-NBZ-SS-0.0-0.5 *Collected:* 3/30/2012 9:50:00 *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	9600		13.8	MDL	27.6	PQL	MG/KG	J	Q
ANTIMONY	0.169	J	0.115	MDL	0.230	PQL	MG/KG	J	Z
Zirconium	5.75	U	2.87	MDL	5.75	PQL	MG/KG	UJ	Q

Sample ID: SL-121-NBZ-SS-0.0-0.5 *Collected:* 3/30/2012 11:10:00 *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	10100		12.9	MDL	25.7	PQL	MG/KG	J	Q
ANTIMONY	0.183	J	0.107	MDL	0.215	PQL	MG/KG	J	Z
SELENIUM	0.367	J	0.215	MDL	0.429	PQL	MG/KG	J	Z
Zirconium	5.36	U	2.68	MDL	5.36	PQL	MG/KG	UJ	Q

Sample ID: SL-134-NBZ-SS-0.0-0.5 *Collected:* 3/30/2012 10:30:00 *Analysis Type:* RES/TOT *Dilution:* 0.980

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	9340		12.9	MDL	25.8	PQL	MG/KG	J	Q
ANTIMONY	0.173	J	0.107	MDL	0.215	PQL	MG/KG	J	Z
Zirconium	5.37	U	2.69	MDL	5.37	PQL	MG/KG	UJ	Q

Method Category: SVOA

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

Sample ID: SL-079-NBZ-SS-0.0-0.5 *Collected:* 3/30/2012 9:50:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH(C8-C11)	0.60	J	0.58	MDL	1.2	PQL	MG/KG	J	Z

Method Category: SVOA

Method: 8081A **Matrix:** SO

Sample ID: SL-121-NBZ-SS-0.0-0.5 *Collected:* 3/30/2012 11:10:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDD	0.25	J	0.18	MDL	0.37	PQL	UG/KG	J	Z
ENDOSULFAN II	0.28	J	0.18	MDL	0.37	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12C321 **Laboratory:** EMXT

EDD Filename: 12C321R **eQAPP Name:** CDM_SSFL_120730_EMAX

Method Category: SVOA

Method: 8081A **Matrix:** SO

Sample ID: SL-121-NBZ-SS-0.0-0.5 *Collected:* 3/30/2012 11:10:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
HEPTACHLOR EPOXIDE	0.11	J	0.092	MDL	0.18	PQL	UG/KG	J	Z

Sample ID: SL-134-NBZ-SS-0.0-0.5 *Collected:* 3/30/2012 10:30:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
METHOXYCHLOR	0.96	J	0.93	MDL	1.9	PQL	UG/KG	J	Z

Method Category: SVOA

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

Sample ID: SL-079-NBZ-SS-0.0-0.5 *Collected:* 3/30/2012 9:50:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Butylbenzylphthalate	10	J	9.8	MDL	19	PQL	UG/KG	J	Z
CHRYSENE	1.4	J	0.99	MDL	2.0	PQL	UG/KG	J	Z

Sample ID: SL-121-NBZ-SS-0.0-0.5 *Collected:* 3/30/2012 11:10:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(G,H,I)PERYLENE	1.5	J	0.92	MDL	1.8	PQL	UG/KG	J	Z
PHENANTHRENE	1.1	J	0.92	MDL	1.8	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12C321 **Laboratory: EMXT**

EDD Filename: 12C321R **eQAPP Name: CDM_SSFL_120730_EMAX**

Reason Code Legend

Reason Code	*Description*
L	Laboratory Control Spike Upper Estimation
Q	Matrix Spike Lower Estimation
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Enclosure I

Level III ADR Outliers
(including Manual Review Outliers)

Quality Control
Outlier Reports

12C321

Reporting Limit Outliers

Lab Reporting Batch ID: 12C321 **Laboratory: EMXT**

EDD Filename: 12C321R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 6020
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-079-NBZ-SS-0.0-0.5	ANTIMONY	J	0.169	0.230	PQL	MG/KG	J (all detects)
SL-121-NBZ-SS-0.0-0.5	ANTIMONY	J	0.183	0.215	PQL	MG/KG	J (all detects)
	SELENIUM	J	0.367	0.429	PQL	MG/KG	
SL-134-NBZ-SS-0.0-0.5	ANTIMONY	J	0.173	0.215	PQL	MG/KG	J (all detects)

Method: 8015B EFH
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-079-NBZ-SS-0.0-0.5	EFH(C8-C11)	J	0.60	1.2	PQL	MG/KG	J (all detects)

Method: 8081A
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-121-NBZ-SS-0.0-0.5	4,4'-DDD	J	0.25	0.37	PQL	UG/KG	J (all detects)
	ENDOSULFAN II	J	0.28	0.37	PQL	UG/KG	
	HEPTACHLOR EPOXIDE	J	0.11	0.18	PQL	UG/KG	
SL-134-NBZ-SS-0.0-0.5	METHOXYCHLOR	J	0.96	1.9	PQL	UG/KG	J (all detects)

Method: 8270C SIM
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-079-NBZ-SS-0.0-0.5	Butylbenzylphthalate	J	10	19	PQL	UG/KG	J (all detects)
	CHRYSENE	J	1.4	2.0	PQL	UG/KG	
SL-121-NBZ-SS-0.0-0.5	BENZO(G,H,I)PERYLENE	J	1.5	1.8	PQL	UG/KG	J (all detects)
	PHENANTHRENE	J	1.1	1.8	PQL	UG/KG	

LDC #: 28255L4
SDG #: 12C321
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET

ADR

Date: 8-29-12
Page: of 1
Reviewer:
2nd Reviewer:

METHOD: Metals (EPA SW 846 Method ~~6010B~~/6020A/~~7000~~ 7471A)

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

	Validation Area		Comments
I.	Technical holding times	—	Sampling dates: 3/30/12
II.	ICP/MS Tune	—	
III.	Calibration	—	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	—	
VI.	Matrix Spike Analysis	N	MS/D (from 12C285)
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-NBZ-SS-032712(12C273) =EB-NBZ-SS-032912 (12C305)

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: see

1	SL-079-NBZ-SS-0.0-0.5	11		21		31	
2	SL-121-NBZ-SS-0.0-0.5	12		22		32	
3	SL-134-NBZ-SS-0.0-0.5	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 28255L4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer:
2nd Reviewer:

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

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

Sampling date: 3/27/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All

Analyte	Blank ID	Sample Identification										
	EB-NBZ-SS-032712 (SDG: 12C273)	Action Limit	No Qualifiers									
Cu	0.000807	0.20175										

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 #: 28255L4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: CR
2nd Reviewer: MC

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

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

Sampling date: 3/29/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All

Analyte	Blank ID	Sample Identification										
	EB-NBZ-SS-032912 (SDG: 12C305)	Action Limit	No Qualifiers									
Al	0.0266	6.65										
Cu	0.00108	0.27										
Na	0.112	28										

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

12D004

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-Apr-2012	SL-026-NBZ-SS-0.0-0.5	D004-02	N	3550B	8015B EFH	III
02-Apr-2012	SL-026-NBZ-SS-0.0-0.5	D004-02	N	3550B	8081A	III
02-Apr-2012	SL-026-NBZ-SS-0.0-0.5	D004-02	N	3550B	8082	III
02-Apr-2012	SL-026-NBZ-SS-0.0-0.5	D004-02	N	3550B	8270C	III
02-Apr-2012	SL-026-NBZ-SS-0.0-0.5	D004-02	N	3550B	8270C SIM	III
02-Apr-2012	SL-026-NBZ-SS-0.0-0.5	D004-02	N	7471A	7471A	III
02-Apr-2012	SL-026-NBZ-SS-0.0-0.5	D004-02	N	GEN PREP	300.0	III
02-Apr-2012	SL-026-NBZ-SS-0.0-0.5	D004-02	N	GEN PREP	314.0	III
02-Apr-2012	SL-026-NBZ-SS-0.0-0.5	D004-02	N	GEN PREP	6020	III
02-Apr-2012	SL-026-NBZ-SS-0.0-0.5	D004-02	N	GEN PREP	7199	III
02-Apr-2012	SL-026-NBZ-SS-0.0-0.5	D004-02	N	GEN PREP	8015B	III
02-Apr-2012	SL-026-NBZ-SS-0.0-0.5	D004-02	N	GEN PREP	8015M	III
02-Apr-2012	SL-026-NBZ-SS-0.0-0.5	D004-02	N	GEN PREP	8330A	III
02-Apr-2012	SL-026-NBZ-SS-0.0-0.5	D004-02	N	GEN PREP	8332	III
02-Apr-2012	SL-026-NBZ-SS-0.0-0.5	D004-02	N	GEN PREP	9014	III
02-Apr-2012	SL-026-NBZ-SS-0.0-0.5	D004-02	N	GEN PREP	9045D	III
02-Apr-2012	SL-026-NBZ-SS-0.0-0.5MS	D004-02M	MS	3550B	8081A	III
02-Apr-2012	SL-026-NBZ-SS-0.0-0.5MS	D004-02M	MS	3550B	8082	III
02-Apr-2012	SL-026-NBZ-SS-0.0-0.5MS	D004-02M	MS	3550B	8270C	III
02-Apr-2012	SL-026-NBZ-SS-0.0-0.5MS	D004-02M	MS	3550B	8270C SIM	III
02-Apr-2012	SL-026-NBZ-SS-0.0-0.5	D004-02R	N	GEN PREP	7199	III
02-Apr-2012	SL-026-NBZ-SS-0.0-0.5MSD	D004-02S	MSD	3550B	8081A	III
02-Apr-2012	SL-026-NBZ-SS-0.0-0.5MSD	D004-02S	MSD	3550B	8082	III
02-Apr-2012	SL-026-NBZ-SS-0.0-0.5MSD	D004-02S	MSD	3550B	8270C	III
02-Apr-2012	SL-026-NBZ-SS-0.0-0.5MSD	D004-02S	MSD	3550B	8270C SIM	III
02-Apr-2012	SL-028-NBZ-SS-0.0-0.5	D004-04	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
02-Apr-2012	SL-028-NBZ-SS-0.0-0.5	D004-04	N	3550B	8081A	III
02-Apr-2012	SL-028-NBZ-SS-0.0-0.5	D004-04	N	3550B	8082	III
02-Apr-2012	SL-028-NBZ-SS-0.0-0.5	D004-04	N	3550B	8270C	III
02-Apr-2012	SL-028-NBZ-SS-0.0-0.5	D004-04	N	3550B	8270C SIM	III
02-Apr-2012	SL-028-NBZ-SS-0.0-0.5	D004-04	N	7471A	7471A	III
02-Apr-2012	SL-028-NBZ-SS-0.0-0.5	D004-04	N	GEN PREP	300.0	III
02-Apr-2012	SL-028-NBZ-SS-0.0-0.5	D004-04	N	GEN PREP	314.0	III
02-Apr-2012	SL-028-NBZ-SS-0.0-0.5	D004-04	N	GEN PREP	6020	III
02-Apr-2012	SL-028-NBZ-SS-0.0-0.5	D004-04	N	GEN PREP	7199	III
02-Apr-2012	SL-028-NBZ-SS-0.0-0.5	D004-04	N	GEN PREP	8015B	III
02-Apr-2012	SL-028-NBZ-SS-0.0-0.5	D004-04	N	GEN PREP	8015M	III
02-Apr-2012	SL-028-NBZ-SS-0.0-0.5	D004-04	N	GEN PREP	8330A	III
02-Apr-2012	SL-028-NBZ-SS-0.0-0.5	D004-04	N	GEN PREP	8332	III
02-Apr-2012	SL-028-NBZ-SS-0.0-0.5	D004-04	N	GEN PREP	9014	III
02-Apr-2012	SL-028-NBZ-SS-0.0-0.5	D004-04	N	GEN PREP	9045D	III
02-Apr-2012	SL-028-NBZ-SS-0.0-0.5	D004-04R	N	GEN PREP	7199	III
02-Apr-2012	SL-113-NBZ-SS-0.0-0.5	D004-08	N	3550B	8081A	III
02-Apr-2012	SL-113-NBZ-SS-0.0-0.5	D004-08	N	3550B	8082	III
02-Apr-2012	SL-113-NBZ-SS-0.0-0.5	D004-08	N	3550B	8270C	III
02-Apr-2012	SL-113-NBZ-SS-0.0-0.5	D004-08	N	3550B	8270C SIM	III
02-Apr-2012	SL-113-NBZ-SS-0.0-0.5	D004-08	N	7471A	7471A	III
02-Apr-2012	SL-113-NBZ-SS-0.0-0.5	D004-08	N	GEN PREP	300.0	III
02-Apr-2012	SL-113-NBZ-SS-0.0-0.5	D004-08	N	GEN PREP	314.0	III
02-Apr-2012	SL-113-NBZ-SS-0.0-0.5	D004-08	N	GEN PREP	6020	III
02-Apr-2012	SL-113-NBZ-SS-0.0-0.5	D004-08	N	GEN PREP	7199	III
02-Apr-2012	SL-113-NBZ-SS-0.0-0.5	D004-08	N	GEN PREP	9045D	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-Apr-2012	SL-113-NBZ-SS-0.0-0.5	D004-08R	N	GEN PREP	7199	III
02-Apr-2012	SL-025-NBZ-SS-0.0-0.5	D004-01	N	3550B	8015B EFH	III
02-Apr-2012	SL-025-NBZ-SS-0.0-0.5	D004-01	N	3550B	8081A	III
02-Apr-2012	SL-025-NBZ-SS-0.0-0.5	D004-01	N	3550B	8082	III
02-Apr-2012	SL-025-NBZ-SS-0.0-0.5	D004-01	N	3550B	8270C	III
02-Apr-2012	SL-025-NBZ-SS-0.0-0.5	D004-01	N	3550B	8270C SIM	III
02-Apr-2012	SL-025-NBZ-SS-0.0-0.5	D004-01	N	7471A	7471A	III
02-Apr-2012	SL-025-NBZ-SS-0.0-0.5	D004-01	N	GEN PREP	300.0	III
02-Apr-2012	SL-025-NBZ-SS-0.0-0.5	D004-01	N	GEN PREP	314.0	III
02-Apr-2012	SL-025-NBZ-SS-0.0-0.5	D004-01	N	GEN PREP	6020	III
02-Apr-2012	SL-025-NBZ-SS-0.0-0.5	D004-01	N	GEN PREP	7199	III
02-Apr-2012	SL-025-NBZ-SS-0.0-0.5	D004-01	N	GEN PREP	8015B	III
02-Apr-2012	SL-025-NBZ-SS-0.0-0.5	D004-01	N	GEN PREP	8015M	III
02-Apr-2012	SL-025-NBZ-SS-0.0-0.5	D004-01	N	GEN PREP	8330A	III
02-Apr-2012	SL-025-NBZ-SS-0.0-0.5	D004-01	N	GEN PREP	8332	III
02-Apr-2012	SL-025-NBZ-SS-0.0-0.5	D004-01	N	GEN PREP	9014	III
02-Apr-2012	SL-025-NBZ-SS-0.0-0.5	D004-01	N	GEN PREP	9045D	III
02-Apr-2012	SL-025-NBZ-SS-0.0-0.5DUP	D004-01D	DUP	GEN PREP	9014	III
02-Apr-2012	SL-025-NBZ-SS-0.0-0.5DUP	D004-01D	DUP	GEN PREP	9045D	III
02-Apr-2012	SL-025-NBZ-SS-0.0-0.5MS	D004-01M	MS	GEN PREP	9014	III
02-Apr-2012	SL-025-NBZ-SS-0.0-0.5	D004-01R	N	GEN PREP	7199	III
02-Apr-2012	SL-027-NBZ-SS-0.0-0.5	D004-03	N	3550B	8015B EFH	III
02-Apr-2012	SL-027-NBZ-SS-0.0-0.5	D004-03	N	3550B	8081A	III
02-Apr-2012	SL-027-NBZ-SS-0.0-0.5	D004-03	N	3550B	8082	III
02-Apr-2012	SL-027-NBZ-SS-0.0-0.5	D004-03	N	3550B	8270C	III
02-Apr-2012	SL-027-NBZ-SS-0.0-0.5	D004-03	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
02-Apr-2012	SL-027-NBZ-SS-0.0-0.5	D004-03	N	7471A	7471A	III
02-Apr-2012	SL-027-NBZ-SS-0.0-0.5	D004-03	N	GEN PREP	300.0	III
02-Apr-2012	SL-027-NBZ-SS-0.0-0.5	D004-03	N	GEN PREP	314.0	III
02-Apr-2012	SL-027-NBZ-SS-0.0-0.5	D004-03	N	GEN PREP	6020	III
02-Apr-2012	SL-027-NBZ-SS-0.0-0.5	D004-03	N	GEN PREP	7199	III
02-Apr-2012	SL-027-NBZ-SS-0.0-0.5	D004-03	N	GEN PREP	8015B	III
02-Apr-2012	SL-027-NBZ-SS-0.0-0.5	D004-03	N	GEN PREP	8015M	III
02-Apr-2012	SL-027-NBZ-SS-0.0-0.5	D004-03	N	GEN PREP	8330A	III
02-Apr-2012	SL-027-NBZ-SS-0.0-0.5	D004-03	N	GEN PREP	8332	III
02-Apr-2012	SL-027-NBZ-SS-0.0-0.5	D004-03	N	GEN PREP	9014	III
02-Apr-2012	SL-027-NBZ-SS-0.0-0.5	D004-03	N	GEN PREP	9045D	III
02-Apr-2012	SL-027-NBZ-SS-0.0-0.5	D004-03R	N	GEN PREP	7199	III
02-Apr-2012	SL-138-NBZ-SS-0.0-0.5	D004-09	N	3550B	8081A	III
02-Apr-2012	SL-138-NBZ-SS-0.0-0.5	D004-09	N	3550B	8082	III
02-Apr-2012	SL-138-NBZ-SS-0.0-0.5	D004-09	N	3550B	8270C	III
02-Apr-2012	SL-138-NBZ-SS-0.0-0.5	D004-09	N	3550B	8270C SIM	III
02-Apr-2012	SL-138-NBZ-SS-0.0-0.5	D004-09	N	7471A	7471A	III
02-Apr-2012	SL-138-NBZ-SS-0.0-0.5	D004-09	N	GEN PREP	300.0	III
02-Apr-2012	SL-138-NBZ-SS-0.0-0.5	D004-09	N	GEN PREP	314.0	III
02-Apr-2012	SL-138-NBZ-SS-0.0-0.5	D004-09	N	GEN PREP	6020	III
02-Apr-2012	SL-138-NBZ-SS-0.0-0.5	D004-09	N	GEN PREP	6850	III
02-Apr-2012	SL-138-NBZ-SS-0.0-0.5	D004-09	N	GEN PREP	7199	III
02-Apr-2012	SL-138-NBZ-SS-0.0-0.5	D004-09	N	GEN PREP	9045D	III
02-Apr-2012	SL-138-NBZ-SS-0.0-0.5	D004-09R	N	GEN PREP	7199	III
02-Apr-2012	SL-112-NBZ-SS-0.0-0.5	D004-07	N	3550B	8081A	III
02-Apr-2012	SL-112-NBZ-SS-0.0-0.5	D004-07	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
02-Apr-2012	SL-112-NBZ-SS-0.0-0.5	D004-07	N	3550B	8270C	III
02-Apr-2012	SL-112-NBZ-SS-0.0-0.5	D004-07	N	3550B	8270C SIM	III
02-Apr-2012	SL-112-NBZ-SS-0.0-0.5	D004-07	N	7471A	7471A	III
02-Apr-2012	SL-112-NBZ-SS-0.0-0.5	D004-07	N	GEN PREP	300.0	III
02-Apr-2012	SL-112-NBZ-SS-0.0-0.5	D004-07	N	GEN PREP	314.0	III
02-Apr-2012	SL-112-NBZ-SS-0.0-0.5	D004-07	N	GEN PREP	6020	III
02-Apr-2012	SL-112-NBZ-SS-0.0-0.5	D004-07	N	GEN PREP	7199	III
02-Apr-2012	SL-112-NBZ-SS-0.0-0.5	D004-07	N	GEN PREP	9045D	III
02-Apr-2012	SL-112-NBZ-SS-0.0-0.5	D004-07R	N	GEN PREP	7199	III
02-Apr-2012	SL-111-NBZ-SS-0.0-0.5	D004-06	N	3550B	8081A	III
02-Apr-2012	SL-111-NBZ-SS-0.0-0.5	D004-06	N	3550B	8082	III
02-Apr-2012	SL-111-NBZ-SS-0.0-0.5	D004-06	N	3550B	8270C	III
02-Apr-2012	SL-111-NBZ-SS-0.0-0.5	D004-06	N	3550B	8270C SIM	III
02-Apr-2012	SL-111-NBZ-SS-0.0-0.5	D004-06	N	7471A	7471A	III
02-Apr-2012	SL-111-NBZ-SS-0.0-0.5	D004-06	N	GEN PREP	300.0	III
02-Apr-2012	SL-111-NBZ-SS-0.0-0.5	D004-06	N	GEN PREP	314.0	III
02-Apr-2012	SL-111-NBZ-SS-0.0-0.5	D004-06	N	GEN PREP	6020	III
02-Apr-2012	SL-111-NBZ-SS-0.0-0.5	D004-06	N	GEN PREP	6850	III
02-Apr-2012	SL-111-NBZ-SS-0.0-0.5	D004-06	N	GEN PREP	7199	III
02-Apr-2012	SL-111-NBZ-SS-0.0-0.5	D004-06	N	GEN PREP	9045D	III
02-Apr-2012	SL-111-NBZ-SS-0.0-0.5	D004-06R	N	GEN PREP	7199	III
02-Apr-2012	SL-107-NBZ-SS-0.0-0.5	D004-05	N	3550B	8081A	III
02-Apr-2012	SL-107-NBZ-SS-0.0-0.5	D004-05	N	3550B	8082	III
02-Apr-2012	SL-107-NBZ-SS-0.0-0.5	D004-05	N	3550B	8270C	III
02-Apr-2012	SL-107-NBZ-SS-0.0-0.5	D004-05	N	3550B	8270C SIM	III
02-Apr-2012	SL-107-NBZ-SS-0.0-0.5	D004-05	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-Apr-2012	SL-107-NBZ-SS-0.0-0.5	D004-05	N	GEN PREP	300.0	III
02-Apr-2012	SL-107-NBZ-SS-0.0-0.5	D004-05	N	GEN PREP	314.0	III
02-Apr-2012	SL-107-NBZ-SS-0.0-0.5	D004-05	N	GEN PREP	6020	III
02-Apr-2012	SL-107-NBZ-SS-0.0-0.5	D004-05	N	GEN PREP	7199	III
02-Apr-2012	SL-107-NBZ-SS-0.0-0.5	D004-05	N	GEN PREP	9045D	III
02-Apr-2012	SL-107-NBZ-SS-0.0-0.5MS	D004-05M	MS	GEN PREP	300.0	III
02-Apr-2012	SL-107-NBZ-SS-0.0-0.5	D004-05R	N	GEN PREP	7199	III
02-Apr-2012	SL-107-NBZ-SS-0.0-0.5MSD	D004-05S	MSD	GEN PREP	300.0	III
02-Apr-2012	SL-194-NBZ-SS-0.0-0.5	D004-10	N	3550B	8081A	III
02-Apr-2012	SL-194-NBZ-SS-0.0-0.5	D004-10	N	3550B	8082	III
02-Apr-2012	SL-194-NBZ-SS-0.0-0.5	D004-10	N	3550B	8270C	III
02-Apr-2012	SL-194-NBZ-SS-0.0-0.5	D004-10	N	3550B	8270C SIM	III
02-Apr-2012	SL-194-NBZ-SS-0.0-0.5	D004-10	N	7471A	7471A	III
02-Apr-2012	SL-194-NBZ-SS-0.0-0.5	D004-10	N	GEN PREP	300.0	III
02-Apr-2012	SL-194-NBZ-SS-0.0-0.5	D004-10	N	GEN PREP	314.0	III
02-Apr-2012	SL-194-NBZ-SS-0.0-0.5	D004-10	N	GEN PREP	6020	III
02-Apr-2012	SL-194-NBZ-SS-0.0-0.5	D004-10	N	GEN PREP	7199	III
02-Apr-2012	SL-194-NBZ-SS-0.0-0.5	D004-10	N	GEN PREP	8151A	III
02-Apr-2012	SL-194-NBZ-SS-0.0-0.5	D004-10	N	GEN PREP	9045D	III
02-Apr-2012	SL-194-NBZ-SS-0.0-0.5MS	D004-10M	MS	GEN PREP	6020	III
02-Apr-2012	SL-194-NBZ-SS-0.0-0.5MS	D004-10M	MS	GEN PREP	8151A	III
02-Apr-2012	SL-194-NBZ-SS-0.0-0.5	D004-10R	N	GEN PREP	7199	III
02-Apr-2012	SL-194-NBZ-SS-0.0-0.5MSD	D004-10S	MSD	GEN PREP	6020	III
02-Apr-2012	SL-194-NBZ-SS-0.0-0.5MSD	D004-10S	MSD	GEN PREP	8151A	III

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

Attachment II

Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: 12D004 **Laboratory:** EMXT

EDD Filename: 12D004R **eQAPP Name:** CDM_SSFL_120730_EMAX

Method Category: METALS

Method: 6020 **Matrix:** SO

Sample ID: SL-025-NBZ-SS-0.0-0.5 *Collected:* 4/2/2012 10:05:00 *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	10200		12.6	MDL	25.3	PQL	MG/KG	J	Q
BARIUM	74.4		0.210	MDL	0.421	PQL	MG/KG	J	Q
SELENIUM	0.284	J	0.210	MDL	0.421	PQL	MG/KG	J	Z
SODIUM	78.0	J	52.6	MDL	105	PQL	MG/KG	J	Z
Zirconium	5.26	U	2.63	MDL	5.26	PQL	MG/KG	UJ	Q

Sample ID: SL-026-NBZ-SS-0.0-0.5 *Collected:* 4/2/2012 9:10:00 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
ALUMINUM	10300		12.3	MDL	24.6	PQL	MG/KG	J	Q
ANTIMONY	0.194	J	0.102	MDL	0.205	PQL	MG/KG	J	Z
BARIUM	61.0		0.205	MDL	0.409	PQL	MG/KG	J	Q
SELENIUM	0.205	J	0.205	MDL	0.409	PQL	MG/KG	J	Z
SODIUM	54.4	J	51.2	MDL	102	PQL	MG/KG	J	Z
Zirconium	5.12	U	2.56	MDL	5.12	PQL	MG/KG	UJ	Q

Sample ID: SL-027-NBZ-SS-0.0-0.5 *Collected:* 4/2/2012 10:05:00 *Analysis Type:* RES/TOT *Dilution:* 0.971

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	10100		13.5	MDL	27.1	PQL	MG/KG	J	Q
ANTIMONY	0.182	J	0.113	MDL	0.226	PQL	MG/KG	J	Z
BARIUM	98.2		0.226	MDL	0.452	PQL	MG/KG	J	Q
Zirconium	5.65	U	2.82	MDL	5.65	PQL	MG/KG	UJ	Q

Sample ID: SL-028-NBZ-SS-0.0-0.5 *Collected:* 4/2/2012 9:10:00 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	8960		12.8	MDL	25.7	PQL	MG/KG	J	Q
ANTIMONY	0.113	J	0.107	MDL	0.214	PQL	MG/KG	J	Z
BARIUM	86.6		0.214	MDL	0.428	PQL	MG/KG	J	Q
Zirconium	5.35	U	2.67	MDL	5.35	PQL	MG/KG	UJ	Q

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12D004 **Laboratory:** EMXT

EDD Filename: 12D004R **eQAPP Name:** CDM_SSFL_120730_EMAX

Method Category: METALS

Method: 6020 **Matrix:** SO

Sample ID: SL-107-NBZ-SS-0.0-0.5 *Collected:* 4/2/2012 1:58:00 PM *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	7740		13.2	MDL	26.3	PQL	MG/KG	J	Q
ANTIMONY	0.142	J	0.110	MDL	0.220	PQL	MG/KG	J	Z
BARIUM	65.2		0.220	MDL	0.439	PQL	MG/KG	J	Q
Zirconium	5.49	U	2.74	MDL	5.49	PQL	MG/KG	UJ	Q

Sample ID: SL-111-NBZ-SS-0.0-0.5 *Collected:* 4/2/2012 1:33:00 PM *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	8730		14.6	MDL	29.2	PQL	MG/KG	J	Q
ANTIMONY	0.223	J	0.122	MDL	0.244	PQL	MG/KG	J	Z
BARIUM	79.5		0.244	MDL	0.487	PQL	MG/KG	J	Q
Zirconium	6.09	U	3.05	MDL	6.09	PQL	MG/KG	UJ	Q

Sample ID: SL-112-NBZ-SS-0.0-0.5 *Collected:* 4/2/2012 10:40:00 *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	9540		13.0	MDL	26.0	PQL	MG/KG	J	Q
ANTIMONY	0.162	J	0.108	MDL	0.216	PQL	MG/KG	J	Z
BARIUM	71.9		0.216	MDL	0.433	PQL	MG/KG	J	Q
Zirconium	5.41	U	2.70	MDL	5.41	PQL	MG/KG	UJ	Q

Sample ID: SL-113-NBZ-SS-0.0-0.5 *Collected:* 4/2/2012 9:29:00 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	8810		13.1	MDL	26.3	PQL	MG/KG	J	Q
ANTIMONY	0.123	J	0.109	MDL	0.219	PQL	MG/KG	J	Z
BARIUM	75.2		0.219	MDL	0.438	PQL	MG/KG	J	Q
Zirconium	5.47	U	2.74	MDL	5.47	PQL	MG/KG	UJ	Q

Sample ID: SL-138-NBZ-SS-0.0-0.5 *Collected:* 4/2/2012 10:11:00 *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	9490		13.2	MDL	26.3	PQL	MG/KG	J	Q
ANTIMONY	0.174	J	0.110	MDL	0.219	PQL	MG/KG	J	Z
BARIUM	65.6		0.219	MDL	0.438	PQL	MG/KG	J	Q

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12D004 **Laboratory: EMXT**

EDD Filename: 12D004R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: SL-138-NBZ-SS-0.0-0.5 *Collected:* 4/2/2012 10:11:00 *Analysis Type:* RES/TOT *Dilution:* 0.971

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CADMIUM	0.102	J	0.0548	MDL	0.110	PQL	MG/KG	J	Z
Zirconium	5.48	U	2.74	MDL	5.48	PQL	MG/KG	UJ	Q

Sample ID: SL-194-NBZ-SS-0.0-0.5 *Collected:* 4/2/2012 2:40:00 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	9360		13.1	MDL	26.2	PQL	MG/KG	J	Q
BARIUM	90.6		0.218	MDL	0.437	PQL	MG/KG	J	Q
SILVER	0.0697	J	0.0546	MDL	0.109	PQL	MG/KG	J	Z
Zirconium	5.46	U	2.73	MDL	5.46	PQL	MG/KG	UJ	Q

Method Category: SVOA

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

Sample ID: SL-025-NBZ-SS-0.0-0.5 *Collected:* 4/2/2012 10:05:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH(C12-C14)	0.88	J	0.54	MDL	1.1	PQL	MG/KG	J	Z
EFH(C8-C11)	0.87	J	0.54	MDL	1.1	PQL	MG/KG	J	Z

Sample ID: SL-027-NBZ-SS-0.0-0.5 *Collected:* 4/2/2012 10:05:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH(C8-C11)	0.75	J	0.58	MDL	1.2	PQL	MG/KG	J	Z

Sample ID: SL-028-NBZ-SS-0.0-0.5 *Collected:* 4/2/2012 9:10:00 AM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH(C8-C11)	0.60	J	0.55	MDL	1.1	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12D004 **Laboratory: EMXT**

EDD Filename: 12D004R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

Method: 8081A **Matrix: SO**

Sample ID: SL-025-NBZ-SS-0.0-0.5 *Collected:* 4/2/2012 10:05:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDE	0.33	J	0.19	MDL	0.37	PQL	UG/KG	J	Z

Sample ID: SL-027-NBZ-SS-0.0-0.5 *Collected:* 4/2/2012 10:05:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDE	0.29	J	0.20	MDL	0.40	PQL	UG/KG	J	Z

Sample ID: SL-107-NBZ-SS-0.0-0.5 *Collected:* 4/2/2012 1:58:00 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	0.97		0.19	MDL	0.39	PQL	UG/KG	J	S

Sample ID: SL-113-NBZ-SS-0.0-0.5 *Collected:* 4/2/2012 9:29:00 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
4,4'-DDT	0.41		0.19	MDL	0.37	PQL	UG/KG	J	S

Sample ID: SL-138-NBZ-SS-0.0-0.5 *Collected:* 4/2/2012 10:11:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDT	0.37	J	0.19	MDL	0.38	PQL	UG/KG	J	Z

Method Category: SVOA

Method: 8082 **Matrix: SO**

Sample ID: SL-027-NBZ-SS-0.0-0.5 *Collected:* 4/2/2012 10:05:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Aroclor 5460	3.5	J	2.0	MDL	3.8	PQL	UG/KG	J	Z

Sample ID: SL-107-NBZ-SS-0.0-0.5 *Collected:* 4/2/2012 1:58:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Aroclor 5460	2.2	J	1.9	MDL	3.7	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12D004 **Laboratory: EMXT**

EDD Filename: 12D004R **eQAPP Name: CDM_SSFL_120730_EMAX**

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

Sample ID: SL-111-NBZ-SS-0.0-0.5 *Collected:* 4/2/2012 1:33:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Aroclor 5460	3.9	J	2.1	MDL	4.2	PQL	UG/KG	J	Z

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

Sample ID: SL-194-NBZ-SS-0.0-0.5 *Collected:* 4/2/2012 2:40:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
DICAMBA	1.3	U	0.67	MDL	1.3	PQL	UG/KG	UJ	Q

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

Sample ID: SL-026-NBZ-SS-0.0-0.5 *Collected:* 4/2/2012 9:10:00 AM *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZIDINE	890	U	450	MDL	890	PQL	UG/KG	R	Q

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

Sample ID: SL-025-NBZ-SS-0.0-0.5 *Collected:* 4/2/2012 10:05:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)PYRENE	1.2	J	0.93	MDL	1.9	PQL	UG/KG	J	Z
BENZO(B)FLUORANTHENE	1.5	J	0.93	MDL	1.9	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	1.4	J	0.93	MDL	1.9	PQL	UG/KG	J	Z
BENZO(K)FLUORANTHENE	1.1	J	0.93	MDL	1.9	PQL	UG/KG	J	Z
Butylbenzylphthalate	16	J	9.2	MDL	18	PQL	UG/KG	J	Z
CHRYSENE	1.3	J	0.93	MDL	1.9	PQL	UG/KG	J	Z
FLUORANTHENE	1.4	J	0.93	MDL	1.9	PQL	UG/KG	J	Z
INDENO(1,2,3-CD)PYRENE	1.3	J	0.93	MDL	1.9	PQL	UG/KG	J	Z
PHENANTHRENE	1.2	J	0.93	MDL	1.9	PQL	UG/KG	J	Z
PYRENE	1.5	J	0.93	MDL	1.9	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12D004 **Laboratory: EMXT**

EDD Filename: 12D004R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: **SVOA**

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

Sample ID: **SL-026-NBZ-SS-0.0-0.5** ***Collected:*** **4/2/2012 9:10:00 AM** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BIS(2-ETHYLHEXYL)PHTHALATE	31		9.0	MDL	18	PQL	UG/KG	J	Q
NAPHTHALENE	0.93	J	0.91	MDL	1.8	PQL	UG/KG	J	Z

Sample ID: **SL-027-NBZ-SS-0.0-0.5** ***Collected:*** **4/2/2012 10:05:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)ANTHRACENE	1.2	J	0.99	MDL	2.0	PQL	UG/KG	J	Z
BENZO(B)FLUORANTHENE	1.6	J	0.99	MDL	2.0	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	1.2	J	0.99	MDL	2.0	PQL	UG/KG	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	17	J	9.8	MDL	19	PQL	UG/KG	J	Z
CHRYSENE	1.1	J	0.99	MDL	2.0	PQL	UG/KG	J	Z
INDENO(1,2,3-CD)PYRENE	1.2	J	0.99	MDL	2.0	PQL	UG/KG	J	Z
PYRENE	1.8	J	0.99	MDL	2.0	PQL	UG/KG	J	Z

Sample ID: **SL-107-NBZ-SS-0.0-0.5** ***Collected:*** **4/2/2012 1:58:00 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	1.3	J	0.97	MDL	1.9	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	1.7	J	0.97	MDL	1.9	PQL	UG/KG	J	Z
Butylbenzylphthalate	10	J	9.5	MDL	19	PQL	UG/KG	J	Z
CHRYSENE	1.6	J	0.97	MDL	1.9	PQL	UG/KG	J	Z
INDENO(1,2,3-CD)PYRENE	1.4	J	0.97	MDL	1.9	PQL	UG/KG	J	Z
PHENANTHRENE	1.3	J	0.97	MDL	1.9	PQL	UG/KG	J	Z

Sample ID: **SL-111-NBZ-SS-0.0-0.5** ***Collected:*** **4/2/2012 1:33:00 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(B)FLUORANTHENE	1.8	J	1.1	MDL	2.1	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	1.4	J	1.1	MDL	2.1	PQL	UG/KG	J	Z
CHRYSENE	1.5	J	1.1	MDL	2.1	PQL	UG/KG	J	Z
FLUORANTHENE	1.8	J	1.1	MDL	2.1	PQL	UG/KG	J	Z
PYRENE	1.7	J	1.1	MDL	2.1	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12D004 **Laboratory: EMXT**

EDD Filename: 12D004R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: **SVOA**

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

Sample ID: **SL-138-NBZ-SS-0.0-0.5** ***Collected:*** **4/2/2012 10:11:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
BENZO(B)FLUORANTHENE	1.2	J	0.96	MDL	1.9	PQL	UG/KG	J	Z
FLUORANTHENE	1.1	J	0.96	MDL	1.9	PQL	UG/KG	J	Z
PYRENE	1.1	J	0.96	MDL	1.9	PQL	UG/KG	J	Z

Sample ID: **SL-194-NBZ-SS-0.0-0.5** ***Collected:*** **4/2/2012 2:40:00 PM** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
BENZO(B)FLUORANTHENE	1.6	J	0.96	MDL	1.9	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	1.0	J	0.96	MDL	1.9	PQL	UG/KG	J	Z
CHRYSENE	1.2	J	0.96	MDL	1.9	PQL	UG/KG	J	Z
FLUORANTHENE	1.8	J	0.96	MDL	1.9	PQL	UG/KG	J	Z
PYRENE	1.6	J	0.96	MDL	1.9	PQL	UG/KG	J	Z

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: 12D004 **Laboratory: EMXT**

EDD Filename: 12D004R **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
S	Surrogate/Tracer Recovery Upper Estimation
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Enclosure I

Level III ADR Outliers
(including Manual Review Outliers)

Quality Control
Outlier Reports

12D004

Surrogate Outlier Report

Lab Reporting Batch ID: 12D004 **Laboratory: EMXT**

EDD Filename: 12D004R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: **8081A**
Matrix: **SO**

Sample ID (Analysis Type)	*Surrogate*	*Sample % Recovery*	*% Recovery Limits*	*Affected Compounds*	*Flag*
SL-107-NBZ-SS-0.0-0.5	DECACHLOROBIPHENYL	167	20.00-120.00	All Target Analytes	J (all detects)
SL-113-NBZ-SS-0.0-0.5	DECACHLOROBIPHENYL	128	20.00-120.00	All Target Analytes	J(all detects)

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 12D004 | Laboratory: EMXT

EDD Filename: 12D004R | eQAPP Name: CDM_SSFL_120730_EMAX

Method: 8151A
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-194-NBZ-SS-0.0-0.5MS SL-194-NBZ-SS-0.0-0.5MSD (SL-194-NBZ-SS-0.0-0.5)	2,4,5-TP (Silvex) MCPA	- 183	- 164	30.00-150.00 10.00-160.00	57 (50.00) -	2,4,5-TP (Silvex) MCPA	J (all detects)
SL-194-NBZ-SS-0.0-0.5MS SL-194-NBZ-SS-0.0-0.5MSD (SL-194-NBZ-SS-0.0-0.5)	DICAMBA	33	36	50.00-130.00	-	DICAMBA	J(all detects) UJ(all non-detects)

Method: 6020
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-194-NBZ-SS-0.0-0.5MS (TOT) SL-194-NBZ-SS-0.0-0.5MSD (TOT) (SL-025-NBZ-SS-0.0-0.5 SL -026-NBZ-SS-0.0-0.5 SL -027-NBZ-SS-0.0-0.5 SL -028-NBZ-SS-0.0-0.5 SL -107-NBZ-SS-0.0-0.5 SL -111-NBZ-SS-0.0-0.5 SL -112-NBZ-SS-0.0-0.5 SL -113-NBZ-SS-0.0-0.5 SL -138-NBZ-SS-0.0-0.5 SL -194-NBZ-SS-0.0-0.5)	ALUMINUM BARIUM IRON MANGANESE TITANIUM	136 142 138 160 332	164 142 141 165 494	75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00	- - - - -	ALUMINUM BARIUM IRON MANGANESE TITANIUM	J(all detects) Fe, Mn, Ti, No Qual, >4x
SL-194-NBZ-SS-0.0-0.5MS (TOT) SL-194-NBZ-SS-0.0-0.5MSD (TOT) (SL-025-NBZ-SS-0.0-0.5 SL -026-NBZ-SS-0.0-0.5 SL -027-NBZ-SS-0.0-0.5 SL -028-NBZ-SS-0.0-0.5 SL -107-NBZ-SS-0.0-0.5 SL -111-NBZ-SS-0.0-0.5 SL -112-NBZ-SS-0.0-0.5 SL -113-NBZ-SS-0.0-0.5 SL -138-NBZ-SS-0.0-0.5 SL -194-NBZ-SS-0.0-0.5)	Zirconium	52	57	75.00-125.00	-	Zirconium	J(all detects) UJ(all non-detects)

Method: 8270C
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-026-NBZ-SS-0.0-0.5MS SL-026-NBZ-SS-0.0-0.5MSD (SL-026-NBZ-SS-0.0-0.5)	BENZIDINE	0	0	10.00-150.00	-	BENZIDINE	J(all detects) R(all non-detects)

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 12D004 **Laboratory: EMXT**

EDD Filename: 12D004R **eQAPP Name: CDM_SSFL_120730_EMAX**

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

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
SL-026-NBZ-SS-0.0-0.5MS SL-026-NBZ-SS-0.0-0.5MSD (SL-026-NBZ-SS-0.0-0.5)	BIS(2-ETHYLHEXYL)PHTHALAT	175	226	20.00-150.00	-	BIS(2-ETHYLHEXYL)PHTHALA	J(all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: 12D004 **Laboratory: EMXT**

EDD Filename: 12D004R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 6020
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-025-NBZ-SS-0.0-0.5	SELENIUM SODIUM	J J	0.284 78.0	0.421 105	PQL PQL	MG/KG MG/KG	J (all detects)
SL-026-NBZ-SS-0.0-0.5	ANTIMONY SELENIUM SODIUM	J J J	0.194 0.205 54.4	0.205 0.409 102	PQL PQL PQL	MG/KG MG/KG MG/KG	J (all detects)
SL-027-NBZ-SS-0.0-0.5	ANTIMONY	J	0.182	0.226	PQL	MG/KG	J (all detects)
SL-028-NBZ-SS-0.0-0.5	ANTIMONY	J	0.113	0.214	PQL	MG/KG	J (all detects)
SL-107-NBZ-SS-0.0-0.5	ANTIMONY	J	0.142	0.220	PQL	MG/KG	J (all detects)
SL-111-NBZ-SS-0.0-0.5	ANTIMONY	J	0.223	0.244	PQL	MG/KG	J (all detects)
SL-112-NBZ-SS-0.0-0.5	ANTIMONY	J	0.162	0.216	PQL	MG/KG	J (all detects)
SL-113-NBZ-SS-0.0-0.5	ANTIMONY	J	0.123	0.219	PQL	MG/KG	J (all detects)
SL-138-NBZ-SS-0.0-0.5	ANTIMONY CADMIUM	J J	0.174 0.102	0.219 0.110	PQL PQL	MG/KG MG/KG	J (all detects)
SL-194-NBZ-SS-0.0-0.5	SILVER	J	0.0697	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-025-NBZ-SS-0.0-0.5	EFH(C12-C14) EFH(C8-C11)	J J	0.88 0.87	1.1 1.1	PQL PQL	MG/KG MG/KG	J (all detects)
SL-027-NBZ-SS-0.0-0.5	EFH(C8-C11)	J	0.75	1.2	PQL	MG/KG	J (all detects)
SL-028-NBZ-SS-0.0-0.5	EFH(C8-C11)	J	0.60	1.1	PQL	MG/KG	J (all detects)

Method: 8081A
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-025-NBZ-SS-0.0-0.5	4,4'-DDE	J	0.33	0.37	PQL	UG/KG	J (all detects)
SL-027-NBZ-SS-0.0-0.5	4,4'-DDE	J	0.29	0.40	PQL	UG/KG	J (all detects)
SL-138-NBZ-SS-0.0-0.5	4,4'-DDT	J	0.37	0.38	PQL	UG/KG	J (all detects)

Method: 8082
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-027-NBZ-SS-0.0-0.5	Aroclor 5460	J	3.5	3.8	PQL	UG/KG	J (all detects)

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Reporting Limit Outliers

Lab Reporting Batch ID: 12D004 **Laboratory: EMXT**

EDD Filename: 12D004R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 8082
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-107-NBZ-SS-0.0-0.5	Aroclor 5460	J	2.2	3.7	PQL	UG/KG	J (all detects)
SL-111-NBZ-SS-0.0-0.5	Aroclor 5460	J	3.9	4.2	PQL	UG/KG	J (all detects)

