TETRA TECH EM INC.

November 21, 2012

Greg Haet
EH&S Associate Director, Environmental Protection
Office of Environment, Health & Safety
University of California, Berkeley
University Hall, 3rd Floor #1150
Berkeley, CA 94720

Subject: Sampling Results for Soil Samples Collected for the Building 445 Landscaping Project University of California, Berkeley, Richmond Field Station, Richmond, California

Dear Mr. Haet:

Tetra Tech EM Inc. (Tetra Tech) was contracted by the University of California (UC) Berkeley to conduct sampling activities at Richmond Field Station (RFS), in Richmond, California. The objective of the sampling effort was to characterize near-surface soil in the areas surrounding Building 445 to evaluate soil conditions that workers could be exposed to while performing landscaping and maintenance activities. This letter provides the rationale for the selected sampling locations, a summary of field sampling protocols, and sample results. A figure presenting the sampling locations is enclosed at the end of this letter. Complete analytical results are presented in Attachment 1.

Sample Locations

Incremental sampling methodology was selected for this project to provide a comprehensive and thorough evaluation of chemical concentrations in a specific area of potential exposure, or decision unit. The incremental sampling strategy for this project was based on selecting a decision unit to best represent potential exposure by workers performing landscaping activities.

UC Berkeley provided Tetra Tech with site-specific plans for the landscaping project which consists of installation of a shallow irrigation system, planting potted plants, and construction of a patio. Construction activities include disturbance of surface soils down to approximately 6 to 8 inches below ground surface to lay irrigation equipment, slightly re-grading of the area, the installation of landscaping plants, and the construction of a patio.

Two decision units were selected in July 2012 to best represent possible worker exposure conditions. A third exposure unit was added in September 2012. Decision Unit B445-DU1 represents the area that will be landscaped in front of the Building 445 entrance. Decision Unit B445-DU2 represents a grassy area between the parking lot and Egret Way that will be landscaped. Decision Unit B445-DU3 represents the area on the east side of Building 445 where a patio will be constructed. Three replicate samples were collected at Decision Units B445-DU1 and B445-DU3. Based on irrigation equipment installation and grading activities, surface sample depths of 0 to 6 inches below ground surface (bgs) were collected throughout the decision units.

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Field Sampling Protocols

Soil samples were collected on July 24 and September 6, 2012. The decision unit boundaries were identified in the field based on the rationale presented in the previous section. One incremental soil sample was collected from each of the decision units; with B445-DU1 and –DU3 collected in triplicate. Each incremental soil sample was composed of subsamples from 30 increment locations.

Incremental sampling methodology was used to maximize the goal of obtaining sufficient material over the decision unit to account for both compositional and distributional heterogeneity of any possible contamination. The sampling protocol followed these steps for the decision units:

1. The field sampler began at a corner of the surface decision unit and sampled in an orthogonal pattern, moving from north to south to collect subsamples from 30 locations within the decision unit. The location of the subsamples was not critical as long as they were distributed throughout the decision unit. Samples were collected from the surface using a shovel. For each decision unit, the soil was placed into a stainless steel bowl. The steel bowl was decontaminated between each decision unit using Alconox and de-ionized water.

2. The subsamples were thoroughly mixed in the bowl to form one composited, multi-increment sample from each decision unit.

3. The soil from the bowl was then redistributed into a 1-inch thick uniform layer (approximately 16 by 24 inches) onto a plastic bag.

4. The soil described in Step 3 was subsequently divided again into 30 subsamples using a disposable spoon. This sample was placed in the sample containers provided by the laboratory to form the final sample that was submitted to the analytical laboratory for the analyses listed below.

Following collection from Decision Units B445-DU1, B445-DU2, and B445-DU3, the sample jars were labeled, wrapped with protective bubble wrap material, placed into a sealable plastic bags, and packed into an insulated cooler. These samples were taken directly from the field to Curtis and Tompkins Laboratory in Berkeley, CA on July 24 and September 6, 2012. A copy of the chain-of-custody forms are presented in Attachment 1.

Analyses Summary, Screening Criteria, and Sample Results

Soil samples were analyzed for metals; total petroleum hydrocarbons (TPH) motor oil and diesel; pesticides; polychlorinated biphenyls (PCB); SVOC, and PAHs using the methods listed below.

- Metals by EPA 6020; Mercury by EPA 7471A
- TPH- Extractables by EPA 8015Modified (one DU1 replicate and DU2 only)
- Pesticides by EPA 8081A (one DU1 replicate and DU2 only)
- PCB analysis by EPA 8082 (one DU1 replicate and DU2 only)
- SVOC analysis by EPA 8270
- PAHs analysis by 2730 SIM (one DU1 replicate and DU2 only)

Sample results are presented below along with California Human Health Screening Levels (CHHSL) [“Use of California Human Health Screening Levels (CHHSLs) in Evaluation of Contaminated

Properties" California Environmental Protection Agency, January 2005, updated in 2010] and EPA Region 9 RSLs. For TPH, the California Regional Water Quality Control Board Residential and Commercial non-drinking water standards are included. For SVOC and VOC results the U.S. Environmental Protection Agency Regional Screening Levels (RSL) are included.

In addition, the California EPA benzo(a)pyrene potency equivalence factors (PEF) for SVOCs detected are included. These factors come from the Office of Environmental Health Hazard Assessment's 'Air Toxics Hot Spots Program Risk Assessment Guidelines Part II: Technical Support Document for Describing Available Cancer Potency Factors' (2002). Benzo(a)pyrene is the primary representative for SVOCs. The PEFs were used to calculate the equivalent concentrations of the SVOCs with equivalency factors in terms of benzo(a)pyrene and the totals were screened against the CHHSLs and modified RSL for benzo(a)pyrene, as well as two ambient values established in DTSC's 'Use of the Northern and Southern California Polynuclear Aromatic Hydrocarbon (PAH) Studies in the Manufactured Gas Plant Site Cleanup Process' (2009): the mean benzo(a)pyrene equivalent value and the 95th upper confidence limit on the mean benzo(a)pyrene equivalent values from the Northern California ambient dataset.

SVOCs were detected in soil at concentrations above the CHHSLs and RSLs under the residential and commercial industrial scenarios for B445-DU-2. The calculated benzo(a)pyrene equivalency concentration of 1.25 mg/kg using the Cal EPA PEF and 1.3 mg/kg using the EPA PEFs, were greater than the ambient mean benzo(a)pyrene equivalent value of 0.21 mg/kg (DTSC 2009) and the 95th percent upper confidence limit on the mean benzo(a)pyrene ambient value of 0.4 mg/kg (DTSC 2009). Low level PAH data is available for July 2012 for Decision Units B445-DU1 and B445-DU2 in Table 4.

TPH as diesel was detected above the Water Board residential criteria for soil where groundwater is not a drinking water source in B445-DU1 and B445-DU3-1. The concentrations are Y qualified (sample exhibits hydrocarbon chromatographic pattern which does not resemble diesel standard) and do not indicate a greater petroleum release in the area.

All other analytes detected in the Decision Units associated with Building 445 were below the corresponding screening criteria.

Conclusions

Based on the screen against the CHHSL, the soil in all decision units is safe for workers. Although the soil in B445-DU2 exceeds the CHHSL and background values for benzo(a)pyrene equivalents, short-term exposure to workers is acceptable and will not pose a risk to worker health.

If you have any questions or comments regarding this submittal, please call me at (510) 302-6283.

Sincerely,

Jason Brodersen, P.G.
Project Manager

Enclosure: Figure 1, Tables 1 through 5
Attachment 1: Analytical Results

TABLE 1. METALS RESULTS FOR DETECTED CHEMICALS REPORTED IN MILLIGRAMS PER KILOGRAM (MG/KG)

Sample ID	Sample Location	Sample Date	Depth (feet bgs)	Units	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum
CHHSL Residential					0.07	5200	16	1.7	100000	660	3000	80	18	380
CHHSL C/I					0.24	63000	190	7.5	100000	3200	38000	320	180	4800
Background					16									
EPA RSL Residential					0.39	15000	160	70	120000	23	3100	400	10	310
EPA RSL C/I					1.6	190000	2000	800	1500000	300	41000	800	43	5100
SWRCB ESL - GW is Drinking Water Source, Residential					0.39	750	4	1.7	750	40	230	200	1.3	40
SWRCB ESL - GW is Drinking Water Source, C/I					1.6	1500	8	7.4	750	80	230	750	10	40
SWRCB ESL - GW is Not a Drinking Water Source, Residential					0.39	750	4	1.7	750	40	230	200	1.3	40
SWRCB ESL - GW is Not a Drinking Water Source, C/I					1.6	1500	8	7.4	750	80	230	750	10	40
RFS-B445-DU1	B445-DU1	7/24/2012	0-0.5	mg/kg	4.9	160	0.52	0.45	47	11	490	42	19	0.43
RFS-B445-DU1-2	B445-DU1	9/6/2011	0-0.5	mg/kg	6.8	150	0.45	0.37	42	12	440	40	17	0.26 U
RFS-B445-DU1-3	B445-DU1	9/6/2012	0-0.5	mg/kg	6.3	160	0.44	0.39	37	10	470	40	14	0.26 U
RFS-B445-DU2	B445-DU2	7/24/2012	0-0.5	mg/kg	7.3	170	0.49	0.85	41	11	180	46	5.6	4.7
RFS-B445-DU3-1	B445-DU3	9/6/2012	0-0.5	mg/kg	5.6	160	0.59	0.37	28	9.6	260	27	12	0.095 J
RFS-B445-DU3-2	B445-DU3	9/6/2012	0-0.5	mg/kg	5.8	140	0.53	0.39	33	11	370	30	12	0.26 U
RFS-B445-DU3-3	B445-DU3	9/6/2012	0-0.5	mg/kg	5.6	150	0.57	0.38	37	9.6	420	31	13	0.47

TABLE 1. METALS RESULTS FOR DETECTED CHEMICALS REPORTED IN MILLIGRAMS PER KILOGRAM (MG/KG) (Continued)

Sample ID	Sample Location	Sample Date	Depth (feet bgs)	Units	Nickel	Selenium	Silver	Vanadium	Zinc
				CHHSL Residential	1600	380	380	530	23000
				CHHSL C/I	16000	4800	4800	6700	100000
				Background					
				EPA RSL Residential	3800	390	390	390	23000
				EPA RSL C/I	47000	5100	5100	5200	310000
				SWRCB ESL - GW is Drinking Water Source, Residential	150	10	20	16	600
				SWRCB ESL - GW is Drinking Water Source, C/I	150	10	40	200	600
				SWRCB ESL - GW is Not a Drinking Water Source, Residential	150	10	20	16	600
				SWRCB ESL - GW is Not a Drinking Water Source, C/I	150	10	40	200	600
RFS-B445-DU1	B445-DU1	7/24/2012	0-0.5	mg/kg	42	0.49 U	0.25 U	46	110
RFS-B445-DU1-2	B445-DU1	9/6/2011	0-0.5	mg/kg	43	1.3	0.16 J	42	110
RFS-B445-DU1-3	B445-DU1	9/6/2012	0-0.5	mg/kg	40	0.49 J	0.15 J	37	99
RFS-B445-DU2	B445-DU2	7/24/2012	0-0.5	mg/kg	36	1.1	0.26 U	39	120
RFS-B445-DU3-1	B445-DU3	9/6/2012	0-0.5	mg/kg	30	0.53 U	0.14 J	33	120
RFS-B445-DU3-2	B445-DU3	9/6/2012	0-0.5	mg/kg	31	0.53 U	0.11 J	31	130
RFS-B445-DU3-3	B445-DU3	9/6/2012	0-0.5	mg/kg	33	0.85	0.14 J	35	130

Notes:

Antimony and thallium were not detected.

C/I	Commercial/Industrial	J	Estimated value
CHHSL	California Human Health Screening Level	mg/kg	Milligrams per kilogram
EPA	U.S. Environmental Protection Agency	RSL	Regional Screening Level
feet bgs	Feet below ground surface	SWRCB	State Water Resources Control Board
GW	Groundwater	U	Not detected
ID	Identification		

TABLE 2. PESTICIDE RESULTS FOR DETECTED CHEMICALS REPORTED IN MG/KG

Sample ID	Sample Location	Sample Date	Depth	Units	4,4'-DDD	4,4'-DDE	4,4'-DDT	Aldrin	Alpha-BHC	Alpha-Chlordane	Dieldrin	Endosulfan I	Endosulfan II	Endrin	Gamma-BHC (Lindane)	Gamma-Chlordane	Heptachlor	Heptachlor Epoxide
CHHSL Residential					2.3	1.6	1.6			0.43	0.035			21		0.5		0.13
CHHSL C/I					9	6.3	6.3			1.7	0.13			230		2		0.52
EPA RSL Residential					2	1.4	1.7			1.6	0.03	370	370	18		0.52		0.053
EPA RSL C/I					7.2	5.1	7			6.5	0.11	3700	3700	180		2.1		0.19
SWRCB ESL - GW is Drinking Water Source, Residential					2.4	1.7	1.7			0.44	0.0023	0.0046	0.0046	0.00065				0.014
SWRCB ESL - GW is Drinking Water Source, C/I					10	4	4			1.7	0.0023	0.0046	0.0046	0.00065				0.014
SWRCB ESL - GW is Not a Drinking Water Source, Residential					2.4	1.7	1.7			0.44	0.0023	0.0046	0.0046	0.00065				0.014
SWRCB ESL - GW is Not a Drinking Water Source, C/I					10	4	4			1.7	0.0023	0.0046	0.0046	0.00065				0.014
RFS-B445-DU1	B445-DU1	7/24/2012	0-0.5	mg/kg	0.01	0.008	0.017	0.0018 U	0.0018 U	0.06	0.0025 J	0.0018 U	0.0036 U	0.0014 J	0.0018 U	0.038	0.0055	0.0027
RFS-B445-DU2	B445-DU2	7/24/2012	0-0.5	mg/kg	0.01	0.004	0.0045	0.0006 J	0.00052 J	0.04	0.0014 J	0.0016 J	0.0029 J	0.0036 U	0.00026 J	0.003	0.0017 J	0.0064

Notes:

Beta-BHC, endosulfan sulfate, endrin aldehyde, methoxylene, and toxaphene not detected.

BHC	Hexachlorocyclohexane		
CHHSL	California Human Health Screening Level	GW	Groundwater
C/I	Commercial/Industrial	ID	Identification
DDD	Dichlorodiphenyldichloroethane	J	Estimated value
DDE	Dichlorodiphenyldichloroethylene	mg/kg	Milligrams per kilogram
DDT	Dichlorodiphenyltrichloroethane	RSL	Regional Screening Level
EPA	U.S. Environmental Protection Agency	SWRCB	State Water Resources Control Board
feet bgs	Feet below ground surface	U	Not detected

TABLE 3. TPH RESULTS FOR DETECTED CHEMICALS REPORTED IN MG/KG

Sample ID	Sample Location	Sample Date	Depth (feet bgs)	Units	TPH - Diesel Range Organics	TPH - Oil Range Organics
SWRCB ESL - GW is Not a Drinking Water Source, Residential					100	370
SWRCB ESL - GW is Not a Drinking Water Source, C/I					180	2500
RFS-B445-DU1	B445- DU1	7/24/2012	0-0.5	mg/kg	120 Y	180
RFS-B445-DU2	B445- DU2	7/24/2012	0-0.5	mg/kg	42 Y	120
RFS-B445-DU3-1	B445- DU3	9/6/2012	0-0.5	mg/kg	150 Y	180

Notes:

C/I	Commercial/Industrial	J	Estimated value
EPA	U.S. Environmental Protection Agency	mg/kg	Milligrams per kilogram
ESL	Environmental Screening Level	SWRCB	State Water Resources Control Board
GW	Groundwater	TPH	Total Petroleum Hydrocarbons
ID	Identification	Y	Sample exhibits hydrocarbon chromatographic pattern which does not resemble diesel standard

TABLE 4. SVOC RESULTS FOR DETECTED CHEMICALS
REPORTED IN MG/KG

Sample ID	Sample Location	Sample Date	Depth	Units	4-METHYLPHENOL	ACENAPHTHENE	ACENAPHTHYLENE	ANTHRACENE	BENZO(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(G,H,I)PERYLENE	BENZO(K)FLUORANTHENE	BIS(2-ETHYLHEXYL)PHTHALATE
				CHHSL Residential						0.038				
				CHHSL C/I						0.13				
				EPA RSL Residential		3400		17000	0.15	0.015	0.15		1.5	35
				EPA RSL C/I		33000		170000	2.1	0.21	2.1		21	120
				Ambient- Mean BaP Equivalent Value (DTSC 2009)										
				Ambient - 95 % UCL of the Mean BaP Equivalent Value (DTSC 2009)										
				SWRCB ESL - GW is Drinking Water Source, Residential		16	13	2.8	0.38	0.038	0.38	27	0.38	
				SWRCB ESL - GW is Drinking Water Source, C/I		16	13	2.8	1.3	0.13	1.3	27	1.3	
				SWRCB ESL - GW is Not a Drinking Water Source, Residential		19	13	2.8	0.38	0.038	0.38	27	0.38	
				SWRCB ESL - GW is Not a Drinking Water Source, C/I		19	13	2.8	1.3	0.13	1.3	27	1.3	
				Califonia EPA BaP PEF					0.1	1	0.1		0.1	
				EPA BaP PEF					0.1	1	0.1		0.01	
RFS-B445-DU1	B445 - DU1	7/24/2012	0-0.5	mg/kg	1.8 U	0.016 U	0.024	0.0055 J	0.025	0.046	0.16	0.035	0.035	0.12 J
RFS-B445-DU2	B445 - DU2	7/24/2012	0-0.5	mg/kg	1.8 U	0.0054 J	0.013 J	0.029	**0.57**	**0.87**	1.3	0.55	0.39	0.075 J
RFS-B445-DU3-1	B445 - DU3	9/6/2012	0-0.5	mg/kg	0.082 J	0.21 U	0.21 U	0.21 U	0.21 U	0.02 J	0.035 J	0.21 U	0.21 U	0.16 J

TABLE 4. SVOC RESULTS FOR DETECTED CHEMICALS REPORTED IN MG/KG (Continued)

Sample ID	Sample Location	Sample Date	Depth	Units	BUTYLBENZYLPHTHALATE	CHRYSENE	DIBENZO(A,H)ANTHRACENE	DI-N-BUTYLPHTHALATE	FLUORANTHENE	FLUORENE	INDENO(1,2,3-CD)PYRENE	NAPHTHALENE	PHENANTHRENE	PYRENE	BaP EQUIVALENT (CA EPA)	BaP EQULIVALENT (EPA)
CHHSL Residential															0.038	0.038
CHHSL C/I															0.13	0.13
EPA RSL Residential						15	0.015		2300	2300	0.15	3.6		1700	0.015	0.015
EPA RSL C/I						210	0.21		22000	22000	2.1	18		17000	0.21	0.21
Ambient- Mean BaP Equivalent Value (DTSC 2009)															0.21	0.21
Ambient - 95 % UCL of the Mean BaP Equivalent Value (DTSC 2009)															0.4	0.4
SWRCB ESL - GW is Drinking Water Source, Residential						23	0.062		40	8.9	0.62	1.3	11	85	0.038	0.038
SWRCB ESL - GW is Drinking Water Source, C/I						23	0.21		40	8.9	2.1	2.8	11	85	0.13	0.13
SWRCB ESL - GW is Not a Drinking Water Source, Residential						23	0.062		40	8.9	0.62	1.3	11	85	0.038	0.038
SWRCB ESL - GW is Not a Drinking Water Source, C/I						23	0.21		40	8.9	2.1	2.8	11	85	0.13	0.13
Califonia EPA BaP PEF						0.01	0.34				0.1					
EPA BaP PEF						0.001	1				0.1					
RFS-B445-DU1	B445 - DU1	7/24/2012	0-0.5	mg/kg	0.082 J	0.048	0.011 J	0.077 J	0.049	0.016 U	0.032	0.016 U	0.023	0.047	0.08	0.08
RFS-B445-DU2	B445 - DU2	7/24/2012	0-0.5	mg/kg	1.8 U	0.83	0.14	1.8 U	0.96	0.011 J	0.51	0.0035 J	0.33 J	1	**1.25**	**1.20**
RFS-B445-DU3-1	B445 - DU3	9/6/2012	0-0.5	mg/kg	0.79 J	0.028 J	0.21 U	0.46 J	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.02	0.02

Notes:

Indicates the value exceeds the CHHSL C/I and/or the EPA RSL C/I

Indicates the value exceeds the CHHSL C/I but not both BaP ambient values

Where both low level PAH and SVOC data were available, the higher detected result was selected. Where both results were non-detect, the low level PAH value was selected.

BaP	Benzo(a)pyrene	feet bgs	Feet below ground surface	PEF	Potency Equivalency Factor
CCCT	California Cap Company Transformer	GW	Groundwater	SVOC	Semivolatile organic compunds
CHHSL	California Human Health Screening Level	ID	Identification	SWRCB	State Water Resources Control Board
C/I	Commercial/Industrial	J	Estimated value	U	Not detected
EERC	Earthquake Engineering Research Center	mg/kg	Milligrams per kilogram		
EPA	U.S. Environmental Protection Agency	RSL	Regional Screening Level		

TABLE 5. POTENCY EQUIVALENCE FACTORS CALCULATION FOR BENZO(a)PYRENE REPORTED IN MG/KG

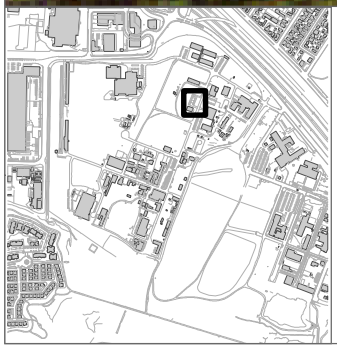
PAH	Potency Equivalency Factor		RFS-B445-DU1*			RFS-B445-DU2*			RFS-B445-DU3-1		
	EPA (2011) (mg/kg)	DTSC (2011) (mg/kg)	Individual PAH concentration (mg/kg)	EPA (2011) (mg/kg)	DTSC (2011) (mg/kg)	Individual PAH concentration (mg/kg)	EPA (2011) (mg/kg)	DTSC (2011) (mg/kg)	Individual PAH concentration (mg/kg)	EPA (2011) (mg/kg)	DTSC (2011) (mg/kg)
Benzo(a)anthracene	0.1	0.1	0.025	0.0025	0.0025	0.57	0.057	0.057	ND	0	0
Benzo(a)pyrene (index compound)	1	1	0.046	0.046	0.046	0.87	0.87	0.87	0.02	0.02	0.02
Benzo(b)fluoranthene	0.1	0.1	0.16	0.016	0.016	1.3	0.13	0.13	0.035	0.0035	0.0035
Benzo(k)fluoranthene	0.01	0.1	0.035	0.00035	0.0035	0.39	0.0039	0.039	ND	0	0
Chrysene	0.001	0.01	0.048	0.000048	0.00048	0.83	0.00083	0.0083	0.028	0.000028	0.00028
Dibenz(a,h)anthracene	1	0.34	0.011	0.011	0.00374	0.14	0.14	0.0476	ND	0	0
Indeno(1,2,3-cd)pyrene	0.1	0.1	0.032	0.0032	0.0032	0.51	0.051	0.051	ND	0	0
			BAP (EQ)	0.079	0.075	**BAP (EQ)**	1.25	1.20	**BAP (EQ)**	0.024	0.024

Notes:

Where both low level PAH and SVOC data were available, the higher detected result was selected. Where both results were non-detect, the low level PAH value was selected.

Nondetect results are not included in the BaP calculation

BaP	Benzo(a)pyrene
DTSC	California Department of Toxic Substances Control
EPA	U.S. Environmental Protection Agency
EQ	Equivalency
mg/kg	Milligrams per kilogram
ND	Not detected
PAH	Polycyclic aromatic hydrocarbon
PEF	Potency Equivalency Factor
SVOC	Semivolatile organic compund



0 50
Feet

Building
Roads and other Landscape Features
California Cap Company Buildings (approximate)
Building 445 Decision Units (0-6-in bgs)

TETRA TECH EM INC.

Richmond Field Station
University of California, Berkeley

FIGURE 1

B445 ISM SAMPLE LOCATIONS

2012-8-29 V:\Misc_GIS\Richmond_Field_Station\Projects\Miscel\B445_ISM_samples.mxd TtEMI-OAK CF


Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 238169
ANALYTICAL REPORT
TPH-Extractables by GC

Tetra Tech EMI	Project : 103S094417
1999 Harrison Street	Location : B445 Landscape
Oakland, CA 94612	Level : IV

Sample ID	Lab ID
RFS-B445-DU1	238169-001
RFS-B445-DU2	238169-002

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: _____ Date: 08/07/2012

Mike J. Dahlquist
Project Manager
(510) 486-0900

NELAP # 01107CA

Curtis & Tompkins, Ltd.

CASE NARRATIVE
TPH-EXTRACTABLES BY GC (EPA 8015B)

Laboratory number:	**238169**
Client:	**Tetra Tech EMI**
Project:	**103S094417**
Location:	**B445 Landscape**
Request Date:	**07/24/12**
Samples Received:	**07/24/12**

This data package contains sample and QC results for two soil samples, requested for the above referenced project on 07/24/12. See attached cooler receipt form for any sample receipt problems or discrepancies.

TPH-Extractables by GC (EPA 8015B):

High recoveries were observed for diesel C10-C24 in the MS/MSD of RFS-B445-DU1 (lab # 238169-001); the LCS was within limits, and the associated RPD was within limits.

Diesel C10-C24 was detected between the MDL and the RL in the method blank for batch 188792; this analyte was detected in samples at a level at least 10 times that of the blank.

No other analytical problems were encountered.

Chain of Custody

238169

Tetra Tech EM Inc.
Oakland Office

1999 Harrison Street, Suite 500
Oakland, CA 94612
510.302.6300 Phone
510.433.0830 Fax

Chain of Custody Record No. 9738

Lab PO#:	To follow
Lab:	CET
Project name:	B445 landscape
TtEMI technical contact:	Sara Woolley
Field samplers:	Carolyn Ferlic, Dayna Aragon
Project (CTO) number:	103S094417.
TtEMI project manager:	Jason Broderson
Field samplers' signatures:	Carolyn Ferlic

Preservative Added: none

Sample ID	Point ID/Depth	Date	Time	Matrix	MS / MSD	40 ml VOA	1 liter Amber	500 ml Poly	Sleeve	Glass Jar	250 ml Poly	Encore	VOA	SVOA	Pest	Metals	TPH Purgeables	TPH Extractables *	PCB	PAH 2730 SIM
RFS-B445-DH1		7/24/12	1030	S071						1				X	X	X		X	X	X
RFS-B445-DH2		7/24/12	1130	S071						1				X	X	X		X	X	X

	Name (print)	Company Name	Date	Time
Relinquished by: Carolyn Ferlic	Carolyn Ferlic	TTEMI	7/24/12	12:55
Received by: Pat Gonzalez	Pat Gonzalez	CET	7/24/12	12:55
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				

Turnaround time/remarks:

* TPH-E with Silica Gel cleanup. (standard)

Fed Ex #:

WHITE-Laboratory Copy YELLOW-Sample Tracker PINK-File Copy

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 238169 Date Received 7/24/12 Number of coolers 0
Client Tetra Tech Project 103S094417

Date Opened 7/24/12 By (print) Eileen Leung (sign) Eileen
Date Logged in ↓ By (print) ↓ (sign) ↓

1. Did cooler come with a shipping slip (airbill, etc) _____ YES (NO)
   Shipping info _____

2A. Were custody seals present? .... ☐ YES (circle) on cooler on samples ☒ NO
   How many _____ Name _____ Date _____
2B. Were custody seals intact upon arrival? _____ YES NO (N/A)
3. Were custody papers dry and intact when received? _____ (YES) NO
4. Were custody papers filled out properly (ink, signed, etc)? _____ (YES) NO
5. Is the project identifiable from custody papers? (If so fill out top of form) (YES) NO
6. Indicate the packing in cooler: (if other, describe) _____

☐ Bubble Wrap ☐ Foam blocks ☐ Bags ☒ None
☐ Cloth material ☐ Cardboard ☐ Styrofoam ☐ Paper towels

7. Temperature documentation: * Notify PM if temperature exceeds 6°C

Type of ice used: ☐ Wet ☐ Blue/Gel ☒ None Temp(°C) _____

☐ Samples Received on ice & cold without a temperature blank; temp. taken with IR gun

☐ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? _____ YES (NO)
   If YES, what time were they transferred to freezer? _____
9. Did all bottles arrive unbroken/unopened? _____ (YES) NO
10. Are there any missing / extra samples? _____ YES (NO)
11. Are samples in the appropriate containers for indicated tests? _____ (YES) NO
12. Are sample labels present, in good condition and complete? _____ (YES) NO
13. Do the sample labels agree with custody papers? _____ (YES) NO
14. Was sufficient amount of sample sent for tests requested? _____ (YES) NO
15. Are the samples appropriately preserved? _____ YES NO (N/A)
16. Did you check preservatives for all bottles for each sample? _____ YES NO (N/A)
17. Did you document your preservative check? _____ YES NO (N/A)
18. Did you change the hold time in LIMS for unpreserved VOAs? _____ YES NO (N/A)
19. Did you change the hold time in LIMS for preserved terracores? _____ YES NO (N/A)
20. Are bubbles > 6mm absent in VOA samples? _____ YES NO (N/A)
21. Was the client contacted concerning this sample delivery? _____ YES (NO)
   If YES, Who was called? _____ By _____ Date: _____

COMMENTS

_____
_____
_____
_____
_____
_____

Rev 10, 11/11

Results & QC Summary

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	238169	Location:	B445 Landscape
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S094417	Analysis:	EPA 8015B
Field ID:	RFS-B445-DU1	Batch#:	188792
Lab ID:	238169-001	Sampled:	07/24/12
Matrix:	Soil	Received:	07/24/12
Units:	mg/Kg	Prepared:	07/25/12
Basis:	dry	Analyzed:	07/25/12
Diln Fac:	1.000		

Moisture: 7%

Cleanup Method: EPA 3630C

Analyte	Result	RL	MDL
Diesel C10-C24	120 Y	1.1	0.30
Motor Oil C24-C36	180	5.4	0.81

Surrogate	%REC	Limits
o-Terphenyl	87	54-129

Y= Sample exhibits chromatographic pattern which does not resemble standard
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	238169	Location:	B445 Landscape
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S094417	Analysis:	EPA 8015B
Field ID:	RFS-B445-DU2	Batch#:	188792
Lab ID:	238169-002	Sampled:	07/24/12
Matrix:	Soil	Received:	07/24/12
Units:	mg/Kg	Prepared:	07/25/12
Basis:	dry	Analyzed:	07/25/12
Diln Fac:	1.000		

Moisture: 7%

Cleanup Method: EPA 3630C

Analyte	Result	RL	MDL
Diesel C10-C24	42 Y	1.1	0.30
Motor Oil C24-C36	120	5.3	0.81

Surrogate	%REC	Limits
o-Terphenyl	97	54-129

Y= Sample exhibits chromatographic pattern which does not resemble standard
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	238169	Location:	B445 Landscape
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S094417	Analysis:	EPA 8015B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC649063	Batch#:	188792
Matrix:	Soil	Prepared:	07/25/12
Units:	mg/Kg	Analyzed:	07/26/12

Cleanup Method: EPA 3630C

Analyte	Result	RL	MDL
Diesel C10-C24	0.40 J	1.0	0.28
Motor Oil C24-C36	ND	5.0	0.75

Surrogate	%REC	Limits
o-Terphenyl	81	54-129

J= Estimated value
ND= Not Detected at or above MDL
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 238169
ANALYTICAL REPORT
Semivolatile Organics by GC/MS

Tetra Tech EMI	Project : 103S094417
1999 Harrison Street	Location : B445 Landscape
Oakland, CA 94612	Level : IV

Sample ID	Lab ID
RFS-B445-DU1	238169-001
RFS-B445-DU2	238169-002

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: _____ Date: 08/07/2012

Mike J. Dahlquist
Project Manager
(510) 486-0900

NELAP # 01107CA

Curtis & Tompkins, Ltd.

CASE NARRATIVE
SEMIVOLATILE ORGANICS BY GC/MS (EPA 8270C)

Laboratory number:	**238169**
Client:	**Tetra Tech EMI**
Project:	**103S094417**
Location:	**B445 Landscape**
Request Date:	**07/24/12**
Samples Received:	**07/24/12**

This data package contains sample and QC results for two soil samples, requested for the above referenced project on 07/24/12. See attached cooler receipt form for any sample receipt problems or discrepancies.

Semivolatile Organics by GC/MS (EPA 8270C):

Bis(2-ethylhexyl)phthalate was detected between the MDL and the RL in the method blank for batch 188785; this analyte was not detected in samples at or above the RL.

RFS-B445-DU1 (lab # 238169-001) and RFS-B445-DU2 (lab # 238169-002) were diluted due to the dark and viscous nature of the sample extracts.

No other analytical problems were encountered.

Chain of Custody

238169

Tetra Tech EM Inc.
Oakland Office

1999 Harrison Street, Suite 500
Oakland, CA 94612
510.302.6300 Phone
510.433.0830 Fax

Chain of Custody Record No. 9738

Lab PO#: To follow

Lab: CET

Project name: B445 landscape

TtEMI technical contact: Sara Woolley

Field samplers: Carolyn Ferlic, Dayna Aragon

Project (CTO) number: 103S094417.

TtEMI project manager: Jason Bradenson

Field samplers' signatures: Carolyn Ferlic

Preservative Added: none

Sample ID	Point ID/Depth	Date	Time	Matrix	MS / MSD	40 ml VOA	1 liter Amber	500 ml Poly	Sleeve	Glass Jar	250 ml Poly	Encore	VOA	SVOA	Pest	Metals	TPH Purgeables	TPH Extractables *	PCB	PAH 2730 SIM
RFS-B445-DH1		7/24/12	1030	Soil						1				X	X	X		X	X	X
RFS-B445-DH2		7/24/12	1130	Soil						1				X	X	X		X	X	X

	Name (print)	Company Name	Date	Time
Relinquished by: Carolyn Ferlic	Carolyn Ferlic	TTEMI	7/24/12	12:55
Received by: Pat Hamphry	Pat Gonzalez	CET	7/24/12	12:55
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				

Turnaround time/remarks:

* TPH-E with Silica Gel cleanup. (standard)

Fed Ex #:

WHITE-Laboratory Copy YELLOW-Sample Tracker PINK-File Copy

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 238169 Date Received 7/24/12 Number of coolers 0
Client Tetra Tech Project 1038094417

Date Opened 7/24/12 By (print) Eileen Leung (sign) Eileen
Date Logged in ↓ By (print) ↓ (sign) ↓

1. Did cooler come with a shipping slip (airbill, etc) _____ YES (NO)
   Shipping info _____

2A. Were custody seals present? .... ☐ YES (circle) on cooler on samples ☒ NO
   How many _____ Name _____ Date _____
2B. Were custody seals intact upon arrival? _____ YES NO (N/A)
3. Were custody papers dry and intact when received? _____ (YES) NO
4. Were custody papers filled out properly (ink, signed, etc)? _____ (YES) NO
5. Is the project identifiable from custody papers? (If so fill out top of form) ___ (YES) NO
6. Indicate the packing in cooler: (if other, describe) _____

☐ Bubble Wrap ☐ Foam blocks ☐ Bags ☒ None
☐ Cloth material ☐ Cardboard ☐ Styrofoam ☐ Paper towels

7. Temperature documentation: * Notify PM if temperature exceeds 6°C

Type of ice used: ☐ Wet ☐ Blue/Gel ☒ None Temp(°C) _____

☐ Samples Received on ice & cold without a temperature blank; temp. taken with IR gun

☐ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? _____ YES (NO)
   If YES, what time were they transferred to freezer? _____
9. Did all bottles arrive unbroken/unopened? _____ (YES) NO
10. Are there any missing / extra samples? _____ YES (NO)
11. Are samples in the appropriate containers for indicated tests? _____ (YES) NO
12. Are sample labels present, in good condition and complete? _____ (YES) NO
13. Do the sample labels agree with custody papers? _____ (YES) NO
14. Was sufficient amount of sample sent for tests requested? _____ (YES) NO
15. Are the samples appropriately preserved? _____ YES NO (N/A)
16. Did you check preservatives for all bottles for each sample? _____ YES NO (N/A)
17. Did you document your preservative check? _____ YES NO (N/A)
18. Did you change the hold time in LIMS for unpreserved VOAs? _____ YES NO (N/A)
19. Did you change the hold time in LIMS for preserved terracores? _____ YES NO (N/A)
20. Are bubbles > 6mm absent in VOA samples? _____ YES NO (N/A)
21. Was the client contacted concerning this sample delivery? _____ YES (NO)
   If YES, Who was called? _____ By _____ Date: _____

COMMENTS

_____
_____
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_____

Rev 10, 11/11

Results & QC Summary

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	238169	Location:	B445 Landscape
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S094417	Analysis:	EPA 8270C
Field ID:	RFS-B445-DU1	Batch#:	188785
Lab ID:	238169-001	Sampled:	07/24/12
Matrix:	Soil	Received:	07/24/12
Units:	ug/Kg	Prepared:	07/25/12
Basis:	dry	Analyzed:	07/25/12
Diln Fac:	5.000		

Moisture: 7%

Analyte	Result	RL	MDL
N-Nitrosodimethylamine	ND	1,800	370
Phenol	ND	1,800	250
bis(2-Chloroethyl)ether	ND	1,800	290
2-Chlorophenol	ND	1,800	290
1,3-Dichlorobenzene	ND	1,800	200
1,4-Dichlorobenzene	ND	1,800	78
Benzyl alcohol	ND	1,800	270
1,2-Dichlorobenzene	ND	1,800	180
2-Methylphenol	ND	1,800	330
bis(2-Chloroisopropyl) ether	ND	1,800	440
4-Methylphenol	ND	1,800	270
N-Nitroso-di-n-propylamine	ND	1,800	260
Hexachloroethane	ND	1,800	140
Nitrobenzene	ND	1,800	78
Isophorone	ND	1,800	52
2-Nitrophenol	ND	3,500	54
2,4-Dimethylphenol	ND	1,800	74
Benzoic acid	ND	8,900	1,300
bis(2-Chloroethoxy)methane	ND	1,800	59
2,4-Dichlorophenol	ND	1,800	67
1,2,4-Trichlorobenzene	ND	1,800	69
Naphthalene	ND	350	68
4-Chloroaniline	ND	1,800	87
Hexachlorobutadiene	ND	1,800	72
4-Chloro-3-methylphenol	ND	1,800	75
2-Methylnaphthalene	ND	350	57
Hexachlorocyclopentadiene	ND	3,500	65
2,4,6-Trichlorophenol	ND	1,800	75
2,4,5-Trichlorophenol	ND	1,800	71
2-Chloronaphthalene	ND	1,800	54
2-Nitroaniline	ND	3,500	56
Dimethylphthalate	ND	1,800	66
Acenaphthylene	ND	350	67
2,6-Dinitrotoluene	ND	1,800	66
3-Nitroaniline	ND	3,500	43
Acenaphthene	ND	350	59
2,4-Dinitrophenol	ND	3,500	500
4-Nitrophenol	ND	3,500	280
Dibenzofuran	ND	1,800	76
2,4-Dinitrotoluene	ND	1,800	52
Diethylphthalate	ND	1,800	72
Fluorene	ND	350	62
4-Chlorophenyl-phenylether	ND	1,800	66
4-Nitroaniline	ND	3,500	51
4,6-Dinitro-2-methylphenol	ND	3,500	370
N-Nitrosodiphenylamine	ND	1,800	71
Azobenzene	ND	1,800	74
4-Bromophenyl-phenylether	ND	1,800	67
Hexachlorobenzene	ND	1,800	73

J= Estimated value
ND= Not Detected at or above MDL
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	238169	Location:	B445 Landscape
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S094417	Analysis:	EPA 8270C
Field ID:	RFS-B445-DU1	Batch#:	188785
Lab ID:	238169-001	Sampled:	07/24/12
Matrix:	Soil	Received:	07/24/12
Units:	ug/Kg	Prepared:	07/25/12
Basis:	dry	Analyzed:	07/25/12
Diln Fac:	5.000		

Analyte	Result	RL	MDL
Pentachlorophenol	ND	3,500	330
Phenanthrene	ND	350	79
Anthracene	ND	350	66
Di-n-butylphthalate	77 J	1,800	77
Fluoranthene	ND	350	69
Pyrene	ND	350	62
Butylbenzylphthalate	82 J	1,800	57
3,3'-Dichlorobenzidine	ND	3,500	59
Benzo(a)anthracene	ND	350	63
Chrysene	ND	350	77
bis(2-Ethylhexyl)phthalate	120 J	1,800	78
Di-n-octylphthalate	ND	1,800	91
Benzo(b)fluoranthene	80 J	350	74
Benzo(k)fluoranthene	ND	350	95
Benzo(a)pyrene	ND	350	82
Indeno(1,2,3-cd)pyrene	ND	350	79
Dibenz(a,h)anthracene	ND	350	77
Benzo(g,h,i)perylene	ND	350	69

Tentatively Identified Compounds	Result
(-)-Globulol	9300 J
.alpha.-Phellandrene	7100 J
.alpha.-Pinene	3700 J
.gamma.-Sitosterol	3400 J
2-Pentanone, 4-hydroxy-4-methyl-	21000 J
CAS# 489-39-4	12000 J
Eucalyptol	8600 J
Octadecane	4200 J
Unknown 1	2800 J
Unknown 2	4800 J

Surrogate	%REC	Limits
2-Fluorophenol	54	35-120
Phenol-d5	62	35-120
2,4,6-Tribromophenol	69	31-120
Nitrobenzene-d5	81	48-120
2-Fluorobiphenyl	50	50-120
Terphenyl-d14	72	40-120

J= Estimated value
ND= Not Detected at or above MDL
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	238169	Location:	B445 Landscape
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S094417	Analysis:	EPA 8270C
Field ID:	RFS-B445-DU2	Batch#:	188785
Lab ID:	238169-002	Sampled:	07/24/12
Matrix:	Soil	Received:	07/24/12
Units:	ug/Kg	Prepared:	07/25/12
Basis:	dry	Analyzed:	07/27/12
Diln Fac:	5.000		

Moisture: 7%

Analyte	Result	RL	MDL
N-Nitrosodimethylamine	ND	1,800	250
Phenol	ND	1,800	38
bis(2-Chloroethyl)ether	ND	1,800	320
2-Chlorophenol	ND	1,800	40
1,3-Dichlorobenzene	ND	1,800	310
1,4-Dichlorobenzene	ND	1,800	42
Benzyl alcohol	ND	1,800	59
1,2-Dichlorobenzene	ND	1,800	41
2-Methylphenol	ND	1,800	74
bis(2-Chloroisopropyl) ether	ND	1,800	38
4-Methylphenol	ND	1,800	39
N-Nitroso-di-n-propylamine	ND	1,800	43
Hexachloroethane	ND	1,800	37
Nitrobenzene	ND	1,800	59
Isophorone	ND	1,800	37
2-Nitrophenol	ND	3,600	41
2,4-Dimethylphenol	ND	1,800	76
Benzoic acid	ND	9,000	2,400
bis(2-Chloroethoxy)methane	ND	1,800	41
2,4-Dichlorophenol	ND	1,800	44
1,2,4-Trichlorobenzene	ND	1,800	43
Naphthalene	ND	360	42
4-Chloroaniline	ND	1,800	51
Hexachlorobutadiene	ND	1,800	48
4-Chloro-3-methylphenol	ND	1,800	45
2-Methylnaphthalene	ND	360	34
Hexachlorocyclopentadiene	ND	3,600	74
2,4,6-Trichlorophenol	ND	1,800	68
2,4,5-Trichlorophenol	ND	1,800	45
2-Chloronaphthalene	ND	1,800	49
2-Nitroaniline	ND	3,600	58
Dimethylphthalate	ND	1,800	54
Acenaphthylene	ND	360	48
2,6-Dinitrotoluene	ND	1,800	48
3-Nitroaniline	ND	3,600	41
Acenaphthene	ND	360	44
2,4-Dinitrophenol	ND	3,600	350
4-Nitrophenol	ND	3,600	390
Dibenzofuran	ND	1,800	56
2,4-Dinitrotoluene	ND	1,800	52
Diethylphthalate	ND	1,800	61
Fluorene	ND	360	53
4-Chlorophenyl-phenylether	ND	1,800	52
4-Nitroaniline	ND	3,600	43
4,6-Dinitro-2-methylphenol	ND	3,600	420
N-Nitrosodiphenylamine	ND	1,800	57
Azobenzene	ND	1,800	46
4-Bromophenyl-phenylether	ND	1,800	57
Hexachlorobenzene	ND	1,800	58

J= Estimated value
ND= Not Detected at or above MDL
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	238169	Location:	B445 Landscape
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S094417	Analysis:	EPA 8270C
Field ID:	RFS-B445-DU2	Batch#:	188785
Lab ID:	238169-002	Sampled:	07/24/12
Matrix:	Soil	Received:	07/24/12
Units:	ug/Kg	Prepared:	07/25/12
Basis:	dry	Analyzed:	07/27/12
Diln Fac:	5.000		

Analyte	Result	RL	MDL
Pentachlorophenol	ND	3,600	690
Phenanthrene	330 J	360	57
Anthracene	78 J	360	61
Di-n-butylphthalate	ND	1,800	65
Fluoranthene	960	360	56
Pyrene	1,000	360	59
Butylbenzylphthalate	ND	1,800	54
3,3'-Dichlorobenzidine	ND	3,600	38
Benzo(a)anthracene	570	360	55
Chrysene	830	360	61
bis(2-Ethylhexyl)phthalate	75 J	1,800	71
Di-n-octylphthalate	ND	1,800	39
Benzo(b)fluoranthene	1,300	360	49
Benzo(k)fluoranthene	390	360	51
Benzo(a)pyrene	870	360	47
Indeno(1,2,3-cd)pyrene	510	360	48
Dibenz(a,h)anthracene	140 J	360	50
Benzo(g,h,i)perylene	550	360	55

Tentatively Identified Compounds	Result
.gamma.-Sitosterol	4200 J
2-Pentanone, 4-hydroxy-4-methyl-	31000 J
9-Octadecenamide, (Z)-	1500 J
Benzo[b]triphenylene	990 J
CAS# 489-39-4	1800 J
CAS# 6754-66-1	910 J
Eucalyptol	1200 J
Nonadecane	920 J
Octacosane	1200 J
Octacosane*	910 J

Surrogate	%REC	Limits
2-Fluorophenol	68	35-120
Phenol-d5	59	35-120
2,4,6-Tribromophenol	71	31-120
Nitrobenzene-d5	63	48-120
2-Fluorobiphenyl	71	50-120
Terphenyl-d14	79	40-120

J= Estimated value
ND= Not Detected at or above MDL
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Semivolatile Organics by GC/MS

Lab #:	238169	Location:	B445 Landscape
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S094417	Analysis:	EPA 8270C
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC649035	Batch#:	188785
Matrix:	Soil	Prepared:	07/25/12
Units:	ug/Kg	Analyzed:	07/25/12

Analyte	Result	RL	MDL
N-Nitrosodimethylamine	ND	330	47
Phenol	ND	330	7.0
bis(2-Chloroethyl)ether	ND	330	59
2-Chlorophenol	ND	330	7.3
1,3-Dichlorobenzene	ND	330	56
1,4-Dichlorobenzene	ND	330	7.6
Benzyl alcohol	ND	330	11
1,2-Dichlorobenzene	ND	330	7.6
2-Methylphenol	ND	330	13
bis(2-Chloroisopropyl) ether	ND	330	6.9
4-Methylphenol	ND	330	7.2
N-Nitroso-di-n-propylamine	ND	330	7.8
Hexachloroethane	ND	330	6.8
Nitrobenzene	ND	330	11
Isophorone	ND	330	6.7
2-Nitrophenol	ND	660	7.6
2,4-Dimethylphenol	ND	330	14
Benzoic acid	ND	1,600	430
bis(2-Chloroethoxy)methane	ND	330	7.5
2,4-Dichlorophenol	ND	330	8.1
1,2,4-Trichlorobenzene	ND	330	7.8
Naphthalene	ND	66	7.6
4-Chloroaniline	ND	330	9.3
Hexachlorobutadiene	ND	330	8.8
4-Chloro-3-methylphenol	ND	330	8.2
2-Methylnaphthalene	ND	66	6.3
Hexachlorocyclopentadiene	ND	660	13
2,4,6-Trichlorophenol	ND	330	12
2,4,5-Trichlorophenol	ND	330	8.3
2-Chloronaphthalene	ND	330	8.9
2-Nitroaniline	ND	660	11
Dimethylphthalate	ND	330	9.9
Acenaphthylene	ND	66	8.8
2,6-Dinitrotoluene	ND	330	8.8
3-Nitroaniline	ND	660	7.5
Acenaphthene	ND	66	8.1
2,4-Dinitrophenol	ND	660	63
4-Nitrophenol	ND	660	70
Dibenzofuran	ND	330	10
2,4-Dinitrotoluene	ND	330	9.5
Diethylphthalate	ND	330	11
Fluorene	ND	66	9.8
4-Chlorophenyl-phenylether	ND	330	9.5
4-Nitroaniline	ND	660	7.9
4,6-Dinitro-2-methylphenol	ND	660	76
N-Nitrosodiphenylamine	ND	330	10
Azobenzene	ND	330	8.5
4-Bromophenyl-phenylether	ND	330	10
Hexachlorobenzene	ND	330	11
Pentachlorophenol	ND	660	130
Phenanthrene	ND	66	10
Anthracene	ND	66	11

J= Estimated value
ND= Not Detected at or above MDL
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Semivolatile Organics by GC/MS

Lab #:	238169	Location:	B445 Landscape
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S094417	Analysis:	EPA 8270C
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC649035	Batch#:	188785
Matrix:	Soil	Prepared:	07/25/12
Units:	ug/Kg	Analyzed:	07/25/12

Analyte	Result	RL	MDL
Di-n-butylphthalate	ND	330	12
Fluoranthene	ND	66	10
Pyrene	ND	66	11
Butylbenzylphthalate	ND	330	9.9
3,3'-Dichlorobenzidine	ND	660	6.9
Benzo(a)anthracene	ND	66	10
Chrysene	ND	66	11
bis(2-Ethylhexyl)phthalate	24 J	330	13
Di-n-octylphthalate	ND	330	7.2
Benzo(b)fluoranthene	ND	66	8.9
Benzo(k)fluoranthene	ND	66	9.4
Benzo(a)pyrene	ND	66	8.7
Indeno(1,2,3-cd)pyrene	ND	66	8.7
Dibenz(a,h)anthracene	ND	66	9.2
Benzo(g,h,i)perylene	ND	66	10

Tentatively Identified Compounds	Result
2-Pentanone, 4-hydroxy-4-methyl-	11000 J
Acetone	210 J

Surrogate	%REC	Limits
2-Fluorophenol	74	35-120
Phenol-d5	70	35-120
2,4,6-Tribromophenol	64	31-120
Nitrobenzene-d5	65	48-120
2-Fluorobiphenyl	70	50-120
Terphenyl-d14	77	40-120

J= Estimated value
ND= Not Detected at or above MDL
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 238169
ANALYTICAL REPORT
Semivolatile Organics by GC/MS SIM

Tetra Tech EMI 1999 Harrison Street Oakland, CA 94612	Project : 103S094417 Location : B445 Landscape Level : IV

Sample ID	Lab ID
RFS-B445-DU1	238169-001
RFS-B445-DU2	238169-002

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: _____ Date: 08/07/2012

Mike J. Dahlquist
Project Manager
(510) 486-0900

NELAP # 01107CA

Curtis & Tompkins, Ltd.

CASE NARRATIVE
SEMIVOLATILE ORGANICS BY GC/MS SIM (EPA 8270C-SIM)

Laboratory number:	**238169**
Client:	**Tetra Tech EMI**
Project:	**103S094417**
Location:	**B445 Landscape**
Request Date:	**07/24/12**
Samples Received:	**07/24/12**

This data package contains sample and QC results for two soil samples, requested for the above referenced project on 07/24/12. See attached cooler receipt form for any sample receipt problems or discrepancies.

Semivolatile Organics by GC/MS SIM (EPA 8270C-SIM):

Matrix spikes QC649055,QC649056 (batch 188789) were not reported because the parent sample required a dilution that would have diluted out the spikes.

High recovery was observed for acenaphthene in the MSD for batch 188789; the parent sample was not a project sample, the LCS was within limits, the associated RPD was within limits, and this analyte was not detected at or above the RL in the associated samples.

RFS-B445-DU1 (lab # 238169-001) and RFS-B445-DU2 (lab # 238169-002) were diluted due to the dark and viscous nature of the sample extracts.

No other analytical problems were encountered.

Chain of Custody

238169

Tetra Tech EM Inc.
Oakland Office

1999 Harrison Street, Suite 500
Oakland, CA 94612
510.302.6300 Phone
510.433.0830 Fax

Chain of Custody Record No. 9738

Lab PO#: To follow

Lab: CET

Project name: B445 landscape

TtEMI technical contact: Sara Woolley

Field samplers: Carolyn Ferlic, Dayna Aragon

Project (CTO) number: 103S094417.

