H0769- TMO/RECRA

RECRA ENVIRONMENTAL INC.

0053265

APR 2000 RECEIVED Data Log In

Chemical and Environmental Measurement Information

Recra LabNet Philadelphia
Analytical Report

Client: TNU-HANFORD B99-093
RFW #: 0003L614
SDG/SAF #: H0769/B99-093

W.O. #: 10985-001-001-9999-00
Date Received: 03-02-2000

GC/MS VOLATILE

Eight (8) soil (charcoal) samples were collected on 02-29-2000.

The samples and their associated QC samples were analyzed according to criteria set forth in Recra OPs based on SW 846 Method 8260B for the client specified Volatile target compounds on 03-10,12-2000.

The following is a summary of the QC results accompanying these 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 time for the analysis was met.
3. Non-target compounds were not detected in the samples.
4. All samples required a medium level analysis and additional 25 to 100-fold dilutions due to high levels of target compounds.
5. All surrogate recoveries were within EPA QC limits.
6. All matrix spike recoveries were within EPA QC limits.
7. All blank spike recoveries were within EPA QC limits.
8. The method blanks contained the common laboratory contaminants Methylene Chloride and/or Acetone at levels less than the CRQL.
9. The Carbon Tetrachloride exceeded the calibration range in sample B0XP47; consequently, it has been flagged 'E'. The reported concentration was based on 1000.5 ng on column. The high standard is 1000 ng on column.

RECEIVED JUN 26 2000 EDMC

for J. Michael Taylor
Vice President
Philadelphia Analytical Laboratory

04-10-00
Date

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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 1 4 pages.

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

GLOSSARY OF VOA 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.
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.

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GLOSSARY OF VOA 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.

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Recra LabNet - Lionville Laboratory
Volatiles by GC/MS, HSL List

Report Date: 03/31/00 10:16

RFW Batch Number: **0003L614** Client: **TNU-HANFORD B99-093** Work Order: 10985001001 Page: 1a

	Cust ID:	B0XP49		B0XP49		B0XP49		B0XP50		B0XP51		B0XP44	
Sample Information	RFW#:	001		001 MS		001 MSD		002		003		004	
	Matrix:	SOLID		SOLID		SOLID		SOLID		SOLID		SOLID	
	D.F.:	51.3		51.3		51.3		58.8		111		111	
	Units:	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
	Level:	MED		MED		MED		MED		MED		MED	
Surrogate Recovery	Toluene-d8	101	%	96	%	93	%	100	%	92	%	94	%
	Bromofluorobenzene	100	%	90	%	93	%	102	%	91	%	91	%
	1,2-Dichloroethane-d4	96	%	107	%	109	%	100	%	89	%	104	%
			fl		fl		fl		fl		fl		fl
Chloromethane		59000	U	59000	U	59000	U	48000	U	44000	J	10000	J
Bromomethane		59000	U	59000	U	59000	U	48000	U	130000	U	97000	U
Vinyl Chloride		59000	U	59000	U	59000	U	48000	U	130000	U	97000	U
Chloroethane		59000	U	59000	U	59000	U	48000	U	130000	U	97000	U
Methylene Chloride		40000	B	19000	BJ	20000	BJ	33000	B	94000	B	28000	BJ
Acetone		82000		43000	BJ	47000	BJ	48000	U	130000	U	92000	BJ
Carbon Disulfide		30000	U	30000	U	30000	U	24000	U	64000	U	49000	U
1,1-Dichloroethene		30000	U	106	%	110	%	24000	U	64000	U	49000	U
1,1-Dichloroethane		30000	U	30000	U	30000	U	24000	U	64000	U	49000	U
1,2-Dichloroethene (total)		30000	U	30000	U	30000	U	24000	U	64000	U	49000	U
Chloroform		8800	J	9700	J	9300	J	11000	J	37000	J	49000	U
1,2-Dichloroethane		30000	U	30000	U	30000	U	24000	U	64000	U	49000	U
2-Butanone		59000	U	59000	U	59000	U	48000	U	130000	U	97000	U
1,1,1-Trichloroethane		30000	U	30000	U	30000	U	24000	U	64000	U	49000	U
Carbon Tetrachloride		460000		450000		440000		870000		2100000		870000	
Bromodichloromethane		30000	U	30000	U	30000	U	24000	U	64000	U	49000	U
1,2-Dichloropropane		30000	U	30000	U	30000	U	24000	U	64000	U	49000	U
cis-1,3-Dichloropropene		30000	U	30000	U	30000	U	24000	U	64000	U	49000	U
Trichloroethene		30000	U	103	%	107	%	24000	U	64000	U	49000	U
Dibromochloromethane		30000	U	30000	U	30000	U	24000	U	64000	U	49000	U
1,1,2-Trichloroethane		30000	U	30000	U	30000	U	24000	U	64000	U	49000	U
Benzene		30000	U	104	%	111	%	24000	U	64000	U	49000	U
Trans-1,3-Dichloropropene		30000	U	30000	U	30000	U	24000	U	64000	U	49000	U
Bromoform		30000	U	30000	U	30000	U	24000	U	64000	U	49000	U
4-Methyl-2-pentanone		59000	U	59000	U	59000	U	48000	U	130000	U	97000	U
2-Hexanone		59000	U	59000	U	59000	U	48000	U	130000	U	97000	U
Tetrachloroethene		30000	U	30000	U	30000	U	24000	U	64000	U	49000	U
1,1,2,2-Tetrachloroethane		8100	J	30000	U	30000	U	24000	U	64000	U	49000	U
Toluene		30000	U	104	%	106	%	24000	U	64000	U	49000	U

*= Outside of EPA CLP QC limits.

