



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
Environmental Sciences Center
701 Mapes Road
Fort Meade, Maryland 20755-5350

DATE : July 10, 2009

SUBJECT: Region III Data QA Review

FROM : Colleen Walling *Colleen Walling*
Region III ESAT RPO (3EA22)

TO : Michael Towle
Regional Project Manager (3HS31)

Attached is the organic data validation report for the Tank Car Corporation of America Site (Case #: 38651; SDG#: C06T7 and C06W0) completed by the Region III Environmental Services Assistance Team (ESAT) contractor under the direction of Region III EAID.

If you have any questions regarding this review, please call me at (410) 305-2763.

Attachments

cc: Joshua Cope (Tetra Tech EMI)

TO File #: 0021 TDF#: 06120

Lockheed Martin Enterprise Solutions & Services
ESAT Region 3
US EPA Environmental Science Center
701 Mapes Road Ft. Meade, MD 20755-530
Telephone 410-305-3037 Facsimile 410-305-3597

DATE: July 8, 2009

SUBJECT: Organic Data Validation (M2 Level)
Case: 38651
SDG: C06T7 and C06W0
Site: Tank Car Corporation of America

FROM: Habteab Ghebreyesus *HG*
Organic Data Reviewer

Mahboobeh Mecanic *MM*
Senior Oversight Chemist

TO: Colleen Walling
ESAT Region 3 Project Officer

OVERVIEW

Case 38651, Sample Delivery Group (SDGs) C06T7 and C06W0, consisted of two (2) aqueous samples and one (1) field blank analyzed for volatile and semivolatile compounds, three (3) soil samples and one (1) waste sample analyzed for semivolatile compounds and one (1) trip blank analyzed for volatile compounds only. The sample set included one (1) field duplicate pair for the soil samples. All samples were submitted to A4 Scientific, Inc. (A4) for analyses. Samples were analyzed according to Contract Laboratory Program (CLP) Statement of Work (SOW) SOM01.2 through Routine Analytical Services (RAS) program.

SUMMARY

Data were validated according to Innovative Approaches for Validation of Organic Data, Level M2. This level of review includes assessment of all Quality Assurance/Quality Control (QA/QC) data and review of chromatograms, but excludes review of raw data and sample spectra. Areas that may impact data usability are listed below.

In SOM01.2, 1,4-dioxane is no longer a target analyte by Trace volatile and Trace volatile SIM analyses. Using SOM01.2 for the detection and reporting of 1,4-dioxane at low and medium levels has not consistently generated data of sufficiently known quality. This is due to poor purge efficiency. Results for 1,4-dioxane using this method should be considered advisory.

MINOR PROBLEMS

- Volatile samples C06W1 and C06W7 had recoveries of Deuterated Monitoring Compound (DMC) 2-butanone-d5 below the lower QC limits. No positive results were reported for compounds associated with this DMC. Quantitation limits for compounds associated with this DMC were qualified "UL" on the DSFs.
- Recoveries of DMCs dimethylphthalate-d6 and Acenaphthylene-d8 were outside the lower control limits in semivolatile sample C06W7. The "L" qualifier for positive results associated with these DMCs in this sample was superseded by "J" on the DSFs. Quantitation limits for compounds associated with these DMCs were qualified "UL" on the DSFs.
- Several compounds failed precision criteria [percent difference (%D)] in the volatile and semivolatile continuing calibrations. Positive result reported for benzaldehyde in semivolatile sample C06W7 was qualified "J" on the DSF. The precision did not exceed the fifty percent (50%) criteria; therefore, quantitation limits were not qualified.

NOTES

- Tentatively identified compounds (TICs) were reviewed during data validation. Compounds identified as common laboratory or blank contaminants were crossed off TIC Form 1s by the reviewer. TIC Form 1s for samples with reported TICs are included in Appendix E.
- Soil samples in SDG C06T7 collected 6/10/2009 and 6/11/09 were extracted on 6/22/2009 for semivolatile compounds. The aqueous technical extraction holding time of seven (7) days from collection to extraction has been exceeded by four (4) to five (5) days. Due to persistence of these compounds in the soil matrix, no data were qualified based on holding times.
- Concentrations of target compounds found in the volatile and semivolatile analyses of the blanks are listed below. Samples with concentrations of common laboratory contaminants less than ten times (<10X) the blank concentrations have been qualified "B" on the DSFs.

<u>Fraction</u>	<u>Blanks</u>	<u>Compound</u>	<u>Concentration</u> (ug/L)	<u>Affected Samples</u>
VOA	Storage (VHBLKS1)	Methylene Chloride	2.6 J	C06W1, C06W7, C06W8
SVOA	Field (C06W7)	Bis(2-ethylhexyl)phthalate	1.2 J	C06W0, C06W8

- Results for field duplicate pair C06T7/C06T9 were comparable for all compounds except di-n-butylphthalate.

- Compounds detected below the Contract Required Quantitation Limits (CRQLs) were qualified “J” on the DSFs unless superseded by “B”.
- Sample weights other than thirty (30) grams were used for the extraction of semivolatile soil samples. The dilution factors reported on the DSFs were adjusted to reflect actual sample weight used.
- Recovery of DMC 1,1-dichloroethene-d2 was outside the upper control limit in volatile sample C06W0. No positive results were reported for the compound associated with this DMC in this sample and no data were qualified based on this finding.

Data for Case 38651, SDGs C06T7 and C06W0, were reviewed in accordance with EPA Region 3 Innovative Approaches (Level M2) for Validation of Organic Data, June 1995.

ATTACHMENTS

- 1) Appendix A Glossary of Data Qualifier Terms
- 2) Appendix B Data Summary Forms
- 3) Appendix C Chain-of-Custody Records
- 4) Appendix D Laboratory Case Narrative
- 5) Appendix E Tentatively Identified Compounds (TICs)

DCN: 38651_C06T7 and C06W0

Appendix A

Glossary of Data Qualifier Codes

GLOSSARY OF DATA QUALIFIER CODES (ORGANIC)

CODES RELATED TO IDENTIFICATION

(confidence concerning presence or absence of analytes):

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

(NO CODE) = Confirmed identification.

B = Not detected substantially above the level reported in laboratory or field blanks.

R = Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

N = Tentative identification. Consider present. Special methods may be needed to confirm its presence or absence in future sampling efforts.

CODES RELATED TO QUANTITATION

(can be used for both positive results and sample quantitation limits):

J = Analyte Present. Reported value may not be accurate or precise.

K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.

L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.

UJ = Not detected, quantitation limit may be inaccurate or imprecise.

UL = Not detected, quantitation limit is probably higher.

OTHER CODES

NJ = Qualitative identification questionable due to poor resolution. Presumptively present at approximate quantity.

Q = No analytical result.

