



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
ENVIRONMENTAL SCIENCE CENTER
701 MAPES ROAD
FORT MEADE, MARYLAND 20755-5350

DATE : July 27, 2009

SUBJECT: Region III Data QA Review

FROM : Colleen Walling *FF for CW*
Region III ESAT RPO (3EA20)

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 # C0766). This report has been 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 (TTEMI)

TO File #: 0021

TDF#: 07065

OFFICE OF ANALYTICAL SERVICES AND QUALITY ASSURANCE

Lockheed Martin Enterprise Solutions & Services
ESAT Region 3
US EPA Environmental Science Center
701 Mapes Road Ft. Meade, MD 20755-5350
Telephone 410-305-3037 Facsimile 410-305-3597



DATE: July 23, 2009

SUBJECT: Organic Data Validation (M2 Level)
Case: 38651
SDG: C0766
Site: Tank Car Corporation of America

FROM: Kurt Roby *KR*
Organic Data Reviewer

Mahboobeh Mecanic ^{A4}
Senior Oversight Chemist

TO: Colleen Walling
ESAT Region 3 Project Officer

OVERVIEW

Case 38651, Sample Delivery Group (SDG) C0766, consisted of two (2) soil samples analyzed for semivolatile compounds by A4 Scientific, Inc. (A4) in accordance with Contract Laboratory Program (CLP) Statement of Work (SOW) SOM01.2 through the 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. No problems were detected during the validation of this data set.

NOTES

- 2,4-Dinitrophenol failed precision criteria [Percent Relative Standard Deviation (%RSD) and Percent Difference (%D)] in initial and continuing calibrations. No positive results for this compound were reported. Quantitation limits for this compound were not impacted since the %RSD or %D did not exceed the 50% criteria.
- Concentrations of fluoranthene and pyrene exceeded the calibration range in the initial analyses for samples C0766 and C0767. These samples were re-analyzed at five fold (5X) dilutions to bring the concentration of the compounds within the calibration range. Results for these compounds were reported from the diluted analyses and annotated with a (+) symbol on the Data Summary Form (DSF) by the reviewer.
- A sample weight other than thirty (30) grams was used in the analysis of sample C0767. The dilution factors reported on the DSFs reflect actual sample weights analyzed.
- Tentatively Identified Compounds (TICs) were reviewed during data validation. TIC Form Is for samples in which TICs were identified are included in Appendix E. Compounds identified as target compounds were crossed off TIC Form Is by the reviewer. When the same compound was identified at more than one retention time, the identification was changed to "unknown" on Form Is by the reviewer.
- Compounds detected below Contract Required Quantitation Limits were qualified "J" on the DSFs.

Data for Case 38651, SDG C0766, were reviewed in accordance with Level M2 Innovative Approaches for Validation of Organic Data, Region III, June 1995.

ATTACHMENTS

Appendix A – Glossary of Data Qualifier Codes
Appendix B – Data Summary Form(s)
Appendix C – Chain of Custody Records
Appendix D – Laboratory Case Narrative
Appendix E – Tentatively Identified Compounds

DCN: 38651_ C0766

Appendix A
Glossary of Data Qualifier Codes

GLOSSARY OF DATA QUALIFIER CODES (ORGANIC)

CODES RELATED TO IDENTIFICATION

(confidence concerning presence or absence of compounds)

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 = Unusable 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

DATA SUMMARY FORM: BNA

Case #: 38651

SDG : C0766

Number of Soil Samples : 2

Site :

TANK CAR CORPORATION OF AMERICA

Number of Water Samples : 0

Lab. :