Method: 8270C SIM
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-025-NBZ-SS-0.0-0.5	BENZO(A)PYRENE	J	1.2	1.9	PQL	UG/KG	J (all detects)
	BENZO(B)FLUORANTHENE	J	1.5	1.9	PQL	UG/KG	
	BENZO(G,H,I)PERYLENE	J	1.4	1.9	PQL	UG/KG	
	BENZO(K)FLUORANTHENE	J	1.1	1.9	PQL	UG/KG	
	Butylbenzylphthalate	J	16	18	PQL	UG/KG	
	CHRYSENE	J	1.3	1.9	PQL	UG/KG	
	FLUORANTHENE	J	1.4	1.9	PQL	UG/KG	
	INDENO(1,2,3-CD)PYRENE	J	1.3	1.9	PQL	UG/KG	
	PHENANTHRENE	J	1.2	1.9	PQL	UG/KG	
	PYRENE	J	1.5	1.9	PQL	UG/KG	
SL-026-NBZ-SS-0.0-0.5	NAPHTHALENE	J	0.93	1.8	PQL	UG/KG	J (all detects)
SL-027-NBZ-SS-0.0-0.5	BENZO(A)ANTHRACENE	J	1.2	2.0	PQL	UG/KG	J (all detects)
	BENZO(B)FLUORANTHENE	J	1.6	2.0	PQL	UG/KG	
	BENZO(G,H,I)PERYLENE	J	1.2	2.0	PQL	UG/KG	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	17	19	PQL	UG/KG	
	CHRYSENE	J	1.1	2.0	PQL	UG/KG	
	INDENO(1,2,3-CD)PYRENE	J	1.2	2.0	PQL	UG/KG	
	PYRENE	J	1.8	2.0	PQL	UG/KG	
SL-107-NBZ-SS-0.0-0.5	BENZO(A)PYRENE	J	1.3	1.9	PQL	UG/KG	J (all detects)
	BENZO(G,H,I)PERYLENE	J	1.7	1.9	PQL	UG/KG	
	Butylbenzylphthalate	J	10	19	PQL	UG/KG	
	CHRYSENE	J	1.6	1.9	PQL	UG/KG	
	INDENO(1,2,3-CD)PYRENE	J	1.4	1.9	PQL	UG/KG	
	PHENANTHRENE	J	1.3	1.9	PQL	UG/KG	
SL-111-NBZ-SS-0.0-0.5	BENZO(B)FLUORANTHENE	J	1.8	2.1	PQL	UG/KG	J (all detects)
	BENZO(G,H,I)PERYLENE	J	1.4	2.1	PQL	UG/KG	
	CHRYSENE	J	1.5	2.1	PQL	UG/KG	
	FLUORANTHENE	J	1.8	2.1	PQL	UG/KG	
	PYRENE	J	1.7	2.1	PQL	UG/KG	
SL-138-NBZ-SS-0.0-0.5	BENZO(B)FLUORANTHENE	J	1.2	1.9	PQL	UG/KG	J (all detects)
	FLUORANTHENE	J	1.1	1.9	PQL	UG/KG	
	PYRENE	J	1.1	1.9	PQL	UG/KG	
SL-194-NBZ-SS-0.0-0.5	BENZO(B)FLUORANTHENE	J	1.6	1.9	PQL	UG/KG	J (all detects)
	BENZO(G,H,I)PERYLENE	J	1.0	1.9	PQL	UG/KG	
	CHRYSENE	J	1.2	1.9	PQL	UG/KG	
	FLUORANTHENE	J	1.8	1.9	PQL	UG/KG	
	PYRENE	J	1.6	1.9	PQL	UG/KG	

LDC #: 28255N4 **VALIDATION COMPLETENESS WORKSHEET** Date: 8/29/12
SDG #: 12D004 ADR Page: 1 of 1
Laboratory: EMAX Laboratories, Inc. Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Metals (EPA SW 846 Method ~~6010B~~/6020A/~~7000~~ 7471A)

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

	Validation Area		Comments
I.	Technical holding times	—	Sampling dates: 4/2/12
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-NBZ-SS-040412 (12D031)

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: all

1	SL-025-NBZ-SS-0.0-0.5	11	SL-194-NBZ-SS-0.0-0.5MS	21		31	
2	SL-026-NBZ-SS-0.0-0.5	12	SL-194-NBZ-SS-0.0-0.5MSD	22		32	
3	SL-027-NBZ-SS-0.0-0.5	13		23		33	
4	SL-028-NBZ-SS-0.0-0.5	14		24		34	
5	SL-107-NBZ-SS-0.0-0.5	15		25		35	
6	SL-111-NBZ-SS-0.0-0.5	16		26		36	
7	SL-112-NBZ-SS-0.0-0.5	17		27		37	
8	SL-113-NBZ-SS-0.0-0.5	18		28		38	
9	SL-138-NBZ-SS-0.0-0.5	19		29		39	
10	SL-194-NBZ-SS-0.0-0.5	20		30		40	

Notes: _____

LDC #: 28255N4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: CK
2nd Reviewer: MV

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

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

Sampling date: 4/4/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All

Analyte	Blank ID	Sample Identification										
	EB-NBZ-SS-040412 (SDG: 12D031)	Action Limit	No Qualifiers									
Cr	0.000239	0.05975										
Cu	0.000719	0.17975										

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

12D018

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-Apr-2012	TB-040312	D018-15	TB	5030B	8015B GRO	III
03-Apr-2012	SL-169-NBZ-SS-0.0-0.5	D018-13	N	3550B	8081A	III
03-Apr-2012	SL-169-NBZ-SS-0.0-0.5	D018-13	N	3550B	8082	III
03-Apr-2012	SL-169-NBZ-SS-0.0-0.5	D018-13	N	3550B	8270C	III
03-Apr-2012	SL-169-NBZ-SS-0.0-0.5	D018-13	N	3550B	8270C SIM	III
03-Apr-2012	SL-169-NBZ-SS-0.0-0.5	D018-13	N	7471A	7471A	III
03-Apr-2012	SL-169-NBZ-SS-0.0-0.5	D018-13	N	GEN PREP	300.0	III
03-Apr-2012	SL-169-NBZ-SS-0.0-0.5	D018-13	N	GEN PREP	314.0	III
03-Apr-2012	SL-169-NBZ-SS-0.0-0.5	D018-13	N	GEN PREP	6020	III
03-Apr-2012	SL-169-NBZ-SS-0.0-0.5	D018-13	N	GEN PREP	7199	III
03-Apr-2012	SL-169-NBZ-SS-0.0-0.5	D018-13	N	GEN PREP	8151A	III
03-Apr-2012	SL-169-NBZ-SS-0.0-0.5	D018-13	N	GEN PREP	9045D	III
03-Apr-2012	SL-169-NBZ-SS-0.0-0.5	D018-13R	N	GEN PREP	7199	III
03-Apr-2012	SL-031-NBZ-SS-0.0-0.5	D018-01	N	3550B	8015B EFH	III
03-Apr-2012	SL-031-NBZ-SS-0.0-0.5	D018-01	N	3550B	8081A	III
03-Apr-2012	SL-031-NBZ-SS-0.0-0.5	D018-01	N	3550B	8082	III
03-Apr-2012	SL-031-NBZ-SS-0.0-0.5	D018-01	N	3550B	8270C	III
03-Apr-2012	SL-031-NBZ-SS-0.0-0.5	D018-01	N	3550B	8270C SIM	III
03-Apr-2012	SL-031-NBZ-SS-0.0-0.5	D018-01	N	7471A	7471A	III
03-Apr-2012	SL-031-NBZ-SS-0.0-0.5	D018-01	N	GEN PREP	300.0	III
03-Apr-2012	SL-031-NBZ-SS-0.0-0.5	D018-01	N	GEN PREP	314.0	III
03-Apr-2012	SL-031-NBZ-SS-0.0-0.5	D018-01	N	GEN PREP	6020	III
03-Apr-2012	SL-031-NBZ-SS-0.0-0.5	D018-01	N	GEN PREP	7199	III
03-Apr-2012	SL-031-NBZ-SS-0.0-0.5	D018-01	N	GEN PREP	8015B	III
03-Apr-2012	SL-031-NBZ-SS-0.0-0.5	D018-01	N	GEN PREP	8015M	III
03-Apr-2012	SL-031-NBZ-SS-0.0-0.5	D018-01	N	GEN PREP	8151A	III

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

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
03-Apr-2012	SL-031-NBZ-SS-0.0-0.5	D018-01	N	GEN PREP	8330A	III
03-Apr-2012	SL-031-NBZ-SS-0.0-0.5	D018-01	N	GEN PREP	8332	III
03-Apr-2012	SL-031-NBZ-SS-0.0-0.5	D018-01	N	GEN PREP	9014	III
03-Apr-2012	SL-031-NBZ-SS-0.0-0.5	D018-01	N	GEN PREP	9045D	III
03-Apr-2012	SL-031-NBZ-SS-0.0-0.5DUP	D018-01D	DUP	GEN PREP	7199	III
03-Apr-2012	SL-031-NBZ-SS-0.0-0.5DUP	D018-01D	DUP	GEN PREP	9045D	III
03-Apr-2012	SL-031-NBZ-SS-0.0-0.5MS	D018-01G	MS	GEN PREP	7199	III
03-Apr-2012	SL-031-NBZ-SS-0.0-0.5MS	D018-01G1	MS	GEN PREP	7199	III
03-Apr-2012	SL-031-NBZ-SS-0.0-0.5MS	D018-01M	MS	3550B	8270C	III
03-Apr-2012	SL-031-NBZ-SS-0.0-0.5MS	D018-01M	MS	3550B	8270C SIM	III
03-Apr-2012	SL-031-NBZ-SS-0.0-0.5MS	D018-01M	MS	7471A	7471A	III
03-Apr-2012	SL-031-NBZ-SS-0.0-0.5MS	D018-01M	MS	GEN PREP	314.0	III
03-Apr-2012	SL-031-NBZ-SS-0.0-0.5MS	D018-01M	MS	GEN PREP	7199	III
03-Apr-2012	SL-031-NBZ-SS-0.0-0.5MS	D018-01M1	MS	GEN PREP	7199	III
03-Apr-2012	SL-031-NBZ-SS-0.0-0.5	D018-01R	N	GEN PREP	7199	III
03-Apr-2012	SL-031-NBZ-SS-0.0-0.5MSD	D018-01S	MSD	3550B	8270C	III
03-Apr-2012	SL-031-NBZ-SS-0.0-0.5MSD	D018-01S	MSD	3550B	8270C SIM	III
03-Apr-2012	SL-031-NBZ-SS-0.0-0.5MSD	D018-01S	MSD	7471A	7471A	III
03-Apr-2012	SL-031-NBZ-SS-0.0-0.5MSD	D018-01S	MSD	GEN PREP	314.0	III
03-Apr-2012	SL-031-NBZ-SS-0.0-0.5DUP	D018-01Z	DUP	GEN PREP	7199	III
03-Apr-2012	SL-108-NBZ-SS-0.0-0.5	D018-08	N	3550B	8081A	III
03-Apr-2012	SL-108-NBZ-SS-0.0-0.5	D018-08	N	3550B	8082	III
03-Apr-2012	SL-108-NBZ-SS-0.0-0.5	D018-08	N	3550B	8270C	III
03-Apr-2012	SL-108-NBZ-SS-0.0-0.5	D018-08	N	3550B	8270C SIM	III
03-Apr-2012	SL-108-NBZ-SS-0.0-0.5	D018-08	N	7471A	7471A	III
03-Apr-2012	SL-108-NBZ-SS-0.0-0.5	D018-08	N	GEN PREP	300.0	III

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

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
03-Apr-2012	SL-108-NBZ-SS-0.0-0.5	D018-08	N	GEN PREP	314.0	III
03-Apr-2012	SL-108-NBZ-SS-0.0-0.5	D018-08	N	GEN PREP	6020	III
03-Apr-2012	SL-108-NBZ-SS-0.0-0.5	D018-08	N	GEN PREP	7199	III
03-Apr-2012	SL-108-NBZ-SS-0.0-0.5	D018-08	N	GEN PREP	8151A	III
03-Apr-2012	SL-108-NBZ-SS-0.0-0.5	D018-08	N	GEN PREP	9045D	III
03-Apr-2012	SL-108-NBZ-SS-0.0-0.5MS	D018-08M	MS	GEN PREP	8151A	III
03-Apr-2012	SL-108-NBZ-SS-0.0-0.5	D018-08R	N	GEN PREP	7199	III
03-Apr-2012	SL-108-NBZ-SS-0.0-0.5MSD	D018-08S	MSD	GEN PREP	8151A	III
03-Apr-2012	SL-127-NBZ-SS-0.0-0.5	D018-11	N	3550B	8081A	III
03-Apr-2012	SL-127-NBZ-SS-0.0-0.5	D018-11	N	3550B	8082	III
03-Apr-2012	SL-127-NBZ-SS-0.0-0.5	D018-11	N	3550B	8270C	III
03-Apr-2012	SL-127-NBZ-SS-0.0-0.5	D018-11	N	3550B	8270C SIM	III
03-Apr-2012	SL-127-NBZ-SS-0.0-0.5	D018-11	N	7471A	7471A	III
03-Apr-2012	SL-127-NBZ-SS-0.0-0.5	D018-11	N	GEN PREP	300.0	III
03-Apr-2012	SL-127-NBZ-SS-0.0-0.5	D018-11	N	GEN PREP	314.0	III
03-Apr-2012	SL-127-NBZ-SS-0.0-0.5	D018-11	N	GEN PREP	6020	III
03-Apr-2012	SL-127-NBZ-SS-0.0-0.5	D018-11	N	GEN PREP	7199	III
03-Apr-2012	SL-127-NBZ-SS-0.0-0.5	D018-11	N	GEN PREP	8151A	III
03-Apr-2012	SL-127-NBZ-SS-0.0-0.5	D018-11	N	GEN PREP	9045D	III
03-Apr-2012	SL-127-NBZ-SS-0.0-0.5	D018-11R	N	GEN PREP	7199	III
03-Apr-2012	SL-033-NBZ-SS-0.0-0.5	D018-03	N	3550B	8015B EFH	III
03-Apr-2012	SL-033-NBZ-SS-0.0-0.5	D018-03	N	3550B	8081A	III
03-Apr-2012	SL-033-NBZ-SS-0.0-0.5	D018-03	N	3550B	8082	III
03-Apr-2012	SL-033-NBZ-SS-0.0-0.5	D018-03	N	3550B	8270C	III
03-Apr-2012	SL-033-NBZ-SS-0.0-0.5	D018-03	N	3550B	8270C SIM	III
03-Apr-2012	SL-033-NBZ-SS-0.0-0.5	D018-03	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
03-Apr-2012	SL-033-NBZ-SS-0.0-0.5	D018-03	N	GEN PREP	300.0	III
03-Apr-2012	SL-033-NBZ-SS-0.0-0.5	D018-03	N	GEN PREP	314.0	III
03-Apr-2012	SL-033-NBZ-SS-0.0-0.5	D018-03	N	GEN PREP	6020	III
03-Apr-2012	SL-033-NBZ-SS-0.0-0.5	D018-03	N	GEN PREP	7199	III
03-Apr-2012	SL-033-NBZ-SS-0.0-0.5	D018-03	N	GEN PREP	8015B	III
03-Apr-2012	SL-033-NBZ-SS-0.0-0.5	D018-03	N	GEN PREP	8015M	III
03-Apr-2012	SL-033-NBZ-SS-0.0-0.5	D018-03	N	GEN PREP	8151A	III
03-Apr-2012	SL-033-NBZ-SS-0.0-0.5	D018-03	N	GEN PREP	8330A	III
03-Apr-2012	SL-033-NBZ-SS-0.0-0.5	D018-03	N	GEN PREP	8332	III
03-Apr-2012	SL-033-NBZ-SS-0.0-0.5	D018-03	N	GEN PREP	9014	III
03-Apr-2012	SL-033-NBZ-SS-0.0-0.5	D018-03	N	GEN PREP	9045D	III
03-Apr-2012	SL-033-NBZ-SS-0.0-0.5	D018-03R	N	GEN PREP	7199	III
03-Apr-2012	SL-122-NBZ-SS-0.0-0.5	D018-10	N	3550B	8081A	III
03-Apr-2012	SL-122-NBZ-SS-0.0-0.5	D018-10	N	3550B	8082	III
03-Apr-2012	SL-122-NBZ-SS-0.0-0.5	D018-10	N	3550B	8270C	III
03-Apr-2012	SL-122-NBZ-SS-0.0-0.5	D018-10	N	3550B	8270C SIM	III
03-Apr-2012	SL-122-NBZ-SS-0.0-0.5	D018-10	N	7471A	7471A	III
03-Apr-2012	SL-122-NBZ-SS-0.0-0.5	D018-10	N	GEN PREP	300.0	III
03-Apr-2012	SL-122-NBZ-SS-0.0-0.5	D018-10	N	GEN PREP	314.0	III
03-Apr-2012	SL-122-NBZ-SS-0.0-0.5	D018-10	N	GEN PREP	6020	III
03-Apr-2012	SL-122-NBZ-SS-0.0-0.5	D018-10	N	GEN PREP	7199	III
03-Apr-2012	SL-122-NBZ-SS-0.0-0.5	D018-10	N	GEN PREP	8151A	III
03-Apr-2012	SL-122-NBZ-SS-0.0-0.5	D018-10	N	GEN PREP	9045D	III
03-Apr-2012	SL-122-NBZ-SS-0.0-0.5	D018-10R	N	GEN PREP	7199	III
03-Apr-2012	SL-034-NBZ-SS-0.0-0.5	D018-04	N	3550B	8015B EFH	III
03-Apr-2012	SL-034-NBZ-SS-0.0-0.5	D018-04	N	3550B	8081A	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-Apr-2012	SL-034-NBZ-SS-0.0-0.5	D018-04	N	3550B	8082	III
03-Apr-2012	SL-034-NBZ-SS-0.0-0.5	D018-04	N	3550B	8270C	III
03-Apr-2012	SL-034-NBZ-SS-0.0-0.5	D018-04	N	3550B	8270C SIM	III
03-Apr-2012	SL-034-NBZ-SS-0.0-0.5	D018-04	N	7471A	7471A	III
03-Apr-2012	SL-034-NBZ-SS-0.0-0.5	D018-04	N	GEN PREP	300.0	III
03-Apr-2012	SL-034-NBZ-SS-0.0-0.5	D018-04	N	GEN PREP	314.0	III
03-Apr-2012	SL-034-NBZ-SS-0.0-0.5	D018-04	N	GEN PREP	6020	III
03-Apr-2012	SL-034-NBZ-SS-0.0-0.5	D018-04	N	GEN PREP	7199	III
03-Apr-2012	SL-034-NBZ-SS-0.0-0.5	D018-04	N	GEN PREP	8015B	III
03-Apr-2012	SL-034-NBZ-SS-0.0-0.5	D018-04	N	GEN PREP	8015M	III
03-Apr-2012	SL-034-NBZ-SS-0.0-0.5	D018-04	N	GEN PREP	8151A	III
03-Apr-2012	SL-034-NBZ-SS-0.0-0.5	D018-04	N	GEN PREP	8330A	III
03-Apr-2012	SL-034-NBZ-SS-0.0-0.5	D018-04	N	GEN PREP	8332	III
03-Apr-2012	SL-034-NBZ-SS-0.0-0.5	D018-04	N	GEN PREP	9014	III
03-Apr-2012	SL-034-NBZ-SS-0.0-0.5	D018-04	N	GEN PREP	9045D	III
03-Apr-2012	SL-034-NBZ-SS-0.0-0.5	D018-04R	N	GEN PREP	7199	III
03-Apr-2012	SL-032-NBZ-SS-0.0-0.5	D018-02	N	3550B	8015B EFH	III
03-Apr-2012	SL-032-NBZ-SS-0.0-0.5	D018-02	N	3550B	8081A	III
03-Apr-2012	SL-032-NBZ-SS-0.0-0.5	D018-02	N	3550B	8082	III
03-Apr-2012	SL-032-NBZ-SS-0.0-0.5	D018-02	N	3550B	8270C	III
03-Apr-2012	SL-032-NBZ-SS-0.0-0.5	D018-02	N	3550B	8270C SIM	III
03-Apr-2012	SL-032-NBZ-SS-0.0-0.5	D018-02	N	7471A	7471A	III
03-Apr-2012	SL-032-NBZ-SS-0.0-0.5	D018-02	N	GEN PREP	300.0	III
03-Apr-2012	SL-032-NBZ-SS-0.0-0.5	D018-02	N	GEN PREP	314.0	III
03-Apr-2012	SL-032-NBZ-SS-0.0-0.5	D018-02	N	GEN PREP	6020	III
03-Apr-2012	SL-032-NBZ-SS-0.0-0.5	D018-02	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
03-Apr-2012	SL-032-NBZ-SS-0.0-0.5	D018-02	N	GEN PREP	8015B	III
03-Apr-2012	SL-032-NBZ-SS-0.0-0.5	D018-02	N	GEN PREP	8015M	III
03-Apr-2012	SL-032-NBZ-SS-0.0-0.5	D018-02	N	GEN PREP	8151A	III
03-Apr-2012	SL-032-NBZ-SS-0.0-0.5	D018-02	N	GEN PREP	8330A	III
03-Apr-2012	SL-032-NBZ-SS-0.0-0.5	D018-02	N	GEN PREP	8332	III
03-Apr-2012	SL-032-NBZ-SS-0.0-0.5	D018-02	N	GEN PREP	9014	III
03-Apr-2012	SL-032-NBZ-SS-0.0-0.5	D018-02	N	GEN PREP	9045D	III
03-Apr-2012	SL-032-NBZ-SS-0.0-0.5	D018-02R	N	GEN PREP	7199	III
03-Apr-2012	SL-140-NBZ-SS-0.0-0.5	D018-12	N	3550B	8081A	III
03-Apr-2012	SL-140-NBZ-SS-0.0-0.5	D018-12	N	3550B	8082	III
03-Apr-2012	SL-140-NBZ-SS-0.0-0.5	D018-12	N	3550B	8270C	III
03-Apr-2012	SL-140-NBZ-SS-0.0-0.5	D018-12	N	3550B	8270C SIM	III
03-Apr-2012	SL-140-NBZ-SS-0.0-0.5	D018-12	N	7471A	7471A	III
03-Apr-2012	SL-140-NBZ-SS-0.0-0.5	D018-12	N	GEN PREP	300.0	III
03-Apr-2012	SL-140-NBZ-SS-0.0-0.5	D018-12	N	GEN PREP	314.0	III
03-Apr-2012	SL-140-NBZ-SS-0.0-0.5	D018-12	N	GEN PREP	6020	III
03-Apr-2012	SL-140-NBZ-SS-0.0-0.5	D018-12	N	GEN PREP	7199	III
03-Apr-2012	SL-140-NBZ-SS-0.0-0.5	D018-12	N	GEN PREP	8151A	III
03-Apr-2012	SL-140-NBZ-SS-0.0-0.5	D018-12	N	GEN PREP	9045D	III
03-Apr-2012	SL-140-NBZ-SS-0.0-0.5	D018-12R	N	GEN PREP	7199	III
03-Apr-2012	SL-035-NBZ-SS-0.0-0.5	D018-05	N	3550B	8015B EFH	III
03-Apr-2012	SL-035-NBZ-SS-0.0-0.5	D018-05	N	3550B	8081A	III
03-Apr-2012	SL-035-NBZ-SS-0.0-0.5	D018-05	N	3550B	8082	III
03-Apr-2012	SL-035-NBZ-SS-0.0-0.5	D018-05	N	3550B	8270C	III
03-Apr-2012	SL-035-NBZ-SS-0.0-0.5	D018-05	N	3550B	8270C SIM	III
03-Apr-2012	SL-035-NBZ-SS-0.0-0.5	D018-05	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
03-Apr-2012	SL-035-NBZ-SS-0.0-0.5	D018-05	N	GEN PREP	300.0	III
03-Apr-2012	SL-035-NBZ-SS-0.0-0.5	D018-05	N	GEN PREP	314.0	III
03-Apr-2012	SL-035-NBZ-SS-0.0-0.5	D018-05	N	GEN PREP	6020	III
03-Apr-2012	SL-035-NBZ-SS-0.0-0.5	D018-05	N	GEN PREP	7199	III
03-Apr-2012	SL-035-NBZ-SS-0.0-0.5	D018-05	N	GEN PREP	8015B	III
03-Apr-2012	SL-035-NBZ-SS-0.0-0.5	D018-05	N	GEN PREP	8015M	III
03-Apr-2012	SL-035-NBZ-SS-0.0-0.5	D018-05	N	GEN PREP	8151A	III
03-Apr-2012	SL-035-NBZ-SS-0.0-0.5	D018-05	N	GEN PREP	8330A	III
03-Apr-2012	SL-035-NBZ-SS-0.0-0.5	D018-05	N	GEN PREP	8332	III
03-Apr-2012	SL-035-NBZ-SS-0.0-0.5	D018-05	N	GEN PREP	9014	III
03-Apr-2012	SL-035-NBZ-SS-0.0-0.5	D018-05	N	GEN PREP	9045D	III
03-Apr-2012	SL-035-NBZ-SS-0.0-0.5	D018-05R	N	GEN PREP	7199	III
03-Apr-2012	SL-035-NBZ-SB-2.0-3.0	D018-07	N	3550B	8015B EFH	III
03-Apr-2012	SL-035-NBZ-SB-2.0-3.0	D018-07	N	3550B	8082	III
03-Apr-2012	SL-035-NBZ-SB-2.0-3.0	D018-07	N	3550B	8270C	III
03-Apr-2012	SL-035-NBZ-SB-2.0-3.0	D018-07	N	3550B	8270C SIM	III
03-Apr-2012	SL-035-NBZ-SB-2.0-3.0	D018-07	N	7471A	7471A	III
03-Apr-2012	SL-035-NBZ-SB-2.0-3.0	D018-07	N	GEN PREP	300.0	III
03-Apr-2012	SL-035-NBZ-SB-2.0-3.0	D018-07	N	GEN PREP	314.0	III
03-Apr-2012	SL-035-NBZ-SB-2.0-3.0	D018-07	N	GEN PREP	6020	III
03-Apr-2012	SL-035-NBZ-SB-2.0-3.0	D018-07	N	GEN PREP	7199	III
03-Apr-2012	SL-035-NBZ-SB-2.0-3.0	D018-07	N	GEN PREP	8015B	III
03-Apr-2012	SL-035-NBZ-SB-2.0-3.0	D018-07	N	GEN PREP	8015M	III
03-Apr-2012	SL-035-NBZ-SB-2.0-3.0	D018-07	N	GEN PREP	8330A	III
03-Apr-2012	SL-035-NBZ-SB-2.0-3.0	D018-07	N	GEN PREP	8332	III
03-Apr-2012	SL-035-NBZ-SB-2.0-3.0	D018-07	N	GEN PREP	9014	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-Apr-2012	SL-035-NBZ-SB-2.0-3.0	D018-07	N	GEN PREP	9045D	III
03-Apr-2012	SL-035-NBZ-SB-2.0-3.0DUP	D018-07D	DUP	GEN PREP	9014	III
03-Apr-2012	SL-035-NBZ-SB-2.0-3.0MS	D018-07M	MS	GEN PREP	300.0	III
03-Apr-2012	SL-035-NBZ-SB-2.0-3.0MS	D018-07M	MS	GEN PREP	9014	III
03-Apr-2012	SL-035-NBZ-SB-2.0-3.0	D018-07R	N	GEN PREP	7199	III
03-Apr-2012	SL-035-NBZ-SB-2.0-3.0MSD	D018-07S	MSD	GEN PREP	300.0	III
03-Apr-2012	SL-115-NBZ-SS-0.0-0.5	D018-09	N	3550B	8081A	III
03-Apr-2012	SL-115-NBZ-SS-0.0-0.5	D018-09	N	3550B	8082	III
03-Apr-2012	SL-115-NBZ-SS-0.0-0.5	D018-09	N	3550B	8270C	III
03-Apr-2012	SL-115-NBZ-SS-0.0-0.5	D018-09	N	3550B	8270C SIM	III
03-Apr-2012	SL-115-NBZ-SS-0.0-0.5	D018-09	N	7471A	7471A	III
03-Apr-2012	SL-115-NBZ-SS-0.0-0.5	D018-09	N	GEN PREP	300.0	III
03-Apr-2012	SL-115-NBZ-SS-0.0-0.5	D018-09	N	GEN PREP	314.0	III
03-Apr-2012	SL-115-NBZ-SS-0.0-0.5	D018-09	N	GEN PREP	6020	III
03-Apr-2012	SL-115-NBZ-SS-0.0-0.5	D018-09	N	GEN PREP	7199	III
03-Apr-2012	SL-115-NBZ-SS-0.0-0.5	D018-09	N	GEN PREP	8151A	III
03-Apr-2012	SL-115-NBZ-SS-0.0-0.5	D018-09	N	GEN PREP	9045D	III
03-Apr-2012	SL-115-NBZ-SS-0.0-0.5	D018-09R	N	GEN PREP	7199	III
03-Apr-2012	SL-035-NBZ-SB-2.5	D018-06	N	5035	8015B GRO	III
03-Apr-2012	SL-198-NBZ-SS-0.0-0.5	D018-14	N	3550B	8081A	III
03-Apr-2012	SL-198-NBZ-SS-0.0-0.5	D018-14	N	3550B	8082	III
03-Apr-2012	SL-198-NBZ-SS-0.0-0.5	D018-14	N	3550B	8270C	III
03-Apr-2012	SL-198-NBZ-SS-0.0-0.5	D018-14	N	3550B	8270C SIM	III
03-Apr-2012	SL-198-NBZ-SS-0.0-0.5	D018-14	N	7471A	7471A	III
03-Apr-2012	SL-198-NBZ-SS-0.0-0.5	D018-14	N	GEN PREP	300.0	III
03-Apr-2012	SL-198-NBZ-SS-0.0-0.5	D018-14	N	GEN PREP	314.0	III

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

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
03-Apr-2012	SL-198-NBZ-SS-0.0-0.5	D018-14	N	GEN PREP	6020	III
03-Apr-2012	SL-198-NBZ-SS-0.0-0.5	D018-14	N	GEN PREP	7199	III
03-Apr-2012	SL-198-NBZ-SS-0.0-0.5	D018-14	N	GEN PREP	8151A	III
03-Apr-2012	SL-198-NBZ-SS-0.0-0.5	D018-14	N	GEN PREP	9045D	III
03-Apr-2012	SL-198-NBZ-SS-0.0-0.5MS	D018-14M	MS	GEN PREP	6020	III
03-Apr-2012	SL-198-NBZ-SS-0.0-0.5	D018-14R	N	GEN PREP	7199	III
03-Apr-2012	SL-198-NBZ-SS-0.0-0.5MSD	D018-14S	MSD	GEN PREP	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: 12D018 **Laboratory: EMXT**

EDD Filename: 12D018R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: GENCHEM

Method: 300.0 **Matrix: SO**

Sample ID: SL-035-NBZ-SB-2.0-3.0 *Collected:* 4/3/2012 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
Nitrate-NO3	1.55	J	0.788	MDL	1.58	PQL	MG/KG	J	Z

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: SL-031-NBZ-SS-0.0-0.5 *Collected:* 4/3/2012 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
ALUMINUM	9650		13.0	MDL	25.9	PQL	MG/KG	J	Q
ANTIMONY	0.151	J	0.108	MDL	0.216	PQL	MG/KG	J	Z
Zirconium	5.40	U	2.70	MDL	5.40	PQL	MG/KG	UJ	Q

Sample ID: SL-032-NBZ-SS-0.0-0.5 *Collected:* 4/3/2012 2:00:00 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
ALUMINUM	10500		13.4	MDL	26.9	PQL	MG/KG	J	Q
ANTIMONY	0.155	J	0.112	MDL	0.224	PQL	MG/KG	J	Z
Zirconium	5.60	U	2.80	MDL	5.60	PQL	MG/KG	UJ	Q

Sample ID: SL-033-NBZ-SS-0.0-0.5 *Collected:* 4/3/2012 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
ALUMINUM	10400		12.7	MDL	25.4	PQL	MG/KG	J	Q
ANTIMONY	0.116	J	0.106	MDL	0.212	PQL	MG/KG	J	Z
Zirconium	5.30	U	2.65	MDL	5.30	PQL	MG/KG	UJ	Q

Sample ID: SL-034-NBZ-SS-0.0-0.5 *Collected:* 4/3/2012 11:22:00 *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	9960		14.1	MDL	28.1	PQL	MG/KG	J	Q
ANTIMONY	0.158	J	0.117	MDL	0.234	PQL	MG/KG	J	Z
Zirconium	5.86	U	2.93	MDL	5.86	PQL	MG/KG	UJ	Q

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12D018 **Laboratory: EMXT**

EDD Filename: 12D018R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: **METALS**

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

Sample ID: **SL-035-NBZ-SB-2.0-3.0** ***Collected:*** **4/3/2012 2:30:00 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
ALUMINUM	14400		12.5	MDL	25.1	PQL	MG/KG	J	Q
SODIUM	57.8	J	52.3	MDL	105	PQL	MG/KG	J	Z
Zirconium	5.23	U	2.61	MDL	5.23	PQL	MG/KG	UJ	Q

Sample ID: **SL-035-NBZ-SS-0.0-0.5** ***Collected:*** **4/3/2012 2:30:00 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
ALUMINUM	10900		13.3	MDL	26.6	PQL	MG/KG	J	Q
ANTIMONY	0.139	J	0.111	MDL	0.222	PQL	MG/KG	J	Z
Zirconium	5.54	U	2.77	MDL	5.54	PQL	MG/KG	UJ	Q

Sample ID: **SL-108-NBZ-SS-0.0-0.5** ***Collected:*** **4/3/2012 9:45:00 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	9050		12.7	MDL	25.5	PQL	MG/KG	J	Q
Zirconium	5.30	U	2.65	MDL	5.30	PQL	MG/KG	UJ	Q

Sample ID: **SL-115-NBZ-SS-0.0-0.5** ***Collected:*** **4/3/2012 2:32:00 PM** ***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	11400		13.0	MDL	26.1	PQL	MG/KG	J	Q
ANTIMONY	0.192	J	0.109	MDL	0.217	PQL	MG/KG	J	Z
SODIUM	61.5	J	54.3	MDL	109	PQL	MG/KG	J	Z
Zirconium	5.43	U	2.71	MDL	5.43	PQL	MG/KG	UJ	Q

Sample ID: **SL-122-NBZ-SS-0.0-0.5** ***Collected:*** **4/3/2012 11:03:00** ***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	10600		13.6	MDL	27.2	PQL	MG/KG	J	Q
ANTIMONY	0.158	J	0.113	MDL	0.226	PQL	MG/KG	J	Z
Zirconium	5.66	U	2.83	MDL	5.66	PQL	MG/KG	UJ	Q

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12D018 **Laboratory:** EMXT

EDD Filename: 12D018R **eQAPP Name:** CDM_SSFL_120730_EMAX

Method Category: METALS

Method: 6020 **Matrix:** SO

Sample ID: SL-127-NBZ-SS-0.0-0.5 *Collected:* 4/3/2012 10:10:00 *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	10400		12.4	MDL	24.9	PQL	MG/KG	J	Q
Zirconium	5.18	U	2.59	MDL	5.18	PQL	MG/KG	UJ	Q

Sample ID: SL-140-NBZ-SS-0.0-0.5 *Collected:* 4/3/2012 2:06:00 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
ALUMINUM	12200		13.3	MDL	26.6	PQL	MG/KG	J	Q
ANTIMONY	0.216	J	0.111	MDL	0.222	PQL	MG/KG	J	Z
SODIUM	65.3	J	55.5	MDL	111	PQL	MG/KG	J	Z
Zirconium	5.55	U	2.78	MDL	5.55	PQL	MG/KG	UJ	Q

Sample ID: SL-169-NBZ-SS-0.0-0.5 *Collected:* 4/3/2012 9:11:00 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
ALUMINUM	10800		12.7	MDL	25.4	PQL	MG/KG	J	Q
ANTIMONY	0.150	J	0.106	MDL	0.212	PQL	MG/KG	J	Z
SODIUM	58.4	J	52.9	MDL	106	PQL	MG/KG	J	Z
Zirconium	5.29	U	2.65	MDL	5.29	PQL	MG/KG	UJ	Q

Sample ID: SL-198-NBZ-SS-0.0-0.5 *Collected:* 4/3/2012 3:26:00 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
ALUMINUM	10400		12.7	MDL	25.5	PQL	MG/KG	J	Q
ANTIMONY	0.208	J	0.106	MDL	0.212	PQL	MG/KG	J	Z
Zirconium	5.30	U	2.65	MDL	5.30	PQL	MG/KG	UJ	Q

Method Category: SVOA

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

Sample ID: SL-031-NBZ-SS-0.0-0.5 *Collected:* 4/3/2012 9:30:00 AM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH(C15-C20)	0.93	J	0.54	MDL	1.1	PQL	MG/KG	J	Z
EFH(C8-C11)	0.61	J	0.54	MDL	1.1	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12D018 **Laboratory: EMXT**

EDD Filename: 12D018R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

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

Sample ID: SL-032-NBZ-SS-0.0-0.5 *Collected:* 4/3/2012 2:00:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH(C15-C20)	0.76	J	0.57	MDL	1.1	PQL	MG/KG	J	Z
EFH(C8-C11)	0.62	J	0.57	MDL	1.1	PQL	MG/KG	J	Z

Sample ID: SL-033-NBZ-SS-0.0-0.5 *Collected:* 4/3/2012 10:30:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH(C8-C11)	0.61	J	0.55	MDL	1.1	PQL	MG/KG	J	Z

Sample ID: SL-034-NBZ-SS-0.0-0.5 *Collected:* 4/3/2012 11:22:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH(C8-C11)	0.70	J	0.60	MDL	1.2	PQL	MG/KG	J	Z

Sample ID: SL-035-NBZ-SB-2.0-3.0 *Collected:* 4/3/2012 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
EFH(C8-C11)	0.54	J	0.53	MDL	1.1	PQL	MG/KG	J	Z

Sample ID: SL-035-NBZ-SS-0.0-0.5 *Collected:* 4/3/2012 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
EFH(C8-C11)	0.61	J	0.57	MDL	1.1	PQL	MG/KG	J	Z

Method Category: SVOA

Method: 8081A **Matrix: SO**

Sample ID: SL-108-NBZ-SS-0.0-0.5 *Collected:* 4/3/2012 9:45:00 AM *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDD	0.20	J	0.18	MDL	0.36	PQL	UG/KG	J	Z

Sample ID: SL-127-NBZ-SS-0.0-0.5 *Collected:* 4/3/2012 10:10:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDT	0.22	J	0.18	MDL	0.36	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12D018 **Laboratory:** EMXT

EDD Filename: 12D018R **eQAPP Name:** CDM_SSFL_120730_EMAX

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

Sample ID: SL-169-NBZ-SS-0.0-0.5 *Collected:* 4/3/2012 9:11:00 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
4,4'-DDT	0.28	J	0.19	MDL	0.38	PQL	UG/KG	J	Z

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

Sample ID: SL-140-NBZ-SS-0.0-0.5 *Collected:* 4/3/2012 2:06:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Aroclor 5460	2.2	J	2.0	MDL	3.8	PQL	UG/KG	J	Z

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

Sample ID: SL-031-NBZ-SS-0.0-0.5 *Collected:* 4/3/2012 9:30:00 AM *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZIDINE	900	U	460	MDL	900	PQL	UG/KG	UJ	Q

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

Sample ID: SL-032-NBZ-SS-0.0-0.5 *Collected:* 4/3/2012 2:00:00 PM *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1-METHYLNAPHTHALENE	1.1	J	0.97	MDL	1.9	PQL	UG/KG	J	Z
2-METHYLNAPHTHALENE	1.4	J	0.97	MDL	1.9	PQL	UG/KG	J	Z
ACENAPHTHENE	1.1	J	0.97	MDL	1.9	PQL	UG/KG	J	Z
ACENAPHTHYLENE	1.0	J	0.97	MDL	1.9	PQL	UG/KG	J	Z
Butylbenzylphthalate	16	J	9.5	MDL	19	PQL	UG/KG	J	Z
CHRYSENE	1.6	J	0.97	MDL	1.9	PQL	UG/KG	J	Z
INDENO(1,2,3-CD)PYRENE	1.8	J	0.97	MDL	1.9	PQL	UG/KG	J	Z
NAPHTHALENE	1.2	J	0.97	MDL	1.9	PQL	UG/KG	J	Z
PHENANTHRENE	1.7	J	0.97	MDL	1.9	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12D018 **Laboratory: EMXT**

EDD Filename: 12D018R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

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

Sample ID: SL-034-NBZ-SS-0.0-0.5 *Collected:* 4/3/2012 11:22:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(B)FLUORANTHENE	1.9	J	1.0	MDL	2.0	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	1.6	J	1.0	MDL	2.0	PQL	UG/KG	J	Z
CHRYSENE	1.1	J	1.0	MDL	2.0	PQL	UG/KG	J	Z
FLUORANTHENE	1.9	J	1.0	MDL	2.0	PQL	UG/KG	J	Z
PHENANTHRENE	1.1	J	1.0	MDL	2.0	PQL	UG/KG	J	Z
PYRENE	1.8	J	1.0	MDL	2.0	PQL	UG/KG	J	Z

Sample ID: SL-035-NBZ-SB-2.0-3.0 *Collected:* 4/3/2012 2:30:00 PM *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACENAPHTHENE	1.0	J	0.89	MDL	1.8	PQL	UG/KG	J	Z
ACENAPHTHYLENE	1.0	J	0.89	MDL	1.8	PQL	UG/KG	J	Z
NAPHTHALENE	1.1	J	0.89	MDL	1.8	PQL	UG/KG	J	Z

Sample ID: SL-035-NBZ-SS-0.0-0.5 *Collected:* 4/3/2012 2:30:00 PM *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORANTHENE	1.5	J	0.96	MDL	1.9	PQL	UG/KG	J	Z

Sample ID: SL-115-NBZ-SS-0.0-0.5 *Collected:* 4/3/2012 2:32:00 PM *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(B)FLUORANTHENE	1.1	J	0.97	MDL	1.9	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	1.0	J	0.97	MDL	1.9	PQL	UG/KG	J	Z
FLUORANTHENE	1.1	J	0.97	MDL	1.9	PQL	UG/KG	J	Z
PYRENE	1.2	J	0.97	MDL	1.9	PQL	UG/KG	J	Z

Sample ID: SL-122-NBZ-SS-0.0-0.5 *Collected:* 4/3/2012 11:03:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BIS(2-ETHYLHEXYL)PHTHALATE	15	J	9.6	MDL	19	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12D018 **Laboratory: EMXT**

EDD Filename: 12D018R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

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

Sample ID: SL-127-NBZ-SS-0.0-0.5 *Collected:* 4/3/2012 10:10:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BIS(2-ETHYLHEXYL)PHTHALATE	16	J	8.9	MDL	18	PQL	UG/KG	J	Z

Sample ID: SL-140-NBZ-SS-0.0-0.5 *Collected:* 4/3/2012 2:06:00 PM *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(B)FLUORANTHENE	1.5	J	0.99	MDL	2.0	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	1.1	J	0.99	MDL	2.0	PQL	UG/KG	J	Z
CHRYSENE	1.1	J	0.99	MDL	2.0	PQL	UG/KG	J	Z
FLUORANTHENE	1.5	J	0.99	MDL	2.0	PQL	UG/KG	J	Z
PYRENE	1.4	J	0.99	MDL	2.0	PQL	UG/KG	J	Z

Sample ID: SL-169-NBZ-SS-0.0-0.5 *Collected:* 4/3/2012 9:11:00 AM *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(B)FLUORANTHENE	1.1	J	0.94	MDL	1.9	PQL	UG/KG	J	Z
FLUORANTHENE	1.1	J	0.94	MDL	1.9	PQL	UG/KG	J	Z
PYRENE	1.1	J	0.94	MDL	1.9	PQL	UG/KG	J	Z

Sample ID: SL-198-NBZ-SS-0.0-0.5 *Collected:* 4/3/2012 3:26:00 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
Butylbenzylphthalate	9.3	J	9.1	MDL	18	PQL	UG/KG	J	Z

Method Category: VOA

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

Sample ID: TB-040312 *Collected:* 4/3/2012 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)	27	J	10	MDL	50	PQL	UG/L	J	Z

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12D018 **Laboratory: EMXT**

EDD Filename: 12D018R **eQAPP Name: CDM_SSFL_120730_EMAX**

Reason Code Legend

Reason Code	*Description*
Q	Matrix Spike Lower Estimation
Q	Matrix Spike Lower Rejection
S	Surrogate/Tracer Recovery Lower Estimation
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Enclosure I

Level III ADR Outliers
(including Manual Review Outliers)

Quality Control
Outlier Reports

12D018

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 12D018 | Laboratory: EMXT

EDD Filename: 12D018R | 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-198-NBZ-SS-0.0-0.5MS (TOT) SL-198-NBZ-SS-0.0-0.5MSD (TOT) (SL-031-NBZ-SS-0.0-0.5 SL -032-NBZ-SS-0.0-0.5 SL -033-NBZ-SS-0.0-0.5 SL -034-NBZ-SS-0.0-0.5 SL -035-NBZ-SB-2.0-3.0 SL -035-NBZ-SS-0.0-0.5 SL -108-NBZ-SS-0.0-0.5 SL -115-NBZ-SS-0.0-0.5 SL -122-NBZ-SS-0.0-0.5 SL -127-NBZ-SS-0.0-0.5 SL -140-NBZ-SS-0.0-0.5 SL -169-NBZ-SS-0.0-0.5 SL -198-NBZ-SS-0.0-0.5)	MANGANESE TITANIUM	68 -110	29 -237	75.00-125.00 75.00-125.00	- -	MANGANESE TITANIUM	No Qual, >4x
SL-198-NBZ-SS-0.0-0.5MS (TOT) SL-198-NBZ-SS-0.0-0.5MSD (TOT) (SL-031-NBZ-SS-0.0-0.5 SL -032-NBZ-SS-0.0-0.5 SL -033-NBZ-SS-0.0-0.5 SL -034-NBZ-SS-0.0-0.5 SL -035-NBZ-SB-2.0-3.0 SL -035-NBZ-SS-0.0-0.5 SL -108-NBZ-SS-0.0-0.5 SL -115-NBZ-SS-0.0-0.5 SL -122-NBZ-SS-0.0-0.5 SL -127-NBZ-SS-0.0-0.5 SL -140-NBZ-SS-0.0-0.5 SL -169-NBZ-SS-0.0-0.5 SL -198-NBZ-SS-0.0-0.5)	ALUMINUM IRON Zirconium	74 59 55	72 50 55	75.00-125.00 75.00-125.00 75.00-125.00	- - -	ALUMINUM IRON Zirconium	J(all detects) UJ(all non-detects) Fe, No Qual, >4x

Method: 8270C
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-031-NBZ-SS-0.0-0.5MS SL-031-NBZ-SS-0.0-0.5MSD (SL-031-NBZ-SS-0.0-0.5)	BENZIDINE	3	4	10.00-150.00	-	BENZIDINE	J(all detects) UJ(all non-detects)

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Reporting Limit Outliers

Lab Reporting Batch ID: 12D018 **Laboratory: EMXT**

EDD Filename: 12D018R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 8015B GRO
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TB-040312	GASOLINE RANGE ORGANICS (C5-C12)	J	27	50	PQL	UG/L	J (all detects)

Method: 300.0
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-035-NBZ-SB-2.0-3.0	Nitrate-NO3	J	1.55	1.58	PQL	MG/KG	J (all detects)

Method: 6020
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-031-NBZ-SS-0.0-0.5	ANTIMONY	J	0.151	0.216	PQL	MG/KG	J (all detects)
SL-032-NBZ-SS-0.0-0.5	ANTIMONY	J	0.155	0.224	PQL	MG/KG	J (all detects)
SL-033-NBZ-SS-0.0-0.5	ANTIMONY	J	0.116	0.212	PQL	MG/KG	J (all detects)
SL-034-NBZ-SS-0.0-0.5	ANTIMONY	J	0.158	0.234	PQL	MG/KG	J (all detects)
SL-035-NBZ-SB-2.0-3.0	SODIUM	J	57.8	105	PQL	MG/KG	J (all detects)
SL-035-NBZ-SS-0.0-0.5	ANTIMONY	J	0.139	0.222	PQL	MG/KG	J (all detects)
SL-115-NBZ-SS-0.0-0.5	ANTIMONY SODIUM	J J	0.192 61.5	0.217 109	PQL PQL	MG/KG MG/KG	J (all detects)
SL-122-NBZ-SS-0.0-0.5	ANTIMONY	J	0.158	0.226	PQL	MG/KG	J (all detects)
SL-140-NBZ-SS-0.0-0.5	ANTIMONY SODIUM	J J	0.216 65.3	0.222 111	PQL PQL	MG/KG MG/KG	J (all detects)
SL-169-NBZ-SS-0.0-0.5	ANTIMONY SODIUM	J J	0.150 58.4	0.212 106	PQL PQL	MG/KG MG/KG	J (all detects)
SL-198-NBZ-SS-0.0-0.5	ANTIMONY	J	0.208	0.212	PQL	MG/KG	J (all detects)