Appendix B

Data Summary Forms

Case #: 38651

SDG : C06W0

Site :

TANK CAR CORPORATION OF AMERICA

Lab. :

A4

Sample Number :	C06W0	C06W1	C06W7	C06W8							
Sampling Location : (Prefix: TCCA)	-MW-04	-TB-01	-FB-01	-MW-05							
Field QC:		Trip Blank	Field Blank								
Matrix :	Water	Water	Water	Water							
Units :	ug/L	ug/L	ug/L	ug/L							
Date Sampled :	6/11/2009	6/10/2009	6/11/2009	6/11/2009							
Time Sampled :	10:15	15:10	17:34	15:36							
pH :	<2.0	<2.0	<2.0	<2.0							
Dilution Factor :	1.0	1.0	1.0	1.0							
Volatiles Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
1,1,2-Trichloroethane	5.0										
*Tetrachloroethene	5.0										
2-Hexanone	10										
Dibromochloromethane	5.0										
1,2-Dibromoethane	5.0										
*Chlorobenzene	5.0										
*Ethylbenzene	5.0										
o-Xylene	5.0										
m,p-Xylene	5.0										
*Styrene	5.0										
Bromoform	5.0										
Isopropylbenzene	5.0										
1,1,2,2-Tetrachloroethane	5.0										
*1,3-Dichlorobenzene	5.0										
*1,4-Dichlorobenzene	5.0										
1,2-Dichlorobenzene	5.0										
1,2-Dibromo-3-chloropropane	5.0										
1,2,4-Trichlorobenzene	5.0										
1,2,3-Trichlorobenzene	5.0										

CRQL = Contract Required Quantitation Limit

*Action Level Exists

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL * Dilution Factor)

Revised 09/99

Case #: 38651

SDG : C06W0

Number of Soil Samples : 0

Site :

TANK CAR CORPORATION OF AMERICA

Number of Water Samples : 3

Lab. :

A4

Number of Sediment Samples : 0

Sample Number :		C06W0	C06W7	C06W8							
Sampling Location : (Prefix: TCCA)		-MW-04	-FB-01	-MW-05							
Field QC:			Field Blank								
Matrix :		Water	Water	Water							
Units :		ug/L	ug/L	ug/L							
Date Sampled :		6/11/2009	6/11/2009	6/11/2009							
Time Sampled :		10:15	17:34	15:36							
Dilution Factor :		1.0	1.0	1.0							
Semivolatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Benzaldehyde	5.0			0.81	J						
Phenol	5.0										
Bis(2-Chloroethyl)ether	5.0										
2-Chlorophenol	5.0										
2-Methylphenol	5.0										
2,2'-Oxybis(1-chloropropane)	5.0										
Acetophenone	5.0										
4-Methylphenol	5.0										
N-Nitroso-di-n-propylamine	5.0										
Hexachloroethane	5.0										
Nitrobenzene	5.0										
Isophorone	5.0										
2-Nitrophenol	5.0										
2,4-Dimethylphenol	5.0										
Bis(2-chloroethoxy)methane	5.0										
2,4-Dichlorophenol	5.0										
Naphthalene	5.0				UL	1.1	J				
4-Chloroaniline	5.0										
Hexachlorobutadiene	5.0										
Caprolactam	5.0	2.1	J		UL						
4-Chloro-3-methylphenol	5.0			2.7	J						
2-Methylnaphthalene	5.0				UL						
Hexachlorocyclopentadiene	5.0										
2,4,6-Trichlorophenol	5.0										
2,4,5-Trichlorophenol	5.0										
1,1'-Biphenyl	5.0				UL						
2-Chloronaphthalene	5.0				UL						
2-Nitroaniline	10										
Dimethylphthalate	5.0				UL						
2,6-Dinitrotoluene	5.0										
Acenaphthylene	5.0				UL						
3-Nitroaniline	10										
Acenaphthene	5.0				UL						

Case #: 38651

SDG : C06W0

Site :

TANK CAR CORPORATION OF AMERICA

Lab. :

A4

Sample Number :		C06W0	C06W7	C06W8							
Sampling Location : (Prefix: TCCA)		-MW-04	-FB-01	-MW-05							
Field QC:			Field Blank								
Matrix :		Water	Water	Water							
Units :		ug/L	ug/L	ug/L							
Date Sampled :		6/11/2009	6/11/2009	6/11/2009							
Time Sampled :		10:15	17:34	15:36							
Dilution Factor :		1.0	1.0	1.0							
Semivolatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
2,4-Dinitrophenol	10										
4-Nitrophenol	10										
Dibenzofuran	5.0					1.7	J				
2,4-Dinitrotoluene	5.0										
Diethylphthalate	5.0			UL							
Fluorene	5.0										
4-Chlorophenyl-phenylether	5.0										
4-Nitroaniline	10										
4,6-Dinitro-2-methylphenol	10										
N-Nitrosodiphenylamine	5.0										
1,2,4,5-Tetrachlorobenzene	5.0										
4-Bromophenyl-phenylether	5.0										
*Hexachlorobenzene	5.0										
Atrazine	5.0										
*Pentachlorophenol	10										
Phenanthrene	5.0										
Anthracene	5.0										
Carbazole	5.0	0.57	J			5.4					
Di-n-butylphthalate	5.0			0.56	J						
Fluoranthene	5.0										
Pyrene	5.0										
Butylbenzylphthalate	5.0	1.2	J	UL		3.0	J				
3,3'-Dichlorobenzidine	5.0										
Benzo(a)anthracene	5.0										
Chrysene	5.0										
Bis(2-ethylhexyl)phthalate	5.0	1.1	B	1.2	J	1.3	B				
Di-n-octylphthalate	5.0			UL							
Benzo(b)fluoranthene	5.0										
Benzo(k)fluoranthene	5.0										
Benzo(a)pyrene	5.0										
Indeno(1,2,3-cd)pyrene	5.0										
Dibenzo(a,h)anthracene	5.0										
Benzo(g,h,i)perylene	5.0										
2,3,4,6-Tetrachlorophenol	5.0										

CRQL = Contract Required Quantitation Limit *Action Level Exists SEE NARRATIVE FOR CODE DEFINITIONS
 To calculate sample quantitation limits: (CRQL * Dilution Factor) Revised 09/99

Case #: 38651

SDG : C06T7

Number of Soil Samples : 4

Site :

TANK CAR CORPORATION OF AMERICA

Number of Water Samples : 0

Lab. :

A4

Number of Sediment Samples : 0

Sample Number :		C06T7	C06T8	C06T9	C06W9						
Sampling Location : (Prefix: TCCA)		-SS-13	-SS-18	-SS-19	-WA-01						
Field QC:		Dup of C06T9		Dup of C06T7							
Matrix :		Soil	Soil	Soil	Soil						
Units :		ug/Kg	ug/Kg	ug/Kg	ug/Kg						
Date Sampled :		6/10/2009	6/10/2009	6/10/2009	6/11/2009						
Time Sampled :		11:08	10:57	11:04	15:36						
%Moisture :		18.6	22.4	19.1	21.3						
Dilution Factor :		0.99	1.0	0.99	1.0						
Semivolatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Benzaldehyde	170										
Phenol	170										
Bis(2-Chloroethyl)ether	170										
2-Chlorophenol	170										
2-Methylphenol	170										
2,2'-Oxybis(1-chloropropane)	170										
Acetophenone	170										
4-Methylphenol	170										
N-Nitroso-di-n-propylamine	170										
Hexachloroethane	170										
Nitrobenzene	170										
Isophorone	170										
2-Nitrophenol	170										
2,4-Dimethylphenol	170										
Bis(2-chloroethoxy)methane	170										
2,4-Dichlorophenol	170										
Naphthalene	170							730			
4-Chloroaniline	170										
Hexachlorobutadiene	170										
Caprolactam	170										
4-Chloro-3-methylphenol	170										
2-Methylnaphthalene	170							73	J		
Hexachlorocyclopentadiene	170										
2,4,6-Trichlorophenol	170										
2,4,5-Trichlorophenol	170										
1,1'-Biphenyl	170							33	J		
2-Chloronaphthalene	170										
2-Nitroaniline	330										
Dimethylphthalate	170										
2,6-Dinitrotoluene	170										
Acenaphthylene	170										
3-Nitroaniline	330										
Acenaphthene	170							110	J		