TtEMI project manager: Jason Bradenson

Field samplers' signatures: Carolyn Ferlic

Preservative Added: none

Sample ID	Point ID/Depth	Date	Time	Matrix	MS / MSD	40 ml VOA	1 liter Amber	500 ml Poly	Sleeve	Glass Jar	250 ml Poly	Encore	VOA	SVOA	Pest	Metals	TPH Purgeables	TPH Extractables *	PCB	PAH 2730 SIM
RFS-B445-DH1		7/24/12	1030	Soil						1				X	X	X		X	X	X
RFS-B445-DH2		7/24/12	1130	Soil						1				X	X	X		X	X	X

	Name (print)	Company Name	Date	Time
Relinquished by: Carolyn Ferlic	Carolyn Ferlic	TTEMI	7/24/12	12:55
Received by: Pat Hamphry	Pat Gonzalez	CET	7/24/12	12:55
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				

Turnaround time/remarks:

* TPH-E with Silica Gel cleanup. (standard)

Fed Ex #:

WHITE-Laboratory Copy YELLOW-Sample Tracker PINK-File Copy

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 238169 Date Received 7/24/12 Number of coolers 0
Client Tetra Tech Project 103S094417

Date Opened 7/24/12 By (print) Eileen Leung (sign) Eileen
Date Logged in ↓ By (print) ↓ (sign) ↓

1. Did cooler come with a shipping slip (airbill, etc)_____ YES (NO)
   Shipping info_____

2A. Were custody seals present? .... ☐ YES (circle) on cooler on samples ☒ NO
   How many _____ Name_____ Date_____
2B. Were custody seals intact upon arrival? _____ YES NO (N/A)
3. Were custody papers dry and intact when received? _____ (YES) NO
4. Were custody papers filled out properly (ink, signed, etc)? _____ (YES) NO
5. Is the project identifiable from custody papers? (If so fill out top of form) (YES) NO
6. Indicate the packing in cooler: (if other, describe)_____

   ☐ Bubble Wrap ☐ Foam blocks ☐ Bags ☒ None
   ☐ Cloth material ☐ Cardboard ☐ Styrofoam ☐ Paper towels
7. Temperature documentation: * Notify PM if temperature exceeds 6°C

   Type of ice used: ☐ Wet ☐ Blue/Gel ☒ None Temp(°C)_____

   ☐ Samples Received on ice & cold without a temperature blank; temp. taken with IR gun

   ☐ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? _____ YES (NO)
   If YES, what time were they transferred to freezer?_____
9. Did all bottles arrive unbroken/unopened? _____ (YES) NO
10. Are there any missing / extra samples? _____ YES (NO)
11. Are samples in the appropriate containers for indicated tests? _____ (YES) NO
12. Are sample labels present, in good condition and complete? _____ (YES) NO
13. Do the sample labels agree with custody papers? _____ (YES) NO
14. Was sufficient amount of sample sent for tests requested? _____ (YES) NO
15. Are the samples appropriately preserved? _____ YES NO (N/A)
16. Did you check preservatives for all bottles for each sample? _____ YES NO (N/A)
17. Did you document your preservative check? _____ YES NO (N/A)
18. Did you change the hold time in LIMS for unpreserved VOAs? _____ YES NO (N/A)
19. Did you change the hold time in LIMS for preserved terracores? _____ YES NO (N/A)
20. Are bubbles > 6mm absent in VOA samples? _____ YES NO (N/A)
21. Was the client contacted concerning this sample delivery? _____ YES (NO)
   If YES, Who was called?_____ By_____ Date:_____

COMMENTS

_____

Rev 10, 11/11

Results & QC Summary

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	238169	Location:	B445 Landscape
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S094417	Analysis:	EPA 8270C-SIM
Field ID:	RFS-B445-DU1	Batch#:	188789
Lab ID:	238169-001	Sampled:	07/24/12
Matrix:	Soil	Received:	07/24/12
Units:	ug/Kg	Prepared:	07/25/12
Basis:	dry	Analyzed:	07/26/12
Diln Fac:	3.000		

Moisture: 7%

Analyte	Result	RL	MDL
Naphthalene	ND	16	3.2
Acenaphthylene	24	16	3.2
Acenaphthene	ND	16	3.2
Fluorene	ND	16	3.2
Phenanthrene	23	16	3.2
Anthracene	5.5 J	16	3.2
Fluoranthene	49	16	3.2
Pyrene	47	16	3.2
Benzo(a)anthracene	25	16	3.2
Chrysene	48	16	3.2
Benzo(b)fluoranthene	160	16	3.2
Benzo(k)fluoranthene	35	16	3.2
Benzo(a)pyrene	46	16	3.2
Indeno(1,2,3-cd)pyrene	32	16	3.2
Dibenz(a,h)anthracene	11 J	16	3.2
Benzo(g,h,i)perylene	35	16	3.2

Surrogate	%REC	Limits
Nitrobenzene-d5	96	31-120
2-Fluorobiphenyl	86	46-120
Terphenyl-d14	95	41-120

J= Estimated value
ND= Not Detected at or above MDL
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	238169	Location:	B445 Landscape
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S094417	Analysis:	EPA 8270C-SIM
Field ID:	RFS-B445-DU2	Batch#:	188789
Lab ID:	238169-002	Sampled:	07/24/12
Matrix:	Soil	Received:	07/24/12
Units:	ug/Kg	Prepared:	07/25/12
Basis:	dry	Analyzed:	07/26/12
Diln Fac:	3.000		

Moisture: 7%

Analyte	Result	RL	MDL
Naphthalene	3.5 J	16	3.2
Acenaphthylene	13 J	16	3.2
Acenaphthene	5.4 J	16	3.2
Fluorene	11 J	16	3.2
Phenanthrene	88	16	3.2
Anthracene	29	16	3.2
Fluoranthene	240	16	3.2
Pyrene	230	16	3.2
Benzo(a)anthracene	110	16	3.2
Chrysene	250	16	3.2
Benzo(b)fluoranthene	440	16	3.2
Benzo(k)fluoranthene	140	16	3.2
Benzo(a)pyrene	220	16	3.2
Indeno(1,2,3-cd)pyrene	210	16	3.2
Dibenz(a,h)anthracene	60	16	3.2
Benzo(g,h,i)perylene	190	16	3.2

Surrogate	%REC	Limits
Nitrobenzene-d5	95	31-120
2-Fluorobiphenyl	90	46-120
Terphenyl-d14	103	41-120

J= Estimated value
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Semivolatile Organics by GC/MS SIM

Lab #:	238169	Location:	B445 Landscape
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S094417	Analysis:	EPA 8270C-SIM
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC649051	Batch#:	188789
Matrix:	Soil	Prepared:	07/25/12
Units:	ug/Kg	Analyzed:	07/25/12

Analyte	Result	RL	MDL
Naphthalene	ND	5.0	1.0
Acenaphthylene	ND	5.0	1.0
Acenaphthene	ND	5.0	1.0
Fluorene	ND	5.0	1.0
Phenanthrene	ND	5.0	1.0
Anthracene	ND	5.0	1.0
Fluoranthene	ND	5.0	1.0
Pyrene	ND	5.0	1.0
Benzo(a)anthracene	ND	5.0	1.0
Chrysene	ND	5.0	1.0
Benzo(b)fluoranthene	ND	5.0	1.0
Benzo(k)fluoranthene	ND	5.0	1.0
Benzo(a)pyrene	ND	5.0	1.0
Indeno(1,2,3-cd)pyrene	ND	5.0	1.0
Dibenz(a,h)anthracene	ND	5.0	1.0
Benzo(g,h,i)perylene	ND	5.0	1.0

Surrogate	%REC	Limits
Nitrobenzene-d5	75	31-120
2-Fluorobiphenyl	83	46-120
Terphenyl-d14	88	41-120

ND= Not Detected at or above MDL
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 238169
ANALYTICAL REPORT
Pesticides

Tetra Tech EMI 1999 Harrison Street Oakland, CA 94612	Project : 103S094417 Location : B445 Landscape Level : IV

Sample ID	Lab ID
RFS-B445-DU1	238169-001
RFS-B445-DU2	238169-002

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: _____ Date: 08/07/2012

Mike J. Dahlquist
Project Manager
(510) 486-0900

NELAP # 01107CA

Curtis & Tompkins, Ltd.

CASE NARRATIVE
PESTICIDES (EPA 8081A)

Laboratory number:	**238169**
Client:	**Tetra Tech EMI**
Project:	**103S094417**
Location:	**B445 Landscape**
Request Date:	**07/24/12**
Samples Received:	**07/24/12**

This data package contains sample and QC results for two soil samples, requested for the above referenced project on 07/24/12. See attached cooler receipt form for any sample receipt problems or discrepancies.

Pesticides (EPA 8081A):

All samples underwent sulfur cleanup using the copper option in EPA Method 3660B.

All samples underwent florisil cleanup using EPA Method 3620C.

High response was observed for endrin aldehyde in the ICV analyzed 07/27/12 21:25; average ICV drift met method requirements, and this analyte was not detected at or above the RL in the associated samples.

High responses were observed for endosulfan sulfate and endrin aldehyde in the ICV analyzed 06/24/12 23:47; average ICV drift met method requirements.

High responses were observed for many analytes in the CCV analyzed 08/02/12 03:34; average CCV drift met method requirements.

High response was observed for methoxychlor in the CCV analyzed 07/25/12 20:01.

Low response was observed for 4,4'-DDT in the CCV analyzed 07/25/12 14:02; average CCV drift met method requirements.

No other analytical problems were encountered.

Chain of Custody

238169

Tetra Tech EM Inc.
Oakland Office

1999 Harrison Street, Suite 500
Oakland, CA 94612
510.302.6300 Phone
510.433.0830 Fax

Chain of Custody Record No. 9738

Lab PO#:	To follow
Lab:	CET
Project name:	B445 landscape
TtEMI technical contact:	Sara Woolley
Field samplers:	Carolyn Ferlic, Dayna Aragon
Project (CTO) number:	103S094417.
TtEMI project manager:	Jason Broderson
Field samplers' signatures:	Carolyn Ferlic

Preservative Added: none

Sample ID	Point ID/Depth	Date	Time	Matrix	MS / MSD	40 ml VOA	1 liter Amber	500 ml Poly	Sleeve	Glass Jar	250 ml Poly	Encore	VOA	SVOA	Pest	Metals	TPH Purgeables	TPH Extractables *	PCB	PAH 2730 SIM
RFS-B445-DH1		7/24/12	1030	Soil						1				X	X	X		X	X	X
RFS-B445-DH2		7/24/12	1130	Soil						1				X	X	X		X	X	X

	Name (print)	Company Name	Date	Time
Relinquished by: Carolyn Ferlic	Carolyn Ferlic	TTEMI	7/24/12	12:55
Received by: Pat Gonzalez	Pat Gonzalez	CET	7/24/12	12:55
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				

Turnaround time/remarks:

* TPH-E with Silica Gel cleanup. (standard)

Fed Ex #:

WHITE-Laboratory Copy YELLOW-Sample Tracker PINK-File Copy

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 238169 Date Received 7/24/12 Number of coolers 0
Client Tetra Tech Project 103S094417

Date Opened 7/24/12 By (print) Eileen Leung (sign) Eileen
Date Logged in ↓ By (print) ↓ (sign) ↓

1. Did cooler come with a shipping slip (airbill, etc)_____ YES (NO)
   Shipping info_____

2A. Were custody seals present? .... ☐ YES (circle) on cooler on samples ☒ NO
   How many _____ Name_____ Date_____
2B. Were custody seals intact upon arrival? _____ YES NO (N/A)
3. Were custody papers dry and intact when received? _____ (YES) NO
4. Were custody papers filled out properly (ink, signed, etc)? _____ (YES) NO
5. Is the project identifiable from custody papers? (If so fill out top of form) (YES) NO
6. Indicate the packing in cooler: (if other, describe)_____

   ☐ Bubble Wrap ☐ Foam blocks ☐ Bags ☒ None
   ☐ Cloth material ☐ Cardboard ☐ Styrofoam ☐ Paper towels
7. Temperature documentation: * Notify PM if temperature exceeds 6°C

   Type of ice used: ☐ Wet ☐ Blue/Gel ☒ None Temp(°C)_____

   ☐ Samples Received on ice & cold without a temperature blank; temp. taken with IR gun

   ☐ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? _____ YES (NO)
   If YES, what time were they transferred to freezer?_____
9. Did all bottles arrive unbroken/unopened? _____ (YES) NO
10. Are there any missing / extra samples? _____ YES (NO)
11. Are samples in the appropriate containers for indicated tests? _____ (YES) NO
12. Are sample labels present, in good condition and complete? _____ (YES) NO
13. Do the sample labels agree with custody papers? _____ (YES) NO
14. Was sufficient amount of sample sent for tests requested? _____ (YES) NO
15. Are the samples appropriately preserved? _____ YES NO (N/A)
16. Did you check preservatives for all bottles for each sample? _____ YES NO (N/A)
17. Did you document your preservative check? _____ YES NO (N/A)
18. Did you change the hold time in LIMS for unpreserved VOAs? _____ YES NO (N/A)
19. Did you change the hold time in LIMS for preserved terracores? _____ YES NO (N/A)
20. Are bubbles > 6mm absent in VOA samples? _____ YES NO (N/A)
21. Was the client contacted concerning this sample delivery? _____ YES (NO)
   If YES, Who was called?_____ By_____ Date:_____

COMMENTS

_____

Rev 10, 11/11

Results & QC Summary

Curtis & Tompkins, Ltd.

Organochlorine Pesticides

Lab #:	238169	Location:	B445 Landscape
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S094417	Analysis:	EPA 8081A
Field ID:	RFS-B445-DU1	Batch#:	188773
Lab ID:	238169-001	Sampled:	07/24/12
Matrix:	Soil	Received:	07/24/12
Units:	ug/Kg	Prepared:	07/25/12
Basis:	dry	Analyzed:	08/02/12
Diln Fac:	1.000		

Moisture: 7%

Analyte	Result	RL	MDL
alpha-BHC	ND	1.8	0.22
beta-BHC	ND	1.8	0.45
gamma-BHC	ND	1.8	0.23
delta-BHC	ND	1.8	0.30
Heptachlor	5.5 C	1.8	0.21
Aldrin	ND	1.8	0.22
Heptachlor epoxide	2.7	1.8	0.24
Endosulfan I	ND	1.8	0.19
Dieldrin	2.5 C J	3.6	0.43
4,4'-DDE	8.1 C	3.6	0.64
Endrin	1.4 C J	3.6	0.61
Endosulfan II	ND	3.6	0.54
Endosulfan sulfate	ND	3.6	0.56
4,4'-DDD	13 C #	3.6	0.79
Endrin aldehyde	ND	3.6	0.37
4,4'-DDT	17	3.6	0.51
alpha-Chlordane	56 C	1.8	0.22
gamma-Chlordane	38 C	1.8	0.27
Methoxychlor	ND	18	3.4
Toxaphene	ND	65	9.9

Surrogate	%REC	Limits
TCMX	83	46-120
Decachlorobiphenyl	95	38-125

#= CCV drift outside limits; average CCV drift within limits per method requirements
C= Presence confirmed, but RPD between columns exceeds 40%
J= Estimated value
ND= Not Detected at or above MDL
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Organochlorine Pesticides

Lab #:	238169	Location:	B445 Landscape
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S094417	Analysis:	EPA 8081A
Field ID:	RFS-B445-DU2	Batch#:	188773
Lab ID:	238169-002	Sampled:	07/24/12
Matrix:	Soil	Received:	07/24/12
Units:	ug/Kg	Prepared:	07/25/12
Basis:	dry	Analyzed:	08/02/12
Diln Fac:	1.000		

Moisture: 7%

Analyte	Result	RL	MDL
alpha-BHC	0.52 C J	1.8	0.21
beta-BHC	ND	1.8	0.45
gamma-BHC	0.26 C J	1.8	0.23
delta-BHC	ND	1.8	0.30
Heptachlor	1.7 C J	1.8	0.21
Aldrin	0.60 C J	1.8	0.22
Heptachlor epoxide	6.4	1.8	0.24
Endosulfan I	1.6 C J	1.8	0.19
Dieldrin	1.4 C J	3.6	0.43
4,4'-DDE	4.3 C	3.6	0.63
Endrin	ND	3.6	0.60
Endosulfan II	2.9 J	3.6	0.54
Endosulfan sulfate	ND	3.6	0.56
4,4'-DDD	11 C #	3.6	0.79
Endrin aldehyde	ND	3.6	0.36
4,4'-DDT	4.5 C	3.6	0.51
alpha-Chlordane	44	1.8	0.22
gamma-Chlordane	3.3 C	1.8	0.27
Methoxychlor	ND	18	3.4
Toxaphene	ND	65	9.9

Surrogate	%REC	Limits
TCMX	86	46-120
Decachlorobiphenyl	100	38-125

#= CCV drift outside limits; average CCV drift within limits per method requirements
C= Presence confirmed, but RPD between columns exceeds 40%
J= Estimated value
ND= Not Detected at or above MDL
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Organochlorine Pesticides

Lab #:	238169	Location:	B445 Landscape
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S094417	Analysis:	EPA 8081A
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC648976	Batch#:	188773
Matrix:	Soil	Prepared:	07/24/12
Units:	ug/Kg	Analyzed:	07/25/12

Analyte	Result	RL	MDL
alpha-BHC	ND	1.7	0.27
beta-BHC	ND	1.7	0.38
gamma-BHC	ND	1.7	0.30
delta-BHC	ND	1.7	0.27
Heptachlor	ND	1.7	0.23
Aldrin	ND	1.7	0.22
Heptachlor epoxide	ND	1.7	0.22
Endosulfan I	ND	1.7	0.19
Dieldrin	ND	3.3	0.36
4,4'-DDE	ND	3.3	0.33
Endrin	ND	3.3	0.42
Endosulfan II	ND	3.3	0.48
Endosulfan sulfate	ND	3.3	0.34
4,4'-DDD	ND	3.3	0.46
Endrin aldehyde	ND	3.3	0.46
4,4'-DDT	ND #	3.3	0.32
alpha-Chlordane	ND	1.7	0.18
gamma-Chlordane	ND	1.7	0.17
Methoxychlor	ND	17	2.5
Toxaphene	ND	60	13

Surrogate	%REC	Limits
TCMX	89	46-120
Decachlorobiphenyl	106	38-125

#= CCV drift outside limits; average CCV drift within limits per method requirements
ND= Not Detected at or above MDL
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 238169
ANALYTICAL REPORT
PCBs

Tetra Tech EMI 1999 Harrison Street Oakland, CA 94612	Project : 103S094417 Location : B445 Landscape Level : IV

Sample ID	Lab ID
RFS-B445-DU1	238169-001
RFS-B445-DU2	238169-002

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: _____ Date: 08/07/2012

Mike J. Dahlquist
Project Manager
(510) 486-0900

NELAP # 01107CA

Curtis & Tompkins, Ltd.

CASE NARRATIVE
PCBS (EPA 8082)

Laboratory number:	**238169**
Client:	**Tetra Tech EMI**
Project:	**103S094417**
Location:	**B445 Landscape**
Request Date:	**07/24/12**
Samples Received:	**07/24/12**

This data package contains sample and QC results for two soil samples, requested for the above referenced project on 07/24/12. See attached cooler receipt form for any sample receipt problems or discrepancies.

PCBs (EPA 8082):

All samples underwent sulfuric acid cleanup using EPA Method 3665A.

All samples underwent sulfur cleanup using the copper option in EPA Method 3660B.

High responses were observed for Aroclor-1016 and Aroclor-1260 in the CCV analyzed 07/25/12 08:03.

High responses were observed for Aroclor-1016 and Aroclor-1260 in the CCV analyzed 07/25/12 13:41.

High response was observed for Aroclor-1260 in the CCV analyzed 07/26/12 15:43; affected data was qualified with "b".

No other analytical problems were encountered.

Chain of Custody

238169

Tetra Tech EM Inc.
Oakland Office

1999 Harrison Street, Suite 500
Oakland, CA 94612
510.302.6300 Phone
510.433.0830 Fax

Chain of Custody Record No. 9738

Lab PO#: To follow

Lab: CET

Project name: B445 landscape

TtEMI technical contact: Sara Woolley

Field samplers: Carolyn Ferlic, Dayna Aragon

Project (CTO) number: 103S094417.

TtEMI project manager: Jason Bradenson

Field samplers' signatures: Carolyn Ferlic

Preservative Added: none

Sample ID	Point ID/Depth	Date	Time	Matrix	MS / MSD	40 ml VOA	1 liter Amber	500 ml Poly	Sleeve	Glass Jar	250 ml Poly	Encore	VOA	SVOA	Pest	Metals	TPH Purgeables	TPH Extractables *	PCB	PAH 2730 SIM
RFS-B445-DH1		7/24/12	1030	S071						1				X	X	X		X	X	X
RFS-B445-DH2		7/24/12	1130	S071						1				X	X	X		X	X	X

	Name (print)	Company Name	Date	Time
Relinquished by: Carolyn Ferlic	Carolyn Ferlic	TTEMI	7/24/12	12:55
Received by: Pat Gonzalez	Pat Gonzalez	CET	7/24/12	12:55
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				

Turnaround time/remarks:

* TPH-E with Silica Gel cleanup. (standard)

Fed Ex #:

WHITE-Laboratory Copy YELLOW-Sample Tracker PINK-File Copy

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 238169 Date Received 7/24/12 Number of coolers 0
Client Tetra Tech Project 103S094417

Date Opened 7/24/12 By (print) Eileen Leung (sign) Eileen
Date Logged in ↓ By (print) ↓ (sign) ↓

1. Did cooler come with a shipping slip (airbill, etc) _____ YES (NO)
   Shipping info _____

2A. Were custody seals present? .... ☐ YES (circle) on cooler on samples ☒ NO
   How many _____ Name _____ Date _____
2B. Were custody seals intact upon arrival? _____ YES NO (N/A)
3. Were custody papers dry and intact when received? _____ (YES) NO
4. Were custody papers filled out properly (ink, signed, etc)? _____ (YES) NO
5. Is the project identifiable from custody papers? (If so fill out top of form) ___ (YES) NO
6. Indicate the packing in cooler: (if other, describe) _____

☐ Bubble Wrap ☐ Foam blocks ☐ Bags ☒ None
☐ Cloth material ☐ Cardboard ☐ Styrofoam ☐ Paper towels

7. Temperature documentation: * Notify PM if temperature exceeds 6°C

Type of ice used: ☐ Wet ☐ Blue/Gel ☒ None Temp(°C) _____

☐ Samples Received on ice & cold without a temperature blank; temp. taken with IR gun

☐ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? _____ YES (NO)
   If YES, what time were they transferred to freezer? _____
9. Did all bottles arrive unbroken/unopened? _____ (YES) NO
10. Are there any missing / extra samples? _____ YES (NO)
11. Are samples in the appropriate containers for indicated tests? _____ (YES) NO
12. Are sample labels present, in good condition and complete? _____ (YES) NO
13. Do the sample labels agree with custody papers? _____ (YES) NO
14. Was sufficient amount of sample sent for tests requested? _____ (YES) NO
15. Are the samples appropriately preserved? _____ YES NO (N/A)
16. Did you check preservatives for all bottles for each sample? _____ YES NO (N/A)
17. Did you document your preservative check? _____ YES NO (N/A)
18. Did you change the hold time in LIMS for unpreserved VOAs? _____ YES NO (N/A)
19. Did you change the hold time in LIMS for preserved terracores? _____ YES NO (N/A)
20. Are bubbles > 6mm absent in VOA samples? _____ YES NO (N/A)
21. Was the client contacted concerning this sample delivery? _____ YES (NO)
   If YES, Who was called? _____ By _____ Date: _____

COMMENTS

_____

Rev 10, 11/11

Results & QC Summary

Curtis & Tompkins, Ltd.

Polychlorinated Biphenyls (PCBs)

Lab #:	238169	Location:	B445 Landscape
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S094417	Analysis:	EPA 8082
Field ID:	RFS-B445-DU1	Batch#:	188773
Lab ID:	238169-001	Sampled:	07/24/12
Matrix:	Soil	Received:	07/24/12
Units:	ug/Kg	Prepared:	07/25/12
Basis:	dry	Analyzed:	08/04/12
Diln Fac:	1.000		

Moisture: 7%

Analyte	Result	RL	MDL
Aroclor-1016	ND	10	2.6
Aroclor-1221	ND	21	1.7
Aroclor-1232	ND	10	1.3
Aroclor-1242	ND	10	0.69
Aroclor-1248	ND	10	1.9
Aroclor-1254	ND	10	1.4
Aroclor-1260	ND	10	0.84

Surrogate	%REC	Limits
TCMX	99	56-143
Decachlorobiphenyl	83	33-135

ND= Not Detected at or above MDL
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Polychlorinated Biphenyls (PCBs)

Lab #:	238169	Location:	B445 Landscape
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S094417	Analysis:	EPA 8082
Field ID:	RFS-B445-DU2	Batch#:	188773
Lab ID:	238169-002	Sampled:	07/24/12
Matrix:	Soil	Received:	07/24/12
Units:	ug/Kg	Prepared:	07/25/12
Basis:	dry	Analyzed:	08/04/12
Diln Fac:	1.000		

Moisture: 7%

Analyte	Result	RL	MDL
Aroclor-1016	ND	10	2.6
Aroclor-1221	ND	21	1.7
Aroclor-1232	ND	10	1.3
Aroclor-1242	ND	10	0.69
Aroclor-1248	ND	10	1.9
Aroclor-1254	ND	10	1.4
Aroclor-1260	ND	10	0.84

Surrogate	%REC	Limits
TCMX	100	56-143
Decachlorobiphenyl	95	33-135

ND= Not Detected at or above MDL
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Polychlorinated Biphenyls (PCBs)

Lab #:	238169	Location:	B445 Landscape
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S094417	Analysis:	EPA 8082
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC648976	Batch#:	188773
Matrix:	Soil	Prepared:	07/24/12
Units:	ug/Kg	Analyzed:	07/25/12

Analyte	Result	RL	MDL
Aroclor-1016	ND	9.6	0.31
Aroclor-1221	ND	19	5.1
Aroclor-1232	ND	9.6	0.90
Aroclor-1242	ND	9.6	0.42
Aroclor-1248	ND	9.6	0.80
Aroclor-1254	ND	9.6	1.9
Aroclor-1260	ND	9.6	0.70

Surrogate	%REC	Limits
TCMX	89	56-143
Decachlorobiphenyl	89	33-135

ND= Not Detected at or above MDL
RL= Reporting Limit
MDL= Method Detection Limit

43.0

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 238169
ANALYTICAL REPORT
Metals

Tetra Tech EMI 1999 Harrison Street Oakland, CA 94612	Project : 103S094417 Location : B445 Landscape Level : IV

Sample ID	Lab ID
RFS-B445-DU1	238169-001
RFS-B445-DU2	238169-002

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: _____ Date: 08/07/2012

Mike J. Dahlquist
Project Manager
(510) 486-0900

NELAP # 01107CA

Curtis & Tompkins, Ltd.

CASE NARRATIVE
METALS (EPA 6010B AND EPA 7471A)

Laboratory number:	**238169**
Client:	**Tetra Tech EMI**
Project:	**103S094417**
Location:	**B445 Landscape**
Request Date:	**07/24/12**
Samples Received:	**07/24/12**

This data package contains sample and QC results for two soil samples, requested for the above referenced project on 07/24/12. See attached cooler receipt form for any sample receipt problems or discrepancies.

Metals (EPA 6010B and EPA 7471A):

Low recoveries were observed for lead, vanadium, and zinc in the MS/MSD for batch 188831; the parent sample was not a project sample, the BS/BSD were within limits, and the associated RPDs were within limits.

Responses exceeding the instrument's linear range were observed for copper in the MS/MSD/post digest spike of RFS-B445-DU1 (lab # 238169-001).

Chromium, copper, and zinc were detected between the MDL and the RL in the method blank for batch 188831; these analytes were detected in samples at a level at least 10 times that of the blank.

No other analytical problems were encountered.

Chain of Custody

238169

Tetra Tech EM Inc.
Oakland Office

1999 Harrison Street, Suite 500
Oakland, CA 94612
510.302.6300 Phone
510.433.0830 Fax

Chain of Custody Record No. 9738

Lab PO#:	To follow
Lab:	CET
Project name:	B445 landscape
TtEMI technical contact:	Sara Woolley
Field samplers:	Carolyn Ferlic, Dayna Aragon
Project (CTO) number:	103S094417.
TtEMI project manager:	Jason Broderson
Field samplers' signatures:	Carolyn Ferlic

Preservative Added: none

Sample ID	Point ID/Depth	Date	Time	Matrix	MS / MSD	40 ml VOA	1 liter Amber	500 ml Poly	Sleeve	Glass Jar	250 ml Poly	Encore	VOA	SVOA	Pest	Metals	TPH Purgeables	TPH Extractables *	PCB	PAH 2730 SIM
RFS-B445-DH1		7/24/12	1030	Soil						1				X	X	X		X	X	X
RFS-B445-DH2		7/24/12	1130	Soil						1				X	X	X		X	X	X

	Name (print)	Company Name	Date	Time
Relinquished by: Carolyn Ferlic	Carolyn Ferlic	TTEMI	7/24/12	12:55
Received by: Pat Gonzalez	Pat Gonzalez	CET	7/24/12	12:55
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				

Turnaround time/remarks:

* TPH-E with Silica Gel cleanup. (standard)

Fed Ex #:

WHITE-Laboratory Copy YELLOW-Sample Tracker PINK-File Copy

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 238169 Date Received 7/24/12 Number of coolers 0
Client Tetra Tech Project 103S094417

Date Opened 7/24/12 By (print) Eileen Leung (sign) Eileen
Date Logged in ↓ By (print) ↓ (sign) ↓

1. Did cooler come with a shipping slip (airbill, etc) _____ YES (NO)
   Shipping info _____

2A. Were custody seals present? .... ☐ YES (circle) on cooler on samples ☒ NO
   How many _____ Name _____ Date _____
2B. Were custody seals intact upon arrival? _____ YES NO (N/A)
3. Were custody papers dry and intact when received? _____ (YES) NO
4. Were custody papers filled out properly (ink, signed, etc)? _____ (YES) NO
5. Is the project identifiable from custody papers? (If so fill out top of form) (YES) NO
6. Indicate the packing in cooler: (if other, describe) _____

☐ Bubble Wrap ☐ Foam blocks ☐ Bags ☒ None
☐ Cloth material ☐ Cardboard ☐ Styrofoam ☐ Paper towels

7. Temperature documentation: * Notify PM if temperature exceeds 6°C

Type of ice used: ☐ Wet ☐ Blue/Gel ☒ None Temp(°C) _____

☐ Samples Received on ice & cold without a temperature blank; temp. taken with IR gun

☐ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? _____ YES (NO)
   If YES, what time were they transferred to freezer? _____
9. Did all bottles arrive unbroken/unopened? _____ (YES) NO
10. Are there any missing / extra samples? _____ YES (NO)
11. Are samples in the appropriate containers for indicated tests? _____ (YES) NO
12. Are sample labels present, in good condition and complete? _____ (YES) NO
13. Do the sample labels agree with custody papers? _____ (YES) NO
14. Was sufficient amount of sample sent for tests requested? _____ (YES) NO
15. Are the samples appropriately preserved? _____ YES NO (N/A)
16. Did you check preservatives for all bottles for each sample? _____ YES NO (N/A)
17. Did you document your preservative check? _____ YES NO (N/A)
18. Did you change the hold time in LIMS for unpreserved VOAs? _____ YES NO (N/A)
19. Did you change the hold time in LIMS for preserved terracores? _____ YES NO (N/A)
20. Are bubbles > 6mm absent in VOA samples? _____ YES NO (N/A)
21. Was the client contacted concerning this sample delivery? _____ YES (NO)
   If YES, Who was called? _____ By _____ Date: _____

COMMENTS

_____
_____
_____
_____
_____
_____

Rev 10, 11/11

Results & QC Summary

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	238169	Project#:	103S094417
Client:	Tetra Tech EMI	Location:	B445 Landscape
Field ID:	RFS-B445-DU1	Basis:	dry
Lab ID:	238169-001	Sampled:	07/24/12
Matrix:	Soil	Received:	07/24/12
Units:	mg/Kg		

Moisture: 7%

Analyte	Result	RL	MDL	Diln Fac	Batch#	Prepared	Analyzed	Prep	Analysis
Antimony	ND	0.49	0.16	1.000	188831	07/25/12	07/26/12	EPA 3050B	EPA 6010B
Arsenic	4.9	0.25	0.082	1.000	188831	07/25/12	07/26/12	EPA 3050B	EPA 6010B
Barium	160	0.25	0.048	1.000	188831	07/25/12	07/26/12	EPA 3050B	EPA 6010B
Beryllium	0.52	0.099	0.019	1.000	188831	07/25/12	07/26/12	EPA 3050B	EPA 6010B
Cadmium	0.45	0.25	0.016	1.000	188831	07/25/12	07/26/12	EPA 3050B	EPA 6010B
Chromium	47	0.25	0.021	1.000	188831	07/25/12	07/26/12	EPA 3050B	EPA 6010B
Cobalt	11	0.25	0.019	1.000	188831	07/25/12	07/26/12	EPA 3050B	EPA 6010B
Copper	490	0.26	0.085	1.000	188831	07/25/12	07/26/12	EPA 3050B	EPA 6010B
Lead	42	0.25	0.072	1.000	188831	07/25/12	07/26/12	EPA 3050B	EPA 6010B
Mercury	19	1.9	0.58	100.0	188895	07/27/12	07/27/12	METHOD	EPA 7471A
Molybdenum	0.43	0.25	0.055	1.000	188831	07/25/12	07/26/12	EPA 3050B	EPA 6010B
Nickel	42	0.25	0.067	1.000	188831	07/25/12	07/26/12	EPA 3050B	EPA 6010B
Selenium	ND	0.49	0.14	1.000	188831	07/25/12	07/26/12	EPA 3050B	EPA 6010B
Silver	ND	0.25	0.074	1.000	188831	07/25/12	07/26/12	EPA 3050B	EPA 6010B
Thallium	ND	0.49	0.16	1.000	188831	07/25/12	07/26/12	EPA 3050B	EPA 6010B
Vanadium	46	0.25	0.024	1.000	188831	07/25/12	07/26/12	EPA 3050B	EPA 6010B
Zinc	110	0.99	0.096	1.000	188831	07/25/12	07/26/12	EPA 3050B	EPA 6010B

ND= Not Detected at or above MDL
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	238169	Project#:	103S094417
Client:	Tetra Tech EMI	Location:	B445 Landscape
Field ID:	RFS-B445-DU2	Basis:	dry
Lab ID:	238169-002	Sampled:	07/24/12
Matrix:	Soil	Received:	07/24/12
Units:	mg/Kg		

Moisture: 7%

Analyte	Result	RL	MDL	Diln Fac	Batch#	Prepared	Analyzed	Prep	Analysis
Antimony	ND	0.52	0.15	1.000	188831	07/25/12	07/30/12	EPA 3050B	EPA 6010B
Arsenic	7.3	0.26	0.075	1.000	188831	07/25/12	07/30/12	EPA 3050B	EPA 6010B
Barium	170	0.26	0.056	1.000	188831	07/25/12	07/30/12	EPA 3050B	EPA 6010B
Beryllium	0.49	0.10	0.013	1.000	188831	07/25/12	07/30/12	EPA 3050B	EPA 6010B
Cadmium	0.85	0.26	0.026	1.000	188831	07/25/12	07/30/12	EPA 3050B	EPA 6010B
Chromium	41	0.26	0.065	1.000	188831	07/25/12	07/30/12	EPA 3050B	EPA 6010B
Cobalt	11	0.26	0.031	1.000	188831	07/25/12	07/30/12	EPA 3050B	EPA 6010B
Copper	180	0.26	0.086	1.000	188831	07/25/12	07/30/12	EPA 3050B	EPA 6010B
Lead	46	0.26	0.072	1.000	188831	07/25/12	07/30/12	EPA 3050B	EPA 6010B
Mercury	5.6	1.7	0.55	100.0	188895	07/27/12	07/27/12	METHOD	EPA 7471A
Molybdenum	4.7	0.26	0.051	1.000	188831	07/25/12	07/30/12	EPA 3050B	EPA 6010B
Nickel	36	0.26	0.068	1.000	188831	07/25/12	07/30/12	EPA 3050B	EPA 6010B
Selenium	1.1	0.52	0.17	1.000	188831	07/25/12	07/30/12	EPA 3050B	EPA 6010B
Silver	ND	0.26	0.041	1.000	188831	07/25/12	07/30/12	EPA 3050B	EPA 6010B
Thallium	ND	0.52	0.15	1.000	188831	07/25/12	07/30/12	EPA 3050B	EPA 6010B
Vanadium	39	0.26	0.059	1.000	188831	07/25/12	07/30/12	EPA 3050B	EPA 6010B
Zinc	120	1.0	0.058	1.000	188831	07/25/12	07/30/12	EPA 3050B	EPA 6010B

ND= Not Detected at or above MDL
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Batch QC Report

California Title 22 Metals

Lab #:	238169	Location:	B445 Landscape
Client:	Tetra Tech EMI	Prep:	EPA 3050B
Project#:	103S094417	Analysis:	EPA 6010B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC649223	Batch#:	188831
Matrix:	Soil	Prepared:	07/25/12
Units:	mg/Kg	Analyzed:	07/26/12

Analyte	Result	RL	MDL
Antimony	ND	0.50	0.16
Arsenic	ND	0.25	0.083
Barium	ND	0.25	0.049
Beryllium	ND	0.10	0.019
Cadmium	ND	0.25	0.016
Chromium	0.022 J	0.25	0.021
Cobalt	ND	0.25	0.019
Copper	0.10 J	0.26	0.086
Lead	ND	0.25	0.073
Molybdenum	ND	0.25	0.056
Nickel	ND	0.25	0.068
Selenium	ND	0.50	0.15
Silver	ND	0.25	0.075
Thallium	ND	0.50	0.16
Vanadium	ND	0.25	0.025
Zinc	0.27 J	1.0	0.098

J= Estimated value
ND= Not Detected at or above MDL
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 238169
ANALYTICAL REPORT
Wet Chemistry

Tetra Tech EMI 1999 Harrison Street Oakland, CA 94612	Project : 103S094417 Location : B445 Landscape Level : IV

Sample ID	Lab ID
RFS-B445-DU1	238169-001
RFS-B445-DU2	238169-002

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: _____ Date: 08/07/2012

Mike J. Dahlquist
Project Manager
(510) 486-0900

NELAP # 01107CA

Curtis & Tompkins, Ltd.

CASE NARRATIVE
WET CHEMISTRY (ASTM D2216/CLP)

Laboratory number:	**238169**
Client:	**Tetra Tech EMI**
Project:	**103S094417**
Location:	**B445 Landscape**
Request Date:	**07/24/12**
Samples Received:	**07/24/12**

This data package contains sample and QC results for two soil samples, requested for the above referenced project on 07/24/12. See attached cooler receipt form for any sample receipt problems or discrepancies.

Moisture (ASTM D2216/CLP):

No analytical problems were encountered.

Chain of Custody

238169

Tetra Tech EM Inc.
Oakland Office

1999 Harrison Street, Suite 500
Oakland, CA 94612
510.302.6300 Phone
510.433.0830 Fax

Chain of Custody Record No. 9738

Preservative Added: none

Lab PO#:	To follow
Lab:	CET
Project name:	B445 landscape
TtEMI technical contact:	Sara Woolley
Field samplers:	Carolyn Ferlic, Dayna Aragon
Project (CTO) number:	103S094417.
TtEMI project manager:	Jason Broderson
Field samplers' signatures:	Carolyn Ferlic

Sample ID	Point ID/Depth	Date	Time	Matrix	MS / MSD	40 ml VOA	1 liter Amber	500 ml Poly	Sleeve	Glass Jar	250 ml Poly	Encore	VOA	SVOA	Pest	Metals	TPH Purgeables	TPH Extractables *	PCB	PAH 2730 SIM
RFS-B445-DH1		7/24/12	1030	Soil						1				X	X	X		X	X	X
RFS-B445-DH2		7/24/12	1130	Soil						1				X	X	X		X	X	X

	Name (print)	Company Name	Date	Time
Relinquished by: Carolyn Ferlic	Carolyn Ferlic	TTEMI	7/24/12	12:55
Received by: Pat Gonzalez	Pat Gonzalez	CET	7/24/12	12:55
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				

Turnaround time/remarks:

* TPH-E with Silica Gel cleanup. (standard)

Fed Ex #:

WHITE-Laboratory Copy YELLOW-Sample Tracker PINK-File Copy

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 238169 Date Received 7/24/12 Number of coolers 0
Client Tetra Tech Project 103S094417

Date Opened 7/24/12 By (print) Eileen Leung (sign) Eileen
Date Logged in ↓ By (print) ↓ (sign) ↓

1. Did cooler come with a shipping slip (airbill, etc)_____ YES (NO)
   Shipping info_____

2A. Were custody seals present? .... ☐ YES (circle) on cooler on samples ☒ NO
   How many _____ Name_____ Date_____
2B. Were custody seals intact upon arrival? _____ YES NO (N/A)
3. Were custody papers dry and intact when received? _____ (YES) NO
4. Were custody papers filled out properly (ink, signed, etc)? _____ (YES) NO
5. Is the project identifiable from custody papers? (If so fill out top of form) (YES) NO
6. Indicate the packing in cooler: (if other, describe)_____

   ☐ Bubble Wrap ☐ Foam blocks ☐ Bags ☒ None
   ☐ Cloth material ☐ Cardboard ☐ Styrofoam ☐ Paper towels
7. Temperature documentation: * Notify PM if temperature exceeds 6°C

   Type of ice used: ☐ Wet ☐ Blue/Gel ☒ None Temp(°C)_____

   ☐ Samples Received on ice & cold without a temperature blank; temp. taken with IR gun

   ☐ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? _____ YES (NO)
   If YES, what time were they transferred to freezer?_____
9. Did all bottles arrive unbroken/unopened? _____ (YES) NO
10. Are there any missing / extra samples? _____ YES (NO)
11. Are samples in the appropriate containers for indicated tests? _____ (YES) NO
12. Are sample labels present, in good condition and complete? _____ (YES) NO
13. Do the sample labels agree with custody papers? _____ (YES) NO
14. Was sufficient amount of sample sent for tests requested? _____ (YES) NO
15. Are the samples appropriately preserved? _____ YES NO (N/A)
16. Did you check preservatives for all bottles for each sample? _____ YES NO (N/A)
17. Did you document your preservative check? _____ YES NO (N/A)
18. Did you change the hold time in LIMS for unpreserved VOAs? _____ YES NO (N/A)
19. Did you change the hold time in LIMS for preserved terracores? _____ YES NO (N/A)
20. Are bubbles > 6mm absent in VOA samples? _____ YES NO (N/A)
21. Was the client contacted concerning this sample delivery? _____ YES (NO)
   If YES, Who was called?_____ By_____ Date:_____

COMMENTS

_____

Rev 10, 11/11

Results & QC Summary

Percent Moisture Summary Report

Batch: 188761
Date: 07/24/12
Method: CLP SOW 390
Analyst: MFV

Sample	Tare (g)	Wet (g)	Dry (g)	Percent Solids	Percent Moisture
237828-003	11.0261	17.9552	16.8529	84	16
237828-004	11.3524	17.5900	16.4163	81	19
237954-001	11.3855	17.6240	16.3798	80	20
237975-001	10.9515	17.6356	16.3995	82	18
237975-002	11.3377	17.7156	16.2091	76	24
238115-001	11.3458	18.2992	17.2739	85	15
238124-001	11.3835	17.6769	17.1696	92	8
238124-002	11.3292	17.9603	17.5404	94	6
238125-001	11.4020	17.6712	17.1641	92	8
238169-001	11.3608	17.7930	17.3608	93	7
238169-002	11.3141	17.4352	16.9783	93	7
238176-001	11.3361	17.2926	16.6180	89	11
238176-002	11.4186	17.8841	16.8299	84	16
238176-003	11.6391	17.2801	16.4325	85	15
238176-004	11.3865	17.3373	16.0540	78	22
QC648932	11.4128	17.1650	16.7199	92	8
of 238125-001			RPD:	0.4%	4.4%
QC648934	10.9638	17.7654	17.2507	92	8
of 238169-002			RPD:	0.1%	1.4%

Moisture LOG **Curtis & Tompkins, Ltd.**

LIMS Batch #: 188761
Date: 7-24-12

Page: 59
Benchbook#: BK 3312
Scale Used
☑ Leachates Analytical
☐ _____

Sample # / Letter	Dish #	Dish Weight (g)	Sample + Dish Wt (g)	Final Weight (g)	*Comments
BLK	K01	11.3226	Ø	11.3222	
237828-003 D	5CB	11.0261	17.9552	16.8529	
-004	E06	11.3524	17.5900	16.4163	
237954-001	D35	11.3855	17.6240	16.3798	
237975-001	J20	10.9515	17.6356	16.3995	
-002	CT25	11.3377	17.7156	16.2091	
238115-001	ETL	11.3458	18.2992	17.2739	
238124-001 B	E01	11.3835	17.6769	17.1696	
-002	A08	11.3292	17.9603	17.5404	
238125-001	CT3	11.4020	17.6712	17.1641	
SDUP -001	CZ3	11.4128	17.1650	16.7199	QC648932
238169-001	CT1	11.3608	17.7930	17.3608	ADDED AT 1350
-002	DZD	11.3141	17.4352	16.9783	
SDUP -002	DFW	10.9638	17.7654	17.2507	QC648934
238176-001 D	D32	11.3361	17.2926	16.6180	Sample Scale 8PM 7-24-12
-002	C53	11.4186	17.8841	16.8299	
-003	7AA	11.6391	17.2801	16.4325	
-004	K05	11.3865	17.3375	16.0540	Sampled 1733773

MN 7-25-12

Date/ Time IN: 7-24-12 1245
Temp (F) IN: 105
Date/ Time OUT: 7-25-12 0910
Temp (F) OUT: 105

7-24-12
Extraction Chemist Date

7/25/12
Reviewed by Date

PROJECT AE 163 METTLER

Notebook No. BK-2394

Continued From Page

DATE	ANALYST	0.2000	0.5000	1.0000	2.0000	5.0000	10.0000	20.0000	50.0000	100.0000	SET
6-12-12	MV	0.2000	0.5001	1.0001	2.0001	5.0002	10.0001	20.0002	50.0003	100.0005	10827
6-13-12	MV	0.2000	0.5000	1.0000	2.0000	5.0001	10.0001	20.0001	50.0001	100.0001	10827
6-14-12	MV	0.2000	0.5001	1.0000	2.0000	5.0001	10.0002	20.0003	50.0005	100.0006	10827
6-15-12	MV	0.2000	0.5000	1.0001	2.0000	5.0001	10.0002	20.0003	50.0002	100.0003	10827
6-18-12	MV	0.2000	0.5000	1.0000	2.0000	5.0001	10.0001	20.0001	50.0002	100.0002	10827
6-19-12	MV	0.2000	0.5000	1.0000	2.0000	5.0000	10.0000	20.0001	50.0001	100.0001	10827
6-25-12	MV	0.2000	0.5000	1.0000	2.0000	5.0000	10.0001	20.0001	50.0003	100.0004	10827
6-26-12	MV	0.2000	0.5000	1.0000	2.0000	5.0001	10.0001	20.0001	50.0001	99.9999	10827
6-27-12	MV	0.2000	0.5000	1.0000	2.0000	5.0001	10.0002	20.0003	50.0004	100.0005	10827
6-28-12	MV	0.2000	0.5000	1.0000	2.0000	5.0001	10.0001	20.0002	50.0002	100.0001	10827
6-29-12	MV	0.2000	0.5000	1.0000	2.0000	5.0000	10.0001	20.0001	50.0000	100.0000	10827
7-2-12	MV	0.2000	0.5000	1.0000	2.0000	5.0000	10.0001	20.0002	50.0003	100.0004	10827
7-3-12	MV	0.2000	0.5000	1.0000	2.0000	5.0001	10.0001	20.0001	50.0001	100.0000	10827
7-5-12	MV	0.2000	0.5000	1.0000	2.0000	5.0001	10.0001	20.0003	50.0004	100.0007	10827
7-6-12	MV	0.2000	0.5000	1.0000	2.0000	5.0001	10.0001	20.0001	50.0000	99.9999	10827
7-7-12	VV	0.2001	0.5000	1.0000	2.0000	5.0001	10.0001	20.0001	50.0003	100.0003	10827
7-8-12	MV	0.2000	0.5000	1.0000	2.0000	5.0000	10.0000	20.0001	50.0000	100.0000	10827
7-9-12 (MV 7-9-12)	MV	0.2000	0.5000	1.0000	2.0000	5.0001	10.0001	20.0002	50.0000	99.9999	10827
7-10-12	MV	0.2000	0.5000	1.0000	2.0000	5.0000	10.0000	20.0001	50.0000	99.9999	10827
7-11-12	MV	0.2000	0.5000	1.0000	2.0000	5.0001	10.0000	20.0000	50.0000	99.9998	10827
7-12-12	MV	0.2000	0.5000	1.0000	2.0000	5.0000	10.0000	20.0001	50.0000	99.9998	10827
7-13-12	MV	0.2000	0.5000	1.0000	2.0000	5.0000	10.0000	20.0000	50.0000	99.9998	10827
7-15-12	VV	0.2000	0.5001	1.0000	1.9999	5.0001	10.0002	20.0003	50.0002	100.0004	10827
7-16-12	MV	0.2000	0.5000	1.0000	2.0000	5.0001	10.0001	20.0001	50.0000	99.9999	10827
7-17-12	MV	0.2000	0.5000	1.0000	2.0000	5.0000	10.0000	20.0000	49.9999	99.9995	10827
7-18-12	VV	0.1999	0.4999	0.9998	2.0000	5.0000	10.0001	20.0002	50.0003	100.0006	10827
7-19-12	MV	0.2000	0.5000	1.0000	2.0000	5.0001	10.0000	20.0001	50.0000	99.9998	10827
7-20-12	MV	0.2001	0.5001	1.0000	2.0000	5.0001	10.0001	20.0002	50.0001	100.0001	10827
7-23-12	MV	0.2000	0.5000	1.0000	2.0000	5.0000	10.0000	20.0001	50.0000	99.9999	10827
7-24-12	MV	0.2000	0.5000	1.0000	2.0000	5.0000	10.0000	20.0000	49.9999	99.9997	10827
7-25-12	MV	0.2000	0.5000	1.0000	2.0000	5.0001	10.0001	20.0001	50.0000	100.0003	10827

Continued on Page

Read and Understood By

Signed Date Signed Date


Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 239425
ANALYTICAL REPORT
TPH-Extractables by GC

Tetra Tech EMI	Project : 103S094417
1999 Harrison Street	Location : B445 Landscape
Oakland, CA 94612	Level : IV

Sample ID	Lab ID
RFS-B445-DU3-1	239425-003
RFS-B484-SP	239425-006

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: _____ Date: 09/14/2012

Mike J. Dahlquist
Project Manager
(510) 486-0900

NELAP # 01107CA

Curtis & Tompkins, Ltd.

CASE NARRATIVE
TPH-EXTRACTABLES BY GC (EPA 8015B)

Laboratory number:	**239425**
Client:	**Tetra Tech EMI**
Project:	**103S094417**
Location:	**B445 Landscape**
Request Date:	**09/06/12**
Samples Received:	**09/06/12**

This data package contains sample and QC results for two soil samples, requested for the above referenced project on 09/06/12. See attached cooler receipt form for any sample receipt problems or discrepancies.

TPH-Extractables by GC (EPA 8015B):

No analytical problems were encountered.