Method: 8015B EFH
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-031-NBZ-SS-0.0-0.5	EFH(C15-C20) EFH(C8-C11)	J J	0.93 0.61	1.1 1.1	PQL PQL	MG/KG MG/KG	J (all detects)
SL-032-NBZ-SS-0.0-0.5	EFH(C15-C20) EFH(C8-C11)	J J	0.76 0.62	1.1 1.1	PQL PQL	MG/KG MG/KG	J (all detects)
SL-033-NBZ-SS-0.0-0.5	EFH(C8-C11)	J	0.61	1.1	PQL	MG/KG	J (all detects)
SL-034-NBZ-SS-0.0-0.5	EFH(C8-C11)	J	0.70	1.2	PQL	MG/KG	J (all detects)
SL-035-NBZ-SB-2.0-3.0	EFH(C8-C11)	J	0.54	1.1	PQL	MG/KG	J (all detects)

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Reporting Limit Outliers

Lab Reporting Batch ID: 12D018 **Laboratory:** EMXT

EDD Filename: 12D018R **eQAPP Name:** CDM_SSFL_120730_EMAX

Method: 8015B EFH
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-035-NBZ-SS-0.0-0.5	EFH(C8-C11)	J	0.61	1.1	PQL	MG/KG	J (all detects)

Method: 8081A
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-108-NBZ-SS-0.0-0.5	4,4'-DDD	J	0.20	0.36	PQL	UG/KG	J (all detects)
SL-127-NBZ-SS-0.0-0.5	4,4'-DDT	J	0.22	0.36	PQL	UG/KG	J (all detects)
SL-169-NBZ-SS-0.0-0.5	4,4'-DDT	J	0.28	0.38	PQL	UG/KG	J (all detects)

Method: 8082
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-140-NBZ-SS-0.0-0.5	Aroclor 5460	J	2.2	3.8	PQL	UG/KG	J (all detects)

Method: 8270C SIM
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-032-NBZ-SS-0.0-0.5	1-METHYLNAPHTHALENE	J	1.1	1.9	PQL	UG/KG	J (all detects)
	2-METHYLNAPHTHALENE	J	1.4	1.9	PQL	UG/KG	
	ACENAPHTHENE	J	1.1	1.9	PQL	UG/KG	
	ACENAPHTHYLENE	J	1.0	1.9	PQL	UG/KG	
	Butylbenzylphthalate	J	16	19	PQL	UG/KG	
	CHRYSENE	J	1.6	1.9	PQL	UG/KG	
	INDENO(1,2,3-CD)PYRENE	J	1.8	1.9	PQL	UG/KG	
	NAPHTHALENE	J	1.2	1.9	PQL	UG/KG	
	PHENANTHRENE	J	1.7	1.9	PQL	UG/KG	
SL-034-NBZ-SS-0.0-0.5	BENZO(B)FLUORANTHENE	J	1.9	2.0	PQL	UG/KG	J (all detects)
	BENZO(G,H,I)PERYLENE	J	1.6	2.0	PQL	UG/KG	
	CHRYSENE	J	1.1	2.0	PQL	UG/KG	
	FLUORANTHENE	J	1.9	2.0	PQL	UG/KG	
	PHENANTHRENE	J	1.1	2.0	PQL	UG/KG	
	PYRENE	J	1.8	2.0	PQL	UG/KG	
SL-035-NBZ-SB-2.0-3.0	ACENAPHTHENE	J	1.0	1.8	PQL	UG/KG	J (all detects)
	ACENAPHTHYLENE	J	1.0	1.8	PQL	UG/KG	
	NAPHTHALENE	J	1.1	1.8	PQL	UG/KG	
SL-035-NBZ-SS-0.0-0.5	FLUORANTHENE	J	1.5	1.9	PQL	UG/KG	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: 12D018 **Laboratory: EMXT**

EDD Filename: 12D018R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 8270C SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-115-NBZ-SS-0.0-0.5	BENZO(B)FLUORANTHENE	J	1.1	1.9	PQL	UG/KG	J (all detects)
	BENZO(G,H,I)PERYLENE	J	1.0	1.9	PQL	UG/KG	
	FLUORANTHENE	J	1.1	1.9	PQL	UG/KG	
	PYRENE	J	1.2	1.9	PQL	UG/KG	
SL-122-NBZ-SS-0.0-0.5	BIS(2-ETHYLHEXYL)PHTHALATE	J	15	19	PQL	UG/KG	J (all detects)
SL-127-NBZ-SS-0.0-0.5	BIS(2-ETHYLHEXYL)PHTHALATE	J	16	18	PQL	UG/KG	J (all detects)
SL-140-NBZ-SS-0.0-0.5	BENZO(B)FLUORANTHENE	J	1.5	2.0	PQL	UG/KG	J (all detects)
	BENZO(G,H,I)PERYLENE	J	1.1	2.0	PQL	UG/KG	
	CHRYSENE	J	1.1	2.0	PQL	UG/KG	
	FLUORANTHENE	J	1.5	2.0	PQL	UG/KG	
	PYRENE	J	1.4	2.0	PQL	UG/KG	
SL-169-NBZ-SS-0.0-0.5	BENZO(B)FLUORANTHENE	J	1.1	1.9	PQL	UG/KG	J (all detects)
	FLUORANTHENE	J	1.1	1.9	PQL	UG/KG	
	PYRENE	J	1.1	1.9	PQL	UG/KG	
SL-198-NBZ-SS-0.0-0.5	Butylbenzylphthalate	J	9.3	18	PQL	UG/KG	J (all detects)

LDC #: 28255O4 **VALIDATION COMPLETENESS WORKSHEET** Date: 8/29-12

SDG #: 12D018 ADR Page: 1 of 1

Laboratory: EMAX Laboratories, Inc. Reviewer:

2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6010B/6020A/7000) 7471A

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

	Validation Area		Comments
I.	Technical holding times	—	Sampling dates: 4/3/12
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-NBZ-SB-040412 > 12D031 EB-NBZ-SS-040412

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-031-NBZ-SS-0.0-0.5	11	SL-140-NBZ-SS-0.0-0.5	21		31	
2	SL-032-NBZ-SS-0.0-0.5	12	SL-169-NBZ-SS-0.0-0.5	22		32	
3	SL-033-NBZ-SS-0.0-0.5	13	SL-198-NBZ-SS-0.0-0.5	23		33	
4	SL-034-NBZ-SS-0.0-0.5	14	SL-031-NBZ-SS-0.0-0.5MS (HS)	24		34	
5	SL-035-NBZ-SS-0.0-0.5	15	SL-031-NBZ-SS-0.0-0.5MSD ↓	25		35	
6	SL-035-NBZ-SB-2.0-3.0	16	SL-198-NBZ-SS-0.0-0.5MS	26		36	
7	SL-108-NBZ-SS-0.0-0.5	17	SL-198-NBZ-SS-0.0-0.5MSD	27		37	
8	SL-115-NBZ-SS-0.0-0.5	18		28		38	
9	SL-122-NBZ-SS-0.0-0.5	19		29		39	
10	SL-127-NBZ-SS-0.0-0.5	20		30		40	

Notes:

LDC #: 28255O4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer:
2nd Reviewer:

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

Blank units: mg/L **Associated sample units:** mg/Kg
Sampling date: 4/4/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: 6

Analyte	Blank ID	Sample Identification										
	EB-NBZ-SB-040412 (SDG: 12D031)	Action Limit	No Qualifiers									
Ca	0.0253	6.325										
Zn	0.0146	3.65										

Sampling date: 4/4/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: 1-5, 7-13

Analyte	Blank ID	Sample Identification										
	EB-NBZ-SS-040412 (SDG: 12D031)	Action Limit	No Qualifiers									
Cr	0.000239	0.05975										
Cu	0.000719	0.17975										

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

12D031

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-Apr-2012	TB-040412	D031-16	TB	5030B	8015B GRO	IV
04-Apr-2012	TB-040412	D031-16	TB	5030B	8260B	IV
04-Apr-2012	TB-040412	D031-16	TB	5030B	8260B SIM	IV
04-Apr-2012	SL-110-NBZ-SS-0.0-0.5	D031-10	N	3550B	8081A	IV
04-Apr-2012	SL-110-NBZ-SS-0.0-0.5	D031-10	N	3550B	8082	IV
04-Apr-2012	SL-110-NBZ-SS-0.0-0.5	D031-10	N	3550B	8270C	IV
04-Apr-2012	SL-110-NBZ-SS-0.0-0.5	D031-10	N	3550B	8270C SIM	IV
04-Apr-2012	SL-110-NBZ-SS-0.0-0.5	D031-10	N	7471A	7471A	IV
04-Apr-2012	SL-110-NBZ-SS-0.0-0.5	D031-10	N	GEN PREP	300.0	IV
04-Apr-2012	SL-110-NBZ-SS-0.0-0.5	D031-10	N	GEN PREP	314.0	IV
04-Apr-2012	SL-110-NBZ-SS-0.0-0.5	D031-10	N	GEN PREP	6020	IV
04-Apr-2012	SL-110-NBZ-SS-0.0-0.5	D031-10	N	GEN PREP	7199	IV
04-Apr-2012	SL-110-NBZ-SS-0.0-0.5	D031-10	N	GEN PREP	8151A	IV
04-Apr-2012	SL-110-NBZ-SS-0.0-0.5	D031-10	N	GEN PREP	9045D	IV
04-Apr-2012	SL-110-NBZ-SS-0.0-0.5	D031-10R	N	GEN PREP	7199	IV
04-Apr-2012	SL-097-NBZ-SS-0.0-0.5	D031-06	N	3550B	8081A	IV
04-Apr-2012	SL-097-NBZ-SS-0.0-0.5	D031-06	N	3550B	8082	IV
04-Apr-2012	SL-097-NBZ-SS-0.0-0.5	D031-06	N	3550B	8270C	IV
04-Apr-2012	SL-097-NBZ-SS-0.0-0.5	D031-06	N	3550B	8270C SIM	IV
04-Apr-2012	SL-097-NBZ-SS-0.0-0.5	D031-06	N	7471A	7471A	IV
04-Apr-2012	SL-097-NBZ-SS-0.0-0.5	D031-06	N	GEN PREP	300.0	IV
04-Apr-2012	SL-097-NBZ-SS-0.0-0.5	D031-06	N	GEN PREP	314.0	IV
04-Apr-2012	SL-097-NBZ-SS-0.0-0.5	D031-06	N	GEN PREP	6020	IV
04-Apr-2012	SL-097-NBZ-SS-0.0-0.5	D031-06	N	GEN PREP	7199	IV
04-Apr-2012	SL-097-NBZ-SS-0.0-0.5	D031-06	N	GEN PREP	8151A	IV
04-Apr-2012	SL-097-NBZ-SS-0.0-0.5	D031-06	N	GEN PREP	9045D	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
04-Apr-2012	SL-097-NBZ-SS-0.0-0.5	D031-06R	N	GEN PREP	7199	IV
04-Apr-2012	SL-114-NBZ-SS-0.0-0.5	D031-11	N	3550B	8081A	IV
04-Apr-2012	SL-114-NBZ-SS-0.0-0.5	D031-11	N	3550B	8082	IV
04-Apr-2012	SL-114-NBZ-SS-0.0-0.5	D031-11	N	3550B	8270C	IV
04-Apr-2012	SL-114-NBZ-SS-0.0-0.5	D031-11	N	3550B	8270C SIM	IV
04-Apr-2012	SL-114-NBZ-SS-0.0-0.5	D031-11	N	7471A	7471A	IV
04-Apr-2012	SL-114-NBZ-SS-0.0-0.5	D031-11	N	GEN PREP	300.0	IV
04-Apr-2012	SL-114-NBZ-SS-0.0-0.5	D031-11	N	GEN PREP	314.0	IV
04-Apr-2012	SL-114-NBZ-SS-0.0-0.5	D031-11	N	GEN PREP	6020	IV
04-Apr-2012	SL-114-NBZ-SS-0.0-0.5	D031-11	N	GEN PREP	7199	IV
04-Apr-2012	SL-114-NBZ-SS-0.0-0.5	D031-11	N	GEN PREP	8151A	IV
04-Apr-2012	SL-114-NBZ-SS-0.0-0.5	D031-11	N	GEN PREP	9045D	IV
04-Apr-2012	SL-114-NBZ-SS-0.0-0.5	D031-11R	N	GEN PREP	7199	IV
04-Apr-2012	SL-100-NBZ-SS-0.0-0.5	D031-08	N	3550B	8081A	IV
04-Apr-2012	SL-100-NBZ-SS-0.0-0.5	D031-08	N	3550B	8082	IV
04-Apr-2012	SL-100-NBZ-SS-0.0-0.5	D031-08	N	3550B	8270C	IV
04-Apr-2012	SL-100-NBZ-SS-0.0-0.5	D031-08	N	3550B	8270C SIM	IV
04-Apr-2012	SL-100-NBZ-SS-0.0-0.5	D031-08	N	7471A	7471A	IV
04-Apr-2012	SL-100-NBZ-SS-0.0-0.5	D031-08	N	GEN PREP	300.0	IV
04-Apr-2012	SL-100-NBZ-SS-0.0-0.5	D031-08	N	GEN PREP	314.0	IV
04-Apr-2012	SL-100-NBZ-SS-0.0-0.5	D031-08	N	GEN PREP	6020	IV
04-Apr-2012	SL-100-NBZ-SS-0.0-0.5	D031-08	N	GEN PREP	7199	IV
04-Apr-2012	SL-100-NBZ-SS-0.0-0.5	D031-08	N	GEN PREP	8151A	IV
04-Apr-2012	SL-100-NBZ-SS-0.0-0.5	D031-08	N	GEN PREP	9045D	IV
04-Apr-2012	SL-100-NBZ-SS-0.0-0.5DUP	D031-08D	DUP	GEN PREP	7199	IV
04-Apr-2012	SL-100-NBZ-SS-0.0-0.5MS	D031-08G	MS	GEN PREP	7199	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
04-Apr-2012	SL-100-NBZ-SS-0.0-0.5MS	D031-08G1	MS	GEN PREP	7199	IV
04-Apr-2012	SL-100-NBZ-SS-0.0-0.5MS	D031-08M	MS	GEN PREP	300.0	IV
04-Apr-2012	SL-100-NBZ-SS-0.0-0.5MS	D031-08M	MS	GEN PREP	314.0	IV
04-Apr-2012	SL-100-NBZ-SS-0.0-0.5MS	D031-08M	MS	GEN PREP	7199	IV
04-Apr-2012	SL-100-NBZ-SS-0.0-0.5MS	D031-08M1	MS	GEN PREP	7199	IV
04-Apr-2012	SL-100-NBZ-SS-0.0-0.5	D031-08R	N	GEN PREP	7199	IV
04-Apr-2012	SL-100-NBZ-SS-0.0-0.5MSD	D031-08S	MSD	GEN PREP	300.0	IV
04-Apr-2012	SL-100-NBZ-SS-0.0-0.5MSD	D031-08S	MSD	GEN PREP	314.0	IV
04-Apr-2012	SL-100-NBZ-SS-0.0-0.5DUP	D031-08Z	DUP	GEN PREP	7199	IV
04-Apr-2012	SL-104-NBZ-SS-0.0-0.5	D031-09	N	3550B	8081A	IV
04-Apr-2012	SL-104-NBZ-SS-0.0-0.5	D031-09	N	3550B	8082	IV
04-Apr-2012	SL-104-NBZ-SS-0.0-0.5	D031-09	N	3550B	8270C	IV
04-Apr-2012	SL-104-NBZ-SS-0.0-0.5	D031-09	N	3550B	8270C SIM	IV
04-Apr-2012	SL-104-NBZ-SS-0.0-0.5	D031-09	N	7471A	7471A	IV
04-Apr-2012	SL-104-NBZ-SS-0.0-0.5	D031-09	N	GEN PREP	300.0	IV
04-Apr-2012	SL-104-NBZ-SS-0.0-0.5	D031-09	N	GEN PREP	314.0	IV
04-Apr-2012	SL-104-NBZ-SS-0.0-0.5	D031-09	N	GEN PREP	6020	IV
04-Apr-2012	SL-104-NBZ-SS-0.0-0.5	D031-09	N	GEN PREP	6850	IV
04-Apr-2012	SL-104-NBZ-SS-0.0-0.5	D031-09	N	GEN PREP	7199	IV
04-Apr-2012	SL-104-NBZ-SS-0.0-0.5	D031-09	N	GEN PREP	8151A	IV
04-Apr-2012	SL-104-NBZ-SS-0.0-0.5	D031-09	N	GEN PREP	9045D	IV
04-Apr-2012	SL-104-NBZ-SS-0.0-0.5	D031-09R	N	GEN PREP	7199	IV
04-Apr-2012	SL-099-NBZ-SS-0.0-0.5	D031-07	N	3550B	8081A	IV
04-Apr-2012	SL-099-NBZ-SS-0.0-0.5	D031-07	N	3550B	8082	IV
04-Apr-2012	SL-099-NBZ-SS-0.0-0.5	D031-07	N	3550B	8270C	IV
04-Apr-2012	SL-099-NBZ-SS-0.0-0.5	D031-07	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
04-Apr-2012	SL-099-NBZ-SS-0.0-0.5	D031-07	N	7471A	7471A	IV
04-Apr-2012	SL-099-NBZ-SS-0.0-0.5	D031-07	N	GEN PREP	300.0	IV
04-Apr-2012	SL-099-NBZ-SS-0.0-0.5	D031-07	N	GEN PREP	314.0	IV
04-Apr-2012	SL-099-NBZ-SS-0.0-0.5	D031-07	N	GEN PREP	6020	IV
04-Apr-2012	SL-099-NBZ-SS-0.0-0.5	D031-07	N	GEN PREP	7199	IV
04-Apr-2012	SL-099-NBZ-SS-0.0-0.5	D031-07	N	GEN PREP	8151A	IV
04-Apr-2012	SL-099-NBZ-SS-0.0-0.5	D031-07	N	GEN PREP	9045D	IV
04-Apr-2012	SL-099-NBZ-SS-0.0-0.5	D031-07R	N	GEN PREP	7199	IV
04-Apr-2012	SL-120-NBZ-SS-0.0-0.5	D031-12	N	3550B	8081A	IV
04-Apr-2012	SL-120-NBZ-SS-0.0-0.5	D031-12	N	3550B	8082	IV
04-Apr-2012	SL-120-NBZ-SS-0.0-0.5	D031-12	N	3550B	8270C	IV
04-Apr-2012	SL-120-NBZ-SS-0.0-0.5	D031-12	N	3550B	8270C SIM	IV
04-Apr-2012	SL-120-NBZ-SS-0.0-0.5	D031-12	N	7471A	7471A	IV
04-Apr-2012	SL-120-NBZ-SS-0.0-0.5	D031-12	N	GEN PREP	300.0	IV
04-Apr-2012	SL-120-NBZ-SS-0.0-0.5	D031-12	N	GEN PREP	314.0	IV
04-Apr-2012	SL-120-NBZ-SS-0.0-0.5	D031-12	N	GEN PREP	6020	IV
04-Apr-2012	SL-120-NBZ-SS-0.0-0.5	D031-12	N	GEN PREP	7199	IV
04-Apr-2012	SL-120-NBZ-SS-0.0-0.5	D031-12	N	GEN PREP	8151A	IV
04-Apr-2012	SL-120-NBZ-SS-0.0-0.5	D031-12	N	GEN PREP	9045D	IV
04-Apr-2012	SL-120-NBZ-SS-0.0-0.5	D031-12R	N	GEN PREP	7199	IV
04-Apr-2012	SL-020-NBZ-SS-0.0-0.5	D031-05	N	3550B	8081A	IV
04-Apr-2012	SL-020-NBZ-SS-0.0-0.5	D031-05	N	3550B	8082	IV
04-Apr-2012	SL-020-NBZ-SS-0.0-0.5	D031-05	N	3550B	8270C	IV
04-Apr-2012	SL-020-NBZ-SS-0.0-0.5	D031-05	N	3550B	8270C SIM	IV
04-Apr-2012	SL-020-NBZ-SS-0.0-0.5	D031-05	N	7471A	7471A	IV
04-Apr-2012	SL-020-NBZ-SS-0.0-0.5	D031-05	N	GEN PREP	300.0	IV

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

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
04-Apr-2012	SL-020-NBZ-SS-0.0-0.5	D031-05	N	GEN PREP	314.0	IV
04-Apr-2012	SL-020-NBZ-SS-0.0-0.5	D031-05	N	GEN PREP	6020	IV
04-Apr-2012	SL-020-NBZ-SS-0.0-0.5	D031-05	N	GEN PREP	7199	IV
04-Apr-2012	SL-020-NBZ-SS-0.0-0.5	D031-05	N	GEN PREP	8151A	IV
04-Apr-2012	SL-020-NBZ-SS-0.0-0.5	D031-05	N	GEN PREP	9045D	IV
04-Apr-2012	SL-020-NBZ-SS-0.0-0.5	D031-05R	N	GEN PREP	7199	IV
04-Apr-2012	SL-187-NBZ-SS-0.0-0.5	D031-15	N	3550B	8081A	IV
04-Apr-2012	SL-187-NBZ-SS-0.0-0.5	D031-15	N	3550B	8082	IV
04-Apr-2012	SL-187-NBZ-SS-0.0-0.5	D031-15	N	3550B	8270C	IV
04-Apr-2012	SL-187-NBZ-SS-0.0-0.5	D031-15	N	3550B	8270C SIM	IV
04-Apr-2012	SL-187-NBZ-SS-0.0-0.5	D031-15	N	7471A	7471A	IV
04-Apr-2012	SL-187-NBZ-SS-0.0-0.5	D031-15	N	GEN PREP	300.0	IV
04-Apr-2012	SL-187-NBZ-SS-0.0-0.5	D031-15	N	GEN PREP	314.0	IV
04-Apr-2012	SL-187-NBZ-SS-0.0-0.5	D031-15	N	GEN PREP	6020	IV
04-Apr-2012	SL-187-NBZ-SS-0.0-0.5	D031-15	N	GEN PREP	7199	IV
04-Apr-2012	SL-187-NBZ-SS-0.0-0.5	D031-15	N	GEN PREP	8151A	IV
04-Apr-2012	SL-187-NBZ-SS-0.0-0.5	D031-15	N	GEN PREP	9045D	IV
04-Apr-2012	SL-187-NBZ-SS-0.0-0.5MS	D031-15M	MS	GEN PREP	6020	IV
04-Apr-2012	SL-187-NBZ-SS-0.0-0.5	D031-15R	N	GEN PREP	7199	IV
04-Apr-2012	SL-187-NBZ-SS-0.0-0.5MSD	D031-15S	MSD	GEN PREP	6020	IV
04-Apr-2012	SL-181-NBZ-SS-0.0-0.5	D031-14	N	3550B	8081A	IV
04-Apr-2012	SL-181-NBZ-SS-0.0-0.5	D031-14	N	3550B	8082	IV
04-Apr-2012	SL-181-NBZ-SS-0.0-0.5	D031-14	N	3550B	8270C	IV
04-Apr-2012	SL-181-NBZ-SS-0.0-0.5	D031-14	N	3550B	8270C SIM	IV
04-Apr-2012	SL-181-NBZ-SS-0.0-0.5	D031-14	N	7471A	7471A	IV
04-Apr-2012	SL-181-NBZ-SS-0.0-0.5	D031-14	N	GEN PREP	300.0	IV

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

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
04-Apr-2012	SL-181-NBZ-SS-0.0-0.5	D031-14	N	GEN PREP	314.0	IV
04-Apr-2012	SL-181-NBZ-SS-0.0-0.5	D031-14	N	GEN PREP	6020	IV
04-Apr-2012	SL-181-NBZ-SS-0.0-0.5	D031-14	N	GEN PREP	7199	IV
04-Apr-2012	SL-181-NBZ-SS-0.0-0.5	D031-14	N	GEN PREP	8151A	IV
04-Apr-2012	SL-181-NBZ-SS-0.0-0.5	D031-14	N	GEN PREP	9045D	IV
04-Apr-2012	SL-181-NBZ-SS-0.0-0.5	D031-14R	N	GEN PREP	7199	IV
04-Apr-2012	EB-NBZ-SB-040412	D031-01	EB	3520C	8015B EFH	IV
04-Apr-2012	EB-NBZ-SB-040412	D031-01	EB	3520C	8082	IV
04-Apr-2012	EB-NBZ-SB-040412	D031-01	EB	3520C	8270C	IV
04-Apr-2012	EB-NBZ-SB-040412	D031-01	EB	5030B	8015B GRO	IV
04-Apr-2012	EB-NBZ-SB-040412	D031-01	EB	7470A	7470A	IV
04-Apr-2012	EB-NBZ-SB-040412	D031-01	EB	GEN PREP	300.0	IV
04-Apr-2012	EB-NBZ-SB-040412	D031-01	EB	GEN PREP	314.0	IV
04-Apr-2012	EB-NBZ-SB-040412	D031-01	EB	GEN PREP	6020	IV
04-Apr-2012	EB-NBZ-SB-040412	D031-01	EB	GEN PREP	7199	IV
04-Apr-2012	EB-NBZ-SB-040412	D031-01	EB	GEN PREP	8015B	IV
04-Apr-2012	EB-NBZ-SB-040412	D031-01	EB	GEN PREP	8015M	IV
04-Apr-2012	EB-NBZ-SB-040412	D031-01	EB	GEN PREP	8330A	IV
04-Apr-2012	EB-NBZ-SB-040412	D031-01	EB	GEN PREP	8332	IV
04-Apr-2012	EB-NBZ-SB-040412	D031-01	EB	GEN PREP	9014	IV
04-Apr-2012	EB-NBZ-SB-040412	D031-01	EB	GEN PREP	9040C	IV
04-Apr-2012	EB-NBZ-SB-040412DUP	D031-01D	DUP	GEN PREP	9040C	IV
04-Apr-2012	EB-NBZ-SB-040412	D031-01R	EB	GEN PREP	7199	IV
04-Apr-2012	SL-020-NBZ-SB-2.5-3.5	D031-04	N	3550B	8015B EFH	IV
04-Apr-2012	SL-020-NBZ-SB-2.5-3.5	D031-04	N	3550B	8081A	IV
04-Apr-2012	SL-020-NBZ-SB-2.5-3.5	D031-04	N	3550B	8082	IV

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

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
04-Apr-2012	SL-020-NBZ-SB-2.5-3.5	D031-04	N	3550B	8270C	IV
04-Apr-2012	SL-020-NBZ-SB-2.5-3.5	D031-04	N	3550B	8270C SIM	IV
04-Apr-2012	SL-020-NBZ-SB-2.5-3.5	D031-04	N	7471A	7471A	IV
04-Apr-2012	SL-020-NBZ-SB-2.5-3.5	D031-04	N	GEN PREP	300.0	IV
04-Apr-2012	SL-020-NBZ-SB-2.5-3.5	D031-04	N	GEN PREP	314.0	IV
04-Apr-2012	SL-020-NBZ-SB-2.5-3.5	D031-04	N	GEN PREP	6020	IV
04-Apr-2012	SL-020-NBZ-SB-2.5-3.5	D031-04	N	GEN PREP	7199	IV
04-Apr-2012	SL-020-NBZ-SB-2.5-3.5	D031-04	N	GEN PREP	8015B	IV
04-Apr-2012	SL-020-NBZ-SB-2.5-3.5	D031-04	N	GEN PREP	8015M	IV
04-Apr-2012	SL-020-NBZ-SB-2.5-3.5	D031-04	N	GEN PREP	8151A	IV
04-Apr-2012	SL-020-NBZ-SB-2.5-3.5	D031-04	N	GEN PREP	8330A	IV
04-Apr-2012	SL-020-NBZ-SB-2.5-3.5	D031-04	N	GEN PREP	8332	IV
04-Apr-2012	SL-020-NBZ-SB-2.5-3.5	D031-04	N	GEN PREP	9014	IV
04-Apr-2012	SL-020-NBZ-SB-2.5-3.5	D031-04	N	GEN PREP	9045D	IV
04-Apr-2012	SL-020-NBZ-SB-2.5-3.5DUP	D031-04D	DUP	GEN PREP	9045D	IV
04-Apr-2012	SL-020-NBZ-SB-2.5-3.5MS	D031-04M	MS	7471A	7471A	IV
04-Apr-2012	SL-020-NBZ-SB-2.5-3.5	D031-04R	N	GEN PREP	7199	IV
04-Apr-2012	SL-020-NBZ-SB-2.5-3.5MSD	D031-04S	MSD	7471A	7471A	IV
04-Apr-2012	SL-020-NBZ-SB-3.0	D031-03	N	5035	8015B GRO	IV
04-Apr-2012	SL-020-NBZ-SB-3.0	D031-03N	N	5035	8260B	IV
04-Apr-2012	SL-020-NBZ-SB-3.0	D031-03R	N	5035	8260B SIM	IV
04-Apr-2012	SL-155-NBZ-SS-0.0-0.5	D031-13	N	3550B	8081A	IV
04-Apr-2012	SL-155-NBZ-SS-0.0-0.5	D031-13	N	3550B	8082	IV
04-Apr-2012	SL-155-NBZ-SS-0.0-0.5	D031-13	N	3550B	8270C	IV
04-Apr-2012	SL-155-NBZ-SS-0.0-0.5	D031-13	N	3550B	8270C SIM	IV
04-Apr-2012	SL-155-NBZ-SS-0.0-0.5	D031-13	N	7471A	7471A	IV

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

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
04-Apr-2012	SL-155-NBZ-SS-0.0-0.5	D031-13	N	GEN PREP	300.0	IV
04-Apr-2012	SL-155-NBZ-SS-0.0-0.5	D031-13	N	GEN PREP	314.0	IV
04-Apr-2012	SL-155-NBZ-SS-0.0-0.5	D031-13	N	GEN PREP	6020	IV
04-Apr-2012	SL-155-NBZ-SS-0.0-0.5	D031-13	N	GEN PREP	6850	IV
04-Apr-2012	SL-155-NBZ-SS-0.0-0.5	D031-13	N	GEN PREP	7199	IV
04-Apr-2012	SL-155-NBZ-SS-0.0-0.5	D031-13	N	GEN PREP	8151A	IV
04-Apr-2012	SL-155-NBZ-SS-0.0-0.5	D031-13	N	GEN PREP	9045D	IV
04-Apr-2012	SL-155-NBZ-SS-0.0-0.5	D031-13R	N	GEN PREP	7199	IV
04-Apr-2012	EB-NBZ-SS-040412	D031-02	EB	3520C	8015B EFH	IV
04-Apr-2012	EB-NBZ-SS-040412	D031-02	EB	3520C	8081A	IV
04-Apr-2012	EB-NBZ-SS-040412	D031-02	EB	3520C	8082	IV
04-Apr-2012	EB-NBZ-SS-040412	D031-02	EB	3520C	8270C	IV
04-Apr-2012	EB-NBZ-SS-040412	D031-02	EB	7470A	7470A	IV
04-Apr-2012	EB-NBZ-SS-040412	D031-02	EB	GEN PREP	300.0	IV
04-Apr-2012	EB-NBZ-SS-040412	D031-02	EB	GEN PREP	314.0	IV
04-Apr-2012	EB-NBZ-SS-040412	D031-02	EB	GEN PREP	6020	IV
04-Apr-2012	EB-NBZ-SS-040412	D031-02	EB	GEN PREP	7199	IV
04-Apr-2012	EB-NBZ-SS-040412	D031-02	EB	GEN PREP	8015B	IV
04-Apr-2012	EB-NBZ-SS-040412	D031-02	EB	GEN PREP	8015M	IV
04-Apr-2012	EB-NBZ-SS-040412	D031-02	EB	GEN PREP	8151A	IV
04-Apr-2012	EB-NBZ-SS-040412	D031-02	EB	GEN PREP	8330A	IV
04-Apr-2012	EB-NBZ-SS-040412	D031-02	EB	GEN PREP	8332	IV
04-Apr-2012	EB-NBZ-SS-040412	D031-02	EB	GEN PREP	9014	IV
04-Apr-2012	EB-NBZ-SS-040412	D031-02	EB	GEN PREP	9040C	IV
04-Apr-2012	EB-NBZ-SS-040412	D031-02R	EB	GEN PREP	7199	IV

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Attachment II

Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: 12D031 Laboratory: EMXT

EDD Filename: 12D031R eQAPP Name: CDM_SSFL_120730_EMAX

Method Category: GENCHEM

Method: 300.0 Matrix: SO

Sample ID: SL-020-NBZ-SB-2.5-3.5 *Collected:* 4/4/2012 2:40:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORIDE	1.07	J	0.566	MDL	1.13	PQL	MG/KG	J	Z

Sample ID: SL-155-NBZ-SS-0.0-0.5 *Collected:* 4/4/2012 2:55:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORIDE	0.550	J	0.544	MDL	1.09	PQL	MG/KG	J	Z

Sample ID: SL-181-NBZ-SS-0.0-0.5 *Collected:* 4/4/2012 2:22:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORIDE	0.565	J	0.548	MDL	1.10	PQL	MG/KG	J	Z

Method Category: METALS

Method: 6020 Matrix: AQ

Sample ID: EB-NBZ-SB-040412 *Collected:* 4/4/2012 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
CALCIUM	0.0253	J	0.0250	MDL	0.100	PQL	MG/L	J	Z
ZINC	0.0146	J	0.0100	MDL	0.0200	PQL	MG/L	J	Z

Sample ID: EB-NBZ-SS-040412 *Collected:* 4/4/2012 3:45:00 PM *Analysis Type:* RES/TOT *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	0.000239	J	0.000200	MDL	0.00100	PQL	MG/L	J	Z
COPPER	0.000719	J	0.000500	MDL	0.00100	PQL	MG/L	J	Z

Method Category: METALS

Method: 6020 Matrix: SO

Sample ID: SL-020-NBZ-SB-2.5-3.5 *Collected:* 4/4/2012 2:40:00 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	0.171	J	0.112	MDL	0.224	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12D031 Laboratory: EMXT

EDD Filename: 12D031R eQAPP Name: CDM_SSFL_120730_EMAX

Method Category: METALS

Method: 6020 **Matrix:** SO

Sample ID: SL-020-NBZ-SB-2.5-3.5 **Collected:** 4/4/2012 2:40:00 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
SELENIUM	0.242	J	0.224	MDL	0.448	PQL	MG/KG	J	Z
SODIUM	70.4	J	56.1	MDL	112	PQL	MG/KG	J	Z
Zirconium	5.61	U	2.80	MDL	5.61	PQL	MG/KG	UJ	Q

Sample ID: SL-020-NBZ-SS-0.0-0.5 **Collected:** 4/4/2012 1:40:00 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	0.157	J	0.108	MDL	0.215	PQL	MG/KG	J	Z
Zirconium	5.38	U	2.69	MDL	5.38	PQL	MG/KG	UJ	Q

Sample ID: SL-097-NBZ-SS-0.0-0.5 **Collected:** 4/4/2012 9:14:00 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	0.110	J	0.102	MDL	0.204	PQL	MG/KG	J	Z
Zirconium	5.10	U	2.55	MDL	5.10	PQL	MG/KG	UJ	Q

Sample ID: SL-099-NBZ-SS-0.0-0.5 **Collected:** 4/4/2012 10:41:00 **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	0.187	J	0.109	MDL	0.218	PQL	MG/KG	J	Z
Zirconium	5.45	U	2.72	MDL	5.45	PQL	MG/KG	UJ	Q

Sample ID: SL-100-NBZ-SS-0.0-0.5 **Collected:** 4/4/2012 9:51:00 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	0.145	J	0.108	MDL	0.217	PQL	MG/KG	J	Z
Zirconium	5.42	U	2.71	MDL	5.42	PQL	MG/KG	UJ	Q

Sample ID: SL-104-NBZ-SS-0.0-0.5 **Collected:** 4/4/2012 10:40:00 **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	0.146	J	0.105	MDL	0.209	PQL	MG/KG	J	Z
Zirconium	5.23	U	2.61	MDL	5.23	PQL	MG/KG	UJ	Q

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12D031 Laboratory: EMXT

EDD Filename: 12D031R eQAPP Name: CDM_SSFL_120730_EMAX

Method Category: METALS

Method: 6020 **Matrix:** SO

Sample ID: SL-110-NBZ-SS-0.0-0.5 **Collected:** 4/4/2012 9:00:00 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	0.119	J	0.104	MDL	0.207	PQL	MG/KG	J	Z
Zirconium	5.18	U	2.59	MDL	5.18	PQL	MG/KG	UJ	Q

Sample ID: SL-114-NBZ-SS-0.0-0.5 **Collected:** 4/4/2012 9:25:00 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
Zirconium	5.21	U	2.61	MDL	5.21	PQL	MG/KG	UJ	Q

Sample ID: SL-120-NBZ-SS-0.0-0.5 **Collected:** 4/4/2012 11:05:00 **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	0.186	J	0.106	MDL	0.213	PQL	MG/KG	J	Z
Zirconium	5.32	U	2.66	MDL	5.32	PQL	MG/KG	UJ	Q

Sample ID: SL-155-NBZ-SS-0.0-0.5 **Collected:** 4/4/2012 2:55:00 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	0.129	J	0.105	MDL	0.209	PQL	MG/KG	J	Z
Zirconium	5.23	U	2.62	MDL	5.23	PQL	MG/KG	UJ	Q

Sample ID: SL-181-NBZ-SS-0.0-0.5 **Collected:** 4/4/2012 2:22:00 PM **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	0.163	J	0.103	MDL	0.207	PQL	MG/KG	J	Z
Zirconium	5.17	U	2.58	MDL	5.17	PQL	MG/KG	UJ	Q

Sample ID: SL-187-NBZ-SS-0.0-0.5 **Collected:** 4/4/2012 1:49:00 PM **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	0.177	J	0.104	MDL	0.208	PQL	MG/KG	J	Z
SODIUM	57.9	J	52.0	MDL	104	PQL	MG/KG	J	Z
Zirconium	5.20	U	2.60	MDL	5.20	PQL	MG/KG	UJ	Q

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12D031 Laboratory: EMXT

EDD Filename: 12D031R eQAPP Name: CDM_SSFL_120730_EMAX

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

Sample ID: SL-020-NBZ-SB-2.5-3.5 *Collected:* 4/4/2012 2:40:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH(C8-C11)	0.61	J	0.57	MDL	1.1	PQL	MG/KG	J	Z

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

Sample ID: SL-020-NBZ-SB-2.5-3.5 *Collected:* 4/4/2012 2:40:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLORDANE (TECHNICAL)	3.9	U	1.9	MDL	3.9	PQL	UG/KG	UJ	C

Sample ID: SL-020-NBZ-SS-0.0-0.5 *Collected:* 4/4/2012 1:40:00 PM *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDE	0.24	J	0.19	MDL	0.38	PQL	UG/KG	J	Z, *XIII
CHLORDANE (TECHNICAL)	3.8	U	1.9	MDL	3.8	PQL	UG/KG	UJ	C

Sample ID: SL-097-NBZ-SS-0.0-0.5 *Collected:* 4/4/2012 9:14:00 AM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLORDANE (TECHNICAL)	3.6	U	1.8	MDL	3.6	PQL	UG/KG	UJ	C

Sample ID: SL-099-NBZ-SS-0.0-0.5 *Collected:* 4/4/2012 10:41:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLORDANE (TECHNICAL)	3.7	U	1.9	MDL	3.7	PQL	UG/KG	UJ	C

Sample ID: SL-100-NBZ-SS-0.0-0.5 *Collected:* 4/4/2012 9:51:00 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
4,4'-DDE	0.30	J	0.18	MDL	0.37	PQL	UG/KG	J	Z
CHLORDANE (TECHNICAL)	3.7	U	1.8	MDL	3.7	PQL	UG/KG	UJ	C

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12D031 Laboratory: EMXT

EDD Filename: 12D031R eQAPP Name: CDM_SSFL_120730_EMAX

Method Category: SVOA

Method: 8081A **Matrix:** SO

Sample ID: SL-104-NBZ-SS-0.0-0.5 *Collected:* 4/4/2012 10:40:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDE	0.35	J	0.18	MDL	0.37	PQL	UG/KG	J	Z
4,4'-DDT	0.29	J	0.18	MDL	0.37	PQL	UG/KG	J	Z, *XIII
CHLORDANE (TECHNICAL)	3.7	U	1.8	MDL	3.7	PQL	UG/KG	UJ	C

Sample ID: SL-110-NBZ-SS-0.0-0.5 *Collected:* 4/4/2012 9:00:00 AM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLORDANE (TECHNICAL)	3.7	U	1.8	MDL	3.7	PQL	UG/KG	UJ	C
METHOXYCHLOR	4.1		0.92	MDL	1.8	PQL	UG/KG	J	*XIII

Sample ID: SL-114-NBZ-SS-0.0-0.5 *Collected:* 4/4/2012 9:25:00 AM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLORDANE (TECHNICAL)	3.7	U	1.9	MDL	3.7	PQL	UG/KG	UJ	C

Sample ID: SL-120-NBZ-SS-0.0-0.5 *Collected:* 4/4/2012 11:05:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDE	0.29	J	0.18	MDL	0.37	PQL	UG/KG	J	Z, *XIII
CHLORDANE (TECHNICAL)	3.7	U	1.8	MDL	3.7	PQL	UG/KG	UJ	C

Sample ID: SL-155-NBZ-SS-0.0-0.5 *Collected:* 4/4/2012 2:55:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLORDANE (TECHNICAL)	3.7	U	1.8	MDL	3.7	PQL	UG/KG	UJ	C

Sample ID: SL-181-NBZ-SS-0.0-0.5 *Collected:* 4/4/2012 2:22:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLORDANE (TECHNICAL)	3.7	U	1.9	MDL	3.7	PQL	UG/KG	UJ	C

Sample ID: SL-187-NBZ-SS-0.0-0.5 *Collected:* 4/4/2012 1:49:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLORDANE (TECHNICAL)	3.7	U	1.9	MDL	3.7	PQL	UG/KG	UJ	C

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12D031 Laboratory: EMXT

EDD Filename: 12D031R eQAPP Name: CDM_SSFL_120730_EMAX

Method Category: SVOA

Method: 8082 **Matrix:** SO

Sample ID: SL-020-NBZ-SB-2.5-3.5 **Collected:** 4/4/2012 2:40:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Aroclor 5432	3.7	U	1.9	MDL	3.7	PQL	UG/KG	UJ	E
Aroclor 5442	3.7	U	1.9	MDL	3.7	PQL	UG/KG	UJ	E
Aroclor 5460	3.7	U	1.9	MDL	3.7	PQL	UG/KG	UJ	E

Sample ID: SL-020-NBZ-SS-0.0-0.5 **Collected:** 4/4/2012 1:40:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Aroclor 5432	3.7	U	1.9	MDL	3.7	PQL	UG/KG	UJ	E
Aroclor 5442	3.7	U	1.9	MDL	3.7	PQL	UG/KG	UJ	E
Aroclor 5460	3.7	U	1.9	MDL	3.7	PQL	UG/KG	UJ	E

Sample ID: SL-097-NBZ-SS-0.0-0.5 **Collected:** 4/4/2012 9:14:00 AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Aroclor 5432	3.5	U	1.8	MDL	3.5	PQL	UG/KG	UJ	E
Aroclor 5442	3.5	U	1.8	MDL	3.5	PQL	UG/KG	UJ	E
Aroclor 5460	3.5	U	1.8	MDL	3.5	PQL	UG/KG	UJ	E

Sample ID: SL-099-NBZ-SS-0.0-0.5 **Collected:** 4/4/2012 10:41:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Aroclor 5432	3.6	U	1.9	MDL	3.6	PQL	UG/KG	UJ	E
Aroclor 5442	3.6	U	1.9	MDL	3.6	PQL	UG/KG	UJ	E
Aroclor 5460	3.7		1.9	MDL	3.6	PQL	UG/KG	J	E, S

Sample ID: SL-100-NBZ-SS-0.0-0.5 **Collected:** 4/4/2012 9:51:00 AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Aroclor 5432	3.6	U	1.8	MDL	3.6	PQL	UG/KG	UJ	E
Aroclor 5442	3.6	U	1.8	MDL	3.6	PQL	UG/KG	UJ	E
Aroclor 5460	3.6	U	1.8	MDL	3.6	PQL	UG/KG	UJ	E

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12D031 Laboratory: EMXT

EDD Filename: 12D031R eQAPP Name: CDM_SSFL_120730_EMAX

Method Category: SVOA

Method: 8082 **Matrix:** SO

Sample ID: SL-104-NBZ-SS-0.0-0.5 ***Collected:*** 4/4/2012 10:40:00 ***Analysis Type:*** RES ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Aroclor 5432	3.6	U	1.8	MDL	3.6	PQL	UG/KG	UJ	E
Aroclor 5442	3.6	U	1.8	MDL	3.6	PQL	UG/KG	UJ	E
Aroclor 5460	3.4	J	1.8	MDL	3.6	PQL	UG/KG	J	Z, E

Sample ID: SL-110-NBZ-SS-0.0-0.5 ***Collected:*** 4/4/2012 9:00:00 AM ***Analysis Type:*** RES ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Aroclor 5432	3.6	U	1.8	MDL	3.6	PQL	UG/KG	UJ	E
Aroclor 5442	3.6	U	1.8	MDL	3.6	PQL	UG/KG	UJ	E
Aroclor 5460	3.7		1.8	MDL	3.6	PQL	UG/KG	J	E, S

Sample ID: SL-114-NBZ-SS-0.0-0.5 ***Collected:*** 4/4/2012 9:25:00 AM ***Analysis Type:*** RES ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Aroclor 5432	3.6	U	1.9	MDL	3.6	PQL	UG/KG	UJ	E
Aroclor 5442	3.6	U	1.9	MDL	3.6	PQL	UG/KG	UJ	E
Aroclor 5460	2.9	J	1.9	MDL	3.6	PQL	UG/KG	J	Z, E

Sample ID: SL-120-NBZ-SS-0.0-0.5 ***Collected:*** 4/4/2012 11:05:00 ***Analysis Type:*** RES ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Aroclor 5432	3.6	U	1.8	MDL	3.6	PQL	UG/KG	UJ	E
Aroclor 5442	3.6	U	1.8	MDL	3.6	PQL	UG/KG	UJ	E
Aroclor 5460	3.6	U	1.8	MDL	3.6	PQL	UG/KG	UJ	E

Sample ID: SL-155-NBZ-SS-0.0-0.5 ***Collected:*** 4/4/2012 2:55:00 PM ***Analysis Type:*** RES ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Aroclor 5432	3.6	U	1.8	MDL	3.6	PQL	UG/KG	UJ	E
Aroclor 5442	3.6	U	1.8	MDL	3.6	PQL	UG/KG	UJ	E
Aroclor 5460	3.6	U	1.8	MDL	3.6	PQL	UG/KG	UJ	E