Case #: 38651

SDG : C06T7

Site :

TANK CAR CORPORATION OF AMERICA

Lab. :

A4

Sample Number :	C06T7	C06T8	C06T9	C06W9							
Sampling Location : (Prifix: TCCA)	-SS-13	-SS-18	-SS-19	-WA-01							
Field QC:	Dup of C06T9		Dup of C06T7								
Matrix :	Soil	Soil	Soil	Soil							
Units :	ug/Kg	ug/Kg	ug/Kg	ug/Kg							
Date Sampled :	6/10/2009	6/10/2009	6/10/2009	6/11/2009							
Time Sampled :	11:08	10:57	11:04	15:36							
%Moisture :	18.6	22.4	19.1	21.3							
Dilution Factor :	0.99	1.0	0.99	1.0							
Semivolatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
2,4-Dinitrophenol	330										
4-Nitrophenol	330										
Dibenzofuran	170							80	J		
2,4-Dinitrotoluene	170										
Diethylphthalate	170										
Fluorene	170							92	J		
4-Chlorophenyl-phenylether	170										
4-Nitroaniline	330										
4,6-Dinitro-2-methylphenol	330										
N-Nitrosodiphenylamine	170										
1,2,4,5-Tetrachlorobenzene	170										
4-Bromophenyl-phenylether	170										
Hexachlorobenzene	170										
Atrazine	170										
Pentachlorophenol	330										
Phenanthrene	170			150	J	31	J	290			
Anthracene	170			27	J			150	J		
Carbazole	170							70	J		
Di-n-butylphthalate	170	1200		1300		580		120	J		
Fluoranthene	170	60	J	350		90	J	560			
Pyrene	170	52	J	320		85	J	450			
Butylbenzylphthalate	170										
3,3'-Dichlorobenzidine	170										
Benzo(a)anthracene	170	33	J	170	J	53	J	270			
Chrysene	170	41	J	190	J	59	J	310			
Bis(2-ethylhexyl)phthalate	170	30	J			24	J	56	J		
Di-n-octylphthalate	170										
Benzo(b)fluoranthene	170	33	J	130	J	61	J	330			
Benzo(k)fluoranthene	170	32	J	170	J	42	J	220			
Benzo(a)pyrene	170	31	J	180	J	52	J	300			
Indeno(1,2,3-cd)pyrene	170	31	J	120	J	37	J	230			
Dibenzo(a,h)anthracene	170			48	J			59	J		
Benzo(g,h,i)perylene	170	21	J	96	J	25	J	200	J		
2,3,4,6-Tetrachlorophenol	170										

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL * Dilution Factor) / [(100 - %Moisture) / 100]

Revised 09/99

Appendix C

Chain-of-Custody Records



**USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record**

Case No: 38651

DAS No:

R

Region: Project Code: Account Code: CERCLIS ID: Spill ID: Site Name/State: Project Leader: Action: Sampling Co:	3 CT4593 PAN000306553 TCCA June 09 VOC & SVOC/PA Jordan Vaughn Tetra Tech	Date Shipped: Carrier Name: Airbill: Shipped to:	6/11/2009 FedEx 857499847990 A4 Scientific 1544 Sawdust Road Suite 505 The Woodlands TX 77380 (281) 292-5277	Chain of Custody Record	Sampler Signature: Received By (Date / Time)			
ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No/ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type

C06W8	Ground Water/ Jordan Vaughn	L/G	SVOC:water (14), TVOA (14)	TCCA2146 (HCL), TCCA2147 (HCL), TCCA2148 (HCL), TCCA2149, TCCA2150 (5) TCCA2151 (1)	TCCA-MM-05	S: 6/11/2009 15:36		
C06W9	Waste/ Jordan Vaughn	L/G	SVOC soil (14)		TCCA-WA-01	S: 6/11/2009 15:36		Waste Soil

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key: SVOC soil = SVOC soil, SVOC:water = SVOC water, TVOA = SOM01:2 TVOA	Concentration: L = Low, M = Low/Medium, H = High Type/Designate: Composite = C, Grab = G		Shipment lead? _____

TR Number: 3-023200937-061109-0001

PR provides preliminary results. Requests for preliminary results will increase analytical costs.
Send Copy to: Sample Management Office, Attn: Heather Bauer, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4200; Fax 703/818-4602

REGION COPY

rabina@a4scientific.com

From: "Kramer, Caroline" <ckramer5@fedcsc.com>
To: "Jessica Schulze" <jschulze@a4scientific.com>; "Laxmi Teerupalli" <laxmi@a4scientific.com>; "Rabina Shreshta" <rabina@a4scientific.com>; "Reddy Pakanati" <Pakanati@a4scientific.com>
Cc: "Walsh, Colin" <cwash20@fedcsc.com>; "Carroll Harris" <harris.carroll@epa.gov>; "Dan Slizys" <slizys.dan@epa.gov>; "John Kwedar" <kwedar.john@epa.gov>
Sent: Wednesday, June 17, 2009 9:31 AM
Subject: Region 03 | Case 38651 | Lab A4 | SDG C06W0 | Issue Multiple | FINAL

Jessica,

I am helping Colin out this morning.

Summary Start

-Discrepancies with tags, jars, and/or TR/COC-

Issue 1: The TR/COC lists the analysis as TVOA and SVOA; however per scheduling the water samples should be analyzed for VOA and SVOA.

Resolution 1: In accordance with previous direction from Region 3, the laboratory will note the issue in the Case/SDG Narrative, perform the analyses as indicated on the Scheduling Notification Form, and proceed with the analysis of the samples. The resolution will be applied to all TR/COCs received for this Case that list an incorrect analysis.

-Broken samples-

Issue 2: Water samples Co6W7 and Co6Wo were both received with 1-1L amber bottle broken. The laboratory has enough volume remaining to perform the requested analysis.

Resolution 2: In accordance with previous direction from Region 3, the laboratory will note the issue in the Case/SDG Narrative and proceed with the analysis of the sample. If re-extraction/reanalysis is necessary, the laboratory will contact the SMO coordinator and wait for a resolution.