Chain of Custody

239425

Tetra Tech EM Inc.
Oakland Office

1999 Harrison Street, Suite 500
Oakland, CA 94612
510.302.6300 Phone
510.433.0830 Fax

Chain of Custody Record No. 9070

Lab PO#: 120AK13 to follow

Lab: CAT

Project name: B445 Landscape + B48 Stockpile

TtEMI technical contact: Sara Woolley

Field samplers: Quinn Johnson, Mark Duffy

Project (CTO) number: 1035094417

TtEMI project manager: Jason Bradersen

Field samplers' signatures: Sara Woolley

Preservative Added

No./Container Types / Analysis Required

	Sample ID	Point ID/Depth	Date	Time	Matrix	MS / MSD	40 ml VOA	1 liter Amber	500 ml Poly	Sleeve	Glass Jar	250 ml Poly	Encore	VOA	SVOA	Pest	Metals Hg	TPH Purgeables	TPH Extractables*	PCB
+1	RFS-B445-DU1-2		9/6/12	10:15	soil						1						X			
+2	RFS-B445-DU1-3			11:00							1						X			
X3	RFS-B445-DU3-1			11:45							2			X			X		X	X
X4	RFS-B445-DU3-2			12:35							1						X			
X5	RFS-B445-DU3-3			14:20							1						X			
++6	RFS-B484-SP			15:40							2			X			X		X	X

	Name (print)	Company Name	Date	Time
Relinquished by:	Sara Woolley	TtEMI	9/6/12	17:05
Received by:	Mike Dahlquist	CAT	9/6	1705
Relinquished by:	Adnan Ahmad	CAT	9/6/12	2200
Received by:				

Turnaround time/remarks:

* with silica gel clean up
+ 24 hour TAT
X 24 hour TAT for Hg only, 5 day TAT for all others
++ 5 day TAT

Fed Ex #:

WHITE-Laboratory Copy YELLOW-Sample Tracker PINK-File Copy

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 239425 Date Received 9/6/12 Number of coolers 1
Client Tetra Tech Project B445 Landscape

Date Opened 9/6/12 By (print) AA (sign) [signature]
Date Logged in ↓ By (print) ↓ (sign) ↓

1. Did cooler come with a shipping slip (airbill, etc) _____ YES (NO)
   Shipping info _____

2A. Were custody seals present? .... ☐ YES (circle) on cooler on samples ☑ NO
   How many _____ Name _____ Date _____
2B. Were custody seals intact upon arrival? _____ YES NO (N/A)
3. Were custody papers dry and intact when received? _____ (YES) NO
4. Were custody papers filled out properly (ink, signed, etc)? _____ (YES) NO
5. Is the project identifiable from custody papers? (If so fill out top of form) ___ (YES) NO
6. Indicate the packing in cooler: (if other, describe) _____

☐ Bubble Wrap ☐ Foam blocks ☐ Bags ☐ None
☐ Cloth material ☐ Cardboard ☐ Styrofoam ☐ Paper towels

7. Temperature documentation: * Notify PM if temperature exceeds 6°C

Type of ice used: ☑ Wet ☐ Blue/Gel ☐ None Temp(°C) 6

☑ Samples Received on ice & cold without a temperature blank; temp. taken with IR gun

☐ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? _____ YES (NO)
   If YES, what time were they transferred to freezer? _____
9. Did all bottles arrive unbroken/unopened? _____ (YES) NO
10. Are there any missing / extra samples? _____ YES (NO)
11. Are samples in the appropriate containers for indicated tests? _____ (YES) NO
12. Are sample labels present, in good condition and complete? _____ (YES) NO
13. Do the sample labels agree with custody papers? _____ (YES) NO
14. Was sufficient amount of sample sent for tests requested? _____ (YES) NO
15. Are the samples appropriately preserved? _____ YES NO (N/A)
16. Did you check preservatives for all bottles for each sample? _____ YES NO (N/A)
17. Did you document your preservative check? _____ YES NO (N/A)
18. Did you change the hold time in LIMS for unpreserved VOAs? _____ YES NO (N/A)
19. Did you change the hold time in LIMS for preserved terracores? _____ YES NO (N/A)
20. Are bubbles > 6mm absent in VOA samples? _____ YES NO (N/A)
21. Was the client contacted concerning this sample delivery? _____ YES (NO)
   If YES, Who was called? _____ By _____ Date: _____

COMMENTS

_____
_____
_____
_____
_____
_____

Rev 10, 11/11

Results & QC Summary

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	239425	Location:	B445 Landscape
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S094417	Analysis:	EPA 8015B
Field ID:	RFS-B445-DU3-1	Batch#:	190299
Lab ID:	239425-003	Sampled:	09/06/12
Matrix:	Soil	Received:	09/06/12
Units:	mg/Kg	Prepared:	09/08/12
Basis:	dry	Analyzed:	09/09/12
Diln Fac:	1.000		

Moisture: 5%

Cleanup Method: EPA 3630C

Analyte	Result	RL	MDL
Diesel C10-C24	150 Y	1.1	0.29
Motor Oil C24-C36	180	5.3	0.80

Surrogate	%REC	Limits
o-Terphenyl	99	54-129

Y= Sample exhibits chromatographic pattern which does not resemble standard
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	239425	Location:	B445 Landscape
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S094417	Analysis:	EPA 8015B
Field ID:	RFS-B484-SP	Batch#:	190299
Lab ID:	239425-006	Sampled:	09/06/12
Matrix:	Soil	Received:	09/06/12
Units:	mg/Kg	Prepared:	09/08/12
Basis:	dry	Analyzed:	09/10/12
Diln Fac:	1.000		

Moisture: 12%

Cleanup Method: EPA 3630C

Analyte	Result	RL	MDL
Diesel C10-C24	20 Y	1.1	0.31
Motor Oil C24-C36	85	5.6	0.85

Surrogate	%REC	Limits
o-Terphenyl	117	54-129

Y= Sample exhibits chromatographic pattern which does not resemble standard
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	239425	Location:	B445 Landscape
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S094417	Analysis:	EPA 8015B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC655332	Batch#:	190299
Matrix:	Soil	Prepared:	09/08/12
Units:	mg/Kg	Analyzed:	09/10/12

Cleanup Method: EPA 3630C

Analyte	Result	RL	MDL
Diesel C10-C24	ND	0.99	0.26
Motor Oil C24-C36	ND	5.0	0.86

Surrogate	%REC	Limits
o-Terphenyl	85	54-129

ND= Not Detected at or above MDL
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	239425	Location:	B445 Landscape
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S094417	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC655333	Batch#:	190299
Matrix:	Soil	Prepared:	09/08/12
Units:	mg/Kg	Analyzed:	09/09/12

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	50.07	44.37	89	51-131

Surrogate	%REC	Limits
o-Terphenyl	98	54-129

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	239425	Location:	B445 Landscape
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S094417	Analysis:	EPA 8015B
Field ID:	RFS-B445-DU3-1	Batch#:	190299
MSS Lab ID:	239425-003	Sampled:	09/06/12
Matrix:	Soil	Received:	09/06/12
Units:	mg/Kg	Prepared:	09/08/12
Basis:	dry	Analyzed:	09/09/12
Diln Fac:	1.000		

Type:	MS	Moisture:	5%
Lab ID:	QC655334	Cleanup Method:	EPA 3630C

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	152.4	52.14	196.7	85	34-144

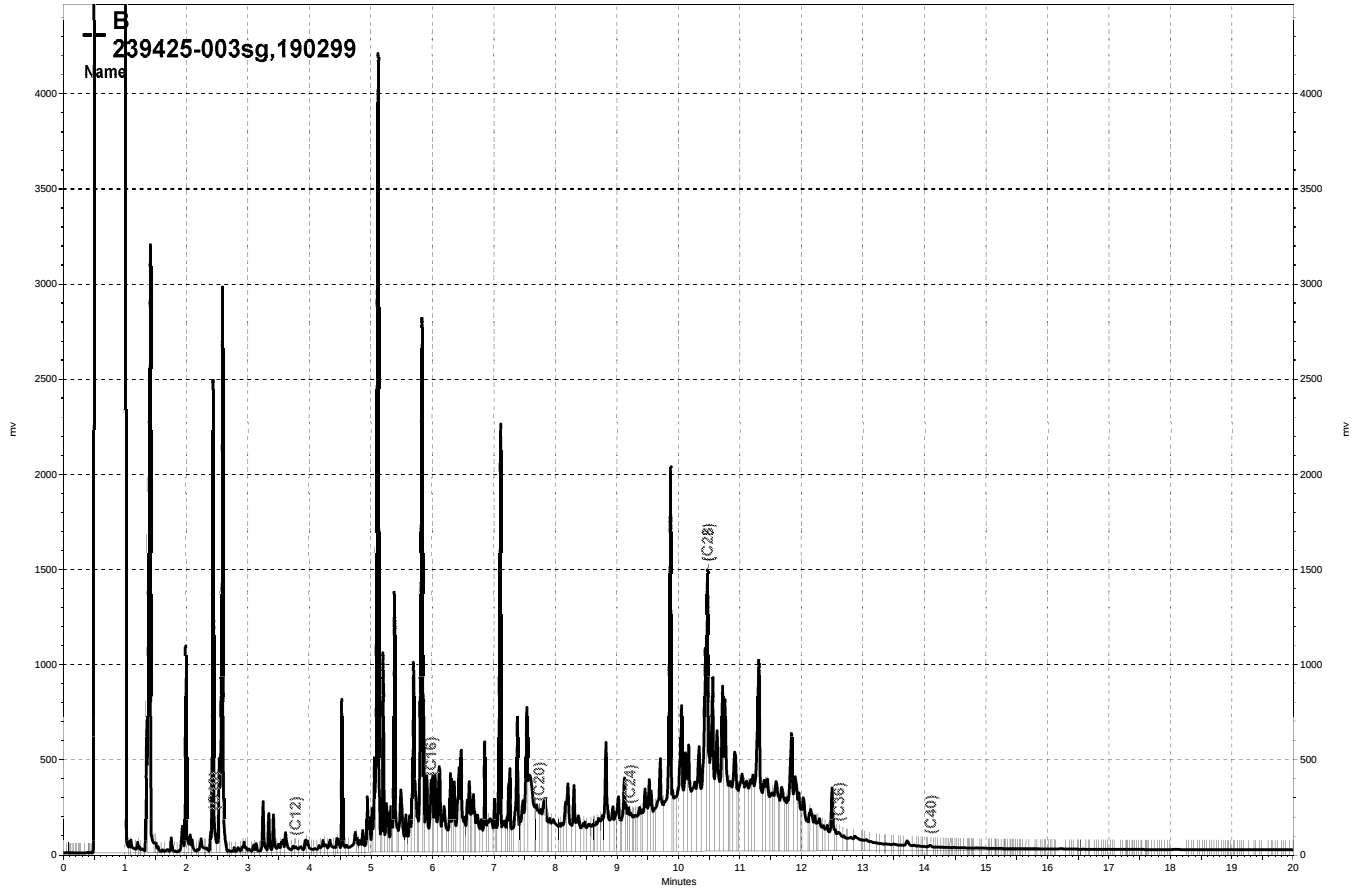
Surrogate	%REC	Limits
o-Terphenyl	105	54-129

Type:	MSD	Moisture:	5%
Lab ID:	QC655335	Cleanup Method:	EPA 3630C

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	52.43	181.2	55	34-144	8	52

Surrogate	%REC	Limits
o-Terphenyl	121	54-129

RPD= Relative Percent Difference



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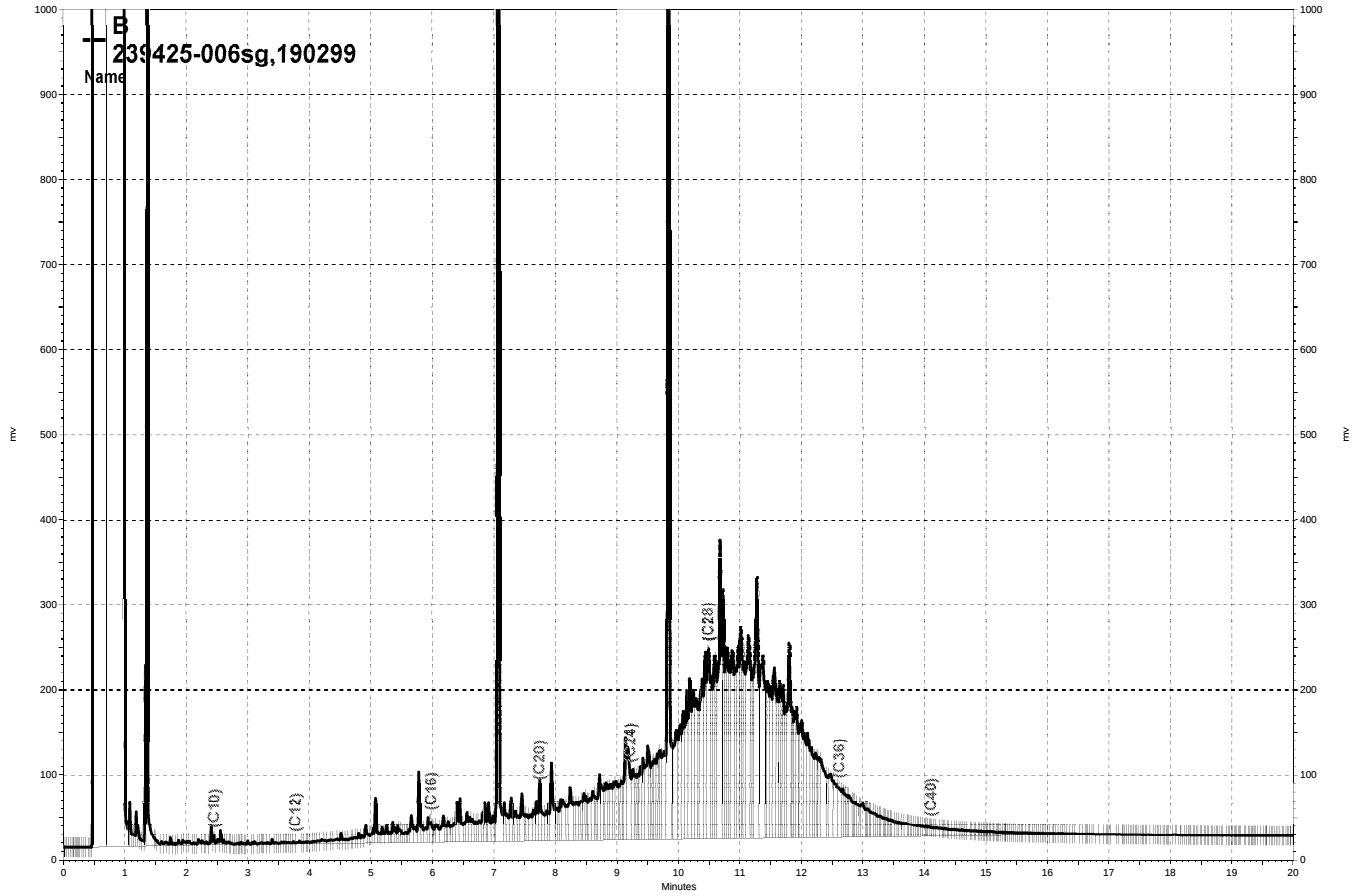

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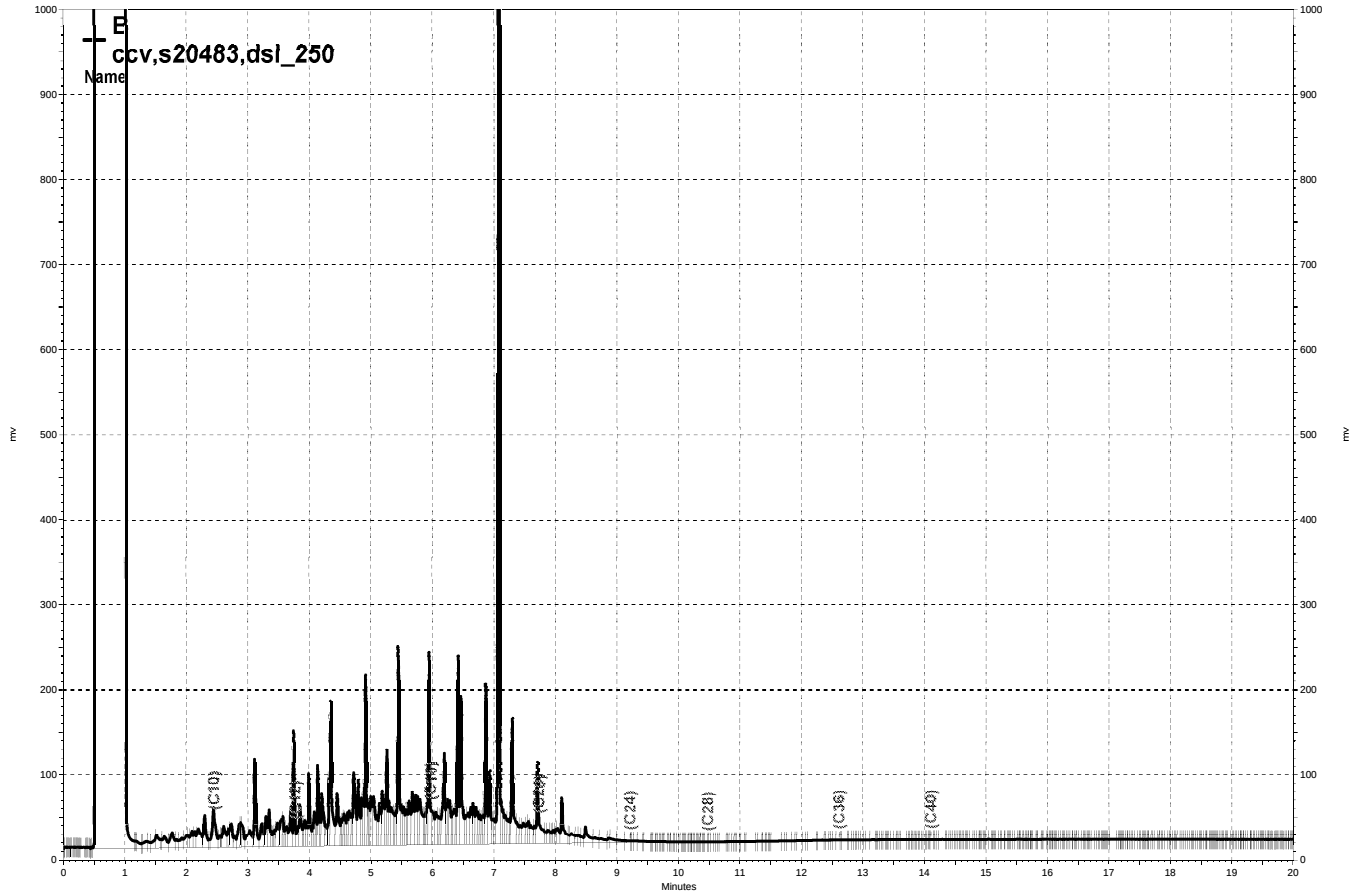

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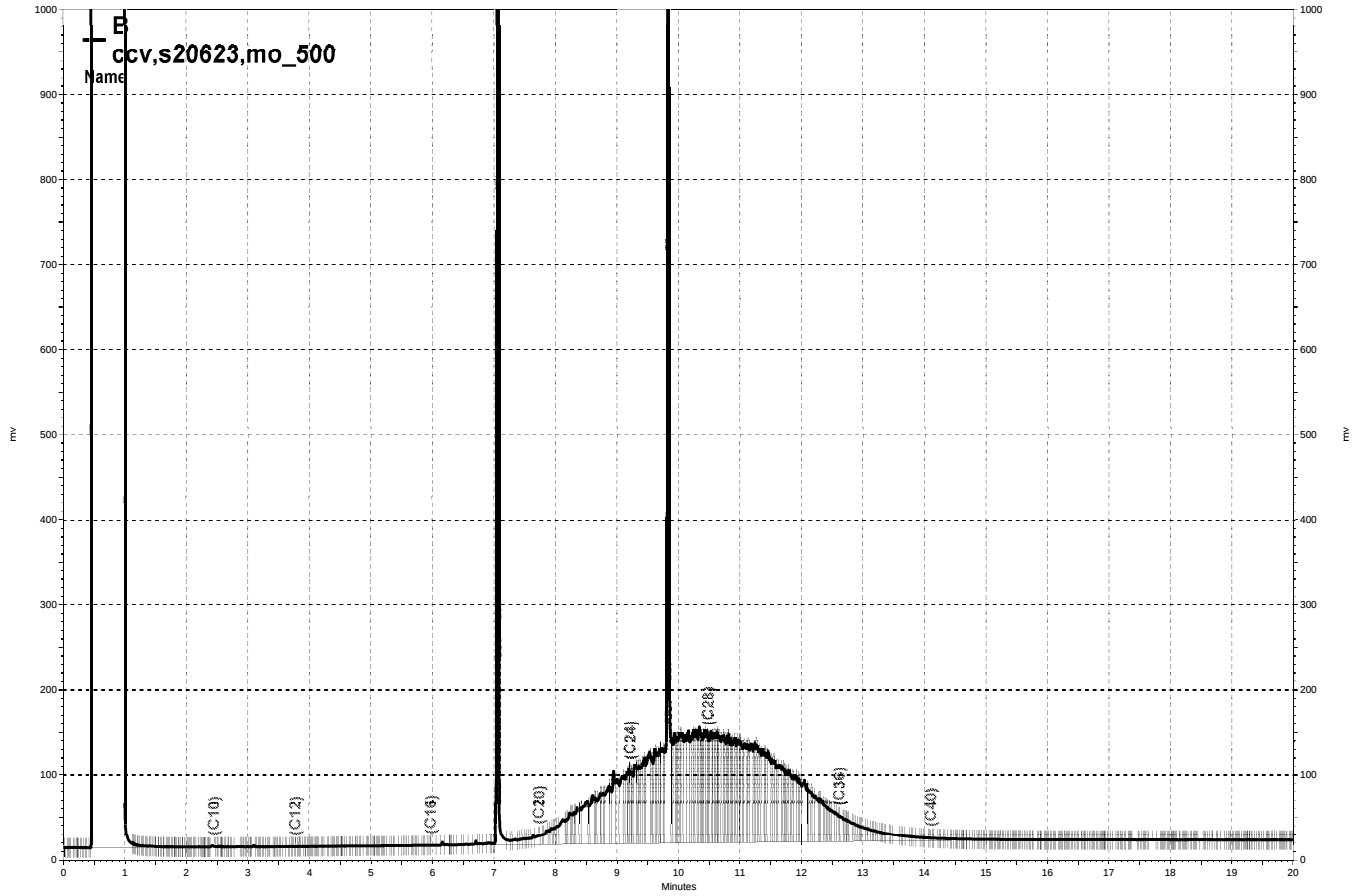

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CURTIS & TOMPKINS INITIAL CALIBRATION FOR 239425 GCSV Soil: EPA 8015B

Inst : GC15B
Calnum : 162269861001
Units : mg/L

Name : MO_187
Date : 05-JUL-2012 17:13
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	187b013	162269861013	MO_50	05-JUL-2012 17:40	S20089
L2	187b014	162269861014	MO_250	05-JUL-2012 18:08	S19735
L3	187b015	162269861015	MO_500	05-JUL-2012 18:36	S19736
L4	187b016	162269861016	MO_1000	05-JUL-2012 19:03	S19737
L5	187b017	162269861017	MO_2500	05-JUL-2012 19:31	S19738 (2X)
L6	187b018	162269861018	MO_5000	05-JUL-2012 19:59	S19738

Analyte	L1	L2	L3	L4	L5	L6	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	MxRSD	Flg
Motor Oil C24-C36	36632	41825	42396	41873	39738	36092	AVRG		2.52E-5		39759	7	0.995	20	

Spiked Amounts / Drifts	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D
Motor Oil C24-C36	50.000	-8	250.00	5	500.00	7	1000.0	5	2500.0	0	5000.0	-9

SFL 07/06/12 : Corrected automatically drawn baseline on all level except MO_1000.

Analyst: SFL Date: 07/06/12 Reviewer: EAH Date: 07/06/12

Instrument amount = a0 + response * a1 + response^2 * a2; AVRG=Average response factor

CURTIS & TOMPKINS INITIAL CALIBRATION FOR 239425 GCSV Soil: EPA 8015B

Inst : GC15B
Calnum : 162276981001
Units : mg/L

Name : DSL_192
Date : 10-JUL-2012 18:17
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	192b013	162276981013	DSL_10	10-JUL-2012 18:17	S19968
L2	192b014	162276981014	DSL_100	10-JUL-2012 18:45	S19945
L3	192b015	162276981015	DSL_500	10-JUL-2012 19:13	S19946
L4	192b016	162276981016	DSL_1000	10-JUL-2012 19:41	S19947
L5	192b017	162276981017	DSL_5000	10-JUL-2012 20:08	S19943
L6	192b018	162276981018	DSL_7500	10-JUL-2012 20:36	S19948

Analyte	L1	L2	L3	L4	L5	L6	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	MxRSD	Flg
Diesel C10-C24	48271	54425	53540	55563	52940	53037	AVRG		1.89E-5		52963	5	0.995	20	

Spiked Amounts / Drifts	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D
Diesel C10-C24	10.000	-9	100.00	3	500.00	1	1000.0	5	5000.0	0	7500.0	0

JDG 07/11/12 : Manually integrated fuel hump in multiple levels.

JDG 07/12/12 : RT has been fixed.

Analyst: JDG Date: 07/12/12 Reviewer: EAH Date: 07/12/12

Instrument amount = a0 + response * a1 + response^2 * a2; AVRG=Average response factor

CURTIS & TOMPKINS 2ND SOURCE CALIBRATION SUMMARY FOR 239425 GCSV Soil
EPA 8015B

Inst : GC15B
Calnum : 162276981001

Name : DSL_192
Cal Date : 10-JUL-2012

ICV 162276981020 (192b020 10-JUL-2012) stds: S19823

Analyte	Spiked	Quant	Units	%D	Max	Flags
Diesel C10-C24	500.0	496.5	mg/L	-1	15	

Analyst: JDG Date: 07/11/12 Reviewer: EAH Date: 07/12/12

CURTIS & TOMPKINS INITIAL CALIBRATION FOR 239425 GCSV Soil: EPA 8015B

Inst : GC15B
Calnum : 162281280001
Units : mg/L

Name : OTP-HEX_195
Date : 13-JUL-2012 17:42
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	195b011	162281280011	HEXOTP_5	13-JUL-2012 17:42	S19347
L2	195b012	162281280012	HEXOTP_10	13-JUL-2012 18:09	S19348
L3	195b013	162281280013	HEXOTP_25	13-JUL-2012 18:37	S19349
L4	195b014	162281280014	HEXOTP_50	13-JUL-2012 19:04	S19350
L5	195b015	162281280015	HEXOTP_100	13-JUL-2012 19:32	S19351
L6	195b016	162281280016	HEXOTP_200	13-JUL-2012 20:00	S19352

Analyte	L1	L2	L3	L4	L5	L6	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	MxRSD	Flg
o-Terphenyl	62022	61944	61801	62655	63080	61712	AVRG		1.61E-5		62202	1	0.995	20	

Spiked Amounts / Drifts	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D
o-Terphenyl	5.0000	0	10.000	0	25.000	-1	50.000	1	100.00	1	200.00	-1

JDG 07/16/12 : Corrected automatically drawn baseline in multiple levels.

Analyst: JDG Date: 07/16/12 Reviewer: EAH Date: 07/16/12

Instrument amount = a0 + response * a1 + response^2 * a2; AVRG=Average response factor

CURTIS & TOMPKINS INITIAL CALIBRATION FOR 239425 GCSV Soil: EPA 8015B

Inst : GC26A
Calnum : 862229641002
Units : mg/L

Name : DSL_159
Date : 07-JUN-2012 21:31
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	159a013	862229641013	DSL_10	07-JUN-2012 21:31	S19968
L2	159a014	862229641014	DSL_100	07-JUN-2012 21:59	S19945
L3	159a015	862229641015	DSL_500	07-JUN-2012 22:26	S19946
L4	159a016	862229641016	DSL_1000	07-JUN-2012 22:54	S19947
L5	159a017	862229641017	DSL_5000	07-JUN-2012 23:22	S19943
L6	159a018	862229641018	DSL_7500	07-JUN-2012 23:50	S19948

Analyte	L1	L2	L3	L4	L5	L6	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	MxRSD	Flg
Diesel C10-C24	40959	44491	45897	49445	48124	48006	AVRG		2.17E-5		46154	7	0.995	20	

Spiked Amounts / Drifts	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D
Diesel C10-C24	10.000	-11	100.00	-4	500.00	-1	1000.0	7	5000.0	4	7500.0	4

SFL 06/10/12 : Corrected automatically drawn baseline in DSL_500 (159a015).

SFL 06/10/12 : Corrected automatically drawn baseline in DSL_1000 (159a016).

SFL 06/10/12 : Corrected automatically drawn baseline in DSL_5000 (159a017).

SFL 06/10/12 : Corrected automatically drawn baseline in DSL_7500 (159a018).

EAH 06/12/12 : SFL06/12/12 11:38RT for C24 fixed to 8.892

Analyst: SFL Date: 06/10/12 Reviewer: EAH Date: 06/12/12

Instrument amount = a0 + response * a1 + response^2 * a2; AVRG=Average response factor

CURTIS & TOMPKINS 2ND SOURCE CALIBRATION SUMMARY FOR 239425 GCSV Soil
EPA 8015B

Inst : GC26A
Calnum : 862229641002

Name : DSL_159
Cal Date : 07-JUN-2012

ICV 862229641020 (159a020 08-JUN-2012) stds: S19823

Analyte	Spiked	Quant	Units	%D	Max	Flags
Diesel C10-C24	500.0	497.6	mg/L	0	15	

Analyst: SFL Date: 06/10/12 Reviewer: EAH Date: 06/11/12

CURTIS & TOMPKINS INITIAL CALIBRATION FOR 239425 GCSV Soil: EPA 8015B

Inst : GC26A
Calnum : 862246744001
Units : mg/L

Name : MO_171
Date : 19-JUN-2012 11:45
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	171a007	862246744007	MO_50	19-JUN-2012 11:45	S19734
L2	171a008	862246744008	MO_250	19-JUN-2012 12:13	S19735
L3	171a009	862246744009	MO_500	19-JUN-2012 12:40	S19736
L4	171a010	862246744010	MO_1000	19-JUN-2012 13:08	S19737
L5	171a011	862246744011	MO_2500	19-JUN-2012 13:36	S19738 (2X)
L6	171a012	862246744012	MO_5000	19-JUN-2012 14:04	S19738

Analyte	L1	L2	L3	L4	L5	L6	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	MxRSD	Flg
Motor Oil C24-C36	28100	34267	35355	34093	35057	36030	AVRG		2.96E-5		33817	9	0.995	20	

Spiked Amounts / Drifts	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D
Motor Oil C24-C36	50.000	-17	250.00	1	500.00	5	1000.0	1	2500.0	4	5000.0	7

JDG 06/19/12 : Corrected automatically drawn baseline in all levels.

SFL 06/20/12 : The RT for C40 on page 29 is changed to 12.743.

JDG: 06/19/12 SFL: 06/20/12 EAH: 06/20/12

Instrument amount = a0 + response * a1 + response^2 * a2; AVRG=Average response factor

CURTIS & TOMPKINS INITIAL CALIBRATION FOR 239425 GCSV Soil: EPA 8015B

Inst : GC26A
Calnum : 862248129001
Units : mg/L

Name : OTP-HEX_172
Date : 20-JUN-2012 16:51
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	172a016	862248129016	HEXOTP_5	20-JUN-2012 16:51	S19347
L2	172a017	862248129017	HEXOTP_10	20-JUN-2012 17:19	S19348
L3	172a018	862248129018	HEXOTP_25	20-JUN-2012 17:47	S19349
L4	172a019	862248129019	HEXOTP_50	20-JUN-2012 18:15	S19350
L5	172a020	862248129020	HEXOTP_100	20-JUN-2012 18:42	S19351
L6	172a021	862248129021	HEXOTP_200	20-JUN-2012 19:10	S19352

Analyte	L1	L2	L3	L4	L5	L6	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	MxRSD	Flg
o-Terphenyl	57987	57128	57947	59072	60911	61357	AVRG		1.69E-5		59067	3	0.995	20	

Spiked Amounts / Drifts	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D
o-Terphenyl	5.0000	-2	10.000	-3	25.000	-2	50.000	0	100.00	3	200.00	4

JDG 06/21/12 : Corrected automatically drawn baseline in all levels.

Analyst: JDG Date: 06/21/12 Reviewer: EAH Date: 06/21/12

Instrument amount = a0 + response * a1 + response^2 * a2; AVRG=Average response factor

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 239425 GCSV Soil
EPA 8015B

Inst : GC15B Run Name : DSL_250 IDF : 1.0
Seqnum : 162365242003 File : 253b003 Time : 09-SEP-2012 16:17
Standards: S20483

Analyte	Cal	Caldate	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Diesel C10-C24	162276981001	10-JUL-2012	52963	51013	250.0	240.8	mg/L	-4	15	
o-Terphenyl	162281280001	13-JUL-2012	62202	59710	50.00	48.00	mg/L	-4	15	

JDG 09/10/12 : Corrected automatically drawn baseline.

Analyst: JDG Date: 09/10/12 Reviewer: SFL Date: 09/10/12

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 239425 GCSV Soil
EPA 8015B

Inst : GC15B Run Name : MO_500 IDF : 1.0
Seqnum : 162365242004 File : 253b004 Time : 09-SEP-2012 16:45
Standards: S20623

Analyte	Cal	Caldate	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Motor Oil C24-C36	162269861001	05-JUL-2012	39759	39430	500.0	495.9	mg/L	-1	15	
o-Terphenyl	162281280001	13-JUL-2012	62202	62885	50.00	50.55	mg/L	1	15	

Analyst: JDG Date: 09/10/12 Reviewer: SFL Date: 09/10/12

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 239425 GCSV Soil
EPA 8015B

Inst : GC15B Run Name : DSL_1000 IDF : 1.0
Seqnum : 162365242023 File : 253b023 Time : 10-SEP-2012 00:37
Standards: S20485

Analyte	Cal	Caldate	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Diesel C10-C24	162276981001	10-JUL-2012	52963	54836	1000	1035	mg/L	4	15	
o-Terphenyl	162281280001	13-JUL-2012	62202	67521	50.00	54.27	mg/L	9	15	

JDG 09/10/12 : Corrected automatically drawn baseline.

Analyst: JDG Date: 09/10/12 Reviewer: SFL Date: 09/10/12

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 239425 GCSV Soil
EPA 8015B

Inst : GC15B Run Name : MO_500 IDF : 1.0
Seqnum : 162365242024 File : 253b024 Time : 10-SEP-2012 01:05
Standards: S20623

Analyte	Cal	Caldate	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Motor Oil C24-C36	162269861001	05-JUL-2012	39759	39539	500.0	497.2	mg/L	-1	15	
o-Terphenyl	162281280001	13-JUL-2012	62202	65815	50.00	52.90	mg/L	6	15	

JDG 09/10/12 : Manually integrated fuel hump.

Analyst: JDG Date: 09/10/12 Reviewer: SFL Date: 09/10/12

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 239425 GCSV Soil
EPA 8015B

Inst : GC15B Run Name : DSL_250 IDF : 1.0
Seqnum : 162365242048 File : 253b048 Time : 10-SEP-2012 12:59
Standards: S20483

Analyte	Cal	Caldate	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Diesel C10-C24	162276981001	10-JUL-2012	52963	51687	250.0	244.0	mg/L	-2	15	
o-Terphenyl	162281280001	13-JUL-2012	62202	60350	50.00	48.51	mg/L	-3	15	

SFL 09/10/12 : Corrected automatically drawn baseline.

Analyst: SFL Date: 09/10/12 Reviewer: JDG Date: 09/10/12

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 239425 GCSV Soil
EPA 8015B

Inst : GC15B Run Name : MO_500 IDF : 1.0
Seqnum : 162365242049 File : 253b049 Time : 10-SEP-2012 13:26
Standards: S20623

Analyte	Cal	Caldate	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Motor Oil C24-C36	162269861001	05-JUL-2012	39759	39777	500.0	500.2	mg/L	0	15	
o-Terphenyl	162281280001	13-JUL-2012	62202	64973	50.00	52.23	mg/L	4	15	

Analyst: SFL Date: 09/10/12 Reviewer: JDG Date: 09/10/12

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 239425 GCSV Soil
EPA 8015B

Inst : GC15B Run Name : DSL_500 IDF : 1.0
Seqnum : 162365242063 File : 253b063 Time : 10-SEP-2012 20:15
Standards: S20484

Analyte	Cal	Caldate	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Diesel C10-C24	162276981001	10-JUL-2012	52963	54690	500.0	516.3	mg/L	3	15	
o-Terphenyl	162281280001	13-JUL-2012	62202	65125	50.00	52.35	mg/L	5	15	

JDG 09/11/12 : Corrected automatically drawn baseline.

Analyst: JDG Date: 09/11/12 Reviewer: SFL Date: 09/11/12

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 239425 GCSV Soil
EPA 8015B

Inst : GC15B Run Name : MO_500 IDF : 1.0
Seqnum : 162365242064 File : 253b064 Time : 10-SEP-2012 20:43
Standards: S20623

Analyte	Cal	Caldate	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Motor Oil C24-C36	162269861001	05-JUL-2012	39759	40932	500.0	514.7	mg/L	3	15	
o-Terphenyl	162281280001	13-JUL-2012	62202	64572	50.00	51.90	mg/L	4	15	

Analyst: JDG Date: 09/11/12 Reviewer: SFL Date: 09/11/12

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 239425 GCSV Soil
EPA 8015B

Inst : GC26A Run Name : MO_500 IDF : 1.0
Seqnum : 862366223003 File : 254a003 Time : 10-SEP-2012 08:39
Standards: S20623

Analyte	Cal	Caldate	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Motor Oil C24-C36	862246744001	19-JUN-2012	33817	35096	500.0	518.9	mg/L	4	15	
o-Terphenyl	862248129001	20-JUN-2012	59067	57379	50.00	48.57	mg/L	-3	15	

SFL 09/10/12 : Corrected automatically drawn baseline.

Analyst: SFL Date: 09/10/12 Reviewer: JDG Date: 09/10/12

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 239425 GCSV Soil
EPA 8015B

Inst : GC26A Run Name : DSL_250 IDF : 1.0
Seqnum : 862366223004 File : 254a004 Time : 10-SEP-2012 09:07
Standards: S20483

Analyte	Cal	Caldate	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Diesel C10-C24	862229641002	07-JUN-2012	46154	47810	250.0	259.0	mg/L	4	15	
o-Terphenyl	862248129001	20-JUN-2012	59067	52691	50.00	44.60	mg/L	-11	15	

SFL 09/10/12 : Corrected automatically drawn baseline.

Analyst: SFL Date: 09/10/12 Reviewer: JDG Date: 09/10/12

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 239425 GCSV Soil
EPA 8015B

Inst : GC26A Run Name : MO_500 IDF : 1.0
Seqnum : 862366223011 File : 254a011 Time : 10-SEP-2012 12:55
Standards: S20623

Analyte	Cal	Caldate	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Motor Oil C24-C36	862246744001	19-JUN-2012	33817	36256	500.0	536.1	mg/L	7	15	
o-Terphenyl	862248129001	20-JUN-2012	59067	58919	50.00	49.88	mg/L	0	15	

SFL 09/10/12 : Corrected automatically drawn baseline.

Analyst: SFL Date: 09/10/12 Reviewer: JDG Date: 09/10/12

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 239425 GCSV Soil
EPA 8015B

Inst : GC26A Run Name : DSL_500 IDF : 1.0
Seqnum : 862366223012 File : 254a012 Time : 10-SEP-2012 13:23
Standards: S20484

Analyte	Cal	Caldate	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Diesel C10-C24	862229641002	07-JUN-2012	46154	50763	500.0	549.9	mg/L	10	15	
o-Terphenyl	862248129001	20-JUN-2012	59067	55187	50.00	46.72	mg/L	-7	15	

SFL 09/10/12 : Corrected automatically drawn baseline.

Analyst: SFL Date: 09/10/12 Reviewer: JDG Date: 09/10/12

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 162269861

Instrument : GC15B Begun : 07/05/12 09:41
Method : EPA 8015B SOP Version : TEH_rv13

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	187b001	X	PRIMER			07/05/12 09:41	1.0		
002	187b002	X	CMARKER			07/05/12 10:09	1.0	1	
003	187b003	CCV	DSL_250			07/05/12 10:36	1.0	2	
004	187b004	CCV	MO_500			07/05/12 11:04	1.0	3	
005	187b005	X	IB			07/05/12 12:36	1.0		
006	187b006	X	CMARKER			07/05/12 13:04	1.0	1	
007	187b007	CCV	DSL_250			07/05/12 13:42	1.0	2	
008	187b008	CCV	MO_500			07/05/12 14:09	1.0	3	
009	187b009	X	CMARKER			07/05/12 14:37	1.0	4	
010	187b010	X	IB			07/05/12 16:18	1.0		
011	187b011	IB	CALIB			07/05/12 16:45	1.0		
012	187b012	ICAL	MO_25			07/05/12 17:13	1.0	5	
013	187b013	ICAL	MO_50			07/05/12 17:40	1.0	5	
014	187b014	ICAL	MO_250			07/05/12 18:08	1.0	6	
015	187b015	ICAL	MO_500			07/05/12 18:36	1.0	7	
016	187b016	ICAL	MO_1000			07/05/12 19:03	1.0	8	
017	187b017	ICAL	MO_2500			07/05/12 19:31	1.0	9	
018	187b018	ICAL	MO_5000			07/05/12 19:59	1.0	9	
019	187b019	IB	CALIB			07/05/12 20:27	1.0		
020	187b020	CMARKER	C8-C50			07/05/12 20:54	1.0	4	
021	187b021	IB	CALIB			07/05/12 21:22	1.0		

SFL 07/06/12 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 21.

Standards used: 1=S19277 2=S19822 3=S20033 4=S20262 5=S20089 6=S19735 7=S19736 8=S19737 9=S19738

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 162276981

Instrument : GC15B
Method : EPA 8015B

Begun : 07/10/12 08:21
SOP Version : TEH_rv13

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	192b001	X	PRIMER			07/10/12 08:21	1.0		
002	192b002	X	CMARKER			07/10/12 08:49	1.0	1	
003	192b003	X	MO_500			07/10/12 09:17	1.0	2	
004	192b004	X	DSL_500			07/10/12 09:45	1.0	3	
005	192b005	X	CMARKER			07/10/12 12:07	1.0	1	
006	192b006	X	MO_500			07/10/12 12:34	1.0	2	
007	192b007	X	DSL_500			07/10/12 13:02	1.0	3	
008	192b008	CCV	DSL_500			07/10/12 14:41	1.0	3	
009	192b009	CCV	MO_500			07/10/12 15:08	1.0	2	
010	192b010	CCV	DSL_500			07/10/12 15:55	1.0	3	
011	192b011	CCV	DSL_250			07/10/12 16:49	1.0	4	
012	192b012	IB	CALIB			07/10/12 17:50	1.0		
013	192b013	ICAL	DSL_10			07/10/12 18:17	1.0	5	
014	192b014	ICAL	DSL_100			07/10/12 18:45	1.0	6	
015	192b015	ICAL	DSL_500			07/10/12 19:13	1.0	7	
016	192b016	ICAL	DSL_1000			07/10/12 19:41	1.0	8	
017	192b017	ICAL	DSL_5000			07/10/12 20:08	1.0	9	
018	192b018	ICAL	DSL_7500			07/10/12 20:36	1.0	10	
019	192b019	IB	CALIB			07/10/12 21:03	1.0		
020	192b020	ICV	DSL_500			07/10/12 21:31	1.0	11	
021	192b021	X	ICV			07/10/12 21:59	1.0	11	
022	192b022	IB	CALIB			07/10/12 22:27	1.0		
023	192b023	CMARKER	C8-C50			07/10/12 22:55	1.0	1	
024	192b024	IB	CALIB			07/10/12 23:23	1.0		

JDG 07/11/12 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 24.

Standards used: 1=S20262 2=S20033 3=S20069 4=S20066 5=S19968 6=S19945 7=S19946 8=S19947 9=S19943 10=S19948 11=S19823

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 162281280

Instrument : GC15B Begun : 07/13/12 08:00
Method : EPA 8015B SOP Version : TEH_rv13

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	195b001	X	PRIMER			07/13/12 08:00	1.0		
002	195b002	X	CMARKER			07/13/12 08:28	1.0	1	
003	195b003	CCV	DSL_500			07/13/12 08:56	1.0	2	
004	195b004	CCV	MO_500			07/13/12 10:15	1.0	3	
005	195b005	LOQ	237608-007	Soil	188126	07/13/12 14:40	1.0		
006	195b006	BLANK	QC647456	Soil	188404	07/13/12 15:12	1.0		
007	195b007	CCV	MO_500			07/13/12 15:44	1.0	3	
008	195b008	CCV	DSL_250			07/13/12 16:12	1.0	4	
010	195b010	IB	CALIB			07/13/12 17:14	1.0		
011	195b011	ICAL	HEXOTP_5			07/13/12 17:42	1.0	5	
012	195b012	ICAL	HEXOTP_10			07/13/12 18:09	1.0	6	
013	195b013	ICAL	HEXOTP_25			07/13/12 18:37	1.0	7	
014	195b014	ICAL	HEXOTP_50			07/13/12 19:04	1.0	8	
015	195b015	ICAL	HEXOTP_100			07/13/12 19:32	1.0	9	
016	195b016	ICAL	HEXOTP_200			07/13/12 20:00	1.0	10	
017	195b017	IB	CALIB			07/13/12 20:28	1.0		

JDG 07/13/12 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 8.

JDG 07/16/12 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 9 through 17.

Standards used: 1=S20262 2=S20069 3=S20033 4=S20066 5=S19347 6=S19348 7=S19349 8=S19350 9=S19351 10=S19352

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 162365242

Instrument : GC15B
Method : EPA 8015B

Begun : 09/09/12 15:22
SOP Version : TEH_rv13

#	File	Type	Sample ID	P	Matrix	Batch	Analyzed	IDF	Stds Used	
001	253b001	X	PRIMER				09/09/12 15:22	1.0		
002	253b002	X	CMARKER				09/09/12 15:50	1.0	1	
003	253b003	CCV	DSL_250				09/09/12 16:17	1.0	2	
004	253b004	CCV	MO_500				09/09/12 16:45	1.0	3	
007	253b007	BLANK	QC655332		Soil	190299	09/09/12 17:13	1.0		
008	253b008	BLANK	QC655332	S	Soil	190299	09/09/12 17:40	1.0		
009	253b009	LCS	QC655333	S	Soil	190299	09/09/12 18:08	1.0		
010	253b010	MSS	239425-003	S	Soil	190299	09/09/12 18:36	1.0		1:BUNKC:12-40=10000
011	253b011	MS	QC655334	S	Soil	190299	09/09/12 19:03	1.0		1:BUNKC:12-40=11000
012	253b012	MSD	QC655335	S	Soil	190299	09/09/12 19:31	1.0		1:BUNKC:12-40=11000
013	253b013	SAMPLE	239464-002	S	Soil	190299	09/09/12 19:58	5.0		8:BUNKC:12-40=22000
014	253b014	SAMPLE	239464-004	S	Soil	190299	09/09/12 20:26	10.0		2:BUNKC:12-40=19000
015	253b015	X	IB				09/09/12 20:54	1.0		
016	253b016	SAMPLE	239464-008	S	Soil	190299	09/09/12 21:22	5.0		6:BUNKC:12-40=20000
017	253b017	SAMPLE	239464-006	S	Soil	190299	09/09/12 21:50	5.0		4:BUNKC:12-40=19000
018	253b018	X	IB				09/09/12 22:18	1.0		
019	253b019	SAMPLE	239464-011	S	Soil	190299	09/09/12 22:45	5.0		8:BUNKC:12-40=25000
020	253b020	SAMPLE	239464-009	S	Soil	190299	09/09/12 23:13	10.0		10:BUNKC:12-40=33000
021	253b021	X	IB				09/09/12 23:41	1.0		
022	253b022	SAMPLE	239464-013	S	Soil	190299	09/10/12 00:09	5.0		7:BUNKC:12-40=21000
023	253b023	CCV	DSL_1000				09/10/12 00:37	1.0	4	
024	253b024	CCV	MO_500				09/10/12 01:05	1.0	3	
025	253b025	CCV	HYFL_500				09/10/12 01:32	1.0	5	
026	253b026	CCV	BUNK_500				09/10/12 02:00	1.0	6	
027	253b027	BLANK	QC655032		Water	190233	09/10/12 02:28	1.0		
028	253b028	SAMPLE	239382-002	S	Water	190233	09/10/12 02:56	1.0		
029	253b029	SAMPLE	239458-010		Soil	190299	09/10/12 03:24	1.0		
030	253b030	SAMPLE	239458-005		Soil	190299	09/10/12 03:52	5.0		
031	253b031	SAMPLE	239458-015		Soil	190299	09/10/12 04:19	5.0		
032	253b032	SAMPLE	239458-020		Soil	190299	09/10/12 04:47	5.0		
033	253b033	SAMPLE	239409-030	S	Soil	190207	09/10/12 05:15	200.0		
034	253b034	SAMPLE	239409-033	S	Soil	190207	09/10/12 05:43	200.0		
035	253b035	SAMPLE	239409-034	S	Soil	190207	09/10/12 06:11	100.0		
036	253b036	SAMPLE	239409-035	S	Soil	190207	09/10/12 06:39	100.0		
037	253b037	SAMPLE	239409-036	S	Soil	190207	09/10/12 07:07	200.0		
038	253b038	X	CMARKER				09/10/12 07:34	1.0	1	
039	253b039	CCV	DSL_500				09/10/12 08:02	1.0	7	
040	253b040	CCV	MO_500				09/10/12 08:31	1.0	3	
041	253b041	CCV	BUNK_500				09/10/12 08:59	1.0	6	
042	253b042	CCV	HYFL_500				09/10/12 09:27	1.0	5	
043	253b043	BLANK	QC655352	S	Water	190304	09/10/12 10:29	1.0		
044	253b044	BLANK	QC655332		Soil	190299	09/10/12 10:57	1.0		
045	253b045	SAMPLE	239315-001	S	Water	190304	09/10/12 11:24	1.0		
046	253b046	SAMPLE	239464-006	S	Soil	190299	09/10/12 11:52	50.0		
047	253b047	SAMPLE	239464-008	S	Soil	190299	09/10/12 12:20	50.0		
048	253b048	CCV	DSL_250				09/10/12 12:59	1.0	2	
049	253b049	CCV	MO_500				09/10/12 13:26	1.0	3	
050	253b050	CCV	BUNK_500				09/10/12 13:54	1.0	6	
051	253b051	CCV	HYFL_500				09/10/12 14:22	1.0	5	
052	253b052	SAMPLE	239475-002		Soil	190330	09/10/12 15:27	1.0		
054	253b054	SAMPLE	239465-002		Water	190304	09/10/12 16:06	1.0		
055	253b055	SAMPLE	239465-003		Water	190304	09/10/12 16:34	1.0		

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 162365242

Instrument : GC15B Begun : 09/09/12 15:22
Method : EPA 8015B SOP Version : TEH_rv13

#	File	Type	Sample ID	P	Matrix	Batch	Analyzed	IDF	Stds Used	
056	253b056	SAMPLE	239465-004		Water	190304	09/10/12 17:02	1.0		
057	253b057	SAMPLE	239465-005		Water	190304	09/10/12 17:29	1.0		
058	253b058	SAMPLE	239465-007		Water	190304	09/10/12 17:57	1.0		
059	253b059	SAMPLE	239469-007		Water	190304	09/10/12 18:25	1.0		
060	253b060	SAMPLE	239469-003		Water	190304	09/10/12 18:52	1.0		
061	253b061	SAMPLE	239425-006	S	Soil	190299	09/10/12 19:20	1.0		
062	253b062	X	CMARKER				09/10/12 19:47	1.0	1	
063	253b063	CCV	DSL_500				09/10/12 20:15	1.0	7	
064	253b064	CCV	MO_500				09/10/12 20:43	1.0	3	
065	253b065	X	CCV				09/10/12 21:11	1.0	7	
066	253b066	X	CCV				09/10/12 21:39	1.0	3	
067	253b067	BLANK	QC655313		Soil	190294	09/10/12 22:07	1.0		
068	253b068	LCS	QC655314		Soil	190294	09/10/12 22:35	1.0		
069	253b069	MSS	239368-009		Soil	190294	09/10/12 23:03	3.0		
070	253b070	MS	QC655315		Soil	190294	09/10/12 23:31	3.0		
071	253b071	MSD	QC655316		Soil	190294	09/10/12 23:59	3.0		
072	253b072	SAMPLE	239357-010		Soil	190330	09/11/12 00:27	1.0		
073	253b073	SAMPLE	239357-011		Soil	190330	09/11/12 00:55	1.0		
074	253b074	SAMPLE	239357-012		Soil	190330	09/11/12 01:22	1.0		
075	253b075	SAMPLE	239357-014		Soil	190330	09/11/12 01:50	1.0		
076	253b076	SAMPLE	239368-001		Soil	190294	09/11/12 02:18	1.0		
077	253b077	SAMPLE	239368-002		Soil	190294	09/11/12 02:46	1.0		
078	253b078	SAMPLE	239368-003		Soil	190294	09/11/12 03:14	5.0		
079	253b079	CCV	DSL_1000				09/11/12 03:41	1.0	4	
080	253b080	CCV	MO_500				09/11/12 04:09	1.0	3	

JDG 09/10/12 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 42.

JDG 09/10/12 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 43 through 51.

JDG 09/11/12 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 52 through 80.

JDG 09/11/12 : Vial#53 did not run.

Standards used: 1=S20262 2=S20483 3=S20623 4=S20485 5=S19451 6=S20384 7=S20484

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 862229641

Instrument : GC26A Begun : 06/07/12 11:21
Method : EPA 8015B SOP Version : TEH_rv13

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	159a001	X	PRIMER			06/07/12 11:21	1.0		
002	159a002	X	IB			06/07/12 11:48	1.0		
003	159a003	X	IB			06/07/12 14:20	1.0		
004	159a004	X	IB			06/07/12 16:34	1.0		
005	159a005	IB	CALIB			06/07/12 17:50	1.0		
006	159a006	ICAL	HEXOTP_5			06/07/12 18:18	1.0	1	
007	159a007	ICAL	HEXOTP_10			06/07/12 18:45	1.0	2	
008	159a008	ICAL	HEXOTP_25			06/07/12 19:13	1.0	3	
009	159a009	ICAL	HEXOTP_50			06/07/12 19:41	1.0	4	
010	159a010	ICAL	HEXOTP_100			06/07/12 20:08	1.0	5	
011	159a011	ICAL	HEXOTP_200			06/07/12 20:36	1.0	6	
012	159a012	IB	CALIB			06/07/12 21:03	1.0		
013	159a013	ICAL	DSL_10			06/07/12 21:31	1.0	7	
014	159a014	ICAL	DSL_100			06/07/12 21:59	1.0	8	
015	159a015	ICAL	DSL_500			06/07/12 22:26	1.0	9	
016	159a016	ICAL	DSL_1000			06/07/12 22:54	1.0	10	
017	159a017	ICAL	DSL_5000			06/07/12 23:22	1.0	11	
018	159a018	ICAL	DSL_7500			06/07/12 23:50	1.0	12	
019	159a019	IB	CALIB			06/08/12 00:18	1.0		
020	159a020	ICV	DSL_500			06/08/12 00:45	1.0	13	
021	159a021	X	ICV			06/08/12 01:13	1.0	13	
022	159a022	IB	CALIB			06/08/12 01:40	1.0		
023	159a023	ICAL	MO_25			06/08/12 02:08	1.0	14	
024	159a024	ICAL	MO_50			06/08/12 02:36	1.0	14	
025	159a025	ICAL	MO_250			06/08/12 03:04	1.0	15	
026	159a026	ICAL	MO_500			06/08/12 03:31	1.0	16	
027	159a027	ICAL	MO_1000			06/08/12 03:59	1.0	17	
028	159a028	ICAL	MO_2500			06/08/12 04:26	1.0	18	
029	159a029	IB	CALIB			06/08/12 04:54	1.0		
030	159a030	CMARKER	C8-C50			06/08/12 05:22	1.0	19	
031	159a031	IB	CALIB			06/08/12 05:50	1.0		

SFL 06/10/12 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 31.

