H0539-TMA/RECRA

RECRA ENVIRONMENTAL INC.

0052713

Chemical and Environmental Measurement Information

Recra LabNet Philadelphia
Analytical Report
****REVISION****

Client : TNU-HANFORD B99-078
RFW# : 9909L157
SDG/SAF #: H0539/B99-078

W.O. #: 10985-001-001-9999-00
Date Received: 09-22-99

RECEIVED
MAR 20 2000
EDMC

SEMIVOLATILE

This narrative was corrected to add the TIC search for Tributylphosphate.

Two (2) soil samples were collected on 09-20-99.

The samples and their associated QC samples were extracted on 10-04-99 and analyzed according to criteria set forth in Recra OPs based on SW 846 Method 8270B for TCL Semivolatile target compounds on 10-05-99.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

1. The cooler temperature upon receipt has been recorded on the chain-of-custody.
2. The required holding times for extraction and analysis were met.
3. Non-target compounds were detected in the samples.
4. All surrogate recoveries were within EPA QC limits.
5. All matrix spike recoveries were within EPA QC limits.
6. One (1) of eleven (11) blank spike recoveries was outside EPA QC limits.
7. The samples were spectrally searched for Butylated Hydroxytoluene and Tributylphosphate; however, they were not identified in the samples.

FEB 2000
RECEIVED
Data
Log In

by J. Michael Taylor
Vice President
Philadelphia Analytical Laboratory

01-27-00
Date

som\gorup\data\bna\tnu10157.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 11 pages.

208 Welsh Pool Road • Lionville, PA 19341-1333 • (610) 280-3000 • Fax (610) 280-3041

GLOSSARY OF BNA DATA

ABBREVIATIONS

BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions and carried through all the steps in the method. Spike recoveries are reported.

BSD = Indicates blank spike duplicate.

MS = Indicates matrix spike.

MSD = Indicates matrix spike duplicate.

DL = Suffix added to sample number to indicate that results are from a diluted analysis.

NA = Not Applicable.

DF = Dilution Factor.

NR = Not Required.

SP, Z = Indicates Spiked Compound.

GLOSSARY OF BNA DATA

DATA QUALIFIERS

U = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.

J = Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.

E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.

D = Identifies all compounds identified in an analysis at a secondary dilution factor.

I = Interference.

NQ = Result qualitatively confirmed but not able to quantify.

A = Indicates that a TIC is a suspected aldol-condensation product.

N = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.

X = This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).

Y = Additional qualifiers used as required are explained in the case narrative.

	Cust ID:	B0WBT2	B0WBT2	B0WBT2	B0WBT1	SBLKDQ	SBLKDQ BS
Sample Information	RFW#:	001	001 MS	001 MSD	002	99LE1196-MB1	99LE1196-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate Recovery	Nitrobenzene-d5	91 %	85 %	78 %	77 %	78 %	92 %
	2-Fluorobiphenyl	80 %	79 %	66 %	73 %	78 %	94 %
	Terphenyl-d14	83 %	83 %	72 %	74 %	92 %	104 %
	Phenol-d5	82 %	72 %	69 %	60 %	81 %	94 %
	2-Fluorophenol	68 %	66 %	64 %	56 %	77 %	92 %
	2,4,6-Tribromophenol	66 %	64 %	57 %	50 %	75 %	96 %
Phenol		350 U	67 %	68 %	350 U	330 U	90 %
bis(2-Chloroethyl)ether		350 U	350 U	350 U	350 U	330 U	330 U
2-Chlorophenol		350 U	60 %	58 %	350 U	330 U	90 %
1,3-Dichlorobenzene		350 U	350 U	350 U	350 U	330 U	330 U
1,4-Dichlorobenzene		350 U	67 %	57 %	350 U	330 U	89 %
1,2-Dichlorobenzene		350 U	350 U	350 U	350 U	330 U	330 U
2-Methylphenol		350 U	350 U	350 U	350 U	330 U	330 U
2,2'-oxybis(1-Chloropropane)		350 U	350 U	350 U	350 U	330 U	330 U
4-Methylphenol		350 U	350 U	350 U	350 U	330 U	330 U
N-Nitroso-di-n-propylamine		350 U	85 %	89 %	350 U	330 U	99 %
Hexachloroethane		350 U	350 U	350 U	350 U	330 U	330 U
Nitrobenzene		350 U	350 U	350 U	350 U	330 U	330 U
Isophorone		350 U	350 U	350 U	350 U	330 U	330 U
2-Nitrophenol		350 U	350 U	350 U	350 U	330 U	330 U
2,4-Dimethylphenol		350 U	350 U	350 U	350 U	330 U	330 U
bis(2-Chloroethoxy)methane		350 U	350 U	350 U	350 U	330 U	330 U
2,4-Dichlorophenol		350 U	350 U	350 U	350 U	330 U	330 U
1,2,4-Trichlorobenzene		350 U	84 %	72 %	350 U	330 U	93 %
Naphthalene		350 U	350 U	350 U	350 U	330 U	330 U
4-Chloroaniline		350 U	350 U	350 U	350 U	330 U	330 U
Hexachlorobutadiene		350 U	350 U	350 U	350 U	330 U	330 U
4-Chloro-3-methylphenol		350 U	78 %	66 %	350 U	330 U	92 %
2-Methylnaphthalene		350 U	350 U	350 U	350 U	330 U	330 U
Hexachlorocyclopentadiene		350 U	350 U	350 U	350 U	330 U	330 U
2,4,6-Trichlorophenol		350 U	350 U	350 U	350 U	330 U	330 U
2,4,5-Trichlorophenol		870 U	870 U	870 U	870 U	840 U	840 U