A4

Sample Number :	C0766	C0767							
Sampling Location :	TCCA-SS-20	TCCA-SS-21							
Matrix :	Soil	Soil							
Units :	ug/Kg	ug/Kg							
Date Sampled :	6/30/2009	6/30/2009							
Time Sampled :	16:10	16:12							
%Moisture :	7.7	25.7							
Dilution Factor :	1.0 / 5.0	1.0 / 4.98							
Semivolatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Benzaldehyde	170			65	J				
Phenol	170								
Bis(2-Chloroethyl)ether	170								
2-Chlorophenol	170								
2-Methylphenol	170								
2,2'-Oxybis(1-chloropropane)	170								
Acetophenone	170			130	J				
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	34	J	39	J				
4-Chloroaniline	170								
Hexachlorobutadiene	170								
Caprolactam	170								
4-Chloro-3-methylphenol	170								
2-Methylnaphthalene	170	20	J	31	J				
Hexachlorocyclopentadiene	170								
2,4,6-Trichlorophenol	170								
2,4,5-Trichlorophenol	170								
1,1'-Biphenyl	170								
2-Chloronaphthalene	170								
2-Nitroaniline	330								
Dimethylphthalate	170								
2,6-Dinitrotoluene	170								
Acenaphthylene	170	28	J	140	J				
3-Nitroaniline	330								
Acenaphthene	170	270		150	J				

Case #: 38651

SDG : C0766

Site :

TANK CAR CORPORATION OF AMERICA

Lab. :

A4

Sample Number :	C0766	C0767							
Sampling Location :	TCCA-SS-20	TCCA-SS-21							
Matrix :	Soil	Soil							
Units :	ug/Kg	ug/Kg							
Date Sampled :	6/30/2009	6/30/2009							
Time Sampled :	16:10	16:12							
%Moisture :	7.7	25.7							
Dilution Factor :	1.0 / 5.0	1.0 / 4.98							
Semivolatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag
2,4-Dinitrophenol	330								
4-Nitrophenol	330								
Dibenzofuran	170	80	J	61	J				
2,4-Dinitrotoluene	170								
Diethylphthalate	170								
Fluorene	170	160	J	170	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	2300		2300					
Anthracene	170	490		610					
Carbazole	170	390		360					
Di-n-butylphthalate	170	120	J	300					
Fluoranthene	170	4700 +		5400 +					
Pyrene	170	3700 +		4100 +					
Butylbenzylphthalate	170	20	J	330					
3,3'-Dichlorobenzidine	170								
Benzo(a)anthracene	170	1800		2400					
Chrysene	170	1900		2800					
Bis(2-ethylhexyl)phthalate	170	79	J	480					
Di-n-octylphthalate	170			380					
Benzo(b)fluoranthene	170	2200		3300					
Benzo(k)fluoranthene	170	930		1700					
Benzo(a)pyrene	170	1600		2400					
Indeno(1,2,3-cd)pyrene	170	1300		2100					
Dibenzo(a,h)anthracene	170	500		860					
Benzo(g,h,i)perylene	170	1200		1800					
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

"+" = Result reported from the diluted analysis.

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 PAN000306653 AGX TCCA June 30 2009/PA Jordan Vaughn Tetra Tech	Date Shipped: Carrier Name: Airbill: Shipped to:	7/6/2009 FedEx 8574 9968 4794 A4 Scientific 1544 Sawdust Road Suite 505 The Woodlands TX 77380 (281) 292-5277
Chain of Custody Record		Sampler Signature:	
Relinquished By	(Date / Time)	Received By	(Date / Time)
1			
2			
3			
4			

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNOUR	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
C0766	Soil (0"-12")/ Jordan Vaughn	L/G	SVOC soil (14)	TCCA2400 (1)	TCCA-SS-20	S: 6/30/2009 16:10	MC0766	-
C0767	Soil (0"-12")/ Jordan Vaughn	L/G	SVOC soil (14)	TCCA2402 (1)	TCCA-SS-21	S: 6/30/2009 16:12	MC0767	-

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 - SOM01.2	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced?