Standards used: 1=S19347 2=S19348 3=S19349 4=S19350 5=S19351 6=S19352 7=S19968 8=S19945 9=S19946 10=S19947 11=S19943 12=S19948 13=S19823 14=S19734 15=S19735 16=S19736 17=S19737 18=S19738 19=S19277

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 862246744

Instrument : GC26A Begun : 06/19/12 08:24
Method : EPA 8015B SOP Version : TEH_rv13

#	File	Type	Sample ID	P	Matrix	Batch	Analyzed	IDF	Stds Used	
001	171a001	X	PRIMER				06/19/12 08:24	1.0		
002	171a002	X	IB				06/19/12 08:51	1.0		
003	171a003	X	CMARKER				06/19/12 09:19	1.0	1	
004	171a004	CCV	DSL_250				06/19/12 09:46	1.0	2	
005	171a005	IB	CALIB				06/19/12 10:50	1.0		
006	171a006	X	MO_25				06/19/12 11:18	1.0	3	
007	171a007	ICAL	MO_50				06/19/12 11:45	1.0	3	
008	171a008	ICAL	MO_250				06/19/12 12:13	1.0	4	
009	171a009	ICAL	MO_500				06/19/12 12:40	1.0	5	
010	171a010	ICAL	MO_1000				06/19/12 13:08	1.0	6	
011	171a011	ICAL	MO_2500				06/19/12 13:36	1.0	7	
012	171a012	ICAL	MO_5000				06/19/12 14:04	1.0	7	
013	171a013	IB	CALIB				06/19/12 14:31	1.0		
014	171a014	CMARKER	C8-C50				06/19/12 14:59	1.0	1	
015	171a015	IB	CALIB				06/19/12 15:27	1.0		
016	171a016	CCV	DSL_250				06/19/12 15:55	1.0	2	
017	171a017	CCV	MO_500				06/19/12 16:23	1.0	8	
018	171a018	X	CCV				06/19/12 16:51	1.0	2	
019	171a019	BLANK	QC644131	S	Soil	187597	06/19/12 17:19	1.0		
020	171a020	LCS	QC644135	S	Soil	187597	06/19/12 17:47	1.0		
021	171a021	SAMPLE	236880-002	S	Soil	187450	06/19/12 18:14	1.0		
022	171a022	SAMPLE	236880-007	S	Soil	187450	06/19/12 18:42	1.0		2:BUNKC:12-50=5300
023	171a023	SAMPLE	236880-011	S	Soil	187450	06/19/12 19:10	1.0		
024	171a024	MSS	236958-017	S	Soil	187597	06/19/12 19:38	1.0		
025	171a025	SAMPLE	236958-018	S	Soil	187597	06/19/12 20:05	1.0		
026	171a026	SAMPLE	236958-019	S	Soil	187597	06/19/12 20:33	1.0		
027	171a027	SAMPLE	236958-020	S	Soil	187597	06/19/12 21:01	1.0		
028	171a028	SAMPLE	236958-022	S	Soil	187597	06/19/12 21:28	1.0		
029	171a029	SAMPLE	236958-023	S	Soil	187597	06/19/12 21:56	1.0		
030	171a030	SAMPLE	236958-024	S	Soil	187597	06/19/12 22:24	1.0		
031	171a031	CCV	DSL_500				06/19/12 22:52	1.0	9	
032	171a032	CCV	MO_500				06/19/12 23:20	1.0	8	
033	171a033	X	CCV				06/19/12 23:48	1.0	9	
034	171a034	X	CCV				06/20/12 00:15	1.0	8	
035	171a035	SAMPLE	236958-025	S	Soil	187597	06/20/12 00:44	1.0		
036	171a036	X	IB				06/20/12 01:11	1.0		
037	171a037	LOD	212266-020		Water	187712	06/20/12 01:39	1.0		
038	171a038	LOD	213035-021		Water	187712	06/20/12 02:07	1.0		
039	171a039	X	CMARKER				06/20/12 02:35	1.0	1	
040	171a040	X	DSL_1000				06/20/12 03:03	1.0	10	
041	171a041	CCV	MO_500				06/20/12 03:31	1.0	8	
042	171a042	CCV	DSL_1000				06/20/12 08:23	1.0	10	

JDG 06/19/12 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 16.

JDG 06/20/12 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 17 through 42.

Standards used: 1=S19277 2=S19822 3=S19734 4=S19735 5=S19736 6=S19737 7=S19738 8=S20033 9=S19823 10=S19824

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 862248129

Instrument : GC26A Begun : 06/20/12 07:29
Method : EPA 8015B SOP Version : TEH_rv13

#	File	Type	Sample ID	P	Matrix	Batch	Analyzed	IDF	Stds Used	
001	172a001	X	PRIMER				06/20/12 07:29	1.0		
002	172a002	X	CMARKER				06/20/12 07:56	1.0	1	
003	172a003	CCV	DSL_250				06/20/12 08:51	1.0	2	
004	172a004	CCV	MO_500				06/20/12 09:19	1.0	3	
005	172a005	SAMPLE	236880-007		Soil	187450	06/20/12 09:46	1.0		
006	172a006	SAMPLE	236880-002		Soil	187450	06/20/12 10:14	1.0		
007	172a007	SAMPLE	236880-011		Soil	187450	06/20/12 10:42	1.0		
008	172a008	SAMPLE	236880-002	S	Soil	187450	06/20/12 12:40	1.0		
009	172a009	SAMPLE	236880-007	S	Soil	187450	06/20/12 13:07	1.0		
010	172a010	SAMPLE	236880-011	S	Soil	187450	06/20/12 13:35	1.0		
011	172a011	CCV	DSL_500				06/20/12 14:27	1.0	4	
012	172a012	SAMPLE	236958-021	S	Soil	187597	06/20/12 14:57	1.0		
013	172a013	CCV	DSL_500				06/20/12 15:24	1.0	4	
014	172a014	CCV	MO_500				06/20/12 15:52	1.0	3	
015	172a015	IB	CALIB				06/20/12 16:24	1.0		
016	172a016	ICAL	HEXOTP_5				06/20/12 16:51	1.0	5	
017	172a017	ICAL	HEXOTP_10				06/20/12 17:19	1.0	6	
018	172a018	ICAL	HEXOTP_25				06/20/12 17:47	1.0	7	
019	172a019	ICAL	HEXOTP_50				06/20/12 18:15	1.0	8	
020	172a020	ICAL	HEXOTP_100				06/20/12 18:42	1.0	9	
021	172a021	ICAL	HEXOTP_200				06/20/12 19:10	1.0	10	
022	172a022	IB	CALIB				06/20/12 19:38	1.0		

SFL 06/20/12 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 14.

JDG 06/21/12 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 15 through 20.

Standards used: 1=S19277 2=S19822 3=S20033 4=S19823 5=S19347 6=S19348 7=S19349 8=S19350 9=S19351 10=S19352

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 862366223

Instrument : GC26A
Method : EPA 8015B

Begun : 09/10/12 07:43
SOP Version : TEH_rv13

#	File	Type	Sample ID	P	Matrix	Batch	Analyzed	IDF	Stds Used	
001	254a001	X	IB				09/10/12 07:43	1.0		
002	254a002	X	CMARKER				09/10/12 08:11	1.0	1	
003	254a003	CCV	MO_500				09/10/12 08:39	1.0	2	
004	254a004	CCV	DSL_250				09/10/12 09:07	1.0	3	
005	254a005	CCV	BUNK_500				09/10/12 09:35	1.0	4	
006	254a006	CCV	HYFL_500				09/10/12 10:15	1.0	5	
007	254a007	BLANK	QC655332	S	Soil	190299	09/10/12 10:47	1.0		
008	254a008	SAMPLE	239409-045	S	Soil	190207	09/10/12 11:15	50.0		
009	254a009	SAMPLE	239464-002	S	Soil	190299	09/10/12 11:43	50.0		
010	254a010	SAMPLE	239464-004	S	Soil	190299	09/10/12 12:11	100.0		
011	254a011	CCV	MO_500				09/10/12 12:55	1.0	2	
012	254a012	CCV	DSL_500				09/10/12 13:23	1.0	6	
013	254a013	CCV	BUNK_500				09/10/12 13:50	1.0	4	
014	254a014	SAMPLE	239476-002		Soil	190330	09/10/12 14:18	1.0		
015	254a015	CHECK	HYFL_500				09/10/12 14:55	1.0	7	
016	254a016	CCV	MO_500				09/10/12 15:22	1.0	2	
017	254a017	CCV	DSL_250				09/10/12 15:50	1.0	3	
018	254a018	CCV	BUNK_500				09/10/12 17:01	1.0	4	
019	254a019	BLANK	QC655437	S	Soil	190320	09/10/12 18:41	1.0		
020	254a020	SAMPLE	239409-033	S	Soil	190207	09/10/12 19:08	100.0		
021	254a021	MSS	239457-001	S	Soil	190320	09/10/12 19:35	5.0		
022	254a022	SAMPLE	239457-002	S	Soil	190320	09/10/12 20:03	5.0		
023	254a023	X	IB				09/10/12 20:31	1.0		
024	254a024	SAMPLE	239457-007	S	Soil	190320	09/10/12 20:59	5.0		
025	254a025	SAMPLE	239457-008	S	Soil	190320	09/10/12 21:26	5.0		
026	254a026	SAMPLE	239457-006	S	Soil	190320	09/10/12 21:54	10.0		
027	254a027	X	IB				09/10/12 22:22	1.0		
028	254a028	SAMPLE	239457-009	S	Soil	190320	09/10/12 22:50	1.0		
029	254a029	SAMPLE	239457-003	S	Soil	190320	09/10/12 23:18	1.0		
030	254a030	SAMPLE	239457-004	S	Soil	190320	09/10/12 23:46	1.0		1:BUNKC:12-40=10000
031	254a031	SAMPLE	239457-005	S	Soil	190320	09/11/12 00:14	1.0		1:BUNKC:12-40=8600
032	254a032	X	CMARKER				09/11/12 00:41	1.0	1	
033	254a033	CCV	DSL_250				09/11/12 01:09	1.0	3	
034	254a034	CCV	MO_500				09/11/12 01:37	1.0	2	
035	254a035	CCV	BUNK_500				09/11/12 02:04	1.0	4	
036	254a036	X	CCV				09/11/12 02:32	1.0	3	
037	254a037	X	CCV				09/11/12 03:00	1.0	2	
038	254a038	X	CCV				09/11/12 03:27	1.0	4	
039	254a039	SAMPLE	239457-010	S	Soil	190320	09/11/12 03:55	1.0		
040	254a040	SAMPLE	239457-012	S	Soil	190320	09/11/12 04:23	1.0		
041	254a041	SAMPLE	239457-013	S	Soil	190320	09/11/12 04:50	1.0		
042	254a042	SAMPLE	239457-014	S	Soil	190320	09/11/12 05:18	1.0		
043	254a043	SAMPLE	239457-015	S	Soil	190320	09/11/12 05:46	1.0		
044	254a044	SAMPLE	239457-019	S	Soil	190320	09/11/12 06:13	1.0		
045	254a045	SAMPLE	239457-020	S	Soil	190320	09/11/12 06:41	1.0		
046	254a046	SAMPLE	239457-016	S	Soil	190320	09/11/12 07:09	1.0		1:BUNKC:12-40=5000
047	254a047	SAMPLE	239457-018	S	Soil	190320	09/11/12 07:37	1.0		1:BUNKC:12-40=8600
048	254a048	SAMPLE	239457-017	S	Soil	190320	09/11/12 08:05	20.0		
049	254a049	CCV	MO_500				09/11/12 08:33	1.0	2	
050	254a050	CCV	DSL_500				09/11/12 09:01	1.0	6	
051	254a051	CCV	BUNK_500				09/11/12 09:28	1.0	4	
052	254a052	LCS	QC655604	S	Soil	190359	09/11/12 09:56	1.0		

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 862366223

Instrument : GC26A Begun : 09/10/12 07:43
Method : EPA 8015B SOP Version : TEH_rv13

#	File	Type	Sample ID	P	Matrix	Batch	Analyzed	IDF	Stds Used	
053	254a053	SAMPLE	239497-008	S	Soil	190359	09/11/12 10:24	1.0		
054	254a054	SAMPLE	239497-006	S	Soil	190359	09/11/12 10:52	40.0		
055	254a055	SAMPLE	239497-009	S	Soil	190359	09/11/12 11:20	50.0		
056	254a056	SAMPLE	239497-014	S	Soil	190359	09/11/12 11:48	50.0		
057	254a057	SAMPLE	239497-016	S	Soil	190359	09/11/12 12:16	50.0		
058	254a058	SAMPLE	239497-005	S	Soil	190359	09/11/12 12:44	5.0		
059	254a059	X	CMARKER				09/11/12 13:11	1.0	1	
060	254a060	CCV	MO_500				09/11/12 13:39	1.0	2	
061	254a061	CCV	DSL_250				09/11/12 14:07	1.0	3	
062	254a062	CCV	BUNK_500				09/11/12 14:34	1.0	4	
063	254a063	BLANK	QC655603		Soil	190359	09/11/12 15:24	1.0		
064	254a064	SAMPLE	239368-003		Soil	190294	09/11/12 15:52	1.0		
065	254a065	X	IB				09/11/12 16:19	1.0		
066	254a066	BLANK	QC655561		Soil	190352	09/11/12 16:47	1.0		
067	254a067	LCS	QC655562		Soil	190352	09/11/12 17:15	1.0		
068	254a068	MSS	239496-005		Soil	190359	09/11/12 17:43	1.0		
069	254a069	MS	QC655605		Soil	190359	09/11/12 18:10	1.0		
070	254a070	MSD	QC655606		Soil	190359	09/11/12 18:38	1.0		
071	254a071	SAMPLE	239496-001		Soil	190359	09/11/12 19:06	1.0		
072	254a072	SAMPLE	239496-002		Soil	190359	09/11/12 19:33	1.0		
073	254a073	SAMPLE	239496-003		Soil	190359	09/11/12 20:01	1.0		
074	254a074	SAMPLE	239496-004		Soil	190359	09/11/12 20:29	1.0		
075	254a075	SAMPLE	239496-006		Soil	190359	09/11/12 20:57	1.0		
076	254a076	SAMPLE	239496-007		Soil	190359	09/11/12 21:24	1.0		
077	254a077	CCV	MO_500				09/11/12 21:52	1.0	2	
078	254a078	CCV	DSL_250				09/11/12 22:20	1.0	3	
079	254a079	X	CCV				09/11/12 22:48	1.0	2	
080	254a080	X	CCV				09/11/12 23:16	1.0	3	

JDG 09/10/12 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 14.

JDG 09/11/12 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 15 through 51.

SFL 09/11/12 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 52 through 62.

SFL 09/12/12 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 63 through 80.

Standards used: 1=S20262 2=S20623 3=S20483 4=S20384 5=S19451 6=S20484 7=S20667

SAMPLE PREPARATION SUMMARY

Batch # : 190299
Started By : MAW
Method : 3550B
Spike #1 ID : S20632

Prep Date : 08-SEP-2012 16:00
Spike #2 ID : S20611

Analysis : TEHM
Finished By : MAW
Units : g

Sample	Stype	Matrix	Initial	Final	Clean DF	Prep DF	pH	Sp 1 Vol	Sp 2 Vol	Sp 3 Vol	Clean Method	Analysis	Comments
239368-010		Soil	49.95	5	1	0.1001		1				TEHM	MIS SOP
239368-011		Soil	49.97	5	1	0.1001		1				TEHM	MIS SOP
239368-012		Soil	50	5	1	0.1000		1				TEHM	MIS SOP
239368-013		Soil	50.03	5	1	0.09994		1				TEHM	MIS SOP
239368-014		Soil	50.2	5	1	0.0996		1				(rebatched)	MIS SOP
239368-015		Soil	50.09	5	1	0.09982		1				TEHM	MIS SOP
239416-001		Soil	50.19	5	1	0.09962		1				TEHM	
239425-003		Soil	50.1	5	1	0.0998		1			3630C	TEH	
239425-006		Soil	50.45	5	1	0.09911		1			3630C	TEH	
239458-005		Soil	49.94	5	1	0.1001		1				TEHM	
239458-010		Soil	49.98	5	1	0.1000		1				TEHM	
239458-015		Soil	50.03	5	1	0.09994		1				TEHM	
239458-020		Soil	50.19	5	1	0.09962		1				TEHM	
239464-002		Soil	49.96	5	1	0.1001		1			3630C	TEHM	
239464-004		Soil	50.46	5	1	0.09909		1			3630C	TEHM	
239464-006		Soil	49.61	5	1	0.1008		1			3630C	TEHM	
239464-008		Soil	50	5	1	0.1000		1			3630C	TEHM	
239464-009		Soil	50.11	5	1	0.09978		1			3630C	TEHM	
239464-011		Soil	49.63	5	1	0.1007		1			3630C	TEHM	
239464-013		Soil	49.94	5	1	0.1001		1			3630C	TEHM	
QC655332	BLANK	Soil	50.33	5	1	0.09934		1			3630C	TEHM	
QC655333	LCS	Soil	49.93	5	1	0.1001		1	1		3630C	TEHM	
QC655334	MS	Soil	50.47	5	1	0.09907		1	1		3630C	TEHM	
QC655335	MSD	Soil	50.19	5	1	0.09962		1	1		3630C	TEHM	

Analyst: JDG Date: 09/10/12 Reviewer: SFL Date: 09/10/12

TEH (8015) Soil Prep Log

Curtis & Tompkins, Ltd.

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LIMS Batch No: 190299
LIMS Analysis TEH/M
Date Extracted: 9/8/12

Extraction Method:
o Shaker Table
☒ EPA 3550 Sonication
o _____

Cleanup Method (if necessary):
☒ EPA 36 30 Silica Gel

Sample #	Container ID	Weight of Sample (g)	Final Volume (mL)	Cleanup (x if needed)	Comments
239368-010	A/B/C	49.95	☒ 5.0 ☐ ____		MIS SOP USED
011	↓	49.97	☒ 5.0 ☐ ____		↓
012		50.00	☒ 5.0 ☐ ____		
013		50.03	☒ 5.0 ☐ ____		
014		50.20	☒ 5.0 ☐ ____		
015	↓	50.09	☒ 5.0 ☐ ____		↓
239416-001	B	50.19	☒ 5.0 ☐ ____		
239425-003	A	50.10	☒ 5.0 ☐ ____	X	MSS
-006	↓	50.45	☒ 5.0 ☐ ____	X	
239458-005	COMP	49.94	☒ 5.0 ☐ ____		
-010	↓	49.98	☒ 5.0 ☐ ____		
-015		50.03	☒ 5.0 ☐ ____		
-020	↓	50.19	☒ 5.0 ☐ ____		
239464-002	B	49.96 MAW 9/8/12	☒ 5.0 ☐ ____	X	
-004	↓	~~49.61~~ 50.46	☒ 5.0 ☐ ____	X	
-006		~~50.00~~ 49.61	☒ 5.0 ☐ ____	X	
-008		~~50.11~~ 50.00	☒ 5.0 ☐ ____	X	
-009		~~49.63~~ 50.11	☒ 5.0 ☐ ____	X	
-011		~~49.94~~ 49.63	☒ 5.0 ☐ ____	X	
-013	↓	~~50.33~~ 49.94	☒ 5.0 ☐ ____	X	
MB QC655332		50.33	☒ 5.0 ☐ ____	X	
LCS 3		49.93	☒ 5.0 ☐ ____	X	
MS 4		50.47	☒ 5.0 ☐ ____	X	239425-003
MSD ↓ 5		50.19	☒ 5.0 ☐ ____	X	↓
			☐ 5.0 ☐ ____		

	Mfg & Lot # / LIMS # / Time	Date/Initial
Baked, solvent-rinsed granular Na2SO4 weighed out for QC samples	EMVB15H	MAW 9/8/12
Samples were dried with CH2Cl2-rinsed powdered Na2SO4	EM3041C024	↓
1.0 mL of Surrogate solution was added to all samples	520632D	
1.0 mL of Spike solution was added to all spikes	520611E	
1:1 CH_2Cl_2 (lot# 52216): Acetone (lot# 52160) was added to all	✓	
Solvent added at (time)	1600	
☒ Sonicated 3 times w/ ≥100mL ☐ placed on Shaker Table at:	✓	
taken off Shaker Table at:	N/A	
Extracts filtered through baked, rinsed powdered Na_2SO_4	EMVB15H	
Concentrated to final volume at temperature (degrees C)	100	
Relinquished to TEH Department	✓	↓

9/8/12
Extraction Chemist / Date

Continued from page ____
Continued on page ____

10/10/12
Reviewed by / Date

Curtis & Tompkins, Ltd. **Silica Gel Cleanup** **EPA 3630c**

Prep Chemist: MAW
Cleanup Date: 9/8/12

Benchbook # **BK 3352**
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Sample #	Extraction Batch#	Initial Volume (mL)	Final Volume (mL)	Comments
239425-003	190299	☒ 1.0 ☐____	☒ 1.0 ☐____	MSS
↓ -006	↓	☒ 1.0 ☐____	☒ 1.0 ☐____	
239464-002		☒ 1.0 ☐____	☒ 1.0 ☐____	
004		☒ 1.0 ☐____	☒ 1.0 ☐____	
006		☒ 1.0 ☐____	☒ 1.0 ☐____	
008		☒ 1.0 ☐____	☒ 1.0 ☐____	
009		☒ 1.0 ☐____	☒ 1.0 ☐____	
011		☒ 1.0 ☐____	☒ 1.0 ☐____	
013		☒ 1.0 ☐____	☒ 1.0 ☐____	
MB QC655332		☒ 1.0 ☐____	☒ 1.0 ☐____	
LCS 3		☒ 1.0 ☐____	☒ 1.0 ☐____	
MS 4		☒ 1.0 ☐____	☒ 1.0 ☐____	
MSD ↓ 5	↓	☒ 1.0 ☐____	☒ 1.0 ☐____	
		☐ 1.0 ☐____	☐ 1.0 ☐____	
		☐ 1.0 ☐____	☐ 1.0 ☐____	
		☐ 1.0 ☐____	☐ 1.0 ☐____	
		☐ 1.0 ☐____	☐ 1.0 ☐____	
		☐ 1.0 ☐____	☐ 1.0 ☐____	
		☐ 1.0 ☐____	☐ 1.0 ☐____	
		☐ 1.0 ☐____	☐ 1.0 ☐____	
		☐ 1.0 ☐____	☐ 1.0 ☐____	
		☐ 1.0 ☐____	☐ 1.0 ☐____	
		☐ 1.0 ☐____	☐ 1.0 ☐____	
		☐ 1.0 ☐____	☐ 1.0 ☐____	
		☐ 1.0 ☐____	☐ 1.0 ☐____	
		☐ 1.0 ☐____	☐ 1.0 ☐____	
		☐ 1.0 ☐____	☐ 1.0 ☐____	
		☐ 1.0 ☐____	☐ 1.0 ☐____	
		☐ 1.0 ☐____	☐ 1.0 ☐____	
		☐ 1.0 ☐____	☐ 1.0 ☐____	
		☐ 1.0 ☐____	☐ 1.0 ☐____	JRo 09/10/12

	Mfg & Lot # / Time / Program	Initials / Date
○ Extracts were cleaned up using C&T assembled ____ g columns	N/A	MAW 9/8/12
☒ Extracts were cleaned up using 1.0 g cartridges	SA3469301	↓
Extracts were eluted with 4.0 mL CH_2Cl_2	EM52160	
Concentrated to volumes as noted above	✓	↓

9/8/12
Extraction Chemist / Date

Continued from page /
Continued on page /

JRo 09/10/12
Reviewed by / Date

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BOOK PAGE

TITLE Soil Aliquot PROJECT DATE

Continued from page

Sample ID	Weight (g)	Analysis	Batch #	Comments
2393363-001 A/B	50.13	TEH		weighed per MIS sop
-002	49.98			
-003	50.17			
-004	50.20			
-005	49.96			
-006	50.03			
-007	50.00			
-008	50.05			
-009	50.33			
-010	50.08			
-011	50.48			
2393368-001 A/B/C	50.44			
-002	50.38			
-003	50.15			
-004	50.12			
-005	50.03			
-006	50.15			
-007	49.99			
-008	50.08			
-009 A/B/C/D	50.49			MSS
MB	50.17			EMVB157H
LCS	50.14			
MS	50.22			2393368-009
MSD	50.37			
				TFB 9/7/12
2393368-010 A/B/C	49.95	TEH	190299	Weighed per MIS SOP
-011	49.97			
-012	50.00			
-013	50.03			
-014	50.20			
-015	50.09			
				TFB 9/7/12

Continued to page

SIGNATURE DATE

DISCLOSED TO AND UNDERSTOOD BY DATE

PROPRIETARY INFORMATION

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 239425
ANALYTICAL REPORT
Semivolatile Organics by GC/MS

Tetra Tech EMI	Project : 103S094417
1999 Harrison Street	Location : B445 Landscape
Oakland, CA 94612	Level : IV

Sample ID	Lab ID
RFS-B445-DU3-1	239425-003
RFS-B484-SP	239425-006

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: _____ Date: 09/14/2012

Mike J. Dahlquist
Project Manager
(510) 486-0900

NELAP # 01107CA

Curtis & Tompkins, Ltd.

CASE NARRATIVE
SEMIVOLATILE ORGANICS BY GC/MS (EPA 8270C)

Laboratory number:	**239425**
Client:	**Tetra Tech EMI**
Project:	**103S094417**
Location:	**B445 Landscape**
Request Date:	**09/06/12**
Samples Received:	**09/06/12**

This data package contains sample and QC results for two soil samples, requested for the above referenced project on 09/06/12. See attached cooler receipt form for any sample receipt problems or discrepancies.

Semivolatile Organics by GC/MS (EPA 8270C):

Low internal standard responses were observed for perylene-d12 in RFS-B445-DU3-1 (lab # 239425-003) and RFS-B484-SP (lab # 239425-006).

Matrix spikes QC655183,QC655184 (batch 190266) were not reported because the parent sample required a dilution that would have diluted out the spikes.

RFS-B445-DU3-1 (lab # 239425-003) was diluted due to the dark and viscous nature of the sample extract.

No other analytical problems were encountered.

Chain of Custody

239425

Tetra Tech EM Inc.
Oakland Office

1999 Harrison Street, Suite 500
Oakland, CA 94612
510.302.6300 Phone
510.433.0830 Fax

Chain of Custody Record No. 9070

Lab PO#: 120AK13 to follow

Lab: CAT

Project name: B445 Landscape + B48 Stockpile

TtEMI technical contact: Sara Woolley

Field samplers: Quinn Johnson, Mark Duffy

Project (CTO) number: 103SQ9K417

TtEMI project manager: Jason Bradersen

Field samplers' signatures: Sara Woolley

	Sample ID	Point ID/Depth	Date	Time	Matrix	MS / MSD	40 ml VOA	1 liter Amber	500 ml Poly	Sleeve	Glass Jar	250 ml Poly	Encore	VOA	SVOA	Pest	Metals Hg	TPH Purgeables	TPH Extractables*	PCB
+1	RFS-B445-DU1-2		9/6/12	10:15	soil						1						X			
+2	RFS-B445-DU1-3			11:00							1						X			
X3	RFS-B445-DU3-1			11:45							2			X			X		X	X
X4	RFS-B445-DU3-2			12:35							1						X			
X5	RFS-B445-DU3-3			14:29							1						X			
++6	RFS-B484-SP			15:40							2			X			X		X	X

	Name (print)	Company Name	Date	Time
Relinquished by: Sara Woolley	Sara Woolley	TtEMI	9/6/12	17:05
Received by:	Mike Dahlquist	CAT	9/6	1705
Relinquished by:	Adnan Ahmad	CAT	9/6/12	2200
Received by:				

Turnaround time/remarks:

* with silica gel clean up
+ 24 hour TAT
X 24 hour TAT for Hg only, 5 day TAT for all others
++ 5 day TAT

Fed Ex #:

WHITE-Laboratory Copy YELLOW-Sample Tracker PINK-File Copy

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 239425 Date Received 9/6/12 Number of coolers 1
Client Tetra Tech Project B445 Landscape

Date Opened 9/6/12 By (print) AA (sign) [signature]
Date Logged in ↓ By (print) ↓ (sign) ↓

1. Did cooler come with a shipping slip (airbill, etc) _____ YES (NO)
   Shipping info _____

2A. Were custody seals present? .... ☐ YES (circle) on cooler on samples ☑ NO
   How many _____ Name _____ Date _____
2B. Were custody seals intact upon arrival? _____ YES NO (N/A)
3. Were custody papers dry and intact when received? _____ (YES) NO
4. Were custody papers filled out properly (ink, signed, etc)? _____ (YES) NO
5. Is the project identifiable from custody papers? (If so fill out top of form) ___ (YES) NO
6. Indicate the packing in cooler: (if other, describe) _____

☐ Bubble Wrap ☐ Foam blocks ☐ Bags ☐ None
☐ Cloth material ☐ Cardboard ☐ Styrofoam ☐ Paper towels

7. Temperature documentation: * Notify PM if temperature exceeds 6°C

Type of ice used: ☑ Wet ☐ Blue/Gel ☐ None Temp(°C) 6

☑ Samples Received on ice & cold without a temperature blank; temp. taken with IR gun

☐ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? _____ YES (NO)
   If YES, what time were they transferred to freezer? _____
9. Did all bottles arrive unbroken/unopened? _____ (YES) NO
10. Are there any missing / extra samples? _____ YES (NO)
11. Are samples in the appropriate containers for indicated tests? _____ (YES) NO
12. Are sample labels present, in good condition and complete? _____ (YES) NO
13. Do the sample labels agree with custody papers? _____ (YES) NO
14. Was sufficient amount of sample sent for tests requested? _____ (YES) NO
15. Are the samples appropriately preserved? _____ YES NO (N/A)
16. Did you check preservatives for all bottles for each sample? _____ YES NO (N/A)
17. Did you document your preservative check? _____ YES NO (N/A)
18. Did you change the hold time in LIMS for unpreserved VOAs? _____ YES NO (N/A)
19. Did you change the hold time in LIMS for preserved terracores? _____ YES NO (N/A)
20. Are bubbles > 6mm absent in VOA samples? _____ YES NO (N/A)
21. Was the client contacted concerning this sample delivery? _____ YES (NO)
   If YES, Who was called? _____ By _____ Date: _____

COMMENTS

_____
_____
_____
_____
_____
_____

Rev 10, 11/11

Results & QC Summary

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	239425	Location:	B445 Landscape
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S094417	Analysis:	EPA 8270C
Field ID:	RFS-B445-DU3-1	Batch#:	190266
Lab ID:	239425-003	Sampled:	09/06/12
Matrix:	Soil	Received:	09/06/12
Units:	ug/Kg	Prepared:	09/07/12
Basis:	dry	Analyzed:	09/11/12
Diln Fac:	3.000		

Moisture: 5%

Analyte	Result	RL	MDL
N-Nitrosodimethylamine	ND	1,000	68
Phenol	ND	1,000	47
bis(2-Chloroethyl)ether	ND	1,000	50
2-Chlorophenol	ND	1,000	44
1,3-Dichlorobenzene	ND	1,000	41
1,4-Dichlorobenzene	ND	1,000	23
Benzyl alcohol	ND	1,000	51
1,2-Dichlorobenzene	ND	1,000	32
2-Methylphenol	ND	1,000	45
bis(2-Chloroisopropyl) ether	ND	1,000	50
4-Methylphenol	82 J	1,000	50
N-Nitroso-di-n-propylamine	ND	1,000	48
Hexachloroethane	ND	1,000	33
Nitrobenzene	ND	1,000	28
Isophorone	ND	1,000	32
2-Nitrophenol	ND	2,100	120
2,4-Dimethylphenol	ND	1,000	58
Benzoic acid	ND	5,200	1,200
bis(2-Chloroethoxy)methane	ND	1,000	32
2,4-Dichlorophenol	ND	1,000	29
1,2,4-Trichlorobenzene	ND	1,000	27
Naphthalene	ND	210	40
4-Chloroaniline	ND	1,000	39
Hexachlorobutadiene	ND	1,000	26
4-Chloro-3-methylphenol	ND	1,000	27
2-Methylnaphthalene	ND	210	31
Hexachlorocyclopentadiene	ND	2,100	240
2,4,6-Trichlorophenol	ND	1,000	35
2,4,5-Trichlorophenol	ND	1,000	29
2-Chloronaphthalene	ND	1,000	24
2-Nitroaniline	ND	2,100	110
Dimethylphthalate	ND	1,000	23
Acenaphthylene	ND	210	26
2,6-Dinitrotoluene	ND	1,000	110
3-Nitroaniline	ND	2,100	23
Acenaphthene	ND	210	21
2,4-Dinitrophenol	ND	2,100	150
4-Nitrophenol	ND	2,100	22
Dibenzofuran	ND	1,000	26
2,4-Dinitrotoluene	ND	1,000	26
Diethylphthalate	ND	1,000	26
Fluorene	ND	210	25
4-Chlorophenyl-phenylether	ND	1,000	26
4-Nitroaniline	ND	2,100	33
4,6-Dinitro-2-methylphenol	ND	2,100	110
N-Nitrosodiphenylamine	ND	1,000	25
Azobenzene	ND	1,000	22
4-Bromophenyl-phenylether	ND	1,000	25
Hexachlorobenzene	ND	1,000	21

J= Estimated value
ND= Not Detected at or above MDL
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	239425	Location:	B445 Landscape
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S094417	Analysis:	EPA 8270C
Field ID:	RFS-B445-DU3-1	Batch#:	190266
Lab ID:	239425-003	Sampled:	09/06/12
Matrix:	Soil	Received:	09/06/12
Units:	ug/Kg	Prepared:	09/07/12
Basis:	dry	Analyzed:	09/11/12
Diln Fac:	3.000		

Analyte	Result	RL	MDL
Pentachlorophenol	ND	2,100	320
Phenanthrene	ND	210	25
Anthracene	ND	210	28
Di-n-butylphthalate	460 J	1,000	30
Fluoranthene	ND	210	29
Pyrene	ND	210	23
Butylbenzylphthalate	790 J	1,000	30
3,3'-Dichlorobenzidine	ND	2,100	250
Benzo(a)anthracene	ND	210	21
Chrysene	28 J	210	26
bis(2-Ethylhexyl)phthalate	160 J	1,000	27
Di-n-octylphthalate	ND	1,000	110
Benzo(b)fluoranthene	35 J	210	18
Benzo(k)fluoranthene	ND	210	19
Benzo(a)pyrene	20 J	210	18
Indeno(1,2,3-cd)pyrene	ND	210	24
Dibenz(a,h)anthracene	ND	210	23
Benzo(g,h,i)perylene	ND	210	26

Tentatively Identified Compounds	Result
.alpha.-Phellandrene	5600 J
.alpha.-Pinene	5900 J
2-Pentanone, 4-hydroxy-4-methyl-	21000 J
3-Cyclohexene-1-methanol,.alpha.,.alpha.,4-trimethyl-,acetate	1100 J
CAS# 489-39-4	8600 J
Cyclohexane, 1-ethenyl-1-methyl-2-(1-methylethenyl)-4-(1-methylethylidene)-	1600 J
Cyclohexane, 1-ethenyl-1-methyl-2-(1-methylethenyl)-4-(1-methylethylidene)-*	930 J
Unknown 1	920 J
Unknown 2	1000 J
Unknown 3	590 J

Surrogate	%REC	Limits
2-Fluorophenol	74	35-120
Phenol-d5	69	35-120
2,4,6-Tribromophenol	71	31-120
Nitrobenzene-d5	68	48-120
2-Fluorobiphenyl	69	50-120
Terphenyl-d14	83	40-120

J= Estimated value
ND= Not Detected at or above MDL
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	239425	Location:	B445 Landscape
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S094417	Analysis:	EPA 8270C
Field ID:	RFS-B484-SP	Batch#:	190266
Lab ID:	239425-006	Sampled:	09/06/12
Matrix:	Soil	Received:	09/06/12
Units:	ug/Kg	Prepared:	09/07/12
Basis:	dry	Analyzed:	09/11/12
Diln Fac:	1.000		

Moisture: 12%

Analyte	Result	RL	MDL
N-Nitrosodimethylamine	ND	380	24
Phenol	ND	380	17
bis(2-Chloroethyl)ether	ND	380	18
2-Chlorophenol	ND	380	16
1,3-Dichlorobenzene	ND	380	15
1,4-Dichlorobenzene	ND	380	8.2
Benzyl alcohol	ND	380	18
1,2-Dichlorobenzene	ND	380	12
2-Methylphenol	ND	380	16
bis(2-Chloroisopropyl) ether	ND	380	18
4-Methylphenol	ND	380	18
N-Nitroso-di-n-propylamine	ND	380	17
Hexachloroethane	ND	380	12
Nitrobenzene	ND	380	10
Isophorone	ND	380	11
2-Nitrophenol	ND	750	44
2,4-Dimethylphenol	ND	380	21
Benzoic acid	ND	1,900	430
bis(2-Chloroethoxy)methane	ND	380	12
2,4-Dichlorophenol	ND	380	10
1,2,4-Trichlorobenzene	ND	380	9.6
Naphthalene	ND	75	15
4-Chloroaniline	ND	380	14
Hexachlorobutadiene	ND	380	9.4
4-Chloro-3-methylphenol	ND	380	9.8
2-Methylnaphthalene	ND	75	11
Hexachlorocyclopentadiene	ND	750	86
2,4,6-Trichlorophenol	ND	380	12
2,4,5-Trichlorophenol	ND	380	10
2-Chloronaphthalene	ND	380	8.7
2-Nitroaniline	ND	750	38
Dimethylphthalate	ND	380	8.1
Acenaphthylene	ND	75	9.4
2,6-Dinitrotoluene	ND	380	38
3-Nitroaniline	ND	750	8.1
Acenaphthene	ND	75	7.5
2,4-Dinitrophenol	ND	750	55
4-Nitrophenol	ND	750	8.0
Dibenzofuran	ND	380	9.5
2,4-Dinitrotoluene	ND	380	9.4
Diethylphthalate	ND	380	9.4
Fluorene	ND	75	9.0
4-Chlorophenyl-phenylether	ND	380	9.5
4-Nitroaniline	ND	750	12
4,6-Dinitro-2-methylphenol	ND	750	39
N-Nitrosodiphenylamine	ND	380	8.8
Azobenzene	ND	380	7.9
4-Bromophenyl-phenylether	ND	380	9.1
Hexachlorobenzene	ND	380	7.7

J= Estimated value
ND= Not Detected at or above MDL
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	239425	Location:	B445 Landscape
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S094417	Analysis:	EPA 8270C
Field ID:	RFS-B484-SP	Batch#:	190266
Lab ID:	239425-006	Sampled:	09/06/12
Matrix:	Soil	Received:	09/06/12
Units:	ug/Kg	Prepared:	09/07/12
Basis:	dry	Analyzed:	09/11/12
Diln Fac:	1.000		

Analyte	Result	RL	MDL
Pentachlorophenol	ND	750	120
Phenanthrene	36 J	75	9.1
Anthracene	ND	75	10
Di-n-butylphthalate	ND	380	11
Fluoranthene	68 J	75	11
Pyrene	100	75	8.2
Butylbenzylphthalate	ND	380	11
3,3'-Dichlorobenzidine	ND	750	89
Benzo(a)anthracene	48 J	75	7.6
Chrysene	96	75	9.2
bis(2-Ethylhexyl)phthalate	34 J	380	9.6
Di-n-octylphthalate	ND	380	38
Benzo(b)fluoranthene	220	75	6.6
Benzo(k)fluoranthene	68 J	75	6.7
Benzo(a)pyrene	100	75	6.7
Indeno(1,2,3-cd)pyrene	77	75	8.6
Dibenz(a,h)anthracene	22 J	75	8.3
Benzo(g,h,i)perylene	91	75	9.3

Tentatively Identified Compounds	Result
.alpha.-Phellandrene	210 J
2-Pentanone, 4-hydroxy-4-methyl-	22000 J
CAS# 489-39-4	280 J
Cyclotetracosane	1500 J
Hexatriacontane	590 J
Pentadecane, 2,6,10,14-tetramethyl-	150 J
Unknown	520 J

Surrogate	%REC	Limits
2-Fluorophenol	81	35-120
Phenol-d5	84	35-120
2,4,6-Tribromophenol	69	31-120
Nitrobenzene-d5	73	48-120
2-Fluorobiphenyl	69	50-120
Terphenyl-d14	104	40-120

J= Estimated value
ND= Not Detected at or above MDL
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Semivolatile Organics by GC/MS

Lab #:	239425	Location:	B445 Landscape
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S094417	Analysis:	EPA 8270C
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC655181	Batch#:	190266
Matrix:	Soil	Prepared:	09/07/12
Units:	ug/Kg	Analyzed:	09/07/12

Analyte	Result	RL	MDL
N-Nitrosodimethylamine	ND	330	70
Phenol	ND	330	47
bis(2-Chloroethyl)ether	ND	330	54
2-Chlorophenol	ND	330	55
1,3-Dichlorobenzene	ND	330	38
1,4-Dichlorobenzene	ND	330	15
Benzyl alcohol	ND	330	51
1,2-Dichlorobenzene	ND	330	33
2-Methylphenol	ND	330	62
bis(2-Chloroisopropyl) ether	ND	330	83
4-Methylphenol	ND	330	52
N-Nitroso-di-n-propylamine	ND	330	50
Hexachloroethane	ND	330	26
Nitrobenzene	ND	330	15
Isophorone	ND	330	9.7
2-Nitrophenol	ND	670	10
2,4-Dimethylphenol	ND	330	14
Benzoic acid	ND	1,700	250
bis(2-Chloroethoxy)methane	ND	330	11
2,4-Dichlorophenol	ND	330	13
1,2,4-Trichlorobenzene	ND	330	13
Naphthalene	ND	67	13
4-Chloroaniline	ND	330	16
Hexachlorobutadiene	ND	330	14
4-Chloro-3-methylphenol	ND	330	14
2-Methylnaphthalene	ND	67	11
Hexachlorocyclopentadiene	ND	670	12
2,4,6-Trichlorophenol	ND	330	14
2,4,5-Trichlorophenol	ND	330	13
2-Chloronaphthalene	ND	330	10
2-Nitroaniline	ND	670	11
Dimethylphthalate	ND	330	12
Acenaphthylene	ND	67	13
2,6-Dinitrotoluene	ND	330	12
3-Nitroaniline	ND	670	8.1
Acenaphthene	ND	67	11
2,4-Dinitrophenol	ND	670	94
4-Nitrophenol	ND	670	52
Dibenzofuran	ND	330	14
2,4-Dinitrotoluene	ND	330	9.8
Diethylphthalate	ND	330	14
Fluorene	ND	67	12
4-Chlorophenyl-phenylether	ND	330	12
4-Nitroaniline	ND	670	9.5
4,6-Dinitro-2-methylphenol	ND	670	69
N-Nitrosodiphenylamine	ND	330	13
Azobenzene	ND	330	14
4-Bromophenyl-phenylether	ND	330	13
Hexachlorobenzene	ND	330	14
Pentachlorophenol	ND	670	62
Phenanthrene	ND	67	15
Anthracene	ND	67	12

J= Estimated value
ND= Not Detected at or above MDL
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Semivolatile Organics by GC/MS

Lab #:	239425	Location:	B445 Landscape
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S094417	Analysis:	EPA 8270C
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC655181	Batch#:	190266
Matrix:	Soil	Prepared:	09/07/12
Units:	ug/Kg	Analyzed:	09/07/12

Analyte	Result	RL	MDL
Di-n-butylphthalate	ND	330	15
Fluoranthene	ND	67	13
Pyrene	ND	67	12
Butylbenzylphthalate	ND	330	11
3,3'-Dichlorobenzidine	ND	670	11
Benzo(a)anthracene	ND	67	12
Chrysene	ND	67	14
bis(2-Ethylhexyl)phthalate	ND	330	15
Di-n-octylphthalate	ND	330	17
Benzo(b)fluoranthene	ND	67	14
Benzo(k)fluoranthene	ND	67	18
Benzo(a)pyrene	ND	67	15
Indeno(1,2,3-cd)pyrene	ND	67	15
Dibenz(a,h)anthracene	ND	67	15
Benzo(g,h,i)perylene	ND	67	13

Tentatively Identified Compounds	Result
2-Pentanone, 4-hydroxy-4-methyl-	2800 J
Unknown	300 J

Surrogate	%REC	Limits
2-Fluorophenol	49	35-120
Phenol-d5	55	35-120
2,4,6-Tribromophenol	58	31-120
Nitrobenzene-d5	57	48-120
2-Fluorobiphenyl	62	50-120
Terphenyl-d14	60	40-120

J= Estimated value
ND= Not Detected at or above MDL
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Semivolatile Organics by GC/MS

Lab #:	239425	Location:	B445 Landscape
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S094417	Analysis:	EPA 8270C
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC655182	Batch#:	190266
Matrix:	Soil	Prepared:	09/07/12
Units:	ug/Kg	Analyzed:	09/07/12

Analyte	Spiked	Result	%REC	Limits
Phenol	2,660	1,675	63	49-120
2-Chlorophenol	2,660	1,671	63	52-120
1,4-Dichlorobenzene	2,660	1,642	62	51-120
N-Nitroso-di-n-propylamine	2,660	1,797	68	46-120
1,2,4-Trichlorobenzene	2,660	1,662	63	54-120
4-Chloro-3-methylphenol	2,660	1,936	73	59-120
Acenaphthene	997.3	649.3	65	57-120
4-Nitrophenol	2,660	1,852	70	55-120
2,4-Dinitrotoluene	2,660	1,805	68	56-120
Pentachlorophenol	2,660	1,510	57	38-120
Pyrene	997.3	707.6	71	56-120

Surrogate	%REC	Limits
2-Fluorophenol	59	35-120
Phenol-d5	66	35-120
2,4,6-Tribromophenol	71	31-120
Nitrobenzene-d5	62	48-120
2-Fluorobiphenyl	59	50-120
Terphenyl-d14	73	40-120

CURTIS & TOMPKINS DFTPP TUNE FOR 239425 MSBNA Soil
EPA 8270C

Inst : MSBNA06 Run Name : DFTPP/PEM IDF : 1.0
Seqnum : 552359297001 File : yi501 Time : 05-SEP-2012 12:17

Standards: S20011

Mass	Ion Abundance Criteria	Abundance	% Relative Abundance	Q
51	30% - 60% of mass 198	146194	49.89	
68	< 2% of mass 69	0	0.00	
69		109057	100.00	
70	< 2% of mass 69	364	0.33	
127	40% - 60% of mass 198	123514	42.15	
197	< 1% of mass 198	0	0.00	
198		293034	100.00	
199	5% - 9% of mass 198	20365	6.95	
275	10% - 30% of mass 198	68464	23.36	
365	> 1% of mass 198	7883	2.69	
441	Present, < mass 443	16728	30.51	
442	> 40% and < 100% of mass 198	271850	92.77	
443	17% - 23% of mass 442	54824	20.17	

Analyst: LLH Date: 09/05/12 Reviewer: LW Date: 09/07/12

PEM Report

File Name : G:\csinput.net\DATA\090512\YI501.D
Date Acquired : 5 Sep 2012 12:17 pm
Sample Name : TUN,S20011
Misc. Info : DFTPP/PEM
Calib. Title : MSBNA06 BNA DFTPP/PEM
Inst. Name : MSBNA06
AcquisitionMeth: DFTPP06.M

Compound Name	Tailing Factor	RT	Area
Pentachlorophenol	1.450	5.48	656508
Benzidine	0.608	7.36	2454857
4,4'-DDT		8.39	1096537
4,4'-DDE		7.60	6357
4,4'-DDD		8.01	151666

% Breakdown: 4,4'-DDT	LIMIT <=20%	13%	PASS
Tailing: Pentachlorophenol	8270C <5.0	1.5	PASS
	8270D <=2	1	PASS
Tailing: Benzidine	8270C <3.0	0.6	PASS
	8270D <=2	1	PASS

Wed Sep 05 12:26:58 2012

CURTIS & TOMPKINS DFTPP TUNE FOR 239425 MSBNA Soil
EPA 8270C

Inst : MSBNA06 Run Name : DFTPP/PEM IDF : 1.0
Seqnum : 552362420001 File : yi701 Time : 07-SEP-2012 16:20

Standards: S20011

Mass	Ion Abundance Criteria	Abundance	% Relative Abundance	Q
51	30% - 60% of mass 198	143815	52.59	
68	< 2% of mass 69	0	0.00	
69		105229	100.00	
70	< 2% of mass 69	354	0.34	
127	40% - 60% of mass 198	116960	42.77	
197	< 1% of mass 198	0	0.00	
198		273450	100.00	
199	5% - 9% of mass 198	18880	6.90	
275	10% - 30% of mass 198	62941	23.02	
365	> 1% of mass 198	4859	1.78	
441	Present, < mass 443	23504	48.96	
442	> 40% and < 100% of mass 198	244650	89.47	
443	17% - 23% of mass 442	48008	19.62	

Analyst: LLH Date: 09/07/12 Reviewer: LW Date: 09/11/12

PEM Report

File Name : G:\msbna06\090712\YI701.D
Date Acquired : 7 Sep 2012 4:20 pm
Sample Name : TUN,S20011
Misc. Info : DFTPP/PEM
Calib. Title : MSBNA06 BNA DFTPP/PEM
Inst. Name : MSBNA06
AcquisitionMeth: DFTPP06.M

Compound Name	Tailing Factor	RT	Area
Pentachlorophenol	1.313	5.48	682488
Benzidine	0.900	7.35	2217263
4,4'-DDT		8.39	1071849
4,4'-DDE		7.59	8081
4,4'-DDD		8.01	167142

% Breakdown: 4,4'-DDT	LIMIT <=20%	14%	PASS
Tailing: Pentachlorophenol	8270C <5.0	1.3	PASS
	8270D <=2	1	PASS
Tailing: Benzidine	8270C <3.0	0.9	PASS
	8270D <=2	1	PASS

Fri Sep 07 16:34:42 2012

CURTIS & TOMPKINS DFTPP TUNE FOR 239425 MSBNA Soil
EPA 8270C

Inst : MSBNA07 Run Name : DFTPP/PEM IDF : 1.0
Seqnum : 562278593001 File : zgb01 Time : 11-JUL-2012 11:13

Standards: S20011

Mass	Ion Abundance Criteria	Abundance	% Relative Abundance	Q
51	30% - 60% of mass 198	278102	38.53	
68	< 2% of mass 69	0	0.00	
69		294568	100.00	
70	< 2% of mass 69	1232	0.42	
127	40% - 60% of mass 198	370944	51.40	
197	< 1% of mass 198	0	0.00	
198		721728	100.00	
199	5% - 9% of mass 198	48013	6.65	
275	10% - 30% of mass 198	193792	26.85	
365	> 1% of mass 198	18981	2.63	
441	Present, < mass 443	54378	58.48	
442	> 40% and < 100% of mass 198	481322	66.69	
443	17% - 23% of mass 442	92992	19.32	

LLH 07/11/12 [4,4'-DDD]: Combined split peak.