Summary End

Caroline L. Kramer
 Environmental Coordinator - Regions 8 and 9
 CSC

15000 Conference Center Drive, Chantilly VA 20151
 Civil Division | (p) 703-818-4248 | (f) 703-818-4602 | ckramer5@fedcsc.com | www.csc.com

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- 6/17/2009 11:29am Phone conversation between Caroline Kramer, SMO, and Jessica Schulze, A4. Jessica confirmed that the laboratory had sufficient volume for the VOA analysis as well for water samples Co6W7 and Co6Wo.

From: jschulze@a4scientific.com [mailto:jschulze@a4scientific.com]
Sent: Wednesday, June 17, 2009 11:55 AM
To: Kramer, Caroline
Cc: Laxmi; pakanati; sri
Subject: Re: CASE/SDG 38651/C06W0

Water.

— Original Message —

From: Kramer, Caroline
To: jschulze@a4scientific.com
Sent: Wednesday, June 17, 2009 7:38 AM
Subject: RE: CASE/SDG 38651/C06W0

Jessica,
 Are samples Co6W7 and Co6Wo water or soil samples?
 Thanks,

Caroline L. Kramer
 Environmental Coordinator - Regions 8 and 9
 CSC

6/24/2009

15000 Conference Center Drive, Chantilly VA 20151
 Civil Division | (p) 703-818-4248 | (f) 703-818-4602 | ckramer5@fedcsc.com | www.csc.com

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From: jschulze@a4scientific.com [<mailto:jschulze@a4scientific.com>]
Sent: Wednesday, June 17, 2009 10:25 AM
To: Kramer, Caroline
Cc: Laxmi; pakanati; sri
Subject: Re: CASE/SDG 38651/C06W0

Yes. lab will have sufficient volume to perform SVOA analysis for samples C06W7 and C06W0.

— Original Message —

From: Kramer, Caroline
To: Jessica Schulze ; Laxmi Teerupalli ; Rabina Shreshta ; Reddy Pakanati
Cc: Walsh, Colin
Sent: Wednesday, June 17, 2009 6:37 AM
Subject: FW: CASE/SDG 38651/C06W0

Jessica,
 I am helping Colin out this morning.

Can you please confirm that the two samples for issue 2 (Co6W7 and Co6Wo) have sufficient volume remaining to perform the requested analysis?

Thank you,

Caroline L. Kramer
 Environmental Coordinator - Regions 8 and 9
 CSC

15000 Conference Center Drive, Chantilly VA 20151
 Civil Division | (p) 703-818-4248 | (f) 703-818-4602 | ckramer5@fedcsc.com | www.csc.com

From: Walsh, Colin
Sent: Wednesday, June 17, 2009 8:19 AM
To: Kramer, Caroline
Subject: FW: CASE/SDG 38651/C06W0

New Region 3 issues.

Colin G. Walsh
Environmental Coordinator - Region 3
CSC

15000 Conference Center Drive, Chantilly, VA 20151
 Civil Division | (p) 703-818-4544 | (f) 703-818-4602 | cwalsh20@fedcsc.com | www.csc.com

From: jschulze@a4scientific.com [<mailto:jschulze@a4scientific.com>]
Sent: Tuesday, June 16, 2009 7:45 PM
To: Walsh, Colin
Cc: Laxmi; pakanati; sri
Subject: Fw: CASE/SDG 38651/C06W0

Colin,

0000000001

Please note lab also has the following issue.

Issue 2: Lab received samples C06W7 and C06W0 with 1-1L amber broken. Tag numbers are TCCA2145 and TCCA2130.

— Original Message —

From: jschulze@a4scientific.com
To: [Region 3, Colin Walsh](#)
Cc: [Laxmi](#) ; [pakanati](#) ; [sri](#)
Sent: Tuesday, June 16, 2009 5:42 PM
Subject: CASE/SDG 38651/C06W0

Colin,

Lab received water samples for above referenced case on 6/12/09.

Issue: Per TR/COC analysis is TVOA and SVOA. Per Scheduling analysis is VOA and SVOA. Please clarify.

Please let me know if you have any questions.
Thanks.

Jessica Schulze
A4 Scientific Inc.
1544 Sawdust Rd. Suite 505
The Woodlands, Texas 77380
(281) 292-5277

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6/24/2009

875 6-3-09

U.S. EPA Region III Analytical Request Form

Revision 10.06

ASQAB USE ONLY		
RAS#	CT4593	Analytical TAT
DAS#		
NSF#		14 DAYS

38651

Date: 6/2/09		Site Activity: Removal Site Evaluations <i>Assessment</i>	
Site Name: Tank Car Corporation of America			
City: Orland	State: PA	Street Address: 1725 Walnut Ave	
Program: Superfund		Latitude:	Longitude:
Site ID:	Acct. #: 2009 T03 N 302DC6C A3GXR500	CERCLIS #: PAN000 306 553	
Site Specific QA Plan Submitted: <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes		Operable Unit:	
Title: START3 QAPP		Date Approved: November 2006	
EPA Project Leader: Michael Towle	Phone#: 215-814-3272	Cell Phone #:	E-mail: towle.michael@epa.gov
Request Preparer: JOSHUA COPE	Phone#: 610-364-2130	Cell Phone #:	E-mail: Joshua.cope@ttemi.com
Site Leader: Jordan Vaughn	Phone#: 610-364-2141	Cell Phone #:	E-mail: Jordan.vaughn@ttemi.com
Contractor: Tetra Tech EM Inc			
#Samples 13	Matrix: water	Parameter: TCL VOC	Method: SOM01.2
#Samples 11	Matrix: water	Parameter: TCL SVOC	Method: SOM01.2
#Samples 11	Matrix: water	Parameter: TAL Metals & Hg	Method: ILM05.4 ICPAES & Hg
#Samples 4	Matrix: soil	Parameter: TCL SVOC	Method: SOM01.2
#Samples 6	Matrix: soil	Parameter: TAL Metals & Hg	Method: ILM05.4 ICPAES & Hg
EPA CO/PO: Jeff Fang/Karen Wodarczyk			
Ship Date From: 6/10/09			
Ship Date To: 6/12/09		Org. Validation Level M2	Inorg. Validation Level IM2
Unvalidated Data Requested: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes If Yes, TAT Needed: <input checked="" type="checkbox"/> 14days <input type="checkbox"/> 7days <input type="checkbox"/> 48hrs <input type="checkbox"/> 24hrs <input type="checkbox"/> Other (Specify) <i>PR's by ESA</i>			
Validated Data Package Due: <input type="checkbox"/> 42 days <input checked="" type="checkbox"/> 30 days <input type="checkbox"/> 21days <input type="checkbox"/> 14 days <input type="checkbox"/> Other (Specify) <i>14/16</i>			
Electronic Data Deliverables Required: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes (EDDs will be provided in Region 3 EDD Format)			
Special Instructions: See attached Required Limits and CRQL/CRDLs Needed. *Analyze by ILM05.4 ICPAES & Hg. Report results in ug/wipe.			

Appendix D

Laboratory Case Narrative

Contract #: EPW05036	Case #: 38651	SDG #: C06W0
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SDG NARRATIVE

SAMPLE RECEIPT & LOGIN

The following samples were received on the dates listed against them. The samples were logged in for analysis as listed.