TR Number: 3-023200937-070609-0002

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

875 6-3-09

U.S. EPA Region III Analytical Request Form

Revision 10.06

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

38651

Date: 6/2/09		Site Activity: Removal Site Evaluations <i>Assessment</i>	
Site Name: Tank Car Corporation of America		Street Address: 1725 Walnut Ave	
City: Orland	State: PA	Latitude:	Longitude:
Program: Superfund	Acct #: 2009 T03 N 302DC6C A3GXRS00	CERCLIS #: PAN/000 306 553	
Site ID:	Spill ID: A3GX	Operable Unit:	
Site Specific QA Plan Submitted: <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	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	EPA CO/PO: Jeff Fang/Karen Wodarczyk		
#Samples 13	Matrix: water	Parameter: TCL VOC	Method: SOM01.2 <i>30691</i>
#Samples 11	Matrix: water	Parameter: TCL SVOC	Method: SOM01.2 <i>30692</i>
#Samples 11	Matrix: water	Parameter: TAL Metals & Hg	Method: ILM05.4 ICPAES & Hg <i>30695</i>
#Samples 4	Matrix: soil	Parameter: TCL SVOC	Method: SOM01.2 <i>30693</i>
#Samples 6	Matrix: soil	Parameter: TAL Metals & Hg	Method: ILM05.4 ICPAES & Hg <i>30694</i>
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>14/10</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.			



"Cope, Joshua"
<joshua.cope@ttemi.com>
07/15/2009 04:43 PM

FVI

To Lisa Penix/ESC/R3/USEPA/US
cc
bcc

Subject RE: Regional COC needed for RAS case 38651 - Tank Car Corporation of America

Lisa,

The sampler is away till next week but I can tell you that both soil samples shipped on 7/6/09 are field samples. No dupes or blanks were collected.

I assume that you are referring to the following sets of samples shipped on 7/6/09:

FedEx Airbill No. 8574 9968 4794 - 2 soil samples were shipped to A4 Scientific for semivolatile organic compound (SVOC) analysis.

FedEx Airbill No. 8574 9985 1960 - 2 soil samples were shipped to Chemtech Consulting Group for Metals analysis.

Josh Cope
Senior Chemist
Tetra Tech EM Inc.
Mobile: 215.768.8114
Fax: 610.485.8587

-----Original Message-----

From: Penix.Lisa@epamail.epa.gov [mailto:Penix.Lisa@epamail.epa.gov]
Sent: Tuesday, July 14, 2009 4:02 PM
To: Walling.Colleen@epamail.epa.gov; Fang.Jeffrey@epamail.epa.gov;
Wodarczyk.Karen@epamail.epa.gov; Towle.Michael@epamail.epa.gov
Cc: Slizys.Dan@epamail.epa.gov; Kwedar.John@epamail.epa.gov;
Harris.Carroll@epamail.epa.gov; Yastrop.Victor@epamail.epa.gov;
Snyder.Judy@epamail.epa.gov; Cope, Joshua; Vaughn, Jordan
Subject: Regional COC needed for RAS case 38651 - Tank Car Corporation of America

Disclaimer: Information contained below does not constitute technical direction. The Sampling/Field contractor shall contact their applicable EPA Contracting Officer Representative (COR) for technical direction

Case: 38651
Lab: A4
SDG: C0766

Site: Tank Car Corporation of America
EPA Project Leader: Michael Towle
Site Leader: Jordan Vaughn

1. ESAT RSCC has not received the Regional copy of TR # s 3-023200937-070609-0002 for this case. The Regional copy with any field QC and field duplicate pairs identified is needed for validation. A Forms II Lite .F2L file; a faxed copy; or a scanned PDF file is

acceptable.

Please feel free to contact me with any questions.

Lisa D. Penix
Lockheed Martin IS & GS - Civil
Energy & Environmental Services
ESAT Region 3
US EPA Environmental Science Center
701 Mapes Road
Fort Meade, MD 20755-5350
(410) 305 - 3020
email: Penix.Lisa@epamail.epa.gov

Appendix D
Laboratory Case Narrative

Contract #: EPW05036	Case #: 38651	SDG #: C0766
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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>
C0766	0010558-01	Soil	1	07/07/09 10:01	SOM01.2 SVOA	SDG FIRST SX-
C0767	0010558-02	Soil	1	07/07/09 10:01	SOM01.2 SVOA	

The cooler temperatures are listed against the coolers.

DATE RECEIVED	COOLER NO.	Temp (in °C)	Airbill No.
7/7/09	1	6	857499684794

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.

The following samples were run at dilution, listed against them to get all the compounds within range.