Analyst: LLH Date: 07/11/12 Reviewer: LW Date: 07/13/12

PEM Report

File Name : G:\msbna07\071112\ZGB01.D
Date Acquired : 11 Jul 2012 11:13 am
Sample Name : TUN,S20011
Misc. Info : DFTPP/PEM
Calib. Title : MSBNA07 BNA DFTPP/PEM
Inst. Name : MSBNA07
AcquisitionMeth: DFTPP07.M

Compound Name	Tailing Factor	RT	Area
Pentachlorophenol	1.057	5.62	602753
Benzidine	0.553	7.48	5460682
4,4'-DDT		8.51	2467963
4,4'-DDE		7.71	5488
4,4'-DDD		8.13	46922

% Breakdown: 4,4'-DDT	LIMIT <=20%	2%	PASS
Tailing: Pentachlorophenol	8270C <5.0	1.1	PASS
	8270D <=2	1	PASS
Tailing: Benzidine	8270C <3.0	0.6	PASS
	8270D <=2	1	PASS

Wed Jul 11 11:24:37 2012

CURTIS & TOMPKINS DFTPP TUNE FOR 239425 MSBNA Soil
EPA 8270C

Inst : MSBNA07 Run Name : DFTPP/PEM IDF : 1.0
Seqnum : 562280008001 File : zgc01 Time : 12-JUL-2012 10:48

Standards: S20011

Mass	Ion Abundance Criteria	Abundance	% Relative Abundance	Q
51	30% - 60% of mass 198	325697	34.96	
68	< 2% of mass 69	2770	0.78	
69		353435	100.00	
70	< 2% of mass 69	1559	0.44	
127	40% - 60% of mass 198	463509	49.75	
197	< 1% of mass 198	0	0.00	
198		931667	100.00	
199	5% - 9% of mass 198	62701	6.73	
275	10% - 30% of mass 198	252864	27.14	
365	> 1% of mass 198	25357	2.72	
441	Present, < mass 443	118786	88.34	
442	> 40% and < 100% of mass 198	704192	75.58	
443	17% - 23% of mass 442	134461	19.09	

Analyst: LLH Date: 07/12/12 Reviewer: LW Date: 07/13/12

PEM Report

File Name : G:\msbna07\071212\ZGC01.D
Date Acquired : 12 Jul 2012 10:48 am
Sample Name : TUN,S20011
Misc. Info : DFTPP/PEM
Calib. Title : MSBNA07 BNA DFTPP/PEM
Inst. Name : MSBNA07
AcquisitionMeth: DFTPP07.M

Compound Name	Tailing Factor	RT	Area
Pentachlorophenol	1.331	5.60	1128484
Benzidine	0.591	7.48	7028228
4,4'-DDT		8.51	3335245
4,4'-DDE		7.71	11349
4,4'-DDD		8.13	157047

% Breakdown: 4,4'-DDT	LIMIT <=20%	5%	PASS
Tailing: Pentachlorophenol	8270C <5.0	1.3	PASS
	8270D <=2	1	PASS
Tailing: Benzidine	8270C <3.0	0.6	PASS
	8270D <=2	1	PASS

Thu Jul 12 11:03:02 2012

CURTIS & TOMPKINS DFTPP TUNE FOR 239425 MSBNA Soil
EPA 8270C

Inst : MSBNA07 Run Name : DFTPP/PEM IDF : 1.0
Seqnum : 562368091001 File : zib01 Time : 11-SEP-2012 14:51

Standards: S20011

Mass	Ion Abundance Criteria	Abundance	% Relative Abundance	Q
51	30% - 60% of mass 198	329368	44.01	
68	< 2% of mass 69	0	0.00	
69		346731	100.00	
70	< 2% of mass 69	1617	0.47	
127	40% - 60% of mass 198	396010	52.92	
197	< 1% of mass 198	0	0.00	
198		748352	100.00	
199	5% - 9% of mass 198	49733	6.65	
275	10% - 30% of mass 198	170773	22.82	
365	> 1% of mass 198	14442	1.93	
441	Present, < mass 443	60549	81.10	
442	> 40% and < 100% of mass 198	392682	52.47	
443	17% - 23% of mass 442	74661	19.01	

Analyst: LLH Date: 09/11/12 Reviewer: LW Date: 09/12/12

PEM Report

File Name : G:\msbna07\091112\ZIB01.D
Date Acquired : 11 Sep 2012 2:51 pm
Sample Name : TUN,S20011
Misc. Info : DFTPP/PEM
Calib. Title : MSBNA07 BNA DFTPP/PEM
Inst. Name : MSBNA07
AcquisitionMeth: DFTPP07.M

Compound Name	Tailing Factor	RT	Area
Pentachlorophenol	0.907	5.14	379784
Benzidine	0.491	6.99	5412455
4,4'-DDT		8.01	2714843
4,4'-DDE		7.22	21578
4,4'-DDD		7.63	126952

% Breakdown: 4,4'-DDT	LIMIT <=20%	5%	PASS
Tailing: Pentachlorophenol	8270C <5.0	0.9	PASS
	8270D <=2	1	PASS
Tailing: Benzidine	8270C <3.0	0.5	PASS
	8270D <=2	0	PASS

Tue Sep 11 15:10:08 2012

CURTIS & TOMPKINS INITIAL CALIBRATION FOR 239425 MSBNA Soil: EPA 8270C

Inst : MSBNA06
Calnum : 552359297001
Units : ug/mL

Name : 6PTBNA6
Date : 05-SEP-2012 12:37
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	yi502	552359297002	ICAL	05-SEP-2012 12:37	S20236
L2	yi503	552359297003	ICAL	05-SEP-2012 13:13	S20238
L3	yi504	552359297004	ICAL	05-SEP-2012 13:51	S20239
L4	yi505	552359297005	ICAL	05-SEP-2012 14:31	S20248
L5	yi506	552359297006	ICAL	05-SEP-2012 15:10	S20249
L6	yi507	552359297007	ICAL	05-SEP-2012 15:48	S20250
L7	yi508	552359297008	ICAL	05-SEP-2012 16:24	S20244
L8	yi509	552359297009	ICAL	05-SEP-2012 17:01	S20245
L9	yi510	552359297010	ICAL	05-SEP-2012 17:41	S20246

Analyte	L1	L2	L3	L4	L5	L6	L7	L8	L9	Type	a0	a1	a2	Avg	r^2 %RSD	Max %RSD	Min RF	Min r^2	Flg
N-Nitrosodimethylamine		1.2750	1.3524	1.5356	1.5053	1.4142	1.3613m	1.3983m	1.3676	AVRG		0.71366		1.4012	6	15	0.05	0.99	
Phenol		1.9594	1.8745	2.0177	1.8563	1.7373	1.6089	1.5968	1.5940	AVRG		0.56160		1.7806	10	15	0.05	0.99	
bis(2-Chloroethyl)ether		1.3665	1.2917	1.3851	1.2704	1.1568	1.0500	1.0751m	0.9579m	AVRG		0.83738		1.1942	13	15	0.05	0.99	
2-Chlorophenol		1.5725	1.4481	1.5497	1.4635	1.3459	1.2537	1.2457	1.2093	AVRG		0.72148		1.3860	10	15	0.05	0.99	
1,3-Dichlorobenzene		1.8080	1.6442	1.7697	1.6177	1.5024	1.4282	1.4016	1.3672	AVRG		0.63801		1.5674	11	15	0.05	0.99	
1,4-Dichlorobenzene		1.5969	1.5739	1.5105	1.4505	1.3961	1.2479	1.2338	1.1827	AVRG		0.71477		1.3990	12	15	0.05	0.99	
Benzyl alcohol		0.8192	0.8230	0.8614	0.8130	0.8067	0.7418	0.7833	0.7732	AVRG		1.24579		0.8027	5	15	0.05	0.99	
1,2-Dichlorobenzene		1.5591	1.4795	1.5290	1.4489	1.3731	1.2223	1.2169	1.1459	AVRG		0.72895		1.3718	12	15	0.05	0.99	
2-Methylphenol		0.9602	0.9693	0.9544	0.9146	0.8430	0.7392	0.7781	0.7590	AVRG		1.15646		0.8647	11	15	0.05	0.99	
bis(2-Chloroisopropyl) ether		3.2727	3.1967	2.9626	2.7559	2.5842				AVRG		0.33848		2.9544	10	15	0.05	0.99	
4-Methylphenol		1.4280	1.3222	1.4061	1.3361	1.3171				AVRG		0.73427		1.3619	4	15	0.05	0.99	
N-Nitroso-di-n-propylamine		0.8820m	0.8400m	0.8761	0.8183	0.7658	0.7236	0.7367m	0.7084m	AVRG		1.25964		0.7939	9	15	0.050	0.99	
Hexachloroethane		0.6736	0.6350	0.6773	0.6253	0.5734	0.5137	0.5147	0.4879	AVRG		1.70177		0.5876	13	15	0.05	0.99	
Nitrobenzene		0.4154	0.3855	0.3544	0.3537	0.3276	0.3206	0.3197	0.3094	AVRG		2.87126		0.3483	11	15	0.05	0.99	
Isophorone		0.7588	0.6825	0.6903	0.6836	0.6413	0.6527	0.6905m	0.6583m	AVRG		1.46575		0.6822	5	15	0.05	0.99	
2-Nitrophenol			0.2269	0.2177	0.2150	0.2027	0.1953	0.1967m	0.1947m	AVRG		4.83098		0.2070	6	15	0.05	0.99	
2,4-Dimethylphenol		0.3875	0.3495	0.3376	0.3255	0.3128	0.2852m	0.2774m	0.2787m	AVRG		3.13210		0.3193	12	15	0.05	0.99	
bis(2-Chloroethoxy)methane			0.4554	0.4306	0.4225	0.4097	0.4044	0.4048	0.4024	AVRG		2.38925		0.4185	5	15	0.05	0.99	
Benzoic acid		0.2318m	0.2392m	0.2583	0.2703	0.2567	0.2874m	0.2851m	0.2828m	AVRG		3.78874		0.2639	8	15	0.05	0.99	
2,4-Dichlorophenol		0.3949	0.3739	0.3568	0.3332	0.3145	0.3015m	0.2963m	0.2829m	AVRG		3.01447		0.3317	12	15	0.05	0.99	
1,2,4-Trichlorobenzene		0.4541	0.4057	0.3898	0.3697	0.3473	0.3307	0.3254	0.3252	AVRG		2.71370		0.3685	12	15	0.05	0.99	
Naphthalene	1.0838	1.0707	1.0488	1.0305	0.9765	0.9326	0.9037	0.9091	0.8678m	AVRG		1.02001		0.9804	8	15	0.05	0.99	
4-Chloroaniline		0.4382	0.4489	0.4339	0.4175	0.3847	0.3789	0.3919m	0.3830m	AVRG		2.44113		0.4096	7	15	0.05	0.99	
Hexachlorobutadiene		0.2629	0.2428	0.2378	0.2228	0.2114	0.1976	0.2010	0.1923m	AVRG		4.52348		0.2211	11	15	0.05	0.99	

Analyte	L1	L2	L3	L4	L5	L6	L7	L8	L9	Type	a0	a1	a2	Avg	r^2 %RSD	Max %RSD	Min RF	Min r^2	Flg
4-Chloro-3-methylphenol		0.3413	0.3174	0.2985	0.2940	0.2831	0.2798	0.2739	0.2577	AVRG		3.41054		0.2932	9	15	0.05	0.99	
2-Methylnaphthalene	0.7989	0.8333	0.7905	0.7736	0.7296	0.7197	0.7122	0.6879	0.6745	AVRG		1.33927		0.7467	7	15	0.05	0.99	
Hexachlorocyclopentadiene			0.4399	0.4469	0.4665	0.4179	0.3872	0.3960	0.3787	AVRG		2.38655		0.4190	8	15	0.050	0.99	
2,4,6-Trichlorophenol		0.5118	0.5304	0.4911	0.5058	0.4669	0.4228	0.4373	0.4267	AVRG		2.10922		0.4741	9	15	0.05	0.99	
2,4,5-Trichlorophenol		0.5527	0.5625	0.5054	0.5111m	0.4710	0.4235m	0.4287m	0.4137m	AVRG		2.06795		0.4836	12	15	0.05	0.99	
2-Chloronaphthalene			1.3884	1.3252	1.3203	1.1841	1.1415	1.1428	1.1569	AVRG		0.80839		1.2370	8	15	0.05	0.99	
2-Nitroaniline			0.4519	0.4268	0.4597	0.4283	0.3933	0.4110	0.4050	AVRG		2.35219		0.4251	6	15	0.05	0.99	
Dimethylphthalate		1.4979	1.5114	1.4125	1.4366	1.3152	1.2009	1.2790	1.2545	AVRG		0.73341		1.3635	9	15	0.05	0.99	
2,6-Dinitrotoluene		0.3123	0.3240	0.3063	0.3095	0.3133	0.2811	0.2923	0.2868	AVRG		3.29812		0.3032	5	15	0.05	0.99	
Acenaphthylene	2.1337	2.2036	2.1684	2.0208	1.8887	1.8254	1.7738	1.7335	1.7033	AVRG		0.51573		1.9390	10	15	0.05	0.99	
3-Nitroaniline			0.3626	0.3584	0.3696	0.3391	0.3409	0.3544	0.3514	AVRG		2.82676		0.3538	3	15	0.05	0.99	
Acenaphthene	1.1958	1.1883	1.1976	1.1600	1.1456	1.1258	0.9830	0.9979	0.9723	AVRG		0.90305		1.1074	9	15	0.05	0.99	
2,4-Dinitrophenol			0.0868	0.1144	0.1216	0.1279	0.1438	0.1614	0.1622	LINR	12.3690	5.57470		0.1312	0.997	15	0.050	0.99	
4-Nitrophenol			0.1643	0.1606	0.1701	0.1597	0.1583	0.1584	0.1643	AVRG		6.16400		0.1622	3	15	0.050	0.99	
Dibenzofuran			1.7820	1.6261	1.6355	1.5827	1.4057	1.3790	1.3084	AVRG		0.65302		1.5313	11	15	0.05	0.99	
2,4-Dinitrotoluene		0.4004	0.4030	0.3887	0.4076	0.3946	0.3701	0.3728	0.3507	AVRG		2.59080		0.3860	5	15	0.05	0.99	
Diethylphthalate			1.5442	1.4486	1.4229	1.3782	1.3014	1.2469	1.2666	AVRG		0.72850		1.3727	8	15	0.05	0.99	
Fluorene	1.4970	1.4871	1.4055	1.3282	1.3435	1.2574	1.1471	1.1966	1.1576	AVRG		0.76142		1.3133	10	15	0.05	0.99	
4-Chlorophenyl-phenylether			0.7643	0.7170	0.7321	0.7068	0.6666	0.6669	0.6420	AVRG		1.42982		0.6994	6	15	0.05	0.99	
4-Nitroaniline			0.3243	0.3173	0.3159	0.3205	0.2976	0.3041		AVRG		3.19197		0.3133	3	15	0.05	0.99	
4,6-Dinitro-2-methylphenol			0.1043	0.1132	0.1069	0.1102	0.1065	0.1081	0.1096	AVRG		9.22705		0.1084	3	15	0.05	0.99	
N-Nitrosodiphenylamine			0.5594	0.5356	0.5183	0.4865	0.4507	0.4381	0.4209	AVRG		2.05309		0.4871	11	15	0.05	0.99	
Azobenzene			0.7489	0.6619	0.6494	0.6169	0.5433	0.5394	0.5308	AVRG		1.63140		0.6130	13	15	0.05	0.99	
4-Bromophenyl-phenylether			0.2766	0.2524	0.2517	0.2426	0.2272	0.2285	0.2284	AVRG		4.09963		0.2439	7	15	0.05	0.99	
Hexachlorobenzene		0.2780	0.2835	0.2676	0.2611	0.2430	0.2305	0.2311	0.2277	AVRG		3.95565		0.2528	9	15	0.05	0.99	
Pentachlorophenol			0.1759	0.1797	0.1702	0.1690	0.1641	0.1659	0.1658	AVRG		5.87907		0.1701	3	15	0.05	0.99	
Phenanthrene	1.1260	1.0538	1.0495	0.9857	0.9502	0.9230	0.8899	0.8667	0.8807	AVRG		1.03144		0.9695	9	15	0.05	0.99	
Anthracene	1.1272	1.0707	1.1031	1.0358	0.9849	0.9287	0.8895	0.8765m	0.8589	AVRG		1.01404		0.9862	10	15	0.05	0.99	
Di-n-butylphthalate			1.4368	1.3763	1.2956	1.2397	1.1351	1.1428	1.1296	AVRG		0.79946		1.2508	10	15	0.05	0.99	
Fluoranthene	1.4114	1.3835	1.4631	1.3276	1.2970	1.2879	1.1962	1.1836	1.1971	AVRG		0.76612		1.3053	8	15	0.05	0.99	
Pyrene	1.4342	1.4766	1.4218	1.3879	1.3893	1.3908	1.3509	1.3129	1.3943	AVRG		0.71663		1.3954	3	15	0.05	0.99	
Butylbenzylphthalate			0.6666	0.6503	0.6847	0.6650	0.6526	0.6541	0.6775	AVRG		1.50512		0.6644	2	15	0.05	0.99	
3,3'-Dichlorobenzidine			0.4919	0.5149	0.5205	0.4941	0.5125	0.5110	0.5221	AVRG		1.96241		0.5096	2	15	0.05	0.99	
Benzo(a)anthracene	1.2401	1.2114	1.2115	1.1607m	1.1502	1.1045	1.0684	1.1214	1.0663	AVRG		0.87086		1.1483	6	15	0.05	0.99	
bis(2-Ethylhexyl)phthalate			0.9138	0.8784	0.8767	0.8150	0.7578	0.7136	0.6400	AVRG		1.25106		0.7993	13	15	0.05	0.99	
Chrysene	1.1124	1.1031	1.0843	1.0630	1.0322	1.0400	1.0308	1.0425	1.0560	AVRG		0.94101		1.0627	3	15	0.05	0.99	
Di-n-octylphthalate			1.4308	1.5200	1.4381	1.4224	1.3793	1.3744	1.3770	AVRG		0.70409		1.4203	4	15	0.05	0.99	
Benzo(b)fluoranthene	1.0923	1.1818	1.1558	1.1829	1.0888	1.1820	1.0974	1.1756m	1.2702	AVRG		0.86317		1.1585	5	15	0.05	0.99	
Benzo(k)fluoranthene	1.1778	1.1727	1.1759	1.1222	1.0484	1.0408	0.9994	0.9411m	0.9143m	AVRG		0.93822		1.0658	10	15	0.05	0.99	
Benzo(a)pyrene	0.9472	1.0121	1.0298	1.0507	1.0078	1.0108	0.9770	1.0166	1.0572	AVRG		0.98802		1.0121	3	15	0.05	0.99	
Indeno(1,2,3-cd)pyrene	0.9294	1.0555	1.1647m	1.2046m	1.1806m	1.1710	1.1542	1.1987	1.1870	AVRG		0.87841		1.1384	8	15	0.05	0.99	

Analyte	L1	L2	L3	L4	L5	L6	L7	L8	L9	Type	a0	a1	a2	Avg	r^2 %RSD	Max %RSD	Min RF	Min r^2	Flg
Dibenz(a,h)anthracene	0.7493m	0.8737m	0.9489	0.9651	0.9581	0.9238	0.9013	0.9239	0.9232	AVRG		1.10197		0.9075	7	15	0.05	0.99	
Benzo(g,h,i)perylene	0.8712	0.8804	0.9553	0.9936	0.9844	0.9831	0.9518	0.9415	0.9559	AVRG		1.05670		0.9463	5	15	0.05	0.99	
2-Fluorophenol	1.5142	1.6174	1.7780	1.9123	1.8278	1.7626	1.7485	1.6183	1.6945	AVRG		0.58164		1.7193	7	15	0.05	0.99	
Phenol-d5	1.9040	1.9519	2.0225	2.2062	2.1047	2.0136	1.9127	1.9894	1.9618	AVRG		0.49815		2.0074	5	15	0.05	0.99	
Nitrobenzene-d5	0.4260	0.4497	0.4136	0.4401	0.3985	0.3970	0.3897m	0.4000	0.3957	AVRG		2.42569		0.4123	5	15	0.05	0.99	
2-Fluorobiphenyl	1.7886	1.7963	1.7265	1.6409	1.6230	1.4710	1.3335	1.3103	1.2618	AVRG		0.64508		1.5502	14	15	0.05	0.99	
2,4,6-Tribromophenol	0.2393	0.2466	0.2661	0.2362	0.2464	0.2494	0.2400	0.2548	0.2547	AVRG		4.02959		0.2482	4	15	0.05	0.99	
Terphenyl-d14	0.9000	0.9750	0.9652	0.9218	0.9603	0.9496	0.9239	0.8621	0.9522	AVRG		1.07013		0.9345	4	15	0.05	0.99	

Spiked Amounts / Drifts	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D	L7	%D	L8	%D	L9	%D
N-Nitrosodimethylamine			10.000	-9	20.000	-3	32.000	10	40.000	7	50.000	1	80.000	-3	100.00	0	120.00	-2
Phenol			10.000	10	20.000	5	32.000	13	40.000	4	50.000	-2	80.000	-10	100.00	-10	120.00	-10
bis(2-Chloroethyl)ether			10.000	14	20.000	8	32.000	16	40.000	6	50.000	-3	80.000	-12	100.00	-10	120.00	-20
2-Chlorophenol			10.000	13	20.000	4	32.000	12	40.000	6	50.000	-3	80.000	-10	100.00	-10	120.00	-13
1,3-Dichlorobenzene			10.000	15	20.000	5	32.000	13	40.000	3	50.000	-4	80.000	-9	100.00	-11	120.00	-13
1,4-Dichlorobenzene			10.000	14	20.000	13	32.000	8	40.000	4	50.000	0	80.000	-11	100.00	-12	120.00	-15
Benzyl alcohol			10.000	2	20.000	3	32.000	7	40.000	1	50.000	0	80.000	-8	100.00	-2	120.00	-4
1,2-Dichlorobenzene			10.000	14	20.000	8	32.000	11	40.000	6	50.000	0	80.000	-11	100.00	-11	120.00	-16
2-Methylphenol			10.000	11	20.000	12	32.000	10	40.000	6	50.000	-3	80.000	-15	100.00	-10	120.00	-12
bis(2-Chloroisopropyl) ether			10.000	11	20.000	8	32.000	0	40.000	-7	50.000	-13						
4-Methylphenol			10.000	5	20.000	-3	32.000	3	40.000	-2	50.000	-3						
N-Nitroso-di-n-propylamine			10.000	11	20.000	6	32.000	10	40.000	3	50.000	-4	80.000	-9	100.00	-7	120.00	-11
Hexachloroethane			10.000	15	20.000	8	32.000	15	40.000	6	50.000	-2	80.000	-13	100.00	-12	120.00	-17
Nitrobenzene			10.000	19	20.000	11	32.000	2	40.000	2	50.000	-6	80.000	-8	100.00	-8	120.00	-11
Isophorone			10.000	11	20.000	0	32.000	1	40.000	0	50.000	-6	80.000	-4	100.00	1	120.00	-4
2-Nitrophenol					20.000	10	32.000	5	40.000	4	50.000	-2	80.000	-6	100.00	-5	120.00	-6
2,4-Dimethylphenol			10.000	**21**	20.000	9	32.000	6	40.000	2	50.000	-2	80.000	-11	100.00	-13	120.00	-13
bis(2-Chloroethoxy)methane					10.000	9	16.000	3	20.000	1	25.000	-2	40.000	-3	50.000	-3	60.000	-4
Benzoic acid			50.000	-12	60.000	-9	80.000	-2	90.000	2	100.00	-3	120.00	9	130.00	8	140.00	7
2,4-Dichlorophenol			10.000	19	20.000	13	32.000	8	40.000	0	50.000	-5	80.000	-9	100.00	-11	120.00	-15
1,2,4-Trichlorobenzene			10.000	**23**	20.000	10	32.000	6	40.000	0	50.000	-6	80.000	-10	100.00	-12	120.00	-12
Naphthalene	2.0000	11	5.0000	9	10.000	7	16.000	5	20.000	0	25.000	-5	40.000	-8	50.000	-7	60.000	-11
4-Chloroaniline			10.000	7	20.000	10	32.000	6	40.000	2	50.000	-6	80.000	-8	100.00	-4	120.00	-6
Hexachlorobutadiene			10.000	19	20.000	10	32.000	8	40.000	1	50.000	-4	80.000	-11	100.00	-9	120.00	-13
4-Chloro-3-methylphenol			10.000	16	20.000	8	32.000	2	40.000	0	50.000	-3	80.000	-5	100.00	-7	120.00	-12
2-Methylnaphthalene	2.0000	7	5.0000	12	10.000	6	16.000	4	20.000	-2	25.000	-4	40.000	-5	50.000	-8	60.000	-10
Hexachlorocyclopentadiene					20.000	5	32.000	7	40.000	11	50.000	0	80.000	-8	100.00	-5	120.00	-10
2,4,6-Trichlorophenol			10.000	8	20.000	12	32.000	4	40.000	7	50.000	-2	80.000	-11	100.00	-8	120.00	-10
2,4,5-Trichlorophenol			10.000	14	20.000	16	32.000	5	40.000	6	50.000	-3	80.000	-12	100.00	-11	120.00	-14
2-Chloronaphthalene					10.000	12	16.000	7	20.000	7	25.000	-4	40.000	-8	50.000	-8	60.000	-6
2-Nitroaniline					20.000	6	32.000	0	40.000	8	50.000	1	80.000	-7	100.00	-3	120.00	-5
Dimethylphthalate			10.000	10	20.000	11	32.000	4	40.000	5	50.000	-4	80.000	-12	100.00	-6	120.00	-8
2,6-Dinitrotoluene			10.000	3	20.000	7	32.000	1	40.000	2	50.000	3	80.000	-7	100.00	-4	120.00	-5
Acenaphthylene	2.0000	10	5.0000	14	10.000	12	16.000	4	20.000	-3	25.000	-6	40.000	-9	50.000	-11	60.000	-12
3-Nitroaniline					20.000	3	32.000	1	40.000	4	50.000	-4	80.000	-4	100.00	0	120.00	-1
Acenaphthene	2.0000	8	5.0000	7	10.000	8	16.000	5	20.000	3	25.000	2	40.000	-11	50.000	-10	60.000	-12
2,4-Dinitrophenol					20.000	10	32.000	2	40.000	-1	50.000	-4	80.000	-4	100.00	2	120.00	1
4-Nitrophenol					20.000	1	32.000	-1	40.000	5	50.000	-2	80.000	-2	100.00	-2	120.00	1
Dibenzofuran					10.000	16	16.000	6	20.000	7	25.000	3	40.000	-8	50.000	-10	60.000	-15
2,4-Dinitrotoluene			10.000	4	20.000	4	32.000	1	40.000	6	50.000	2	80.000	-4	100.00	-3	120.00	-9
Diethylphthalate					10.000	12	16.000	6	20.000	4	25.000	0	40.000	-5	50.000	-9	60.000	-8
Fluorene	2.0000	14	5.0000	13	10.000	7	16.000	1	20.000	2	25.000	-4	40.000	-13	50.000	-9	60.000	-12

Spiked Amounts / Drifts	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D	L7	%D	L8	%D	L9	%D
4-Chlorophenyl-phenylether					10.000	9	16.000	3	20.000	5	25.000	1	40.000	-5	50.000	-5	60.000	-8
4-Nitroaniline					20.000	4	32.000	1	40.000	1	50.000	2	80.000	-5	100.00	-3		
4,6-Dinitro-2-methylphenol					20.000	-4	32.000	4	40.000	-1	50.000	2	80.000	-2	100.00	0	120.00	1
N-Nitrosodiphenylamine					10.000	15	16.000	10	20.000	6	25.000	0	40.000	-7	50.000	-10	60.000	-14
Azobenzene					10.000	**22**	16.000	8	20.000	6	25.000	1	40.000	-11	50.000	-12	60.000	-13
4-Bromophenyl-phenylether					10.000	13	16.000	3	20.000	3	25.000	-1	40.000	-7	50.000	-6	60.000	-6
Hexachlorobenzene			10.000	10	20.000	12	32.000	6	40.000	3	50.000	-4	80.000	-9	100.00	-9	120.00	-10
Pentachlorophenol					20.000	3	32.000	6	40.000	0	50.000	-1	80.000	-4	100.00	-2	120.00	-3
Phenanthrene	2.0000	16	5.0000	9	10.000	8	16.000	2	20.000	-2	25.000	-5	40.000	-8	50.000	-11	60.000	-9
Anthracene	2.0000	14	5.0000	9	10.000	12	16.000	5	20.000	0	25.000	-6	40.000	-10	50.000	-11	60.000	-13
Di-n-butylphthalate					10.000	15	16.000	10	20.000	4	25.000	-1	40.000	-9	50.000	-9	60.000	-10
Fluoranthene	2.0000	8	5.0000	6	10.000	12	16.000	2	20.000	-1	25.000	-1	40.000	-8	50.000	-9	60.000	-8
Pyrene	2.0000	3	5.0000	6	10.000	2	16.000	-1	20.000	0	25.000	0	40.000	-3	50.000	-6	60.000	0
Butylbenzylphthalate					10.000	0	16.000	-2	20.000	3	25.000	0	40.000	-2	50.000	-2	60.000	2
3,3'-Dichlorobenzidine					20.000	-3	32.000	1	40.000	2	50.000	-3	80.000	1	100.00	0	120.00	2
Benzo(a)anthracene	2.0000	8	5.0000	5	10.000	6	16.000	1	20.000	0	25.000	-4	40.000	-7	50.000	-2	60.000	-7
bis(2-Ethylhexyl)phthalate					10.000	14	16.000	10	20.000	10	25.000	2	40.000	-5	50.000	-11	60.000	-20
Chrysene	2.0000	5	5.0000	4	10.000	2	16.000	0	20.000	-3	25.000	-2	40.000	-3	50.000	-2	60.000	-1
Di-n-octylphthalate					10.000	1	16.000	7	20.000	1	25.000	0	40.000	-3	50.000	-3	60.000	-3
Benzo(b)fluoranthene	2.0000	-6	5.0000	2	10.000	0	16.000	2	20.000	-6	25.000	2	40.000	-5	50.000	1	60.000	10
Benzo(k)fluoranthene	2.0000	11	5.0000	10	10.000	10	16.000	5	20.000	-2	25.000	-2	40.000	-6	50.000	-12	60.000	-14
Benzo(a)pyrene	2.0000	-6	5.0000	0	10.000	2	16.000	4	20.000	0	25.000	0	40.000	-3	50.000	0	60.000	4
Indeno(1,2,3-cd)pyrene	2.0000	-18	5.0000	-7	10.000	2	16.000	6	20.000	4	25.000	3	40.000	1	50.000	5	60.000	4
Dibenz(a,h)anthracene	2.0000	-17	5.0000	-4	10.000	5	16.000	6	20.000	6	25.000	2	40.000	-1	50.000	2	60.000	2
Benzo(g,h,i)perylene	2.0000	-8	5.0000	-7	10.000	1	16.000	5	20.000	4	25.000	4	40.000	1	50.000	-1	60.000	1
2-Fluorophenol	2.0000	-12	5.0000	-6	10.000	3	16.000	11	20.000	6	25.000	3	40.000	2	50.000	-6	60.000	-1
Phenol-d5	2.0000	-5	5.0000	-3	10.000	1	16.000	10	20.000	5	25.000	0	40.000	-5	50.000	-1	60.000	-2
Nitrobenzene-d5	2.0000	3	5.0000	9	10.000	0	16.000	7	20.000	-3	25.000	-4	40.000	-5	50.000	-3	60.000	-4
2-Fluorobiphenyl	2.0000	15	5.0000	16	10.000	11	16.000	6	20.000	5	25.000	-5	40.000	-14	50.000	-15	60.000	-19
2,4,6-Tribromophenol	2.0000	-4	5.0000	-1	10.000	7	16.000	-5	20.000	-1	25.000	0	40.000	-3	50.000	3	60.000	3
Terphenyl-d14	2.0000	-4	5.0000	4	10.000	3	16.000	-1	20.000	3	25.000	2	40.000	-1	50.000	-8	60.000	2

KMH 09/06/12 [1,4-Dichlorobenzene-d4]: Picked or reassigned peak in multiple levels.

KMH 09/06/12 [N-Nitrosodimethylamine]: Corrected automatically drawn baseline in multiple levels.

KMH 09/06/12 [Aniline]: Picked or reassigned peak in multiple levels.

KMH 09/06/12 [Benzoic acid]: Corrected automatically drawn baseline in multiple levels.

KMH 09/06/12 [2,4,5-Trichlorophenol]: Corrected automatically drawn baseline in multiple levels.

KMH 09/06/12 [2,4-Dinitrophenol]: Picked or reassigned peak in ICAL (yi502).

KMH 09/06/12 [4-Nitroaniline]: Corrected automatically drawn baseline in ICAL (yi502).

KMH 09/06/12 [Dibenz(a,h)anthracene]: Corrected automatically drawn baseline in multiple levels.

KMH 09/06/12 [N-Nitroso-di-n-propylamine]: Picked or reassigned peak in multiple levels.

KMH 09/06/12 [Indeno(1,2,3-cd)pyrene]: Combined split peak in multiple levels.

KMH 09/06/12 [Benzo(a)anthracene]: Corrected automatically drawn baseline in ICAL (yi505).

KMH 09/06/12 [4-Methylphenol]: Combined split peak in multiple levels.

KMH 09/06/12 [Nitrobenzene-d5]: Corrected automatically drawn baseline in ICAL (yi508).

KMH 09/06/12 [2,4-Dimethylphenol]: Picked or reassigned peak in multiple levels.

KMH 09/06/12 [2,4-Dichlorophenol]: Corrected automatically drawn baseline in multiple levels.

KMH 09/06/12 [Aniline]: Corrected automatically drawn baseline in multiple levels.

KMH 09/06/12 [bis(2-Chloroethyl)ether]: Corrected automatically drawn baseline in multiple levels.

KMH 09/06/12 [Isophorone]: Picked or reassigned peak in multiple levels.

KMH 09/06/12 [2-Nitrophenol]: Corrected automatically drawn baseline in multiple levels.

KMH 09/06/12 [4-Chloroaniline]: Corrected automatically drawn baseline in multiple levels.

KMH 09/06/12 [Anthracene]: Corrected automatically drawn baseline in ICAL (yi509).

KMH 09/06/12 [Benzo(b)fluoranthene]: Corrected automatically drawn baseline in ICAL (yi509).

KMH 09/06/12 [Benzo(k)fluoranthene]: Picked or reassigned peak in multiple levels.

KMH 09/06/12 [N-Nitroso-di-n-propylamine]: Corrected automatically drawn baseline in ICAL (yi510).

KMH 09/06/12 [Naphthalene]: Corrected automatically drawn baseline in ICAL (yi510).

KMH 09/06/12 [Hexachlorobutadiene]: Corrected automatically drawn baseline in ICAL (yi510).

KMH 09/06/12 [Resorcinol]: Combined split peak in ICAL (yi510).

Analyst: KMH Date: 09/06/12 Reviewer: LW Date: 09/07/12

m=manual integration

Instrument amount = a0 + response * a1 + response^2 * a2; AVRG=Average response factor; LINR=Linear regression

552359297001

CURTIS & TOMPKINS 2ND SOURCE CALIBRATION SUMMARY FOR 239425 MSBNA Soil
EPA 8270C

Inst : MSBNA06 Name : 6PTBNA6
Calnum : 552359297001 Cal Date : 05-SEP-2012

ICV 552359297011 (yi511 05-SEP-2012) stds: S19910

Analyte	Spiked	Quant	Units	%D	Max	Flags
N-Nitrosodimethylamine	40.00	44.68	ug/mL	12	30	
Phenol	40.00	39.65	ug/mL	-1	20	
bis(2-Chloroethyl)ether	40.00	42.13	ug/mL	5	30	
2-Chlorophenol	40.00	41.11	ug/mL	3	30	
1,3-Dichlorobenzene	40.00	43.15	ug/mL	8	30	
1,4-Dichlorobenzene	40.00	42.50	ug/mL	6	20	
Benzyl alcohol	40.00	41.43	ug/mL	4	30	
1,2-Dichlorobenzene	40.00	44.19	ug/mL	10	30	
2-Methylphenol	40.00	42.65	ug/mL	7	30	
bis(2-Chloroisopropyl) ether	40.00	39.02	ug/mL	-2	30	
4-Methylphenol	40.00	37.77	ug/mL	-6	30	
N-Nitroso-di-n-propylamine	40.00	42.21	ug/mL	6	30	
Hexachloroethane	40.00	44.05	ug/mL	10	30	
Nitrobenzene	40.00	43.47	ug/mL	9	30	
Isophorone	40.00	42.56	ug/mL	6	30	
2-Nitrophenol	40.00	43.12	ug/mL	8	20	
2,4-Dimethylphenol	40.00	41.74	ug/mL	4	30	
bis(2-Chloroethoxy)methane	40.00	41.16	ug/mL	3	30	
Benzoic acid	100.0	105.8	ug/mL	6	40	
2,4-Dichlorophenol	40.00	42.05	ug/mL	5	20	
1,2,4-Trichlorobenzene	40.00	44.68	ug/mL	12	30	
Naphthalene	40.00	38.28	ug/mL	-4	30	
4-Chloroaniline	40.00	40.29	ug/mL	1	30	
Hexachlorobutadiene	40.00	42.88	ug/mL	7	20	
4-Chloro-3-methylphenol	40.00	42.78	ug/mL	7	20	
2-Methylnaphthalene	40.00	38.60	ug/mL	-3	30	
Hexachlorocyclopentadiene	40.00	36.62	ug/mL	-8	40	
2,4,6-Trichlorophenol	40.00	40.07	ug/mL	0	20	
2,4,5-Trichlorophenol	40.00	39.31	ug/mL	-2	30	
2-Chloronaphthalene	40.00	38.31	ug/mL	-4	30	
2-Nitroaniline	40.00	41.52	ug/mL	4	30	
Dimethylphthalate	40.00	39.64	ug/mL	-1	30	
2,6-Dinitrotoluene	40.00	41.22	ug/mL	3	30	
Acenaphthylene	40.00	35.26	ug/mL	-12	30	
3-Nitroaniline	40.00	38.31	ug/mL	-4	30	
Acenaphthene	40.00	37.24	ug/mL	-7	20	
2,4-Dinitrophenol	40.00	41.97	ug/mL	5	40	
4-Nitrophenol	40.00	40.00	ug/mL	0	40	
Dibenzofuran	40.00	37.72	ug/mL	-6	30	
2,4-Dinitrotoluene	40.00	40.53	ug/mL	1	30	
Diethylphthalate	40.00	37.13	ug/mL	-7	30	
Fluorene	40.00	37.04	ug/mL	-7	30	
4-Chlorophenyl-phenylether	40.00	38.07	ug/mL	-5	40	
4-Nitroaniline	40.00	40.43	ug/mL	1	30	
4,6-Dinitro-2-methylphenol	40.00	44.00	ug/mL	10	30	
N-Nitrosodiphenylamine	40.00	47.51	ug/mL	19	20	
Azobenzene	40.00	38.27	ug/mL	-4	30	
4-Bromophenyl-phenylether	40.00	38.41	ug/mL	-4	30	
Hexachlorobenzene	40.00	40.62	ug/mL	2	30	

Analyte	Spiked	Quant	Units	%D	Max	Flags
Pentachlorophenol	40.00	43.88	ug/mL	10	20	
Phenanthrene	40.00	38.76	ug/mL	-3	30	
Anthracene	40.00	37.76	ug/mL	-6	30	
Di-n-butylphthalate	40.00	39.76	ug/mL	-1	30	
Fluoranthene	40.00	38.71	ug/mL	-3	20	
Pyrene	40.00	43.38	ug/mL	8	30	
Butylbenzylphthalate	40.00	42.65	ug/mL	7	30	
3,3'-Dichlorobenzidine	60.00	63.28	ug/mL	5	40	
Benzo(a)anthracene	40.00	42.55	ug/mL	6	30	
bis(2-Ethylhexyl)phthalate	40.00	42.58	ug/mL	6	30	
Chrysene	40.00	40.70	ug/mL	2	30	
Di-n-octylphthalate	40.00	41.53	ug/mL	4	20	
Benzo(b)fluoranthene	40.00	43.39	ug/mL	8	30	
Benzo(k)fluoranthene	40.00	40.32	ug/mL	1	30	m
Benzo(a)pyrene	40.00	47.78	ug/mL	19	20	
Indeno(1,2,3-cd)pyrene	40.00	45.05	ug/mL	13	30	
Dibenz(a,h)anthracene	40.00	43.55	ug/mL	9	30	
Benzo(g,h,i)perylene	40.00	41.12	ug/mL	3	30	

Analyst: KMH Date: 09/06/12 Reviewer: LW Date: 09/07/12

m=manual integration

CURTIS & TOMPKINS INITIAL CALIBRATION FOR 239425 MSBNA Soil: EPA 8270C

Inst : MSBNA07
Calnum : 562278593001
Units : ug/mL

Name : 6PTBNA7
Date : 11-JUL-2012 11:46
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	zgb02	562278593002	ICAL 1	11-JUL-2012 11:46	S20236
L2	zgb03	562278593003	ICAL 2	11-JUL-2012 12:19	S20238
L3	zgb04	562278593004	ICAL 3	11-JUL-2012 12:54	S20239
L4	zgb05	562278593005	ICAL 4	11-JUL-2012 13:28	S20248
L5	zgb06	562278593006	ICAL 5	11-JUL-2012 14:02	S20249
L6	zgb07	562278593007	ICAL 6	11-JUL-2012 14:36	S20250
L7	zgb08	562278593008	ICAL 7	11-JUL-2012 15:11	S20244
L8	zgb09	562278593009	ICAL 8	11-JUL-2012 15:45	S20245
L9	zgb10	562278593010	ICAL 9	11-JUL-2012 16:18	S20246

Analyte	L1	L2	L3	L4	L5	L6	L7	L8	L9	Type	a0	a1	a2	Avg	r^2 %RSD	Max %RSD	Min RF	Min r^2	Flg
N-Nitrosodimethylamine		0.6308	0.6341	0.7858	0.7854	0.6051	0.7634	0.7887m	0.6274m	AVRG		1.42330		0.7026	12	15	0.05	0.99	
Phenol		1.5842	1.5687	1.6443	1.6168	1.4456	1.5193	1.5200	1.3894	AVRG		0.65102		1.5361	6	15	0.05	0.99	
bis(2-Chloroethyl)ether		1.2716m	1.2338m	1.3168m	1.2956m	1.1327m	1.1920	1.1671	0.9745m	AVRG		0.83472		1.1980	9	15	0.05	0.99	
2-Chlorophenol		1.4163	1.4490	1.4426	1.4100	1.3499	1.3442	1.3243	1.2683	AVRG		0.72698		1.3755	5	15	0.05	0.99	
1,3-Dichlorobenzene		1.6265	1.6374	1.5631	1.5028	1.4567	1.3643	1.3300	1.2747	AVRG		0.68053		1.4694	9	15	0.05	0.99	
1,4-Dichlorobenzene		1.6496	1.6515	1.5561	1.5010	1.4404	1.3476	1.2997	1.2455	AVRG		0.68426		1.4614	11	15	0.05	0.99	
Benzyl alcohol		0.8849	0.8789	0.8986	0.8845	0.8369	0.8856	0.8958	0.8671	AVRG		1.13758		0.8791	2	15	0.05	0.99	
1,2-Dichlorobenzene		1.5699	1.5612	1.4860	1.4439	1.3774	1.3003	1.2720	1.2240	AVRG		0.71209		1.4043	9	15	0.05	0.99	
2-Methylphenol		1.0848	1.0571	1.0799	1.0426	0.9603	0.9764	0.9809	0.9134	AVRG		0.98821		1.0119	6	15	0.05	0.99	
bis(2-Chloroisopropyl) ether		1.4596	1.3888	1.6913	1.6680	1.2979	1.5796	1.5756	1.2628	AVRG		0.67093		1.4905	11	15	0.05	0.99	
4-Methylphenol		1.5229	1.4846	1.5326	1.4995	1.4051				AVRG		0.67162		1.4889	3	15	0.05	0.99	
N-Nitroso-di-n-propylamine		0.8167	0.8186	0.9496	0.9429	0.7926	0.8790	0.8702m	0.7617m	AVRG		1.17108		0.8539	8	15	0.050	0.99	
Hexachloroethane		0.5810	0.5779	0.5982	0.5826	0.5285	0.5314	0.5181	0.4686	AVRG		1.82385		0.5483	8	15	0.05	0.99	
Nitrobenzene		0.3205	0.3379	0.3797	0.3762	0.3319	0.3692	0.3775	0.3347	AVRG		2.82932		0.3534	7	15	0.05	0.99	
Isophorone		0.6182	0.6193	0.6915	0.6851	0.6057	0.6617	0.6651m	0.6040m	AVRG		1.55320		0.6438	6	15	0.05	0.99	
2-Nitrophenol			0.1827m	0.1947	0.1980	0.2005m	0.2036	0.2077	0.2089m	AVRG		5.01383		0.1994	4	15	0.05	0.99	
2,4-Dimethylphenol		0.3636	0.3483	0.3746	0.3620	0.3415	0.3492	0.3481	0.3298	AVRG		2.83974		0.3521	4	15	0.05	0.99	
bis(2-Chloroethoxy)methane			0.3871	0.4239	0.4208	0.3827	0.4117	0.4164	0.3819	AVRG		2.47833		0.4035	5	15	0.05	0.99	
Benzoic acid		0.1556	0.1859	0.2273m	0.2409	0.2366	0.2663m	0.2788m	0.2745m	LINR	27.9600	2.88898		0.2333	0.997	15	0.05	0.99	
2,4-Dichlorophenol		0.3183	0.3221	0.3121	0.3036	0.3062	0.2875	0.2841	0.2851	AVRG		3.30721		0.3024	5	15	0.05	0.99	
1,2,4-Trichlorobenzene		0.3601	0.3667	0.3380	0.3286	0.3364	0.3006	0.2939	0.2975	AVRG		3.05144		0.3277	9	15	0.05	0.99	
Naphthalene	1.1399	1.1440	1.1379	1.1159	1.0670	1.0303	0.9990	0.9964	0.9438	AVRG		0.94005		1.0638	7	15	0.05	0.99	
4-Chloroaniline		0.3297	0.4527	0.4729	0.4649	0.4488	0.4385m	0.4374m	0.4232m	AVRG		2.30669		0.4335	10	15	0.05	0.99	
Hexachlorobutadiene		0.1941	0.2013	0.1817	0.1759	0.1904	0.1650	0.1586	0.1668	AVRG		5.57961		0.1792	9	15	0.05	0.99	

Analyte	L1	L2	L3	L4	L5	L6	L7	L8	L9	Type	a0	a1	a2	Avg	r^2 %RSD	Max %RSD	Min RF	Min r^2	Flg
4-Chloro-3-methylphenol		0.3071	0.3082	0.3212	0.3142	0.2936	0.3054	0.3059	0.2899	AVRG		3.27139		0.3057	3	15	0.05	0.99	
2-Methylnaphthalene	0.7628	0.7519	0.7469	0.7291	0.7105	0.7267	0.6840	0.6828	0.6908	AVRG		1.38773		0.7206	4	15	0.05	0.99	
Hexachlorocyclopentadiene			0.3646	0.3696	0.3606	0.3803	0.3512	0.3519	0.3652	AVRG		2.75222		0.3633	3	15	0.050	0.99	
2,4,6-Trichlorophenol		0.3551	0.3773	0.3791	0.3687	0.3756	0.3602	0.3662	0.3709	AVRG		2.70888		0.3692	2	15	0.05	0.99	
2,4,5-Trichlorophenol		0.3893	0.4141	0.4094	0.4058	0.4059	0.3771m	0.3828m	0.3831m	AVRG		2.52555		0.3960	4	15	0.05	0.99	
2-Chloronaphthalene			1.1937	1.1859	1.1557	1.1351	1.0917	1.1079	1.0924	AVRG		0.87911		1.1375	4	15	0.05	0.99	
2-Nitroaniline			0.2827	0.3622	0.3736	0.3080	0.3790	0.3985	0.3344	AVRG		2.87080		0.3483	12	15	0.05	0.99	
Dimethylphthalate		1.3437	1.3324	1.3447	1.2983	1.2727	1.2232	1.2377	1.1916	AVRG		0.78092		1.2805	5	15	0.05	0.99	
2,6-Dinitrotoluene		0.2600	0.2883	0.3083	0.3103	0.3046	0.3091	0.3187	0.3159m	AVRG		3.31231		0.3019	6	15	0.05	0.99	
Acenaphthylene	1.9754	1.9428	1.9240	1.9277	1.8619	1.8057	1.7335	1.7692	1.7073	AVRG		0.54063		1.8497	5	15	0.05	0.99	
3-Nitroaniline			0.2891	0.3393	0.3440	0.3241m	0.3510m	0.3655	0.3527	AVRG		2.95908		0.3379	7	15	0.05	0.99	
Acenaphthene	1.2862m	1.2104	1.2099	1.2291	1.1950	1.1843	1.1738	1.1574	1.1067	AVRG		0.83699		1.1948	4	15	0.05	0.99	
2,4-Dinitrophenol			0.0783	0.1065	0.1192	0.1312	0.1492	0.1654	0.1720	LINR	14.4186	5.21441		0.1317	0.997	15	0.050	0.99	
4-Nitrophenol			0.1479	0.1731	0.1767m	0.1645	0.1845m	0.1917m	0.1843m	AVRG		5.72562		0.1747	8	15	0.050	0.99	
Dibenzofuran			1.6948	1.6735	1.6142	1.5948	1.4939	1.5140	1.4925	AVRG		0.63190		1.5825	5	15	0.05	0.99	
2,4-Dinitrotoluene		0.3326	0.3757	0.4062	0.4050	0.3977	0.4015	0.4134m	0.4029m	AVRG		2.55180		0.3919	7	15	0.05	0.99	
Diethylphthalate			1.3568	1.4041	1.3645	1.2878	1.2935m	1.3129m	1.2430m	AVRG		0.75573		1.3232	4	15	0.05	0.99	
Fluorene	1.4661	1.3877	1.3866	1.3507	1.3114	1.3111	1.2544	1.2754	1.2757	AVRG		0.74881		1.3355	5	15	0.05	0.99	
4-Chlorophenyl-phenylether			0.6794	0.6534	0.6343	0.6649	0.6113	0.6216	0.6439	AVRG		1.55254		0.6441	4	15	0.05	0.99	
4-Nitroaniline			0.3073	0.3275	0.3316	0.3231m	0.3444m	0.3549	0.3446	AVRG		2.99988		0.3333	5	15	0.05	0.99	
4,6-Dinitro-2-methylphenol			0.0879	0.1057m	0.1123	0.1155	0.1263m			AVRG		9.12809		0.1096	13	15	0.05	0.99	
N-Nitrosodiphenylamine			0.5418	0.5515	0.5391	0.5363	0.5307	0.5482	0.5489m	AVRG		1.84375		0.5424	1	15	0.05	0.99	
Azobenzene			0.6814	0.8094	0.8113	0.6638	0.8056	0.8330	0.6842	AVRG		1.32354		0.7555	10	15	0.05	0.99	
4-Bromophenyl-phenylether			0.2154	0.2060	0.2060	0.2206	0.2061	0.2101	0.2284	AVRG		4.68991		0.2132	4	15	0.05	0.99	
Hexachlorobenzene		0.2252	0.2454	0.2358	0.2333	0.2551	0.2340	0.2355	0.2517	AVRG		4.17537		0.2395	4	15	0.05	0.99	
Pentachlorophenol			0.1283	0.1325	0.1388	0.1518	0.1499	0.1557	0.1692	AVRG		6.82062		0.1466	10	15	0.05	0.99	
Phenanthrene	1.1204	1.0835	1.0571	1.0343	1.0312	1.0037	0.9919	1.0226	1.0016	AVRG		0.96295		1.0385	4	15	0.05	0.99	
Anthracene	1.1586	1.1122	1.0859	1.0456	1.0321m	1.0103m	0.9912m	1.0123m	0.9952m	AVRG		0.95304		1.0493	6	15	0.05	0.99	
Di-n-butylphthalate			1.2700	1.3225	1.3010	1.2055	1.2488	1.2662	1.1475	AVRG		0.79896		1.2516	5	15	0.05	0.99	
Fluoranthene	1.2720	1.1983	1.1797	1.1234	1.1114	1.1527	1.1062	1.1301	1.1489	AVRG		0.86349		1.1581	5	15	0.05	0.99	
Pyrene	1.1501	1.1727	1.2095	1.2400	1.2439	1.1972	1.2307	1.2896	1.2327	AVRG		0.82068		1.2185	3	15	0.05	0.99	
Butylbenzylphthalate			0.5605	0.6359	0.6407	0.5680	0.6639	0.6946	0.6155	AVRG		1.59849		0.6256	8	15	0.05	0.99	
3,3'-Dichlorobenzidine			0.3862	0.4259	0.4437	0.4628	0.4804	0.4973	0.4996	AVRG		2.19026		0.4566	9	15	0.05	0.99	
Benzo(a)anthracene	1.1211	1.0971	1.1137	1.1037	1.1001	1.0892	1.0918	1.1379	1.1500	AVRG		0.89960		1.1116	2	15	0.05	0.99	
bis(2-Ethylhexyl)phthalate			0.7747	0.8857	0.8815	0.7533	0.8117	0.8011	0.6844	AVRG		1.25169		0.7989	9	15	0.05	0.99	
Chrysene	1.0355	1.0055	1.0131	0.9964	0.9887	0.9848	0.9897	1.0191	1.0269	AVRG		0.99341		1.0066	2	15	0.05	0.99	
Di-n-octylphthalate			1.3238	1.5664	1.6029	1.3811	1.6829	1.7796	1.5268	AVRG		0.64436		1.5519	10	15	0.05	0.99	
Benzo(b)fluoranthene	1.0074	1.0205	1.0891	1.1116	1.1256	1.1554	1.1934	1.2745	1.3778	AVRG		0.86912		1.1506	10	15	0.05	0.99	
Benzo(k)fluoranthene	1.0600m	1.0719m	1.1180m	1.1310	1.1401	1.1225	1.1468	1.1360	1.1108m	AVRG		0.89668		1.1152	3	15	0.05	0.99	
Benzo(a)pyrene	0.8648	0.8931	0.9431	0.9766	0.9848	0.9925	1.0240	1.0733	1.0935	AVRG		1.01744		0.9829	8	15	0.05	0.99	
Indeno(1,2,3-cd)pyrene	0.9315	0.9819	1.0446	1.0572	1.0811	1.1230	1.1579	1.2285	1.2742	AVRG		0.91094		1.0978	10	15	0.05	0.99	

Analyte	L1	L2	L3	L4	L5	L6	L7	L8	L9	Type	a0	a1	a2	Avg	r^2 %RSD	Max %RSD	Min RF	Min r^2	Flg
Dibenz(a,h)anthracene	0.7499m	0.8180	0.8657	0.8697	0.8969	0.9329	0.9541	1.0069	1.0354	AVRG		1.10708		0.9033	10	15	0.05	0.99	
Benzo(g,h,i)perylene	0.8324	0.8092	0.8396	0.8426	0.8624	0.9126	0.9308	0.9803	1.0056	AVRG		1.12285		0.8906	8	15	0.05	0.99	
2-Fluorophenol	1.2573	1.2826	1.3143	1.3638	1.3441	1.2710	1.3147	1.3302	1.2709	AVRG		0.76603		1.3054	3	15	0.05	0.99	
Phenol-d5	1.5656	1.5697	1.5859	1.6813	1.6444	1.4936	1.5963	1.6265	1.5302	AVRG		0.62966		1.5882	4	15	0.05	0.99	
Nitrobenzene-d5	0.3009	0.3162	0.3383	0.3921	0.4004	0.3587	0.3882	0.4024	0.3673	AVRG		2.75682		0.3627	10	15	0.05	0.99	
2-Fluorobiphenyl	1.5039	1.4857	1.4962	1.4962	1.4305	1.4235	1.2847	1.2900	1.2876	AVRG		0.70876		1.4109	7	15	0.05	0.99	
2,4,6-Tribromophenol		0.1484	0.1743	0.1702	0.1666	0.1982	0.1813	0.1838		AVRG		5.72388		0.1747	9	15	0.05	0.99	
Terphenyl-d14	0.8090	0.8260	0.8451	0.8755	0.8812	0.8976	0.8825	0.9068	0.9243	AVRG		1.14679		0.8720	4	15	0.05	0.99	