<u>Client Sample</u>	<u>Lab Sample</u>	<u>Matrix</u>	<u>#Cont.</u>	<u>Received</u>	<u>Analysis</u>	<u>Comments</u>
C06W0	0010463-01	Water	15	06/12/09 10:05	SOM01.2 VOA LOW SOM01.2 SVOA	SDG FIRST SX-
C06W1	0010463-02	Water	3	06/12/09 10:05	SOM01.2 VOA LOW	
C06W7	0010463-03	Water	5	06/12/09 10:05	SOM01.2 VOA LOW SOM01.2 SVOA	
C06W8	0010463-04	Water	5	06/12/09 10:05	SOM01.2 VOA LOW SOM01.2 SVOA	

The cooler temperatures are listed against the coolers.

DATE RECEIVED	COOLER NO.	Temp (in °C)	Airbill No.
6/12/09	1	5	857499847990

The following issues were noted:

Issue 1: The TR/COC lists the analysis as TVOA and SVOA; however per scheduling the water samples should be analyzed for VOA and SVOA.

Resolution 1: Per Region 3, the laboratory has noted the issue, performed the analyses as indicated on the Scheduling Notification Form, and proceeded with the analysis of the samples.

Issue 2: Water samples Co6W7 and Co6Wo were both received with 1-1L amber bottle broken. The laboratory has enough volume remaining to perform the requested analysis.

Resolution 2: Per Region 3, the laboratory has noted the issue and proceeded with the analysis of the sample. If re-extraction/reanalysis is necessary, the laboratory will contact the SMO coordinator and wait for a resolution.

Directive (email) is enclosed. No other discrepancies or issues were noted during sample receipt and login.

VOLATILES LOW/MEDIUM

Samples were analyzed using instrument C-5973 and F-5973.

Instrument C-5973 consisted of an Agilent 5973 GC/MS with a 25-meter long DB-624 (Agilent cat#128-1324) column having a 0.2mm ID and 1.12µm film thickness, Tekmar Purge and Trap Model LSC2000 with an Archon auto sampler. The trap used was a #10 trap (OI Cat# 258822) having an approximate composition of 40% Tenax, 30% Silica gel and 30% CMS.

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A4 SCIENTIFIC, INC.

1544 Sawdust Road, Suite505•The Woodlands, TX 77380•Phone (281) 292-5277

Contract #: EPW05036	Case #: 38651	SDG #: C06W0
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Instrument F-5973 consisted of an Agilent 5973 GC/MS with a 25-meter long DB-624 (Agilent cat#128-1324) column having a 0.2mm ID and 1.12µm film thickness, Tekmar Purge and Trap Model LSC2000 with an Archon auto sampler. The trap used was a #10 trap (OI Cat# 258822) having an approximate composition of 40% Tenax, 30% Silica gel and 30% CMS.

All VOA samples had the pH characteristics verified. The reading is listed below.

EPA SAMPLE #	LAB SAMPLE #	pH
C06W0	0010463-01	≤ 2
C06W1	0010463-02	≤ 2
C06W7	0010463-03	≤ 2
C06W8	0010463-04	≤ 2

MS/MSD was not required.

Manual integrations were performed for the following samples for the compounds listed against them.

Compound	EPA Sample ID
Bromomethane	VSTD1002X, VSTD0052X, VSTD01050
Chloroethane-d5	VSTD0102X, VSTD00550
Methyl Acetate	VSTD0052X
Trichlorofluoromethane	VSTD0052X, VSTD0502X, VSTD20041
Acetone	VSTD0052X
Vinyl Chloride-d3	VSTD00550, VSTD01050
Dichlorodifluoromethane	VSTD00550, VSTD01050
Chloromethane	VSTD00550
Chloroethane	VSTD00550
2-Hexanone-d5	VSTD00541
2-Hexanone	VSTD00541

These manual integrations were necessary because the software failed to accurately integrate the entire peak. In all the above instances, the quantitation reports are flagged with "m". A hard copy printout of the manual integration, the scan ranges, and initials of the analyst or manager is included in the data package.

SEMI-VOLATILES

1) **Extractions**

Water samples and associated blanks were extracted by continuous liquid-liquid extraction method. No problems were encountered during extraction.

2) **Analysis**

All samples were analyzed on an Agilent-5973 GC/MS using a 30-meter HP-5MS column (Agilent cat#19091S-433) having a 0.25mm ID and a 0.25µm film thickness. A 1µL injection was used.

MS/MSD was not required.

Manual integrations were performed for the following samples for the compounds listed against them.

Compound	EPA Sample ID
Phenol-d5	C06W0, C06W7, C06W7, C06W8 SSTD0057W, 0000000002

Contract #: EPW05036	Case #: 38651	SDG #: C06W0
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	SSTD0107W, SSTD0407W, SSTD0807W, SSTD0207Q, SSTD0207R, SSTD0207W,
Indeno (1, 2, 3-cd) pyrene	SSTD0057W, SSTD0107W, SSTD0807W, SSTD0207W, SSTD0207X, SSTD0207Y

These manual integrations were necessary because the software failed to accurately integrate the entire peak. In all the above instances, the quantitation reports are flagged with "m". A hard copy printout of the manual integration, the scan ranges, and initials of the analyst or manager is included in the data package.

The following equations were used for calculation of the sample results from raw instrument output data:

VOLATILES

Water (Low/Med, Trace & SIM):

$$\text{Concentration } (\mu\text{g/L}) = \frac{(A_x)(I_s)(Df)}{(A_{is})(RRF)(V_o)}$$

A_x = Area of the characteristic ion (EICP) for the compound to be measured.

A_{is} = Area of the characteristic ion (EICP) for the internal standard.

I_s = Amount of internal standard added in nanograms (ng).

\overline{RRF} = Mean relative response factor from the initial calibration.

V_o = Total volume of water purged, in milliliters (mL).

Df = Dilution factor.

Semivolatiles:

Water

$$\text{Concentration } (\mu\text{g/L}) = \frac{(A_x)(I_s)(V_t)(Df)(GPC)}{(A_{is})(RRF)(V_o)(V_i)}$$

A_x = Area of the characteristic ion for the compound to be measured.

A_{is} = Area of the characteristic ion for the internal standard.

I_s = Amount of internal standard injected in nanograms (ng).

\overline{RRF} = Mean relative response factor determined from the initial calibration.

V_o = Volume of water extracted in milliliters (mL).

V_i = Volume of extracted infected in microliters (μL).

V_t = Volume of concentrated extract in microliters (μL). ($V_t = 1000\mu\text{L}$).

Df = Dilution Factor.

$$GPC = \frac{V_{in}}{V_{out}} = \text{GPC Factor. (If, no GPC is performed, } GPC=1).$$

V_{in} = Volume of extract loaded onto GPC column.

V_{out} = Volume of extract collected after the GPC cleanup.

I certify that this Sample Data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy Sample Data Package and in the electronic data deliverable has been authorized by the laboratory Manager or Manager's designee, as verified by the following signature.

S. V. Kotha (Lab Director)

06/25/09

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A4 SCIENTIFIC, INC.