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12D031 Laboratory: EMXT

EDD Filename: 12D031R eQAPP Name: CDM_SSFL_120730_EMAX

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

Sample ID: SL-181-NBZ-SS-0.0-0.5 *Collected:* 4/4/2012 2:22:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Aroclor 5432	3.6	U	1.9	MDL	3.6	PQL	UG/KG	UJ	E
Aroclor 5442	3.6	U	1.9	MDL	3.6	PQL	UG/KG	UJ	E
Aroclor 5460	3.6	U	1.9	MDL	3.6	PQL	UG/KG	UJ	E

Sample ID: SL-187-NBZ-SS-0.0-0.5 *Collected:* 4/4/2012 1:49:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Aroclor 5432	3.6	U	1.9	MDL	3.6	PQL	UG/KG	UJ	E
Aroclor 5442	3.6	U	1.9	MDL	3.6	PQL	UG/KG	UJ	E
Aroclor 5460	3.6	U	1.9	MDL	3.6	PQL	UG/KG	UJ	E

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

Sample ID: EB-NBZ-SS-040412 *Collected:* 4/4/2012 3:45:00 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
DINOSEB	0.80	U	0.20	MDL	0.80	PQL	UG/L	UJ	C

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

Sample ID: SL-020-NBZ-SB-2.5-3.5 *Collected:* 4/4/2012 2:40:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,5-T	0.19	U	0.096	MDL	0.19	PQL	UG/KG	UJ	C
DINOSEB	1.9	U	0.96	MDL	1.9	PQL	UG/KG	UJ	C

Sample ID: SL-020-NBZ-SS-0.0-0.5 *Collected:* 4/4/2012 1:40:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,5-T	0.19	U	0.094	MDL	0.19	PQL	UG/KG	UJ	C
DINOSEB	1.9	U	0.94	MDL	1.9	PQL	UG/KG	UJ	C

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12D031 Laboratory: EMXT

EDD Filename: 12D031R eQAPP Name: CDM_SSFL_120730_EMAX

Method Category: SVOA

Method: 8151A **Matrix:** SO

Sample ID: **SL-097-NBZ-SS-0.0-0.5** ***Collected:*** **4/4/2012 9:14:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,5-T	0.18	U	0.091	MDL	0.18	PQL	UG/KG	UJ	C
DINOSEB	1.8	U	0.91	MDL	1.8	PQL	UG/KG	UJ	C

Sample ID: **SL-099-NBZ-SS-0.0-0.5** ***Collected:*** **4/4/2012 10:41:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,5-T	0.19	U	0.093	MDL	0.19	PQL	UG/KG	UJ	C
DINOSEB	1.9	U	0.93	MDL	1.9	PQL	UG/KG	UJ	C

Sample ID: **SL-100-NBZ-SS-0.0-0.5** ***Collected:*** **4/4/2012 9:51:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,5-T	0.18	U	0.092	MDL	0.18	PQL	UG/KG	UJ	C
DINOSEB	1.8	U	0.92	MDL	1.8	PQL	UG/KG	UJ	C

Sample ID: **SL-104-NBZ-SS-0.0-0.5** ***Collected:*** **4/4/2012 10:40:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,5-T	0.18	U	0.091	MDL	0.18	PQL	UG/KG	UJ	C
DINOSEB	1.8	U	0.91	MDL	1.8	PQL	UG/KG	UJ	C

Sample ID: **SL-110-NBZ-SS-0.0-0.5** ***Collected:*** **4/4/2012 9:00:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,5-T	0.18	U	0.092	MDL	0.18	PQL	UG/KG	UJ	C
DINOSEB	1.8	U	0.92	MDL	1.8	PQL	UG/KG	UJ	C

Sample ID: **SL-114-NBZ-SS-0.0-0.5** ***Collected:*** **4/4/2012 9:25:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,5-T	0.19	U	0.093	MDL	0.19	PQL	UG/KG	UJ	C
DINOSEB	1.9	U	0.93	MDL	1.9	PQL	UG/KG	UJ	C

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12D031 Laboratory: EMXT

EDD Filename: 12D031R eQAPP Name: CDM_SSFL_120730_EMAX

Method Category: SVOA

Method: 8151A Matrix: SO

Sample ID: SL-120-NBZ-SS-0.0-0.5 *Collected:* 4/4/2012 11:05:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,5-T	0.18	U	0.092	MDL	0.18	PQL	UG/KG	UJ	C
DINOSEB	1.8	U	0.92	MDL	1.8	PQL	UG/KG	UJ	C

Sample ID: SL-155-NBZ-SS-0.0-0.5 *Collected:* 4/4/2012 2:55:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,5-T	0.18	U	0.092	MDL	0.18	PQL	UG/KG	UJ	C
DINOSEB	1.8	U	0.92	MDL	1.8	PQL	UG/KG	UJ	C

Sample ID: SL-181-NBZ-SS-0.0-0.5 *Collected:* 4/4/2012 2:22:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,5-T	0.19	U	0.093	MDL	0.19	PQL	UG/KG	UJ	C
DINOSEB	1.9	U	0.93	MDL	1.9	PQL	UG/KG	UJ	C

Sample ID: SL-187-NBZ-SS-0.0-0.5 *Collected:* 4/4/2012 1:49:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,5-T	0.19	U	0.093	MDL	0.19	PQL	UG/KG	UJ	C
DINOSEB	1.9	U	0.93	MDL	1.9	PQL	UG/KG	UJ	C

Method Category: SVOA

Method: 8270C SIM Matrix: SO

Sample ID: SL-020-NBZ-SB-2.5-3.5 *Collected:* 4/4/2012 2:40:00 PM *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BIS(2-ETHYLHEXYL)PHTHALATE	14	J	9.5	MDL	19	PQL	UG/KG	J	Z

Sample ID: SL-020-NBZ-SS-0.0-0.5 *Collected:* 4/4/2012 1:40:00 PM *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1-METHYLNAPHTHALENE	1.2	J	0.94	MDL	1.9	PQL	UG/KG	J	Z
2-METHYLNAPHTHALENE	1.3	J	0.94	MDL	1.9	PQL	UG/KG	J	Z
ACENAPHTHYLENE	1.3	J	0.94	MDL	1.9	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12D031 Laboratory: EMXT

EDD Filename: 12D031R eQAPP Name: CDM_SSFL_120730_EMAX

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

Sample ID: SL-020-NBZ-SS-0.0-0.5 ***Collected:*** 4/4/2012 1:40:00 PM ***Analysis Type:*** RES-BASE/NEUTRAL ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHRYSENE	1.8	J	0.94	MDL	1.9	PQL	UG/KG	J	Z
NAPHTHALENE	1.3	J	0.94	MDL	1.9	PQL	UG/KG	J	Z

Sample ID: SL-099-NBZ-SS-0.0-0.5 ***Collected:*** 4/4/2012 10:41:00 ***Analysis Type:*** RES-BASE/NEUTRAL ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PHENANTHRENE	0.93	J	0.93	MDL	1.9	PQL	UG/KG	J	Z

Sample ID: SL-100-NBZ-SS-0.0-0.5 ***Collected:*** 4/4/2012 9:51:00 AM ***Analysis Type:*** RES-BASE/NEUTRAL ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BIS(2-ETHYLHEXYL)PHTHALATE	15	J	9.1	MDL	18	PQL	UG/KG	J	Z

Sample ID: SL-104-NBZ-SS-0.0-0.5 ***Collected:*** 4/4/2012 10:40:00 ***Analysis Type:*** RES-BASE/NEUTRAL ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)ANTHRACENE	1.5	J	0.91	MDL	1.8	PQL	UG/KG	J	Z
BENZO(A)PYRENE	1.6	J	0.91	MDL	1.8	PQL	UG/KG	J	Z
Butylbenzylphthalate	9.1	J	9.0	MDL	18	PQL	UG/KG	J	Z
CHRYSENE	1.7	J	0.91	MDL	1.8	PQL	UG/KG	J	Z
INDENO(1,2,3-CD)PYRENE	1.6	J	0.91	MDL	1.8	PQL	UG/KG	J	Z
PHENANTHRENE	0.93	J	0.91	MDL	1.8	PQL	UG/KG	J	Z

Sample ID: SL-110-NBZ-SS-0.0-0.5 ***Collected:*** 4/4/2012 9:00:00 AM ***Analysis Type:*** RES-BASE/NEUTRAL ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(G,H,I)PERYLENE	1.6	J	0.92	MDL	1.8	PQL	UG/KG	J	Z
Butylbenzylphthalate	15	J	9.1	MDL	18	PQL	UG/KG	J	Z

Sample ID: SL-114-NBZ-SS-0.0-0.5 ***Collected:*** 4/4/2012 9:25:00 AM ***Analysis Type:*** RES-BASE/NEUTRAL ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PHENANTHRENE	1.6	J	0.93	MDL	1.9	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12D031 Laboratory: EMXT

EDD Filename: 12D031R eQAPP Name: CDM_SSFL_120730_EMAX

Method Category: VOA

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

Sample ID: EB-NBZ-SB-040412 *Collected:* 4/4/2012 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)	15	J	10	MDL	50	PQL	UG/L	U	T

Sample ID: TB-040412 *Collected:* 4/4/2012 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)	19	J	10	MDL	50	PQL	UG/L	J	Z

Method Category: VOA

Method: 8260B **Matrix:** SO

Sample ID: SL-020-NBZ-SB-3.0 *Collected:* 4/4/2012 2:45:00 PM *Analysis Type:* RES *Dilution:* 0.99

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
METHYLENE CHLORIDE	4.2	J	2.2	MDL	5.5	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12D031 **Laboratory: EMXT**

EDD Filename: 12D031R **eQAPP Name: CDM_SSFL_120730_EMAX**

Reason Code Legend

Reason Code	*Description*
*XIII	RPD Between Columns
A	ICP Serial Dilution
C	Continuing Calibration Verification Percent Difference Lower Estimation
E	Laboratory Control Precision
L	Laboratory Control Precision
Q	Matrix Spike Lower Estimation
Q	Matrix Spike Lower Rejection
S	Surrogate/Tracer Recovery Lower Estimation
S	Surrogate/Tracer Recovery Upper Estimation
T	Trip Blank Contamination
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Enclosure I

Level III ADR Outliers
(including Manual Review Outliers)

Quality Control
Outlier Reports

12D031

Trip Blank Outlier Report

Lab Reporting Batch ID: 12D031 **Laboratory: EMXT**

EDD Filename: 12D031R **eQAPP Name: CDM_SSFL_120730_EMAX**

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

Trip Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
TB-040412(RES)	4/4/2012 8:00:00 AM	GASOLINE RANGE ORGANICS (C5-C12)	19 UG/L	EB-NBZ-SB-040412 EB-NBZ-SS-040412 SL-020-NBZ-SB-2.5-3.5 SL-020-NBZ-SB-3.0 SL-020-NBZ-SS-0.0-0.5 SL-097-NBZ-SS-0.0-0.5 SL-099-NBZ-SS-0.0-0.5 SL-100-NBZ-SS-0.0-0.5 SL-104-NBZ-SS-0.0-0.5 SL-110-NBZ-SS-0.0-0.5 SL-114-NBZ-SS-0.0-0.5 SL-120-NBZ-SS-0.0-0.5 SL-155-NBZ-SS-0.0-0.5 SL-181-NBZ-SS-0.0-0.5 SL-187-NBZ-SS-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-NBZ-SB-040412(RES)	GASOLINE RANGE ORGANICS (C5-C12)	15 UG/L	50U UG/L

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Surrogate Outlier Report

Lab Reporting Batch ID: 12D031 **Laboratory: EMXT**

EDD Filename: 12D031R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 8082
Matrix: SO

Sample ID (Analysis Type)	Surrogate	Sample % Recovery	% Recovery Limits	Affected Compounds	Flag
SL-099-NBZ-SS-0.0-0.5	DECACHLOROBIPHENYL	127	45.00-120.00	All Target Analytes	J(all detects)
SL-110-NBZ-SS-0.0-0.5	DECACHLOROBIPHENYL	127	45.00-120.00	All Target Analytes	J(all detects)
SL-120-NBZ-SS-0.0-0.5	DECACHLOROBIPHENYL	124	45.00-120.00	All Target Analytes	J(all detects)
SL-181-NBZ-SS-0.0-0.5	DECACHLOROBIPHENYL	172	45.00-120.00	All Target Analytes	J(all detects)
SL-187-NBZ-SS-0.0-0.5	DECACHLOROBIPHENYL	141	45.00-120.00	All Target Analytes	J(all detects)

Method: 8270C
Matrix: SO

Sample ID (Analysis Type)	Surrogate	Sample % Recovery	% Recovery Limits	Affected Compounds	Flag
SL-020-NBZ-SB-2.5-3.5	2-FLUOROBIPHENYL	44.3	45.00-130.00	No Affected Compounds	

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 12D031 **Laboratory: EMXT**

EDD Filename: 12D031R **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-187-NBZ-SS-0.0-0.5MSD (TOT) (SL-020-NBZ-SB-2.5-3.5 SL -020-NBZ-SS-0.0-0.5 SL -097-NBZ-SS-0.0-0.5 SL -099-NBZ-SS-0.0-0.5 SL -100-NBZ-SS-0.0-0.5 SL -104-NBZ-SS-0.0-0.5 SL -110-NBZ-SS-0.0-0.5 SL -114-NBZ-SS-0.0-0.5 SL -120-NBZ-SS-0.0-0.5 SL -155-NBZ-SS-0.0-0.5 SL -181-NBZ-SS-0.0-0.5 SL -187-NBZ-SS-0.0-0.5)	TITANIUM	-	-35	75.00-125.00	-	TITANIUM	No Qual, >4x
SL-187-NBZ-SS-0.0-0.5MS (TOT) **SL-187-NBZ-SS-0.0-0.5MSD** (TOT) (SL-020-NBZ-SB-2.5-3.5 SL -020-NBZ-SS-0.0-0.5 SL -097-NBZ-SS-0.0-0.5 SL -099-NBZ-SS-0.0-0.5 SL -100-NBZ-SS-0.0-0.5 SL -104-NBZ-SS-0.0-0.5 SL -110-NBZ-SS-0.0-0.5 SL -114-NBZ-SS-0.0-0.5 SL -120-NBZ-SS-0.0-0.5 SL -155-NBZ-SS-0.0-0.5 SL -181-NBZ-SS-0.0-0.5 SL -187-NBZ-SS-0.0-0.5)	ALUMINUM IRON MANGANESE Zirconium	- - - 41	67 59 43 40	75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00	- - - -	ALUMINUM IRON MANGANESE Zirconium	J(all detects) UJ(all non-detects) Al, Fe, Mn, No Qual, >4x

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: 12D031

Laboratory: EMXT

EDD Filename: 12D031R

eQAPP Name: CDM_SSFL_120730_EMAX

Method: 8082
Matrix: SO

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
60D037SC (SL-020-NBZ-SB-2.5-3.5 SL -020-NBZ-SS-0.0-0.5 SL -097-NBZ-SS-0.0-0.5 SL -099-NBZ-SS-0.0-0.5 SL -100-NBZ-SS-0.0-0.5 SL -104-NBZ-SS-0.0-0.5 SL -110-NBZ-SS-0.0-0.5 SL -114-NBZ-SS-0.0-0.5 SL -120-NBZ-SS-0.0-0.5 SL -155-NBZ-SS-0.0-0.5 SL -181-NBZ-SS-0.0-0.5 SL -187-NBZ-SS-0.0-0.5)	Aroclor 5460	-	-	50.00-150.00	60 (50.00)	Aroclor 5432 Aroclor 5442 Aroclor 5460	J (all detects) UJ (all non-detects)

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Reporting Limit Outliers

Lab Reporting Batch ID: 12D031 **Laboratory: EMXT**

EDD Filename: 12D031R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 6020
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-NBZ-SB-040412	CALCIUM	J	0.0253	0.100	PQL	MG/L	J (all detects)
	ZINC	J	0.0146	0.0200	PQL	MG/L	
EB-NBZ-SS-040412	CHROMIUM	J	0.000239	0.00100	PQL	MG/L	J (all detects)
	COPPER	J	0.000719	0.00100	PQL	MG/L	

Method: 8015B GRO
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-NBZ-SB-040412	GASOLINE RANGE ORGANICS (C5-C12)	J	15	50	PQL	UG/L	J (all detects)
TB-040412	GASOLINE RANGE ORGANICS (C5-C12)	J	19	50	PQL	UG/L	J (all detects)

Method: 300.0
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-020-NBZ-SB-2.5-3.5	FLUORIDE	J	1.07	1.13	PQL	MG/KG	J (all detects)
SL-155-NBZ-SS-0.0-0.5	FLUORIDE	J	0.550	1.09	PQL	MG/KG	J (all detects)
SL-181-NBZ-SS-0.0-0.5	FLUORIDE	J	0.565	1.10	PQL	MG/KG	J (all detects)

Method: 6020
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-020-NBZ-SB-2.5-3.5	ANTIMONY	J	0.171	0.224	PQL	MG/KG	J (all detects)
	SELENIUM	J	0.242	0.448	PQL	MG/KG	
	SODIUM	J	70.4	112	PQL	MG/KG	
SL-020-NBZ-SS-0.0-0.5	ANTIMONY	J	0.157	0.215	PQL	MG/KG	J (all detects)
SL-097-NBZ-SS-0.0-0.5	ANTIMONY	J	0.110	0.204	PQL	MG/KG	J (all detects)
SL-099-NBZ-SS-0.0-0.5	ANTIMONY	J	0.187	0.218	PQL	MG/KG	J (all detects)
SL-100-NBZ-SS-0.0-0.5	ANTIMONY	J	0.145	0.217	PQL	MG/KG	J (all detects)
SL-104-NBZ-SS-0.0-0.5	ANTIMONY	J	0.146	0.209	PQL	MG/KG	J (all detects)
SL-110-NBZ-SS-0.0-0.5	ANTIMONY	J	0.119	0.207	PQL	MG/KG	J (all detects)
SL-120-NBZ-SS-0.0-0.5	ANTIMONY	J	0.186	0.213	PQL	MG/KG	J (all detects)
SL-155-NBZ-SS-0.0-0.5	ANTIMONY	J	0.129	0.209	PQL	MG/KG	J (all detects)
SL-181-NBZ-SS-0.0-0.5	ANTIMONY	J	0.163	0.207	PQL	MG/KG	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: 12D031 | Laboratory: EMXT

EDD Filename: 12D031R | eQAPP Name: CDM_SSFL_120730_EMAX

Method: 6020
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-187-NBZ-SS-0.0-0.5	ANTIMONY	J	0.177	0.208	PQL	MG/KG	J (all detects)
	SODIUM	J	57.9	104	PQL	MG/KG	

Method: 8015B EFH
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-020-NBZ-SB-2.5-3.5	EFH(C8-C11)	J	0.61	1.1	PQL	MG/KG	J (all detects)

Method: 8081A
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-020-NBZ-SS-0.0-0.5	4,4'-DDE	J	0.24	0.38	PQL	UG/KG	J (all detects)
SL-100-NBZ-SS-0.0-0.5	4,4'-DDE	J	0.30	0.37	PQL	UG/KG	J (all detects)
SL-104-NBZ-SS-0.0-0.5	4,4'-DDE	J	0.35	0.37	PQL	UG/KG	J (all detects)
	4,4'-DDT	J	0.29	0.37	PQL	UG/KG	
SL-120-NBZ-SS-0.0-0.5	4,4'-DDE	J	0.29	0.37	PQL	UG/KG	J (all detects)

Method: 8082
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-104-NBZ-SS-0.0-0.5	Aroclor 5460	J	3.4	3.6	PQL	UG/KG	J (all detects)
SL-114-NBZ-SS-0.0-0.5	Aroclor 5460	J	2.9	3.6	PQL	UG/KG	J (all detects)

Method: 8260B
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-020-NBZ-SB-3.0	METHYLENE CHLORIDE	J	4.2	5.5	PQL	UG/KG	J (all detects)

Method: 8270C SIM
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-020-NBZ-SB-2.5-3.5	BIS(2-ETHYLHEXYL)PHTHALATE	J	14	19	PQL	UG/KG	J (all detects)

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Reporting Limit Outliers

Lab Reporting Batch ID: 12D031 **Laboratory: EMXT**

EDD Filename: 12D031R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: **8270C SIM**

Matrix: **SO**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
SL-020-NBZ-SS-0.0-0.5	1-METHYLNAPHTHALENE	J	1.2	1.9	PQL	UG/KG	J (all detects)
	2-METHYLNAPHTHALENE	J	1.3	1.9	PQL	UG/KG	
	ACENAPHTHYLENE	J	1.3	1.9	PQL	UG/KG	
	CHRYSENE	J	1.8	1.9	PQL	UG/KG	
	NAPHTHALENE	J	1.3	1.9	PQL	UG/KG	
SL-099-NBZ-SS-0.0-0.5	PHENANTHRENE	J	0.93	1.9	PQL	UG/KG	J (all detects)
SL-100-NBZ-SS-0.0-0.5	BIS(2-ETHYLHEXYL)PHTHALATE	J	15	18	PQL	UG/KG	J (all detects)
SL-104-NBZ-SS-0.0-0.5	BENZO(A)ANTHRACENE	J	1.5	1.8	PQL	UG/KG	J (all detects)
	BENZO(A)PYRENE	J	1.6	1.8	PQL	UG/KG	
	Butylbenzylphthalate	J	9.1	18	PQL	UG/KG	
	CHRYSENE	J	1.7	1.8	PQL	UG/KG	
	INDENO(1,2,3-CD)PYRENE	J	1.6	1.8	PQL	UG/KG	
	PHENANTHRENE	J	0.93	1.8	PQL	UG/KG	
SL-110-NBZ-SS-0.0-0.5	BENZO(G,H,I)PERYLENE	J	1.6	1.8	PQL	UG/KG	J (all detects)
	Butylbenzylphthalate	J	15	18	PQL	UG/KG	
SL-114-NBZ-SS-0.0-0.5	PHENANTHRENE	J	1.6	1.9	PQL	UG/KG	J (all detects)

LDC #: 28255P4
SDG #: 12D031
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level IV ADR

Date: 8-28-12
Page: 1 of 1
Reviewer: CR
2nd Reviewer: V

METHOD: Metals (EPA SW 846 Method ~~6010B~~/~~6020A~~/~~7000~~) 6020A/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: 4/4/12
II.	ICP/MS Tune	A	
III.	Calibration	A	
IV.	Blanks	~~SW~~ 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)	~~SW~~ 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=1,7

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-NBZ-SB-040412 W	11	SL-120-NBZ-SS-0.0-0.5	21		31	
2	EB-NBZ-SS-040412	12	SL-155-NBZ-SS-0.0-0.5	22		32	
3	SL-020-NBZ-SB-2.5-3.5	13	SL-181-NBZ-SS-0.0-0.5	23		33	
4	SL-020-NBZ-SS-0.0-0.5	14	SL-187-NBZ-SS-0.0-0.5	24		34	
5	SL-097-NBZ-SS-0.0-0.5	15	SL-020-NBZ-SB-2.5-3.5MS	25		35	
6	SL-099-NBZ-SS-0.0-0.5	16	SL-020-NBZ-SB-2.5-3.5MSD	26		36	
7	SL-100-NBZ-SS-0.0-0.5	17	SL-187-NBZ-SS-0.0-0.5MS	27		37	
8	SL-104-NBZ-SS-0.0-0.5	18	SL-187-NBZ-SS-0.0-0.5MSD	28		38	
9	SL-110-NBZ-SS-0.0-0.5	19		29		39	
10	SL-114-NBZ-SS-0.0-0.5	20		30		40	

Notes:

Enclosure II

Level IV Validation Reports

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Santa Susana Field Laboratory
Collection Date:	April 4, 2012
LDC Report Date:	September 4, 2012
Matrix:	Soil/Water
Parameters:	Volatiles
Validation Level:	Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	12D031

Sample Identification

SL-020-NBZ-SB-3.0
TB-040412

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.

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 volatile contaminants were found in the method blanks.

Sample TB-040412 was identified as a trip blank. No volatile 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. 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 12D031	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 12D031

SDG	Sample	Compound	Flag	A or P	Reason (Code)
12D031	SL-020-NBZ-SB-3.0 TB-040412	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 12D031

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Volatiles - Field Blank Data Qualification Summary - SDG 12D031

No Sample Data Qualified in this SDG

LDC #: 28255P1a **VALIDATION COMPLETENESS WORKSHEET** Date: 9/01/12
SDG #: 12D031 Level IV Page: 1 of 1
Laboratory: EMAX Laboratories, Inc. Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

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

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 4/4/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	%D RSD ≤30 r²
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 25
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	ND	TB = 1

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

Validated Samples: soil + water

1	SL-020-NBZ-SB-3.0	11	MBLK1W	21		31	
2	TB-040412	12	MBLK1S	22		32	
3		13	MBLKCS	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 #: 24255P1a

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 $\geq$ 0.990?	✓			
Were all percent relative standard deviations (%RSD) $\leq$ 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) $\leq$ 25% and relative response factors (RRF) $\geq$ 0.05?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed 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

IETHOD: 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 #: 28255 P/a

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: FT
2nd Reviewer: C

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
			JJJ (3rd internal standard)	1.541	1.541	1.496	1.496	3.20	3.20
			(4th internal standard)	(50)	(50)				
2	V003B16	2/16/12	C (1st internal standard)	0.247	0.247	0.243	0.243	10.76	10.76
			V (2nd internal standard)	1.422	1.422	1.437	1.437	2.54	2.54
			JJJ (3rd internal standard)	1.385	1.385	1.405	1.405	5.03	5.03
			(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 #: 28255P1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

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

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	RDV053	4/10/12	C (1st internal standard)	0.391	0.396	0.396	1.3	1.3
			V (2nd internal standard)	1.683	1.527	1.527	9.3	9.3
			JJJ (3rd internal standard)	1.496	1.514	1.514	1.2	1.2
			(4th internal standard)					
2	RDB151	4/11/12	C (1st internal standard)	0.243	0.276	0.276	13.6	13.6
			V (2nd internal standard)	1.437	1.492	1.492	3.8	3.8
			JJJ (3rd internal standard)	1.405	1.546	1.546	10.0	10.0
			(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 #: 28255P1a

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: FT
2nd reviewer:

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:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	50.0	52.68	105	105	0
1,2-Dichloroethane-d4		50.08	100	100	
Toluene-d8		51.07	102	102	
Bromofluorobenzene		51.50	103	103	

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 #: 28253 P/a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

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 = | LCS - LCSD | * 2/(LCS + LCSD) LCS = Laboraotry control sample percent recovery LCSD = Laboratory control sample duplicate percent recovery

LCS ID: lcs 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	50.0	50.0	48.2	46.8	96	96	94	94	3	3
Trichloroethene	↓	↓	50.1	49.8	100	100	100	100	1	1
Benzene			49.8	49.7	100	100	99	99	0	0
Toluene			47.1	46.5	94	94	93	93	1	1
Chlorobenzene			48.2	47.0	96	96	94	94	3	3

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 #: 28255 P/R

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

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

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. #1 , E :

Conc. = $\frac{(115901)(50)(5)}{(2223603)(5.06)(0.1)(0.892)}$

= 0.573

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification
	$y = b + a(x)$				
	$\frac{115901}{2223603} = 0.01491 + 0.49486\left(\frac{X}{50}\right)$				
		$X = 3.76$			
	final conc $= \frac{(3.76)(5)}{(5.06)(0.892)} = 4.2$ ug/kg				

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Santa Susana Field Laboratory

Collection Date: April 4, 2012

LDC Report Date: September 4, 2012

Matrix: Soil/Water

Parameters: 1,4-Dioxane

Validation Level: Level IV

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 12D031

Sample Identification

SL-020-NBZ-SB-3.0
TB-040412

Introduction

This data review covers one soil sample and one water samples 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-040412 was identified as a trip 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 12D031	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 12D031

SDG	Sample	Compound	Flag	A or P	Reason (Code)
12D031	SL-020-NBZ-SB-3.0 TB-040412	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 12D031

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
1,4-Dioxane - Field Blank Data Qualification Summary - SDG 12D031

No Sample Data Qualified in this SDG

LDC #: 28255P1b **VALIDATION COMPLETENESS WORKSHEET** Date: 8/31/12
SDG #: 12D031 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: 4/4/12
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	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	ND	TB = 2

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-020-NBZ-SB-3.0 S	11	MBLK1W	21		31	
2	TB-040412 W	12	MBLK2S	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	

LDC #: 28255P1b

VALIDATION FINDINGS CHECKLIST

Reviewer: FT
2nd Reviewer: [illegible]

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?	✓			

LDC #: 28255 P1b

VALIDATION FINDINGS CHECKLIST

Reviewer: FT
2nd Reviewer: A

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

METHOD: 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 #: 28255 P1b

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

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

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 (20 std)	Recalculated RRF (20 std)	Reported Average RRF (initial)	Recalculated Average RRF (initial)	Reported %RSD	Recalculated %RSD
1	ICAL VOF5K03	11/3/11	1,4-Dioxane (1st internal standard)	1.168	1.168	1.231	1.231	13.19	13.19
			(2nd internal standard)						
			(3rd internal standard)						
			(4th internal standard)	(20)	(20)				
2	VOF5J31	10/31/11	↓ (1st internal standard)	1.163	1.163	1.145	1.145	7.02	7.02
			(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 #: 28255 P1b

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: FT
2nd Reviewer: A

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	RDY028	4/10/12	1,4-Dioxane (1st internal standard)	1.231	1.213	1.213	1.5	1.5
			(2nd internal standard)					
			(3rd internal standard)					
			(4th internal standard)					
2	RDY017	4/10/12	↓ (1st internal standard)	1.145	1.335	1.335	16.6	16.6
			(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 #: 28255 P1b

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

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	20.0	17.54	87.7	87.7	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 #: 28255P1b

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

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

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/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	Recalculated
1,1-Dichloroethene										
Trichloroethene										
Benzene										
Toluene										
Chlorobenzene										
1,4 - Dioxane	200	200	223	220	112	112	110	110	2	2

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 #: 28255P1b

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

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. = ( ) ( ) ( ) / ( ) ( ) ( ) ( )

= 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:	April 4, 2012
LDC Report Date:	September 4, 2012
Matrix:	Soil/Water
Parameters:	Semivolatiles
Validation Level:	Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	12D031

Sample Identification

EB-NBZ-SB-040412
EB-NBZ-SS-040412
SL-020-NBZ-SB-2.5-3.5
SL-020-NBZ-SS-0.0-0.5
SL-097-NBZ-SS-0.0-0.5
SL-099-NBZ-SS-0.0-0.5
SL-100-NBZ-SS-0.0-0.5
SL-104-NBZ-SS-0.0-0.5
SL-110-NBZ-SS-0.0-0.5
SL-114-NBZ-SS-0.0-0.5
SL-120-NBZ-SS-0.0-0.5
SL-155-NBZ-SS-0.0-0.5
SL-181-NBZ-SS-0.0-0.5
SL-187-NBZ-SS-0.0-0.5

Introduction

This data review covers 12 soil samples and 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C 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.

Samples EB-NBZ-SB-040412 and EB-NBZ-SS-040412 were identified as equipment blanks. No semivolatile 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. 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 12D031	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 12D031

SDG	Sample	Compound	Flag	A or P	Reason (Code)
12D031	EB-NBZ-SB-040412 EB-NBZ-SS-040412 SL-020-NBZ-SB-2.5-3.5 SL-020-NBZ-SS-0.0-0.5 SL-097-NBZ-SS-0.0-0.5 SL-099-NBZ-SS-0.0-0.5 SL-100-NBZ-SS-0.0-0.5 SL-104-NBZ-SS-0.0-0.5 SL-110-NBZ-SS-0.0-0.5 SL-114-NBZ-SS-0.0-0.5 SL-120-NBZ-SS-0.0-0.5 SL-155-NBZ-SS-0.0-0.5 SL-181-NBZ-SS-0.0-0.5 SL-187-NBZ-SS-0.0-0.5	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 12D031

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Semivolatiles - Field Blank Data Qualification Summary - SDG 12D031

No Sample Data Qualified in this SDG

LDC #: 28255P2a **VALIDATION COMPLETENESS WORKSHEET** Date: 9/01/12
SDG #: 12D031 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: 4/4/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	%RSD ≤ 30, r^2
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 25
V.	Blanks	A	
VI.	Surrogate spikes	SW	
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.	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	NP	EB = 1, 2

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-NBZ-SB-040412 W	11	SL-120-NBZ-SS-0.0-0.5	21	MBLK1W	31	
2	EB-NBZ-SS-040412 W	12	SL-155-NBZ-SS-0.0-0.5	22	MBLK1S	32	
3	SL-020-NBZ-SB-2.5-3.5	13	SL-181-NBZ-SS-0.0-0.5	23		33	
4	SL-020-NBZ-SS-0.0-0.5	14	SL-187-NBZ-SS-0.0-0.5	24		34	
5	SL-097-NBZ-SS-0.0-0.5	15		25		35	
6	SL-099-NBZ-SS-0.0-0.5	16		26		36	
7	SL-100-NBZ-SS-0.0-0.5	17		27		37	
8	SL-104-NBZ-SS-0.0-0.5	18		28		38	
9	SL-110-NBZ-SS-0.0-0.5	19		29		39	
10	SL-114-NBZ-SS-0.0-0.5	20		30		40	

LDC #: 28255P2a

VALIDATION FINDINGS CHECKLIST

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

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 #: 28255P2a

VALIDATION FINDINGS CHECKLIST

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds from the associated calibration standard?	✓			
XI. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?		✓		
XII. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?			✓	
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XVII. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.		✓		

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS 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 #: 28285p2a
SDG #: see cover

VALIDATION FINDINGS WORKSHEET
Surrogate Recovery

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

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

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

Y (N) N/A Were percent recoveries (%R) for surrogates within QC limits?
Y N (N/A) If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?
Y N (N/A) If any %R was less than 10 percent, was a reanalysis performed to confirm %R?

#	Date	Sample ID	Surrogate	%R (Limits)	Qualifications
		3	FBP	44.3 (45-130)	no qual
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
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				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	

* QC limits are advisory	QC Limits (Soil)	QC Limits (Water)
S1 (NBZ) = Nitrobenzene-d5	23-120	35-114
S2 (FBP) = 2-Fluorobiphenyl	30-115	43-116
S3 (TPH) = Terphenyl-d14	18-137	33-141
S4 (PHL) = Phenol-d5	24-113	10-94
S5 (2FP)= 2-Fluorophenol	25-121	21-100
S6 (TBP) = 2,4,6-Tribromophenol	19-122	10-123
S7 (2CP) = 2-Chlorophenol-d4	20-130*	33-110*
S8 (DCB) = 1,2-Dichlorobenzene-d4	20-130*	16-110*

LDC #: 28255 P2s

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 (X std)	Recalculated RRF (25 std)	Reported Average RRF (initial)	Recalculated Average RRF (initial)	Reported %RSD	Recalculated %RSD
1	ICAL	2/28/12	Phenol (1st internal standard)	2.179	2.179	2.263	2.263	3.32	3.32
			Naphthalene (2nd internal standard)	1.167	1.167	1.122	1.122	11.90	11.90
			Fluorene (3rd internal standard)	1.378	1.378	1.353	1.393	11.89	11.89
			Pentachlorophenol (4th internal standard)	0.174	0.174	0.177	0.177	6.50	6.50
			Bis(2-ethylhexyl)phthalate (5th internal standard)	0.771	0.771	0.748	0.748	2.56	2.56
			Benzo(a)pyrene (6th internal standard)	1.135	1.135	1.094	1.094	6.15	6.15
2	ICAL	3/5/12	Phenol (1st internal standard)	1.106	1.106	1.106	1.106	3.09	3.09
			Naphthalene (2nd internal standard)	0.971	0.971	0.970	0.970	1.90	1.90
			Fluorene (3rd internal standard)	1.286	1.286	1.317	1.317	2.75	2.75
			Pentachlorophenol (4th internal standard)	0.143	0.143	0.134	0.134	11.33	11.33
			Bis(2-ethylhexyl)phthalate (5th internal standard)	0.744	0.744	0.725	0.725	8.92	8.92
			Benzo(a)pyrene (6th internal standard)	1.044	1.044	1.025	1.025	5.70	5.70
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 #: 28215 P2c

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

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

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	RDL092	4/12/12	Phenol (1st internal standard)	2.263	2.099	2.099	7.2	7.2
			Naphthalene (2nd internal standard)	1.122	1.077	1.077	4.0	4.0
			Fluorene (3rd internal standard)	1.353	1.358	1.358	0.4	0.4
			Pentachlorophenol (4th internal standard)	0.177	0.164	0.164	7.3	7.3
			Bis(2-ethylhexyl)phthalate (5th internal standard)	0.748	0.777	0.777	3.9	3.9
			Benzo(a)pyrene (6th internal standard)	1.094	1.120	1.120	2.4	2.4
2	~~RDH263~~	~~3/5/12~~	Phenol (1st internal standard)	~~2.263~~				
			Naphthalene (2nd internal standard)	1.122				
			Fluorene (3rd internal standard)	1.353				
			Pentachlorophenol (4th internal standard)	0.177				
			Bis(2-ethylhexyl)phthalate (5th internal standard)	0.748				
			Benzo(a)pyrene (6th internal standard)	~~1.094~~				
3	RDH263	4/17/12	Phenol (1st internal standard)	1.106	1.006	1.006	9.0	9.0
			Naphthalene (2nd internal standard)	0.970	0.935	0.939	3.6	3.6
			Fluorene (3rd internal standard)	1.317	1.277	1.277	3.0	3.6
			Pentachlorophenol (4th internal standard)	0.134	0.134	0.134	0.0	0.0
			Bis(2-ethylhexyl)phthalate (5th internal standard)	0.725	0.397	0.397	9.7	9.7
			Benzo(a)pyrene (6th internal standard)	1.025	0.997	0.997	2.7	2.7

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 #: 28525-582a

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: FT
2nd reviewer: e

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: #14

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5	10	5.30	53.0	53.0	0
2-Fluorobiphenyl	↓	5.78	57.8	57.8	
Terphenyl-d14	↓	8.92	89.2	89.2	↓
Phenol-d5	30	19.17	63.9	63.9	
2-Fluorophenol	↓	16.56	55.2	55.2	
2,4,6-Tribromophenol	↓	23.53	78.4	78.4	
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 #: 28255P2C

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

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

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 = | LCSC - LCSDC | * 2/(LCSC + LCSDC) LCSC = Laboraotry control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: LCS1P

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	667	667	574	508	86	86	76	76	12	12
N-Nitroso-di-n-propylamine			514	452	77	77	68	68	13	13
4-Chloro-3-methylphenol			606	521	91	91	78	78	15	15
Acenaphthene			646	572	97	97	86	86	12	12
Pentachlorophenol			584	533	88	88	80	80	9	9
Pyrene			626	529	94	94	79	79	17	17

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 #: 28285 P2 S

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

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

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(V_t)(DF)(2.0)}{(A_{is})(RRF)(V_o)(V_i)(\%S)}$

A_x	=	Area of the characteristic ion (EICP) for the compound to be measured
A_{is}	=	Area of the characteristic ion (EICP) for the specific internal standard
I_s	=	Amount of internal standard added in nanograms (ng)
V_o	=	Volume or weight of sample extract in milliliters (ml) or grams (g).
V_i	=	Volume of extract injected in microliters (ul)
V_t	=	Volume of the concentrated extract in microliters (ul)
Df	=	Dilution Factor.
%S	=	Percent solids, applicable to soil and solid matrices only.
2.0	=	Factor of 2 to account for GPC cleanup

Example:

Sample I.D. _____ , _____:

Conc. = $\frac{(\quad)(\quad)(\quad)(\quad)(\quad)}{(\quad)(\quad)(\quad)(\quad)(\quad)}$

=

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Santa Susana Field Laboratory

Collection Date: April 4, 2012

LDC Report Date: September 4, 2012

Matrix: Soil

Parameters: Semivolatiles

Validation Level: Level IV

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 12D031

Sample Identification

SL-020-NBZ-SB-2.5-3.5
SL-020-NBZ-SS-0.0-0.5
SL-097-NBZ-SS-0.0-0.5
SL-099-NBZ-SS-0.0-0.5
SL-100-NBZ-SS-0.0-0.5
SL-104-NBZ-SS-0.0-0.5
SL-110-NBZ-SS-0.0-0.5
SL-114-NBZ-SS-0.0-0.5
SL-120-NBZ-SS-0.0-0.5
SL-155-NBZ-SS-0.0-0.5
SL-181-NBZ-SS-0.0-0.5
SL-187-NBZ-SS-0.0-0.5

Introduction

This data review covers 12 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 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.

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

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 12D031	All compounds reported below the RL.	J (all detects)	A

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Santa Susana Field Laboratory
Semivolatiles - Data Qualification Summary - SDG 12D031

SDG	Sample	Compound	Flag	A or P	Reason (Code)
12D031	SL-020-NBZ-SB-2.5-3.5 SL-020-NBZ-SS-0.0-0.5 SL-097-NBZ-SS-0.0-0.5 SL-099-NBZ-SS-0.0-0.5 SL-100-NBZ-SS-0.0-0.5 SL-104-NBZ-SS-0.0-0.5 SL-110-NBZ-SS-0.0-0.5 SL-114-NBZ-SS-0.0-0.5 SL-120-NBZ-SS-0.0-0.5 SL-155-NBZ-SS-0.0-0.5 SL-181-NBZ-SS-0.0-0.5 SL-187-NBZ-SS-0.0-0.5	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 12D031

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Semivolatiles - Field Blank Data Qualification Summary - SDG 12D031

No Sample Data Qualified in this SDG

LDC #: 28255P2b **VALIDATION COMPLETENESS WORKSHEET** Date: 9/61/12

SDG #: 12D031 Level IV Page: 1 of 1

Laboratory: EMAX Laboratories, Inc. Reviewer: JD

2nd Reviewer: A

METHOD: GC/MS ~~Polynuclear Aromatic Hydrocarbons~~ SVOA (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: 4/4/12
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	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	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:

soil

1	SL-020-NBZ-SB-2.5-3.5	11	SL-181-NBZ-SS-0.0-0.5	21	MBLK1S	31	
2	SL-020-NBZ-SS-0.0-0.5	12	SL-187-NBZ-SS-0.0-0.5	22		32	
3	SL-097-NBZ-SS-0.0-0.5	13		23		33	
4	SL-099-NBZ-SS-0.0-0.5	14		24		34	
5	SL-100-NBZ-SS-0.0-0.5	15		25		35	
6	SL-104-NBZ-SS-0.0-0.5	16		26		36	
7	SL-110-NBZ-SS-0.0-0.5	17		27		37	
8	SL-114-NBZ-SS-0.0-0.5	18		28		38	
9	SL-120-NBZ-SS-0.0-0.5	19		29		39	
10	SL-155-NBZ-SS-0.0-0.5	20		30		40	

LDC #: 28255 p2b

VALIDATION FINDINGS CHECKLIST

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 #: 28255P2b

VALIDATION FINDINGS CHECKLIST

Page: 1 of
Reviewer: FT
2nd Reviewer:

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds from the associated calibration standard?	✓			
XI. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓		✓	
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓		✓	
Were chromatogram peaks verified and accounted for?	✓			
XII. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?			✓	
XIV. System performance				
System performance was found to be acceptable.		-		
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XVII. Field blanks				
Field blanks were identified in this SDG.		✓		
Target compounds were detected in the field blanks.			✓	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS 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 #: 28255p2b

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	SVE7C055	3/5/12	~~Phenol (1st internal standard)~~						
			Naphthalene (2nd internal standard)	3.350	3.350	3.478	3.478	8.37	8.3
			~~Fluorene~~ Phenanthrene (3rd internal standard)	1.121	1.121	1.182	1.182	8.55	8.55
			~~Pentachlorophenol~~ Benzo (a) pyrene (4th internal standard)	1.001	1.001	0.955	0.955	9.62	9.62
			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 #: 28255 p2b

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

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	RD H2623	4/17/12	~~Phenol (1st internal standard)~~					
			Naphthalene (2nd internal standard)	3.478	3.169	3.169	8.9	8.9
			~~Fluorene~~ Phenanthrene (3rd internal standard)	1.182	0.967	0.967	18.2	18.2
			~~Pentachlorophenol~~ (Benzo(a)pyrene (4th internal standard)	0.955	0.994	0.994	4.1	4.1
			~~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 #: 28255p2b

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: FT
2nd reviewer: A

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #2

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5	10.0	6.65	66.5	66.5	0
2-Fluorobiphenyl	↓	7.30	73.0	73.0	↓
Terphenyl-d14	↓	8.18	81.8	81.8	↓
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 #: 28255pd6

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

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

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 = | LCSC - LCSDC | * 2/(LCSC + LCSDC) LCSC = Laboraotry control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: 105 1D

Compound	Spike Added (ug/kg)		Spike Concentration (ug/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
Phenol										
N-Nitroso-di-n-propylamine										
4-Chloro-3-methylphenol										
Acenaphthene	333	333	344	293	103	103	88	88	16	16
Pentachlorophenol										
Pyrene	333	333	315	258	95	95	77	77	20	20

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 #: 38255P26

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

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

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(V_t)(DF)(2.0)}{(A_{is})(RRF)(V_o)(V_i)(\%S)}$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

V_o = Volume or weight of sample extract in milliliters (ml) or grams (g).

V_i = Volume of extract injected in microliters (ul)

V_t = Volume of the concentrated extract in microliters (ul)

Df = Dilution Factor.

%S = Percent solids, applicable to soil and solid matrices only.

2.0 = Factor of 2 to account for GPC cleanup

Example: 1/30

Sample I.D. #2, Phenanthrene

Conc. = $\frac{(3556)(40)(1)(\quad)(\quad)(\quad)}{(2112310)(1.182)(30)(0.903)}$

=

2.1 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: April 4, 2012

LDC Report Date: September 4, 2012

Matrix: Soil/Water

Parameters: Chlorinated Pesticides

Validation Level: Level IV

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 12D031

Sample Identification

EB-NBZ-SS-040412
SL-020-NBZ-SB-2.5-3.5
SL-020-NBZ-SS-0.0-0.5
SL-097-NBZ-SS-0.0-0.5
SL-099-NBZ-SS-0.0-0.5
SL-100-NBZ-SS-0.0-0.5
SL-104-NBZ-SS-0.0-0.5
SL-110-NBZ-SS-0.0-0.5
SL-114-NBZ-SS-0.0-0.5
SL-120-NBZ-SS-0.0-0.5
SL-155-NBZ-SS-0.0-0.5
SL-181-NBZ-SS-0.0-0.5
SL-187-NBZ-SS-0.0-0.5

Introduction

This data review covers 12 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 with the following exceptions:

Date	Standard	Column	Compound	%D	Associated Samples	Flag	A or P
4/20/12	CCV	Elite-CLP1	Chlordane	78	All soil samples in SDG 12D031	J (all detects) UJ (all non-detects)	A

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

Retention times (RT) of all compounds in the calibration standards were within QC limits.

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-NBZ-SS-040412 was identified as an equipment blank. No chlorinated pesticide contaminants were found.

VI. Surrogate Spikes

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

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

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

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.