Spiked Amounts / Drifts	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D	L7	%D	L8	%D	L9	%D
N-Nitrosodimethylamine			10.000	-10	20.000	-10	32.000	12	40.000	12	50.000	-14	80.000	9	100.00	12	120.00	-11
Phenol			10.000	3	20.000	2	32.000	7	40.000	5	50.000	-6	80.000	-1	100.00	-1	120.00	-10
bis(2-Chloroethyl)ether			10.000	6	20.000	3	32.000	10	40.000	8	50.000	-5	80.000	-1	100.00	-3	120.00	-19
2-Chlorophenol			10.000	3	20.000	5	32.000	5	40.000	3	50.000	-2	80.000	-2	100.00	-4	120.00	-8
1,3-Dichlorobenzene			10.000	11	20.000	11	32.000	6	40.000	2	50.000	-1	80.000	-7	100.00	-9	120.00	-13
1,4-Dichlorobenzene			10.000	13	20.000	13	32.000	6	40.000	3	50.000	-1	80.000	-8	100.00	-11	120.00	-15
Benzyl alcohol			10.000	1	20.000	0	32.000	2	40.000	1	50.000	-5	80.000	1	100.00	2	120.00	-1
1,2-Dichlorobenzene			10.000	12	20.000	11	32.000	6	40.000	3	50.000	-2	80.000	-7	100.00	-9	120.00	-13
2-Methylphenol			10.000	7	20.000	4	32.000	7	40.000	3	50.000	-5	80.000	-4	100.00	-3	120.00	-10
bis(2-Chloroisopropyl) ether			10.000	-2	20.000	-7	32.000	13	40.000	12	50.000	-13	80.000	6	100.00	6	120.00	-15
4-Methylphenol			10.000	2	20.000	0	32.000	3	40.000	1	50.000	-6						
N-Nitroso-di-n-propylamine			10.000	-4	20.000	-4	32.000	11	40.000	10	50.000	-7	80.000	3	100.00	2	120.00	-11
Hexachloroethane			10.000	6	20.000	5	32.000	9	40.000	6	50.000	-4	80.000	-3	100.00	-6	120.00	-15
Nitrobenzene			10.000	-9	20.000	-4	32.000	7	40.000	6	50.000	-6	80.000	4	100.00	7	120.00	-5
Isophorone			10.000	-4	20.000	-4	32.000	7	40.000	6	50.000	-6	80.000	3	100.00	3	120.00	-6
2-Nitrophenol					20.000	-8	32.000	-2	40.000	-1	50.000	1	80.000	2	100.00	4	120.00	5
2,4-Dimethylphenol			10.000	3	20.000	-1	32.000	6	40.000	3	50.000	-3	80.000	-1	100.00	-1	120.00	-6
bis(2-Chloroethoxy)methane					10.000	-4	16.000	5	20.000	4	25.000	-5	40.000	2	50.000	3	60.000	-5
Benzoic acid			50.000	1	60.000	0	80.000	1	90.000	1	100.00	-4	120.00	0	130.00	2	140.00	-1
2,4-Dichlorophenol			10.000	5	20.000	7	32.000	3	40.000	0	50.000	1	80.000	-5	100.00	-6	120.00	-6
1,2,4-Trichlorobenzene			10.000	10	20.000	12	32.000	3	40.000	0	50.000	3	80.000	-8	100.00	-10	120.00	-9
Naphthalene	2.0000	7	5.0000	8	10.000	7	16.000	5	20.000	0	25.000	-3	40.000	-6	50.000	-6	60.000	-11
4-Chloroaniline			10.000	**-24**	20.000	4	32.000	9	40.000	7	50.000	4	80.000	1	100.00	1	120.00	-2
Hexachlorobutadiene			10.000	8	20.000	12	32.000	1	40.000	-2	50.000	6	80.000	-8	100.00	-11	120.00	-7
4-Chloro-3-methylphenol			10.000	0	20.000	1	32.000	5	40.000	3	50.000	-4	80.000	0	100.00	0	120.00	-5
2-Methylnaphthalene	2.0000	6	5.0000	4	10.000	4	16.000	1	20.000	-1	25.000	1	40.000	-5	50.000	-5	60.000	-4
Hexachlorocyclopentadiene					20.000	0	32.000	2	40.000	-1	50.000	5	80.000	-3	100.00	-3	120.00	1
2,4,6-Trichlorophenol			10.000	-4	20.000	2	32.000	3	40.000	0	50.000	2	80.000	-2	100.00	-1	120.00	0
2,4,5-Trichlorophenol			10.000	-2	20.000	5	32.000	3	40.000	2	50.000	3	80.000	-5	100.00	-3	120.00	-3
2-Chloronaphthalene					10.000	5	16.000	4	20.000	2	25.000	0	40.000	-4	50.000	-3	60.000	-4
2-Nitroaniline					20.000	-19	32.000	4	40.000	7	50.000	-12	80.000	9	100.00	14	120.00	-4
Dimethylphthalate			10.000	5	20.000	4	32.000	5	40.000	1	50.000	-1	80.000	-4	100.00	-3	120.00	-7
2,6-Dinitrotoluene			10.000	-14	20.000	-4	32.000	2	40.000	3	50.000	1	80.000	2	100.00	6	120.00	5
Acenaphthylene	2.0000	7	5.0000	5	10.000	4	16.000	4	20.000	1	25.000	-2	40.000	-6	50.000	-4	60.000	-8
3-Nitroaniline					20.000	-14	32.000	0	40.000	2	50.000	-4	80.000	4	100.00	8	120.00	4
Acenaphthene	2.0000	8	5.0000	1	10.000	1	16.000	3	20.000	0	25.000	-1	40.000	-2	50.000	-3	60.000	-7
2,4-Dinitrophenol					20.000	13	32.000	1	40.000	-2	50.000	-3	80.000	-4	100.00	1	120.00	2
4-Nitrophenol					20.000	-15	32.000	-1	40.000	1	50.000	-6	80.000	6	100.00	10	120.00	6
Dibenzofuran					10.000	7	16.000	6	20.000	2	25.000	1	40.000	-6	50.000	-4	60.000	-6
2,4-Dinitrotoluene			10.000	-15	20.000	-4	32.000	4	40.000	3	50.000	1	80.000	2	100.00	5	120.00	3
Diethylphthalate					10.000	3	16.000	6	20.000	3	25.000	-3	40.000	-2	50.000	-1	60.000	-6
Fluorene	2.0000	10	5.0000	4	10.000	4	16.000	1	20.000	-2	25.000	-2	40.000	-6	50.000	-4	60.000	-4

Spiked Amounts / Drifts	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D	L7	%D	L8	%D	L9	%D
4-Chlorophenyl-phenylether					10.000	5	16.000	1	20.000	-2	25.000	3	40.000	-5	50.000	-3	60.000	0
4-Nitroaniline					20.000	-8	32.000	-2	40.000	-1	50.000	-3	80.000	3	100.00	6	120.00	3
4,6-Dinitro-2-methylphenol					20.000	-20	32.000	-4	40.000	3	50.000	5	80.000	15				
N-Nitrosodiphenylamine					10.000	0	16.000	2	20.000	-1	25.000	-1	40.000	-2	50.000	1	60.000	1
Azobenzene					10.000	-10	16.000	7	20.000	7	25.000	-12	40.000	7	50.000	10	60.000	-9
4-Bromophenyl-phenylether					10.000	1	16.000	-3	20.000	-3	25.000	3	40.000	-3	50.000	-1	60.000	7
Hexachlorobenzene			10.000	-6	20.000	2	32.000	-2	40.000	-3	50.000	6	80.000	-2	100.00	-2	120.00	5
Pentachlorophenol					20.000	-13	32.000	-10	40.000	-5	50.000	4	80.000	2	100.00	6	120.00	15
Phenanthrene	2.0000	8	5.0000	4	10.000	2	16.000	0	20.000	-1	25.000	-3	40.000	-4	50.000	-2	60.000	-4
Anthracene	2.0000	10	5.0000	6	10.000	3	16.000	0	20.000	-2	25.000	-4	40.000	-6	50.000	-4	60.000	-5
Di-n-butylphthalate					10.000	1	16.000	6	20.000	4	25.000	-4	40.000	0	50.000	1	60.000	-8
Fluoranthene	2.0000	10	5.0000	3	10.000	2	16.000	-3	20.000	-4	25.000	0	40.000	-4	50.000	-2	60.000	-1
Pyrene	2.0000	-6	5.0000	-4	10.000	-1	16.000	2	20.000	2	25.000	-2	40.000	1	50.000	6	60.000	1
Butylbenzylphthalate					10.000	-10	16.000	2	20.000	2	25.000	-9	40.000	6	50.000	11	60.000	-2
3,3'-Dichlorobenzidine					20.000	-15	32.000	-7	40.000	-3	50.000	1	80.000	5	100.00	9	120.00	9
Benzo(a)anthracene	2.0000	1	5.0000	-1	10.000	0	16.000	-1	20.000	-1	25.000	-2	40.000	-2	50.000	2	60.000	3
bis(2-Ethylhexyl)phthalate					10.000	-3	16.000	11	20.000	10	25.000	-6	40.000	2	50.000	0	60.000	-14
Chrysene	2.0000	3	5.0000	0	10.000	1	16.000	-1	20.000	-2	25.000	-2	40.000	-2	50.000	1	60.000	2
Di-n-octylphthalate					10.000	-15	16.000	1	20.000	3	25.000	-11	40.000	8	50.000	15	60.000	-2
Benzo(b)fluoranthene	2.0000	-12	5.0000	-11	10.000	-5	16.000	-3	20.000	-2	25.000	0	40.000	4	50.000	11	60.000	20
Benzo(k)fluoranthene	2.0000	-5	5.0000	-4	10.000	0	16.000	1	20.000	2	25.000	1	40.000	3	50.000	2	60.000	0
Benzo(a)pyrene	2.0000	-12	5.0000	-9	10.000	-4	16.000	-1	20.000	0	25.000	1	40.000	4	50.000	9	60.000	11
Indeno(1,2,3-cd)pyrene	2.0000	-15	5.0000	-11	10.000	-5	16.000	-4	20.000	-2	25.000	2	40.000	5	50.000	12	60.000	16
Dibenz(a,h)anthracene	2.0000	-17	5.0000	-9	10.000	-4	16.000	-4	20.000	-1	25.000	3	40.000	6	50.000	11	60.000	15
Benzo(g,h,i)perylene	2.0000	-7	5.0000	-9	10.000	-6	16.000	-5	20.000	-3	25.000	2	40.000	5	50.000	10	60.000	13
2-Fluorophenol	2.0000	-4	5.0000	-2	10.000	1	16.000	4	20.000	3	25.000	-3	40.000	1	50.000	2	60.000	-3
Phenol-d5	2.0000	-1	5.0000	-1	10.000	0	16.000	6	20.000	4	25.000	-6	40.000	1	50.000	2	60.000	-4
Nitrobenzene-d5	2.0000	-17	5.0000	-13	10.000	-7	16.000	8	20.000	10	25.000	-1	40.000	7	50.000	11	60.000	1
2-Fluorobiphenyl	2.0000	7	5.0000	5	10.000	6	16.000	6	20.000	1	25.000	1	40.000	-9	50.000	-9	60.000	-9
2,4,6-Tribromophenol			5.0000	-15	10.000	0	16.000	-3	20.000	-5	25.000	13	40.000	4	50.000	5		
Terphenyl-d14	2.0000	-7	5.0000	-5	10.000	-3	16.000	0	20.000	1	25.000	3	40.000	1	50.000	4	60.000	6

LLH 07/12/12 [N-Nitrosodimethylamine]: Corrected automatically drawn baseline in multiple levels.

LLH 07/12/12 [Aniline]: Picked or reassigned peak in all levels.

LLH 07/12/12 [bis(2-Chloroethyl)ether]: Corrected automatically drawn baseline in multiple levels.

LLH 07/12/12 [N-Nitroso-di-n-propylamine]: Corrected automatically drawn baseline in multiple levels.

LLH 07/12/12 [Isophorone]: Picked or reassigned peak in multiple levels.

LLH 07/12/12 [2-Nitrophenol]: Corrected automatically drawn baseline in ICAL 1 (zgb02).

LLH 07/12/12 [2-Nitrophenol]: Picked or reassigned peak in multiple levels.

LLH 07/12/12 [bis(2-Chloroethoxy)methane]: Corrected automatically drawn baseline in ICAL 1 (zgb02).

LLH 07/12/12 [Benzoic acid]: Corrected automatically drawn baseline in multiple levels.

LLH 07/12/12 [4-Methylphenol]: Combined split peak in multiple levels.

LLH 07/12/12 [4-Chloroaniline]: Corrected automatically drawn baseline in multiple levels.

LLH 07/12/12 [2,4,5-Trichlorophenol]: Corrected automatically drawn baseline in multiple levels.

LLH 07/12/12 [2,6-Dinitrotoluene]: Picked or reassigned peak in ICAL 9 (zgb10).

LLH 07/12/12 [Acenaphthene]: Corrected automatically drawn baseline in ICAL 1 (zgb02).

LLH 07/12/12 [4-Nitrophenol]: Corrected automatically drawn baseline in multiple levels.

LLH 07/12/12 [2,4-Dinitrotoluene]: Corrected automatically drawn baseline in multiple levels.

LLH 07/12/12 [2,3,4,6-Tetrachlorophenol]: Corrected automatically drawn baseline in multiple levels.

LLH 07/12/12 [Diethylphthalate]: Corrected automatically drawn baseline in multiple levels.

LLH 07/12/12 [4-Nitroaniline]: Corrected automatically drawn baseline in multiple levels.

LLH 07/12/12 [4,6-Dinitro-2-methylphenol]: Corrected automatically drawn baseline in multiple levels.

LLH 07/12/12 [N-Nitrosodiphenylamine]: Corrected automatically drawn baseline in ICAL 9 (zgb10).

LLH 07/12/12 [Anthracene]: Corrected automatically drawn baseline in multiple levels.

LLH 07/12/12 [Carbazole]: Corrected automatically drawn baseline in multiple levels.

LLH 07/12/12 [Benzo(k)fluoranthene]: Corrected automatically drawn baseline in multiple levels.

LLH 07/12/12 [Benzo(k)fluoranthene]: Picked or reassigned peak in ICAL 9 (zgb10).

LLH 07/12/12 [Dibenz(a,h)anthracene]: Corrected automatically drawn baseline in ICAL 1 (zgb02).

LLH 07/12/12 [4-Nitrophenol]: Picked or reassigned peak in ICAL 9 (zgb10).

LLH 07/12/12 [3-Nitroaniline]: Corrected automatically drawn baseline in ICAL 7 (zgb08).

LLH 07/24/12 : 2,4-Dinitrophenol did not meet min RF ---> cut a loop of column and then conditioned with diesel std, then baked out and then retuned, since IS against ICAL was low

LLH 07/26/12 : on 7/24, another loop was cut off

LLH 07/26/12 : cut 2 loops, 2,4-Dinitrophenol still fails min RF

LLH 09/06/12 : cut 2 loops to get better CCV, Hexachlorocyclopentadiene and PCP are out low

LLH 09/12/12 : cut 2 loops and primed to improve CCV, Pentachlorophenol at -22%D

Analyst: LLH Date: 07/12/12 Reviewer: LW Date: 07/13/12

m=manual integration

Instrument amount = a0 + response * a1 + response^2 * a2; AVRG=Average response factor; LINR=Linear regression

CURTIS & TOMPKINS 2ND SOURCE CALIBRATION SUMMARY FOR 239425 MSBNA Soil
EPA 8270C

Inst : MSBNA07 Name : 6PTBNA7
Calnum : 562278593001 Cal Date : 11-JUL-2012

ICV 562280008002 (zgc02 12-JUL-2012) stds: S19910

Analyte	Spiked	Quant	Units	%D	Max	Flags
N-Nitrosodimethylamine	40.00	32.45	ug/mL	-19	30	
Phenol	40.00	37.30	ug/mL	-7	20	
bis(2-Chloroethyl)ether	40.00	37.58	ug/mL	-6	30	
2-Chlorophenol	40.00	39.02	ug/mL	-2	30	
1,3-Dichlorobenzene	40.00	40.37	ug/mL	1	30	
1,4-Dichlorobenzene	40.00	40.39	ug/mL	1	20	
Benzyl alcohol	40.00	37.09	ug/mL	-7	30	
1,2-Dichlorobenzene	40.00	40.66	ug/mL	2	30	
2-Methylphenol	40.00	38.75	ug/mL	-3	30	
bis(2-Chloroisopropyl) ether	40.00	33.37	ug/mL	-17	30	
4-Methylphenol	40.00	34.21	ug/mL	-14	30	
N-Nitroso-di-n-propylamine	40.00	37.41	ug/mL	-6	30	
Hexachloroethane	40.00	39.63	ug/mL	-1	30	
Nitrobenzene	40.00	36.82	ug/mL	-8	30	
Isophorone	40.00	36.69	ug/mL	-8	30	
2-Nitrophenol	40.00	39.49	ug/mL	-1	20	
2,4-Dimethylphenol	40.00	37.94	ug/mL	-5	30	
bis(2-Chloroethoxy)methane	40.00	35.88	ug/mL	-10	30	
Benzoic acid	100.0	95.57	ug/mL	-4	40	
2,4-Dichlorophenol	40.00	40.13	ug/mL	0	20	
1,2,4-Trichlorobenzene	40.00	43.83	ug/mL	10	30	
Naphthalene	40.00	36.96	ug/mL	-8	30	
4-Chloroaniline	40.00	40.84	ug/mL	2	30	m
Hexachlorobutadiene	40.00	43.07	ug/mL	8	20	
4-Chloro-3-methylphenol	40.00	38.33	ug/mL	-4	20	
2-Methylnaphthalene	40.00	38.63	ug/mL	-3	30	
Hexachlorocyclopentadiene	40.00	40.28	ug/mL	1	40	
2,4,6-Trichlorophenol	40.00	40.39	ug/mL	1	20	
2,4,5-Trichlorophenol	40.00	41.06	ug/mL	3	30	
2-Chloronaphthalene	40.00	38.09	ug/mL	-5	30	
2-Nitroaniline	40.00	32.92	ug/mL	-18	30	
Dimethylphthalate	40.00	39.29	ug/mL	-2	30	
2,6-Dinitrotoluene	40.00	41.18	ug/mL	3	30	
Acenaphthylene	40.00	37.52	ug/mL	-6	30	
3-Nitroaniline	40.00	36.41	ug/mL	-9	30	m
Acenaphthene	40.00	36.04	ug/mL	-10	20	
2,4-Dinitrophenol	40.00	40.97	ug/mL	2	40	
4-Nitrophenol	40.00	34.65	ug/mL	-13	40	m
Dibenzofuran	40.00	36.91	ug/mL	-8	30	
2,4-Dinitrotoluene	40.00	39.63	ug/mL	-1	30	
Diethylphthalate	40.00	35.88	ug/mL	-10	30	
Fluorene	40.00	36.90	ug/mL	-8	30	
4-Chlorophenyl-phenylether	40.00	39.39	ug/mL	-2	40	
4-Nitroaniline	40.00	36.07	ug/mL	-10	30	m
4,6-Dinitro-2-methylphenol	40.00	38.60	ug/mL	-4	30	
N-Nitrosodiphenylamine	40.00	44.06	ug/mL	10	20	
Azobenzene	40.00	31.56	ug/mL	**-21**	30	!v-
4-Bromophenyl-phenylether	40.00	40.44	ug/mL	1	30	
Hexachlorobenzene	40.00	40.78	ug/mL	2	30	

Analyte	Spiked	Quant	Units	%D	Max	Flags
Pentachlorophenol	40.00	41.32	ug/mL	3	20	
Phenanthrene	40.00	37.13	ug/mL	-7	30	
Anthracene	40.00	37.19	ug/mL	-7	30	m
Di-n-butylphthalate	40.00	34.90	ug/mL	-13	30	
Fluoranthene	40.00	37.78	ug/mL	-6	20	
Pyrene	40.00	39.06	ug/mL	-2	30	
Butylbenzylphthalate	40.00	34.80	ug/mL	-13	30	
3,3'-Dichlorobenzidine	60.00	56.36	ug/mL	-6	40	
Benzo(a)anthracene	40.00	39.75	ug/mL	-1	30	
bis(2-Ethylhexyl)phthalate	40.00	35.50	ug/mL	-11	30	
Chrysene	40.00	38.92	ug/mL	-3	30	
Di-n-octylphthalate	40.00	33.63	ug/mL	-16	20	
Benzo(b)fluoranthene	40.00	40.90	ug/mL	2	30	
Benzo(k)fluoranthene	40.00	39.91	ug/mL	0	30	
Benzo(a)pyrene	40.00	44.60	ug/mL	12	20	
Indeno(1,2,3-cd)pyrene	40.00	41.87	ug/mL	5	30	
Dibenz(a,h)anthracene	40.00	40.74	ug/mL	2	30	
Benzo(g,h,i)perylene	40.00	39.40	ug/mL	-2	30	

Analyst: LLH Date: 07/12/12 Reviewer: LW Date: 07/13/12

!=warning -=low bias m=manual integration v=ICV

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 239425 MSBNA Soil
EPA 8270C

Inst : MSBNA06 IDF : 1.0
Seqnum : 552362420002 File : yi702 Time : 07-SEP-2012 16:37
Cal : 552359297001 Caldate : 05-SEP-2012
Standards: S20248

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Min RF	Flags
N-Nitrosodimethylamine	1.4012	1.4070	32.00	32.13	ug/mL	0	30	0.0500	
Phenol	1.7806	1.9956	32.00	35.86	ug/mL	12	20	0.0500	
bis(2-Chloroethyl)ether	1.1942	1.3323	32.00	35.70	ug/mL	12	30	0.0500	
2-Chlorophenol	1.3860	1.5242	32.00	35.19	ug/mL	10	30	0.0500	
1,3-Dichlorobenzene	1.5674	1.7402	32.00	35.53	ug/mL	11	30	0.0500	
1,4-Dichlorobenzene	1.3990	1.4459	32.00	33.07	ug/mL	3	20	0.0500	
Benzyl alcohol	0.8027	0.8932	32.00	35.61	ug/mL	11	30	0.0500	
1,2-Dichlorobenzene	1.3718	1.5713	32.00	36.65	ug/mL	15	30	0.0500	
2-Methylphenol	0.8647	0.9675	32.00	35.80	ug/mL	12	30	0.0500	
bis(2-Chloroisopropyl) ether	2.9544	2.7839	32.00	30.15	ug/mL	-6	30	0.0500	
4-Methylphenol	1.3619	1.3840	32.00	32.52	ug/mL	2	30	0.0500	
N-Nitroso-di-n-propylamine	0.7939	0.8561	32.00	34.51	ug/mL	8	30	0.0500	
Hexachloroethane	0.5876	0.6628	32.00	36.09	ug/mL	13	30	0.0500	
Nitrobenzene	0.3483	0.3726	32.00	34.24	ug/mL	7	30	0.0500	
Isophorone	0.6822	0.7176	32.00	33.66	ug/mL	5	30	0.0500	
2-Nitrophenol	0.2070	0.2338	32.00	36.15	ug/mL	13	20	0.0500	
2,4-Dimethylphenol	0.3193	0.3235	32.00	32.43	ug/mL	1	30	0.0500	
bis(2-Chloroethoxy)methane	0.4185	0.4529	16.00	17.31	ug/mL	8	30	0.0500	
Benzoic acid	0.2639	0.2876	80.00	87.18	ug/mL	9	40	0.0500	
2,4-Dichlorophenol	0.3317	0.3631	32.00	35.02	ug/mL	9	20	0.0500	
1,2,4-Trichlorobenzene	0.3685	0.4004	32.00	34.77	ug/mL	9	30	0.0500	
Naphthalene	0.9804	1.0011	16.00	16.34	ug/mL	2	30	0.0500	
4-Chloroaniline	0.4096	0.4287	32.00	33.49	ug/mL	5	30	0.0500	
Hexachlorobutadiene	0.2211	0.2353	32.00	34.06	ug/mL	6	20	0.0500	
4-Chloro-3-methylphenol	0.2932	0.3185	32.00	34.76	ug/mL	9	20	0.0500	
2-Methylnaphthalene	0.7467	0.8014	16.00	17.17	ug/mL	7	30	0.0500	
Hexachlorocyclopentadiene	0.4190	0.4012	32.00	30.64	ug/mL	-4	40	0.0500	
2,4,6-Trichlorophenol	0.4741	0.5325	32.00	35.94	ug/mL	12	20	0.0500	
2,4,5-Trichlorophenol	0.4836	0.5407	32.00	35.78	ug/mL	12	30	0.0500	
2-Chloronaphthalene	1.2370	1.3311	16.00	17.22	ug/mL	8	30	0.0500	
2-Nitroaniline	0.4251	0.4609	32.00	34.69	ug/mL	8	30	0.0500	
Dimethylphthalate	1.3635	1.5107	32.00	35.45	ug/mL	11	30	0.0500	
2,6-Dinitrotoluene	0.3032	0.3369	32.00	35.56	ug/mL	11	30	0.0500	
Acenaphthylene	1.9390	2.0971	16.00	17.30	ug/mL	8	30	0.0500	
3-Nitroaniline	0.3538	0.3839	32.00	34.72	ug/mL	9	30	0.0500	
Acenaphthene	1.1074	1.2514	16.00	18.08	ug/mL	13	20	0.0500	
2,4-Dinitrophenol	0.1312	0.1413	32.00	37.58	ug/mL	17	40	0.0500	
4-Nitrophenol	0.1622	0.1736	32.00	34.25	ug/mL	7	40	0.0500	
Dibenzofuran	1.5313	1.7563	16.00	18.35	ug/mL	15	30	0.0500	
2,4-Dinitrotoluene	0.3860	0.4489	32.00	37.21	ug/mL	16	30	0.0500	
Diethylphthalate	1.3727	1.5194	16.00	17.71	ug/mL	11	30	0.0500	
Fluorene	1.3133	1.3543	16.00	16.50	ug/mL	3	30	0.0500	
4-Chlorophenyl-phenylether	0.6994	0.7275	16.00	16.64	ug/mL	4	40	0.0500	
4-Nitroaniline	0.3133	0.3408	32.00	34.81	ug/mL	9	30	0.0500	
4,6-Dinitro-2-methylphenol	0.1084	0.1214	32.00	35.85	ug/mL	12	30	0.0500	
N-Nitrosodiphenylamine	0.4871	0.5503	16.00	18.08	ug/mL	13	20	0.0500	
Azobenzene	0.6130	0.6759	16.00	17.64	ug/mL	10	30	0.0500	
4-Bromophenyl-phenylether	0.2439	0.2622	16.00	17.20	ug/mL	7	30	0.0500	

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Min RF	Flags
Hexachlorobenzene	0.2528	0.2639	32.00	33.41	ug/mL	4	30	0.0500	
Pentachlorophenol	0.1701	0.1872	32.00	35.22	ug/mL	10	20	0.0500	
Phenanthrene	0.9695	0.9998	16.00	16.50	ug/mL	3	30	0.0500	
Anthracene	0.9862	1.0447	16.00	16.95	ug/mL	6	30	0.0500	
Di-n-butylphthalate	1.2508	1.3930	16.00	17.82	ug/mL	11	30	0.0500	
Fluoranthene	1.3053	1.4080	16.00	17.26	ug/mL	8	20	0.0500	
Pyrene	1.3954	1.4638	16.00	16.78	ug/mL	5	30	0.0500	
Butylbenzylphthalate	0.6644	0.7282	16.00	17.54	ug/mL	10	30	0.0500	
3,3'-Dichlorobenzidine	0.5096	0.5408	32.00	33.96	ug/mL	6	40	0.0500	
Benzo(a)anthracene	1.1483	1.1796	16.00	16.44	ug/mL	3	30	0.0500	
bis(2-Ethylhexyl)phthalate	0.7993	0.8911	16.00	17.84	ug/mL	11	30	0.0500	
Chrysene	1.0627	1.1357	16.00	17.10	ug/mL	7	30	0.0500	
Di-n-octylphthalate	1.4203	1.5591	16.00	17.56	ug/mL	10	20	0.0500	
Benzo(b)fluoranthene	1.1585	1.1930	16.00	16.48	ug/mL	3	30	0.0500	
Benzo(k)fluoranthene	1.0658	1.0715	16.00	16.09	ug/mL	1	30	0.0500	
Benzo(a)pyrene	1.0121	1.0823	16.00	17.11	ug/mL	7	20	0.0500	
Indeno(1,2,3-cd)pyrene	1.1384	1.2362	16.00	17.37	ug/mL	9	30	0.0500	
Dibenz(a,h)anthracene	0.9075	1.0072	16.00	17.76	ug/mL	11	30	0.0500	
Benzo(g,h,i)perylene	0.9463	1.0615	16.00	17.95	ug/mL	12	30	0.0500	
2-Fluorophenol	1.7193	1.8737	16.00	17.44	ug/mL	9	30	0.0500	
Phenol-d5	2.0074	2.2490	16.00	17.93	ug/mL	12	30	0.0500	
Nitrobenzene-d5	0.4123	0.4393	16.00	17.05	ug/mL	7	30	0.0500	
2-Fluorobiphenyl	1.5502	1.6849	16.00	17.39	ug/mL	9	30	0.0500	
2,4,6-Tribromophenol	0.2482	0.2648	16.00	17.07	ug/mL	7	30	0.0500	
Terphenyl-d14	0.9345	1.0020	16.00	17.16	ug/mL	7	30	0.0500	

LLH 09/07/12 [Aniline]: Picked or reassigned peak.

Analyst: LLH Date: 09/07/12 Reviewer: LW Date: 09/11/12

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 239425 MSBNA Soil
EPA 8270C

Inst : MSBNA07 IDF : 1.0
Seqnum : 562368091002 File : zib02 Time : 11-SEP-2012 15:10
Cal : 562278593001 Caldate : 11-JUL-2012
Standards: S20248

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Min RF	Flags
N-Nitrosodimethylamine	0.7026	0.5377	32.00	24.49	ug/mL	**-23**	30	0.0500	!c-
Phenol	1.5361	1.5941	32.00	33.21	ug/mL	4	20	0.0500	
bis(2-Chloroethyl)ether	1.1980	1.3260	32.00	35.42	ug/mL	11	30	0.0500	
2-Chlorophenol	1.3755	1.4174	32.00	32.97	ug/mL	3	30	0.0500	
1,3-Dichlorobenzene	1.4694	1.5782	32.00	34.37	ug/mL	7	30	0.0500	
1,4-Dichlorobenzene	1.4614	1.5975	32.00	34.98	ug/mL	9	20	0.0500	
Benzyl alcohol	0.8791	0.8928	32.00	32.50	ug/mL	2	30	0.0500	
1,2-Dichlorobenzene	1.4043	1.5052	32.00	34.30	ug/mL	7	30	0.0500	
2-Methylphenol	1.0119	1.0532	32.00	33.30	ug/mL	4	30	0.0500	
bis(2-Chloroisopropyl) ether	1.4905	1.5908	32.00	34.15	ug/mL	7	30	0.0500	
4-Methylphenol	1.4889	1.5067	32.00	32.38	ug/mL	1	30	0.0500	
N-Nitroso-di-n-propylamine	0.8539	0.7319	32.00	27.43	ug/mL	-14	30	0.0500	
Hexachloroethane	0.5483	0.5739	32.00	33.49	ug/mL	5	30	0.0500	
Nitrobenzene	0.3534	0.3515	32.00	31.82	ug/mL	-1	30	0.0500	
Isophorone	0.6438	0.6765	32.00	33.62	ug/mL	5	30	0.0500	
2-Nitrophenol	0.1994	0.2110	32.00	33.85	ug/mL	6	20	0.0500	
2,4-Dimethylphenol	0.3521	0.3085	32.00	28.03	ug/mL	-12	30	0.0500	
bis(2-Chloroethoxy)methane	0.4035	0.4107	16.00	16.29	ug/mL	2	30	0.0500	
Benzoic acid	0.2333	0.1260	80.00	57.09	ug/mL	**-29**	40	0.0500	!c-
2,4-Dichlorophenol	0.3024	0.3139	32.00	33.22	ug/mL	4	20	0.0500	
1,2,4-Trichlorobenzene	0.3277	0.3408	32.00	33.28	ug/mL	4	30	0.0500	
Naphthalene	1.0638	1.1042	16.00	16.61	ug/mL	4	30	0.0500	
4-Chloroaniline	0.4335	0.4582	32.00	33.82	ug/mL	6	30	0.0500	
Hexachlorobutadiene	0.1792	0.1912	32.00	34.15	ug/mL	7	20	0.0500	
4-Chloro-3-methylphenol	0.3057	0.3193	32.00	33.42	ug/mL	4	20	0.0500	
2-Methylnaphthalene	0.7206	0.7559	16.00	16.78	ug/mL	5	30	0.0500	
Hexachlorocyclopentadiene	0.3633	0.2219	32.00	19.54	ug/mL	**-39**	40	0.0500	!c-
2,4,6-Trichlorophenol	0.3692	0.3719	32.00	32.24	ug/mL	1	20	0.0500	
2,4,5-Trichlorophenol	0.3960	0.4042	32.00	32.67	ug/mL	2	30	0.0500	
2-Chloronaphthalene	1.1375	1.1414	16.00	16.06	ug/mL	0	30	0.0500	
2-Nitroaniline	0.3483	0.3184	32.00	29.25	ug/mL	-9	30	0.0500	
Dimethylphthalate	1.2805	1.3382	32.00	33.44	ug/mL	5	30	0.0500	
2,6-Dinitrotoluene	0.3019	0.3293	32.00	34.90	ug/mL	9	30	0.0500	
Acenaphthylene	1.8497	1.8541	16.00	16.04	ug/mL	0	30	0.0500	
3-Nitroaniline	0.3379	0.3532	32.00	33.45	ug/mL	5	30	0.0500	
Acenaphthene	1.1948	1.1162	16.00	14.95	ug/mL	-7	20	0.0500	
2,4-Dinitrophenol	0.1317	0.0880	32.00	29.11	ug/mL	-9	40	0.0500	
4-Nitrophenol	0.1747	0.1348	32.00	24.69	ug/mL	**-23**	40	0.0500	!c-
Dibenzofuran	1.5825	1.6459	16.00	16.64	ug/mL	4	30	0.0500	
2,4-Dinitrotoluene	0.3919	0.4392	32.00	35.86	ug/mL	12	30	0.0500	
Diethylphthalate	1.3232	1.3721	16.00	16.59	ug/mL	4	30	0.0500	
Fluorene	1.3355	1.3733	16.00	16.45	ug/mL	3	30	0.0500	
4-Chlorophenyl-phenylether	0.6441	0.6840	16.00	16.99	ug/mL	6	40	0.0500	
4-Nitroaniline	0.3333	0.3631	32.00	34.86	ug/mL	9	30	0.0500	
4,6-Dinitro-2-methylphenol	0.1096	0.1072	32.00	31.32	ug/mL	-2	30	0.0500	
N-Nitrosodiphenylamine	0.5424	0.5430	16.00	16.02	ug/mL	0	20	0.0500	
Azobenzene	0.7555	0.6792	16.00	14.38	ug/mL	-10	30	0.0500	!v-
4-Bromophenyl-phenylether	0.2132	0.2105	16.00	15.80	ug/mL	-1	30	0.0500	

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Min RF	Flags
Hexachlorobenzene	0.2395	0.2400	32.00	32.07	ug/mL	0	30	0.0500	
Pentachlorophenol	0.1466	0.1254	32.00	27.36	ug/mL	-14	20	0.0500	
Phenanthrene	1.0385	1.0352	16.00	15.95	ug/mL	0	30	0.0500	
Anthracene	1.0493	1.0615	16.00	16.19	ug/mL	1	30	0.0500	
Di-n-butylphthalate	1.2516	1.3193	16.00	16.87	ug/mL	5	30	0.0500	
Fluoranthene	1.1581	1.1928	16.00	16.48	ug/mL	3	20	0.0500	
Pyrene	1.2185	1.1552	16.00	15.17	ug/mL	-5	30	0.0500	
Butylbenzylphthalate	0.6256	0.5695	16.00	14.56	ug/mL	-9	30	0.0500	
3,3'-Dichlorobenzidine	0.4566	0.3834	32.00	26.87	ug/mL	-16	40	0.0500	
Benzo(a)anthracene	1.1116	1.0917	16.00	15.71	ug/mL	-2	30	0.0500	
bis(2-Ethylhexyl)phthalate	0.7989	0.7907	16.00	15.84	ug/mL	-1	30	0.0500	
Chrysene	1.0066	1.0052	16.00	15.98	ug/mL	0	30	0.0500	
Di-n-octylphthalate	1.5519	1.4820	16.00	15.28	ug/mL	-5	20	0.0500	
Benzo(b)fluoranthene	1.1506	1.1135	16.00	15.48	ug/mL	-3	30	0.0500	
Benzo(k)fluoranthene	1.1152	1.1283	16.00	16.19	ug/mL	1	30	0.0500	
Benzo(a)pyrene	0.9829	0.9722	16.00	15.83	ug/mL	-1	20	0.0500	
Indeno(1,2,3-cd)pyrene	1.0978	1.0496	16.00	15.30	ug/mL	-4	30	0.0500	
Dibenz(a,h)anthracene	0.9033	0.9368	16.00	16.59	ug/mL	4	30	0.0500	
Benzo(g,h,i)perylene	0.8906	0.8180	16.00	14.70	ug/mL	-8	30	0.0500	
2-Fluorophenol	1.3054	1.2741	16.00	15.62	ug/mL	-2	30	0.0500	
Phenol-d5	1.5882	1.6290	16.00	16.41	ug/mL	3	30	0.0500	
Nitrobenzene-d5	0.3627	0.3881	16.00	17.12	ug/mL	7	30	0.0500	
2-Fluorobiphenyl	1.4109	1.4767	16.00	16.75	ug/mL	5	30	0.0500	
2,4,6-Tribromophenol	0.1747	0.1899	16.00	17.40	ug/mL	9	30	0.0500	
Terphenyl-d14	0.8720	0.8799	16.00	16.15	ug/mL	1	30	0.0500	

LLH 09/11/12 [Aniline]: Picked or reassigned peak.

Analyst: LLH Date: 09/11/12 Reviewer: LW Date: 09/12/12

!=warning -=low bias c=CCV v=ICV

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 552362420

Date : 09/07/12
Sequence : MSBNA06 yi7

Reference : yi702
Analyzed : 09/07/12 16:37

#	Type	Sample ID	DCBZ14D4	RT	NAPHD8	RT	ACEND10	RT	PHEND10	RT	CHYD12	RT	PERYD12	RT
		CCV+CCV/BS+CCV/LCS+ICV+ICV/BS+ICV/CCV+ICV/LCS+RCCV STD	223394	6.09	743711	7.59	427044	9.74	851335	11.60	784348	15.00	923802	17.89
		LOWER LIMIT	111697	5.59	371856	7.09	213522	9.24	425668	11.10	392174	14.50	461901	17.39
		UPPER LIMIT	446788	6.59	1487422	8.09	854088	10.24	1702670	12.10	1568696	15.50	1847604	18.39
002	CCV		223394	6.09	743711	7.59	427044	9.74	851335	11.60	784348	15.00	923802	17.89
003	BLANK	QC655181	233318	6.10	824019	7.58	470081	9.74	865346	11.59	910488	14.99	944393	17.88
004	LCS	QC655182	200168	6.10	666881	7.59	417745	9.74	836823	11.59	774652	15.00	936262	17.89
005	LCS	QC655182	203762	6.10	655104	7.59	390783	9.74	815860	11.59	764781	14.99	892102	17.88
006	SAMPLE	239416-001	240276	6.10	784968	7.58	471900	9.74	859187	11.59	881248	14.99	916380	17.88
007	SAMPLE	239403-004	1258 *	6.27	800815	7.59	468564	9.74	897350	11.59	915801	14.99	1001884	17.89
008	SAMPLE	239403-002	1127 *	6.27	825366	7.58	474899	9.74	876269	11.59	855206	14.99	874582	17.89
009	SAMPLE	239403-001	1048 *	6.27	764789	7.58	439279	9.74	821593	11.59	804063	14.99	727594	17.89
010	MSS	239403-003	265539	6.09	880978	7.58	497328	9.74	910362	11.59	854845	14.99	763163	17.88
011	SAMPLE	239404-005	1149 *	6.27	833914	7.59	462247	9.74	821011	11.59	744848	15.00	478997	17.90
012	SAMPLE	239404-006	1105 *	6.27	817696	7.58	408686	9.74	725437	11.60	709501	15.00	464592	17.89
013	SAMPLE	239404-008	1090 *	6.27	876534	7.58	460513	9.74	800930	11.59	755320	14.99	526692	17.88
014	SAMPLE	239404-009	229902	6.09	767167	7.58	436220	9.74	758547	11.59	609041	15.01	302155 *	17.91
015	SAMPLE	239404-010	1216 *	6.27	727254	7.58	416933	9.74	791662	11.59	635906	15.01	364209 *	17.90
016	SAMPLE	239404-011	246166	6.09	782436	7.58	387779	9.74	751319	11.60	661197	15.02	361035 *	17.90
017	SAMPLE	239425-003	201621	6.10	788113	7.58	406516	9.74	768002	11.60	709661	15.00	377376 *	17.89
018	SAMPLE	239425-006	218744	6.10	797764	7.58	443293	9.74	829682	11.60	670526	15.00	290387 *	17.88
019	SAMPLE	239410-020	1122 *	6.27	838538	7.58	495656	9.74	932884	11.59	763006	14.99	361359 *	17.86
020	SAMPLE	239410-021	239138	6.10	802341	7.59	459861	9.74	802994	11.59	586397	15.00	265916 *	17.89

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 562368091

Date : 09/11/12
Sequence : MSBNA07 zib

Reference : zib02
Analyzed : 09/11/12 15:10

#	Type	Sample ID	DCBZ14D4	RT	NAPHD8	RT	ACEND10	RT	PHEND10	RT	CHYD12	RT	PERYD12	RT
		CCV+CCV/BS+CCV/LCS+ICV+ICV/BS+ICV/CCV+ICV/LCS+RCCV STD	1463034	5.77	5489639	7.25	3466320	9.40	6421589	11.24	6618175	14.56	6032601	17.17
		LOWER LIMIT	731517	5.27	2744820	6.75	1733160	8.90	3210795	10.74	3309088	14.06	3016301	16.67
		UPPER LIMIT	2926068	6.27	10979278	7.75	6932640	9.90	12843178	11.74	13236350	15.06	12065202	17.67
002	CCV		1463034	5.77	5489639	7.25	3466320	9.40	6421589	11.24	6618175	14.56	6032601	17.17
003	SAMPLE	239416-001	1453180	5.77	5403074	7.25	3263563	9.40	6116810	11.24	6424824	14.56	5970690	17.17
004	SAMPLE	239496-001	1046739	5.78	5168991	7.25	3230358	9.40	6022663	11.24	6311990	14.56	5741109	17.16
005	SAMPLE	239496-002	1235592	5.77	5593113	7.25	3469989	9.40	6455160	11.24	6929244	14.56	6300459	17.17
006	SAMPLE	239496-004	1361474	5.77	5927123	7.25	3721021	9.40	7165350	11.24	7713308	14.56	7408509	17.17
007	SAMPLE	239496-006	1025988	5.78	4344042	7.25	2685439	9.40	5007530	11.24	4780028	14.56	3615635	17.17
008	SAMPLE	239496-007	791492	5.77	4266642	7.25	2604299	9.40	4758825	11.24	4814959	14.56	4218115	17.17
009	SAMPLE	239496-009	1071821	5.77	4363789	7.25	2548798	9.40	4725755	11.24	4691829	14.56	4189271	17.17
010	SAMPLE	239496-003	1364970	5.77	6656251	7.25	4067651	9.40	7775004	11.24	8086960	14.56	6929256	17.17
011	SAMPLE	239496-005	1263967	5.77	5002153	7.25	3305665	9.40	6275290	11.24	6148162	14.56	5296819	17.17
012	SAMPLE	239496-008	1315331	5.77	5706649	7.25	3397998	9.40	6398340	11.24	6235817	14.56	4687386	17.17
013	SAMPLE	239496-010	1393560	5.78	5454186	7.25	3569701	9.40	6753645	11.24	6728029	14.56	5053572	17.17
014	SAMPLE	239425-003	1448810	5.78	5498339	7.25	3470567	9.40	6438738	11.24	5365486	14.56	2804600 *	17.16
015	SAMPLE	239425-006	1433427	5.78	5839981	7.25	3647671	9.40	6852490	11.24	4628357	14.56	1936567 *	17.16

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 552359297

Instrument : MSBNA06 Begun : 09/05/12 12:17
Method : EPA 8270C SOP Version : bna_rv.9

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	yi501	TUN	DFTPP/PEM			09/05/12 12:17	1.0	1	
002	yi502	ICAL	ICAL			09/05/12 12:37	1.0	2	
003	yi503	ICAL	ICAL			09/05/12 13:13	1.0	3	
004	yi504	ICAL	ICAL			09/05/12 13:51	1.0	4	
005	yi505	ICAL	ICAL			09/05/12 14:31	1.0	5	
006	yi506	ICAL	ICAL			09/05/12 15:10	1.0	6	
007	yi507	ICAL	ICAL			09/05/12 15:48	1.0	7	
008	yi508	ICAL	ICAL			09/05/12 16:24	1.0	8	
009	yi509	ICAL	ICAL			09/05/12 17:01	1.0	9	
010	yi510	ICAL	ICAL			09/05/12 17:41	1.0	10	
011	yi511	ICV	ICV			09/05/12 18:20	1.0	11	
012	yi512	ICV	ICV			09/05/12 19:02	1.0	12 13	

KMH 09/06/12 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 12.

Standards used: 1=S20011 2=S20236 3=S20238 4=S20239 5=S20248 6=S20249 7=S20250 8=S20244 9=S20245 10=S20246 11=S19910 12=S19898 13=S18805

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 552362420

Instrument : MSBNA06 Begun : 09/07/12 16:20
Method : EPA 8270C SOP Version : bna_rv.9

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	yi701	TUN	DFTPP/PEM			09/07/12 16:20	1.0	1	
002	yi702	CCV				09/07/12 16:37	1.0	2	
003	yi703	BLANK	QC655181	Soil	190266	09/07/12 19:18	1.0	3	
004	yi704	LCS	QC655182	Soil	190266	09/07/12 19:55	1.0	3	1:MEPH4=50
005	yi705	LCS	QC655182	Soil	190266	09/07/12 20:33	2.0	3	
006	yi706	SAMPLE	239416-001	Soil	190266	09/07/12 21:14	1.0	3	
007	yi707	SAMPLE	239403-004	Soil	190266	09/07/12 21:54	1.0	3	2:PHENOLD5=4400
008	yi708	SAMPLE	239403-002	Soil	190266	09/07/12 22:34	1.0	3	3:PHENOLD5=4900
009	yi709	SAMPLE	239403-001	Soil	190266	09/07/12 23:15	2.0	3	4:PHENOLD5=2900
010	yi710	MSS	239403-003	Soil	190266	09/07/12 23:54	20.0	3	
011	yi711	SAMPLE	239404-005	Soil	190266	09/08/12 00:31	1.0	3	3:PHENOLD5=5100
012	yi712	SAMPLE	239404-006	Soil	190266	09/08/12 01:09	3.0	3	3:PHENOLD5=2000
013	yi713	SAMPLE	239404-008	Soil	190266	09/08/12 01:45	10.0	3	2:PHENOLD5=370
014	yi714	SAMPLE	239404-009	Soil	190266	09/08/12 02:26	2.0	3	
015	yi715	SAMPLE	239404-010	Soil	190266	09/08/12 03:05	10.0	3	6:PHENOL=2500
016	yi716	SAMPLE	239404-011	Soil	190266	09/08/12 03:46	10.0	3	
017	yi717	SAMPLE	239425-003	Soil	190266	09/08/12 04:24	3.0	3	<<t
018	yi718	SAMPLE	239425-006	Soil	190266	09/08/12 05:02	1.0	3	<<t
019	yi719	SAMPLE	239410-020	Soil	190266	09/08/12 05:38	25.0	3	<<t , 2:PH2F=140
020	yi720	SAMPLE	239410-021	Soil	190266	09/08/12 06:15	1.0	3	<<t

LLH 09/10/12 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 001 through 020.

Standards used: 1=S20011 2=S20248 3=S18805

Flags used: <<t=out of clock

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 562278593

Instrument : MSBNA07 Begun : 07/11/12 11:13
Method : EPA 8270C SOP Version : bna_rv.9

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	zgb01	TUN	DFTPP/PEM			07/11/12 11:13	1.0	1	
002	zgb02	ICAL	ICAL 1			07/11/12 11:46	1.0	2	
003	zgb03	ICAL	ICAL 2			07/11/12 12:19	1.0	3	
004	zgb04	ICAL	ICAL 3			07/11/12 12:54	1.0	4	
005	zgb05	ICAL	ICAL 4			07/11/12 13:28	1.0	5	
006	zgb06	ICAL	ICAL 5			07/11/12 14:02	1.0	6	
007	zgb07	ICAL	ICAL 6			07/11/12 14:36	1.0	7	
008	zgb08	ICAL	ICAL 7			07/11/12 15:11	1.0	8	
009	zgb09	ICAL	ICAL 8			07/11/12 15:45	1.0	9	
010	zgb10	ICAL	ICAL 9			07/11/12 16:18	1.0	10	
011	zgb11	ICV	ICV			07/11/12 16:53	1.0	11	

LLH 07/12/12 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 001 through 011.

Standards used: 1=S20011 2=S20236 3=S20238 4=S20239 5=S20248 6=S20249 7=S20250 8=S20244 9=S20245 10=S20246 11=S19910

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 562280008

Instrument : MSBNA07 Begun : 07/12/12 10:48
Method : EPA 8270C SOP Version : bna_rv.9

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	zgc01	TUN	DFTPP/PEM			07/12/12 10:48	1.0	1	
002	zgc02	ICV/CCV	ICV			07/12/12 11:05	1.0	2	
003	zgc03	LOD	220566-066	Water	188272	07/12/12 11:51	1.0	3	
004	zgc04	LOD	224319-062	Soil	188424	07/12/12 15:21	1.0	3	

LLH 07/12/12 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 001 through 004.

Standards used: 1=S20011 2=S19910 3=S18805

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 562368091

Instrument : MSBNA07 Begun : 09/11/12 14:51
Method : EPA 8270C SOP Version : bna_rv.9

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used
001	zib01	TUN	DFTPP/PEM			09/11/12 14:51	1.0	1
002	zib02	CCV				09/11/12 15:10	1.0	2
003	zib03	SAMPLE	239416-001	Soil	190377	09/11/12 15:46	1.0	3
004	zib04	SAMPLE	239496-001	Soil	190377	09/11/12 16:21	1.0	3
005	zib05	SAMPLE	239496-002	Soil	190377	09/11/12 16:56	1.0	3
006	zib06	SAMPLE	239496-004	Soil	190377	09/11/12 17:31	1.0	3
007	zib07	SAMPLE	239496-006	Soil	190377	09/11/12 18:06	1.0	3
008	zib08	SAMPLE	239496-007	Soil	190377	09/11/12 18:40	1.0	3
009	zib09	SAMPLE	239496-009	Soil	190377	09/11/12 19:15	1.0	3
010	zib10	SAMPLE	239496-003	Soil	190377	09/11/12 19:51	1.0	3
011	zib11	SAMPLE	239496-005	Soil	190377	09/11/12 20:26	1.0	3
012	zib12	SAMPLE	239496-008	Soil	190377	09/11/12 21:02	1.0	3
013	zib13	SAMPLE	239496-010	Soil	190377	09/11/12 21:38	1.0	3
014	zib14	SAMPLE	239425-003	Soil	190266	09/11/12 22:13	3.0	3
015	zib15	SAMPLE	239425-006	Soil	190266	09/11/12 22:50	1.0	3

KMH 09/12/12 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 15.

Standards used: 1=S20011 2=S20248 3=S18805

SAMPLE PREPARATION SUMMARY

Batch # : 190266
Started By : ICK
Method : 3550B
Spike #1 ID : S20014

Prep Date : 07-SEP-2012 11:15
SOP Version : 8270_3550_rv11
Spike #2 ID : S20576

Analysis : 8270
Finished By : ICK
Units : g

Sample	Stype	Matrix	Initial	Final	Clean DF	Prep DF	pH	Sp 1 Vol	Sp 2 Vol	Sp 3 Vol	Clean Method	Analysis	Comments
239403-001		Soil	30.15	1	1	0.03317		.4				8270	
239403-002		Soil	30.35	1	1	0.03295		.4				8270	
239403-003		Soil	30.24	1	1	0.03307		.4				8270	MSS
239403-004		Soil	30.14	1	1	0.03318		.4				8270	
239404-005		Soil	30.31	1	1	0.03299		.4				8270	
239404-006		Soil	30.06	1	1	0.03327		.4				8270	
239404-008		Soil	30.08	2	1	0.06649		.4				8270	Wouldn't Concentrate
239404-009		Soil	30	1	1	0.03333		.4				8270	
239404-010		Soil	30.12	2	1	0.0664		.4				8270	See comment 1 below
239404-011		Soil	30.41	2	1	0.06577		.4				8270	See comment 1 below
239410-011		Soil	30	1	1	0.03333		.4				8270	
239410-013		Soil	30.3	1	1	0.033		.4				8270	
239410-014		Soil	30.21	1	1	0.0331		.4				8270	
239410-015		Soil	30.06	1	1	0.03327		.4				8270	
239410-016		Soil	30.01	1	1	0.03332		.4				8270	
239410-020		Soil	30.17	2	1	0.06629		.4				8270	Wouldn't Concentrate
239410-021		Soil	30.07	1	1	0.03326		.4				8270	
239416-001		Soil	30.23	1	1	0.03308		.4				(rebatched)	
239425-003		Soil	30.3	1	1	0.033		.4				8270	
239425-006		Soil	30.3	1	1	0.033		.4				8270	
QC655181	BLANK	Soil	30.03	1	1	0.0333		.4				8270	
QC655182	LCS	Soil	30.08	1	1	0.03324		.4	1			8270	
QC655183	MS	Soil	30.09	1	1	0.03323		.4	1			8270	
QC655184	MSD	Soil	30.42	1	1	0.03287		.4	1			8270	

Comment 1: Heavy Sediment; Wouldn't Concentrate

LLH 09/10/12 : Matrix spikes QC655183,QC655184 (batch 190266) were not reported because the parent sample required a dilution that would have diluted out the spikes.