EPA SAMPLE ID	DILUTION
C0766	5
C0767	5

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

Compound	EPA Sample ID
Phenol-d5	C0766, C0766DL, C0767, C0767DL, SSTD0208U, SSTD0408U, SSTD0808U, SSTD0108U, SSTD0208V, SSTD0208W, SBLK4A
Benzo (k) fluoranthene	C0766, C0766DL, C0767, C0767DL, SSTD0208U
Indeno (1, 2, 3-cd) pyrene	C0766, C0766DL, C0767, C0767DL, SSTD0208U,

Contract #: EPW05036	Case #: 38651	SDG #: C0766
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	SSTD0408U, SSTD0408U, SSTD0108U, SSTD0208V, SSTD0208W
Benzo (b) fluoranthene	C0766, C0766DL, C0767, C0767DL
Caprolactam	SSTD0408U

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:

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

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

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

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

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

07/13/09
 Date of Signature

Percent Solids Logbook

Effective	Area	Type	Number-Version	RCN
15-June-2009	WET CHEM	FORM	5FORM03-A	799-0615

DATE IN: 07-07-09 TIME IN: 18:30 TEMP IN: 104°C

DATE OUT (1): 07-08-09 TIME OUT (1): 9:00 TEMP OUT (1): 104°C

DATE OUT (2): - TIME OUT (2): - TEMP OUT (2): -

DATE OUT (3): - TIME OUT (3): - TEMP OUT (3): -

SOP: 550003-A Method: ASTM D2216-92/SM2540G/ILM05.4(SOM1.2)other.
Oven ID: A Thermometer ID: Sper-1

Pan # A	Lab Sample ID B	Client Sample ID C	Pan Weight (g) D	Pan + Wet Sample (g) E	Pan + Dry Sample #1 (g) F	Pan + Dry Sample #2 (g) F	Pan + Dry Sample #3 (g) F	Percent solids** I	
12	9610095-BLK1	PMBLK95	1.748	1.748	1.748	NA	NA	-	
75	0010557-01	P12-B-P-01	1.769	8.351	6.630	↓	↓	73.9	
31	-02	↓ -02	1.821	8.001	5.248			55.5	
02	-03	P12-SED-01	1.843	8.369	3.140			19.9	
-	-04	P12-W-01	-	-	-			-	
P11	0010558-01	10766	1.817	9.258	8.684			92.3	
1	↓ -02	↓ 76	1.804	7.869	6.313			74.3	
21	0010557-01D	P12-B-P-01	1.851	8.932	7.024			73.1	
25	0010558-01D	10766D	1.746	8.549	7.945			91.8	

SMA
07/08/09

Notes:

Analyst/Date: *SMA* 07/08/09 Reviewer/Date: *AS* 07/08/09

Final Dry Weight (F) is used when monitored final weights are consistent.

**Percent solids(G) = {(F-D)/(E-D)} * 100

AS 07/13/09
444

Appendix E
Tentatively Identified Compounds (TICs)

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

EPA SAMPLE NO.