The sample results for detected compounds from the two columns were within 40% relative percent difference (RPD) with the following exceptions:

Sample	Compound	RPD	Flag	A or P
SL-020-NBZ-SS-0.0-0.5	4,4'-DDE	83	J (all detects)	A
SL-104-NBZ-SS-0.0-0.5	4,4'-DDT	55	J (all detects)	A

Sample	Compound	RPD	Flag	A or P
SL-110-NBZ-SS-0.0-0.5	Methoxychlor	64	J (all detects)	A
SL-120-NBZ-SS-0.0-0.5	4,4'-DDE	42	J (all detects)	A

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 12D031	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 12D031

SDG	Sample	Compound	Flag	A or P	Reason (Code)
12D031	SL-020-NBZ-SB-2.5-3.5 SL-020-NBZ-SS-0.0-0.5 SL-097-NBZ-SS-0.0-0.5 SL-099-NBZ-SS-0.0-0.5 SL-100-NBZ-SS-0.0-0.5 SL-104-NBZ-SS-0.0-0.5 SL-110-NBZ-SS-0.0-0.5 SL-114-NBZ-SS-0.0-0.5 SL-120-NBZ-SS-0.0-0.5 SL-155-NBZ-SS-0.0-0.5 SL-181-NBZ-SS-0.0-0.5 SL-187-NBZ-SS-0.0-0.5	Chlordane	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D) (C)
12D031	SL-020-NBZ-SS-0.0-0.5 SL-120-NBZ-SS-0.0-0.5	4,4'-DDE	J (all detects)	A	Compound quantitation and RLs (RPD) (*XIII)
12D031	SL-104-NBZ-SS-0.0-0.5	4,4'-DDT	J (all detects)	A	Compound quantitation and RLs (RPD) (*XIII)
12D031	SL-110-NBZ-SS-0.0-0.5	Methoxychlor	J (all detects)	A	Compound quantitation and RLs (RPD) (*XIII)
12D031	EB-NBZ-SS-040412 SL-020-NBZ-SB-2.5-3.5 SL-020-NBZ-SS-0.0-0.5 SL-097-NBZ-SS-0.0-0.5 SL-099-NBZ-SS-0.0-0.5 SL-100-NBZ-SS-0.0-0.5 SL-104-NBZ-SS-0.0-0.5 SL-110-NBZ-SS-0.0-0.5 SL-114-NBZ-SS-0.0-0.5 SL-120-NBZ-SS-0.0-0.5 SL-155-NBZ-SS-0.0-0.5 SL-181-NBZ-SS-0.0-0.5 SL-187-NBZ-SS-0.0-0.5	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 12D031

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Chlorinated Pesticides - Field Blank Data Qualification Summary - SDG 12D031

No Sample Data Qualified in this SDG

LDC #: 28255P3a

SDG #: 12D031

Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level IV

Date: 9/01/12

Page: 1 of 1

Reviewer: EJ

2nd Reviewer:

METHOD: GC Chlorinated Pesticides (EPA SW846 Method 8081A)

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

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 4/4/12
II.	GC/ECD Instrument Performance Check	A+NA	
III.	Initial calibration	A	%D RSD ≤20
IV.	Continuing calibration/ICV	SW	ICV/CCV ≤20
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	client specified
VIII.	Laboratory control samples	A	LCS ID
IX.	Regional quality assurance and quality control	N	
X.	Florisil cartridge check	N	
XI.	GPC Calibration	N	
XII.	Target compound identification	A	
XIII.	Compound quantitation/RL/LOQ/LODs	SW	
XIV.	Overall assessment of data	A	
XV.	Field duplicates	N	
XVI.	Field blanks	ND	EB = 1

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

Validated Samples: soil + water

1	EB-NBZ-SS-040412	11	SL-155-NBZ-SS-0.0-0.5	21	MBLK1W	31	
2	SL-020-NBZ-SB-2.5-3.5	12	SL-181-NBZ-SS-0.0-0.5	22	MBLKLS	32	
3	SL-020-NBZ-SS-0.0-0.5	13	SL-187-NBZ-SS-0.0-0.5	23		33	
4	SL-097-NBZ-SS-0.0-0.5	14		24		34	
5	SL-099-NBZ-SS-0.0-0.5	15		25		35	
6	SL-100-NBZ-SS-0.0-0.5	16		26		36	
7	SL-104-NBZ-SS-0.0-0.5	17		27		37	
8	SL-110-NBZ-SS-0.0-0.5	18		28		38	
9	SL-114-NBZ-SS-0.0-0.5	19		29		39	
10	SL-120-NBZ-SS-0.0-0.5	20		30		40	

Notes:

LDC #: 28255B3a
SDG #: per cover

VALIDATION FINDINGS CHECKLIST

Reviewer: FT
2nd Reviewer: A

Method: ✓ GC ____ HPLC

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

LDC #: 28255P3a
SDG #: per cover

VALIDATION FINDINGS CHECKLIST

Reviewer: FJ
2nd Reviewer: C

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 #: 28255P3a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

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

METHOD: ✓ **GC** __ **HPLC**

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
What type of continuing calibration calculation was performed? __%D or __RPD
Y N N/A Were continuing calibration standards analyzed at the required frequencies?
Y N N/A Did the continuing calibration standards meet the %D / RPD validation criteria of ≤20.0%?
Level IV Only
Y N N/A Were the retention times for all calibrated compounds within their respective acceptance windows?

#	Date	Standard ID	Detector/ Column	Compound	%D / RPD (Limit ≤ 20.0)	RT (limit)	Associated Samples	Qualifications
1	4/20/12 19:39	CCV	Elite-CLP1	Chlordane (Technical)	78	( )	All soils	J/UJ/A (C)
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
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						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		

LDC #: 28255P32
SDG #: see cover

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and Reported CRQLs

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

METHOD: ✓ GC ___ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Level IV/D Only
Y N N/A Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?
Y N N/A Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

#	Compound Name	% RPD Bet 2 col Finding ≤ 40	Associated Samples	Qualifications
	4,4'-DDE	~~42~~ 83	3	J/A dit * X11
	4,4'-DDT	55	7	↓
	methoxychlor	64	8	↓
	4,4'-DDE	42	10	↓

Comments: See sample calculation verification worksheet for recalculations

LDC #: 28255P3a
SDG #: [illegible]

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
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 (10/10 std)	Recalculated CF (10/10 std)	Reported Average CF (initial)	Recalculated Average CF (initial)	Reported %RSD	Recalculated %RSD
1	ICAL	4/18/12	endosulfan I cal1	168899	168899	160359.7	160359.7	7.8	7.8
			methoxychlor	75511	75511	70408.7	70408.7	15.7	15.7
2			↓ cal2	70979	70979	68566.5	68566.5	4.0	4.0
				31008	31008	29476.0	29476.0	14.0	14.0
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.

INICIC 1SB

LDC #: 28255P3a
SDG #: pw cover

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

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	CCV 18.32	4/20/12	endosulfan I aP1	10.0	9.40	9.40	6	6
			methoxychlor	100.0	98.60	98.60	1	1
			cLP2	10.0	9.29	9.29	7	7
2			↓	100.0	90.60	90.60	9	9
	CCV 13:21	4/23/12	↓ cLP1	20.0	18.0	18.0	10	10
			↓	200.0	183.77	183.77	8	8
3			↓ cLP2	↓	19.03	19.03	5	5
			↓	↓	179.60	179.60	10	10
	CCV 18:55	4/23/12	↓ cLP1	20.0	19.63	19.63	2	2
4			↓	200.0	202.95	202.95	1	1
			↓ cLP2	20.0	19.85	19.85	1	1
			↓	200	191.52	191.52	4	4

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

LDC #: 28255B3a
SDG #: see cover

METHOD: ✓ GC __ HPLC

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: FT
2nd reviewer: [signature]

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 3

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
TCMX	ch B	40	37.131	92.8	92.8	0
DCB	ch A	↓	34.052	85.1	85.1	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 #: 28255 P3e
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 = 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: lcs1D

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)										
Alpha-BHC	2.67	2.67	2.43	2.42	91	91	91	91	0	0
Gamma-BHC	2.67	2.67	2.34	2.30	98	98	86	86	2	2

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 #: 28255 P3a
SDG #: [illegible]

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

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

4/30.01

METHOD: ✓ GC ___ HPLC

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

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

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

Example:

Sample ID. # 3 Compound Name heptachlor

Concentration = $\frac{482146 \quad (4)}{138436.9 \quad (30.01) \quad (0.903)}$

= 0.51 ug/kg

#	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: April 4, 2012

LDC Report Date: September 4, 2012

Matrix: Soil/Water

Parameters: Polychlorinated Biphenyls

Validation Level: Level IV

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 12D031

Sample Identification

EB-NBZ-SB-040412
EB-NBZ-SS-040412
SL-020-NBZ-SB-2.5-3.5
SL-020-NBZ-SS-0.0-0.5
SL-097-NBZ-SS-0.0-0.5
SL-099-NBZ-SS-0.0-0.5
SL-100-NBZ-SS-0.0-0.5
SL-104-NBZ-SS-0.0-0.5
SL-110-NBZ-SS-0.0-0.5
SL-114-NBZ-SS-0.0-0.5
SL-120-NBZ-SS-0.0-0.5
SL-155-NBZ-SS-0.0-0.5
SL-181-NBZ-SS-0.0-0.5
SL-187-NBZ-SS-0.0-0.5

Introduction

This data review covers 12 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 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.

Samples EB-NBZ-SB-040412 and EB-NBZ-SS-040412 were identified as equipment blanks. 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 with the following exceptions:

Sample	Column	Surrogate	%R (Limits)	Compound	Flag	A or P
SL-099-NBZ-SS-0.0-0.5	ZB-multiresidue-2	Decachlorobiphenyl	127 (45-120)	All TCL compounds	J (all detects)	P
SL-110-NBZ-SS-0.0-0.5	ZB-multiresidue-2	Decachlorobiphenyl	127 (45-120)	All TCL compounds	J (all detects)	P
SL-120-NBZ-SS-0.0-0.5	ZB-multiresidue-2	Decachlorobiphenyl	124 (45-120)	All TCL compounds	J (all detects)	P
SL-181-NBZ-SS-0.0-0.5	ZB-multiresidue-2	Decachlorobiphenyl	172 (45-120)	All TCL compounds	J (all detects)	P
SL-187-NBZ-SS-0.0-0.5	ZB-multiresidue-1	Decachlorobiphenyl	141 (45-120)	All TCL compounds	J (all detects)	P

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

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

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Affected Compound	Flag	A or P
LCS/D (All soil samples in SDG 12D031)	Aroclor-5460	-	-	60 (≤50)	Aroclor-5432 Aroclor-5442 Aroclor-5460	J (all detects) UJ (all non-detects)	P

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

XI. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XII. Target Compound Identification

All target compound identifications were within validation criteria.

XIII. Compound Quantitation 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 12D031	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 12D031

SDG	Sample	Compound	Flag	A or P	Reason (Code)
12D031	SL-099-NBZ-SS-0.0-0.5 SL-110-NBZ-SS-0.0-0.5 SL-120-NBZ-SS-0.0-0.5 SL-181-NBZ-SS-0.0-0.5 SL-187-NBZ-SS-0.0-0.5	All TCL compounds	J (all detects)	P	Surrogate spikes (%R) (S)
12D031	SL-020-NBZ-SB-2.5-3.5 SL-020-NBZ-SS-0.0-0.5 SL-097-NBZ-SS-0.0-0.5 SL-099-NBZ-SS-0.0-0.5 SL-100-NBZ-SS-0.0-0.5 SL-104-NBZ-SS-0.0-0.5 SL-110-NBZ-SS-0.0-0.5 SL-114-NBZ-SS-0.0-0.5 SL-120-NBZ-SS-0.0-0.5 SL-155-NBZ-SS-0.0-0.5 SL-181-NBZ-SS-0.0-0.5 SL-187-NBZ-SS-0.0-0.5	Aroclor-5432 Aroclor-5442 Aroclor-5460	J (all detects) UJ (all non-detects)	P	Laboratory control samples (%R) (E)
12D031	EB-NBZ-SB-040412 EB-NBZ-SS-040412 SL-020-NBZ-SB-2.5-3.5 SL-020-NBZ-SS-0.0-0.5 SL-097-NBZ-SS-0.0-0.5 SL-099-NBZ-SS-0.0-0.5 SL-100-NBZ-SS-0.0-0.5 SL-104-NBZ-SS-0.0-0.5 SL-110-NBZ-SS-0.0-0.5 SL-114-NBZ-SS-0.0-0.5 SL-120-NBZ-SS-0.0-0.5 SL-155-NBZ-SS-0.0-0.5 SL-181-NBZ-SS-0.0-0.5 SL-187-NBZ-SS-0.0-0.5	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 12D031

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 12D031

No Sample Data Qualified in this SDG

LDC #: 28255P3b

VALIDATION COMPLETENESS WORKSHEET

SDG #: 12D031

Level IV

Laboratory: EMAX Laboratories, Inc.

Date: 9/01/12

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: A

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: 4/4/12
II.	GC/ECD Instrument Performance Check	NA	
III.	Initial calibration	A	%RSD ≤ 20
IV.	Continuing calibration/ICV	A	RRF/CCV ≤ 20
V.	Blanks	A	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	N	client specified
VIII.	Laboratory control samples	SW	res ID
IX.	Regional quality assurance and quality control	N	
X.	Florisil cartridge check	N	
XI.	GPC Calibration	N	
XII.	Target compound identification	A	
XIII.	Compound quantitation/RL/LOQ/LODs	A	
XIV.	Overall assessment of data	A	
XV.	Field duplicates	N	
XVI.	Field blanks	ND	EB = 1, 2

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-NBZ-SB-040412 W	11	SL-120-NBZ-SS-0.0-0.5	21		31	
2	EB-NBZ-SS-040412 W	12	SL-155-NBZ-SS-0.0-0.5	22		32	
3	SL-020-NBZ-SB-2.5-3.5	13	SL-181-NBZ-SS-0.0-0.5	23		33	
4	SL-020-NBZ-SS-0.0-0.5	14	SL-187-NBZ-SS-0.0-0.5	24		34	
5	SL-097-NBZ-SS-0.0-0.5	15		25		35	
6	SL-099-NBZ-SS-0.0-0.5	16		26		36	
7	SL-100-NBZ-SS-0.0-0.5	17		27		37	
8	SL-104-NBZ-SS-0.0-0.5	18		28		38	
9	SL-110-NBZ-SS-0.0-0.5	19		29		39	
10	SL-114-NBZ-SS-0.0-0.5	20		30		40	

Notes: _____

LDC #: 28255B3b
SDG #: per cover

VALIDATION FINDINGS CHECKLIST

Reviewer: FR
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 #: 28255 P3b
SDG #: per cover

VALIDATION FINDINGS CHECKLIST

Reviewer: FJ
2nd Reviewer: C

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 #: 28255P3b

VALIDATION FINDINDS WORKSHEET
Surrogate Recovery

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

METHOD: ✓ GC __ HPLC

Are surrogates required by the method? Yes___ or No____.

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

Y N N/A Were surrogates spiked into all samples and blanks?

Y N N/A Did all surrogate recoveries (%R) meet the QC limits?

#	Sample ID	Detector/ Column	Surrogate Compound	%R (Limits)	Qualifications
1	6	ZB-multiresidue-2	O	127 (45-120)	J/Pdet (S)
				( )	
				( )	
✓	9	↓	↓	127 (↓)	↓
				( )	
				( )	
✓	11	↓	↓	124 (↓)	↓
				( )	
				( )	
✓	13	↓	↓	172 (↓)	↓
				( )	
				( )	
	14	ZB multiresidue-1	↓	141 (↓)	↓
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	

	Surrogate Compound		Surrogate Compound		Surrogate Compound		Surrogate Compound		
A	Chlorobenzene (CBZ)	G	Octacosane	M	Benzo(e)Pyrene	S	1-Chloro-3-Nitrobenzene	Y	Tetrachloro-m- xylene
B	4-Bromofluorobenzene (BFB)	H	Ortho-Terphenyl	N	Terphenyl-D14	T	3,4-Dinitrotoluene		
C	a,a,a-Trifluorotoluene	I	Fluorobenzene (FBZ)	O	Decachlorobiphenyl (DCB)	U	Tripentyltin		
D	Bromochlorobenene	J	n-Triacontane	P	1-methylnaphthalene	V	Tri-n-propyltin		
E	1,4-Dichlorobutane	K	Hexacosane	Q	Dichlorophenyl Acetic Acid (DCAA)	W	Tributyl Phosphate		
F	1,4-Difluorobenzene (DFB)	L	Bromobenzene	R	4-Nitrophenol	X	Triphenyl Phosphate		

LDC #: 28285 P 36

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

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

METHOD: ✓ GC __ HPLC

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

Y N N/A Were a laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) analyzed for each matrix in this SDG?

Y N N/A Were the LCS percent recoveries (%R) and relative percent differences (RPD) within the QC limits?

Level IV/D Only

Y N N/A Was an LCS analyzed every 20 samples for each matrix or whenever a sample extraction was performed?

#	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	LCSD 801	Aroclor	( )	( )	60 (50)	All soils	J/UJ/P (E qual) Aroclor 5432, 5442, 5460
		5460	( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		

LDC #: 28255 p3b
SDG #: per cover

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: FJ
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 (60 std)	Recalculated CF (52 std)	Reported Average CF (initial)	Recalculated Average CF (initial)	Reported %RSD	Recalculated %RSD
1	ICAL	2/29/12	PCB 1260-1 ZB-M-1	3697.26	3697.26	3671.742	3671.742	7.5	7.5
			ZB-M-2	9860	9860	10079.1	10079.1	18.5	18.5
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 #: 28255P3b
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	CCV 19:55	5/4/12	PCB 1260 ZB-M-1	500.0	599.098	599.098	20	20
			ZB-M-2	500.0	529.081	529.081	6	6
2	CCV 11:38	5/7/12	↓	500.0	599.307	599.307	20	20
				500.0	470.700	470.700	6	6
3								
4								

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

LDC #: 28255P3b
SDG #: see cover

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Page: 1 of
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: #6

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
DCB	ch B	40	50.75	127	127	0
TCMX	ch A	40	~~52.64~~ 59.31	148	148	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 #: 28255 P3b
SDG #: all covers

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

Page: 1 of 1
Reviewer: FD
2nd Reviewer: C

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 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)										
Dinoseb (8151)										
Naphthalene (8310)										
Anthracene (8310)										
HMX (8330)										
2,4,6-Trinitrotoluene (8330)										
Arodor 1260	66.7	66.7	99.9	67.1	150	150	101	101	39	39

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 #: 28255 P3b
SDG #: [illegible]

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

4/30.03
S= 91.8

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. #6 Compound Name Aroclor 5460

final Concentration = $\frac{25.68 \quad (4)}{(30.03)(0.918)}$

= 3.7 ug/kg

#	Sample ID	Compound	Reported Concentrations ( )	Recalculated Results Concentrations ( )	Qualifications
	#2				
	Aroclor 5460-1	= ~~5381~~ = 2.14 / ~~2515.8~~	= 4864 / 627.6 =	7.75	-1 = 7.75
					-2 = 2.00
					-3 = 4.19
					-4 = 6.32
					-5 = 5.43
					Total = 25.68

Comments:

SAMPCALew.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Santa Susana Field Laboratory

Collection Date: April 4, 2012

LDC Report Date: August 29, 2012

Matrix: Soil/Water

Parameters: Metals

Validation Level: Level IV

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 12D031

Sample Identification

EB-NBZ-SB-040412
EB-NBZ-SS-040412
SL-020-NBZ-SB-2.5-3.5
SL-020-NBZ-SS-0.0-0.5
SL-097-NBZ-SS-0.0-0.5
SL-099-NBZ-SS-0.0-0.5
SL-100-NBZ-SS-0.0-0.5
SL-104-NBZ-SS-0.0-0.5
SL-110-NBZ-SS-0.0-0.5
SL-114-NBZ-SS-0.0-0.5
SL-120-NBZ-SS-0.0-0.5
SL-155-NBZ-SS-0.0-0.5
SL-181-NBZ-SS-0.0-0.5
SL-187-NBZ-SS-0.0-0.5
SL-020-NBZ-SB-2.5-3.5MS
SL-020-NBZ-SB-2.5-3.5MSD
SL-187-NBZ-SS-0.0-0.5MS
SL-187-NBZ-SS-0.0-0.5MSD

Introduction

This data review covers 16 soil and 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6020A and 7471A for Metals. The metals analyzed were Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc, and Zirconium.

This review follows the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

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

J Indicates an estimated value.

R Quality control indicates the data is not usable.

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

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

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

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

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5% .

III. Calibration

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.

Samples EB-NBZ-SB-040412 and EB-NBZ-SS-040412 were identified as equipment blanks. No metal contaminants were found with the following exceptions:

Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
EB-NBZ-SB-040412	4/4/12	Calcium Zinc	0.0253 mg/L 0.0146 mg/L	SL-020-NBZ-SB-2.5-3.5
EB-NBZ-SS-040412	4/4/12	Chromium Copper	0.000239 mg/L 0.000719 mg/L	SL-020-NBZ-SS-0.0-0.5 SL-097-NBZ-SS-0.0-0.5 SL-099-NBZ-SS-0.0-0.5 SL-100-NBZ-SS-0.0-0.5 SL-104-NBZ-SS-0.0-0.5 SL-110-NBZ-SS-0.0-0.5 SL-114-NBZ-SS-0.0-0.5 SL-120-NBZ-SS-0.0-0.5 SL-155-NBZ-SS-0.0-0.5 SL-181-NBZ-SS-0.0-0.5 SL-187-NBZ-SS-0.0-0.5

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.

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-187-NBZ-SS-0.0-0.5MS/MSD (All soil samples in SDG 12D031)	Zirconium	41 (75-125)	40 (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 12D031	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 12D031

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
12D031	SL-020-NBZ-SB-2.5-3.5 SL-020-NBZ-SS-0.0-0.5 SL-097-NBZ-SS-0.0-0.5 SL-099-NBZ-SS-0.0-0.5 SL-100-NBZ-SS-0.0-0.5 SL-104-NBZ-SS-0.0-0.5 SL-110-NBZ-SS-0.0-0.5 SL-114-NBZ-SS-0.0-0.5 SL-120-NBZ-SS-0.0-0.5 SL-155-NBZ-SS-0.0-0.5 SL-181-NBZ-SS-0.0-0.5 SL-187-NBZ-SS-0.0-0.5	Zirconium	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (%R)(Q)
12D031	EB-NBZ-SB-040412 EB-NBZ-SS-040412 SL-020-NBZ-SB-2.5-3.5 SL-020-NBZ-SS-0.0-0.5 SL-097-NBZ-SS-0.0-0.5 SL-099-NBZ-SS-0.0-0.5 SL-100-NBZ-SS-0.0-0.5 SL-104-NBZ-SS-0.0-0.5 SL-110-NBZ-SS-0.0-0.5 SL-114-NBZ-SS-0.0-0.5 SL-120-NBZ-SS-0.0-0.5 SL-155-NBZ-SS-0.0-0.5 SL-181-NBZ-SS-0.0-0.5 SL-187-NBZ-SS-0.0-0.5	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 12D031

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Metals - Field Blank Data Qualification Summary - SDG 12D031

No Sample Data Qualified in this SDG

LDC #: 28255P4
SDG #: 12D031
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET
Level IV

Date: 8/28/12
Page: 1 of 1
Reviewer: CL
2nd Reviewer: V

METHOD: Metals (EPA SW 846 Method ~~6010B~~/~~6020A~~/~~7000~~) 6020A/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: 4/4/12
II.	ICP/MS Tune	A	
III.	Calibration	A	
IV.	Blanks	~~SW~~ 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=1,2

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-NBZ-SB-040412 W	11	SL-120-NBZ-SS-0.0-0.5	21		31	
2	EB-NBZ-SS-040412	12	SL-155-NBZ-SS-0.0-0.5	22		32	
3	SL-020-NBZ-SB-2.5-3.5	13	SL-181-NBZ-SS-0.0-0.5	23		33	
4	SL-020-NBZ-SS-0.0-0.5	14	SL-187-NBZ-SS-0.0-0.5	24		34	
5	SL-097-NBZ-SS-0.0-0.5	15	SL-020-NBZ-SB-2.5-3.5MS	25		35	
6	SL-099-NBZ-SS-0.0-0.5	16	SL-020-NBZ-SB-2.5-3.5MSD	26		36	
7	SL-100-NBZ-SS-0.0-0.5	17	SL-187-NBZ-SS-0.0-0.5MS	27		37	
8	SL-104-NBZ-SS-0.0-0.5	18	SL-187-NBZ-SS-0.0-0.5MSD	28		38	
9	SL-110-NBZ-SS-0.0-0.5	19		29		39	
10	SL-114-NBZ-SS-0.0-0.5	20		30		40	

Notes: _____

LDC #: 28C55P4

VALIDATION FINDINGS CHECKLIST

Page: 1 of
Reviewer: CK
2nd Reviewer: [illegible]

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

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. ICP/MS Tune				
Were all isotopes in the tuning solution mass resolution within 0.1 amu?	✓			
Were %RSD of isotopes in the tuning solution ≤5%?	✓			
III. Calibration				
Were all instruments calibrated daily, each set-up time?	✓			
Were the proper number of standards used?	✓			
Were all initial and continuing calibration verification %Rs within the 90-110% (80-120% for mercury) QC limits?	✓			
Were all initial calibration correlation coefficients ≥ 0.995?	✓			
IV. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	✓			
V. ICP Interference Check Sample				
Were ICP interference check samples performed daily?	✓			
Were the AB solution percent recoveries (%R) with the 80-120% QC limits?	✓			
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.		✓		
Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of +/- RL(+/-2X RL for soil) was used for samples that were ≤ 5X the RL, including when only one of the duplicate sample values were ≤ 5X the RL.	✓			
VII. Laboratory control samples				
Was an LCS anaylzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% QC limits for water samples and laboratory established QC limits for soils?	✓			

LDC #: 2825SP4

VALIDATION FINDINGS CHECKLIST

Page: 2 of
Reviewer: [illegible]
2nd Reviewer: [illegible]

Validation Area	Yes	No	NA	Findings/Comments
VIII. Furnace Atomic Absorption QC				
If MSA was performed, was the correlation coefficients > 0.995?			✓	
Do all applicable analysies have duplicate injections? (Level IV only)			✓	
For sample concentrations > RL, are applicable duplicate injection RSD values < 20%? (Level IV only)			✓	
Were analytical spike recoveries within the 85-115% QC limits?			✓	
IX. ICP Serial Dilution				
Was an ICP serial dilution analyzed if analyte concentrations were > 50X the MDL (ICP)/>100X the MDL(ICP/MS)?	✓			
Were all percent differences (%Ds) < 10%?	✓			
Was there evidence of negative interference? If yes, professional judgement will be used to qualify the data.			✓	
X. Internal Standards (EPA SW 846 Method 6020/EPA 200.8)				
Were all the percent recoveries (%R) within the 30-120% (6020)/60-125% (200.8) of the intensity of the internal standard in the associated initial calibration?	✓			
If the %Rs were outside the criteria, was a reanalysis performed?	✓			
XI. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
XII. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target analytes were detected in the field duplicates.			✓	
XV. Field blanks				
Field blanks were identified in this SDG.	✓			
Target analytes were detected in the field blanks.	✓			

LDC #: 28255\4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: CR
2nd reviewer: [signature]

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
		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
QC15,16		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
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 #: 28255P4

VALIDATION FINDINGS WORKSHEET
Field Blanks

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

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

Blank units: mg/L **Associated sample units:** mg/Kg
Sampling date: 4/4/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: 3

Analyte	Blank ID	Sample Identification											
	1	Action Limit											
Ca	0.0253	6.325											
Zn	0.0146	3.65											

Sampling date: 4/4/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: 4-14

Analyte	Blank ID	Sample Identification											
	2	Action Limit											
Cr	0.000239	0.05975											
Cu	0.000719	0.17975											

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 #: 28255P4

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Page: 1 of 1
Reviewer: AR
2nd Reviewer: LW

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	Zr	41	40		All Soil	J/UJ/A (Q)

Comments: Al, Fe, Mn, Ti 74X

LDC #: 28255P4

VALIDATION FINDINGS WORKSHEET
Initial and Continuing Calibration Calculation Verification

Reviewer: CR
2nd Reviewer: [illegible]

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

An initial and continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

%R = Found x 100 / True

Where, Found = concentration (in ug/L) of each analyte measured in the analysis of the ICV or CCV solution
True = concentration (in ug/L) of each analyte in the ICV or CCV source

Standard ID	Type of Analysis	Element	Found (ug/L)	True (ug/L)	Recalculated %R	Reported %R	Acceptable (Y/N)
	ICP (Initial calibration)						
ICV	ICP/MS (Initial calibration)	Ni	30.83	30	103	103	Y
ICV	CVAA (Initial calibration)	Hg	2.03	2	102	-	↓
	ICP (Continuing calibration)						
CCV2	ICP/MS (Continuing calibration)	Sr	25.67	25	103	103	
CCV2	CVAA (Continuing calibration)	Hg	5.07	5	101	-	↓
	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 #: 28258Q7

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Reviewer: QR
2nd Reviewer: [illegible]

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

Percent recoveries (%R) for an ICP interference check sample, a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$\%R = \frac{Found}{True} \times 100$ Where, Found = Concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, Found = SSR (spiked sample result) - SR (sample result).
True = Concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$RPD = \frac{|S-D|}{(S+D)/2} \times 100$ Where, S = Original sample concentration
D = Duplicate sample concentration

An ICP serial dilution percent difference (%D) was recalculated using the following formula:

$\%D = \frac{|I-SDR|}{I} \times 100$ Where, I = Initial Sample Result (mg/L)
SDR = Serial Dilution Result (mg/L) (Instrument Reading x 5)

Sample ID	Type of Analysis	Element	Found / S / I (units)	True / D / SDR (units)	Recalculated %R / RPD / %D	Reported %R / RPD / %D	Acceptable (Y/N)
ICSAB	ICP interference check	Ca	19.87	20	99	99	Y
LCS	Laboratory control sample	Mn	25.2	25	101	101	
17	Matrix spike	Sn	(SSR-SR) 31.1	27	115	115	
17/18	Duplicate	V	56.5	54.0	4	4	
14	ICP serial dilution	Sr	19.5	17.9	8	8	

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 #: 26258A4

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 3
Reviewer: CR
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 Mo were recalculated and verified using the followi 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:

$$\frac{100mL(10)(0.894\ mg/L)}{0.883(2.02g)(1000)} = 0.501\ mg/kg$$

#	Sample ID	Analyte	Reported Concentration (mg/kg)	Calculated Concentration (mg/kg)	Acceptable (Y/N)
	3	Al	12300	12300	Y
		Sb	0.171	0.171	
		As	6.83	6.83	
		Ba	83.1	83.1	
		Be	0.559	0.559	
		Cd	0.234	0.234	
		Ca	2930	2930	
		Cr	16.3	16.3	
		Co	5.50	5.50	
		Cu	8.45	8.45	
		Fe	20700	20700	
		Pb	5.47	5.47	
		Mg	5040	5040	
		Mn	309	309	
		Mo	0.501	0.501	
		Ni	11.1	11.1	
		K	3390	3390	
		Se	0.292	0.292	
		Na	70.4	70.4	
		Si	16.9	16.9	

Note:

LDC #: ~~66446~~ 4
28255P4

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 2 of 3
Reviewer: GR
2nd reviewer:

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

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

Y N N/A Have results been reported and calculated correctly?
Y N N/A Are results within the calibrated range of the instruments and within the linear range of the ICP?
Y N N/A Are all detection limits below the CRDL?

Detected analyte results for Mg were recalculated and verified using the following equation:

Concentration = $\frac{(RD)(FV)(Dil)}{(In.\ Vol.)}$

RD = Raw data concentration
FV = Final volume (ml)
In. Vol. = Initial volume (ml) or weight (G)
Dil = Dilution factor

Recalculation:

$$\frac{5926 mg/L (100 mL)(10)}{0.903 (2.06 g)(1000)} = 3185.7 mg/kg$$

#	Sample ID	Analyte	Reported Concentration (mg/kg)	Calculated Concentration (mg/kg)	Acceptable (Y/N)
	3	Tl	0.244	0.244	Y
		Ti	964	964	
		V	33.6	33.6	
		Zn	58.7	58.7	
		Li	27.8	27.8	
		P	448	448	
	4	Al	7630	7630	
		Sb	0.175	0.175	
		As	3.59	3.59	
		Ba	64.6	64.6	
		Be	0.291	0.291	
		Cd	0.156	0.156	
		Ca	2300	2300	
		Cr	8.70	8.70	
		Co	3.41	3.41	
		Cu	5.06	5.06	
		Fe	13200	13200	
		Pb	5.82	5.82	
		Mg	3190	3190	

Note:

LDC #: ~~60946~~ 4
26255P4

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: GR
2nd reviewer: W

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

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

Y N N/A Have results been reported and calculated correctly?
Y N N/A Are results within the calibrated range of the instruments and within the linear range of the ICP?
Y N N/A Are all detection limits below the CRDL?

Detected analyte results for _____ were recalculated and verified using the following equation:

Concentration = $\frac{(RD)(FV)(Dil)}{(In.\ Vol.)}$

Recalculation:

RD = Raw data concentration
FV = Final volume (ml)
In. Vol. = Initial volume (ml) or weight (G)
Dil = Dilution factor

See Previous Page

#	Sample ID	Analyte	Reported Concentration (ug/L)	Calculated Concentration (ug/L)	Acceptable (Y/N)
	4	Mn	202	202	Y
		Mo	0.327	0.327	
		Ni	6.18	6.18	
		K	3050	3050	
		Sr	12.3	12.3	
		Tl	0.164	0.164	
		Ti	690	690	
		V	20.3	20.3	
		Zn	49.6	49.6	
		Li	17.3	17.3	
		P	362	362	

Note: _____

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Santa Susana Field Laboratory

Collection Date: April 4, 2012

LDC Report Date: September 4, 2012

Matrix: Soil/Water

Parameters: Herbicides

Validation Level: Level IV

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 12D031

Sample Identification

EB-NBZ-SS-040412
SL-020-NBZ-SB-2.5-3.5
SL-020-NBZ-SS-0.0-0.5
SL-097-NBZ-SS-0.0-0.5
SL-099-NBZ-SS-0.0-0.5
SL-100-NBZ-SS-0.0-0.5
SL-104-NBZ-SS-0.0-0.5
SL-110-NBZ-SS-0.0-0.5
SL-114-NBZ-SS-0.0-0.5
SL-120-NBZ-SS-0.0-0.5
SL-155-NBZ-SS-0.0-0.5
SL-181-NBZ-SS-0.0-0.5
SL-187-NBZ-SS-0.0-0.5

Introduction

This data review covers 12 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 with the following exceptions:

Date	Standard	Column	Compound	%D	Associated Samples	Flag	A or P
4/9/12	WD09008B	STX-CLP2	Dinoseb	21	All water samples in SDG 12D031	J (all detects) UJ (all non-detects)	A
4/18/12	WD18002A	STX-CLP1	2,4,5-T Dinoseb	23 31	All soil samples in SDG 12D031	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

Retention times (RT) of all compounds in the calibration standards were within QC limits.

IV. Blanks

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

Sample EB-NBZ-SS-040412 was identified as an equipment 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 12D031	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 12D031

SDG	Sample	Compound	Flag	A or P	Reason (Code)
12D031	EB-NBZ-SS-040412	Dinoseb	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D) (C)
12D031	SL-020-NBZ-SB-2.5-3.5 SL-020-NBZ-SS-0.0-0.5 SL-097-NBZ-SS-0.0-0.5 SL-099-NBZ-SS-0.0-0.5 SL-100-NBZ-SS-0.0-0.5 SL-104-NBZ-SS-0.0-0.5 SL-110-NBZ-SS-0.0-0.5 SL-114-NBZ-SS-0.0-0.5 SL-120-NBZ-SS-0.0-0.5 SL-155-NBZ-SS-0.0-0.5 SL-181-NBZ-SS-0.0-0.5 SL-187-NBZ-SS-0.0-0.5	2,4,5-T Dinoseb	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Continuing calibration (%D) (C)
12D031	EB-NBZ-SS-040412 SL-020-NBZ-SB-2.5-3.5 SL-020-NBZ-SS-0.0-0.5 SL-097-NBZ-SS-0.0-0.5 SL-099-NBZ-SS-0.0-0.5 SL-100-NBZ-SS-0.0-0.5 SL-104-NBZ-SS-0.0-0.5 SL-110-NBZ-SS-0.0-0.5 SL-114-NBZ-SS-0.0-0.5 SL-120-NBZ-SS-0.0-0.5 SL-155-NBZ-SS-0.0-0.5 SL-181-NBZ-SS-0.0-0.5 SL-187-NBZ-SS-0.0-0.5	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 12D031

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Herbicides - Field Blank Data Qualification Summary - SDG 12D031

No Sample Data Qualified in this SDG

LDC #: 28255P5 **VALIDATION COMPLETENESS WORKSHEET** Date: 8/31/12
SDG #: 12D031 Level IV Page: 1 of 1
Laboratory: EMAX Laboratories, Inc. Reviewer: [illegible]
2nd Reviewer: [illegible]

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: 4/4/12
II	Initial calibration	A	%RSD ≤ 20
III.	Calibration verification/ICV	SW	ICV/CCV ≤ 20
IV.	Blanks	A	
V	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	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

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-NBZ-SS-040412 W	11	SL-155-NBZ-SS-0.0-0.5	21	MBLKIW	31	
2	SL-020-NBZ-SB-2.5-3.5	12	SL-181-NBZ-SS-0.0-0.5	22	MBLKIS	32	
3	SL-020-NBZ-SS-0.0-0.5	13	SL-187-NBZ-SS-0.0-0.5	23		33	
4	SL-097-NBZ-SS-0.0-0.5	14		24		34	
5	SL-099-NBZ-SS-0.0-0.5	15		25		35	
6	SL-100-NBZ-SS-0.0-0.5	16		26		36	
7	SL-104-NBZ-SS-0.0-0.5	17		27		37	
8	SL-110-NBZ-SS-0.0-0.5	18		28		38	
9	SL-114-NBZ-SS-0.0-0.5	19		29		39	
10	SL-120-NBZ-SS-0.0-0.5	20		30		40	

Notes:

LDC #: 28255P5
SDG #: per cover

VALIDATION FINDINGS CHECKLIST

Reviewer: P
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 #: 28255 P5
SDG #: pc cover

VALIDATION FINDINGS CHECKLIST

Reviewer: FJ
2nd Reviewer: C

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 #: 28255P5

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

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

METHOD: ✓ GC ___ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
What type of continuing calibration calculation was performed? ___%D or ___RPD
Y N N/A Were continuing calibration standards analyzed at the required frequencies?
Y N N/A Did the continuing calibration standards meet the %D / RPD validation criteria of ≤15.0%? 20
Level IV Only
Y N N/A Were the retention times for all calibrated compounds within their respective acceptance windows?

#	Date	Standard ID	Detector/ Column	Compound	%D / RPD (Limit ≤ 15.0) 20	RT (limit)	Associated Samples	Qualifications
	4/9/12	WDO 9008B	STX-clP2	Dinoseb	21	( )	All water	J/UJ/A (C)
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
	4/18/12	WD18002A	STX-clP1	2,4,5-T	23	( )	All soils	J
				Dinoseb	31	( )	↓	↓
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		

LDC #: 28255P5
SDG #: [illegible]

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: F7
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 (10std)	Reported Average CF (initial)	Recalculated Average CF (initial)	Reported %RSD	Recalculated %RSD
1	ICAL	2/13/12	2,4-D STX-CLP	699	699	722.5	722.5	13.2	13.2
			Pinoseb	1725	1725	1771.7	1771.7	9.4	9.4
2			↓ STX-CLP2	793	793	813.8	813.8	11.5	11.5
			↓	1838	1838	1889	1889	6.3	6.3
				(4D)	(4D)				
3	ICAL	3/21/12	↓	845	845	838.6	838.6	14.5	14.5
			↓	2046	2046	~~1818~~ 2004.4	2004.4	10.5	10.5
4			↓	918	918	914.6	914.6	14.6	14.6
			↓	2083	2083	2038.6	2038.6	2.5	2.5

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

LDC #: 28255P5
SDG #: pw cover

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

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	WDO 9008-A	4/9/12	2,4-D clp1	100.0	95.35	95.35	5	5
			Dinoseb clp1	100	93.90	93.90	6	6
			clp2	100	91.20	91.20	9	9
2			↓ clp2	100	78.60	78.60	21	21
3	WD18002	4/18/12	↓ clp1	60	63.48	63.48	6	6
			↓	↓	78.54	78.54	31	31
4			↓ clp2	↓	57.51	57.51	4	4
			↓	↓	57.26	57.26	5	5

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

LDC #: 28255 P5
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: #2

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
2,4-PCPAA	SPX-CLP1	600	770.8	128	128	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 #: 28255P5
SDG #: all covers

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 = 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: lcs/10 sol

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)	15.0	15.0	#16.5	17.5	110	110	117	117	6	5
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 #: 28255 P5
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._____ Compound Name _____

Concentration = _____

MP

#	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: April 4, 2012

LDC Report Date: August 29, 2012

Matrix: Soil/Water

Parameters: Wet Chemistry

Validation Level: Level IV

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 12D031

Sample Identification

EB-NBZ-SB-040412
EB-NBZ-SS-040412
SL-020-NBZ-SB-2.5-3.5
SL-020-NBZ-SS-0.0-0.5
SL-097-NBZ-SS-0.0-0.5
SL-099-NBZ-SS-0.0-0.5
SL-100-NBZ-SS-0.0-0.5
SL-104-NBZ-SS-0.0-0.5
SL-110-NBZ-SS-0.0-0.5
SL-114-NBZ-SS-0.0-0.5
SL-120-NBZ-SS-0.0-0.5
SL-155-NBZ-SS-0.0-0.5
SL-181-NBZ-SS-0.0-0.5
SL-187-NBZ-SS-0.0-0.5
SL-100-NBZ-SS-0.0-0.5MS
SL-100-NBZ-SS-0.0-0.5MSD
SL-100-NBZ-SS-0.0-0.5DUP

Introduction

This data review covers 15 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 9010A/9014 for Cyanide, EPA Method 300.0 for Nitrate as Nitrogen and Fluoride, EPA SW 846 Method 7199 for Hexavalent Chromium, and 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 contaminant concentrations were found in the initial, continuing and preparation blanks.

Samples EB-NBZ-SB-040412 and EB-NBZ-SS-040412 were identified as equipment blanks. No contaminant concentrations were found.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

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

VIII. Sample Result Verification

All sample result verifications were acceptable.

All analytes reported below the RL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 12D031	All analytes reported below the RL and above the MDL.	J (all detects)	A

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

Santa Susana Field Laboratory
Wet Chemistry - Data Qualification Summary - SDG 12D031

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
12D031	EB-NBZ-SB-040412 EB-NBZ-SS-040412 SL-020-NBZ-SB-2.5-3.5 SL-020-NBZ-SS-0.0-0.5 SL-097-NBZ-SS-0.0-0.5 SL-099-NBZ-SS-0.0-0.5 SL-100-NBZ-SS-0.0-0.5 SL-104-NBZ-SS-0.0-0.5 SL-110-NBZ-SS-0.0-0.5 SL-114-NBZ-SS-0.0-0.5 SL-120-NBZ-SS-0.0-0.5 SL-155-NBZ-SS-0.0-0.5 SL-181-NBZ-SS-0.0-0.5 SL-187-NBZ-SS-0.0-0.5	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (Z)

Santa Susana Field Laboratory
Wet Chemistry – Laboratory Blank Data Qualification Summary - SDG 12D031

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Wet Chemistry - Field Blank Data Qualification Summary - SDG 12D031

No Sample Data Qualified in this SDG

LDC #: 28255P6
SDG #: 12D031
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET
Level IV

Date: 8-28-12
Page: 1 of 1
Reviewer: AL
2nd Reviewer: W

METHOD: (Analyte) Cyanide (EPA SW846 Method 9010A/9014), Nitrate-N, Fluoride (EPA Method 300.0), Hexavalent Chromium (EPA SW846 Method 7199), 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: 4/4/12
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	A	
IV	Matrix Spike/Matrix Spike Duplicates	A	MS/D
V	Duplicates	A	D
VI.	Laboratory control samples	A	LCS/D
VII.	Sample result verification	A	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	N	
X	Field blanks	ND	EB=1,2

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-NBZ-SB-040412 W	11	SL-120-NBZ-SS-0.0-0.5	21		31	
2	EB-NBZ-SS-040412 ↓	12	SL-155-NBZ-SS-0.0-0.5	22		32	
3	SL-020-NBZ-SB-2.5-3.5	13	SL-181-NBZ-SS-0.0-0.5	23		33	
4	SL-020-NBZ-SS-0.0-0.5	14	SL-187-NBZ-SS-0.0-0.5	24		34	
5	SL-097-NBZ-SS-0.0-0.5	15	SL-100-NBZ-SS-0.0-0.5MS	25		35	
6	SL-099-NBZ-SS-0.0-0.5	16	SL-100-NBZ-SS-0.0-0.5MSD	26		36	
7	SL-100-NBZ-SS-0.0-0.5	17	SL-100-NBZ-SS-0.0-0.5DUP	27		37	
8	SL-104-NBZ-SS-0.0-0.5	18		28		38	
9	SL-110-NBZ-SS-0.0-0.5	19		29		39	
10	SL-114-NBZ-SS-0.0-0.5	20		30		40	

Notes:

LDC #: 28255P6

VALIDATION FINDINGS CHECKLIST

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?			✓	

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 #: 28255P6

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Reviewer: CR
2nd reviewer: ~

All circled methods are applicable to each sample.