Analyst: LLH Date: 09/10/12 Reviewer: LW Date: 09/11/12

BNA Soil Prep Log

Curtis & Tompkins, Ltd.

Page: 75 **BK 3326**

LIMS Batch No: 190266
LIMS Analysis 8270
Date Extracted: 9/7/12

Extraction Method:
☒ EPA 3550b Sonication
☐ Other _____

Cleanup Method (if necessary):
☐ EPA 3640a GPC
☐ Other _____

Sample #	Container ID	Weight of Sample (g)	Final Volume (mL)	Cleanup (x if needed)	Comments
239403-001	A	30.15	☒ 1.0 ☐		
2		30.35	☒ 1.0 ☐		
3		30.24	☒ 1.0 ☐		MSS
4		30.14	☒ 1.0 ☐		
239404-005		30.31	☒ 1.0 ☐		
6		30.06	☒ 1.0 ☐		
8	B	30.08	☐ 1.0 ☒ 2.0		Wouldn't conc.
9		30.00	☒ 1.0 ☐		
10		30.12	☐ 1.0 ☒ 2.0		Heavy Sediment, Wouldn't conc.
11	A	30.41	☐ 1.0 ☒ 2.0		
239410-011	B	30.00	☒ 1.0 ☐		
13		30.30	☒ 1.0 ☐		
14		30.21	☒ 1.0 ☐		
15	A	30.06	☒ 1.0 ☐		
16		30.01	☒ 1.0 ☐		
20	F	30.17	☐ 1.0 ☒ 2.0		Wouldn't Conc.
21	B	30.07	☒ 1.0 ☐		
239416-001		30.23	☒ 1.0 ☐		
239425-003		30.30	☒ 1.0 ☐		
6		30.30	☒ 1.0 ☐		
MB QC655181	N/A	30.03	☒ 1.0 ☐		
LCS 2		30.08	☒ 1.0 ☐		
MS 3		30.09	☒ 1.0 ☐		
MSD 4		30.42	☒ 1.0 ☐		
		TFB 9/10/12			

	Mfg & Lot # / LIMS # / Time	Date/Initials
Baked, CH_2Cl_2-rinsed granular Na_2SO_4 used for QC & to dry samples	EMVB15H	KK 9/7/12
0.4 mL of surrogate solution was added to all samples	S20014A	
1.0 mL of matrix spiking solution was added to all spikes	S20576C	
≥100mL 1:1 CH_2Cl_2:Acetone was added to all: CH_2Cl_2	EM52160	
Acetone	EM52038	
Solvent was added at (time)	11:15	
☒ sonicated 3 times w/ ≥100mL ☐ soxhlet extractors on at:	✓	
soxhlets off at:	N/A	
Extracts filtered through baked, CH_2Cl_2-rinsed powdered Na_2SO_4	EM30416024	
Concentrated to final volume at temperature (degrees C)	70	
Relinquished to BNA department	✓	

9/7/12
Extraction Chemist / Date

Continued from page _____
Continued on page 1

TFB 9/10/12
Reviewed by / Date

TITLE PROJECT DATE

Continued from page

Sample ID	Weight(g)	Analysis	Batch #	Comments
239403-001A	30.15	8270	1902666	
2	30.35			
3	30.24			MSS
4	30.14			
239404-005	30.31			
6	30.06			
8B	30.08			
9	30.00			
10	30.12			
11A	30.41			
239410-011B	30.00			Rocky
13	30.30			
14	30.21			Rocky
15A	30.06			
16	30.01			
20F	30.17			
21B	30.07			
239416-001B	30.23			Wet
239425-003B	30.30			Rocky
6	30.30			
MB	30.03			EMVB15H
LCS	30.08			
MS	30.09			239403-003A
MSD	30.42			

ICK 9/7/12

Continued to page

SIGNATURE DATE

DISCLOSED TO AND UNDERSTOOD BY DATE

PROPRIETARY INFORMATION

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 239425
ANALYTICAL REPORT
PCBs

Tetra Tech EMI 1999 Harrison Street Oakland, CA 94612	Project : 103S094417 Location : B445 Landscape Level : IV

Sample ID	Lab ID
RFS-B445-DU3-1	239425-003
RFS-B484-SP	239425-006

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: _____ Date: 09/14/2012

Mike J. Dahlquist
Project Manager
(510) 486-0900

NELAP # 01107CA

Curtis & Tompkins, Ltd.

CASE NARRATIVE
PCBS (EPA 8082)

Laboratory number:	**239425**
Client:	**Tetra Tech EMI**
Project:	**103S094417**
Location:	**B445 Landscape**
Request Date:	**09/06/12**
Samples Received:	**09/06/12**

This data package contains sample and QC results for two soil samples, requested for the above referenced project on 09/06/12. See attached cooler receipt form for any sample receipt problems or discrepancies.

PCBs (EPA 8082):

All samples underwent sulfuric acid cleanup using EPA Method 3665A.

All samples underwent sulfur cleanup using the copper option in EPA Method 3660B.

High responses were observed for Aroclor-1016 and Aroclor-1260 in the CCV analyzed 09/10/12 21:27.

No other analytical problems were encountered.

Chain of Custody

239425

Tetra Tech EM Inc.
Oakland Office

1999 Harrison Street, Suite 500
Oakland, CA 94612
510.302.6300 Phone
510.433.0830 Fax

Chain of Custody Record No. 9070

Lab PO#: 120AK13 to follow

Lab: CAT

Project name: B445 Landscape + B48 Stockpile

TtEMI technical contact: Sara Woolley

Field samplers: Quinn Johnson, Mark Duffy

Project (CTO) number: 1035094417

TtEMI project manager: Jason Bradersen

Field samplers' signatures: Sara Woolley

Preservative Added

No./Container Types / Analysis Required

	Sample ID	Point ID/Depth	Date	Time	Matrix	MS / MSD	40 ml VOA	1 liter Amber	500 ml Poly	Sleeve	Glass Jar	250 ml Poly	Encore	VOA	SVOA	Pest	Metals Hg	TPH Purgeables	TPH Extractables *	PCB
+1	RFS-B445-DU1-2		9/6/12	10:15	soil						1						X			
+2	RFS-B445-DU1-3			11:00							1						X			
X3	RFS-B445-DU3-1			11:45							2			X			X		X	X
X4	RFS-B445-DU3-2			12:35							1						X			
X5	RFS-B445-DU3-3			14:20							1						X			
++6	RFS-B484-SP			15:40							2			X			X		X	X

	Name (print)	Company Name	Date	Time
Relinquished by:	Sara Woolley	TtEMI	9/6/12	17:05
Received by:	Mike Dahlquist	CAT	9/6	1705
Relinquished by:	Adnan Ahmad	CAT	9/6/12	2200
Received by:				

Turnaround time/remarks:

* with silica gel clean up
+ 24 hour TAT
X 24 hour TAT for Hg only, 5 day TAT for all others
++ 5 day TAT

Fed Ex #:

WHITE-Laboratory Copy YELLOW-Sample Tracker PINK-File Copy

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 239425 Date Received 9/6/12 Number of coolers 1
Client Tetra Tech Project B445 Landscape

Date Opened 9/6/12 By (print) AA (sign) [signature]
Date Logged in ↓ By (print) ↓ (sign) ↓

1. Did cooler come with a shipping slip (airbill, etc) _____ YES (NO)
   Shipping info _____

2A. Were custody seals present? .... ☐ YES (circle) on cooler on samples ☑ NO
   How many _____ Name _____ Date _____
2B. Were custody seals intact upon arrival? _____ YES NO (N/A)
3. Were custody papers dry and intact when received? _____ (YES) NO
4. Were custody papers filled out properly (ink, signed, etc)? _____ (YES) NO
5. Is the project identifiable from custody papers? (If so fill out top of form) ___ (YES) NO
6. Indicate the packing in cooler: (if other, describe) _____

☐ Bubble Wrap ☐ Foam blocks ☐ Bags ☐ None
☐ Cloth material ☐ Cardboard ☐ Styrofoam ☐ Paper towels

7. Temperature documentation: * Notify PM if temperature exceeds 6°C

Type of ice used: ☑ Wet ☐ Blue/Gel ☐ None Temp(°C) 6

☑ Samples Received on ice & cold without a temperature blank; temp. taken with IR gun

☐ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? _____ YES (NO)
   If YES, what time were they transferred to freezer? _____
9. Did all bottles arrive unbroken/unopened? _____ (YES) NO
10. Are there any missing / extra samples? _____ YES (NO)
11. Are samples in the appropriate containers for indicated tests? _____ (YES) NO
12. Are sample labels present, in good condition and complete? _____ (YES) NO
13. Do the sample labels agree with custody papers? _____ (YES) NO
14. Was sufficient amount of sample sent for tests requested? _____ (YES) NO
15. Are the samples appropriately preserved? _____ YES NO (N/A)
16. Did you check preservatives for all bottles for each sample? _____ YES NO (N/A)
17. Did you document your preservative check? _____ YES NO (N/A)
18. Did you change the hold time in LIMS for unpreserved VOAs? _____ YES NO (N/A)
19. Did you change the hold time in LIMS for preserved terracores? _____ YES NO (N/A)
20. Are bubbles > 6mm absent in VOA samples? _____ YES NO (N/A)
21. Was the client contacted concerning this sample delivery? _____ YES (NO)
   If YES, Who was called? _____ By _____ Date: _____

COMMENTS

_____
_____
_____
_____
_____
_____

Rev 10, 11/11

Results & QC Summary

Curtis & Tompkins, Ltd.

Polychlorinated Biphenyls (PCBs)

Lab #:	239425	Location:	B445 Landscape
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S094417	Analysis:	EPA 8082
Field ID:	RFS-B445-DU3-1	Batch#:	190332
Lab ID:	239425-003	Sampled:	09/06/12
Matrix:	Soil	Received:	09/06/12
Units:	ug/Kg	Prepared:	09/10/12
Basis:	dry	Analyzed:	09/13/12
Diln Fac:	1.000		

Moisture: 5%

Analyte	Result	RL	MDL
Aroclor-1016	ND	13	3.1
Aroclor-1221	ND	25	2.1
Aroclor-1232	ND	13	1.6
Aroclor-1242	ND	13	0.84
Aroclor-1248	ND	13	2.3
Aroclor-1254	ND	13	1.7
Aroclor-1260	ND	13	1.0

Surrogate	%REC	Limits
TCMX	104	56-143
Decachlorobiphenyl	94	33-135

ND= Not Detected at or above MDL
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Polychlorinated Biphenyls (PCBs)

Lab #:	239425	Location:	B445 Landscape
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S094417	Analysis:	EPA 8082
Field ID:	RFS-B484-SP	Batch#:	190332
Lab ID:	239425-006	Sampled:	09/06/12
Matrix:	Soil	Received:	09/06/12
Units:	ug/Kg	Prepared:	09/10/12
Basis:	dry	Analyzed:	09/13/12
Diln Fac:	1.000		

Moisture: 12%

Analyte	Result	RL	MDL
Aroclor-1016	ND	14	3.3
Aroclor-1221	ND	27	2.3
Aroclor-1232	ND	14	1.7
Aroclor-1242	ND	14	0.90
Aroclor-1248	ND	14	2.4
Aroclor-1254	33	14	1.8
Aroclor-1260	ND	14	1.1

Surrogate	%REC	Limits
TCMX	101	56-143
Decachlorobiphenyl	87	33-135

ND= Not Detected at or above MDL
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Polychlorinated Biphenyls (PCBs)

Lab #:	239425	Location:	B445 Landscape
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S094417	Analysis:	EPA 8082
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC655478	Batch#:	190332
Matrix:	Soil	Prepared:	09/10/12
Units:	ug/Kg	Analyzed:	09/10/12

Analyte	Result	RL	MDL
Aroclor-1016	ND	12	3.0
Aroclor-1221	ND	24	2.0
Aroclor-1232	ND	12	1.5
Aroclor-1242	ND	12	0.81
Aroclor-1248	ND	12	2.2
Aroclor-1254	ND	12	1.6
Aroclor-1260	ND	12	0.98

Surrogate	%REC	Limits
TCMX	108	56-143
Decachlorobiphenyl	106	33-135

ND= Not Detected at or above MDL
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Polychlorinated Biphenyls (PCBs)

Lab #:	239425	Location:	B445 Landscape
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S094417	Analysis:	EPA 8082
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC655479	Batch#:	190332
Matrix:	Soil	Prepared:	09/10/12
Units:	ug/Kg	Analyzed:	09/12/12

Analyte	Spiked	Result	%REC	Limits
Aroclor-1016	168.8	173.1	103	59-139
Aroclor-1260	168.8	140.0	83	56-141

Surrogate	%REC	Limits
TCMX	106	56-143
Decachlorobiphenyl	125	33-135

Curtis & Tompkins, Ltd.

Batch QC Report

Polychlorinated Biphenyls (PCBs)

Lab #:	239425	Location:	B445 Landscape
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S094417	Analysis:	EPA 8082
Field ID:	ZZZZZZZZZZ	Batch#:	190332
MSS Lab ID:	239410-003	Sampled:	09/06/12
Matrix:	Soil	Received:	09/06/12
Units:	ug/Kg	Prepared:	09/10/12
Basis:	dry	Analyzed:	09/11/12
Diln Fac:	1.000		

Type: MS Moisture: 7%
Lab ID: QC655480

Analyte	MSS Result	Spiked	Result	%REC	Limits
Aroclor-1016	<3.147	177.1	194.4	110	47-158
Aroclor-1260	131.7	177.1	302.1	96	35-160

Surrogate	%REC	Limits
TCMX	103	56-143
Decachlorobiphenyl	70	33-135

Type: MSD Moisture: 7%
Lab ID: QC655481

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Aroclor-1016	180.8	184.4	102	47-158	7	43
Aroclor-1260	180.8	309.1	98	35-160	1	42

Surrogate	%REC	Limits
TCMX	99	56-143
Decachlorobiphenyl	71	33-135

RPD= Relative Percent Difference

Confirmation Report for 239425 PCBS Soil
Curtis & Tompkins Laboratories

Units: ug/Kg

Lab ID	Client ID	Analyte	Result	Confirmation	RPD	%D
239425-006	RFS-B484-SP	Aroclor-1254	33.35	28.97	14	-13

Curtis & Tompkins, Ltd.

CASE NARRATIVE
METALS (EPA 6010B AND EPA 7471A)

Laboratory number:	**239425**
Client:	**Tetra Tech EMI**
Project:	**103S094417**
Location:	**B445 Landscape**
Request Date:	**09/06/12**
Samples Received:	**09/06/12**

This data package contains sample and QC results for six soil samples, requested for the above referenced project on 09/06/12. See attached cooler receipt form for any sample receipt problems or discrepancies.

Metals (EPA 6010B and EPA 7471A):
High recoveries were observed for barium and cobalt in the MS of RFS-B445-DUI-2 (lab # 239425-001); the BS/BSD were within limits, and the associated RPDs were within limits.

Response exceeding the instrument's linear range was observed for copper in the MSD of RFS-B445-DUI-2 (lab # 239425-001).

Chromium and zinc were detected between the MDL and the RL in the method blank for batch 190267; these analytes were detected in samples at a level at least 10 times that of the blank.

No other analytical problems were encountered.

Chain of Custody

239425

Tetra Tech EM Inc.
Oakland Office

1999 Harrison Street, Suite 500
Oakland, CA 94612
510.302.6300 Phone
510.433.0830 Fax

Chain of Custody Record No. 9070

Lab PO#: 120AK13 to follow

Lab: CAT

Project name: B445 Landscape + B48 Stockpile

TtEMI technical contact: Sara Woolley

Field samplers: Quinn Johnson, Mark Duffy

Project (CTO) number: 1035094417

TtEMI project manager: Jason Bradessen

Field samplers' signatures: Sara Woolley

Preservative Added: Hg*

No./Container Types: 40 ml VOA; 1 liter Amber; 500 ml Poly; Sleeve; Glass Jar; 250 ml Poly; Encore

Analysis Required: VOA; SVOA; Pest; Metals (3/Hg); TPH Purgeables; TPH Extractables; PCB

	Sample ID	Point ID/Depth	Date	Time	Matrix	MS / MSD	40 ml VOA	1 liter Amber	500 ml Poly	Sleeve	Glass Jar	250 ml Poly	Encore	VOA	SVOA	Pest	Metals	TPH Purgeables	TPH Extractables	PCB
+1	RFS-B445-DU1-2		9/6/12	10:15	soil						1						X			
+2	RFS-B445-DU1-3			11:00							1						X			
X3	RFS-B445-DU3-1			11:45							2			X			X		X	X
X4	RFS-B445-DU3-2			12:35							1						X			
X5	RFS-B445-DU3-3			14:20							1						X			
++6	RFS-B484-SP			15:40							2			X			X		X	X

	Name (print)	Company Name	Date	Time
Relinquished by:	Sara Woolley	TtEMI	9/6/12	17:05
Received by:	Mike Dahlquist	CAT	9/6	1705
Relinquished by:	Adnan Ahmad	CAT	9/6/12	2200
Received by:				

Turnaround time/remarks:
* with silica gel clean up
+ 24 hour TAT
X 24 hour TAT for Hg only, 5 day TAT for all others
++ 5 day TAT

Fed Ex #:

WHITE-Laboratory Copy YELLOW-Sample Tracker PINK-File Copy

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 239425 Date Received 9/6/12 Number of coolers 1
Client Tetra Tech Project B445 Landscape

Date Opened 9/6/12 By (print) AA (sign) [signature]
Date Logged in ↓ By (print) ↓ (sign) ↓

1. Did cooler come with a shipping slip (airbill, etc) _____ YES (NO)
   Shipping info _____

2A. Were custody seals present? .... ☐ YES (circle) on cooler on samples ☑ NO
   How many _____ Name _____ Date _____
2B. Were custody seals intact upon arrival? _____ YES NO (N/A)
3. Were custody papers dry and intact when received? _____ (YES) NO
4. Were custody papers filled out properly (ink, signed, etc)? _____ (YES) NO
5. Is the project identifiable from custody papers? (If so fill out top of form) ___ (YES) NO
6. Indicate the packing in cooler: (if other, describe) _____

☐ Bubble Wrap ☐ Foam blocks ☐ Bags ☐ None
☐ Cloth material ☐ Cardboard ☐ Styrofoam ☐ Paper towels

7. Temperature documentation: * Notify PM if temperature exceeds 6°C

Type of ice used: ☑ Wet ☐ Blue/Gel ☐ None Temp(°C) 6

☑ Samples Received on ice & cold without a temperature blank; temp. taken with IR gun

☐ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? _____ YES (NO)
   If YES, what time were they transferred to freezer? _____
9. Did all bottles arrive unbroken/unopened? _____ (YES) NO
10. Are there any missing / extra samples? _____ YES (NO)
11. Are samples in the appropriate containers for indicated tests? _____ (YES) NO
12. Are sample labels present, in good condition and complete? _____ (YES) NO
13. Do the sample labels agree with custody papers? _____ (YES) NO
14. Was sufficient amount of sample sent for tests requested? _____ (YES) NO
15. Are the samples appropriately preserved? _____ YES NO (N/A)
16. Did you check preservatives for all bottles for each sample? _____ YES NO (N/A)
17. Did you document your preservative check? _____ YES NO (N/A)
18. Did you change the hold time in LIMS for unpreserved VOAs? _____ YES NO (N/A)
19. Did you change the hold time in LIMS for preserved terracores? _____ YES NO (N/A)
20. Are bubbles > 6mm absent in VOA samples? _____ YES NO (N/A)
21. Was the client contacted concerning this sample delivery? _____ YES (NO)
   If YES, Who was called? _____ By _____ Date: _____

COMMENTS

_____
_____
_____
_____
_____
_____

Rev 10, 11/11

Results & QC Summary

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	239425	Project#:	103S094417
Client:	Tetra Tech EMI	Location:	B445 Landscape
Field ID:	RFS-B445-DUI-2	Sampled:	09/06/12
Lab ID:	239425-001	Received:	09/06/12
Matrix:	Soil	Prepared:	09/07/12
Units:	mg/Kg	Analyzed:	09/07/12
Basis:	dry		

Moisture: 5%

Analyte	Result	RL	MDL	Diln Fac	Batch#	Prep	Analysis
Antimony	ND	0.51	0.16	1.000	190267	EPA 3050B	EPA 6010B
Arsenic	6.8	0.26	0.085	1.000	190267	EPA 3050B	EPA 6010B
Barium	150	0.26	0.050	1.000	190267	EPA 3050B	EPA 6010B
Beryllium	0.45	0.10	0.019	1.000	190267	EPA 3050B	EPA 6010B
Cadmium	0.37	0.26	0.016	1.000	190267	EPA 3050B	EPA 6010B
Chromium	42	0.26	0.021	1.000	190267	EPA 3050B	EPA 6010B
Cobalt	12	0.26	0.020	1.000	190267	EPA 3050B	EPA 6010B
Copper	440	0.26	0.088	1.000	190267	EPA 3050B	EPA 6010B
Lead	40	0.26	0.075	1.000	190267	EPA 3050B	EPA 6010B
Mercury	17	0.34	0.11	20.00	190272	METHOD	EPA 7471A
Molybdenum	ND	0.26	0.057	1.000	190267	EPA 3050B	EPA 6010B
Nickel	43	0.26	0.069	1.000	190267	EPA 3050B	EPA 6010B
Selenium	1.3	0.51	0.15	1.000	190267	EPA 3050B	EPA 6010B
Silver	0.16 J	0.26	0.076	1.000	190267	EPA 3050B	EPA 6010B
Thallium	ND	0.51	0.17	1.000	190267	EPA 3050B	EPA 6010B
Vanadium	42	0.26	0.025	1.000	190267	EPA 3050B	EPA 6010B
Zinc	110	1.0	0.10	1.000	190267	EPA 3050B	EPA 6010B

J= Estimated value
ND= Not Detected at or above MDL
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	239425	Project#:	103S094417
Client:	Tetra Tech EMI	Location:	B445 Landscape
Field ID:	RFS-B445-DUI-3	Sampled:	09/06/12
Lab ID:	239425-002	Received:	09/06/12
Matrix:	Soil	Prepared:	09/07/12
Units:	mg/Kg	Analyzed:	09/07/12
Basis:	dry		

Moisture: 6%

Analyte	Result	RL	MDL	Diln Fac	Batch#	Prep	Analysis
Antimony	ND	0.52	0.17	1.000	190267	EPA 3050B	EPA 6010B
Arsenic	6.3	0.26	0.087	1.000	190267	EPA 3050B	EPA 6010B
Barium	160	0.26	0.051	1.000	190267	EPA 3050B	EPA 6010B
Beryllium	0.44	0.10	0.020	1.000	190267	EPA 3050B	EPA 6010B
Cadmium	0.39	0.26	0.017	1.000	190267	EPA 3050B	EPA 6010B
Chromium	37	0.26	0.022	1.000	190267	EPA 3050B	EPA 6010B
Cobalt	10	0.26	0.020	1.000	190267	EPA 3050B	EPA 6010B
Copper	470	0.27	0.090	1.000	190267	EPA 3050B	EPA 6010B
Lead	40	0.26	0.076	1.000	190267	EPA 3050B	EPA 6010B
Mercury	14	1.7	0.55	100.0	190272	METHOD	EPA 7471A
Molybdenum	ND	0.26	0.059	1.000	190267	EPA 3050B	EPA 6010B
Nickel	40	0.26	0.071	1.000	190267	EPA 3050B	EPA 6010B
Selenium	0.49 J	0.52	0.15	1.000	190267	EPA 3050B	EPA 6010B
Silver	0.15 J	0.26	0.078	1.000	190267	EPA 3050B	EPA 6010B
Thallium	ND	0.52	0.17	1.000	190267	EPA 3050B	EPA 6010B
Vanadium	37	0.26	0.026	1.000	190267	EPA 3050B	EPA 6010B
Zinc	99	1.0	0.10	1.000	190267	EPA 3050B	EPA 6010B

J= Estimated value
ND= Not Detected at or above MDL
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	239425	Project#:	103S094417
Client:	Tetra Tech EMI	Location:	B445 Landscape
Field ID:	RFS-B445-DU3-1	Sampled:	09/06/12
Lab ID:	239425-003	Received:	09/06/12
Matrix:	Soil	Prepared:	09/07/12
Units:	mg/Kg	Analyzed:	09/07/12
Basis:	dry		

Moisture: 5%

Analyte	Result	RL	MDL	Diln Fac	Batch#	Prep	Analysis
Antimony	ND	0.53	0.17	1.000	190267	EPA 3050B	EPA 6010B
Arsenic	5.6	0.27	0.088	1.000	190267	EPA 3050B	EPA 6010B
Barium	160	0.27	0.052	1.000	190267	EPA 3050B	EPA 6010B
Beryllium	0.59	0.11	0.020	1.000	190267	EPA 3050B	EPA 6010B
Cadmium	0.37	0.27	0.017	1.000	190267	EPA 3050B	EPA 6010B
Chromium	28	0.27	0.022	1.000	190267	EPA 3050B	EPA 6010B
Cobalt	9.6	0.27	0.021	1.000	190267	EPA 3050B	EPA 6010B
Copper	260	0.28	0.092	1.000	190267	EPA 3050B	EPA 6010B
Lead	27	0.27	0.078	1.000	190267	EPA 3050B	EPA 6010B
Mercury	12	1.8	0.55	100.0	190272	METHOD	EPA 7471A
Molybdenum	0.095 J	0.27	0.060	1.000	190267	EPA 3050B	EPA 6010B
Nickel	30	0.27	0.072	1.000	190267	EPA 3050B	EPA 6010B
Selenium	ND	0.53	0.16	1.000	190267	EPA 3050B	EPA 6010B
Silver	0.14 J	0.27	0.079	1.000	190267	EPA 3050B	EPA 6010B
Thallium	ND	0.53	0.17	1.000	190267	EPA 3050B	EPA 6010B
Vanadium	33	0.27	0.026	1.000	190267	EPA 3050B	EPA 6010B
Zinc	120	1.1	0.10	1.000	190267	EPA 3050B	EPA 6010B

J= Estimated value
ND= Not Detected at or above MDL
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	239425	Project#:	103S094417
Client:	Tetra Tech EMI	Location:	B445 Landscape
Field ID:	RFS-B445-DU3-2	Sampled:	09/06/12
Lab ID:	239425-004	Received:	09/06/12
Matrix:	Soil	Prepared:	09/07/12
Units:	mg/Kg	Analyzed:	09/07/12
Basis:	dry		

Moisture: 7%

Analyte	Result	RL	MDL	Diln Fac	Batch#	Prep	Analysis
Antimony	ND	0.53	0.17	1.000	190267	EPA 3050B	EPA 6010B
Arsenic	5.8	0.26	0.087	1.000	190267	EPA 3050B	EPA 6010B
Barium	140	0.26	0.051	1.000	190267	EPA 3050B	EPA 6010B
Beryllium	0.53	0.11	0.020	1.000	190267	EPA 3050B	EPA 6010B
Cadmium	0.39	0.26	0.017	1.000	190267	EPA 3050B	EPA 6010B
Chromium	33	0.26	0.022	1.000	190267	EPA 3050B	EPA 6010B
Cobalt	11	0.26	0.020	1.000	190267	EPA 3050B	EPA 6010B
Copper	370	0.27	0.091	1.000	190267	EPA 3050B	EPA 6010B
Lead	30	0.26	0.077	1.000	190267	EPA 3050B	EPA 6010B
Mercury	12	1.8	0.57	100.0	190272	METHOD	EPA 7471A
Molybdenum	ND	0.26	0.059	1.000	190267	EPA 3050B	EPA 6010B
Nickel	31	0.26	0.071	1.000	190267	EPA 3050B	EPA 6010B
Selenium	ND	0.53	0.15	1.000	190267	EPA 3050B	EPA 6010B
Silver	0.11 J	0.26	0.079	1.000	190267	EPA 3050B	EPA 6010B
Thallium	ND	0.53	0.17	1.000	190267	EPA 3050B	EPA 6010B
Vanadium	31	0.26	0.026	1.000	190267	EPA 3050B	EPA 6010B
Zinc	130	1.1	0.10	1.000	190267	EPA 3050B	EPA 6010B

J= Estimated value
ND= Not Detected at or above MDL
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	239425	Project#:	103S094417
Client:	Tetra Tech EMI	Location:	B445 Landscape
Field ID:	RFS-B445-DU3-3	Sampled:	09/06/12
Lab ID:	239425-005	Received:	09/06/12
Matrix:	Soil	Prepared:	09/07/12
Units:	mg/Kg	Analyzed:	09/07/12
Basis:	dry		

Moisture: 6%

Analyte	Result	RL	MDL	Diln Fac	Batch#	Prep	Analysis
Antimony	ND	0.52	0.17	1.000	190267	EPA 3050B	EPA 6010B
Arsenic	5.6	0.26	0.087	1.000	190267	EPA 3050B	EPA 6010B
Barium	150	0.26	0.051	1.000	190267	EPA 3050B	EPA 6010B
Beryllium	0.57	0.10	0.020	1.000	190267	EPA 3050B	EPA 6010B
Cadmium	0.38	0.26	0.017	1.000	190267	EPA 3050B	EPA 6010B
Chromium	37	0.26	0.022	1.000	190267	EPA 3050B	EPA 6010B
Cobalt	9.6	0.26	0.020	1.000	190267	EPA 3050B	EPA 6010B
Copper	420	0.27	0.090	1.000	190267	EPA 3050B	EPA 6010B
Lead	31	0.26	0.076	1.000	190267	EPA 3050B	EPA 6010B
Mercury	13	1.7	0.52	100.0	190272	METHOD	EPA 7471A
Molybdenum	0.47	0.26	0.059	1.000	190267	EPA 3050B	EPA 6010B
Nickel	33	0.26	0.071	1.000	190267	EPA 3050B	EPA 6010B
Selenium	0.85	0.52	0.15	1.000	190267	EPA 3050B	EPA 6010B
Silver	0.14 J	0.26	0.078	1.000	190267	EPA 3050B	EPA 6010B
Thallium	ND	0.52	0.17	1.000	190267	EPA 3050B	EPA 6010B
Vanadium	35	0.26	0.026	1.000	190267	EPA 3050B	EPA 6010B
Zinc	130	1.0	0.10	1.000	190267	EPA 3050B	EPA 6010B

J= Estimated value
ND= Not Detected at or above MDL
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	239425	Project#:	103S094417
Client:	Tetra Tech EMI	Location:	B445 Landscape
Field ID:	RFS-B484-SP	Sampled:	09/06/12
Lab ID:	239425-006	Received:	09/06/12
Matrix:	Soil	Prepared:	09/07/12
Units:	mg/Kg	Analyzed:	09/07/12
Basis:	dry		

Moisture: 12%

Analyte	Result	RL	MDL	Diln Fac	Batch#	Prep	Analysis
Antimony	ND	0.55	0.18	1.000	190267	EPA 3050B	EPA 6010B
Arsenic	5.8	0.28	0.092	1.000	190267	EPA 3050B	EPA 6010B
Barium	200	0.28	0.054	1.000	190267	EPA 3050B	EPA 6010B
Beryllium	0.63	0.11	0.021	1.000	190267	EPA 3050B	EPA 6010B
Cadmium	0.25 J	0.28	0.018	1.000	190267	EPA 3050B	EPA 6010B
Chromium	25	0.28	0.023	1.000	190267	EPA 3050B	EPA 6010B
Cobalt	13	0.28	0.021	1.000	190267	EPA 3050B	EPA 6010B
Copper	82	0.29	0.095	1.000	190267	EPA 3050B	EPA 6010B
Lead	23	0.28	0.081	1.000	190267	EPA 3050B	EPA 6010B
Mercury	1.2	0.19	0.061	10.00	190272	METHOD	EPA 7471A
Molybdenum	0.28 J	0.28	0.062	1.000	190267	EPA 3050B	EPA 6010B
Nickel	30	0.28	0.075	1.000	190267	EPA 3050B	EPA 6010B
Selenium	0.69	0.55	0.16	1.000	190267	EPA 3050B	EPA 6010B
Silver	0.093 J	0.28	0.082	1.000	190267	EPA 3050B	EPA 6010B
Thallium	ND	0.55	0.18	1.000	190267	EPA 3050B	EPA 6010B
Vanadium	34	0.28	0.027	1.000	190267	EPA 3050B	EPA 6010B
Zinc	86	1.1	0.11	1.000	190267	EPA 3050B	EPA 6010B

J= Estimated value
ND= Not Detected at or above MDL
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Batch QC Report

California Title 22 Metals

Lab #:	239425	Location:	B445 Landscape
Client:	Tetra Tech EMI	Prep:	EPA 3050B
Project#:	103S094417	Analysis:	EPA 6010B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC655185	Batch#:	190267
Matrix:	Soil	Prepared:	09/07/12
Units:	mg/Kg	Analyzed:	09/07/12

Analyte	Result	RL	MDL
Antimony	ND	0.50	0.16
Arsenic	ND	0.25	0.083
Barium	ND	0.25	0.049
Beryllium	ND	0.10	0.019
Cadmium	ND	0.25	0.016
Chromium	0.034 J	0.25	0.021
Cobalt	ND	0.25	0.019
Copper	ND	0.26	0.086
Lead	ND	0.25	0.073
Molybdenum	ND	0.25	0.056
Nickel	ND	0.25	0.068
Selenium	ND	0.50	0.15
Silver	ND	0.25	0.075
Thallium	ND	0.50	0.16
Vanadium	ND	0.25	0.025
Zinc	0.31 J	1.0	0.098

J= Estimated value
ND= Not Detected at or above MDL
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Batch QC Report

California Title 22 Metals

Lab #:	239425	Location:	B445 Landscape
Client:	Tetra Tech EMI	Prep:	EPA 3050B
Project#:	103S094417	Analysis:	EPA 6010B
Matrix:	Soil	Batch#:	190267
Units:	mg/Kg	Prepared:	09/07/12
Diln Fac:	1.000	Analyzed:	09/07/12

Type: BS Lab ID: QC655186

Analyte	Spiked	Result	%REC	Limits
Antimony	100.0	101.5	102	80-120
Arsenic	50.00	51.63	103	80-121
Barium	100.0	105.4	105	80-120
Beryllium	2.500	2.693	108	80-120
Cadmium	10.00	10.76	108	80-120
Chromium	100.0	103.1	103	80-120
Cobalt	25.00	25.90	104	80-120
Copper	12.50	13.02	104	80-120
Lead	100.0	101.4	101	80-120
Molybdenum	20.00	21.07	105	80-120
Nickel	25.00	25.82	103	80-120
Selenium	50.00	50.55	101	80-120
Silver	10.00	10.50	105	80-120
Thallium	50.00	50.81	102	80-120
Vanadium	25.00	26.23	105	80-120
Zinc	25.00	26.29	105	80-120

Type: BSD Lab ID: QC655187

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Antimony	100.0	101.0	101	80-120	1	20
Arsenic	50.00	51.02	102	80-121	1	20
Barium	100.0	104.2	104	80-120	1	20
Beryllium	2.500	2.671	107	80-120	1	20
Cadmium	10.00	10.61	106	80-120	1	20
Chromium	100.0	102.4	102	80-120	1	20
Cobalt	25.00	25.58	102	80-120	1	20
Copper	12.50	12.75	102	80-120	2	20
Lead	100.0	100.4	100	80-120	1	23
Molybdenum	20.00	20.77	104	80-120	1	20
Nickel	25.00	25.52	102	80-120	1	20
Selenium	50.00	50.18	100	80-120	1	20
Silver	10.00	10.40	104	80-120	1	20
Thallium	50.00	50.28	101	80-120	1	20
Vanadium	25.00	26.13	105	80-120	0	20
Zinc	25.00	26.05	104	80-120	1	20

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

California Title 22 Metals

Lab #:	239425	Location:	B445 Landscape
Client:	Tetra Tech EMI	Prep:	EPA 3050B
Project#:	103S094417	Analysis:	EPA 6010B
Field ID:	RFS-B445-DUI-2	Batch#:	190267
MSS Lab ID:	239425-001	Sampled:	09/06/12
Matrix:	Soil	Received:	09/06/12
Units:	mg/Kg	Prepared:	09/07/12
Basis:	as received	Analyzed:	09/07/12
Diln Fac:	1.000		

Type: MS Lab ID: QC655188

Analyte	MSS Result	Spiked	Result	%REC	Limits
Antimony	<0.1542	97.09	33.63	35	12-120
Arsenic	6.488	48.54	51.67	93	73-121
Barium	146.6	97.09	292.2	150 *	51-135
Beryllium	0.4259	2.427	2.802	98	79-120
Cadmium	0.3481	9.709	9.364	93	74-120
Chromium	39.67	97.09	126.1	89	62-124
Cobalt	11.19	24.27	42.09	127 *	62-120
Copper	420.9	12.14	468.0	389 NM	48-150
Lead	37.88	97.09	123.6	88	58-124
Molybdenum	<0.05451	19.42	16.49	85	69-120
Nickel	40.87	24.27	67.18	108	49-135
Selenium	1.214	48.54	43.35	87	68-120
Silver	0.1533	9.709	9.403	95	76-120
Thallium	<0.1583	48.54	40.90	84	68-120
Vanadium	40.27	24.27	67.86	114	54-137
Zinc	101.1	24.27	133.1	132 NM	43-147

Type: MSD Lab ID: QC655189

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Antimony	100.0	34.75	35	12-120	0	36
Arsenic	50.00	51.10	89	73-121	4	40
Barium	100.0	240.3	94	51-135	21	40
Beryllium	2.500	2.789	95	79-120	3	21
Cadmium	10.00	9.539	92	74-120	1	20
Chromium	100.0	129.0	89	62-124	0	34
Cobalt	25.00	33.61	90	62-120	24	35
Copper	12.50	502.7 >LR	654 NM	48-150	NC	39
Lead	100.0	126.2	88	58-124	0	44
Molybdenum	20.00	17.61	88	69-120	4	25
Nickel	25.00	62.86	88	49-135	8	37
Selenium	50.00	44.39	86	68-120	0	29
Silver	10.00	9.562	94	76-120	1	29
Thallium	50.00	41.93	84	68-120	0	21
Vanadium	25.00	59.29	76	54-137	15	31
Zinc	25.00	129.9	115 NM	43-147	3	41

*= Value outside of QC limits; see narrative
NC= Not Calculated
NM= Not Meaningful: Sample concentration > 4X spike concentration
>LR= Response exceeds instrument's linear range
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

California Title 22 Metals

Lab #:	239425	Location:	B445 Landscape
Client:	Tetra Tech EMI	Prep:	EPA 3050B
Project#:	103S094417	Analysis:	EPA 6010B
Field ID:	RFS-B445-DUI-2	Basis:	as received
Type:	Serial Dilution	Diln Fac:	5.000
MSS Lab ID:	239425-001	Batch#:	190267
Lab ID:	QC655190	Sampled:	09/06/12
Matrix:	Soil	Received:	09/06/12
Units:	mg/Kg	Analyzed:	09/07/12

Analyte	MSS Result	MSS RL	Result	RL	% Diff	Lim
Antimony	ND	0.4854	ND	2.427	NC	10
Arsenic	6.488	0.2427	6.700	1.214	3	10
Barium	146.6	0.2427	155.8	1.214	6	10
Beryllium	0.4259	0.09709	0.4538 J	0.4854	NC	10
Cadmium	0.3481	0.2427	0.4092 J	1.214	NC	10
Chromium	39.67	0.2427	42.53	1.214	7	10
Cobalt	11.19	0.2427	12.19	1.214	9	10
Copper	420.9	0.2517	421.6	1.259	0	10
Lead	37.88	0.2427	41.36	1.214	9	10
Molybdenum	ND	0.2427	0.3216 J	1.214	NC	10
Nickel	40.87	0.2427	44.02	1.214	8	10
Selenium	1.214	0.4854	ND	2.427	NC	10
Silver	0.1533	0.2427	ND	1.214	NC	10
Thallium	ND	0.4854	ND	2.427	NC	10
Vanadium	40.27	0.2427	42.18	1.214	5	10
Zinc	101.1	0.9709	108.8	4.854	8	10

J= Estimated value
NC= Not Calculated
ND= Not Detected at or above MDL
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

California Title 22 Metals

Lab #:	239425	Location:	B445 Landscape
Client:	Tetra Tech EMI	Prep:	EPA 3050B
Project#:	103S094417	Analysis:	EPA 6010B
Field ID:	RFS-B445-DUI-2	Basis:	as received
Type:	Post Digest Spike	Diln Fac:	1.000
MSS Lab ID:	239425-001	Batch#:	190267
Lab ID:	QC655191	Sampled:	09/06/12
Matrix:	Soil	Received:	09/06/12
Units:	mg/Kg	Analyzed:	09/07/12

Analyte	MSS Result	Spiked	Result	%REC	Limits
Antimony	<0.1542	97.09	89.65	92	75-125
Arsenic	6.488	48.54	51.93	94	75-125
Barium	146.6	97.09	232.1	88	75-125
Beryllium	0.4259	2.427	2.715	94	75-125
Cadmium	0.3481	9.709	9.328	92	75-125
Chromium	39.67	97.09	125.6	88	75-125
Cobalt	11.19	24.27	32.44	88	75-125
Copper	420.9	12.14	421.1	2 NM	75-125
Lead	37.88	97.09	120.8	85	75-125
Molybdenum	<0.05451	19.42	18.04	93	75-125
Nickel	40.87	24.27	61.17	84	75-125
Selenium	1.214	48.54	45.50	91	75-125
Silver	0.1533	9.709	8.462	86	75-125
Thallium	<0.1583	48.54	40.67	84	75-125
Vanadium	40.27	24.27	61.99	89	75-125
Zinc	101.1	24.27	121.0	82 NM	75-125

NM= Not Meaningful: Sample concentration > 4X spike concentration

Curtis & Tompkins, Ltd.

Batch QC Report

California Title 22 Metals

Lab #:	239425	Location:	B445 Landscape
Client:	Tetra Tech EMI	Prep:	METHOD
Project#:	103S094417	Analysis:	EPA 7471A
Analyte:	Mercury	Diln Fac:	1.000
Type:	BLANK	Batch#:	190272
Lab ID:	QC655210	Prepared:	09/07/12
Matrix:	Soil	Analyzed:	09/07/12
Units:	mg/Kg		

Result	RL	MDL
ND	0.017	0.0052

ND= Not Detected at or above MDL
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Batch QC Report

California Title 22 Metals

Lab #:	239425	Location:	B445 Landscape
Client:	Tetra Tech EMI	Prep:	METHOD
Project#:	103S094417	Analysis:	EPA 7471A
Analyte:	Mercury	Batch#:	190272
Matrix:	Soil	Prepared:	09/07/12
Units:	mg/Kg	Analyzed:	09/07/12
Diln Fac:	1.000		

Type	Lab ID	Spiked	Result	%REC	Limits	RPD	Lim
BS	QC655211	0.2083	0.2133	102	80-120		
BSD	QC655212	0.2083	0.2167	104	80-120	2	20

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

California Title 22 Metals

Lab #:	239425	Location:	B445 Landscape
Client:	Tetra Tech EMI	Prep:	METHOD
Project#:	103S094417	Analysis:	EPA 7471A
Analyte:	Mercury	Diln Fac:	1.000
Field ID:	ZZZZZZZZZZ	Batch#:	190272
MSS Lab ID:	239220-005	Sampled:	08/24/12
Matrix:	Soil	Received:	08/29/12
Units:	mg/Kg	Prepared:	09/07/12
Basis:	dry	Analyzed:	09/07/12

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	Moisture	RPD	Lim
MS	QC655213	0.1747	0.3533	0.5695	112	76-138	39%		
MSD	QC655214		0.3473	0.5599	111	76-138	39%	1	42

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

California Title 22 Metals

Lab #:	239425	Location:	B445 Landscape
Client:	Tetra Tech EMI	Prep:	METHOD
Project#:	103S094417	Analysis:	EPA 7471A
Analyte:	Mercury	Basis:	dry
Field ID:	ZZZZZZZZZZ	Diln Fac:	5.000
Type:	Serial Dilution	Batch#:	190272
MSS Lab ID:	239220-005	Sampled:	08/24/12
Lab ID:	QC655215	Received:	08/29/12
Matrix:	Soil	Analyzed:	09/07/12
Units:	mg/Kg		

MSS Result	MSS RL	Result	RL	Moisture	% Diff	Lim
0.1747	0.02687	ND	0.1344	39%	NC	10

NC= Not Calculated
ND= Not Detected at or above MDL
RL= Reporting Limit

REPORTING SUMMARY FOR 239425 METALS Soil
Curtis & Tompkins Laboratories

Lab ID	Inst ID	Analyzed	IDF	SB	AS	BA	BE	CD	CR	CO	CU	PB	HG	MO	NI	SE	AG	TL	V	ZN
239425-001	MET08	09/07/12 12:27	1.0	+	+	+	+	+	+	+	+	+		+	+		+	+	+	+
239425-001	MET08	09/07/12 12:30	1.0													+				
239425-001	MET14	09/07/12 14:46	20.0										+							
239425-002	MET08	09/07/12 13:07	1.0	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+	+
239425-002	MET14	09/07/12 14:48	1.0																	
239425-002	MET14	09/07/12 14:59	100.0										+							
239425-003	MET08	09/07/12 13:30	1.0	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+	+
239425-003	MET14	09/07/12 15:02	100.0										+							
239425-004	MET08	09/07/12 13:33	1.0	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+	+
239425-004	MET14	09/07/12 15:04	100.0										+							
239425-005	MET08	09/07/12 13:37	1.0	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+	+
239425-005	MET14	09/07/12 15:06	100.0										+							
239425-006	MET08	09/07/12 13:40	1.0	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+	+
239425-006	MET08	09/07/12 13:46	1.0																	
239425-006	MET14	09/07/12 15:08	100.0																	
239425-006	MET14	09/07/12 15:31	10.0										+							
QC655185	MET08	09/07/12 12:14	1.0	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+	+
QC655186	MET08	09/07/12 12:19	1.0	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+	+
QC655187	MET08	09/07/12 12:23	1.0	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+	+
QC655188	MET08	09/07/12 12:33	1.0	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+	+
QC655189	MET08	09/07/12 12:37	1.0	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+	+
QC655190	MET08	09/07/12 12:42	5.0	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+	+
QC655191	MET08	09/07/12 12:46	1.0	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+	+
QC655210	MET14	09/07/12 14:09	1.0										+							
QC655211	MET14	09/07/12 14:12	1.0										+							
QC655212	MET14	09/07/12 14:14	1.0										+							
QC655213	MET14	09/07/12 14:18	1.0										+							
QC655214	MET14	09/07/12 14:21	1.0										+							
QC655215	MET14	09/07/12 14:23	5.0										+							

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 82361903

Instrument : MET08 Begun : 09/07/12 07:43
Method : EPA 6010B SOP Version : icp metals_rv9

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	met08_sr_6010	ICALBLK				09/07/12 07:43	1.0		
002	met08_sr_6010	ICAL	CRI5.1			09/07/12 07:48	1.0	1	
003	met08_sr_6010	ICAL	CS100			09/07/12 07:53	1.0	2	
004	met08_sr_6010	ICAL	CS1K			09/07/12 07:57	1.0	3	
005	met08_sr_6010	ICAL	CS10K			09/07/12 08:01	1.0	4	
006	met08_sr_6010	ICAL	CS100K			09/07/12 08:06	1.0	5	
007	met08_sr_6010	ICV				09/07/12 08:12	1.0	6	
008	met08_sr_6010	ICB				09/07/12 08:17	1.0		
009	met08_sr_6010	ICSA				09/07/12 08:22	1.0	7	10:AL=520000
010	met08_sr_6010	ICSAB				09/07/12 08:35	1.0	8	5:AL=520000
011	met08_sr_6010	XCRI				09/07/12 08:41	1.0	9	
012	met08_sr_6010	CRI				09/07/12 08:45	1.0	9	
013	met08_sr_6010	BLANK	QC655129	Soil	190253	09/07/12 09:01	1.0		
014	met08_sr_6010	BS	QC655130	Soil	190253	09/07/12 09:06	1.0		
015	met08_sr_6010	BSD	QC655131	Soil	190253	09/07/12 09:10	1.0		
016	met08_sr_6010	MSS	239378-001	Soil	190253	09/07/12 09:14	1.0		3:FE=340000
017	met08_sr_6010	MS	QC655132	Soil	190253	09/07/12 09:17	1.0		
018	met08_sr_6010	MSD	QC655133	Soil	190253	09/07/12 09:20	1.0		
019	met08_sr_6010	SER	QC655134	Soil	190253	09/07/12 09:24	5.0		
020	met08_sr_6010	PDS	QC655135	Soil	190253	09/07/12 09:28	1.0	10 11	3:FE=350000
021	met08_sr_6010	CCV				09/07/12 09:31	1.0	12	
022	met08_sr_6010	CCB				09/07/12 09:36	1.0		
023	met08_sr_6010	SAMPLE	239389-001	Soil	190253	09/07/12 09:41	1.0		3:FE=360000
024	met08_sr_6010	SAMPLE	239397-001	Soil	190253	09/07/12 09:44	1.0		3:FE=380000
025	met08_sr_6010	SAMPLE	239397-002	Soil	190253	09/07/12 09:48	1.0		3:FE=430000
026	met08_sr_6010	SAMPLE	239408-001	Soil	190253	09/07/12 09:51	1.0		5:FE=490000
027	met08_sr_6010	SAMPLE	239402-001	Soil	190253	09/07/12 09:54	1.0		2:FE=240000
028	met08_sr_6010	SAMPLE	239403-005	Soil	190253	09/07/12 09:57	1.0		6:MG=1200000
029	met08_sr_6010	SAMPLE	239403-006	Soil	190253	09/07/12 10:01	1.0		7:MG=1500000
030	met08_sr_6010	SAMPLE	239397-001	Soil	190253	09/07/12 10:04	1.0		3:FE=380000
031	met08_sr_6010	CCV				09/07/12 10:07	1.0	12	
032	met08_sr_6010	CCB				09/07/12 10:12	1.0		
033	met08_sr_6010	ICSAB				09/07/12 10:17	1.0	8	5:AL=530000
034	met08_sr_6010	XBLANK	QC655108	Water	190250	09/07/12 10:40	1.0		
035	met08_sr_6010	XBS	QC655109	Water	190250	09/07/12 10:45	1.0		
036	met08_sr_6010	XBSD	QC655110	Water	190250	09/07/12 10:49	1.0		
037	met08_sr_6010	XMSS	239404-015	Water	190250	09/07/12 10:53	1.0		3:FE=340000
038	met08_sr_6010	XMS	QC655111	Water	190250	09/07/12 10:56	1.0		
039	met08_sr_6010	XMSD	QC655112	Water	190250	09/07/12 11:00	1.0		
040	met08_sr_6010	XSER	QC655113	Water	190250	09/07/12 11:03	5.0		
041	met08_sr_6010	XPDS	QC655114	Water	190250	09/07/12 11:07	1.0	13	
042	met08_sr_6010	XCCV				09/07/12 11:10	1.0	12	
043	met08_sr_6010	XCCB				09/07/12 11:15	1.0		
044	met08_sr_6010	XSAMPLE	239403-007	Water	190250	09/07/12 11:20	1.0		
045	met08_sr_6010	XSAMPLE	239403-008	Water	190250	09/07/12 11:24	1.0		
046	met08_sr_6010	XSAMPLE	239369-001	Water	190250	09/07/12 11:27	1.0		
047	met08_sr_6010	XSAMPLE	239374-001	Water	190250	09/07/12 11:30	1.0		
048	met08_sr_6010	XSAMPLE	239377-001	Water	190250	09/07/12 11:33	1.0		
049	met08_sr_6010	CCV				09/07/12 11:38	1.0	12	
050	met08_sr_6010	CCB				09/07/12 11:44	1.0		
051	met08_sr_6010	ICSAB				09/07/12 11:48	1.0	8	5:AL=530000
052	met08_sr_6010	BLANK	QC655185	Soil	190267	09/07/12 12:14	1.0		

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 82361903

Instrument : MET08 Begun : 09/07/12 07:43
Method : EPA 6010B SOP Version : icp metals_rv9

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
053	met08_sr_6010	BS	QC655186	Soil	190267	09/07/12 12:19	1.0		
054	met08_sr_6010	BSD	QC655187	Soil	190267	09/07/12 12:23	1.0		
055	met08_sr_6010	MSS	239425-001	Soil	190267	09/07/12 12:27	1.0		4:FE=380000
056	met08_sr_6010	MSS	239425-001	Soil	190267	09/07/12 12:30	1.0		4:FE=380000
057	met08_sr_6010	MS	QC655188	Soil	190267	09/07/12 12:33	1.0		
058	met08_sr_6010	MSD	QC655189	Soil	190267	09/07/12 12:37	1.0		2:FE=390000
059	met08_sr_6010	SER	QC655190	Soil	190267	09/07/12 12:42	5.0		
060	met08_sr_6010	PDS	QC655191	Soil	190267	09/07/12 12:46	1.0	10 11	1:FE=380000
061	met08_sr_6010	SAMPLE	239432-002	Soil	190267	09/07/12 12:49	1.0		5:CA=440000
062	met08_sr_6010	CCV				09/07/12 12:53	1.0	12	
063	met08_sr_6010	CCB				09/07/12 12:58	1.0		
064	met08_sr_6010	SAMPLE	239432-002	Soil	190267	09/07/12 13:04	1.0		5:CA=440000
065	met08_sr_6010	SAMPLE	239425-002	Soil	190267	09/07/12 13:07	1.0		4:FE=330000
066	met08_sr_6010	CCV				09/07/12 13:14	1.0	12	
067	met08_sr_6010	CCB				09/07/12 13:19	1.0		
068	met08_sr_6010	ICSAB				09/07/12 13:24	1.0	8	5:AL=500000
069	met08_sr_6010	SAMPLE	239425-003	Soil	190267	09/07/12 13:30	1.0		3:FE=320000
070	met08_sr_6010	SAMPLE	239425-004	Soil	190267	09/07/12 13:33	1.0		4:FE=300000
071	met08_sr_6010	SAMPLE	239425-005	Soil	190267	09/07/12 13:37	1.0		3:FE=330000
072	met08_sr_6010	SAMPLE	239425-006	Soil	190267	09/07/12 13:40	1.0		4:FE=310000
073	met08_sr_6010	SAMPLE	239425-006	Soil	190267	09/07/12 13:46	1.0		4:FE=300000
074	met08_sr_6010	CCV				09/07/12 13:49	1.0	12	
075	met08_sr_6010	CCB				09/07/12 13:55	1.0		
076	met08_sr_6010	ICSAB				09/07/12 14:00	1.0	8	5:CA=480000

NT 09/07/12 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 76.