*= Outside of EPA CLP QC limits.

Cust ID:	B0WBT2	B0WBT2	B0WBT2	B0WBT1	SBLKDQ	SBLKDQ BS
RFW#:	001	001 MS	001 MSD	002	99LE1196-MB1	99LE1196-MB1
2-Chloronaphthalene	350 U	350 U	350 U	350 U	330 U	330 U
2-Nitroaniline	870 U	870 U	870 U	870 U	840 U	840 U
Dimethylphthalate	350 U	350 U	350 U	350 U	330 U	330 U
Acenaphthylene	350 U	350 U	350 U	350 U	330 U	330 U
2,6-Dinitrotoluene	350 U	350 U	350 U	350 U	330 U	330 U
3-Nitroaniline	870 U	870 U	870 U	870 U	840 U	840 U
Acenaphthene	350 U	74 %	64 %	350 U	330 U	97 %
2,4-Dinitrophenol	870 U	870 U	870 U	870 U	840 U	840 U
4-Nitrophenol	870 U	78 %	65 %	870 U	840 U	87 %
Dibenzofuran	350 U	350 U	350 U	350 U	330 U	330 U
2,4-Dinitrotoluene	350 U	89 %	75 %	350 U	330 U	98 * %
Diethylphthalate	350 U	350 U	350 U	350 U	330 U	330 U
4-Chlorophenyl-phenylether	350 U	350 U	350 U	350 U	330 U	330 U
Fluorene	350 U	350 U	350 U	350 U	330 U	330 U
4-Nitroaniline	870 U	870 U	870 U	870 U	840 U	840 U
4,6-Dinitro-2-methylphenol	870 U	870 U	870 U	870 U	840 U	840 U
N-Nitrosodiphenylamine (1)	350 U	350 U	350 U	350 U	330 U	330 U
4-Bromophenyl-phenylether	350 U	350 U	350 U	350 U	330 U	330 U
Hexachlorobenzene	350 U	350 U	350 U	350 U	330 U	330 U
Pentachlorophenol	870 U	72 %	63 %	870 U	840 U	94 %
Phenanthrene	350 U	350 U	350 U	350 U	330 U	330 U
Anthracene	350 U	350 U	350 U	350 U	330 U	330 U
Carbazole	350 U	350 U	350 U	350 U	330 U	330 U
Di-n-butylphthalate	350 U	350 U	350 U	350 U	330 U	330 U
Fluoranthene	350 U	350 U	350 U	350 U	330 U	330 U
Pyrene	350 U	93 %	80 %	350 U	330 U	104 %
Butylbenzylphthalate	350 U	350 U	350 U	350 U	330 U	330 U
3,3'-Dichlorobenzidine	350 U	350 U	350 U	350 U	330 U	330 U
Benzo(a)anthracene	350 U	350 U	350 U	350 U	330 U	330 U
Chrysene	350 U	350 U	350 U	350 U	330 U	330 U
bis(2-Ethylhexyl)phthalate	350 U	350 U	350 U	350 U	330 U	330 U
Di-n-octyl phthalate	350 U	350 U	350 U	350 U	330 U	330 U
Benzo(b)fluoranthene	350 U	350 U	350 U	350 U	330 U	330 U
Benzo(k)fluoranthene	350 U	350 U	350 U	350 U	330 U	330 U
Benzo(a)pyrene	350 U	350 U	350 U	350 U	330 U	330 U
Indeno(1,2,3-cd)pyrene	350 U	350 U	350 U	350 U	330 U	330 U
Dibenz(a,h)anthracene	350 U	350 U	350 U	350 U	330 U	330 U
Benzo(g,h,i)perylene	350 U	350 U	350 U	350 U	330 U	330 U