Sample ID	Parameter
1-14	pH TDS Cl (F) NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC (Cr6+) (ClO_4)
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
1-3	pH TDS Cl F (NO_3) NO_2 SO_4 O-PO_4 Alk (CN) NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
QC: 15,16	pH TDS Cl (F) NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ (ClO_4)
15,17	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC (Cr6+) ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4

Comments: _____

LDC #: 28255B6

Validation Findings Worksheet
Initial and Continuing Calibration Calculation Verification

Reviewer: CR
2nd Reviewer: V

Method: Inorganics, Method See Cover

The correlation coefficient (r) for the calibration of F was recalculated. Calibration date: 3/20/12

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	F	s1	0.05	1.035	*0.999895*	0.999895	Y
		s2	0.1	2.287			
		s3	0.2	4.842			
		s4	0.5	15.07			
		s5	1	30.37			
		s6	2	63.13			
		s7	5	153.9			
Calibration verification	NO3	ICV	1	0.983	98.3	98.3	
Calibration verification	ClO4	CCV	30	29.971	99.9	99.9	
Calibration verification	SO4	↓	2	2.045	102	102	↓

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 #: 28558

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Reviewer: 9R
2nd Reviewer: V

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	NO3	8.54	8.86	96	96	Y
15	Matrix spike sample	Cl04	(SSR-SR) 264	271	98	98	
17	Duplicate sample	Cl04	ND	ND	0	0	Y

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 #: 25255B6

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: QR
2nd reviewer: V

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 NO_3 / F reported with a positive detect were recalculated and verified using the following equation:

Concentration =

$NO_3 = 0.0213577(Area) + 0.0376754$

Recalculation:

4: $NO_3 = \frac{(0.0213577(17,052) + 0.0376754)60mL}{0.883(20g)} \times \left(\frac{62}{14}\right) = 6.05mg$

$F = 0.0322393(Area) + 0.0018952$

12: $F = \frac{(0.0322393(4.668) + 0.0018952)60mL}{0.919(20g)} = 0.5497mg$

#	Sample ID	Analyte	Reported Concentration (mg/kg)	Calculated Concentration (mg/kg)	Acceptable (Y/N)
	4	F	1.07	1.07	Y
		NO_3	6.05	6.05	Y
	12	F	0.550	0.550	Y

Note:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Santa Susana Field Laboratory
Collection Date:	April 4, 2012
LDC Report Date:	September 4, 2012
Matrix:	Soil/Water
Parameters:	Total Petroleum Hydrocarbons as Gasoline
Validation Level:	Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	12D031

Sample Identification

EB-NBZ-SB-040412
SL-020-NBZ-SB-3.0
TB-040412

Introduction

This data review covers one soil sample and 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 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-040412 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-040412	4/4/12	TPH as gasoline	19 ug/L	EB-NBZ-SB-040412 SL-020-NBZ-SB-3.0

Sample EB-NBZ-SB-040412 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-NBZ-SB-040412	4/4/12	TPH as gasoline	15 ug/L	All soil samples in SDG 12D031

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-NBZ-SB-040412	TPH as gasoline	15 ug/L	50U 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 12D031	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 12D031

SDG	Sample	Compound	Flag	A or P	Reason (Code)
12D031	EB-NBZ-SB-040412 SL-020-NBZ-SB-3.0 TB-040412	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 12D031

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Total Petroleum Hydrocarbons as Gasoline - Field Blank Data Qualification Summary - SDG 12D031

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
12D031	EB-NBZ-SB-040412	TPH as gasoline	50U ug/L	A	F

LDC #: 28255P7 **VALIDATION COMPLETENESS WORKSHEET** Date: 8/31/12
SDG #: 12D031 Level IV Page: 1 of 1
Laboratory: EMAX Laboratories, Inc. Reviewer: F
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: 4/4/12
II	Initial calibration	A	%D ≤ 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	SW	EB = 1 TB = 3

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-NBZ-SB-040412 W	11	MBLK1S	21		31	
2	SL-020-NBZ-SB-3.0 S	12	MBLK1W	22		32	
3	TB-040412 W	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 #: 28255P7
SDG #: per cover

VALIDATION FINDINGS CHECKLIST

Reviewer: FT
2nd Reviewer: A

Method: ✓ GC _____ HPLC

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

LDC #: 28255P7
SDG #: per cover

VALIDATION FINDINGS CHECKLIST

Reviewer: FT
2nd Reviewer: A

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

LDC #: 28255P7

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: FT
2nd Reviewer: A

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: 4/4/12
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	15									
CRQL										

Blank units: ug/L Associated sample units: ug/L + ~~mg/kg~~ mg/kg
Sampling date: 4/4/12
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, 2

Compound	Blank ID	Blank ID	Sample Identification							
	3		1							
Gasoline Range Organics	19		15/50U							
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 #: 28255P7
SDG #: see cover

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: FJ
2nd Reviewer: [signature]

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 (5pt std)	Recalculated CF (5pt std)	Reported Average CF (initial)	Recalculated Average CF (initial)	Reported %RSD	Recalculated %RSD
1	~~1/25/12~~ ICAL	1/25/12	GRO (C5-C12)	17199	17199	17064.3	17064.3	3.2	3.2
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 #: 28255J7
SDG #: fw cover

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

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	CCV 9:14	4/5/12	GRO C5-C12	1000	911.27	911.27	9	9
2	CCV 00:35	4/6/12	↓	1000	900.61	900.61	10	10
3	CCV 19:49	4/7/12	↓	1000	863.75	863.75	14	14
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 #: 28255P7
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	
4-BFB	DB-5	40	32.49	81.2	81.2	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 #: 28255P7
SDG #: see 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 = 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: 1010 soil

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	25.1	23.4	100	100	94	94	7	7
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 #: 28255P7
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. #1 Compound Name GRO

Concentration = $\frac{202126}{17064.3}$

= 15 ng/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: April 4, 2012

LDC Report Date: September 4, 2012

Matrix: Soil/Water

Parameters: Total Petroleum Hydrocarbons as Extractables

Validation Level: Level IV

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 12D031

Sample Identification

EB-NBZ-SB-040412
EB-NBZ-SS-040412
SL-020-NBZ-SB-2.5-3.5

Introduction

This data review covers one soil samples and 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015B for Total Petroleum Hydrocarbons (TPH) as Extractables.

This review follows the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

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

J Indicates an estimated value.

R Quality control indicates the data is not usable.

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

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

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

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

II. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0% .

III. 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 extractable contaminants were found in the method blanks.

Samples EB-NBZ-SB-040412 and EB-NBZ-SS-040412 were identified as equipment blanks. 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 12D031	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 12D031

SDG	Sample	Compound	Flag	A or P	Reason (Code)
12D031	EB-NBZ-SB-040412 EB-NBZ-SS-040412 SL-020-NBZ-SB-2.5-3.5	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 12D031

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG 12D031

No Sample Data Qualified in this SDG

LDC #: 28255P8
SDG #: 12D031
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET
Level IV

Date: 8/31/12
Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC TPH as Extractables (EPA SW 846 Method 8015B)

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

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 4/4/12
II	Initial calibration	A	
III.	Calibration verification/ICV	A	
IV.	Blanks	A	
V	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	N	client specified LCS ID
VII.	Laboratory control samples	A	
VIII.	Target compound identification	A	
IX.	Compound quantitation RL/LOQ/LODs	A	
X.	System Performance	A	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	ND	EB = 1, 2

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-NBZ-SB-040412	11		21		31	
2	EB-NBZ-SS-040412	12		22		32	
3	SL-020-NBZ-SB-2.5-3.5	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 28255P8
SDG #: all covers

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 #: 28255P8
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 #: 28255P8
SDG #: per cover

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: FP
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 (522 std)	Recalculated CF (522 std)	Reported Average CF (initial)	Recalculated Average CF (initial)	Reported %RSD	Recalculated %RSD
1	ICAL	2/01/12	EFH (C8 - C11)	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 #: 28255P8
SDG #: per 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	ccv 2|13	4/10/12	TOTAL EFH (o8-c40)	500.0	459.19	459.19	8	8
2	ccv 03:44	4/11/12	↓	↓	471.62	471.62	6	6
3								
4								

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

LDC #: 28255P8
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: #3

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
Bromobenzene	DB-5	100	65.4	65.4	65.4	0
Hexacosane	↓	75	20.78	83.1	83.1	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 #: 28255 P8
SDG #: [illegible]

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

Page: 1 of 1
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 = 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: LCS 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)										
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 (C8-C40)	50	50	~~[illegible]~~ 42.9	40.5	86	86	81	81	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 #: 28255P8
SDG #: [illegible]

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

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

3/30.01

METHOD: GC HPLC

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

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

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

Example:

Sample ID. #3 Compound Name EFH (c21-30)

Concentration = $\frac{54\,8803 \quad (3)}{23084.06472 \quad (30.01)(0.883)}$

= 2.7 mg/kg

#	Sample ID	Compound	Reported Concentrations ( )	Recalculated Results Concentrations ( )	Qualifications

Comments: _____

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Santa Susana Field Laboratory

Collection Date: April 4, 2012

LDC Report Date: September 4, 2012

Matrix: Soil/Water

Parameters: Nitroglycerine & PETN

Validation Level: Level IV

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 12D031

Sample Identification

EB-NBZ-SB-040412
EB-NBZ-SS-040412
SL-020-NBZ-SB-2.5-3.5

Introduction

This data review covers one soil sample and 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8332 for Nitroglycerine and PETN.

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 the method.

Triplicate injections of the initial calibration were performed.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Retention time windows were evaluated and considered technically acceptable.

III. Continuing Calibration

Continuing calibration was performed at 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.

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 nitroglycerine or PETN was found in the method blanks.

Samples EB-NBZ-SB-040412 and EB-NBZ-SS-040412 were identified as equipment blanks. No nitroglycerine or PETN was 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 12D031	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
Nitroglycerine & PETN - Data Qualification Summary - SDG 12D031

SDG	Sample	Compound	Flag	A or P	Reason (Code)
12D031	EB-NBZ-SB-040412 EB-NBZ-SS-040412 SL-020-NBZ-SB-2.5-3.5	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (Z)

Santa Susana Field Laboratory
Nitroglycerine & PETN - Laboratory Blank Data Qualification Summary - SDG 12D031

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Nitroglycerine & PETN - Field Blank Data Qualification Summary - SDG 12D031

No Sample Data Qualified in this SDG

LDC #: 28255P24 **VALIDATION COMPLETENESS WORKSHEET** Date: 8/31/12
SDG #: 12D031 Level IV Page: 1 of 1
Laboratory: EMAX Laboratories, Inc. Reviewer:
2nd Reviewer:

METHOD: HPLC Nitroglycerine & PETN (EPA SW 846 Method 8332)

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: 4/4/12
II	Initial calibration	A	
III.	Calibration verification/ICV	A	
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	MP	EB = 1, 2

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-NBZ-SB-040412 W	11		21		31	
2	EB-NBZ-SS-040412 W	12		22		32	
3	SL-020-NBZ-SB-2.5-3.5 S	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 28255 P24
SDG #: per cover

VALIDATION FINDINGS CHECKLIST

Reviewer: FT
2nd Reviewer: A

Method: GC ✓ HPLC

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

LDC #: 28255 P2N
SDG #: per cover

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 #: 28255 P24
SDG #: [illegible]

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 (25 std)	Recalculated CF (25 std)	Reported Average CF (Initial)	Recalculated Average CF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	7/20/11	Nitroglycerin	102	102	101.8	101.8	5.1	5.1
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.

INICLC 1SB

LDC #: 28255 P24
SDG #: per 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	ccv 20:35	4/9/12	nitroglycerin	750.0	678.24	678.24	10	10
2	ccv 15:00	4/13/12	↓	↓	724.45	724.45	3	3
3	ccv 17:32	4/13/12	↓	↓	721.59	721.59	4	4
4								

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

LDC #: 28255 P04
SDG #: see cover

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: FT
2nd reviewer: [illegible]

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	
1,2-DNB	C-18	200	233.2	117	117	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 #: 28255-P24
SDG #: see 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 = 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: lcs 1D

Compound	Spike Added (ug/L)		Spiked Sample Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)										
Diesel (8015)										
Benzene (8021B)										
Methane (RSK-175)										
2,4-D (8151)										
Dinoseb (8151)										
Naphthalene (8310)										
Anthracene (8310)										
HMX (8330)										
2,4,6-Trinitrotoluene (8330)										
Nitroglycerin	1870	1870	1920 ~~ND~~	1870	103	103	106	106	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 #: 28255P24
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._____ Compound Name _____

Concentration =_____

NP

#	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: April 4, 2012

LDC Report Date: September 4, 2012

Matrix: Soil/Water

Parameters: Explosives

Validation Level: Level IV

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 12D031

Sample Identification

EB-NBZ-SB-040412
EB-NBZ-SS-040412
SL-020-NBZ-SB-2.5-3.5

Introduction

This data review covers one soil sample and 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8330A for Explosives.

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 the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Retention time windows were evaluated and considered technically acceptable.

III. Calibration Verification

Calibration verification was performed at the 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.

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 explosive contaminants were found in the method blanks.

Samples EB-NBZ-SB-040412 and EB-NBZ-SS-040412 were identified as equipment blanks. No expolsive 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 12D031	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
Explosives - Data Qualification Summary - SDG 12D031

SDG	Sample	Compound	Flag	A or P	Reason (Code)
12D031	EB-NBZ-SB-040412 EB-NBZ-SS-040412 SL-020-NBZ-SB-2.5-3.5	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (Z)

Santa Susana Field Laboratory
Explosives - Laboratory Blank Data Qualification Summary - SDG 12D031

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Explosives - Field Blank Data Qualification Summary - SDG 12D031

No Sample Data Qualified in this SDG

LDC #: 28255P40 **VALIDATION COMPLETENESS WORKSHEET** Date: 8/31/12
SDG #: 12D031 Level IV Page: 1 of 1
Laboratory: EMAX Laboratories, Inc. Reviewer: F
2nd Reviewer: C

METHOD: HPLC Explosives (EPA SW 846 Method 8330A)

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

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/4/12
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 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 = 1,2

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-NBZ-SB-040412 W	11	MBLK1W	21		31	
2	EB-NBZ-SS-040412	12	MBLK1S	22		32	
3	SL-020-NBZ-SB-2.5-3.5 S	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 28255P4U
SDG #: per cover

VALIDATION FINDINGS CHECKLIST

Reviewer: FJ
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 #: 28255P4O
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 #: 28255P4J
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 (100 std)	Recalculated CF (100 std)	Reported Average CF (initial)	Recalculated Average CF (initial)	Reported %RSD	Recalculated %RSD
1	ICAL	4/5/12	HMX	219.95	219.95	230.494	230.494	7.0	7.0
			RDX	202.67	202.67	208.891	208.891	8.1	8.1
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 #: 28255P4U
SDG #: pw comm

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

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	XD09004A	4/9/12	HMX	400.0	384.87	384.87	4	4
			RDX	400.0	394.93	394.93	1	1
2	XD13002A	4/13/12	↓	↓	366.61	366.61	8	8
			↓	↓	427.42	427.42	7	7
3	XD13013A	4/13/12	↓	↓	383.19	483.19	4	4
			↓	↓	423.88	423.88	6	6
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 #: 28255P40
SDG #: see cover

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: FT
2nd reviewer: A

METHOD: __ GC ✓ HPLC

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: # 3

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
1,2 - Dinitrobenzene	C-18	200	191.7	95.8	95.8	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 #: 28255P4C
SDG #: all cores

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

Reviewer: F
2nd Reviewer: C

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: las 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)	2000	2000	1730	1710	86	86	86	86	1	1
2,4,6-Trinitrotoluene (8330)	↓	↓	1910	1910	96	96	96	96	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 #: 28255P4O
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 =_____

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: April 4, 2012

LDC Report Date: September 4, 2012

Matrix: Soil/Water

Parameters: Alcohols

Validation Level: Level IV

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 12D031

Sample Identification

EB-NBZ-SB-040412
EB-NBZ-SS-040412
SL-020-NBZ-SB-2.5-3.5

Introduction

This data review covers one soil sample and 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 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-NBZ-SB-040412 and EB-NBZ-SS-040412 were identified as equipment blanks. 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 12D031	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 12D031

SDG	Sample	Compound	Flag	A or P	Reason (Code)
12D031	EB-NBZ-SB-040412 EB-NBZ-SS-040412 SL-020-NBZ-SB-2.5-3.5	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 12D031

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Alcohols - Field Blank Data Qualification Summary - SDG 12D031

No Sample Data Qualified in this SDG

LDC #: 28255P43 **VALIDATION COMPLETENESS WORKSHEET** Date: 8/31/12
SDG #: 12D031 Level IV Page: 1 of 1
Laboratory: EMAX Laboratories, Inc. Reviewer: [illegible]
2nd Reviewer: [illegible]

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: 4/4/12
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 specified
VII.	Laboratory control samples	A	yes 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, 2

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-NBZ-SB-040412 W	11	MBLK1S	21		31	
2	EB-NBZ-SS-040412 ↓	12	MBLK1W	22		32	
3	SL-020-NBZ-SB-2.5-3.5	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

LDC #: 28255 P43
SDG #: per cover

VALIDATION FINDINGS CHECKLIST

Reviewer: FP
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 #: 28255P43
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 #: 28255P43
SDG #: per cover

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
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 (10 std)	Recalculated CF (10 std)	Reported Average CF (initial)	Recalculated Average CF (initial)	Reported %RSD	Recalculated %RSD
1	ICAL	4/9/12	methanol	5922.20	5922.20	5899.099	5899.089	8.4	8.4
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.

INICIC 1SB

LDC #: 28355P43
SDG #: per 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	ccv 10:17	4/9/12	Methane	10.0	9.55	9.55	5	5
2	ccv 10:06	4/10/12	↓	10.0	10.60	10.60	6	6
3								
4								

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

LDC #: 28255P43
SDG #: [illegible]

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 = 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: LCS 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)										
ethanol	10000	10000	11100	9380	111	111	94	94	16	16

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 #: 28255P43
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?

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

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 =_____

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: April 4, 2012

LDC Report Date: September 4, 2012

Matrix: Soil/Water

Parameters: Glycols

Validation Level: Level IV

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 12D031

Sample Identification

EB-NBZ-SB-040412
EB-NBZ-SS-040412
SL-020-NBZ-SB-2.5-3.5

Introduction

This data review covers one soil sample and 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015 Modified 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-NBZ-SB-040412 and EB-NBZ-SS-040412 were identified as equipment blanks. 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 12D031	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 12D031

SDG	Sample	Compound	Flag	A or P	Reason (Code)
12D031	EB-NBZ-SB-040412 EB-NBZ-SS-040412 SL-020-NBZ-SB-2.5-3.5	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 12D031

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Glycols - Field Blank Data Qualification Summary - SDG 12D031

No Sample Data Qualified in this SDG

LDC #: 28255P45 **VALIDATION COMPLETENESS WORKSHEET** Date: 8/31/12
SDG #: 12D031 Level IV Page: 1 of 1
Laboratory: EMAX Laboratories Inc. Reviewer: D
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: 4/4/12
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	yes 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, 2

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-NBZ-SB-040412 W	11	MBLK1W	21		31	
2	EB-NBZ-SS-040412 W	12	MBLK1S	22		32	
3	SL-020-NBZ-SB-2.5-3.5	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 28255 P45
SDG #: per cover

VALIDATION FINDINGS CHECKLIST

Reviewer: FT
2nd Reviewer: A

Method: ✓ GC _____ HPLC

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

LDC #: 28255 P45
SDG #: per cover

VALIDATION FINDINGS CHECKLIST

Reviewer: FJ
2nd Reviewer: C

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 #: 28255P45
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 (50 std)	Recalculated CF (50 std)	Reported Average CF (initial)	Recalculated Average CF (initial)	Reported %RSD	Recalculated %RSD
1	ICAL	3/14/12	Diethylene Glycol	4837	4837	5061.4	5061.4	7.9	7.9
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 #: 28255P45
SDG #: per cover

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Page: 1 of 7
Reviewer: EJ
2nd Reviewer: [signature]

METHOD: GC ✓ HPLC ____

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

% Difference = 100 * (ave. CF - CF)/ave. CF
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	CCV 07:22	4/9/12	Diethylene Glycol	50.0	43.94	43.94	12	12
2	CCV 10:50	4/10/12	↓	50.0	47.91	47.91	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 #: 28255 P45
SDG #: all cores

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

Reviewer: FO
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
SC = Concentration
LCS = Laboratory control sample percent recovery
LCSD = Laboratory control sample duplicate percent recovery

LCS/LCSD samples: lcs 10 soil

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	49.5	46.2	99	99	92	92	7	7

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 #: 28255P95
SDG #: all same

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: April 4, 2012

LDC Report Date: September 4, 2012

Matrix: Soil

Parameters: Perchlorate

Validation Level: Level IV

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 12D031

Sample Identification

SL-104-NBZ-SS-0.0-0.5
SL-155-NBZ-SS-0.0-0.5

Introduction

This data review covers 2 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 6850 for Perchlorate.

This review follows the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

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

J Indicates an estimated value.

R Quality control indicates the data is not usable.

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

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

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

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

II. 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.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination (r^2) was greater than or equal to 0.990 .

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 15.0% for unlabeled compounds and less than or equal to 50.0% for labeled compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 15.0% for unlabeled compounds and less than or equal to 50.0% for labeled compounds.

The percent differences (%D) of the limit of detection verification (LODV) calibration standard were less than or equal to 50.0% for perchlorate.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No perchlorate was found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogate spikes were not required by the method.

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 12D031	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
Perchlorate - Data Qualification Summary - SDG 12D031

SDG	Sample	Compound	Flag	A or P	Reason (Code)
12D031	SL-104-NBZ-SS-0.0-0.5 SL-155-NBZ-SS-0.0-0.5	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (Z)

Santa Susana Field Laboratory
Perchlorate - Laboratory Blank Data Qualification Summary - SDG 12D031

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Perchlorate - Field Blank Data Qualification Summary - SDG 12D031

No Sample Data Qualified in this SDG

LDC #: 28255P87 **VALIDATION COMPLETENESS WORKSHEET** Date: 9/01/12
SDG #: 12D031 Level IV Page: 1 of 1
Laboratory: EMAX Laboratories, Inc. Reviewer: [illegible]
2nd Reviewer: A

METHOD: LC/MS Perchlorate (EPA SW846 Method 6850)

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

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 4/4/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	r^2
IV.	Continuing calibration/ICV	A	ICV/CCV ± 15% unlabeled, 50% labeled
V.	Blanks	A	LODV ± 50%
VI.	Surrogate spikes	N	
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	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:

SOILS

9	1	SL-104-NBZ-SS-0.0-0.5	11	MBLKLS	21		31	
12	2	SL-155-NBZ-SS-0.0-0.5	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	

LDC #: 28255P87

VALIDATION FINDINGS CHECKLIST

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

Method: Semivolatiles (~~EPA SW 846 Method 8270C~~) Perchlorate 6850

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%~~ 15/50 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 #: 28255P87

VALIDATION FINDINGS CHECKLIST

Page: 2 of 4
Reviewer: FT
2nd Reviewer: A

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds from the associated calibration standard?	✓			
XI. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓		✓	
Did compound spectra meet specified EPA "Functional Guidelines" criteria?			✓	
Were chromatogram peaks verified and accounted for?	✓			
XII. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?			✓	
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?			✓	
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XVII. Field blanks				
Field blanks were identified in this SDG.		✓		
Target compounds were detected in the field blanks.			✓	

LDC # 28255187
SDG#

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: EJ
2nd Reviewer:

METHOD: 6850.00

Parameter: perchlorate

weighted

Date	Instrument	Compound	Y	X	
03/02/2012	NS	perchlorate	0.09050	0.05	
			0.16323	0.10	
			0.37489	0.25	
			0.77283	0.50	
			1.48528	1.00	
			3.63370	2.50	
			7.24902	5.00	
			14.43676	10.00	

Regression Output:	Regression Output:	Reported	
Constant	0.03038		
Std Err of Y Est	0.01511		
R Squared	0.99999		0.99990
No. of Observations	8.00000		
Degrees of Freedom	6.00000		
X Coefficient(s)	1.441E+000		
Std Err of Coef.	0.001634	0.00	

LDC #: 28255 P87

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: FT
2nd Reviewer: A

METHOD: ~~GC/MS BNA (EPA SW 846 Method 8270C)~~ Perchlorate 6850

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 %R	Recalculated %R
1	CPC GOC027	4/11/12	~~Phenol (1st internal standard)~~ Perchlorate	2.0	2.081	2.081	104	104
			~~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)~~					
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 #: 28255 P87

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: FT
2nd Reviewer: [signature]

METHOD: ~~GC/MS BNA (EPA SW 846 Method 8270)~~ Perchlorate Method 6850

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: LCS ID

Compound	Spike Added (ug/kg)		Spike Concentration (ug/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
Phenol										
N-Nitroso-di-n-propylamine										
4-Chloro-3-methylphenol										
Acenaphthene										
Pentachlorophenol										
Pyrene										
Perchlorate	25.0	25.0	25.1	23.0	101	101	92	92	9	9

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 #: 28255 P87

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of
Reviewer: FT
2nd reviewer:

METHOD: ~~GC/MS BNA (EPA SW 846 Method 8270)~~ Perchlorate 6850

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. _____ , _____:

Conc. = $\frac{(\quad)(\quad)(\quad)(\quad)(\quad)}{(\quad)(\quad)(\quad)(\quad)(\quad)}$

=

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

SAMPLE DELIVERY GROUP

12D048

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
05-Apr-2012	SL-190-NBZ-SS-0.0-0.5	D048-04	N	3550B	8081A	III
05-Apr-2012	SL-190-NBZ-SS-0.0-0.5	D048-04	N	3550B	8082	III
05-Apr-2012	SL-190-NBZ-SS-0.0-0.5	D048-04	N	3550B	8270C	III
05-Apr-2012	SL-190-NBZ-SS-0.0-0.5	D048-04	N	3550B	8270C SIM	III
05-Apr-2012	SL-190-NBZ-SS-0.0-0.5	D048-04	N	7471A	7471A	III
05-Apr-2012	SL-190-NBZ-SS-0.0-0.5	D048-04	N	GEN PREP	300.0	III
05-Apr-2012	SL-190-NBZ-SS-0.0-0.5	D048-04	N	GEN PREP	314.0	III
05-Apr-2012	SL-190-NBZ-SS-0.0-0.5	D048-04	N	GEN PREP	6020	III
05-Apr-2012	SL-190-NBZ-SS-0.0-0.5	D048-04	N	GEN PREP	6850	III
05-Apr-2012	SL-190-NBZ-SS-0.0-0.5	D048-04	N	GEN PREP	7199	III
05-Apr-2012	SL-190-NBZ-SS-0.0-0.5	D048-04	N	GEN PREP	8151A	III
05-Apr-2012	SL-190-NBZ-SS-0.0-0.5	D048-04R	N	GEN PREP	7199	III
05-Apr-2012	SL-175-NBZ-SS-0.0-0.5	D048-03	N	3550B	8081A	III
05-Apr-2012	SL-175-NBZ-SS-0.0-0.5	D048-03	N	3550B	8082	III
05-Apr-2012	SL-175-NBZ-SS-0.0-0.5	D048-03	N	3550B	8270C	III
05-Apr-2012	SL-175-NBZ-SS-0.0-0.5	D048-03	N	3550B	8270C SIM	III
05-Apr-2012	SL-175-NBZ-SS-0.0-0.5	D048-03	N	7471A	7471A	III
05-Apr-2012	SL-175-NBZ-SS-0.0-0.5	D048-03	N	GEN PREP	300.0	III
05-Apr-2012	SL-175-NBZ-SS-0.0-0.5	D048-03	N	GEN PREP	314.0	III
05-Apr-2012	SL-175-NBZ-SS-0.0-0.5	D048-03	N	GEN PREP	6020	III
05-Apr-2012	SL-175-NBZ-SS-0.0-0.5	D048-03	N	GEN PREP	6850	III
05-Apr-2012	SL-175-NBZ-SS-0.0-0.5	D048-03	N	GEN PREP	7199	III
05-Apr-2012	SL-175-NBZ-SS-0.0-0.5	D048-03	N	GEN PREP	8151A	III
05-Apr-2012	SL-175-NBZ-SS-0.0-0.5	D048-03R	N	GEN PREP	7199	III
05-Apr-2012	SL-149-NBZ-SS-0.0-0.5	D048-01	N	3550B	8081A	III
05-Apr-2012	SL-149-NBZ-SS-0.0-0.5	D048-01	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-Apr-2012	SL-149-NBZ-SS-0.0-0.5	D048-01	N	3550B	8270C	III
05-Apr-2012	SL-149-NBZ-SS-0.0-0.5	D048-01	N	3550B	8270C SIM	III
05-Apr-2012	SL-149-NBZ-SS-0.0-0.5	D048-01	N	7471A	7471A	III
05-Apr-2012	SL-149-NBZ-SS-0.0-0.5	D048-01	N	GEN PREP	300.0	III
05-Apr-2012	SL-149-NBZ-SS-0.0-0.5	D048-01	N	GEN PREP	314.0	III
05-Apr-2012	SL-149-NBZ-SS-0.0-0.5	D048-01	N	GEN PREP	6020	III
05-Apr-2012	SL-149-NBZ-SS-0.0-0.5	D048-01	N	GEN PREP	6850	III
05-Apr-2012	SL-149-NBZ-SS-0.0-0.5	D048-01	N	GEN PREP	7199	III
05-Apr-2012	SL-149-NBZ-SS-0.0-0.5	D048-01	N	GEN PREP	8151A	III
05-Apr-2012	SL-149-NBZ-SS-0.0-0.5	D048-01R	N	GEN PREP	7199	III
05-Apr-2012	SL-165-NBZ-SS-0.0-0.5	D048-02	N	3550B	8081A	III
05-Apr-2012	SL-165-NBZ-SS-0.0-0.5	D048-02	N	3550B	8082	III
05-Apr-2012	SL-165-NBZ-SS-0.0-0.5	D048-02	N	3550B	8270C	III
05-Apr-2012	SL-165-NBZ-SS-0.0-0.5	D048-02	N	3550B	8270C SIM	III
05-Apr-2012	SL-165-NBZ-SS-0.0-0.5	D048-02	N	7471A	7471A	III
05-Apr-2012	SL-165-NBZ-SS-0.0-0.5	D048-02	N	GEN PREP	300.0	III
05-Apr-2012	SL-165-NBZ-SS-0.0-0.5	D048-02	N	GEN PREP	314.0	III
05-Apr-2012	SL-165-NBZ-SS-0.0-0.5	D048-02	N	GEN PREP	6020	III
05-Apr-2012	SL-165-NBZ-SS-0.0-0.5	D048-02	N	GEN PREP	6850	III
05-Apr-2012	SL-165-NBZ-SS-0.0-0.5	D048-02	N	GEN PREP	7199	III
05-Apr-2012	SL-165-NBZ-SS-0.0-0.5	D048-02	N	GEN PREP	8151A	III
05-Apr-2012	SL-165-NBZ-SS-0.0-0.5	D048-02R	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*

Attachment II

Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: 12D048 **Laboratory: EMXT**

EDD Filename: 12D048R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: SL-149-NBZ-SS-0.0-0.5 *Collected:* 4/5/2012 10:40:00 *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	0.138	J	0.106	MDL	0.213	PQL	MG/KG	J	Z
Zirconium	5.32	U	2.66	MDL	5.32	PQL	MG/KG	UJ	Q

Sample ID: SL-165-NBZ-SS-0.0-0.5 *Collected:* 4/5/2012 11:20:00 *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	0.126	J	0.106	MDL	0.212	PQL	MG/KG	J	Z
Zirconium	5.30	U	2.65	MDL	5.30	PQL	MG/KG	UJ	Q

Sample ID: SL-175-NBZ-SS-0.0-0.5 *Collected:* 4/5/2012 9:55:00 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	0.156	J	0.115	MDL	0.230	PQL	MG/KG	J	Z
SODIUM	58.2	J	57.4	MDL	115	PQL	MG/KG	J	Z
Zirconium	5.74	U	2.87	MDL	5.74	PQL	MG/KG	UJ	Q

Sample ID: SL-190-NBZ-SS-0.0-0.5 *Collected:* 4/5/2012 9:25:00 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	0.150	J	0.103	MDL	0.207	PQL	MG/KG	J	Z
Zirconium	5.16	U	2.58	MDL	5.16	PQL	MG/KG	UJ	Q

Method Category: SVOA

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

Sample ID: SL-149-NBZ-SS-0.0-0.5 *Collected:* 4/5/2012 10:40:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1-METHYLNAPHTHALENE	1.2	J	0.93	MDL	1.9	PQL	UG/KG	J	Z
2-METHYLNAPHTHALENE	1.2	J	0.93	MDL	1.9	PQL	UG/KG	J	Z
ACENAPHTHENE	0.98	J	0.93	MDL	1.9	PQL	UG/KG	J	Z
ACENAPHTHYLENE	1.1	J	0.93	MDL	1.9	PQL	UG/KG	J	Z
FLUORENE	0.99	J	0.93	MDL	1.9	PQL	UG/KG	J	Z
NAPHTHALENE	1.3	J	0.93	MDL	1.9	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12D048 **Laboratory: EMXT**

EDD Filename: 12D048R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

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

Sample ID: SL-165-NBZ-SS-0.0-0.5 *Collected:* 4/5/2012 11:20:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(B)FLUORANTHENE	1.3	J	0.94	MDL	1.9	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	1.1	J	0.94	MDL	1.9	PQL	UG/KG	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	16	J	9.3	MDL	18	PQL	UG/KG	J	Z
CHRYSENE	1.1	J	0.94	MDL	1.9	PQL	UG/KG	J	Z
FLUORANTHENE	1.7	J	0.94	MDL	1.9	PQL	UG/KG	J	Z
PHENANTHRENE	1.1	J	0.94	MDL	1.9	PQL	UG/KG	J	Z
PYRENE	1.6	J	0.94	MDL	1.9	PQL	UG/KG	J	Z

Sample ID: SL-175-NBZ-SS-0.0-0.5 *Collected:* 4/5/2012 9:55:00 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(K)FLUORANTHENE	1.1	J	1.0	MDL	2.0	PQL	UG/KG	J	Z
CHRYSENE	1.1	J	1.0	MDL	2.0	PQL	UG/KG	J	Z
FLUORANTHENE	1.4	J	1.0	MDL	2.0	PQL	UG/KG	J	Z
INDENO(1,2,3-CD)PYRENE	1.6	J	1.0	MDL	2.0	PQL	UG/KG	J	Z
PYRENE	1.4	J	1.0	MDL	2.0	PQL	UG/KG	J	Z

Sample ID: SL-190-NBZ-SS-0.0-0.5 *Collected:* 4/5/2012 9:25:00 AM *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(B)FLUORANTHENE	1.1	J	0.90	MDL	1.8	PQL	UG/KG	J	Z
FLUORANTHENE	0.93	J	0.90	MDL	1.8	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12D048 **Laboratory: EMXT**

EDD Filename: 12D048R **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: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Enclosure I

Level III ADR Outliers
(including Manual Review Outliers)

Quality Control
Outlier Reports

12D048

Reporting Limit Outliers

Lab Reporting Batch ID: 12D048 **Laboratory: EMXT**

EDD Filename: 12D048R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 6020
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-149-NBZ-SS-0.0-0.5	ANTIMONY	J	0.138	0.213	PQL	MG/KG	J (all detects)
SL-165-NBZ-SS-0.0-0.5	ANTIMONY	J	0.126	0.212	PQL	MG/KG	J (all detects)
SL-175-NBZ-SS-0.0-0.5	ANTIMONY SODIUM	J J	0.156 58.2	0.230 115	PQL PQL	MG/KG MG/KG	J (all detects)
SL-190-NBZ-SS-0.0-0.5	ANTIMONY	J	0.150	0.207	PQL	MG/KG	J (all detects)

Method: 8270C SIM
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-149-NBZ-SS-0.0-0.5	1-METHYLNAPHTHALENE	J	1.2	1.9	PQL	UG/KG	J (all detects)
	2-METHYLNAPHTHALENE	J	1.2	1.9	PQL	UG/KG	
	ACENAPHTHENE	J	0.98	1.9	PQL	UG/KG	
	ACENAPHTHYLENE	J	1.1	1.9	PQL	UG/KG	
	FLUORENE	J	0.99	1.9	PQL	UG/KG	
	NAPHTHALENE	J	1.3	1.9	PQL	UG/KG	
SL-165-NBZ-SS-0.0-0.5	BENZO(B)FLUORANTHENE	J	1.3	1.9	PQL	UG/KG	J (all detects)
	BENZO(G,H,I)PERYLENE	J	1.1	1.9	PQL	UG/KG	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	16	18	PQL	UG/KG	
	CHRYSENE	J	1.1	1.9	PQL	UG/KG	
	FLUORANTHENE	J	1.7	1.9	PQL	UG/KG	
	PHENANTHRENE	J	1.1	1.9	PQL	UG/KG	
	PYRENE	J	1.6	1.9	PQL	UG/KG	
SL-175-NBZ-SS-0.0-0.5	BENZO(K)FLUORANTHENE	J	1.1	2.0	PQL	UG/KG	J (all detects)
	CHRYSENE	J	1.1	2.0	PQL	UG/KG	
	FLUORANTHENE	J	1.4	2.0	PQL	UG/KG	
	INDENO(1,2,3-CD)PYRENE	J	1.6	2.0	PQL	UG/KG	
	PYRENE	J	1.4	2.0	PQL	UG/KG	
SL-190-NBZ-SS-0.0-0.5	BENZO(B)FLUORANTHENE	J	1.1	1.8	PQL	UG/KG	J (all detects)
	FLUORANTHENE	J	0.93	1.8	PQL	UG/KG	

LDC #: 28255Q4
SDG #: 12D048
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 8-29-12
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: 4/5/12
II.	ICP/MS Tune		
III.	Calibration		
IV.	Blanks		
V.	ICP Interference Check Sample (ICS) Analysis		
VI.	Matrix Spike Analysis	N	MS/D (from SDG: 12D031)
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-NBZ-SS-040412 (12D031)

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: All

1	SL-149-NBZ-SS-0.0-0.5	11		21		31	
2	SL-165-NBZ-SS-0.0-0.5	12		22		32	
3	SL-175-NBZ-SS-0.0-0.5	13		23		33	
4	SL-190-NBZ-SS-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 #: 28255Q4

VALIDATION FINDINGS WORKSHEET
Field Blanks

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

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

Sampling date: 4/4/12 Soil factor applied 50x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All

Analyte	Blank ID	Sample Identification										
	EB-NBZ-SS-040412 (SDG: 12D031)	Action Limit	No Qualifiers									
Cr	0.000239	0.05975										
Cu	0.000719	0.17975										

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

12D084

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-Apr-2012	SL-001-NBZ-SS-0.0-0.5	D084-01	N	3550B	8015B EFH	III
09-Apr-2012	SL-001-NBZ-SS-0.0-0.5	D084-01	N	3550B	8081A	III
09-Apr-2012	SL-001-NBZ-SS-0.0-0.5	D084-01	N	3550B	8082	III
09-Apr-2012	SL-001-NBZ-SS-0.0-0.5	D084-01	N	3550B	8270C	III
09-Apr-2012	SL-001-NBZ-SS-0.0-0.5	D084-01	N	3550B	8270C SIM	III
09-Apr-2012	SL-001-NBZ-SS-0.0-0.5	D084-01	N	7471A	7471A	III
09-Apr-2012	SL-001-NBZ-SS-0.0-0.5	D084-01	N	GEN PREP	300.0	III
09-Apr-2012	SL-001-NBZ-SS-0.0-0.5	D084-01	N	GEN PREP	314.0	III
09-Apr-2012	SL-001-NBZ-SS-0.0-0.5	D084-01	N	GEN PREP	6020	III
09-Apr-2012	SL-001-NBZ-SS-0.0-0.5	D084-01	N	GEN PREP	6850	III
09-Apr-2012	SL-001-NBZ-SS-0.0-0.5	D084-01	N	GEN PREP	7199	III
09-Apr-2012	SL-001-NBZ-SS-0.0-0.5	D084-01	N	GEN PREP	8151A	III
09-Apr-2012	SL-001-NBZ-SS-0.0-0.5	D084-01	N	GEN PREP	8330A	III
09-Apr-2012	SL-001-NBZ-SS-0.0-0.5	D084-01	N	GEN PREP	8332	III
09-Apr-2012	SL-001-NBZ-SS-0.0-0.5	D084-01	N	GEN PREP	9014	III
09-Apr-2012	SL-001-NBZ-SS-0.0-0.5	D084-01R	N	GEN PREP	7199	III
09-Apr-2012	SL-151-NBZ-SS-0.0-0.5	D084-02	N	3550B	8081A	III
09-Apr-2012	SL-151-NBZ-SS-0.0-0.5	D084-02	N	3550B	8082	III
09-Apr-2012	SL-151-NBZ-SS-0.0-0.5	D084-02	N	3550B	8270C	III
09-Apr-2012	SL-151-NBZ-SS-0.0-0.5	D084-02	N	3550B	8270C SIM	III
09-Apr-2012	SL-151-NBZ-SS-0.0-0.5	D084-02	N	7471A	7471A	III
09-Apr-2012	SL-151-NBZ-SS-0.0-0.5	D084-02	N	GEN PREP	300.0	III
09-Apr-2012	SL-151-NBZ-SS-0.0-0.5	D084-02	N	GEN PREP	314.0	III
09-Apr-2012	SL-151-NBZ-SS-0.0-0.5	D084-02	N	GEN PREP	7199	III
09-Apr-2012	SL-151-NBZ-SS-0.0-0.5	D084-02	N	GEN PREP	8151A	III
09-Apr-2012	SL-151-NBZ-SS-0.0-0.5	D084-02R	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
09-Apr-2012	SL-151-NBZ-SS-0.0-0.5	D084-02W	N	GEN PREP	6020	III
09-Apr-2012	SL-185-NBZ-SS-0.0-0.5	D084-06	N	3550B	8081A	III
09-Apr-2012	SL-185-NBZ-SS-0.0-0.5	D084-06	N	3550B	8082	III
09-Apr-2012	SL-185-NBZ-SS-0.0-0.5	D084-06	N	3550B	8270C	III
09-Apr-2012	SL-185-NBZ-SS-0.0-0.5	D084-06	N	3550B	8270C SIM	III
09-Apr-2012	SL-185-NBZ-SS-0.0-0.5	D084-06	N	7471A	7471A	III
09-Apr-2012	SL-185-NBZ-SS-0.0-0.5	D084-06	N	GEN PREP	300.0	III
09-Apr-2012	SL-185-NBZ-SS-0.0-0.5	D084-06	N	GEN PREP	314.0	III
09-Apr-2012	SL-185-NBZ-SS-0.0-0.5	D084-06	N	GEN PREP	7199	III
09-Apr-2012	SL-185-NBZ-SS-0.0-0.5	D084-06	N	GEN PREP	8151A	III
09-Apr-2012	SL-185-NBZ-SS-0.0-0.5	D084-06R	N	GEN PREP	7199	III
09-Apr-2012	SL-185-NBZ-SS-0.0-0.5	D084-06W	N	GEN PREP	6020	III
09-Apr-2012	SL-191-NBZ-SS-0.0-0.5	D084-07	N	3550B	8081A	III
09-Apr-2012	SL-191-NBZ-SS-0.0-0.5	D084-07	N	3550B	8082	III
09-Apr-2012	SL-191-NBZ-SS-0.0-0.5	D084-07	N	3550B	8270C	III
09-Apr-2012	SL-191-NBZ-SS-0.0-0.5	D084-07	N	3550B	8270C SIM	III
09-Apr-2012	SL-191-NBZ-SS-0.0-0.5	D084-07	N	7471A	7471A	III
09-Apr-2012	SL-191-NBZ-SS-0.0-0.5	D084-07	N	GEN PREP	300.0	III
09-Apr-2012	SL-191-NBZ-SS-0.0-0.5	D084-07	N	GEN PREP	314.0	III
09-Apr-2012	SL-191-NBZ-SS-0.0-0.5	D084-07	N	GEN PREP	6020	III
09-Apr-2012	SL-191-NBZ-SS-0.0-0.5	D084-07	N	GEN PREP	7199	III
09-Apr-2012	SL-191-NBZ-SS-0.0-0.5	D084-07	N	GEN PREP	8151A	III
09-Apr-2012	SL-191-NBZ-SS-0.0-0.5MS	D084-07G	MS	GEN PREP	7199	III
09-Apr-2012	SL-191-NBZ-SS-0.0-0.5MS	D084-07G1	MS	GEN PREP	7199	III
09-Apr-2012	SL-191-NBZ-SS-0.0-0.5MSD	D084-07H	MSD	GEN PREP	7199	III
09-Apr-2012	SL-191-NBZ-SS-0.0-0.5MSD	D084-07H1	MSD	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
09-Apr-2012	SL-191-NBZ-SS-0.0-0.5MS	D084-07M	MS	3550B	8081A	III
09-Apr-2012	SL-191-NBZ-SS-0.0-0.5MS	D084-07M	MS	3550B	8082	III
09-Apr-2012	SL-191-NBZ-SS-0.0-0.5MS	D084-07M	MS	3550B	8270C	III
09-Apr-2012	SL-191-NBZ-SS-0.0-0.5MS	D084-07M	MS	3550B	8270C SIM	III
09-Apr-2012	SL-191-NBZ-SS-0.0-0.5MS	D084-07M	MS	7471A	7471A	III
09-Apr-2012	SL-191-NBZ-SS-0.0-0.5MS	D084-07M	MS	GEN PREP	300.0	III
09-Apr-2012	SL-191-NBZ-SS-0.0-0.5MS	D084-07M	MS	GEN PREP	314.0	III
09-Apr-2012	SL-191-NBZ-SS-0.0-0.5MS	D084-07M	MS	GEN PREP	6020	III
09-Apr-2012	SL-191-NBZ-SS-0.0-0.5MS	D084-07M	MS	GEN PREP	7199	III
09-Apr-2012	SL-191-NBZ-SS-0.0-0.5MS	D084-07M	MS	GEN PREP	8151A	III
09-Apr-2012	SL-191-NBZ-SS-0.0-0.5MS	D084-07M1	MS	GEN PREP	7199	III
09-Apr-2012	SL-191-NBZ-SS-0.0-0.5	D084-07R	N	GEN PREP	7199	III
09-Apr-2012	SL-191-NBZ-SS-0.0-0.5MSD	D084-07S	MSD	3550B	8081A	III
09-Apr-2012	SL-191-NBZ-SS-0.0-0.5MSD	D084-07S	MSD	3550B	8082	III
09-Apr-2012	SL-191-NBZ-SS-0.0-0.5MSD	D084-07S	MSD	3550B	8270C	III
09-Apr-2012	SL-191-NBZ-SS-0.0-0.5MSD	D084-07S	MSD	3550B	8270C SIM	III
09-Apr-2012	SL-191-NBZ-SS-0.0-0.5MSD	D084-07S	MSD	7471A	7471A	III
09-Apr-2012	SL-191-NBZ-SS-0.0-0.5MSD	D084-07S	MSD	GEN PREP	300.0	III
09-Apr-2012	SL-191-NBZ-SS-0.0-0.5MSD	D084-07S	MSD	GEN PREP	314.0	III
09-Apr-2012	SL-191-NBZ-SS-0.0-0.5MSD	D084-07S	MSD	GEN PREP	6020	III
09-Apr-2012	SL-191-NBZ-SS-0.0-0.5MSD	D084-07S	MSD	GEN PREP	7199	III
09-Apr-2012	SL-191-NBZ-SS-0.0-0.5MSD	D084-07S	MSD	GEN PREP	8151A	III
09-Apr-2012	SL-191-NBZ-SS-0.0-0.5MSD	D084-07S1	MSD	GEN PREP	7199	III
09-Apr-2012	SL-157-NBZ-SS-0.0-0.5	D084-03	N	3550B	8081A	III
09-Apr-2012	SL-157-NBZ-SS-0.0-0.5	D084-03	N	3550B	8082	III
09-Apr-2012	SL-157-NBZ-SS-0.0-0.5	D084-03	N	3550B	8270C	III