1544 Sawdust Road, Suite505•The Woodlands, TX 77380•Phone (281) 292-5277

Contract #: EPW05036	Case #: 38651	SDG #: C06W0
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Signature and Title

Date of Signature

Contract #: EPW05036	Case #: 38651	SDG #: C06T7
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SDG NARRATIVE

SAMPLE RECEIPT & LOGIN

The following samples were received on the dates listed against them. The samples were logged in for analysis as listed.

<u>Client Sample</u>	<u>Lab Sample</u>	<u>Matrix</u>	<u>#Cont.</u>	<u>Received</u>	<u>Analysis</u>	<u>Comments</u>
C06T7	0010462-01	Soil	1	06/12/09 10:05	SOM01.2 SVOA	SDG FIRST SX
C06T8	0010462-02	Soil	1	06/12/09 10:05	SOM01.2 SVOA	
C06T9	0010462-03	Soil	1	06/12/09 10:05	SOM01.2 SVOA	
C06W9	0010462-04	Soil	1	06/12/09 10:05	SOM01.2 SVOA	

The cooler temperatures are listed against the coolers.

<u>DATE RECEIVED</u>	<u>COOLER NO.</u>	<u>Temp (in °C)</u>	<u>Airbill No.</u>
6/12/09	1	5	857499847990

No other discrepancies or issues were noted during sample receipt and login.

SEMI-VOLATILES

1) **Extractions**

Soil samples were extracted by sonication method. GPC cleanup was performed on soil samples and the associated Blank. No problems were encountered during the extraction.

2) **Analysis**

All samples were analyzed on an Agilent-5973 GC/MS using a 30-meter HP-5MS column (Agilent cat#19091S-433) having a 0.25mm ID and a 0.25µm film thickness. A 1µL injection was used.

MS/MSD was not required.

Manual integrations were performed for the following samples for the compounds listed against them.

<u>Compound</u>	<u>EPA Sample ID</u>
Phenol-d5	SSTD0057W, SSTD0107W, SSTD0407W, SSTD0807W, SSTD0207W, SSTD0207X, SSTD0208F, SSTD0208G, C06W9, C06T7, C06T8, C06T9, SBLK3U
Indeno (1, 2, 3-cd) pyrene	SSTD0057W, SSTD0107W, SSTD0807W, SSTD0207Q, SSTD0207R, SSTD0207W, SSTD0207X, SSTD0208F, SSTD0208G, C06T8, C06W9
Benzo (b) fluoranthene	C06T7, C06T8, C06T9, C06W9
Benzo (k) fluoranthene	C06T7, C06T8, C06T9, C06W9
2, 4-Dinitrophenol	SSTD0208F

Contract #: EPW05036	Case #: 38651	SDG #: C06T7
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These manual integrations were necessary because the software failed to accurately integrate the entire peak. In all the above instances, the quantitation reports are flagged with "m". A hard copy printout of the manual integration, the scan ranges, and initials of the analyst or manager is included in the data package.

The following equations were used for calculation of the sample results from raw instrument output data:

Semivolatiles:

Soil/Sediment:

$$\text{Concentration } (\mu\text{g/Kg}) \text{ (Dry weight Basis)} = \frac{(A_x)(I_s)(V_i)(D_f)(GPC)}{(A_{is})(RRF)(V_i)(W_s)(D)}$$

A_x = Area of the characteristic ion for the compound to be measured.

A_{is} = Area of the characteristic ion for the internal standard.

I_s = Amount of internal standard injected in nanograms (ng).

V_i = Volume of concentrated extract in microliters (μL).

V_i = Volume of extracted infected in microliters (μL).

$$D = \frac{100 - \% \text{moisture}}{100}$$

W_s = Weight of sample extracted in grams (g).

D_f = Dilution Factor.

$$GPC = \frac{V_{in}}{V_{out}} = \text{GPC Factor. (If, no GPC is performed, GPC=1).}$$

V_{in} = Volume of extract loaded onto GPC column.

V_{out} = Volume of extract collected after the GPC cleanup.

\overline{RRF} = Mean relative response factor determined from the initial calibration.

I certify that this Sample Data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy Sample Data Package and in the electronic data deliverable has been authorized by the laboratory Manager or Manager's designee, as verified by the following signature.

S. Vokati (Lab Director)

Signature and Title

06/25/09

Date of Signature

Appendix E

Tentatively Identified Compounds (TICs)

1J - FORM I VOA-TIC
 VOLATILE ORGANICS ANALYSIS DATA SHEET
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C06W7

Field Blank

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036
 Lab Code: A4 Case No.: 38651 Mod. Ref No.: _____ SDG No.: C06W0
 Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0010463-03
 Sample wt/vol: 5.00 (g/mL) mL Lab File ID: C8760.D
 Level: (TRACE or LOW/MED) LOW Date Received: 06/12/2009
 % Moisture: not dec. Date Analyzed: 06/20/2009
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0
 Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/L Purge Volume: 5.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN 6.39	5.56	110	J
02		UNKNOWN 6.39	5.74	57	J
03		UNKNOWN 6.39	6.57	50	J
04		UNKNOWN 6.39	7.60	50	J
05		UNKNOWN 10.41	10.61	50	J
06		UNKNOWN 10.41	10.68	47	J
07		UNKNOWN 10.41	10.96	49	J
08		UNKNOWN 10.41	11.09	40	J
09		UNKNOWN 10.41	11.17	33	J
10		UNKNOWN 10.41	11.51	71	J
11		UNKNOWN 10.41	11.62	31	J
12		UNKNOWN 10.41	11.77	34	J
13		UNKNOWN 10.41	11.82	100	J
14		UNKNOWN 13.24	12.41	73	J
15		UNKNOWN 13.24	12.55	140	J
16		UNKNOWN 13.24	12.84	56	J
17		UNKNOWN 13.24	12.88	49	J
18		UNKNOWN 13.24	13.47	50	J
19		UNKNOWN 13.24	14.42	62	J
20		UNKNOWN 13.24	14.70	120	J
21		UNKNOWN 13.24	14.98	62	J
22		UNKNOWN 13.24	15.30	54	J
23		UNKNOWN 13.24	15.85	70	J
24		UNKNOWN 13.24	16.36	70	J
25		UNKNOWN 13.24	17.09	120	J
26					
27					
28					
29					
30					
	E966796 ¹	Total Alkanes	N/A		

¹EPA-designated Registry Number.