(1) - Cannot be separated from Diphenylamine. *= Outside of EPA CLP QC limits.

1F

CLIENT SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B0WBT2

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNU-HANFORD B99-078

Matrix: (soil/water) SOIL Lab Sample ID: 9909L157-001

Sample wt/vol: 30.0 (g/mL) G Lab File ID: A100503

Level: (low/med) LOW Date Received: 09/22/99

% Moisture: 4 decanted: (Y/N) Date Extracted: 10/04/99

Concentrated Extract Volume: 1000(uL) Date Analyzed: 10/05/99

Injection Volume: 2.0(uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH:

Number TICs found: 2 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	7.24	90	JB
2.	UNKNOWN	7.57	90	J

1F

CLIENT SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B0WBT1

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNU-HANFORD B99-078

Matrix: (soil/water) SOIL Lab Sample ID: 9909L157-002

Sample wt/vol: 30.0 (g/mL) G Lab File ID: A100506

Level: (low/med) LOW Date Received: 09/22/99

% Moisture: 4 decanted: (Y/N) Date Extracted: 10/04/99

Concentrated Extract Volume: 1000(uL) Date Analyzed: 10/05/99

Injection Volume: 2.0(uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH:

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	7.23	70	JB
2.		UNKNOWN	23.76	200	J
3.		UNKNOWN	25.15	90	J
4.		UNKNOWN	25.29	100	J

1F

CLIENT SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SBLKDQ

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNU-HANFORD B99-078

Matrix: (soil/water) SOIL Lab Sample ID: 99LE1196-MB1

Sample wt/vol: 30.0 (g/mL) G Lab File ID: D100505

Level: (low/med) LOW Date Received: 10/04/99

% Moisture: _____ decanted: (Y/N)__ Date Extracted: 10/04/99

Concentrated Extract Volume: 1000(uL) Date Analyzed: 10/05/99

Injection Volume: 2.0(uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	8.48	80	J

Recra LabNet - Lionville Laboratory
BNA ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD B99-078

DATE RECEIVED: 09/22/99 RFW LOT # :9909L157

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B0WBT2	001	S	99LE1196	09/20/99	10/04/99	10/05/99
B0WBT2	001 MS	S	99LE1196	09/20/99	10/04/99	10/05/99
B0WBT2	001 MSD	S	99LE1196	09/20/99	10/04/99	10/05/99
B0WBT1	002	S	99LE1196	09/20/99	10/04/99	10/05/99
LAB QC:						
SBLKDQ	MB1	S	99LE1196	N/A	10/04/99	10/05/99
SBLKDQ	MB1 BS	S	99LE1196	N/A	10/04/99	10/05/99

RECRA LabNet Use Only

99091157

Custody Transfer Record/Lab Work Request

Page 1 of 1

ALL FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

(5) perrone wet metals

RECRA LabNet

Client TNU-Hanford B99-078

Est. Final Proj. Sampling Date

Project # 10985-001-001-9999-00

Project Contact/Phone #

RECRA Project Manager AJ

QC Appl Del Std TAT 30 days

Date Rec'd 9.22.99 Date Due 10/22/99

Account #

Refrigerator #		1	6	6					6										
#/Type Container	Liquid																		
	Solid	1qg	1qg	—	—	1			1qg	—	—	—	—	—	1				
Volume	Liquid	0	0																
	Solid	60	250	—	—	1			500	—	—	—	—	—	1				
Preservatives																			