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

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
09-Apr-2012	SL-157-NBZ-SS-0.0-0.5	D084-03	N	3550B	8270C SIM	III
09-Apr-2012	SL-157-NBZ-SS-0.0-0.5	D084-03	N	7471A	7471A	III
09-Apr-2012	SL-157-NBZ-SS-0.0-0.5	D084-03	N	GEN PREP	300.0	III
09-Apr-2012	SL-157-NBZ-SS-0.0-0.5	D084-03	N	GEN PREP	314.0	III
09-Apr-2012	SL-157-NBZ-SS-0.0-0.5	D084-03	N	GEN PREP	7199	III
09-Apr-2012	SL-157-NBZ-SS-0.0-0.5	D084-03	N	GEN PREP	8151A	III
09-Apr-2012	SL-157-NBZ-SS-0.0-0.5	D084-03R	N	GEN PREP	7199	III
09-Apr-2012	SL-157-NBZ-SS-0.0-0.5	D084-03W	N	GEN PREP	6020	III
09-Apr-2012	SL-167-NBZ-SS-0.0-0.5	D084-04	N	3550B	8081A	III
09-Apr-2012	SL-167-NBZ-SS-0.0-0.5	D084-04	N	3550B	8082	III
09-Apr-2012	SL-167-NBZ-SS-0.0-0.5	D084-04	N	3550B	8270C	III
09-Apr-2012	SL-167-NBZ-SS-0.0-0.5	D084-04	N	3550B	8270C SIM	III
09-Apr-2012	SL-167-NBZ-SS-0.0-0.5	D084-04	N	7471A	7471A	III
09-Apr-2012	SL-167-NBZ-SS-0.0-0.5	D084-04	N	GEN PREP	300.0	III
09-Apr-2012	SL-167-NBZ-SS-0.0-0.5	D084-04	N	GEN PREP	314.0	III
09-Apr-2012	SL-167-NBZ-SS-0.0-0.5	D084-04	N	GEN PREP	7199	III
09-Apr-2012	SL-167-NBZ-SS-0.0-0.5	D084-04	N	GEN PREP	8151A	III
09-Apr-2012	SL-167-NBZ-SS-0.0-0.5	D084-04R	N	GEN PREP	7199	III
09-Apr-2012	SL-167-NBZ-SS-0.0-0.5	D084-04W	N	GEN PREP	6020	III
09-Apr-2012	SL-174-NBZ-SS-0.0-0.5	D084-05	N	3550B	8081A	III
09-Apr-2012	SL-174-NBZ-SS-0.0-0.5	D084-05	N	3550B	8082	III
09-Apr-2012	SL-174-NBZ-SS-0.0-0.5	D084-05	N	3550B	8270C	III
09-Apr-2012	SL-174-NBZ-SS-0.0-0.5	D084-05	N	3550B	8270C SIM	III
09-Apr-2012	SL-174-NBZ-SS-0.0-0.5	D084-05	N	7471A	7471A	III
09-Apr-2012	SL-174-NBZ-SS-0.0-0.5	D084-05	N	GEN PREP	300.0	III
09-Apr-2012	SL-174-NBZ-SS-0.0-0.5	D084-05	N	GEN PREP	314.0	III

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

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
09-Apr-2012	SL-174-NBZ-SS-0.0-0.5	D084-05	N	GEN PREP	7199	III
09-Apr-2012	SL-174-NBZ-SS-0.0-0.5	D084-05	N	GEN PREP	8151A	III
09-Apr-2012	SL-174-NBZ-SS-0.0-0.5	D084-05R	N	GEN PREP	7199	III
09-Apr-2012	SL-174-NBZ-SS-0.0-0.5	D084-05W	N	GEN PREP	6020	III
09-Apr-2012	DUP-06-NBZ-QC-040912	D084-08	FD	3550B	8081A	III
09-Apr-2012	DUP-06-NBZ-QC-040912	D084-08	FD	3550B	8082	III
09-Apr-2012	DUP-06-NBZ-QC-040912	D084-08	FD	3550B	8270C	III
09-Apr-2012	DUP-06-NBZ-QC-040912	D084-08	FD	3550B	8270C SIM	III
09-Apr-2012	DUP-06-NBZ-QC-040912	D084-08	FD	7471A	7471A	III
09-Apr-2012	DUP-06-NBZ-QC-040912	D084-08	FD	GEN PREP	300.0	III
09-Apr-2012	DUP-06-NBZ-QC-040912	D084-08	FD	GEN PREP	314.0	III
09-Apr-2012	DUP-06-NBZ-QC-040912	D084-08	FD	GEN PREP	7199	III
09-Apr-2012	DUP-06-NBZ-QC-040912	D084-08	FD	GEN PREP	8151A	III
09-Apr-2012	DUP-06-NBZ-QC-040912	D084-08R	FD	GEN PREP	7199	III
09-Apr-2012	DUP-06-NBZ-QC-040912	D084-08W	FD	GEN PREP	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: 12D084 **Laboratory: EMXT**

EDD Filename: Prep12D084R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: GENCHEM

Method: 300.0 **Matrix: SO**

Sample ID: SL-151-NBZ-SS-0.0-0.5 *Collected:* 4/9/2012 10:15:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORIDE	0.697	J	0.552	MDL	1.10	PQL	MG/KG	J	Z

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: DUP-06-NBZ-QC-040912 *Collected:* 4/9/2012 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
SILVER	0.0726	J	0.0541	MDL	0.108	PQL	MG/KG	J	Z
SODIUM	89.7	J	54.1	MDL	108	PQL	MG/KG	J	Z
Zirconium	5.41	U	2.71	MDL	5.41	PQL	MG/KG	UJ	Q

Sample ID: SL-001-NBZ-SS-0.0-0.5 *Collected:* 4/9/2012 9:36:00 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	0.208	J	0.113	MDL	0.226	PQL	MG/KG	J	Z
BORON	4.79	J	2.83	MDL	5.66	PQL	MG/KG	J	Z
SELENIUM	0.314	J	0.226	MDL	0.452	PQL	MG/KG	J	Z
SODIUM	81.7	J	56.6	MDL	113	PQL	MG/KG	J	Z
Zirconium	5.66	U	2.83	MDL	5.66	PQL	MG/KG	UJ	Q

Sample ID: SL-151-NBZ-SS-0.0-0.5 *Collected:* 4/9/2012 10:15:00 *Analysis Type:* RES/TOT *Dilution:* 0.971

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	3.94	J	2.68	MDL	5.36	PQL	MG/KG	J	Z
SELENIUM	0.428	J	0.215	MDL	0.429	PQL	MG/KG	J	Z
SODIUM	83.2	J	53.6	MDL	107	PQL	MG/KG	J	Z
Zirconium	2.89	J	2.68	MDL	5.36	PQL	MG/KG	J	Z, Q

Sample ID: SL-157-NBZ-SS-0.0-0.5 *Collected:* 4/9/2012 1:47:00 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	0.202	J	0.107	MDL	0.214	PQL	MG/KG	J	Z
SELENIUM	0.216	J	0.214	MDL	0.427	PQL	MG/KG	J	Z
SODIUM	55.1	J	53.4	MDL	107	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12D084 **Laboratory: EMXT**

EDD Filename: Prep12D084R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: **METALS**

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

Sample ID: **SL-157-NBZ-SS-0.0-0.5** ***Collected:*** **4/9/2012 1:47:00 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
Zirconium	5.34	U	2.67	MDL	5.34	PQL	MG/KG	UJ	Q

Sample ID: **SL-167-NBZ-SS-0.0-0.5** ***Collected:*** **4/9/2012 2:12:00 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	0.197	J	0.107	MDL	0.214	PQL	MG/KG	J	Z
SODIUM	57.3	J	53.4	MDL	107	PQL	MG/KG	J	Z
Zirconium	5.34	U	2.67	MDL	5.34	PQL	MG/KG	UJ	Q

Sample ID: **SL-174-NBZ-SS-0.0-0.5** ***Collected:*** **4/9/2012 2:46:00 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	0.156	J	0.109	MDL	0.218	PQL	MG/KG	J	Z
SELENIUM	0.260	J	0.218	MDL	0.437	PQL	MG/KG	J	Z
SODIUM	55.7	J	54.6	MDL	109	PQL	MG/KG	J	Z
Zirconium	5.46	U	2.73	MDL	5.46	PQL	MG/KG	UJ	Q

Sample ID: **SL-185-NBZ-SS-0.0-0.5** ***Collected:*** **4/9/2012 10:50:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1.00**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.232	J	0.223	MDL	0.445	PQL	MG/KG	J	Z
SILVER	0.0913	J	0.0557	MDL	0.111	PQL	MG/KG	J	Z
SODIUM	61.7	J	55.7	MDL	111	PQL	MG/KG	J	Z
Zirconium	5.57	U	2.78	MDL	5.57	PQL	MG/KG	UJ	Q

Sample ID: **SL-191-NBZ-SS-0.0-0.5** ***Collected:*** **4/9/2012 11:22:00** ***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	0.249		0.109	MDL	0.219	PQL	MG/KG	J	Q
BARIUM	127		0.219	MDL	0.438	PQL	MG/KG	J	Q
SELENIUM	0.437	J	0.219	MDL	0.438	PQL	MG/KG	J	Z
SILVER	0.0774	J	0.0547	MDL	0.109	PQL	MG/KG	J	Z
SODIUM	83.6	J	54.7	MDL	109	PQL	MG/KG	J	Z
Zirconium	5.47	U	2.74	MDL	5.47	PQL	MG/KG	UJ	Q

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12D084 **Laboratory: EMXT**

EDD Filename: Prep12D084R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

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

Sample ID: SL-001-NBZ-SS-0.0-0.5 *Collected:* 4/9/2012 9:36:00 AM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH(C15-C20)	0.57	J	0.57	MDL	1.1	PQL	MG/KG	J	Z

Method Category: SVOA

Method: 8081A **Matrix: SO**

Sample ID: DUP-06-NBZ-QC-040912 *Collected:* 4/9/2012 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
4,4'-DDT	0.44		0.18	MDL	0.37	PQL	UG/KG	J	FD

Sample ID: SL-151-NBZ-SS-0.0-0.5 *Collected:* 4/9/2012 10:15:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDD	0.34	J	0.19	MDL	0.38	PQL	UG/KG	J	Z

Sample ID: SL-191-NBZ-SS-0.0-0.5 *Collected:* 4/9/2012 11:22:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDT	0.37	U	0.19	MDL	0.37	PQL	UG/KG	UJ	FD

Method Category: SVOA

Method: 8082 **Matrix: SO**

Sample ID: DUP-06-NBZ-QC-040912 *Collected:* 4/9/2012 3:20:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Aroclor 5432	3.6	U	1.8	MDL	3.6	PQL	UG/KG	UJ	E
Aroclor 5442	3.6	U	1.8	MDL	3.6	PQL	UG/KG	UJ	E
Aroclor 5460	3.6	U	1.8	MDL	3.6	PQL	UG/KG	UJ	E, FD

Sample ID: SL-001-NBZ-SS-0.0-0.5 *Collected:* 4/9/2012 9:36:00 AM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Aroclor 5432	3.7	U	1.9	MDL	3.7	PQL	UG/KG	UJ	E
Aroclor 5442	3.7	U	1.9	MDL	3.7	PQL	UG/KG	UJ	E

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12D084 Laboratory: EMXT

EDD Filename: Prep12D084R eQAPP Name: CDM_SSFL_120730_EMAX

Method Category: SVOA

Method: 8082 **Matrix:** SO

Sample ID: SL-001-NBZ-SS-0.0-0.5 *Collected:* 4/9/2012 9:36:00 AM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Aroclor 5460	3.7	U	1.9	MDL	3.7	PQL	UG/KG	UJ	E

Sample ID: SL-151-NBZ-SS-0.0-0.5 *Collected:* 4/9/2012 10:15:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Aroclor 5432	3.6	U	1.9	MDL	3.6	PQL	UG/KG	UJ	E
Aroclor 5442	3.6	U	1.9	MDL	3.6	PQL	UG/KG	UJ	E
Aroclor 5460	3.6	U	1.9	MDL	3.6	PQL	UG/KG	UJ	E

Sample ID: SL-157-NBZ-SS-0.0-0.5 *Collected:* 4/9/2012 1:47:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Aroclor 5432	3.6	U	1.9	MDL	3.6	PQL	UG/KG	UJ	E
Aroclor 5442	3.6	U	1.9	MDL	3.6	PQL	UG/KG	UJ	E
Aroclor 5460	3.6	U	1.9	MDL	3.6	PQL	UG/KG	UJ	E

Sample ID: SL-167-NBZ-SS-0.0-0.5 *Collected:* 4/9/2012 2:12:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Aroclor 5432	3.5	U	1.8	MDL	3.5	PQL	UG/KG	UJ	E
Aroclor 5442	3.5	U	1.8	MDL	3.5	PQL	UG/KG	UJ	E
Aroclor 5460	3.5	U	1.8	MDL	3.5	PQL	UG/KG	UJ	E

Sample ID: SL-174-NBZ-SS-0.0-0.5 *Collected:* 4/9/2012 2:46:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Aroclor 5432	3.6	U	1.9	MDL	3.6	PQL	UG/KG	UJ	E
Aroclor 5442	3.6	U	1.9	MDL	3.6	PQL	UG/KG	UJ	E
Aroclor 5460	3.6	U	1.9	MDL	3.6	PQL	UG/KG	UJ	E

Sample ID: SL-185-NBZ-SS-0.0-0.5 *Collected:* 4/9/2012 10:50:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Aroclor 5432	3.7	U	1.9	MDL	3.7	PQL	UG/KG	UJ	E
Aroclor 5442	3.7	U	1.9	MDL	3.7	PQL	UG/KG	UJ	E

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12D084 **Laboratory:** EMXT

EDD Filename: Prep12D084R **eQAPP Name:** CDM_SSFL_120730_EMAX

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

Sample ID: SL-185-NBZ-SS-0.0-0.5 *Collected:* 4/9/2012 10:50:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Aroclor 5460	3.7	U	1.9	MDL	3.7	PQL	UG/KG	UJ	E

Sample ID: SL-191-NBZ-SS-0.0-0.5 *Collected:* 4/9/2012 11:22:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Aroclor 5432	3.6	U	1.9	MDL	3.6	PQL	UG/KG	UJ	E
Aroclor 5442	3.6	U	1.9	MDL	3.6	PQL	UG/KG	UJ	E
Aroclor 5460	7.5		1.9	MDL	3.6	PQL	UG/KG	J	E, FD

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

Sample ID: SL-191-NBZ-SS-0.0-0.5 *Collected:* 4/9/2012 11:22:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZIDINE	910	U	460	MDL	910	PQL	UG/KG	UJ	Q

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

Sample ID: DUP-06-NBZ-QC-040912 *Collected:* 4/9/2012 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
1-METHYLNAPHTHALENE	2.2		0.92	MDL	1.8	PQL	UG/KG	J	FD
2-METHYLNAPHTHALENE	2.0		0.92	MDL	1.8	PQL	UG/KG	J	FD
ACENAPHTHENE	2.3		0.92	MDL	1.8	PQL	UG/KG	J	FD
ACENAPHTHYLENE	2.3		0.92	MDL	1.8	PQL	UG/KG	J	FD
BIS(2-ETHYLHEXYL)PHTHALATE	16	J	9.1	MDL	18	PQL	UG/KG	J	Z
FLUORANTHENE	1.3	J	0.92	MDL	1.8	PQL	UG/KG	J	Z, FD
FLUORENE	2.0		0.92	MDL	1.8	PQL	UG/KG	J	FD
NAPHTHALENE	2.0		0.92	MDL	1.8	PQL	UG/KG	J	FD
N-NITROSODIMETHYLAMINE	2.7		0.92	MDL	1.8	PQL	UG/KG	J	FD
PHENANTHRENE	1.2	J	0.92	MDL	1.8	PQL	UG/KG	J	Z, FD
PYRENE	1.1	J	0.92	MDL	1.8	PQL	UG/KG	J	Z, FD

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12D084 **Laboratory:** EMXT

EDD Filename: Prep12D084R **eQAPP Name:** CDM_SSFL_120730_EMAX

Method Category: SVOA

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

Sample ID: SL-151-NBZ-SS-0.0-0.5 ***Collected:*** 4/9/2012 10:15:00 ***Analysis Type:*** RES-BASE/NEUTRAL ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Butylbenzylphthalate	12	J	9.3	MDL	18	PQL	UG/KG	J	Z

Sample ID: SL-167-NBZ-SS-0.0-0.5 ***Collected:*** 4/9/2012 2:12:00 PM ***Analysis Type:*** RES-BASE/NEUTRAL ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(B)FLUORANTHENE	1.4	J	0.91	MDL	1.8	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	1.1	J	0.91	MDL	1.8	PQL	UG/KG	J	Z
FLUORANTHENE	1.2	J	0.91	MDL	1.8	PQL	UG/KG	J	Z
PYRENE	1.3	J	0.91	MDL	1.8	PQL	UG/KG	J	Z

Sample ID: SL-174-NBZ-SS-0.0-0.5 ***Collected:*** 4/9/2012 2:46:00 PM ***Analysis Type:*** RES-BASE/NEUTRAL ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(B)FLUORANTHENE	1.3	J	0.93	MDL	1.9	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	1.2	J	0.93	MDL	1.9	PQL	UG/KG	J	Z
FLUORANTHENE	1.3	J	0.93	MDL	1.9	PQL	UG/KG	J	Z
PYRENE	1.3	J	0.93	MDL	1.9	PQL	UG/KG	J	Z

Sample ID: SL-191-NBZ-SS-0.0-0.5 ***Collected:*** 4/9/2012 11:22:00 ***Analysis Type:*** RES-BASE/NEUTRAL ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1-METHYLNAPHTHALENE	1.9	U	0.93	MDL	1.9	PQL	UG/KG	UJ	FD
2-METHYLNAPHTHALENE	1.9	U	0.93	MDL	1.9	PQL	UG/KG	UJ	FD
ACENAPHTHENE	1.9	U	0.93	MDL	1.9	PQL	UG/KG	UJ	FD
ACENAPHTHYLENE	1.9	U	0.93	MDL	1.9	PQL	UG/KG	UJ	FD
FLUORANTHENE	1.9	U	0.93	MDL	1.9	PQL	UG/KG	UJ	FD
FLUORENE	1.9	U	0.93	MDL	1.9	PQL	UG/KG	UJ	FD
NAPHTHALENE	1.9	U	0.93	MDL	1.9	PQL	UG/KG	UJ	FD
N-NITROSODIMETHYLAMINE	1.9	U	0.93	MDL	1.9	PQL	UG/KG	UJ	FD
PHENANTHRENE	1.9	U	0.93	MDL	1.9	PQL	UG/KG	UJ	FD
PYRENE	1.9	U	0.93	MDL	1.9	PQL	UG/KG	UJ	FD

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12D084 **Laboratory: EMXT**

EDD Filename: Prep12D084R **eQAPP Name: CDM_SSFL_120730_EMAX**

Reason Code Legend

Reason Code	*Description*
E	Laboratory Control Precision
FD	Field Duplicate Precision
L	Laboratory Control Precision
Q	Matrix Spike Lower Estimation
Q	Matrix Spike Lower Rejection
Q	Matrix Spike Upper Estimation
S	Surrogate/Tracer Recovery Upper Estimation
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Enclosure I

Level III ADR Outliers
(including Manual Review Outliers)

Quality Control
Outlier Reports

12D084

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 12D084 | Laboratory: EMXT

EDD Filename: 12D084R | 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-191-NBZ-SS-0.0-0.5MS (TOT) **SL-191-NBZ-SS-0.0-0.5MSD (TOT)** (DUP-06-NBZ-QC-040912 SL -001-NBZ-SS-0.0-0.5 SL -151-NBZ-SS-0.0-0.5 SL -157-NBZ-SS-0.0-0.5 SL -167-NBZ-SS-0.0-0.5 SL -174-NBZ-SS-0.0-0.5 SL -185-NBZ-SS-0.0-0.5 SL -191-NBZ-SS-0.0-0.5)	BARIUM IRON TITANIUM	127 143 448	- - 312	75.00-125.00 75.00-125.00 75.00-125.00	- - -	BARIUM IRON TITANIUM	J (all detects) Fe, Ti, No Qual, >4x Ba, Qual Parent Only
SL-191-NBZ-SS-0.0-0.5MS (TOT) **SL-191-NBZ-SS-0.0-0.5MSD (TOT)** (DUP-06-NBZ-QC-040912 SL -001-NBZ-SS-0.0-0.5 SL -151-NBZ-SS-0.0-0.5 SL -157-NBZ-SS-0.0-0.5 SL -167-NBZ-SS-0.0-0.5 SL -174-NBZ-SS-0.0-0.5 SL -185-NBZ-SS-0.0-0.5 SL -191-NBZ-SS-0.0-0.5)	MANGANESE	248	21	75.00-125.00	-	MANGANESE	No Qual, >4x
SL-191-NBZ-SS-0.0-0.5MS (TOT) **SL-191-NBZ-SS-0.0-0.5MSD (TOT)** (DUP-06-NBZ-QC-040912 SL -001-NBZ-SS-0.0-0.5 SL -151-NBZ-SS-0.0-0.5 SL -157-NBZ-SS-0.0-0.5 SL -167-NBZ-SS-0.0-0.5 SL -174-NBZ-SS-0.0-0.5 SL -185-NBZ-SS-0.0-0.5 SL -191-NBZ-SS-0.0-0.5)	ALUMINUM ANTIMONY Zirconium	66 - 70	- 71 63	75.00-125.00 75.00-125.00 75.00-125.00	- - -	ALUMINUM ANTIMONY Zirconium	J(all detects) UJ(all non-detects) Al, No Qual, >4x Sb, Qual Parent Only

Method: 8270C
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-191-NBZ-SS-0.0-0.5MS **SL-191-NBZ-SS-0.0-0.5MSD** (SL-191-NBZ-SS-0.0-0.5)	BENZIDINE	5	4	10.00-150.00	-	BENZIDINE	J(all detects) UJ(all non-detects)

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: 12D084 | Laboratory: EMXT

EDD Filename: 12D084R | eQAPP Name: CDM_SSFL_120730_EMAX

Method: 8082
Matrix: SO

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
60D037SC (DUP-06-NBZ-QC-040912 SL -001-NBZ-SS-0.0-0.5 SL -151-NBZ-SS-0.0-0.5 SL -157-NBZ-SS-0.0-0.5 SL -167-NBZ-SS-0.0-0.5 SL -174-NBZ-SS-0.0-0.5 SL -185-NBZ-SS-0.0-0.5 SL -191-NBZ-SS-0.0-0.5)	Aroclor 5460	-	-	50.00-150.00	60 (50.00)	Aroclor 5432 Aroclor 5442 Aroclor 5460	J (all detects) UJ (all non-detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: 12D084 **Laboratory: EMXT**

EDD Filename: 12D084R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 300.0
Matrix: SO

Analyte	Concentration (MG/KG)		Sample RPD	eQAPP RPD	Flag
	SL-191-NBZ-SS-0.0-0.5	DUP-06-NBZ-QC-040912			
FLUORIDE	1.50	1.49	1	50.00	No Qualifiers Applied

Method: 6020
Matrix: SO

Analyte	Concentration (MG/KG)		Sample RPD	eQAPP RPD	Flag
	SL-191-NBZ-SS-0.0-0.5 (TOT)	DUP-06-NBZ-QC-040912 (TOT)			
ALUMINUM	18600	15600	18	50.00	
ANTIMONY	0.249	0.330	28	50.00	
ARSENIC	7.37	8.97	20	50.00	
BARIUM	127	109	15	50.00	
BERYLLIUM	0.857	0.692	21	50.00	
CADMIUM	0.234	0.231	1	50.00	
CALCIUM	3870	3830	1	50.00	
CHROMIUM	19.6	17.5	11	50.00	
COBALT	8.26	7.19	14	50.00	
COPPER	14.4	12.7	13	50.00	
IRON	27700	26400	5	50.00	
LEAD	14.1	12.0	16	50.00	
LITHIUM	35.6	34.0	5	50.00	
MAGNESIUM	6580	6010	9	50.00	No Qualifiers Applied
MANGANESE	311	286	8	50.00	
MOLYBDENUM	0.622	0.622	0	50.00	
NICKEL	13.5	12.5	8	50.00	
PHOSPHORUS	486	495	2	50.00	
POTASSIUM	3020	3060	1	50.00	
SELENIUM	0.437	0.433	1	50.00	
SILVER	0.0774	0.0726	6	50.00	
SODIUM	83.6	89.7	7	50.00	
STRONTIUM	22.8	17.7	25	50.00	
THALLIUM	0.348	0.397	13	50.00	
TITANIUM	989	924	7	50.00	
VANADIUM	41.6	38.4	8	50.00	
ZINC	86.5	81.0	7	50.00	

Method: 8081A
Matrix: SO

Analyte	Concentration (UG/KG)		Sample RPD	eQAPP RPD	Flag
	SL-191-NBZ-SS-0.0-0.5	DUP-06-NBZ-QC-040912			
4,4'-DDT	0.37 U	0.44	200	50.00	J(all detects) UJ(all non-detects)

Method: 8082
Matrix: SO

Analyte	Concentration (UG/KG)		Sample RPD	eQAPP RPD	Flag
	SL-191-NBZ-SS-0.0-0.5	DUP-06-NBZ-QC-040912			
Aroclor 5460	7.5	3.6 U	200	50.00	J(all detects) UJ(all non-detects)

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Field Duplicate RPD Report

Lab Reporting Batch ID: 12D084 **Laboratory: EMXT**

EDD Filename: 12D084R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 8270C SIM
Matrix: SO

Analyte	Concentration (UG/KG)		Sample RPD	eQAPP RPD	Flag
	SL-191-NBZ-SS-0.0-0.5	DUP-06-NBZ-QC-040912			
BIS(2-ETHYLHEXYL)PHTHALATE	21	16	27	50.00	No Qualifiers Applied
1-METHYLNAPHTHALENE	1.9 U	2.2	200	50.00	J(all detects) UJ(all non-detects)
2-METHYLNAPHTHALENE	1.9 U	2.0	200	50.00	
ACENAPHTHENE	1.9 U	2.3	200	50.00	
ACENAPHTHYLENE	1.9 U	2.3	200	50.00	
FLUORANTHENE	1.9 U	1.3	200	50.00	
FLUORENE	1.9 U	2.0	200	50.00	
NAPHTHALENE	1.9 U	2.0	200	50.00	
N-NITROSODIMETHYLAMINE	1.9 U	2.7	200	50.00	
PHENANTHRENE	1.9 U	1.2	200	50.00	
PYRENE	1.9 U	1.1	200	50.00	

Method: 9045D
Matrix: SO

Analyte	Concentration (PH UNIT)		Sample RPD	eQAPP RPD	Flag
	SL-191-NBZ-SS-0.0-0.5	DUP-06-NBZ-QC-040912			
PH	6.77	6.75	0		No Qualifiers Applied

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Reporting Limit Outliers

Lab Reporting Batch ID: 12D084 **Laboratory: EMXT**

EDD Filename: 12D084R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 300.0
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-151-NBZ-SS-0.0-0.5	FLUORIDE	J	0.697	1.10	PQL	MG/KG	J (all detects)

Method: 6020
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
DUP-06-NBZ-QC-040912	SILVER	J	0.0726	0.108	PQL	MG/KG	J (all detects)
	SODIUM	J	89.7	108	PQL	MG/KG	
SL-001-NBZ-SS-0.0-0.5	ANTIMONY	J	0.208	0.226	PQL	MG/KG	J (all detects)
	BORON	J	4.79	5.66	PQL	MG/KG	
	SELENIUM	J	0.314	0.452	PQL	MG/KG	
	SODIUM	J	81.7	113	PQL	MG/KG	
SL-151-NBZ-SS-0.0-0.5	BORON	J	3.94	5.36	PQL	MG/KG	J (all detects)
	SELENIUM	J	0.428	0.429	PQL	MG/KG	
	SODIUM	J	83.2	107	PQL	MG/KG	
	Zirconium	J	2.89	5.36	PQL	MG/KG	
SL-157-NBZ-SS-0.0-0.5	ANTIMONY	J	0.202	0.214	PQL	MG/KG	J (all detects)
	SELENIUM	J	0.216	0.427	PQL	MG/KG	
	SODIUM	J	55.1	107	PQL	MG/KG	
SL-167-NBZ-SS-0.0-0.5	ANTIMONY	J	0.197	0.214	PQL	MG/KG	J (all detects)
	SODIUM	J	57.3	107	PQL	MG/KG	
SL-174-NBZ-SS-0.0-0.5	ANTIMONY	J	0.156	0.218	PQL	MG/KG	J (all detects)
	SELENIUM	J	0.260	0.437	PQL	MG/KG	
	SODIUM	J	55.7	109	PQL	MG/KG	
SL-185-NBZ-SS-0.0-0.5	SELENIUM	J	0.232	0.445	PQL	MG/KG	J (all detects)
	SILVER	J	0.0913	0.111	PQL	MG/KG	
	SODIUM	J	61.7	111	PQL	MG/KG	
SL-191-NBZ-SS-0.0-0.5	SELENIUM	J	0.437	0.438	PQL	MG/KG	J (all detects)
	SILVER	J	0.0774	0.109	PQL	MG/KG	
	SODIUM	J	83.6	109	PQL	MG/KG	

Method: 8015B EFH
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-001-NBZ-SS-0.0-0.5	EFH(C15-C20)	J	0.57	1.1	PQL	MG/KG	J (all detects)

Method: 8081A
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-151-NBZ-SS-0.0-0.5	4,4'-DDD	J	0.34	0.38	PQL	UG/KG	J (all detects)

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Reporting Limit Outliers

Lab Reporting Batch ID: 12D084 **Laboratory: EMXT**

EDD Filename: 12D084R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: **8270C SIM**

Matrix: **SO**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
DUP-06-NBZ-QC-040912	BIS(2-ETHYLHEXYL)PHTHALATE	J	16	18	PQL	UG/KG	J (all detects)
	FLUORANTHENE	J	1.3	1.8	PQL	UG/KG	
	PHENANTHRENE	J	1.2	1.8	PQL	UG/KG	
	PYRENE	J	1.1	1.8	PQL	UG/KG	
SL-151-NBZ-SS-0.0-0.5	Butylbenzylphthalate	J	12	18	PQL	UG/KG	J (all detects)
SL-167-NBZ-SS-0.0-0.5	BENZO(B)FLUORANTHENE	J	1.4	1.8	PQL	UG/KG	J (all detects)
	BENZO(G,H,I)PERYLENE	J	1.1	1.8	PQL	UG/KG	
	FLUORANTHENE	J	1.2	1.8	PQL	UG/KG	
	PYRENE	J	1.3	1.8	PQL	UG/KG	
SL-174-NBZ-SS-0.0-0.5	BENZO(B)FLUORANTHENE	J	1.3	1.9	PQL	UG/KG	J (all detects)
	BENZO(G,H,I)PERYLENE	J	1.2	1.9	PQL	UG/KG	
	FLUORANTHENE	J	1.3	1.9	PQL	UG/KG	
	PYRENE	J	1.3	1.9	PQL	UG/KG	

LDC #: 28255R4
SDG #: 12D084
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET
ADR
7471A

Date: 8-29-12
Page: 1 of 1
Reviewer: CR
2nd Reviewer: [illegible]

METHOD: Metals (EPA SW 846 Method ~~6010~~B/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: 4/9/12
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) *Ba, Sb quals parent only
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	N	
XV	Field Blanks	N	EB = EB-NBZ-SS-041212 (SDG 12D122)

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: SOD

1	SL-001-NBZ-SS-0.0-0.5	11		21		31	
2	SL-151-NBZ-SS-0.0-0.5	12		22		32	
3	SL-157-NBZ-SS-0.0-0.5	13		23		33	
4	SL-167-NBZ-SS-0.0-0.5	14		24		34	
5	SL-174-NBZ-SS-0.0-0.5	15		25		35	
6	SL-185-NBZ-SS-0.0-0.5	16		26		36	
7	SL-191-NBZ-SS-0.0-0.5	17		27		37	
8	DUP-06-NBZ-QC-040912	18		28		38	
9	SL-191-NBZ-SS-0.0-0.5MS	19		29		39	
10	SL-191-NBZ-SS-0.0-0.5MSD	20		30		40	

Notes: *2nd MS/MSD in batch from 12D092 therefore Sb, Ba quals parents only, Zr quals all in batch.

SAMPLE DELIVERY GROUP

12D092

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
10-Apr-2012	DUP-07-NBZ-QC-041012	D092-07	FD	3550B	8015B EFH	III
10-Apr-2012	DUP-07-NBZ-QC-041012	D092-07	FD	3550B	8081A	III
10-Apr-2012	DUP-07-NBZ-QC-041012	D092-07	FD	3550B	8082	III
10-Apr-2012	DUP-07-NBZ-QC-041012	D092-07	FD	3550B	8270C	III
10-Apr-2012	DUP-07-NBZ-QC-041012	D092-07	FD	3550B	8270C SIM	III
10-Apr-2012	DUP-07-NBZ-QC-041012	D092-07	FD	7471A	7471A	III
10-Apr-2012	DUP-07-NBZ-QC-041012	D092-07	FD	GEN PREP	300.0	III
10-Apr-2012	DUP-07-NBZ-QC-041012	D092-07	FD	GEN PREP	314.0	III
10-Apr-2012	DUP-07-NBZ-QC-041012	D092-07	FD	GEN PREP	6850	III
10-Apr-2012	DUP-07-NBZ-QC-041012	D092-07	FD	GEN PREP	7199	III
10-Apr-2012	DUP-07-NBZ-QC-041012	D092-07	FD	GEN PREP	8151A	III
10-Apr-2012	DUP-07-NBZ-QC-041012	D092-07	FD	GEN PREP	8330A	III
10-Apr-2012	DUP-07-NBZ-QC-041012	D092-07	FD	GEN PREP	8332	III
10-Apr-2012	DUP-07-NBZ-QC-041012	D092-07	FD	GEN PREP	9014	III
10-Apr-2012	DUP-07-NBZ-QC-041012	D092-07R	FD	GEN PREP	7199	III
10-Apr-2012	DUP-07-NBZ-QC-041012	D092-07W	FD	GEN PREP	6020	III
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5	D092-01	N	3550B	8015B EFH	III
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5	D092-01	N	3550B	8081A	III
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5	D092-01	N	3550B	8082	III
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5	D092-01	N	3550B	8270C	III
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5	D092-01	N	3550B	8270C SIM	III
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5	D092-01	N	7471A	7471A	III
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5	D092-01	N	GEN PREP	314.0	III
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5	D092-01	N	GEN PREP	7199	III
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5	D092-01	N	GEN PREP	8151A	III
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5	D092-01	N	GEN PREP	8330A	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-Apr-2012	SL-009-NBZ-SS-0.0-0.5	D092-01	N	GEN PREP	8332	III
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5	D092-01	N	GEN PREP	9014	III
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5MS	D092-01G	MS	GEN PREP	7199	III
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5MS	D092-01G1	MS	GEN PREP	7199	III
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5MSD	D092-01H	MSD	GEN PREP	7199	III
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5MSD	D092-01H1	MSD	GEN PREP	7199	III
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5MS	D092-01M	MS	3550B	8015B EFH	III
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5MS	D092-01M	MS	3550B	8081A	III
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5MS	D092-01M	MS	3550B	8082	III
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5MS	D092-01M	MS	3550B	8270C	III
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5MS	D092-01M	MS	3550B	8270C SIM	III
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5MS	D092-01M	MS	7471A	7471A	III
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5MS	D092-01M	MS	GEN PREP	300.0	III
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5MS	D092-01M	MS	GEN PREP	314.0	III
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5MS	D092-01M	MS	GEN PREP	6020	III
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5MS	D092-01M	MS	GEN PREP	7199	III
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5MS	D092-01M	MS	GEN PREP	8151A	III
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5MS	D092-01M	MS	GEN PREP	8330A	III
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5MS	D092-01M	MS	GEN PREP	8332	III
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5MS	D092-01M	MS	GEN PREP	9014	III
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5MS	D092-01M1	MS	GEN PREP	7199	III
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5	D092-01R	N	GEN PREP	300.0	III
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5	D092-01R	N	GEN PREP	7199	III
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5MSD	D092-01S	MSD	3550B	8015B EFH	III
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5MSD	D092-01S	MSD	3550B	8081A	III
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5MSD	D092-01S	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
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5MSD	D092-01S	MSD	3550B	8270C	III
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5MSD	D092-01S	MSD	3550B	8270C SIM	III
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5MSD	D092-01S	MSD	7471A	7471A	III
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5MSD	D092-01S	MSD	GEN PREP	300.0	III
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5MSD	D092-01S	MSD	GEN PREP	314.0	III
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5MSD	D092-01S	MSD	GEN PREP	6020	III
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5MSD	D092-01S	MSD	GEN PREP	7199	III
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5MSD	D092-01S	MSD	GEN PREP	8151A	III
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5MSD	D092-01S	MSD	GEN PREP	8330A	III
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5MSD	D092-01S	MSD	GEN PREP	8332	III
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5MSD	D092-01S	MSD	GEN PREP	9014	III
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5MSD	D092-01S1	MSD	GEN PREP	7199	III
10-Apr-2012	SL-009-NBZ-SS-0.0-0.5	D092-01W	N	GEN PREP	6020	III
10-Apr-2012	SL-186-NBZ-SS-0.0-0.5	D092-04	N	3550B	8081A	III
10-Apr-2012	SL-186-NBZ-SS-0.0-0.5	D092-04	N	3550B	8082	III
10-Apr-2012	SL-186-NBZ-SS-0.0-0.5	D092-04	N	3550B	8270C	III
10-Apr-2012	SL-186-NBZ-SS-0.0-0.5	D092-04	N	3550B	8270C SIM	III
10-Apr-2012	SL-186-NBZ-SS-0.0-0.5	D092-04	N	7471A	7471A	III
10-Apr-2012	SL-186-NBZ-SS-0.0-0.5	D092-04	N	GEN PREP	300.0	III
10-Apr-2012	SL-186-NBZ-SS-0.0-0.5	D092-04	N	GEN PREP	314.0	III
10-Apr-2012	SL-186-NBZ-SS-0.0-0.5	D092-04	N	GEN PREP	7199	III
10-Apr-2012	SL-186-NBZ-SS-0.0-0.5	D092-04	N	GEN PREP	8151A	III
10-Apr-2012	SL-186-NBZ-SS-0.0-0.5	D092-04R	N	GEN PREP	7199	III
10-Apr-2012	SL-186-NBZ-SS-0.0-0.5	D092-04W	N	GEN PREP	6020	III
10-Apr-2012	SL-084-NBZ-SS-0.0-0.5	D092-02	N	3550B	8015B EFH	III
10-Apr-2012	SL-084-NBZ-SS-0.0-0.5	D092-02	N	3550B	8081A	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-Apr-2012	SL-084-NBZ-SS-0.0-0.5	D092-02	N	3550B	8082	III
10-Apr-2012	SL-084-NBZ-SS-0.0-0.5	D092-02	N	3550B	8270C	III
10-Apr-2012	SL-084-NBZ-SS-0.0-0.5	D092-02	N	3550B	8270C SIM	III
10-Apr-2012	SL-084-NBZ-SS-0.0-0.5	D092-02	N	7471A	7471A	III
10-Apr-2012	SL-084-NBZ-SS-0.0-0.5	D092-02	N	GEN PREP	300.0	III
10-Apr-2012	SL-084-NBZ-SS-0.0-0.5	D092-02	N	GEN PREP	314.0	III
10-Apr-2012	SL-084-NBZ-SS-0.0-0.5	D092-02	N	GEN PREP	7199	III
10-Apr-2012	SL-084-NBZ-SS-0.0-0.5	D092-02	N	GEN PREP	8151A	III
10-Apr-2012	SL-084-NBZ-SS-0.0-0.5	D092-02	N	GEN PREP	8330A	III
10-Apr-2012	SL-084-NBZ-SS-0.0-0.5	D092-02	N	GEN PREP	8332	III
10-Apr-2012	SL-084-NBZ-SS-0.0-0.5	D092-02	N	GEN PREP	9014	III
10-Apr-2012	SL-084-NBZ-SS-0.0-0.5	D092-02R	N	GEN PREP	7199	III
10-Apr-2012	SL-084-NBZ-SS-0.0-0.5	D092-02W	N	GEN PREP	6020	III
10-Apr-2012	SL-085-NBZ-SS-0.0-0.5	D092-03	N	3550B	8015B EFH	III
10-Apr-2012	SL-085-NBZ-SS-0.0-0.5	D092-03	N	3550B	8081A	III
10-Apr-2012	SL-085-NBZ-SS-0.0-0.5	D092-03	N	3550B	8082	III
10-Apr-2012	SL-085-NBZ-SS-0.0-0.5	D092-03	N	3550B	8270C	III
10-Apr-2012	SL-085-NBZ-SS-0.0-0.5	D092-03	N	3550B	8270C SIM	III
10-Apr-2012	SL-085-NBZ-SS-0.0-0.5	D092-03	N	7471A	7471A	III
10-Apr-2012	SL-085-NBZ-SS-0.0-0.5	D092-03	N	GEN PREP	300.0	III
10-Apr-2012	SL-085-NBZ-SS-0.0-0.5	D092-03	N	GEN PREP	314.0	III
10-Apr-2012	SL-085-NBZ-SS-0.0-0.5	D092-03	N	GEN PREP	7199	III
10-Apr-2012	SL-085-NBZ-SS-0.0-0.5	D092-03	N	GEN PREP	8151A	III
10-Apr-2012	SL-085-NBZ-SS-0.0-0.5	D092-03	N	GEN PREP	8330A	III
10-Apr-2012	SL-085-NBZ-SS-0.0-0.5	D092-03	N	GEN PREP	8332	III
10-Apr-2012	SL-085-NBZ-SS-0.0-0.5	D092-03	N	GEN PREP	9014	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-Apr-2012	SL-085-NBZ-SS-0.0-0.5	D092-03R	N	GEN PREP	7199	III
10-Apr-2012	SL-085-NBZ-SS-0.0-0.5	D092-03W	N	GEN PREP	6020	III
10-Apr-2012	SL-188-NBZ-SS-0.0-0.5	D092-06	N	3550B	8081A	III
10-Apr-2012	SL-188-NBZ-SS-0.0-0.5	D092-06	N	3550B	8082	III
10-Apr-2012	SL-188-NBZ-SS-0.0-0.5	D092-06	N	3550B	8270C	III
10-Apr-2012	SL-188-NBZ-SS-0.0-0.5	D092-06	N	3550B	8270C SIM	III
10-Apr-2012	SL-188-NBZ-SS-0.0-0.5	D092-06	N	7471A	7471A	III
10-Apr-2012	SL-188-NBZ-SS-0.0-0.5	D092-06	N	GEN PREP	300.0	III
10-Apr-2012	SL-188-NBZ-SS-0.0-0.5	D092-06	N	GEN PREP	314.0	III
10-Apr-2012	SL-188-NBZ-SS-0.0-0.5	D092-06	N	GEN PREP	7199	III
10-Apr-2012	SL-188-NBZ-SS-0.0-0.5	D092-06	N	GEN PREP	8151A	III
10-Apr-2012	SL-188-NBZ-SS-0.0-0.5	D092-06R	N	GEN PREP	7199	III
10-Apr-2012	SL-188-NBZ-SS-0.0-0.5	D092-06W	N	GEN PREP	6020	III
10-Apr-2012	SL-177-NBZ-SS-0.0-0.5	D092-05	N	3550B	8081A	III
10-Apr-2012	SL-177-NBZ-SS-0.0-0.5	D092-05	N	3550B	8082	III
10-Apr-2012	SL-177-NBZ-SS-0.0-0.5	D092-05	N	3550B	8270C	III
10-Apr-2012	SL-177-NBZ-SS-0.0-0.5	D092-05	N	3550B	8270C SIM	III
10-Apr-2012	SL-177-NBZ-SS-0.0-0.5	D092-05	N	7471A	7471A	III
10-Apr-2012	SL-177-NBZ-SS-0.0-0.5	D092-05	N	GEN PREP	300.0	III
10-Apr-2012	SL-177-NBZ-SS-0.0-0.5	D092-05	N	GEN PREP	314.0	III
10-Apr-2012	SL-177-NBZ-SS-0.0-0.5	D092-05	N	GEN PREP	7199	III
10-Apr-2012	SL-177-NBZ-SS-0.0-0.5	D092-05	N	GEN PREP	8151A	III
10-Apr-2012	SL-177-NBZ-SS-0.0-0.5	D092-05R	N	GEN PREP	7199	III
10-Apr-2012	SL-177-NBZ-SS-0.0-0.5	D092-05W	N	GEN PREP	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: 12D092 Laboratory: EMXT

EDD Filename: 12D092R eQAPP Name: CDM_SSFL_120730_EMAX

Method Category: GENCHEM

Method: 300.0 Matrix: SO

Sample ID: DUP-07-NBZ-QC-041012 *Collected:* 4/10/2012 9:25:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORIDE	0.742	J	0.574	MDL	1.15	PQL	MG/KG	J	Z

Sample ID: SL-009-NBZ-SS-0.0-0.5 *Collected:* 4/10/2012 9:30:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORIDE	0.788	J	0.579	MDL	1.16	PQL	MG/KG	J	Z

Sample ID: SL-085-NBZ-SS-0.0-0.5 *Collected:* 4/10/2012 2:02:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORIDE	0.965	J	0.591	MDL	1.18	PQL	MG/KG	J	Z

Method Category: GENCHEM

Method: 9014 Matrix: SO

Sample ID: DUP-07-NBZ-QC-041012 *Collected:* 4/10/2012 9:25:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CYANIDE	0.294	J	0.287	MDL	0.574	PQL	MG/KG	J	Z

Sample ID: SL-009-NBZ-SS-0.0-0.5 *Collected:* 4/10/2012 9:30:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CYANIDE	0.356	J	0.289	MDL	0.579	PQL	MG/KG	J	Z

Sample ID: SL-084-NBZ-SS-0.0-0.5 *Collected:* 4/10/2012 11:10:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CYANIDE	0.499	J	0.292	MDL	0.584	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12D092 **Laboratory:** EMXT

EDD Filename: 12D092R **eQAPP Name:** CDM_SSFL_120730_EMAX

Method Category: METALS

Method: 6020 **Matrix:** SO

Sample ID: DUP-07-NBZ-QC-041012 *Collected:* 4/10/2012 9:25:00 *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	0.164	J	0.115	MDL	0.230	PQL	MG/KG	J	Z
SILVER	0.0909	J	0.0574	MDL	0.115	PQL	MG/KG	J	Z
SODIUM	69.5	J	57.4	MDL	115	PQL	MG/KG	J	Z
Zirconium	5.74	U	2.87	MDL	5.74	PQL	MG/KG	UJ	Q

Sample ID: SL-009-NBZ-SS-0.0-0.5 *Collected:* 4/10/2012 9:30:00 *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	0.186	J	0.116	MDL	0.231	PQL	MG/KG	J	Z
SILVER	0.0901	J	0.0579	MDL	0.116	PQL	MG/KG	J	Z
SODIUM	70.0	J	57.9	MDL	116	PQL	MG/KG	J	Z
Zirconium	5.79	U	2.89	MDL	5.79	PQL	MG/KG	UJ	Q

Sample ID: SL-084-NBZ-SS-0.0-0.5 *Collected:* 4/10/2012 11:10:00 *Analysis Type:* RES/TOT *Dilution:* 1.00

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.286	J	0.234	MDL	0.467	PQL	MG/KG	J	Z
SILVER	0.0730	J	0.0584	MDL	0.117	PQL	MG/KG	J	Z
SODIUM	82.8	J	58.4	MDL	117	PQL	MG/KG	J	Z
Zirconium	5.84	U	2.92	MDL	5.84	PQL	MG/KG	UJ	Q