000000040

1J - FORM I VOA-TIC
 VOLATILE ORGANICS ANALYSIS DATA SHEET
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C06W8

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036
 Lab Code: A4 Case No.: 38651 Mod. Ref No.: _____ SDG No.: C06W0
 Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0010463-04
 Sample wt/vol: 5.00 (g/mL) mL Lab File ID: C8761.D
 Level: (TRACE or LOW/MED) LOW Date Received: 06/12/2009
 % Moisture: not dec. Date Analyzed: 06/20/2009
 GC Column: DB-624 ID: 0.20 (mm) Dilution Factor: 1.0
 Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/L Purge Volume: 5.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN 6.39	4.38	30	J
02		UNKNOWN 6.39	4.80	57	J
03		UNKNOWN 6.39	4.85	34	J
04		UNKNOWN 6.39	6.65	50	J
05		UNKNOWN 6.39	6.68	34	J
06		UNKNOWN 6.39	6.80	36	J
07		UNKNOWN 6.39	7.80	34	J
08		UNKNOWN 6.39	8.17	25	J
09		UNKNOWN 10.41	10.72	50	J
10		UNKNOWN 10.41	11.64	100	J
11		UNKNOWN 13.24	11.98	29	J
12		UNKNOWN 13.24	12.05	32	J
13		UNKNOWN 13.24	12.28	140	J
14		UNKNOWN 13.24	12.52	30	J
15		UNKNOWN 13.24	13.05	50	J
16		UNKNOWN 13.24	13.99	85	J
17		UNKNOWN 13.24	14.48	36	J
18		UNKNOWN 13.24	14.70	32	J
19		UNKNOWN 13.24	14.91	39	J
20		UNKNOWN 13.24	15.63	43	J
21		UNKNOWN 13.24	15.80	42	J
22		UNKNOWN 13.24	16.07	32	J
23		UNKNOWN 13.24	16.62	64	J
24		UNKNOWN 13.24	16.68	37	J
25		UNKNOWN 13.24	16.88	37	J
26		UNKNOWN 13.24	17.67	33	J
27		UNKNOWN 13.24	17.70	38	J
28		UNKNOWN 13.24	18.05	36	J
29		UNKNOWN 13.24	18.71	31	J
30					
	E966796 ¹	Total Alkanes	N/A		

16 7/7/09

16 7/7/09

¹EPA-designated Registry Number.

888888887

1K - FORM I SV-TIC
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C06W0

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036
 Lab Code: A4 Case No.: 38651 Mod. Ref No.: _____ SDG No.: C06W0
 Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0010463-01
 Sample wt/vol: 1000 (g/mL) mL Lab File ID: D1302.D
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) CONT
 % Moisture: _____ Decanted: (Y/N) _____ Date Received: 06/12/2009
 Concentrated Extract Volume: 1000 (uL) Date Extracted: 06/16/2009
 Injection Volume: 1.0 (uL) GPC Factor: 1.0 Date Analyzed: 06/19/2009
 GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN 3.65	1.59	9.6	J
02		UNKNOWN 3.65	1.65	3.2	J
03		UNKNOWN 3.65	1.72	13	J
04		UNKNOWN 3.65	1.78	6.1	J
05		UNKNOWN 3.65	1.81	7.2	J
06		UNKNOWN 3.65	1.96	8.1	J
07		UNKNOWN 3.65	2.10	2.2	J
08		UNKNOWN 3.65	2.73	2.5	J
09		UNKNOWN 3.65	2.87	2.0	J
10	1000150-36-1	4-Carene	2.91	4.8	JN
11		UNKNOWN	3.60	2.5	J
12		UNKNOWN 3.65	3.84	3.7	J
13		UNKNOWN 5.36	5.16	2.5	J
14		UNKNOWN 5.36	5.45	5.3	J
15		UNKNOWN 5.36	5.96	5.7	J
16	030434-64-1	2-Cyclopenten-1-one, 3,4-di.	6.50	5.8	JN
17		UNKNOWN 8.04	9.01	5.8	J
18		UNKNOWN 10.31	11.49	2.5	J
19	000057-11-4	Octadecanoic acid	12.73	2.4	JN
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 ²	Total Alkanes	N/A		

²EPA-designated Registry Number.

000000423

1K - FORM I SV-TIC
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C06W7

Field Blank

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036
 Lab Code: A4 Case No.: 38651 Mod. Ref No.: SDG No.: C06W0
 Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0010463-03
 Sample wt/vol: 1000 (g/mL) mL Lab File ID: D1304.D
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) CONT
 % Moisture: Decanted: (Y/N) Date Received: 06/12/2009
 Concentrated Extract Volume: 1000 (uL) Date Extracted: 06/16/2009
 Injection Volume: 1.0 (uL) GPC Factor: 1.0 Date Analyzed: 06/19/2009
 GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	004675-87-0	2-Buten-1-ol, 2-methyl-	1.57	5.6	JN
02		UNKNOWN 3.65	1.65	2.5	J
03		UNKNOWN 3.65	1.72	8.6	J
04		UNKNOWN 3.65	1.78	5.1	J
05		UNKNOWN 3.65	1.81	6.5	J
06		UNKNOWN 3.65	1.87	7.4	J
07		UNKNOWN 3.65	1.96	5.7	J
08	007785-26-4	1S-.alpha.-Pinene	2.90	3.4	JN
09		UNKNOWN 3.65	3.06	2.3	J
10		UNKNOWN 3.65	3.76	5.4	J
11		UNKNOWN 3.65	3.84	3.5	J
12	082304-66-3	7,9-Di-tert-butyl-1-oxaspir.	11.27	5.7	JN
13	000057-10-3	n-Hexadecanoic acid	11.48	3.9	JN
14	000057-11-4	Octadecanoic acid	12.73	4.2	JN
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 ²	Total Alkanes	N/A		

²EPA-designated Registry Number.

1K - FORM I SV-TIC
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C06W8

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036
 Lab Code: A4 Case No.: 38651 Mod. Ref No.: _____ SDG No.: C06W0
 Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: 0010463-04
 Sample wt/vol: 1000 (g/mL) mL Lab File ID: D1303.D
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) CONT
 % Moisture: _____ Decanted: (Y/N) _____ Date Received: 06/12/2009
 Concentrated Extract Volume: 1000 (uL) Date Extracted: 06/16/2009
 Injection Volume: 1.0 (uL) GPC Factor: 1.0 Date Analyzed: 06/19/2009
 GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN 3.65	1.58	13	J
02		UNKNOWN 3.65	1.65	5.5	J
03		UNKNOWN 3.65	1.72	16	J
04		UNKNOWN 3.65	1.78	5.3	J
05		UNKNOWN 3.65	1.81	9.1	J
06		UNKNOWN 3.65	1.88	3.3	J
07		UNKNOWN 3.65	1.96	10	J
08	007785-26-4	1S-.alpha.-Pinene	2.90	4.9	JN
09		UNKNOWN 5.36	4.54	2.7	J
10		UNKNOWN 5.36	6.12	3.2	J
11		UNKNOWN 5.36	6.50	2.8	J
12		UNKNOWN 8.04	7.47	4.8	J
13		UNKNOWN 8.04	8.10	2.9	J
14	000115-98-0	Phosphonic acid, ethenyl-, .	8.20	55	JN
15		UNKNOWN 8.04	8.64	3.6	J
16		UNKNOWN 10.31	9.54	2.9	J
17		UNKNOWN 10.31	9.86	6.2	J
18		UNKNOWN	10.00	65	J
19	000486-25-9	9H-Fluoren-9-one	10.04	3.5	JN
20		UNKNOWN 10.31	10.86	2.9	J
21		UNKNOWN 10.31	11.00	6.9	J
22		UNKNOWN 10.31	11.49	8.1	J
23		UNKNOWN 14.47	12.74	3.8	J
24		UNKNOWN 14.47	13.05	2.9	J
25	004269-15-2	4-Amino-9-fluorenone	13.10	4.5	JN
26		UNKNOWN 14.47	14.01	3.6	J
27		UNKNOWN 14.47	14.35	6.1	J
28		UNKNOWN 14.47	14.57	3.1	J
29					
30					
	E966796 ²	Total Alkanes	N/A	3.2	J

Handwritten notes:
 7/7/09
 7/7/09

²EPA-designated Registry Number.