PRW 09/07/12 : 34-48 were in the wrong autosampler location. Samples were x'd out and re-ran on MET09.

Standards used: 1=S20200 2=S20215 3=S20214 4=S20216 5=S20217 6=S20644 7=S20220 8=S20222 9=S20319 10=S20436 11=S20437 12=S20645 13=S19831

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 82361903

Date : 09/07/12 Reference : met08_sr_6010
Sequence : MET08 09/07/12 Analyzed : 09/07/12 07:48

#	Type	Sample ID	Y A
		ICAL STD	1808473
		LOWER LIMIT	542542
		UPPER LIMIT	2170167
008	ICB		1976997
009	ICSA		1636938
010	ICSAB		1577047
021	CCV		1850391
022	CCB		1956122
028	SAMPLE	239403-005	1720803
029	SAMPLE	239403-006	1654543
031	CCV		1877983
032	CCB		1970450
033	ICSAB		1604534

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 82361903

Date : 09/07/12 Reference : met08_sr_6010
Sequence : MET08 09/07/12 Analyzed : 09/07/12 07:48

#	Type	Sample ID	Y A
		ICAL STD	1808473
		LOWER LIMIT	542542
		UPPER LIMIT	3616946
013	BLANK	QC655129	1959566
014	BS	QC655130	1875046
015	BSD	QC655131	1838333
016	MSS	239378-001	1890651
017	MS	QC655132	1874702
018	MSD	QC655133	1857746
019	SER	QC655134	1873288
020	PDS	QC655135	1931119
023	SAMPLE	239389-001	2003463
024	SAMPLE	239397-001	1909448
025	SAMPLE	239397-002	1834679
026	SAMPLE	239408-001	1997926
027	SAMPLE	239402-001	1996300
030	SAMPLE	239397-001	1923008
049	CCV		1910329
050	CCB		1949101
051	ICSAB		1606476
052	BLANK	QC655185	2000576
053	BS	QC655186	1844284
054	BSD	QC655187	1902303
055	MSS	239425-001	1963320
056	MSS	239425-001	1963280
057	MS	QC655188	1922948
058	MSD	QC655189	1941830
059	SER	QC655190	1916308
060	PDS	QC655191	1962109
061	SAMPLE	239432-002	1866435
062	CCV		1881729
063	CCB		2013482
064	SAMPLE	239432-002	1809346
065	SAMPLE	239425-002	1947996
066	CCV		1912054
067	CCB		1935453
068	ICSAB		1632453
069	SAMPLE	239425-003	1942424
070	SAMPLE	239425-004	2032171
071	SAMPLE	239425-005	1950453
072	SAMPLE	239425-006	1892524
073	SAMPLE	239425-006	2017955
074	CCV		1871258
075	CCB		1970820
076	ICSAB		1608805

CURTIS & TOMPKINS INITIAL CALIBRATION FOR 239425 METALS Soil: EPA 6010B

Inst : MET08 Reviewer : ---
Calnum : 82361903001 Date : 07-SEP-2012 07:43
Units : ug/L X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	met08_sr_6010	82361903002	CRI5.1	07-SEP-2012 07:48	S20200
L2	met08_sr_6010	82361903003	CS100	07-SEP-2012 07:53	S20215
L3	met08_sr_6010	82361903004	CS1K	07-SEP-2012 07:57	S20214
L4	met08_sr_6010	82361903005	CS10K	07-SEP-2012 08:01	S20216
L5	met08_sr_6010	82361903006	CS100K	07-SEP-2012 08:06	S20217

Analyte	Ch	L1	L2	L3	L4	L5	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	Flg
Antimony	A	34.930	31.175	31.532	31.623		LOR0	0.00000	0.03162		32.315	1.000	0.995	
Arsenic	A	14.520	19.168	19.926	19.983		LOR0	0.00000	0.05004		18.399	1.000	0.995	
Barium	A	407.58	398.33	401.75	385.95		LOR0	0.00000	0.00259		398.40	1.000	0.995	
Beryllium	A	5090.1	4652.2	4663.1			LOR0	0.00000	2.14E-4		4801.8	1.000	0.995	
Cadmium	A	249.74	242.28	246.32	237.90		LOR0	0.00000	0.00420		244.06	1.000	0.995	
Chromium	A	92.780	88.669	90.467	88.485		LOR0	0.00000	0.01130		90.100	1.000	0.995	
Cobalt	A	130.12	121.90	127.79	124.23		LOR0	0.00000	0.00805		126.01	1.000	0.995	
Copper	A	78.780	103.86	109.11	109.57		LOR0	0.00000	0.00913		100.33	1.000	0.995	
Lead	A	67.520	57.948	59.201	58.402		LOR0	0.00000	0.01712		60.768	1.000	0.995	
Molybdenum	A	34.100	34.565	35.148	34.936		LOR0	0.00000	0.02862		34.687	1.000	0.995	
Nickel	A	53.460	48.364	50.396	49.226		LOR0	0.00000	0.02031		50.362	1.000	0.995	
Selenium	A	16.890	28.265	29.876	30.214		LOR0	0.00000	0.03310		26.311	1.000	0.995	
Silver	A	764.48	696.07	703.74	696.09		LOR0	0.00000	0.00143		715.09	1.000	0.995	
Thallium	A	19.960	18.761	19.272	18.646		LOR0	0.00000	0.05361		19.160	1.000	0.995	
Vanadium	A	153.26	149.14	148.94	149.30		LOR0	0.00000	0.00670		150.16	1.000	0.995	
Zinc	A	84.175	77.767	79.913	78.676		LOR0	0.00000	0.01271		80.133	1.000	0.995	

Spiked Amounts / Drifts	Ch	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D
Antimony	A	10.000	10	100.00	-1	1000.0	0	10000	0		
Arsenic	A	5.0000	**-27**	100.00	-4	1000.0	0	10000	0		
Barium	A	5.0000	6	100.00	3	1000.0	4	10000	0		
Beryllium	A	2.0000	9	100.00	0	1000.0	0				
Cadmium	A	5.0000	5	100.00	2	1000.0	3	10000	0		
Chromium	A	5.0000	5	100.00	0	1000.0	2	10000	0		
Cobalt	A	5.0000	5	100.00	-2	1000.0	3	10000	0		
Copper	A	5.0000	**-28**	100.00	-5	1000.0	0	10000	0		
Lead	A	5.0000	16	100.00	-1	1000.0	1	10000	0		
Molybdenum	A	5.0000	-2	100.00	-1	1000.0	1	10000	0		
Nickel	A	5.0000	9	100.00	-2	1000.0	2	10000	0		
Selenium	A	10.000	**-44**	100.00	-6	1000.0	-1	10000	0		
Silver	A	5.0000	10	100.00	0	1000.0	1	2000.0	0		
Thallium	A	10.000	7	100.00	1	1000.0	3	10000	0		
Vanadium	A	5.0000	3	100.00	0	1000.0	0	10000	0		
Zinc	A	20.000	7	100.00	-1	1000.0	2	10000	0		

Instrument amount = a0 + response * a1 + response^2 * a2; LOR0=Linear regression forced thru origin, including 0,0 point

CURTIS & TOMPKINS 2ND SOURCE CALIBRATION SUMMARY FOR 239425 METALS Soil
EPA 6010B

Inst : MET08
Calnum : 82361903001 Cal Date : 07-SEP-2012

ICV 82361903007 (07-SEP-2012) stds: S20644

Analyte	Ch	Spiked	Quant	Units	%D	Max	Flags
Antimony	A	5000	5043	ug/L	1	10	
Arsenic	A	5000	5029	ug/L	1	10	
Barium	A	5000	4986	ug/L	0	10	
Beryllium	A	500.0	506.1	ug/L	1	10	
Cadmium	A	5000	4999	ug/L	0	10	
Chromium	A	5000	4927	ug/L	-1	10	
Cobalt	A	5000	4901	ug/L	-2	10	
Copper	A	5000	4906	ug/L	-2	10	
Lead	A	5000	4847	ug/L	-3	10	
Molybdenum	A	5000	5074	ug/L	1	10	
Nickel	A	5000	4895	ug/L	-2	10	
Selenium	A	5000	4915	ug/L	-2	10	
Silver	A	1000	983.6	ug/L	-2	10	
Thallium	A	5000	4993	ug/L	0	10	
Vanadium	A	5000	5031	ug/L	1	10	
Zinc	A	5000	4921	ug/L	-2	10	

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD A FOR 239425 METALS Soil
EPA 6010B

Inst : MET08 IDF : 1.0
Seqnum : 82361903009.1 File : met08_sr_6010 Time : 07-SEP-2012 08:22
Cal : 82361903001 Caldate : 07-SEP-2012
Standards: S20220

Analyte	Ch	Quant	IQL	Units	Flags
Antimony	A	[-6.749]	10.00	ug/L	!a-
Arsenic	A	[-3.203]	5.000	ug/L	!a-
Barium	A	[-0.1294]	5.000	ug/L	
Beryllium	A	[-1.008]	2.000	ug/L	!a-
Cadmium	A	[-3.751]	5.000	ug/L	!a-
Cobalt	A	[3.155]	5.000	ug/L	!a+
Lead	A	[1.526]	5.000	ug/L	
Molybdenum	A	[-0.8745]	5.000	ug/L	
Selenium	A	[-7.127]	10.00	ug/L	!a-
Silver	A	[-2.768]	5.000	ug/L	!a-
Thallium	A	[-0.8548]	10.00	ug/L	
Zinc	A	[9.810]	20.00	ug/L	!a+

Interferent	Ch	Spiked	Quant	Units	%Rec
Chromium	A	20000	19520	ug/L	98
Copper	A	20000	20890	ug/L	104
Manganese	A	20000	19070	ug/L	95
Nickel	A	20000	18320	ug/L	92
Vanadium	A	20000	20110	ug/L	101
Aluminum	R	500000	518700	ug/L	104
Calcium	R	500000	502700	ug/L	101
Iron	R	200000	196200	ug/L	98
Magnesium	R	500000	509300	ug/L	102
Titanium	R	20000	21400	ug/L	107

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	1808473	1636938	-9.49

!=warning +=high bias -=low bias a=ICSA

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 239425 METALS Soil
EPA 6010B

Inst : MET08 IDF : 1.0
Seqnum : 82361903049 File : met08_sr_6010 Time : 07-SEP-2012 11:38
Cal : 82361903001 Caldate : 07-SEP-2012
Standards: S20645

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Antimony	A	32.315	30.515	5000	4825	ug/L	-4	10	
Arsenic	A	18.399	19.002	5000	4755	ug/L	-5	10	
Barium	A	398.40	375.61	5000	4864	ug/L	-3	10	
Beryllium	A	4801.8	4601.4	500.0	493.4	ug/L	-1	10	
Cadmium	A	244.06	234.19	5000	4920	ug/L	-2	10	
Chromium	A	90.100	84.366	5000	4766	ug/L	-5	10	
Cobalt	A	126.01	119.55	5000	4800	ug/L	-4	10	
Copper	A	100.33	108.70	5000	4961	ug/L	-1	10	
Lead	A	60.768	55.427	5000	4745	ug/L	-5	10	
Molybdenum	A	34.687	34.582	5000	4949	ug/L	-1	10	
Nickel	A	50.362	47.072	5000	4780	ug/L	-4	10	
Selenium	A	26.311	27.992	5000	4633	ug/L	-7	10	
Silver	A	715.09	668.52	1000	958.3	ug/L	-4	10	
Thallium	A	19.160	17.553	5000	4705	ug/L	-6	10	
Vanadium	A	150.16	146.05	5000	4891	ug/L	-2	10	
Zinc	A	80.133	75.768	5000	4814	ug/L	-4	10	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	1808473	1910329	5.63

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 239425 METALS Soil
EPA 6010B

Inst : MET08 IDF : 1.0
Seqnum : 82361903050 File : met08_sr_6010 Time : 07-SEP-2012 11:44
Cal : 82361903001 Caldate : 07-SEP-2012

Analyte	Ch	Quant	IQL	2X MDL	Units	Flags
Antimony	A	ND	10.00	2.158	ug/L	
Arsenic	A	ND	5.000	2.582	ug/L	
Barium	A	ND	5.000	0.3522	ug/L	
Beryllium	A	ND	2.000	0.3881	ug/L	
Cadmium	A	ND	5.000	0.9506	ug/L	
Chromium	A	ND	5.000	1.262	ug/L	
Cobalt	A	ND	5.000	1.550	ug/L	
Copper	A	ND	5.000	3.219	ug/L	
Lead	A	ND	5.000	3.105	ug/L	
Molybdenum	A	ND	5.000	2.826	ug/L	
Nickel	A	ND	5.000	2.429	ug/L	
Selenium	A	ND	10.00	4.980	ug/L	
Silver	A	ND	5.000	2.661	ug/L	
Thallium	A	ND	10.00	3.279	ug/L	
Vanadium	A	ND	5.000	1.427	ug/L	
Zinc	A	ND	20.00	4.561	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	1808473	1949101	7.78

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD AB FOR 239425 METALS Soil
EPA 6010B

Inst : MET08 IDF : 1.0
Seqnum : 82361903051 File : met08_sr_6010 Time : 07-SEP-2012 11:48
Cal : 82361903001 Caldate : 07-SEP-2012
Standards: S20222

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Antimony	A	500.0	512.2	ug/L	2	20	
Arsenic	A	500.0	514.3	ug/L	3	20	
Barium	A	500.0	537.6	ug/L	8	20	
Beryllium	A	500.0	534.4	ug/L	7	20	
Cadmium	A	1000	1032	ug/L	3	20	
Chromium	A	500.0	506.8	ug/L	1	20	
Cobalt	A	500.0	479.7	ug/L	-4	20	
Copper	A	500.0	560.7	ug/L	12	20	
Lead	A	1000	964.7	ug/L	-4	20	
Molybdenum	A	500.0	530.2	ug/L	6	20	
Nickel	A	1000	957.4	ug/L	-4	20	
Selenium	A	500.0	515.8	ug/L	3	20	
Silver	A	1000	1121	ug/L	12	20	
Thallium	A	500.0	489.4	ug/L	-2	20	
Vanadium	A	500.0	549.3	ug/L	10	20	
Zinc	A	1000	1009	ug/L	1	20	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	1808473	1606476	-11.17

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 239425 METALS Soil
EPA 6010B

Inst : MET08 IDF : 1.0
Seqnum : 82361903062 File : met08_sr_6010 Time : 07-SEP-2012 12:53
Cal : 82361903001 Caldate : 07-SEP-2012
Standards: S20645

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Antimony	A	32.315	30.868	5000	4881	ug/L	-2	10	
Arsenic	A	18.399	19.366	5000	4846	ug/L	-3	10	
Barium	A	398.40	379.85	5000	4919	ug/L	-2	10	
Beryllium	A	4801.8	4636.9	500.0	497.2	ug/L	-1	10	
Cadmium	A	244.06	235.56	5000	4949	ug/L	-1	10	
Chromium	A	90.100	85.464	5000	4828	ug/L	-3	10	
Cobalt	A	126.01	120.84	5000	4852	ug/L	-3	10	
Copper	A	100.33	105.38	5000	4809	ug/L	-4	10	
Lead	A	60.768	55.886	5000	4784	ug/L	-4	10	
Molybdenum	A	34.687	34.848	5000	4987	ug/L	0	10	
Nickel	A	50.362	47.598	5000	4834	ug/L	-3	10	
Selenium	A	26.311	28.819	5000	4770	ug/L	-5	10	
Silver	A	715.09	671.79	1000	963.0	ug/L	-4	10	
Thallium	A	19.160	17.917	5000	4803	ug/L	-4	10	
Vanadium	A	150.16	146.96	5000	4922	ug/L	-2	10	
Zinc	A	80.133	76.791	5000	4879	ug/L	-2	10	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	1808473	1881729	4.05

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 239425 METALS Soil
EPA 6010B

Inst : MET08 IDF : 1.0
Seqnum : 82361903063 File : met08_sr_6010 Time : 07-SEP-2012 12:58
Cal : 82361903001 Caldate : 07-SEP-2012

Analyte	Ch	Quant	IQL	2X MDL	Units	Flags
Antimony	A	[2.828]	10.00	2.158	ug/L	!ib
Arsenic	A	ND	5.000	2.582	ug/L	
Barium	A	[0.4375]	5.000	0.3522	ug/L	!ib
Beryllium	A	ND	2.000	0.3881	ug/L	
Cadmium	A	ND	5.000	0.9506	ug/L	
Chromium	A	ND	5.000	1.262	ug/L	
Cobalt	A	ND	5.000	1.550	ug/L	
Copper	A	ND	5.000	3.219	ug/L	
Lead	A	ND	5.000	3.105	ug/L	
Molybdenum	A	ND	5.000	2.826	ug/L	
Nickel	A	ND	5.000	2.429	ug/L	
Selenium	A	ND	10.00	4.980	ug/L	
Silver	A	ND	5.000	2.661	ug/L	
Thallium	A	ND	10.00	3.279	ug/L	
Vanadium	A	ND	5.000	1.427	ug/L	
Zinc	A	ND	20.00	4.561	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	1808473	2013482	11.34

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CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 239425 METALS Soil
EPA 6010B

Inst : MET08 IDF : 1.0
Seqnum : 82361903066 File : met08_sr_6010 Time : 07-SEP-2012 13:14
Cal : 82361903001 Caldate : 07-SEP-2012
Standards: S20645

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Antimony	A	32.315	31.085	5000	4915	ug/L	-2	10	
Arsenic	A	18.399	19.471	5000	4872	ug/L	-3	10	
Barium	A	398.40	378.73	5000	4904	ug/L	-2	10	
Beryllium	A	4801.8	4618.6	500.0	495.2	ug/L	-1	10	
Cadmium	A	244.06	235.15	5000	4940	ug/L	-1	10	
Chromium	A	90.100	84.722	5000	4786	ug/L	-4	10	
Cobalt	A	126.01	120.72	5000	4848	ug/L	-3	10	
Copper	A	100.33	105.22	5000	4802	ug/L	-4	10	
Lead	A	60.768	55.765	5000	4774	ug/L	-5	10	
Molybdenum	A	34.687	34.645	5000	4958	ug/L	-1	10	
Nickel	A	50.362	47.450	5000	4818	ug/L	-4	10	
Selenium	A	26.311	29.120	5000	4820	ug/L	-4	10	
Silver	A	715.09	666.44	1000	955.3	ug/L	-4	10	
Thallium	A	19.160	18.064	5000	4842	ug/L	-3	10	
Vanadium	A	150.16	145.49	5000	4873	ug/L	-3	10	
Zinc	A	80.133	76.803	5000	4880	ug/L	-2	10	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	1808473	1912054	5.73

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 239425 METALS Soil
EPA 6010B

Inst : MET08 IDF : 1.0
Seqnum : 82361903067 File : met08_sr_6010 Time : 07-SEP-2012 13:19
Cal : 82361903001 Caldate : 07-SEP-2012

Analyte	Ch	Quant	IQL	2X MDL	Units	Flags
Antimony	A	ND	10.00	2.158	ug/L	
Arsenic	A	ND	5.000	2.582	ug/L	
Barium	A	[0.4975]	5.000	0.3522	ug/L	!ib
Beryllium	A	ND	2.000	0.3881	ug/L	
Cadmium	A	ND	5.000	0.9506	ug/L	
Chromium	A	ND	5.000	1.262	ug/L	
Cobalt	A	ND	5.000	1.550	ug/L	
Copper	A	ND	5.000	3.219	ug/L	
Lead	A	ND	5.000	3.105	ug/L	
Molybdenum	A	ND	5.000	2.826	ug/L	
Nickel	A	ND	5.000	2.429	ug/L	
Selenium	A	ND	10.00	4.980	ug/L	
Silver	A	ND	5.000	2.661	ug/L	
Thallium	A	ND	10.00	3.279	ug/L	
Vanadium	A	ND	5.000	1.427	ug/L	
Zinc	A	ND	20.00	4.561	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	1808473	1935453	7.02

!=warning ib=instrument blank

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD AB FOR 239425 METALS Soil
EPA 6010B

Inst : MET08 IDF : 1.0
Seqnum : 82361903068 File : met08_sr_6010 Time : 07-SEP-2012 13:24
Cal : 82361903001 Caldate : 07-SEP-2012
Standards: S20222

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Antimony	A	500.0	496.8	ug/L	-1	20	
Arsenic	A	500.0	510.7	ug/L	2	20	
Barium	A	500.0	528.5	ug/L	6	20	
Beryllium	A	500.0	525.2	ug/L	5	20	
Cadmium	A	1000	1016	ug/L	2	20	
Chromium	A	500.0	500.5	ug/L	0	20	
Cobalt	A	500.0	473.6	ug/L	-5	20	
Copper	A	500.0	530.7	ug/L	6	20	
Lead	A	1000	943.0	ug/L	-6	20	
Molybdenum	A	500.0	517.7	ug/L	4	20	
Nickel	A	1000	948.6	ug/L	-5	20	
Selenium	A	500.0	541.9	ug/L	8	20	
Silver	A	1000	1096	ug/L	10	20	
Thallium	A	500.0	486.6	ug/L	-3	20	
Vanadium	A	500.0	535.7	ug/L	7	20	
Zinc	A	1000	1001	ug/L	0	20	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	1808473	1632453	-9.73

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 239425 METALS Soil
EPA 6010B

Inst : MET08 IDF : 1.0
Seqnum : 82361903074 File : met08_sr_6010 Time : 07-SEP-2012 13:49
Cal : 82361903001 Caldate : 07-SEP-2012
Standards: S20645

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Antimony	A	32.315	31.335	5000	4955	ug/L	-1	10	
Arsenic	A	18.399	19.781	5000	4950	ug/L	-1	10	
Barium	A	398.40	385.84	5000	4996	ug/L	0	10	
Beryllium	A	4801.8	4703.8	500.0	504.4	ug/L	1	10	
Cadmium	A	244.06	239.15	5000	5024	ug/L	0	10	
Chromium	A	90.100	86.191	5000	4869	ug/L	-3	10	
Cobalt	A	126.01	123.11	5000	4944	ug/L	-1	10	
Copper	A	100.33	106.20	5000	4846	ug/L	-3	10	
Lead	A	60.768	56.631	5000	4848	ug/L	-3	10	
Molybdenum	A	34.687	35.146	5000	5030	ug/L	1	10	
Nickel	A	50.362	48.314	5000	4906	ug/L	-2	10	
Selenium	A	26.311	29.538	5000	4889	ug/L	-2	10	
Silver	A	715.09	678.35	1000	972.4	ug/L	-3	10	
Thallium	A	19.160	18.305	5000	4907	ug/L	-2	10	
Vanadium	A	150.16	147.67	5000	4946	ug/L	-1	10	
Zinc	A	80.133	78.315	5000	4976	ug/L	0	10	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	1808473	1871258	3.47

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 239425 METALS Soil
EPA 6010B

Inst : MET08 IDF : 1.0
Seqnum : 82361903075 File : met08_sr_6010 Time : 07-SEP-2012 13:55
Cal : 82361903001 Caldate : 07-SEP-2012

Analyte	Ch	Quant	IQL	2X MDL	Units	Flags
Antimony	A	ND	10.00	2.158	ug/L	
Arsenic	A	ND	5.000	2.582	ug/L	
Barium	A	[0.4755]	5.000	0.3522	ug/L	!ib
Beryllium	A	ND	2.000	0.3881	ug/L	
Cadmium	A	ND	5.000	0.9506	ug/L	
Chromium	A	ND	5.000	1.262	ug/L	
Cobalt	A	ND	5.000	1.550	ug/L	
Copper	A	ND	5.000	3.219	ug/L	
Lead	A	ND	5.000	3.105	ug/L	
Molybdenum	A	ND	5.000	2.826	ug/L	
Nickel	A	ND	5.000	2.429	ug/L	
Selenium	A	ND	10.00	4.980	ug/L	
Silver	A	ND	5.000	2.661	ug/L	
Thallium	A	[3.394]	10.00	3.279	ug/L	!ib
Vanadium	A	ND	5.000	1.427	ug/L	
Zinc	A	ND	20.00	4.561	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	1808473	1970820	8.98

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CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD AB FOR 239425 METALS Soil
EPA 6010B

Inst : MET08 IDF : 1.0
Seqnum : 82361903076 File : met08_sr_6010 Time : 07-SEP-2012 14:00
Cal : 82361903001 Caldate : 07-SEP-2012
Standards: S20222

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Antimony	A	500.0	510.6	ug/L	2	20	
Arsenic	A	500.0	517.9	ug/L	4	20	
Barium	A	500.0	530.6	ug/L	6	20	
Beryllium	A	500.0	525.7	ug/L	5	20	
Cadmium	A	1000	1021	ug/L	2	20	
Chromium	A	500.0	496.9	ug/L	-1	20	
Cobalt	A	500.0	479.2	ug/L	-4	20	
Copper	A	500.0	534.1	ug/L	7	20	
Lead	A	1000	960.8	ug/L	-4	20	
Molybdenum	A	500.0	519.3	ug/L	4	20	
Nickel	A	1000	950.6	ug/L	-5	20	
Selenium	A	500.0	539.4	ug/L	8	20	
Silver	A	1000	1094	ug/L	9	20	
Thallium	A	500.0	490.8	ug/L	-2	20	
Vanadium	A	500.0	532.9	ug/L	7	20	
Zinc	A	1000	1007	ug/L	1	20	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	1808473	1608805	-11.04

SAMPLE PREPARATION SUMMARY

Batch # : 190267 Analysis : ICAP
Started By : BRJ Prep Date : 07-SEP-2012 09:22 Finished By : BRJ
Method : 3050B SOP Version : 3050B_ICP_rv9 Units : g
Spike #1 ID : S20436 Spike #2 ID : S20437

Sample	Stype	Matrix	Initial	Final	Clean DF	Prep DF	pH	Sp 1 Vol	Sp 2 Vol	Sp 3 Vol	Clean Method	Analysis	Comments
239425-001		Soil	1.03	50	1	48.54						T22/ICP	MSS
239425-002		Soil	1.02	50	1	49.02						T22/ICP	
239425-003		Soil	.99	50	1	50.51						T22/ICP	
239425-004		Soil	1.02	50	1	49.02						T22/ICP	
239425-005		Soil	1.02	50	1	49.02						T22/ICP	
239425-006		Soil	1.03	50	1	48.54						T22/ICP	
239432-002		Soil	1.07	50	1	46.73						T22/ICP	
QC655185	BLANK	Soil	1	50	1	50.0							
QC655186	BS	Soil	1	50	1	50.0		.5	.5				
QC655187	BSD	Soil	1	50	1	50.0		.5	.5				
QC655188	MS	Soil	1.03	50	1	48.54		.5	.5				
QC655189	MSD	Soil	1	50	1	50.0		.5	.5				
QC655190	SER	Soil	1.03	50	1	48.54							
QC655191	PDS	Soil	1.03	50	1	48.54							

Analyst: NT Date: 09/07/12 Reviewer: PRW Date: 09/07/12

Soil Digestion for ICP & ICP-MS

Curtis & Tompkins, Ltd.

LIMS Batch #: 190267
Date Digested: 9/7/12
Digested by: BRJ

Scale Used: ☑ Metals Prep ☐ _____

Digestion Method: ☑ EPA 3050b ☐ _____

BK 3343
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Lvl.	Sample #	Container ID	Weight of Sample (g)	Final Volume (mL)	Filtered? (y/n)	ID	Comments
	BLANK QC655185		Ø	☑ 50 ☐ ____			
	BS QC655186		↓	☑ 50 ☐ ____			
	BSD QC655187		↓	☑ 50 ☐ ____			
IV	239425-001	A	1.03	☑ 50 ☐ ____			MSS
5	MS QC655188	↓	1.03	☐ 50 ☐ ____			
	MSD QC655189		1.00	☐ 50 ☐ ____			
	239425-002		1.02	☐ 50 ☐ ____			
	239425-003		0.99	☐ 50 ☐ ____			
	239425-004		1.02	☐ 50 ☐ ____			
10	239425-005		1.02	☐ 50 ☐ ____			
↓	239425-006	↓	1.03	☐ 50 ☐ ____			
II	239432-002	B	1.07	☐ 50 ☐ ____			
				☐ 50 ☐ ____			
				☐ 50 ☐ ____			
15				☐ 50 ☐ ____			
				☐ 50 ☐ ____			
				☐ 50 ☐ ____			
				☐ 50 ☐ ____			
			BRJ 9/7/12	☐ 50 ☐ ____			
20				☐ 50 ☐ ____			
				☐ 50 ☐ ____			
				☐ 50 ☐ ____			
				☐ 50 ☐ ____			
				☐ 50 ☐ ____			
				☐ 50 ☐ ____			

	Reagent ID or LIMS #	Initials / Date
Digestion tubes, lot#	J143054-262	BRJ 9/7/12
.5 mL of spike solution (Std1) was added to all spikes	S20436	↓
.5 mL of spike solution (Std2) was added to all spikes	S20437	
Digestion Temperature (°C), Block and Probe Location	94.8 95°C B-34	
Digestion begun at (time)	9:22	
1:1 HNO3	L08023 JT BAKER	
concentrated HNO3	0000003390	
3mL 30% hydrogen peroxide	K52A02	
concentrated HCl	K14054	
Digestion ended at (time)	11:34	
O filtered thru' 541 Whatman	66846	
Relinquished to ICP group	ICP	

Brian R. Jones 9/7/12
Digestion Chemist / Date

Continued from page ____
Continued on page ____

NT 9/7/12
Reviewed by / Date

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 842362266

Instrument : MET14 Begun : 09/07/12 13:46
Method : EPA 7470A SOP Version : HG_water_rv12

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	190272	ICALBLK	STD01REP1			09/07/12 13:46	1.0		
002	190272	ICAL	STD02REP1			09/07/12 13:48	1.0	1	
003	190272	ICAL	STD03REP1			09/07/12 13:51	1.0	1	
004	190272	ICAL	STD04REP1			09/07/12 13:53	1.0	1	
005	190272	ICAL	STD05REP1			09/07/12 13:55	1.0	1	
006	190272	ICAL	STD06REP1			09/07/12 13:57	1.0	1	
007	190272	ICV				09/07/12 14:04	1.0	2	
008	190272	ICB				09/07/12 14:06	1.0		
009	190272	BLANK	QC655210	Soil	190272	09/07/12 14:09	1.0		
010	190272	BS	QC655211	Soil	190272	09/07/12 14:12	1.0		
011	190272	BSD	QC655212	Soil	190272	09/07/12 14:14	1.0		
012	190272	MSS	239220-005	Soil	190272	09/07/12 14:16	1.0		
013	190272	MS	QC655213	Soil	190272	09/07/12 14:18	1.0		
014	190272	MSD	QC655214	Soil	190272	09/07/12 14:21	1.0		
015	190272	SER	QC655215	Soil	190272	09/07/12 14:23	5.0		
016	190272	SAMPLE	239220-001	Soil	190272	09/07/12 14:25	1.0		
017	190272	SAMPLE	239220-002	Soil	190272	09/07/12 14:27	1.0		
018	190272	SAMPLE	239220-003	Soil	190272	09/07/12 14:29	1.0		
019	190272	CCV				09/07/12 14:31	1.0	3	
020	190272	CCB				09/07/12 14:34	1.0		
021	190272	SAMPLE	239220-004	Soil	190272	09/07/12 14:37	1.0		
022	190272	SAMPLE	239408-001	Soil	190272	09/07/12 14:39	1.0		
023	190272	SAMPLE	239425-001	Soil	190272	09/07/12 14:46	20.0		
024	190272	SAMPLE	239425-002	Soil	190272	09/07/12 14:48	1.0		1:HG=160
025	190272	SAMPLE	239425-002	Soil	190272	09/07/12 14:59	100.0		
026	190272	SAMPLE	239425-003	Soil	190272	09/07/12 15:02	100.0		
027	190272	SAMPLE	239425-004	Soil	190272	09/07/12 15:04	100.0		
028	190272	SAMPLE	239425-005	Soil	190272	09/07/12 15:06	100.0		
029	190272	SAMPLE	239425-006	Soil	190272	09/07/12 15:08	100.0		
030	190272	CCV				09/07/12 15:10	1.0	3	
031	190272	CCB				09/07/12 15:12	1.0		
032	190272	SAMPLE	239432-002	Soil	190272	09/07/12 15:15	1.0		
033	190272	SAMPLE	239389-001	Soil	190272	09/07/12 15:17	1.0		
034	190272	SAMPLE	239397-001	Soil	190272	09/07/12 15:19	1.0		
035	190272	SAMPLE	239397-002	Soil	190272	09/07/12 15:21	1.0		
036	190272	SAMPLE	239402-001	Soil	190272	09/07/12 15:24	1.0		
037	190272	SAMPLE	239403-005	Soil	190272	09/07/12 15:26	1.0		1:HG=34
038	190272	SAMPLE	239403-006	Soil	190272	09/07/12 15:28	1.0		1:HG=12
039	190272	SAMPLE	239425-006	Soil	190272	09/07/12 15:31	10.0		
040	190272	SAMPLE	239403-005	Soil	190272	09/07/12 15:36	10.0		
041	190272	SAMPLE	239403-006	Soil	190272	09/07/12 15:38	5.0		
042	190272	CCV				09/07/12 15:41	1.0	3	
043	190272	CCB				09/07/12 15:43	1.0		

CRT 09/07/12 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 43.

Standards used: 1=S20657 2=S20659 3=S20660

CURTIS & TOMPKINS INITIAL CALIBRATION FOR 239425 METALS Soil: EPA 7470A

Inst : MET14
Calnum : 842362266001
Units : ug/L

Date : 07-SEP-2012 13:46
X Axis : R

Reviewer : ---
Type : SOIL

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	190272	842362266002	STD02REP1	07-SEP-2012 13:48	S20657 (500X)
L2	190272	842362266003	STD03REP1	07-SEP-2012 13:51	S20657 (200X)
L3	190272	842362266004	STD04REP1	07-SEP-2012 13:53	S20657 (50X)
L4	190272	842362266005	STD05REP1	07-SEP-2012 13:55	S20657 (20X)
L5	190272	842362266006	STD06REP1	07-SEP-2012 13:57	S20657 (10X)

Analyte	L1	L2	L3	L4	L5	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	Flg
Mercury	3515.0	3018.0	2745.5	2606.8	2478.6	LINR	-0.1355	4.05E-4		2872.8	0.999	.99	

Spiked Amounts / Drifts	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D
Mercury	0.2000	**-25**	0.5000	-5	2.0000	4	5.0000	3	10.000	-1

Instrument amount = a0 + response * a1 + response^2 * a2; LINR=Linear regression

CURTIS & TOMPKINS 2ND SOURCE CALIBRATION SUMMARY FOR 239425 METALS Soil
EPA 7470A

Inst : MET14
Calnum : 842362266001 Cal Date : 07-SEP-2012 Type : SOIL

ICV 842362266007 (07-SEP-2012) stds: S20659

Analyte	Spiked	Quant	Units	%D	Max	Flags
Mercury	5.000	5.100	ug/L	2	10	

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 239425 METALS Soil
EPA 7470A

Inst : MET14 IDF : 1.0
Seqnum : 842362266008 File : 190272 Time : 07-SEP-2012 14:06
Cal : 842362266001 Caldate : 07-SEP-2012 Caltype : SOIL

Analyte	Quant	IQL	MDL	Units	Flags
Mercury	ND	0.2000	0.03605	ug/L	

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 239425 METALS Soil
EPA 7470A

Inst : MET14 IDF : 1.0
Seqnum : 842362266019 File : 190272 Time : 07-SEP-2012 14:31
Cal : 842362266001 Caldate : 07-SEP-2012 Caltype : SOIL
Standards: S20660

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Mercury	2872.8	2785.4	5.000	5.510	ug/L	10	20	

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 239425 METALS Soil
EPA 7470A

Inst : MET14 IDF : 1.0
Seqnum : 842362266020 File : 190272 Time : 07-SEP-2012 14:34
Cal : 842362266001 Caldate : 07-SEP-2012 Caltype : SOIL

Analyte	Quant	IQL	MDL	Units	Flags
Mercury	ND	0.2000	0.03605	ug/L	

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 239425 METALS Soil
EPA 7470A

Inst : MET14 IDF : 1.0
Seqnum : 842362266030 File : 190272 Time : 07-SEP-2012 15:10
Cal : 842362266001 Caldate : 07-SEP-2012 Caltype : SOIL
Standards: S20660

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Mercury	2872.8	2790.6	5.000	5.520	ug/L	10	20	

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 239425 METALS Soil
EPA 7470A

Inst : MET14 IDF : 1.0
Seqnum : 842362266031 File : 190272 Time : 07-SEP-2012 15:12
Cal : 842362266001 Caldate : 07-SEP-2012 Caltype : SOIL

Analyte	Quant	IQL	MDL	Units	Flags
Mercury	ND	0.2000	0.03605	ug/L	

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 239425 METALS Soil
EPA 7470A

Inst : MET14 IDF : 1.0
Seqnum : 842362266042 File : 190272 Time : 07-SEP-2012 15:41
Cal : 842362266001 Caldate : 07-SEP-2012 Caltype : SOIL
Standards: S20660

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Mercury	2872.8	2816.0	5.000	5.570	ug/L	11	20	

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 239425 METALS Soil
EPA 7470A

Inst : MET14 IDF : 1.0
Seqnum : 842362266043 File : 190272 Time : 07-SEP-2012 15:43
Cal : 842362266001 Caldate : 07-SEP-2012 Caltype : SOIL

Analyte	Quant	IQL	MDL	Units	Flags
Mercury	ND	0.2000	0.03605	ug/L	

SAMPLE PREPARATION SUMMARY

Batch # : 190272
Started By : CRT
Method : METHOD
Spike #1 ID : S20657

Prep Date : 07-SEP-2012 11:20

Analysis : HG
Finished By : CRT
Units : g

Sample	Stype	Matrix	Initial	Final	Clean DF	Prep DF	pH	Sp 1 Vol	Sp 2 Vol	Sp 3 Vol	Clean Method	Analysis	Comments
239220-001		Soil	.64	50	1	78.13						T22/HG	See comment 1 below
239220-002		Soil	.63	50	1	79.37						TAL/HG	See comment 1 below
239220-003		Soil	.62	50	1	80.65						TAL/HG	See comment 1 below
239220-004		Soil	.61	50	1	81.97						TAL/HG	See comment 1 below
239220-005		Soil	.61	50	1	81.97						TAL/HG	See comment 2 below
239389-001		Soil	.6	50	1	83.33						T22/HG	alias: 239308-001
239397-001		Soil	.58	50	1	86.21						T22/HG	
239397-002		Soil	.62	50	1	80.65						T22/HG	
239402-001		Soil	.6	50	1	83.33						T22/HG	
239403-005		Soil	.57	50	1	87.72						HG	
239403-006		Soil	.59	50	1	84.75						HG	
239408-001		Soil	.58	50	1	86.21						T22/HG	
239425-001		Soil	.62	50	1	80.65						T22/HG	
239425-002		Soil	.61	50	1	81.97						T22/HG	
239425-003		Soil	.6	50	1	83.33						T22/HG	
239425-004		Soil	.59	50	1	84.75						T22/HG	
239425-005		Soil	.64	50	1	78.13						T22/HG	
239425-006		Soil	.59	50	1	84.75						T22/HG	
239432-002		Soil	.58	50	1	86.21						T22/HG	
QC655210	BLANK	Soil	.6	50	1	83.33							
QC655211	BS	Soil	.6	50	1	83.33		1.25					
QC655212	BSD	Soil	.6	50	1	83.33		1.25					
QC655213	MS	Soil	.58	50	1	86.21		1.25					
QC655214	MSD	Soil	.59	50	1	84.75		1.25					
QC655215	SER	Soil	.61	50	1	81.97							

Comment 1: Comp of containers A-B, post-MIS sample
Comment 2: MSS, SER, Comp of containers A-D, post-MIS sample

Analyst: CRT Date: 09/07/12 Reviewer: PRW Date: 09/07/12

Soil Digestion for Mercury

Curtis & Tompkins, Ltd.

LIMS Batch #: 190272

Date Digested: 9/7/12

Scale Used: ☑ Metals Prep ☐ _____

Digestion Method: ☑ EPA 7471A ☐ _____

BK 3336

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Sample #	container ID	Sample Weight (g)	Final Volume (mL)	Filtered? (y/n)	Comments
MB QC655210		0	☑ 50 ☐ ____	X	
BS ↓ 11		0	☑ 50 ☐ ____		
BSD ↓ 12		0	☑ 50 ☐ ____		
239220-005		0.61	☑ 50 ☐ ____		MSS, SER, comp of A-1), post MIS
MS ~~-002~~ CRT 9/7/12		0.58	☑ 50 ☐ ____		QC655213
MSD ~~-003~~		0.59	☑ 50 ☐ ____		↓ 14
239220-001		0.64	☑ 50 ☐ ____		comp of A-B, post MIS sample
↓ -002		0.63	☑ 50 ☐ ____		↓
-003		0.62	☑ 50 ☐ ____		
↓ -004		0.61	☑ 50 ☐ ____		
239408-001	B	0.58	☑ 50 ☐ ____		
239425-001	B	0.62	☑ 50 ☐ ____		
↓ -002	↓	0.61	☑ 50 ☐ ____		
-003		0.60	☑ 50 ☐ ____		
-004		0.59	☑ 50 ☐ ____		
-005		0.64	☑ 50 ☐ ____		
↓ -006	↓	0.59	☑ 50 ☐ ____		
239432-002	B	0.58	☑ 50 ☐ ____		
239389-001	A	0.60	☑ 50 ☐ ____		alias: 239308-001
239397-001	A	0.58	☑ 50 ☐ ____		
↓ -002	↓	0.62	☑ 50 ☐ ____		
239402-001	A	0.60	☑ 50 ☐ ____		
239403-005	↓	0.57	☑ 50 ☐ ____		
↓ -006	↓	0.59	☑ 50 ☐ ____	↓	CRT 9/7/12
			☐ ~~50~~ ☐ ____		

1.25 mL of spike standard was added to all spikes

☑ CAL digested with this batch

	Reagent ID/ LIMS# / Time	Initials / Date
Digestion Tubes, Lot #	EK120423	CRT 9/7/12
ICAL Source LIMS S#	S206 57	
ICV / CCV LIMS S#	↓ 57 / 60	
Digestion Temperature (°C), Block and Probe Location	95°C / B-36	
Digestion Started at (time)	11:20	
Aqua Regia Acids (HNO3+ HCl)	9-7	
5% $KMnO_4$	CRT 9-6	
NaCl.hydroxylamine hydrochloride	8-27	
Stannous Chloride	9-6	
Digestion Completd at (time)	11:50	
☑ filtered thru' 0.45 um syringe filter (lot #)	SS.20869103	↓

9/7/12

Prep Chemist / Date

Continued from page ____

Continued on page ____

9-7-12

Reviewed by / Date

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 239425
ANALYTICAL REPORT
Wet Chemistry

Tetra Tech EMI 1999 Harrison Street Oakland, CA 94612	Project : 103S094417 Location : B445 Landscape Level : IV

Sample ID	Lab ID
RFS-B445-DUI-2	239425-001
RFS-B445-DUI-3	239425-002
RFS-B445-DU3-1	239425-003
RFS-B445-DU3-2	239425-004
RFS-B445-DU3-3	239425-005
RFS-B484-SP	239425-006

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: _____ Date: 09/14/2012

Mike J. Dahlquist
Project Manager
(510) 486-0900

NELAP # 01107CA

Curtis & Tompkins, Ltd.

CASE NARRATIVE
WET CHEMISTRY (ASTM D2216/CLP)

Laboratory number:	**239425**
Client:	**Tetra Tech EMI**
Project:	**103S094417**
Location:	**B445 Landscape**
Request Date:	**09/06/12**
Samples Received:	**09/06/12**

This data package contains sample and QC results for six soil samples, requested for the above referenced project on 09/06/12. See attached cooler receipt form for any sample receipt problems or discrepancies.

Moisture (ASTM D2216/CLP):
No analytical problems were encountered.

Chain of Custody

239425

Tetra Tech EM Inc.
Oakland Office

1999 Harrison Street, Suite 500
Oakland, CA 94612
510.302.6300 Phone
510.433.0830 Fax

Chain of Custody Record No. 9070

Lab PO#: 120AK13 to follow

Lab: CAT

Project name: B445 Landscape + B48 Stockpile

TtEMI technical contact: Sara Woolley

Field samplers: Quinn Johnson, Mark Duffy

Project (CTO) number: 103SQ9K417

TtEMI project manager: Jason Bradersen

Field samplers' signatures: Sara Woolley

	Sample ID	Point ID/Depth	Date	Time	Matrix	MS / MSD	40 ml VOA	1 liter Amber	500 ml Poly	Sleeve	Glass Jar	250 ml Poly	Encore	VOA	SVOA	Pest	Metals Hg	TPH Purgeables	TPH Extractables*	PCB
+1	RFS-B445-DU1-2		9/6/12	10:15	soil						1						X			
+2	RFS-B445-DU1-3			11:00							1						X			
X3	RFS-B445-DU3-1			11:45							2			X			X		X	X
X4	RFS-B445-DU3-2			12:35							1						X			
X5	RFS-B445-DU3-3			14:29							1						X			
++6	RFS-B484-SP			15:40							2			X			X		X	X

	Name (print)	Company Name	Date	Time
Relinquished by:	Sara Woolley	TtEMI	9/6/12	17:05
Received by:	Mike Dahlquist	CAT	9/6	1705
Relinquished by:	Adnan Ahmad	CAT	9/6/12	2200
Received by:				

Turnaround time/remarks:

* with silica gel clean up
+ 24 hour TAT
X 24 hour TAT for Hg only, 5 day TAT for all others
++ 5 day TAT

Fed Ex #:

WHITE-Laboratory Copy YELLOW-Sample Tracker PINK-File Copy

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 239425 Date Received 9/6/12 Number of coolers 1
Client Tetra Tech Project B445 Landscape

Date Opened 9/6/12 By (print) AA (sign) [signature]
Date Logged in ↓ By (print) ↓ (sign) ↓

1. Did cooler come with a shipping slip (airbill, etc) _____ YES (NO)
   Shipping info _____

2A. Were custody seals present? .... ☐ YES (circle) on cooler on samples ☑ NO
   How many _____ Name _____ Date _____
2B. Were custody seals intact upon arrival? _____ YES NO (N/A)
3. Were custody papers dry and intact when received? _____ (YES) NO
4. Were custody papers filled out properly (ink, signed, etc)? _____ (YES) NO
5. Is the project identifiable from custody papers? (If so fill out top of form) ___ (YES) NO
6. Indicate the packing in cooler: (if other, describe) _____

☐ Bubble Wrap ☐ Foam blocks ☐ Bags ☐ None
☐ Cloth material ☐ Cardboard ☐ Styrofoam ☐ Paper towels

7. Temperature documentation: * Notify PM if temperature exceeds 6°C

Type of ice used: ☑ Wet ☐ Blue/Gel ☐ None Temp(°C) 6

☑ Samples Received on ice & cold without a temperature blank; temp. taken with IR gun

☐ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? _____ YES (NO)
   If YES, what time were they transferred to freezer? _____
9. Did all bottles arrive unbroken/unopened? _____ (YES) NO
10. Are there any missing / extra samples? _____ YES (NO)
11. Are samples in the appropriate containers for indicated tests? _____ (YES) NO
12. Are sample labels present, in good condition and complete? _____ (YES) NO
13. Do the sample labels agree with custody papers? _____ (YES) NO
14. Was sufficient amount of sample sent for tests requested? _____ (YES) NO
15. Are the samples appropriately preserved? _____ YES NO (N/A)
16. Did you check preservatives for all bottles for each sample? _____ YES NO (N/A)
17. Did you document your preservative check? _____ YES NO (N/A)
18. Did you change the hold time in LIMS for unpreserved VOAs? _____ YES NO (N/A)
19. Did you change the hold time in LIMS for preserved terracores? _____ YES NO (N/A)
20. Are bubbles > 6mm absent in VOA samples? _____ YES NO (N/A)
21. Was the client contacted concerning this sample delivery? _____ YES (NO)
   If YES, Who was called? _____ By _____ Date: _____

COMMENTS

_____
_____
_____
_____
_____
_____

Rev 10, 11/11

Results & QC Summary

Percent Moisture Summary Report

Batch: 190291
Date: 09/07/12
Method: CLP SOW 390
Analyst: VV

Sample	Tare (g)	Wet (g)	Dry (g)	Percent Solids	Percent Moisture
239220-006	11.3530	17.6084	16.1926	77	23
239425-001	11.3433	17.0913	16.7755	95	5
239425-002	11.5635	17.8433	17.4723	94	6
239425-003	11.3083	18.0399	17.6828	95	5
239425-004	11.3185	17.2635	16.8206	93	7
239425-005	11.3605	17.7093	17.3528	94	6
239425-006	11.2242	19.5688	18.6083	88	12
239437-001	11.3741	19.5061	18.2413	84	16
239437-002	11.1587	17.5136	16.6126	86	14
239452-001	11.0968	17.4150	15.7238	73	27
239455-001	11.4054	17.6286	17.5612	99	1
239455-002	10.8855	17.1146	17.0484	99	1
239455-003	11.3123	18.0917	17.8569	97	3
239455-004	11.1241	17.2593	17.1757	99	1
QC655304	11.0678	17.6693	17.3124	95	5
of 239425-001			RPD:	0.1%	1.6%

PROJECT AE 163 METTLER

Notebook No. BK2394

Continued From Page

DATE	ANALYST	0.2000	0.5000	1.0000	2.0000	5.0000	10.0000	20.0000	50.0000	100.0000	SET
9-6-12	MN	0.2001	0.5000	1.0001	2.0001	5.0001	10.0002	20.0001	50.0001	100.0001	10827
9-7-12	MN	0.2000	0.5000	1.0000	2.0000	5.0000	10.0001	20.0000	50.0001	100.0000	10827
9-8-12	VV	0.2000	0.5000	1.0000	2.0000	5.0000	10.0000	20.0000	50.0001	100.0000	10827

Continued on Page

Read and Understood By

Signed Date Signed Date

Moisture LOG

Curtis & Tompkins, Ltd.

LIMS Batch #: 190291
Date: 9-7-12

Page: **43**
Benchbook#: **BK 3348**
Scale Used
☑ Leachates Analytical
☐ _____

Sample # / Letter	Dish #	Dish Weight (g)	Sample + Dish Wt (g)	Final Weight (g)	*Comments
BLK	CPU	11.2607	Ø	11.2609	
239220-006 A/B	K07	11.3530	17.6084	16.1926	
239425-001 A	TEC	11.3433	17.8913	16.7755	
GDUP -001	B105	11.0678	17.6693	17.3124	
-002	PHX	11.5635	17.8433	17.4723	
-003	DZD	11.3083	18.0399	17.6828	
-004	C125	11.3185	17.2635	16.8206	
-005	~~E08~~	11.3605	17.7093	17.3528	DISH# E03
-006	K04	11.2242	19.5688	18.6083	
239437-001	CT24	11.3741	19.5061	18.2413	
-002	1X	11.1587	17.5136	16.6126	
239452-001	B107	11.0968	17.4150	15.7288	
239455-001	C23	11.4054	17.6286	17.5612	
-002	HN1	10.8855	17.1146	17.0484	
-003	94A	11.3123	18.0917	17.8569	
-004	CCC	11.1241	17.2593	17.1757	

9-8-12

Date/ Time IN: 9-7-12 2000
Temp (F) IN: 105
Date/ Time OUT: 9-8-12 1950
Temp (F) OUT: 103

Extraction Chemist Date: 9-7-12

Reviewed by Date: 9-8-12