Sample ID: SL-085-NBZ-SS-0.0-0.5 *Collected:* 4/10/2012 2:02:00 *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	0.219	J	0.114	MDL	0.228	PQL	MG/KG	J	Z
SODIUM	86.8	J	57.1	MDL	114	PQL	MG/KG	J	Z
Zirconium	5.71	U	2.85	MDL	5.71	PQL	MG/KG	UJ	Q

Sample ID: SL-177-NBZ-SS-0.0-0.5 *Collected:* 4/10/2012 3:10:00 *Analysis Type:* RES/TOT *Dilution:* 0.995

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Zirconium	5.26	U	2.63	MDL	5.26	PQL	MG/KG	UJ	Q

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12D092 **Laboratory: EMXT**

EDD Filename: 12D092R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: SL-186-NBZ-SS-0.0-0.5 *Collected:* 4/10/2012 10:40:00 *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	0.127	J	0.108	MDL	0.216	PQL	MG/KG	J	Z
Zirconium	5.41	U	2.70	MDL	5.41	PQL	MG/KG	UJ	Q

Sample ID: SL-188-NBZ-SS-0.0-0.5 *Collected:* 4/10/2012 2:49:00 *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	0.169	J	0.107	MDL	0.214	PQL	MG/KG	J	Z
SELENIUM	0.218	J	0.214	MDL	0.428	PQL	MG/KG	J	Z
SILVER	0.0613	J	0.0536	MDL	0.107	PQL	MG/KG	J	Z
Zirconium	5.36	U	2.68	MDL	5.36	PQL	MG/KG	UJ	Q

Method Category: METALS

Method: 7471A **Matrix: SO**

Sample ID: DUP-07-NBZ-QC-041012 *Collected:* 4/10/2012 9:25:00 *Analysis Type:* RES/TOT *Dilution:* 0.993

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.102	J	0.0570	MDL	0.114	PQL	MG/KG	J	Z

Sample ID: SL-009-NBZ-SS-0.0-0.5 *Collected:* 4/10/2012 9:30:00 *Analysis Type:* RES/TOT *Dilution:* 1.00

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0631	J	0.0579	MDL	0.116	PQL	MG/KG	J	Z

Sample ID: SL-084-NBZ-SS-0.0-0.5 *Collected:* 4/10/2012 11:10:00 *Analysis Type:* RES/TOT *Dilution:* 0.997

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0584	J	0.0582	MDL	0.116	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12D092 **Laboratory: EMXT**

EDD Filename: 12D092R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

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

Sample ID: DUP-07-NBZ-QC-041012 *Collected:* 4/10/2012 9:25:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH(C8-C11)	1.1	U	0.57	MDL	1.1	PQL	MG/KG	UJ	FD

Sample ID: SL-009-NBZ-SS-0.0-0.5 *Collected:* 4/10/2012 9:30:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH(C8-C11)	0.65	J	0.58	MDL	1.2	PQL	MG/KG	J	Z, FD

Sample ID: SL-085-NBZ-SS-0.0-0.5 *Collected:* 4/10/2012 2:02:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH(C8-C11)	0.63	J	0.59	MDL	1.2	PQL	MG/KG	J	Z

Method Category: SVOA

Method: 8081A **Matrix: SO**

Sample ID: DUP-07-NBZ-QC-041012 *Collected:* 4/10/2012 9:25:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ENDRIN ALDEHYDE	1.3		0.20	MDL	0.39	PQL	UG/KG	J	FD
HEPTACHLOR EPOXIDE	0.66		0.098	MDL	0.20	PQL	UG/KG	J	FD

Sample ID: SL-009-NBZ-SS-0.0-0.5 *Collected:* 4/10/2012 9:30:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ENDRIN ALDEHYDE	0.39	U	0.20	MDL	0.39	PQL	UG/KG	UJ	FD
HEPTACHLOR EPOXIDE	0.20	U	0.098	MDL	0.20	PQL	UG/KG	UJ	FD

Sample ID: SL-085-NBZ-SS-0.0-0.5 *Collected:* 4/10/2012 2:02:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDT	0.26	J	0.20	MDL	0.40	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12D092 **Laboratory: EMXT**

EDD Filename: 12D092R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: SVOA

Method: 8081A **Matrix: SO**

Sample ID: SL-186-NBZ-SS-0.0-0.5 *Collected:* 4/10/2012 10:40:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDE	0.22	J	0.18	MDL	0.37	PQL	UG/KG	J	Z

Method Category: SVOA

Method: 8270C **Matrix: SO**

Sample ID: SL-009-NBZ-SS-0.0-0.5 *Collected:* 4/10/2012 9:30:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZIDINE	960	U	490	MDL	960	PQL	UG/KG	R	Q

Method Category: SVOA

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

Sample ID: DUP-07-NBZ-QC-041012 *Collected:* 4/10/2012 9:25:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)ANTHRACENE	0.99	J	0.98	MDL	2.0	PQL	UG/KG	J	Z, FD
BENZO(B)FLUORANTHENE	1.5	J	0.98	MDL	2.0	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	1.2	J	0.98	MDL	2.0	PQL	UG/KG	J	Z
BENZO(K)FLUORANTHENE	2.0	U	0.98	MDL	2.0	PQL	UG/KG	UJ	FD
BIS(2-ETHYLHEXYL)PHTHALATE	18	J	9.6	MDL	19	PQL	UG/KG	J	Z
CHRYSENE	2.0	U	0.98	MDL	2.0	PQL	UG/KG	UJ	FD
DIBENZO(A,H)ANTHRACENE	2.0	U	0.98	MDL	2.0	PQL	UG/KG	UJ	FD
FLUORANTHENE	1.4	J	0.98	MDL	2.0	PQL	UG/KG	J	Z
FLUORENE	1.7	J	0.98	MDL	2.0	PQL	UG/KG	J	Z, FD
PHENANTHRENE	1.0	J	0.98	MDL	2.0	PQL	UG/KG	J	Z
PYRENE	1.3	J	0.98	MDL	2.0	PQL	UG/KG	J	Z

Sample ID: SL-009-NBZ-SS-0.0-0.5 *Collected:* 4/10/2012 9:30:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)ANTHRACENE	1.7	J	0.98	MDL	2.0	PQL	UG/KG	J	Z, FD
BENZO(B)FLUORANTHENE	1.8	J	0.98	MDL	2.0	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	1.4	J	0.98	MDL	2.0	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12D092 **Laboratory:** EMXT

EDD Filename: 12D092R **eQAPP Name:** CDM_SSFL_120730_EMAX

Method Category: SVOA

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

Sample ID: SL-009-NBZ-SS-0.0-0.5 *Collected:* 4/10/2012 9:30:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(K)FLUORANTHENE	1.4	J	0.98	MDL	2.0	PQL	UG/KG	J	Z, FD
BIS(2-ETHYLHEXYL)PHTHALATE	18	J	9.7	MDL	19	PQL	UG/KG	J	Z
CHRYSENE	1.6	J	0.98	MDL	2.0	PQL	UG/KG	J	Z, FD
DIBENZO(A,H)ANTHRACENE	1.1	J	0.98	MDL	2.0	PQL	UG/KG	J	Z, FD
FLUORANTHENE	1.6	J	0.98	MDL	2.0	PQL	UG/KG	J	Z
FLUORENE	2.0	U	0.98	MDL	2.0	PQL	UG/KG	UJ	FD
PHENANTHRENE	1.2	J	0.98	MDL	2.0	PQL	UG/KG	J	Z
PYRENE	1.5	J	0.98	MDL	2.0	PQL	UG/KG	J	Z

Sample ID: SL-084-NBZ-SS-0.0-0.5 *Collected:* 4/10/2012 11:10:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(K)FLUORANTHENE	1.8	J	0.99	MDL	2.0	PQL	UG/KG	J	Z
NAPHTHALENE	1.0	J	0.99	MDL	2.0	PQL	UG/KG	J	Z
PHENANTHRENE	1.8	J	0.99	MDL	2.0	PQL	UG/KG	J	Z

Sample ID: SL-085-NBZ-SS-0.0-0.5 *Collected:* 4/10/2012 2:02:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)ANTHRACENE	1.2	J	1.0	MDL	2.0	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	1.5	J	1.0	MDL	2.0	PQL	UG/KG	J	Z
CHRYSENE	1.3	J	1.0	MDL	2.0	PQL	UG/KG	J	Z
PHENANTHRENE	1.6	J	1.0	MDL	2.0	PQL	UG/KG	J	Z

Sample ID: SL-177-NBZ-SS-0.0-0.5 *Collected:* 4/10/2012 3:10:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(B)FLUORANTHENE	1.2	J	0.90	MDL	1.8	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	1.2	J	0.90	MDL	1.8	PQL	UG/KG	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	17	J	8.9	MDL	18	PQL	UG/KG	J	Z
FLUORANTHENE	1.3	J	0.90	MDL	1.8	PQL	UG/KG	J	Z
PYRENE	1.1	J	0.90	MDL	1.8	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12D092 **Laboratory:** EMXT

EDD Filename: 12D092R **eQAPP Name:** CDM_SSFL_120730_EMAX

Method Category: SVOA

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

Sample ID: SL-186-NBZ-SS-0.0-0.5 *Collected:* 4/10/2012 10:40:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(G,H,I)PERYLENE	1.1	J	0.92	MDL	1.8	PQL	UG/KG	J	Z
CHRYSENE	0.96	J	0.92	MDL	1.8	PQL	UG/KG	J	Z
FLUORANTHENE	1.2	J	0.92	MDL	1.8	PQL	UG/KG	J	Z
PYRENE	0.96	J	0.92	MDL	1.8	PQL	UG/KG	J	Z

Sample ID: SL-188-NBZ-SS-0.0-0.5 *Collected:* 4/10/2012 2:49:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(G,H,I)PERYLENE	1.6	J	0.91	MDL	1.8	PQL	UG/KG	J	Z
Butylbenzylphthalate	12	J	9.0	MDL	18	PQL	UG/KG	J	Z
CHRYSENE	1.2	J	0.91	MDL	1.8	PQL	UG/KG	J	Z
Di-n-octylphthalate	17	J	9.0	MDL	18	PQL	UG/KG	J	Z
FLUORANTHENE	1.4	J	0.91	MDL	1.8	PQL	UG/KG	J	Z

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: 12D092 **Laboratory: EMXT**

EDD Filename: 12D092R **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
Q	Matrix Spike Upper Estimation
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Enclosure I

Level III ADR Outliers
(including Manual Review Outliers)

Quality Control
Outlier Reports

12D092

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 12D092

Laboratory: EMXT

EDD Filename: 12D092R

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-009-NBZ-SS-0.0-0.5MS (TOT) (DUP-07-NBZ-QC-041012 SL-009-NBZ-SS-0.0-0.5 SL-084-NBZ-SS-0.0-0.5 SL-085-NBZ-SS-0.0-0.5 SL-177-NBZ-SS-0.0-0.5 SL-186-NBZ-SS-0.0-0.5 SL-188-NBZ-SS-0.0-0.5)	MANGANESE	263	-	75.00-125.00	-	MANGANESE	No Qual, >4x
SL-009-NBZ-SS-0.0-0.5MS (TOT) **SL-009-NBZ-SS-0.0-0.5MSD (TOT)** (DUP-07-NBZ-QC-041012 SL-009-NBZ-SS-0.0-0.5 SL-084-NBZ-SS-0.0-0.5 SL-085-NBZ-SS-0.0-0.5 SL-177-NBZ-SS-0.0-0.5 SL-186-NBZ-SS-0.0-0.5 SL-188-NBZ-SS-0.0-0.5)	TITANIUM Zirconium	63 46	263 50	75.00-125.00 75.00-125.00	- -	TITANIUM Zirconium	J(all detects) UJ(all non-detects) Ti, No Qual,>4x

Method: 8270C
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-009-NBZ-SS-0.0-0.5MS **SL-009-NBZ-SS-0.0-0.5MSD** (SL-009-NBZ-SS-0.0-0.5)	BENZIDINE	0	0	10.00-150.00	-	BENZIDINE	J(all detects) R(all non-detects)

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Field Duplicate RPD Report

Lab Reporting Batch ID: 12D092 **Laboratory: EMXT**

EDD Filename: 12D092R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 300.0
Matrix: SO

Analyte	Concentration (MG/KG)		Sample RPD	eQAPP RPD	Flag
	SL-009-NBZ-SS-0.0-0.5	DUP-07-NBZ-QC-041012			
FLUORIDE	0.788	0.742	6	50.00	No Qualifiers Applied
Nitrate-NO3	6.36	6.39	0	50.00	

Method: 6020
Matrix: SO

Analyte	Concentration (MG/KG)		Sample RPD	eQAPP RPD	Flag
	SL-009-NBZ-SS-0.0-0.5 (TOT)	DUP-07-NBZ-QC-041012 (TOT)			
ALUMINUM	10500	9530	10	50.00	No Qualifiers Applied
ANTIMONY	0.186	0.164	13	50.00	
ARSENIC	16.2	14.4	12	50.00	
BARIUM	96.8	89.7	8	50.00	
BERYLLIUM	0.390	0.347	12	50.00	
CADMIUM	0.257	0.251	2	50.00	
CALCIUM	3250	3190	2	50.00	
CHROMIUM	13.1	12.3	6	50.00	
COBALT	4.65	4.33	7	50.00	
COPPER	7.92	7.33	8	50.00	
IRON	17100	16000	7	50.00	
LEAD	9.42	8.84	6	50.00	
LITHIUM	23.6	22.1	7	50.00	
MAGNESIUM	4660	4150	12	50.00	
MANGANESE	285	263	8	50.00	
MOLYBDENUM	0.389	0.388	0	50.00	
NICKEL	9.51	8.73	9	50.00	
PHOSPHORUS	550	488	12	50.00	
POTASSIUM	3920	3530	10	50.00	
SILVER	0.0901	0.0909	1	50.00	
SODIUM	70.0	69.5	1	50.00	
STRONTIUM	17.0	16.9	1	50.00	
THALLIUM	0.229	0.214	7	50.00	
TITANIUM	878	806	9	50.00	
VANADIUM	27.8	25.7	8	50.00	
ZINC	66.9	61.5	8	50.00	

Method: 7471A
Matrix: SO

Analyte	Concentration (MG/KG)		Sample RPD	eQAPP RPD	Flag
	SL-009-NBZ-SS-0.0-0.5 (TOT)	DUP-07-NBZ-QC-041012 (TOT)			
MERCURY	0.0631	0.102	47	50.00	No Qualifiers Applied

Method: 8015B EFH
Matrix: SO

Analyte	Concentration (MG/KG)		Sample RPD	eQAPP RPD	Flag
	SL-009-NBZ-SS-0.0-0.5	DUP-07-NBZ-QC-041012			
EFH(C15-C20)	2.1	2.5	17	50.00	No Qualifiers Applied
EFH(C21-C30)	20	17	16	50.00	
EFH(C30-C40)	35	34	3	50.00	
TOTAL EFH(C8-C40)	58	54	7	50.00	
EFH(C8-C11)	0.65	1.1 U	200	50.00	J(all detects) UJ(all non-detects)

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Field Duplicate RPD Report

Lab Reporting Batch ID: 12D092 **Laboratory: EMXT**

EDD Filename: 12D092R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 8081A
Matrix: SO

Analyte	Concentration (UG/KG)		Sample RPD	eQAPP RPD	Flag
	SL-009-NBZ-SS-0.0-0.5	DUP-07-NBZ-QC-041012			
4,4'-DDE	1.5	2.0	29	50.00	No Qualifiers Applied
ENDRIN ALDEHYDE	0.39 U	1.3	200	50.00	J(all detects)
HEPTACHLOR EPOXIDE	0.20 U	0.66	200	50.00	UJ(all non-detects)

Method: 8082
Matrix: SO

Analyte	Concentration (UG/KG)		Sample RPD	eQAPP RPD	Flag
	SL-009-NBZ-SS-0.0-0.5	DUP-07-NBZ-QC-041012			
AROCLOR 1254	41	30	31	50.00	No Qualifiers Applied

Method: 8270C SIM
Matrix: SO

Analyte	Concentration (UG/KG)		Sample RPD	eQAPP RPD	Flag
	SL-009-NBZ-SS-0.0-0.5	DUP-07-NBZ-QC-041012			
BENZO(B)FLUORANTHENE	1.8	1.5	18	50.00	No Qualifiers Applied
BENZO(G,H,I)PERYLENE	1.4	1.2	15	50.00	
BIS(2-ETHYLHEXYL)PHTHALATE	18	18	0	50.00	
FLUORANTHENE	1.6	1.4	13	50.00	
PHENANTHRENE	1.2	1.0	18	50.00	
PYRENE	1.5	1.3	14	50.00	
BENZO(A)ANTHRACENE	1.7	0.99	53	50.00	J(all detects) UJ(all non-detects)
BENZO(K)FLUORANTHENE	1.4	2.0 U	200	50.00	
CHRYSENE	1.6	2.0 U	200	50.00	
DIBENZO(A,H)ANTHRACENE	1.1	2.0 U	200	50.00	
FLUORENE	2.0 U	1.7	200	50.00	

Method: 9014
Matrix: SO

Analyte	Concentration (MG/KG)		Sample RPD	eQAPP RPD	Flag
	SL-009-NBZ-SS-0.0-0.5	DUP-07-NBZ-QC-041012			
CYANIDE	0.356	0.294	19	50.00	No Qualifiers Applied

Method: 9045D
Matrix: SO

Analyte	Concentration (PH UNIT)		Sample RPD	eQAPP RPD	Flag
	SL-009-NBZ-SS-0.0-0.5	DUP-07-NBZ-QC-041012			
PH	7.14	7.03	2		No Qualifiers Applied

Reporting Limit Outliers

Lab Reporting Batch ID: 12D092 **Laboratory: EMXT**

EDD Filename: 12D092R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 300.0
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
DUP-07-NBZ-QC-041012	FLUORIDE	J	0.742	1.15	PQL	MG/KG	J (all detects)
SL-009-NBZ-SS-0.0-0.5	FLUORIDE	J	0.788	1.16	PQL	MG/KG	J (all detects)
SL-085-NBZ-SS-0.0-0.5	FLUORIDE	J	0.965	1.18	PQL	MG/KG	J (all detects)

Method: 6020
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
DUP-07-NBZ-QC-041012	ANTIMONY	J	0.164	0.230	PQL	MG/KG	J (all detects)
	SILVER	J	0.0909	0.115	PQL	MG/KG	
	SODIUM	J	69.5	115	PQL	MG/KG	
SL-009-NBZ-SS-0.0-0.5	ANTIMONY	J	0.186	0.231	PQL	MG/KG	J (all detects)
	SILVER	J	0.0901	0.116	PQL	MG/KG	
	SODIUM	J	70.0	116	PQL	MG/KG	
SL-084-NBZ-SS-0.0-0.5	SELENIUM	J	0.286	0.467	PQL	MG/KG	J (all detects)
	SILVER	J	0.0730	0.117	PQL	MG/KG	
	SODIUM	J	82.8	117	PQL	MG/KG	
SL-085-NBZ-SS-0.0-0.5	ANTIMONY	J	0.219	0.228	PQL	MG/KG	J (all detects)
	SODIUM	J	86.8	114	PQL	MG/KG	
SL-186-NBZ-SS-0.0-0.5	ANTIMONY	J	0.127	0.216	PQL	MG/KG	J (all detects)
SL-188-NBZ-SS-0.0-0.5	ANTIMONY	J	0.169	0.214	PQL	MG/KG	J (all detects)
	SELENIUM	J	0.218	0.428	PQL	MG/KG	
	SILVER	J	0.0613	0.107	PQL	MG/KG	

Method: 7471A
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
DUP-07-NBZ-QC-041012	MERCURY	J	0.102	0.114	PQL	MG/KG	J (all detects)
SL-009-NBZ-SS-0.0-0.5	MERCURY	J	0.0631	0.116	PQL	MG/KG	J (all detects)
SL-084-NBZ-SS-0.0-0.5	MERCURY	J	0.0584	0.116	PQL	MG/KG	J (all detects)

Method: 8015B EFH
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-009-NBZ-SS-0.0-0.5	EFH(C8-C11)	J	0.65	1.2	PQL	MG/KG	J (all detects)
SL-085-NBZ-SS-0.0-0.5	EFH(C8-C11)	J	0.63	1.2	PQL	MG/KG	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: 12D092 **Laboratory: EMXT**

EDD Filename: 12D092R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: 8081A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-085-NBZ-SS-0.0-0.5	4,4'-DDT	J	0.26	0.40	PQL	UG/KG	J (all detects)
SL-186-NBZ-SS-0.0-0.5	4,4'-DDE	J	0.22	0.37	PQL	UG/KG	J (all detects)

Method: 8270C SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
DUP-07-NBZ-QC-041012	BENZO(A)ANTHRACENE	J	0.99	2.0	PQL	UG/KG	J (all detects)
	BENZO(B)FLUORANTHENE	J	1.5	2.0	PQL	UG/KG	
	BENZO(G,H,I)PERYLENE	J	1.2	2.0	PQL	UG/KG	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	18	19	PQL	UG/KG	
	FLUORANTHENE	J	1.4	2.0	PQL	UG/KG	
	FLUORENE	J	1.7	2.0	PQL	UG/KG	
	PHENANTHRENE	J	1.0	2.0	PQL	UG/KG	
	PYRENE	J	1.3	2.0	PQL	UG/KG	
SL-009-NBZ-SS-0.0-0.5	BENZO(A)ANTHRACENE	J	1.7	2.0	PQL	UG/KG	J (all detects)
	BENZO(B)FLUORANTHENE	J	1.8	2.0	PQL	UG/KG	
	BENZO(G,H,I)PERYLENE	J	1.4	2.0	PQL	UG/KG	
	BENZO(K)FLUORANTHENE	J	1.4	2.0	PQL	UG/KG	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	18	19	PQL	UG/KG	
	CHRYSENE	J	1.6	2.0	PQL	UG/KG	
	DIBENZO(A,H)ANTHRACENE	J	1.1	2.0	PQL	UG/KG	
	FLUORANTHENE	J	1.6	2.0	PQL	UG/KG	
	PHENANTHRENE	J	1.2	2.0	PQL	UG/KG	
	PYRENE	J	1.5	2.0	PQL	UG/KG	
SL-084-NBZ-SS-0.0-0.5	BENZO(K)FLUORANTHENE	J	1.8	2.0	PQL	UG/KG	J (all detects)
	NAPHTHALENE	J	1.0	2.0	PQL	UG/KG	
	PHENANTHRENE	J	1.8	2.0	PQL	UG/KG	
SL-085-NBZ-SS-0.0-0.5	BENZO(A)ANTHRACENE	J	1.2	2.0	PQL	UG/KG	J (all detects)
	BENZO(G,H,I)PERYLENE	J	1.5	2.0	PQL	UG/KG	
	CHRYSENE	J	1.3	2.0	PQL	UG/KG	
	PHENANTHRENE	J	1.6	2.0	PQL	UG/KG	
SL-177-NBZ-SS-0.0-0.5	BENZO(B)FLUORANTHENE	J	1.2	1.8	PQL	UG/KG	J (all detects)
	BENZO(G,H,I)PERYLENE	J	1.2	1.8	PQL	UG/KG	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	17	18	PQL	UG/KG	
	FLUORANTHENE	J	1.3	1.8	PQL	UG/KG	
	PYRENE	J	1.1	1.8	PQL	UG/KG	
SL-186-NBZ-SS-0.0-0.5	BENZO(G,H,I)PERYLENE	J	1.1	1.8	PQL	UG/KG	J (all detects)
	CHRYSENE	J	0.96	1.8	PQL	UG/KG	
	FLUORANTHENE	J	1.2	1.8	PQL	UG/KG	
	PYRENE	J	0.96	1.8	PQL	UG/KG	
SL-188-NBZ-SS-0.0-0.5	BENZO(G,H,I)PERYLENE	J	1.6	1.8	PQL	UG/KG	J (all detects)
	Butylbenzylphthalate	J	12	18	PQL	UG/KG	
	CHRYSENE	J	1.2	1.8	PQL	UG/KG	
	Di-n-octylphthalate	J	17	18	PQL	UG/KG	
	FLUORANTHENE	J	1.4	1.8	PQL	UG/KG	

Reporting Limit Outliers

Lab Reporting Batch ID: 12D092 **Laboratory: EMXT**

EDD Filename: 12D092R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method: **9014**

Matrix: **SO**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
DUP-07-NBZ-QC-041012	CYANIDE	J	0.294	0.574	PQL	MG/KG	J (all detects)
SL-009-NBZ-SS-0.0-0.5	CYANIDE	J	0.356	0.579	PQL	MG/KG	J (all detects)
SL-084-NBZ-SS-0.0-0.5	CYANIDE	J	0.499	0.584	PQL	MG/KG	J (all detects)

LDC #: 28255S4
SDG #: 12D092
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 8-29-12
Page: 1 of 1
Reviewer: CL
2nd Reviewer: W

METHOD: Metals (EPA SW 846 Method ~~6010B~~/6020A/~~7000~~ 7471A)

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

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 4/10/12
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) *
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	—	

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-009-NBZ-SS-0.0-0.5	11		21		31	
2	SL-084-NBZ-SS-0.0-0.5	12		22		32	
3	SL-085-NBZ-SS-0.0-0.5	13		23		33	
4	SL-186-NBZ-SS-0.0-0.5	14		24		34	
5	SL-177-NBZ-SS-0.0-0.5	15		25		35	
6	SL-188-NBZ-SS-0.0-0.5	16		26		36	
7	DUP-07-NBZ-QC-041012	17		27		37	
8	SL-009-NBZ-SS-0.0-0.5MS	18		28		38	
9	SL-009-NBZ-SS-0.0-0.5MSD	19		29		39	
10		20		30		40	

Notes: * 2nd MSD in batch from 12D084 (Zr quals all in batch)

SAMPLE DELIVERY GROUP

12D106

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-Apr-2012	SL-004-NBZ-SS-0.0-0.5	D106-01	N	3550B	8015B EFH	III
11-Apr-2012	SL-004-NBZ-SS-0.0-0.5	D106-01	N	3550B	8081A	III
11-Apr-2012	SL-004-NBZ-SS-0.0-0.5	D106-01	N	3550B	8082	III
11-Apr-2012	SL-004-NBZ-SS-0.0-0.5	D106-01	N	3550B	8270C	III
11-Apr-2012	SL-004-NBZ-SS-0.0-0.5	D106-01	N	3550B	8270C SIM	III
11-Apr-2012	SL-004-NBZ-SS-0.0-0.5	D106-01	N	7471A	7471A	III
11-Apr-2012	SL-004-NBZ-SS-0.0-0.5	D106-01	N	GEN PREP	300.0	III
11-Apr-2012	SL-004-NBZ-SS-0.0-0.5	D106-01	N	GEN PREP	314.0	III
11-Apr-2012	SL-004-NBZ-SS-0.0-0.5	D106-01	N	GEN PREP	7199	III
11-Apr-2012	SL-004-NBZ-SS-0.0-0.5	D106-01	N	GEN PREP	8151A	III
11-Apr-2012	SL-004-NBZ-SS-0.0-0.5	D106-01	N	GEN PREP	8330A	III
11-Apr-2012	SL-004-NBZ-SS-0.0-0.5	D106-01	N	GEN PREP	8332	III
11-Apr-2012	SL-004-NBZ-SS-0.0-0.5	D106-01	N	GEN PREP	9014	III
11-Apr-2012	SL-004-NBZ-SS-0.0-0.5DUP	D106-01D	DUP	GEN PREP	7199	III
11-Apr-2012	SL-004-NBZ-SS-0.0-0.5MS	D106-01G	MS	GEN PREP	7199	III
11-Apr-2012	SL-004-NBZ-SS-0.0-0.5MS	D106-01G1	MS	GEN PREP	7199	III
11-Apr-2012	SL-004-NBZ-SS-0.0-0.5MS	D106-01M	MS	GEN PREP	7199	III
11-Apr-2012	SL-004-NBZ-SS-0.0-0.5MS	D106-01M1	MS	GEN PREP	7199	III
11-Apr-2012	SL-004-NBZ-SS-0.0-0.5	D106-01R	N	GEN PREP	7199	III
11-Apr-2012	SL-004-NBZ-SS-0.0-0.5	D106-01W	N	GEN PREP	6020	III
11-Apr-2012	SL-004-NBZ-SS-0.0-0.5DUP	D106-01Z	DUP	GEN PREP	7199	III
11-Apr-2012	SL-168-NBZ-SS-0.0-0.5	D106-06	N	3550B	8081A	III
11-Apr-2012	SL-168-NBZ-SS-0.0-0.5	D106-06	N	3550B	8082	III
11-Apr-2012	SL-168-NBZ-SS-0.0-0.5	D106-06	N	3550B	8270C	III
11-Apr-2012	SL-168-NBZ-SS-0.0-0.5	D106-06	N	3550B	8270C SIM	III
11-Apr-2012	SL-168-NBZ-SS-0.0-0.5	D106-06	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
11-Apr-2012	SL-168-NBZ-SS-0.0-0.5	D106-06	N	GEN PREP	300.0	III
11-Apr-2012	SL-168-NBZ-SS-0.0-0.5	D106-06	N	GEN PREP	314.0	III
11-Apr-2012	SL-168-NBZ-SS-0.0-0.5	D106-06	N	GEN PREP	7199	III
11-Apr-2012	SL-168-NBZ-SS-0.0-0.5	D106-06	N	GEN PREP	8151A	III
11-Apr-2012	SL-168-NBZ-SS-0.0-0.5MS	D106-06M	MS	3550B	8082	III
11-Apr-2012	SL-168-NBZ-SS-0.0-0.5	D106-06R	N	GEN PREP	7199	III
11-Apr-2012	SL-168-NBZ-SS-0.0-0.5MSD	D106-06S	MSD	3550B	8082	III
11-Apr-2012	SL-168-NBZ-SS-0.0-0.5	D106-06W	N	GEN PREP	6020	III
11-Apr-2012	SL-154-NBZ-SS-0.0-0.5	D106-04	N	3550B	8081A	III
11-Apr-2012	SL-154-NBZ-SS-0.0-0.5	D106-04	N	3550B	8082	III
11-Apr-2012	SL-154-NBZ-SS-0.0-0.5	D106-04	N	3550B	8270C	III
11-Apr-2012	SL-154-NBZ-SS-0.0-0.5	D106-04	N	3550B	8270C SIM	III
11-Apr-2012	SL-154-NBZ-SS-0.0-0.5	D106-04	N	7471A	7471A	III
11-Apr-2012	SL-154-NBZ-SS-0.0-0.5	D106-04	N	GEN PREP	300.0	III
11-Apr-2012	SL-154-NBZ-SS-0.0-0.5	D106-04	N	GEN PREP	314.0	III
11-Apr-2012	SL-154-NBZ-SS-0.0-0.5	D106-04	N	GEN PREP	7199	III
11-Apr-2012	SL-154-NBZ-SS-0.0-0.5	D106-04	N	GEN PREP	8151A	III
11-Apr-2012	SL-154-NBZ-SS-0.0-0.5	D106-04R	N	GEN PREP	7199	III
11-Apr-2012	SL-154-NBZ-SS-0.0-0.5	D106-04W	N	GEN PREP	6020	III
11-Apr-2012	SL-182-NBZ-SS-0.0-0.5	D106-08	N	3550B	8081A	III
11-Apr-2012	SL-182-NBZ-SS-0.0-0.5	D106-08	N	3550B	8082	III
11-Apr-2012	SL-182-NBZ-SS-0.0-0.5	D106-08	N	3550B	8270C	III
11-Apr-2012	SL-182-NBZ-SS-0.0-0.5	D106-08	N	3550B	8270C SIM	III
11-Apr-2012	SL-182-NBZ-SS-0.0-0.5	D106-08	N	7471A	7471A	III
11-Apr-2012	SL-182-NBZ-SS-0.0-0.5	D106-08	N	GEN PREP	300.0	III
11-Apr-2012	SL-182-NBZ-SS-0.0-0.5	D106-08	N	GEN PREP	314.0	III

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

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
11-Apr-2012	SL-182-NBZ-SS-0.0-0.5	D106-08	N	GEN PREP	7199	III
11-Apr-2012	SL-182-NBZ-SS-0.0-0.5	D106-08	N	GEN PREP	8151A	III
11-Apr-2012	SL-182-NBZ-SS-0.0-0.5	D106-08R	N	GEN PREP	7199	III
11-Apr-2012	SL-182-NBZ-SS-0.0-0.5	D106-08W	N	GEN PREP	6020	III
11-Apr-2012	SL-163-NBZ-SS-0.0-0.5	D106-05	N	3550B	8081A	III
11-Apr-2012	SL-163-NBZ-SS-0.0-0.5	D106-05	N	3550B	8082	III
11-Apr-2012	SL-163-NBZ-SS-0.0-0.5	D106-05	N	7471A	7471A	III
11-Apr-2012	SL-163-NBZ-SS-0.0-0.5	D106-05	N	GEN PREP	300.0	III
11-Apr-2012	SL-163-NBZ-SS-0.0-0.5	D106-05	N	GEN PREP	314.0	III
11-Apr-2012	SL-163-NBZ-SS-0.0-0.5	D106-05	N	GEN PREP	7199	III
11-Apr-2012	SL-163-NBZ-SS-0.0-0.5	D106-05	N	GEN PREP	8151A	III
11-Apr-2012	SL-163-NBZ-SS-0.0-0.5	D106-05R	N	3550B	8270C	III
11-Apr-2012	SL-163-NBZ-SS-0.0-0.5	D106-05R	N	3550B	8270C SIM	III
11-Apr-2012	SL-163-NBZ-SS-0.0-0.5	D106-05R	N	GEN PREP	7199	III
11-Apr-2012	SL-163-NBZ-SS-0.0-0.5	D106-05W	N	GEN PREP	6020	III
11-Apr-2012	SL-176-NBZ-SS-0.0-0.5	D106-07	N	3550B	8081A	III
11-Apr-2012	SL-176-NBZ-SS-0.0-0.5	D106-07	N	3550B	8082	III
11-Apr-2012	SL-176-NBZ-SS-0.0-0.5	D106-07	N	3550B	8270C	III
11-Apr-2012	SL-176-NBZ-SS-0.0-0.5	D106-07	N	3550B	8270C SIM	III
11-Apr-2012	SL-176-NBZ-SS-0.0-0.5	D106-07	N	7471A	7471A	III
11-Apr-2012	SL-176-NBZ-SS-0.0-0.5	D106-07	N	GEN PREP	300.0	III
11-Apr-2012	SL-176-NBZ-SS-0.0-0.5	D106-07	N	GEN PREP	314.0	III
11-Apr-2012	SL-176-NBZ-SS-0.0-0.5	D106-07	N	GEN PREP	7199	III
11-Apr-2012	SL-176-NBZ-SS-0.0-0.5	D106-07	N	GEN PREP	8151A	III
11-Apr-2012	SL-176-NBZ-SS-0.0-0.5	D106-07R	N	GEN PREP	7199	III
11-Apr-2012	SL-176-NBZ-SS-0.0-0.5	D106-07W	N	GEN PREP	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
11-Apr-2012	SL-148-NBZ-SS-0.0-0.5	D106-03	N	3550B	8081A	III
11-Apr-2012	SL-148-NBZ-SS-0.0-0.5	D106-03	N	3550B	8082	III
11-Apr-2012	SL-148-NBZ-SS-0.0-0.5	D106-03	N	3550B	8270C	III
11-Apr-2012	SL-148-NBZ-SS-0.0-0.5	D106-03	N	3550B	8270C SIM	III
11-Apr-2012	SL-148-NBZ-SS-0.0-0.5	D106-03	N	7471A	7471A	III
11-Apr-2012	SL-148-NBZ-SS-0.0-0.5	D106-03	N	GEN PREP	300.0	III
11-Apr-2012	SL-148-NBZ-SS-0.0-0.5	D106-03	N	GEN PREP	314.0	III
11-Apr-2012	SL-148-NBZ-SS-0.0-0.5	D106-03	N	GEN PREP	7199	III
11-Apr-2012	SL-148-NBZ-SS-0.0-0.5	D106-03	N	GEN PREP	8151A	III
11-Apr-2012	SL-148-NBZ-SS-0.0-0.5	D106-03R	N	GEN PREP	7199	III
11-Apr-2012	SL-148-NBZ-SS-0.0-0.5	D106-03W	N	GEN PREP	6020	III
11-Apr-2012	SL-145-NBZ-SS-0.0-0.5	D106-02	N	3550B	8081A	III
11-Apr-2012	SL-145-NBZ-SS-0.0-0.5	D106-02	N	3550B	8082	III
11-Apr-2012	SL-145-NBZ-SS-0.0-0.5	D106-02	N	3550B	8270C	III
11-Apr-2012	SL-145-NBZ-SS-0.0-0.5	D106-02	N	3550B	8270C SIM	III
11-Apr-2012	SL-145-NBZ-SS-0.0-0.5	D106-02	N	7471A	7471A	III
11-Apr-2012	SL-145-NBZ-SS-0.0-0.5	D106-02	N	GEN PREP	300.0	III
11-Apr-2012	SL-145-NBZ-SS-0.0-0.5	D106-02	N	GEN PREP	314.0	III
11-Apr-2012	SL-145-NBZ-SS-0.0-0.5	D106-02	N	GEN PREP	7199	III
11-Apr-2012	SL-145-NBZ-SS-0.0-0.5	D106-02	N	GEN PREP	8151A	III
11-Apr-2012	SL-145-NBZ-SS-0.0-0.5	D106-02R	N	GEN PREP	7199	III
11-Apr-2012	SL-145-NBZ-SS-0.0-0.5	D106-02W	N	GEN PREP	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

Attachment II

Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: 12D106 **Laboratory: EMXT**

EDD Filename: 12D106R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: GENCHEM

Method: 300.0 **Matrix: SO**

Sample ID: SL-004-NBZ-SS-0.0-0.5 *Collected:* 4/11/2012 9:12:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORIDE	0.650	J	0.613	MDL	1.23	PQL	MG/KG	J	Z

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: SL-004-NBZ-SS-0.0-0.5 *Collected:* 4/11/2012 9:12:00 *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	0.174	J	0.121	MDL	0.241	PQL	MG/KG	J	Z
BARIUM	79.9		0.241	MDL	0.483	PQL	MG/KG	J	Q
Zirconium	6.04	U	3.02	MDL	6.04	PQL	MG/KG	UJ	Q

Sample ID: SL-145-NBZ-SS-0.0-0.5 *Collected:* 4/11/2012 2:35:00 *Analysis Type:* RES/TOT *Dilution:* 0.990

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	149		0.251	MDL	0.503	PQL	MG/KG	J	Q
BORON	4.24	J	3.14	MDL	6.28	PQL	MG/KG	J	Z
SELENIUM	0.365	J	0.251	MDL	0.503	PQL	MG/KG	J	Z
SILVER	0.0947	J	0.0628	MDL	0.126	PQL	MG/KG	J	Z
Zirconium	6.28	U	3.14	MDL	6.28	PQL	MG/KG	UJ	Q

Sample ID: SL-148-NBZ-SS-0.0-0.5 *Collected:* 4/11/2012 2:03:00 *Analysis Type:* RES/TOT *Dilution:* 0.995

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	131		0.243	MDL	0.487	PQL	MG/KG	J	Q
BORON	3.35	J	3.04	MDL	6.08	PQL	MG/KG	J	Z
SELENIUM	0.350	J	0.243	MDL	0.487	PQL	MG/KG	J	Z
SILVER	0.0914	J	0.0608	MDL	0.122	PQL	MG/KG	J	Z
SODIUM	77.4	J	60.8	MDL	122	PQL	MG/KG	J	Z
Zirconium	6.08	U	3.04	MDL	6.08	PQL	MG/KG	UJ	Q

Sample ID: SL-154-NBZ-SS-0.0-0.5 *Collected:* 4/11/2012 10:06:00 *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	0.215	J	0.128	MDL	0.256	PQL	MG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12D106 **Laboratory:** EMXT

EDD Filename: 12D106R **eQAPP Name:** CDM_SSFL_120730_EMAX

Method Category: METALS

Method: 6020 **Matrix:** SO

Sample ID: SL-154-NBZ-SS-0.0-0.5 *Collected:* 4/11/2012 10:06:00 *Analysis Type:* RES/TOT *Dilution:* 0.957

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	88.9		0.256	MDL	0.512	PQL	MG/KG	J	Q
SODIUM	67.2	J	64.0	MDL	128	PQL	MG/KG	J	Z
Zirconium	6.40	U	3.20	MDL	6.40	PQL	MG/KG	UJ	Q

Sample ID: SL-163-NBZ-SS-0.0-0.5 *Collected:* 4/11/2012 1:23:00 *Analysis Type:* RES/TOT *Dilution:* 0.990

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	148		0.234	MDL	0.468	PQL	MG/KG	J	Q
SELENIUM	0.319	J	0.234	MDL	0.468	PQL	MG/KG	J	Z
SILVER	0.0936	J	0.0585	MDL	0.117	PQL	MG/KG	J	Z
SODIUM	96.2	J	58.5	MDL	117	PQL	MG/KG	J	Z
Zirconium	5.85	U	2.93	MDL	5.85	PQL	MG/KG	UJ	Q

Sample ID: SL-168-NBZ-SS-0.0-0.5 *Collected:* 4/11/2012 9:38:00 *Analysis Type:* RES/TOT *Dilution:* 0.957

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	69.3		0.214	MDL	0.429	PQL	MG/KG	J	Q
Zirconium	5.36	U	2.68	MDL	5.36	PQL	MG/KG	UJ	Q

Sample ID: SL-176-NBZ-SS-0.0-0.5 *Collected:* 4/11/2012 1:48:00 *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	0.229	J	0.117	MDL	0.233	PQL	MG/KG	J	Z
BARIUM	115		0.233	MDL	0.466	PQL	MG/KG	J	Q
SELENIUM	0.256	J	0.233	MDL	0.466	PQL	MG/KG	J	Z
SODIUM	103	J	58.3	MDL	117	PQL	MG/KG	J	Z
Zirconium	4.00	J	2.91	MDL	5.83	PQL	MG/KG	J	Z, Q

Sample ID: SL-182-NBZ-SS-0.0-0.5 *Collected:* 4/11/2012 10:41:00 *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	0.113	MDL	0.225	PQL	MG/KG	J	Z
BARIUM	134		0.225	MDL	0.451	PQL	MG/KG	J	Q
SELENIUM	0.231	J	0.225	MDL	0.451	PQL	MG/KG	J	Z
Zirconium	5.64	U	2.82	MDL	5.64	PQL	MG/KG	UJ	Q

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12D106 **Laboratory:** EMXT

EDD Filename: 12D106R **eQAPP Name:** CDM_SSFL_120730_EMAX

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

Sample ID: SL-004-NBZ-SS-0.0-0.5 *Collected:* 4/11/2012 9:12:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH(C8-C11)	0.69	J	0.61	MDL	1.2	PQL	MG/KG	J	Z

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

Sample ID: SL-004-NBZ-SS-0.0-0.5 *Collected:* 4/11/2012 9:12:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDE	0.37	J	0.21	MDL	0.42	PQL	UG/KG	J	Z
4,4'-DDT	0.36	J	0.21	MDL	0.42	PQL	UG/KG	J	Z

Sample ID: SL-168-NBZ-SS-0.0-0.5 *Collected:* 4/11/2012 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
4,4'-DDT	0.21	J	0.19	MDL	0.38	PQL	UG/KG	J	Z

Sample ID: SL-182-NBZ-SS-0.0-0.5 *Collected:* 4/11/2012 10:41:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDE	0.31	J	0.20	MDL	0.40	PQL	UG/KG	J	Z

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

Sample ID: SL-004-NBZ-SS-0.0-0.5 *Collected:* 4/11/2012 9:12:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(B)FLUORANTHENE	1.1	J	1.0	MDL	2.1	PQL	UG/KG	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	13	J	10	MDL	20	PQL	UG/KG	J	Z

Sample ID: SL-145-NBZ-SS-0.0-0.5 *Collected:* 4/11/2012 2:35:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)ANTHRACENE	2.0	J	1.1	MDL	2.2	PQL	UG/KG	J	Z
BENZO(A)PYRENE	1.6	J	1.1	MDL	2.2	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12D106 **Laboratory: EMXT**

EDD Filename: 12D106R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: **SVOA**

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

Sample ID: **SL-145-NBZ-SS-0.0-0.5** ***Collected:*** **4/11/2012 2:35:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(G,H,I)PERYLENE	1.7	J	1.1	MDL	2.2	PQL	UG/KG	J	Z
FLUORANTHENE	2.0	J	1.1	MDL	2.2	PQL	UG/KG	J	Z
INDENO(1,2,3-CD)PYRENE	1.2	J	1.1	MDL	2.2	PQL	UG/KG	J	Z
PYRENE	2.0	J	1.1	MDL	2.2	PQL	UG/KG	J	Z

Sample ID: **SL-148-NBZ-SS-0.0-0.5** ***Collected:*** **4/11/2012 2:03:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(B)FLUORANTHENE	1.4	J	1.0	MDL	2.1	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	1.2	J	1.0	MDL	2.1	PQL	UG/KG	J	Z
FLUORANTHENE	1.4	J	1.0	MDL	2.1	PQL	UG/KG	J	Z
PHENANTHRENE	1.2	J	1.0	MDL	2.1	PQL	UG/KG	J	Z
PYRENE	1.5	J	1.0	MDL	2.1	PQL	UG/KG	J	Z

Sample ID: **SL-154-NBZ-SS-0.0-0.5** ***Collected:*** **4/11/2012 10:06:00** ***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	2.1	J	1.1	MDL	2.3	PQL	UG/KG	J	Z
BENZO(G,H,I)PERYLENE	1.4	J	1.1	MDL	2.3	PQL	UG/KG	J	Z
CHRYSENE	1.4	J	1.1	MDL	2.3	PQL	UG/KG	J	Z
FLUORANTHENE	2.2	J	1.1	MDL	2.3	PQL	UG/KG	J	Z
PHENANTHRENE	1.2	J	1.1	MDL	2.3	PQL	UG/KG	J	Z
PYRENE	1.9	J	1.1	MDL	2.3	PQL	UG/KG	J	Z

Sample ID: **SL-168-NBZ-SS-0.0-0.5** ***Collected:*** **4/11/2012 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	1.0	J	0.95	MDL	1.9	PQL	UG/KG	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	16	J	9.4	MDL	19	PQL	UG/KG	J	Z

Sample ID: **SL-176-NBZ-SS-0.0-0.5** ***Collected:*** **4/11/2012 1:48:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BIS(2-ETHYLHEXYL)PHTHALATE	14	J	9.8	MDL	20	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING

Data Qualifier Summary

Lab Reporting Batch ID: 12D106 **Laboratory: EMXT**

EDD Filename: 12D106R **eQAPP Name: CDM_SSFL_120730_EMAX**

Method Category: **SVOA**

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

Sample ID: **SL-182-NBZ-SS-0.0-0.5** ***Collected:*** **4/11/2012 10:41:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
BIS(2-ETHYLHEXYL)PHTHALATE	18	J	9.8	MDL	19	PQL	UG/KG	J	Z

* denotes a non-reportable result

Project Name and Number: 1203-004-010-AL - SSFL AREA IV COLLOCATED SAMPLING