1K - FORM I SV-TIC
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C06T7

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036
 Lab Code: A4 Case No.: 38651 Mod. Ref No.: _____ SDG No.: C06T7
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0010462-01
 Sample wt/vol: 30.2 (g/mL) g Lab File ID: D1361.D
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC
 % Moisture: 18.6 Decanted: (Y/N) N Date Received: 06/12/2009
 Concentrated Extract Volume: 500 (uL) Date Extracted: 06/22/2009
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 06/23/2009
 GPC Cleanup: (Y/N) Y pH: 7.7 Dilution Factor: 1.0
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN 3.63	1.57	530	J
02		UNKNOWN 3.63	1.64	96	J
03		UNKNOWN 3.63	1.71	2200	J
04		UNKNOWN 3.63	1.74	110	J
05		UNKNOWN 3.63	1.79	420	J
06		UNKNOWN 3.63	1.86	170	J
07		UNKNOWN 3.63	1.94	2100	J
08		UNKNOWN 3.63	2.30	91	J
09		UNKNOWN 3.63	2.71	110	J
10		UNKNOWN 3.63	3.24	84	J
11		UNKNOWN 3.63	3.58	92	J
12		UNKNOWN 3.63	3.76	86	J
13		UNKNOWN 10.28	12.31	89	J
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 ²	Total Alkanes	N/A	150	J

²EPA-designated Registry Number.

1K - FORM I SV-TIC
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C06T8

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036
 Lab Code: A4 Case No.: 38651 Mod. Ref No.: _____ SDG No.: C06T7
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0010462-02
 Sample wt/vol: 30.1 (g/mL) g Lab File ID: D1362.D
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC
 % Moisture: 22.4 Decanted: (Y/N) N Date Received: 06/12/2009
 Concentrated Extract Volume: 500 (uL) Date Extracted: 06/22/2009
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 06/23/2009
 GPC Cleanup: (Y/N) Y pH: 7.8 Dilution Factor: 1.0
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN 3.63	1.57	620	J
02		UNKNOWN 3.63	1.71	1600	J
03		UNKNOWN 3.63	1.79	380	J
04		UNKNOWN 3.63	1.86	180	J
05		UNKNOWN 3.63	1.94	1500	J
06	000203-64-5	4H-Cyclopenta[def]phenanthre	11.25	130	JN
07		UNKNOWN 10.28	11.60	120	J
08		UNKNOWN 14.44	13.08	92	J
09	000053-19-0	Mitotane	13.41	100	JN
10	000050-29-3	p,p'-DDT	13.44	510	JN
11	000789-02-6	o,p'-DDT	13.87	4600	JN
12		UNKNOWN 16.51	17.73	100	J
13		UNKNOWN 16.51	18.45	290	J
14	1000194-64-2	4, 4, 6a, 6b, 8a, 11, 12, 14b-Octa.	18.64	730	JN
15		UNKNOWN 16.51	18.94	220	J
16		UNKNOWN 16.51	19.00	110	J
17		UNKNOWN 16.51	19.04	200	J
18		UNKNOWN 16.51	19.13	210	J
19		UNKNOWN 16.51	19.51	210	J
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 ²	Total Alkanes	N/A		

²EPA-designated Registry Number.

1K - FORM I SV-TIC
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C06T9

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036
Lab Code: A4 Case No.: 38651 Mod. Ref No.: _____ SDG No.: C06T7
Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0010462-03
Sample wt/vol: 30.2 (g/mL) g Lab File ID: D1363.D
Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC
% Moisture: 19.1 Decanted: (Y/N) N Date Received: 06/12/2009
Concentrated Extract Volume: 500 (uL) Date Extracted: 06/22/2009
Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 06/23/2009
GPC Cleanup: (Y/N) Y pH: 8.2 Dilution Factor: 1.0
CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN 3.63	1.64	97	J
02		UNKNOWN 3.63	1.71	1600	J
03		UNKNOWN 3.63	1.74	94	J
04		UNKNOWN 3.63	1.79	410	J
05		UNKNOWN 3.63	1.86	190	J
06		UNKNOWN 3.63	1.94	1400	J
07		UNKNOWN 3.63	2.15	84	J
08		UNKNOWN 3.63	2.71	100	J
09		UNKNOWN 3.63	3.58	140	J
10		UNKNOWN 3.63	3.76	100	J
11		UNKNOWN 5.34	5.06	89	J
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 ²	Total Alkanes	N/A	150	J

²EPA-designated Registry Number.

1K - FORM I SV-TIC
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C06W9

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036
 Lab Code: A4 Case No.: 38651 Mod. Ref No.: SDG No.: C06T7
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0010462-04
 Sample wt/vol: 30.0 (g/mL) g Lab File ID: D1360.D
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC
 % Moisture: 21.3 Decanted: (Y/N) N Date Received: 06/12/2009
 Concentrated Extract Volume: 500 (uL) Date Extracted: 06/22/2009
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 06/23/2009
 GPC Cleanup: (Y/N) Y pH: 7.7 Dilution Factor: 1.0
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN 3.63	1.46	130	J
02	000107-86-8	2-Butenal, 3-methyl-	1.64	110	JN
03		UNKNOWN 3.63	1.71	2700	J
04		UNKNOWN 3.63	1.74	100	J
05		UNKNOWN 3.63	1.79	420	J
06		UNKNOWN 3.63	1.86	200	J
07		UNKNOWN 3.63	1.94	2600	J
08		UNKNOWN 3.63	2.15	110	J
09		UNKNOWN 3.63	2.71	130	J
10		UNKNOWN 3.63	3.16	120	J
11		UNKNOWN 3.63	3.47	140	J
12		UNKNOWN 3.63	3.76	130	J
13		UNKNOWN 3.63	3.89	120	J
14		UNKNOWN 5.34	5.06	160	J
15	000091-57-6	Napthalene, 1-methyl-	6.56	280	JN
16	000582-16-1	Naphthalene, 2,7-dimethyl-	7.38	97	JN
17	000581-40-8	Naphthalene, 2,3-dimethyl-	7.51	94	JN
18	000203-64-5	4H-Cyclopenta[def]phenanthre	11.25	170	JN
19	003442-78-2	Pyrene, 2-methyl-	13.08	180	JN
20		UNKNOWN 14.44	13.86	160	J
21		UNKNOWN 14.44	14.10	93	J
22		UNKNOWN 14.44	14.59	89	J
23	002381-16-0	Benz[a]anthracene, 9-methyl-	15.08	91	JN
24		UNKNOWN 14.44	15.29	110	J
25	000192-97-2	Benzo[e]pyrene	16.16	220	JN
26					
27					
28					
29					
30					
	E966796 ²	Total Alkanes	N/A	160	J

²EPA-designated Registry Number.