C0766

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036
 Lab Code: A4 Case No.: 38651 Mod. Ref No.: SDG No.: C0766
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0010558-01
 Sample wt/vol: 30.0 (g/mL) g Lab File ID: D1459.D
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC
 % Moisture: 7.7 Decanted: (Y/N) N Date Received: 07/07/2009
 Concentrated Extract Volume: 500 (uL) Date Extracted: 07/07/2009
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 07/09/2009
 GPC Cleanup: (Y/N) Y pH: 7.0 Dilution Factor: 1.0
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN 3.61	1.69	3000	J
02		UNKNOWN 3.61	1.92	2700	J
03	002141-42-6	Anthracene, 1,2,3,4-tetrahy.	10.07	200	JN
04		UNKNOWN 10.26	10.09	160	J
05	000949-41-7	1H-Cyclopropa[1]phenanthren.	11.07	270	JN
06	002531-84-2	Phenanthrene, 2-methyl-	11.11	320	JN
07	000203-64-5	4H-Cyclopenta[def]phenanthre	11.22	680	JN
08		UNKNOWN 10.26	11.27	150	J
09		UNKNOWN 10.26	11.57	580	J
10	033543-31-6	Fluoranthene, 2-methyl-	13.06	170	JN
11		UNKNOWN 14.42	14.07	150	J
12		UNKNOWN 14.42	14.56	150	J
13	002498-66-0	Benz (A)anthracene-7,12-dione	15.54	380	JN
14	000205-99-2	Benz[e]acephenanthrylene	16.12	710	JN
15		UNKNOWN 16.49	16.29	330	J
16		UNKNOWN 16.49	16.73	410	J
17		UNKNOWN 16.49	16.88	220	J
18		UNKNOWN 16.49	17.06	380	J
19		UNKNOWN 16.49	17.21	150	J
20		UNKNOWN 16.49	17.52	150	J
21		UNKNOWN 16.49	17.70	770	J
22	000053-70-3	Dibenz[a,h]anthracene	17.96	440	JN
23		UNKNOWN 16.49	17.99	510	J
24	000191-24-2	Dibenzo[def,mno]chrysene	18.23	620	JN
25		UNKNOWN 16.49	18.75	280	J
26	000192-65-4	1,2,4,5-Dibenzopyrene (01) <i>unknown</i>	19.25	1000	JN
27	000192-65-4	1,2,4,5-Dibenzopyrene (02) <i>unknown</i>	19.32	500	JN
28	000192-65-4	1,2,4,5-Dibenzopyrene (03) <i>unknown</i>	19.55	140	JN
29	000191-07-1	Coronene	19.64	1300	JN
30					
	E966796 ²	Total Alkanes	N/A		

²EPA-designated Registry Number.

DV
7/21/09

000000015

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

EPA SAMPLE NO.

C0766DL

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036
 Lab Code: A4 Case No.: 38651 Mod. Ref No.: SDG No.: C0766
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0010558-01RE1
 Sample wt/vol: 30.0 (g/mL) g Lab File ID: D1464.D
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC
 % Moisture: 7.7 Decanted: (Y/N) N Date Received: 07/07/2009
 Concentrated Extract Volume: 500 (uL) Date Extracted: 07/07/2009
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 07/09/2009
 GPC Cleanup: (Y/N) Y pH: 7.0 Dilution Factor: 5.0
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN 3.61	1.69	3100	JD
02		UNKNOWN 3.61	1.78	390	JD
03	000610-48-0	Anthracene, 1-methyl (01) unknown	11.07	360	JDN
04	000610-48-0	Anthracene, 1-methyl (02) unknown	11.11	400	JDN
05	000203-64-5	4H-Cyclopenta[def]phenanthre	11.23	880	JDN
06		UNKNOWN 10.24	11.57	610	JD
07	000243-17-4	11H-Benzo[b]fluorene	13.05	520	JDN
08		UNKNOWN 14.41	14.07	490	JD
09		UNKNOWN 14.41	14.56	460	JD
10	000243-28-7	Benzo(b)carbazole	14.81	360	JDN
11	000205-82-3	Benzo[j]fluoranthene	16.12	550	JDN
12		UNKNOWN 16.49	17.70	500	JD
13		UNKNOWN 16.49	18.21	580	JD
14	000192-65-4	1,2:4,5-Dibenzopyrene	19.25	580	JDN
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 ²	Total Alkanes	N/A	2400	J

²EPA-designated Registry Number.

DV
7/21/09

000000075

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

EPA SAMPLE NO.