ANALYSES REQUESTED → ORGANIC: VOA, BNA, Pest/PCB, Herb, TPH | INORG: Metal, CN

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	OGCSC	OG25H CDRO	OPCB		TPH	9/22/99		Met(1)	ICNTO INH3N	ISFD IPH	IN3N2	ICAL ICFL 1025A	ICNOC ICN03 1004		
001	BOWBT2			S	9/20/99	1140	X	X	X		X			X	✓	✓	✓	✓	✓		
002	BOWBT1			⊥	⊥	0950	X	X	X		X			X	✓	✓	✓	✓	✓		

MATRIX CODES: S - Soil; SE - Sediment; SO - Solid; SL - Sludge; W - Water; O - Oil; A - Air; DS - Drum Solids; DL - Drum Liquids; L - EP/TCLP Leachate; WI - Wipe; X - Other; F - Fish

RECRA LabNet Use Only

Special Instructions:

Saf# B99-078

COMPOSITE WASTE

DATE/REVISIONS:

Met (1.) = As, Ba, Cd, Cr, Pb, Se, Ag, Be,

2. Cu, Ni, V, Zn, ICR6, Hg

9/23/99 3. tests added per client COC

4. OGCSC = 1-propanol, ethanol

5.

6. Run Matrix QC

RECRA LabNet Use Only

Samples were: 1) Shipped ✓ or Hand Delivered ___

Airbill # *

2) Ambient or (Chilled)

3) Received in Good Condition (Y) or N

4) Labels Indicate Properly Preserved (Y) or N

5) Received Within Holding Times (Y) or N

COC Tape was: 1) Present on Outer Package (Y) or N; 2) Unbroken on Outer Package (Y) or N; 3) Present on Sample (Y) or N; 4) Unbroken on Sample (Y) or N

COC Record Present Upon Sample Rec't (Y) or N

Cooler Temp. 3.2 °C

Discrepancies Between Samples Labels and COC Record? Y or (N)

NOTES:

*423579529610

Relinquished by	Received by	Date	Time
FedEx	D. Ymker	9/22/99	0945

Relinquished by	Received by	Date	Time
	ORIGINAL		
	REWRITTEN		

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-122

Collector Bowers/Trice	Company Contact Chris Cearlock	Telephone No. 372-9574	Project Coordinator TRENT, SJ
Project Designation 200 Area Source characterization - 200-CW-1 OU	Sampling Location 200 B pond (B8758) >15'		SAF No. B99-078
Ice Chest No. SML 510	Field Logbook No. EL-1511		Method of Shipment Fed Ex
Shipped To ~~TMA/RECRA~~ RECRA 870 9-20-99	Offsite Property No. A990263		Bill of Lading/Air Bill No. 4235 7952 9-21-99 CT 9-20 9610
			COA B20CW1 671C

Price Code 8N

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage	Preservation	Cool 4C	Cool 4C	None	Cool 4C						
	Type of Container	aG	aG	aG	aG						
	No. of Container(s) Volume	1 60mL	1 250mL	1 250mL	1 500mL						
SAMPLE ANALYSIS		VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.						

Sample No.	Matrix *	Sample Date	Sample Time								
B0WBT2	Soil	9-20-99	1140	X	X		X			B0WCW1	
B0WBT1	Soil	9-20-99	0950	X	X		X			B0WCW1	
~~B0WBT3~~	Soil										
~~B0WBT5~~	Soil										

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By Doug Bowers	Date/Time 9-20-99/1600	Received By R. F. IB	Date/Time 9-20-99/1600
Relinquished By Rob IB	Date/Time 9.21.99 0830	Received By C Trice	Date/Time 9.21.99 0830
Relinquished By C Trice	Date/Time 9.21.99 1400	Received By FEDEX	Date/Time 9-21.99 1400
Relinquished By Fed Ex	Date/Time 9.22.99/0945	Received By D. J. Smith	Date/Time 9.22.99/0945

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078. Out of Gamma Spec. bottle also analyze for Np-237, isotopic U, Ni-63, Tech-99, Tritium, . Out of ICP bottle also analyze for NO2/NO3, IC anions, Sulfides, Ammonia, Total Cyanide, and pH.

(1) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-155}; Gamma Spec - Add-on {Americium-241}; Strontium-89,90 -- Total Sr; Total Uranium {Uranium}; Isotopic Plutonium; Isotopic Thorium {Thorium-232}; Americium-241
(2) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; ICP Metals - 6010A (Supertrace Add-On) {Beryllium, Copper, Nickel, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196

COLLECTOR UNAVAILABLE TO SIGN COC
9909L157

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time