C0767

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036
 Lab Code: A4 Case No.: 38651 Mod. Ref No.: SDG No.: C0766
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0010558-02
 Sample wt/vol: 30.1 (g/mL) g Lab File ID: D1469.D
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC
 % Moisture: 25.7 Decanted: (Y/N) N Date Received: 07/07/2009
 Concentrated Extract Volume: 500 (uL) Date Extracted: 07/07/2009
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 07/09/2009
 GPC Cleanup: (Y/N) Y pH: 6.9 Dilution Factor: 1.0
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN 3.61	1.44	1600	J
02		UNKNOWN 3.61	1.69	920	J
03		UNKNOWN 3.61	1.92	730	J
04		UNKNOWN 10.26	9.67	360	J
05		UNKNOWN 10.26	9.96	290	J
06		UNKNOWN 10.26	9.99	580	J
07	000132-65-0	Dibenzothiophene	10.09	670	JN
08	002531-84-2	Phenanthrene, 2-methyl- (01) unknown	11.07	650	JN
09	000610-48-0	Anthracene, 1-methyl-	11.10	610	JN
10	000203-64-5	4H-Cyclopenta[def]phenanthrene	11.23	1100	JN
11	002531-84-2	Phenanthrene, 2-methyl- (02) unknown	11.27	370	JN
12	000084-65-1	9,10-Anthracenedione	11.57	1200	JN
13	003674-65-5	Phenanthrene, 2,3-dimethyl-	11.97	380	JN
14	005737-13-3	Cyclopenta(def)phenanthrenon	12.06	340	JN
15	033543-31-6	Fluoranthene, 2-methyl-	13.06	270	JN
16	055591-14-5	Piperazine, 1-methyl-4-(1,2.	15.54	330	JN
17	000205-99-2	Benz[e]acephenanthrylene	16.13	830	JN
18		UNKNOWN 16.49	16.29	310	J
19		UNKNOWN 16.49	16.73	490	J
20		UNKNOWN 16.49	17.07	280	J
21		UNKNOWN 16.49	17.71	850	J
22	000053-70-3	Dibenz[a,h]anthracene	17.96	570	JN
23	000215-58-7	Benzo[b]triphenylene	18.00	600	JN
24	000191-26-4	Dibenzo[def,mno]chrysene	18.23	590	JN
25		UNKNOWN 16.49	18.62	370	J
26		UNKNOWN 16.49	18.76	520	J
27	000192-65-4	1,2:4,5-Dibenzopyrene	19.25	1200	JN
28	000189-64-0	3,4:8,9-Dibenzopyrene	19.32	490	JN
29	000191-30-0	1,2:3,4-Dibenzopyrene	19.65	820	JN
30					
	E966796 ²	Total Alkanes	N/A	380	J

²EPA-designated Registry Number.

DV
7/21/09

000000117

SOM01.2 (8/2007)

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

EPA SAMPLE NO.

C0767DL

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW05036
 Lab Code: A4 Case No.: 38651 Mod. Ref No.: SDG No.: C0766
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: 0010558-02RE1
 Sample wt/vol: 30.1 (g/mL) g Lab File ID: D1471.D
 Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC
 % Moisture: 25.7 Decanted: (Y/N) N Date Received: 07/07/2009
 Concentrated Extract Volume: 500 (uL) Date Extracted: 07/07/2009
 Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 07/09/2009
 GPC Cleanup: (Y/N) Y pH: 6.9 Dilution Factor: 5.0
 CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		UNKNOWN 3.61	1.44	3500	JD
02		UNKNOWN 10.26	9.99	700	JD
03		UNKNOWN 10.26	10.06	500	JD
04		UNKNOWN 10.26	11.07	780	JD
05	000613-12-7	Anthracene, 2-methyl- (02)	11.10	760	JDN
06	000203-64-5	4H-Cyclopenta[def]phenanthre	11.23	1400	JDN
07	000084-65-1	9,10-Anthracenedione	11.57	1400	JDN
08		UNKNOWN 14.41	12.72	470	JD
09	033543-31-6	Fluoranthene, 2-methyl-	13.06	950	JDN
10	000479-79-8	11H-Benzo[a]fluoren-11-one	13.86	550	JDN
11	000243-46-9	Benzo[b]naphtho[2,3-d]thiop.	14.01	760	JDN
12		UNKNOWN 14.41	14.07	540	JD
13		UNKNOWN 14.41	14.56	510	JD
14		UNKNOWN 14.41	14.74	590	JD
15	003351-31-3	Chrysene, 3-methyl-	15.06	660	JDN
16		UNKNOWN 16.49	15.53	670	JD
17	000207-08-9	Benzo[j]fluoranthene	16.12	950	JDN
18		UNKNOWN 16.49	17.70	930	JD
19		UNKNOWN 16.49	17.96	510	JD
20	000192-65-4	1,2:4,5-Dibenzopyrene	19.25	1200	JDN
21	000191-30-0	1,2:3,4-Dibenzopyrene	19.64	590	JDN
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 ²	Total Alkanes	N/A		

²EPA-designated Registry Number.

000000179

SOM01.2 (8/2007)