RFW Batch Number: 0003L614 Client: TNU-HANFORD B99-093 Work Order: 10985001001 Page: 1b

Cust ID:	B0XP49		B0XP49		B0XP49		B0XP50		B0XP51		B0XP44	
RFW#:	001		001 MS		001 MSD		002		003		004	
Level:	MED		MED		MED		MED		MED		MED	
Chlorobenzene	30000	U	100	%	103	%	24000	U	64000	U	49000	U
Ethylbenzene	30000	U	30000	U	30000	U	24000	U	64000	U	49000	U
Styrene	30000	U	30000	U	30000	U	24000	U	64000	U	49000	U
Xylene (total)	30000	U	30000	U	30000	U	24000	U	64000	U	49000	U

*= Outside of EPA CLP QC limits.

Recra LabNet - Lionville Laboratory
Volatiles by GC/MS, HSL List

Report Date: 03/31/00 10:16

RFW Batch Number: 0003L614 Client: TNU-HANFORD B99-093 Work Order: 10985001001 Page: 2a

	Cust ID:	B0XP45		B0XP46		B0XP47		B0XP48		VBLKRH		VBLKRH BS	
Sample Information	RFW#:	005		006		007		008		00LVH108-MB1		00LVH108-MB1	
	Matrix:	SOLID		SOLID		SOLID		SOLID		SOIL		SOIL	
	D.F.:	51.3		57.1		54.1		97.6		2.00		2.00	
	Units:	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
	Level:	MED		MED		MED		MED		MED		MED	
Surrogate Recovery	Toluene-d8	103	%	102	%	103	%	90	%	100	%	101	%
	Bromofluorobenzene	104	%	102	%	105	%	85	%	102	%	102	%
	1,2-Dichloroethane-d4	98	%	100	%	105	%	99	%	95	%	95	%
Chloromethane		58000	U	47000	U	61000	U	110000	U	1200	U	1200	U
Bromomethane		58000	U	47000	U	61000	U	110000	U	1200	U	1200	U
Vinyl Chloride		58000	U	47000	U	61000	U	110000	U	1200	U	1200	U
Chloroethane		58000	U	47000	U	61000	U	110000	U	1200	U	1200	U
Methylene Chloride		39000	B	33000	B	42000	B	34000	BJ	580	J	640	B
Acetone		58000	U	47000	U	61000	U	100000	BJ	1200	U	1200	U
Carbon Disulfide		29000	U	24000	U	30000	U	56000	U	620	U	620	U
1,1-Dichloroethene		29000	U	24000	U	30000	U	56000	U	620	U	129	%
1,1-Dichloroethane		29000	U	24000	U	30000	U	56000	U	620	U	620	U
1,2-Dichloroethene (total)		29000	U	24000	U	30000	U	56000	U	620	U	620	U
Chloroform		12000	J	9700	J	13000	J	18000	J	620	U	620	U
1,2-Dichloroethane		29000	U	24000	U	30000	U	56000	U	620	U	620	U
2-Butanone		58000	U	47000	U	61000	U	110000	U	1200	U	1200	U
1,1,1-Trichloroethane		29000	U	24000	U	30000	U	56000	U	620	U	620	U
Carbon Tetrachloride		500000		370000		1200000	E	890000		620	U	620	U
Bromodichloromethane		29000	U	24000	U	30000	U	56000	U	620	U	620	U
1,2-Dichloropropane		29000	U	24000	U	30000	U	56000	U	620	U	620	U
cis-1,3-Dichloropropene		29000	U	24000	U	30000	U	56000	U	620	U	620	U
Trichloroethene		29000	U	24000	U	30000	U	11000	J	620	U	88	%
Dibromochloromethane		29000	U	24000	U	30000	U	56000	U	620	U	620	U
1,1,2-Trichloroethane		29000	U	24000	U	30000	U	56000	U	620	U	620	U
Benzene		29000	U	24000	U	30000	U	56000	U	620	U	93	%
Trans-1,3-Dichloropropene		29000	U	24000	U	30000	U	56000	U	620	U	620	U
Bromoform		29000	U	24000	U	30000	U	56000	U	620	U	620	U
4-Methyl-2-pentanone		58000	U	47000	U	61000	U	110000	U	1200	U	1200	U
2-Hexanone		58000	U	47000	U	61000	U	110000	U	1200	U	1200	U
Tetrachloroethene		29000	U	24000	U	30000	U	56000	U	620	U	620	U
1,1,2,2-Tetrachloroethane		29000	U	24000	U	30000	U	56000	U	620	U	620	U
Toluene		29000	U	24000	U	30000	U	56000	U	620	U	97	%

*= Outside of EPA CLP QC limits.

RFW Batch Number: 0003L614 Client: TNU-HANFORD B99-093 Work Order: 10985001001 Page: 2b

Cust ID:	B0XP45		B0XP46		B0XP47		B0XP48		VBLKRH		VBLKRH BS	
RFW#:	005		006		007		008		00LVH108-MB1		00LVH108-MB1	
Level:	MED		MED		MED		MED		MED		MED	
Chlorobenzene	29000	U	24000	U	30000	U	56000	U	620	U	95	%
Ethylbenzene	29000	U	24000	U	30000	U	56000	U	620	U	620	U
Styrene	29000	U	24000	U	30000	U	56000	U	620	U	620	U
Xylene (total)	29000	U	24000	U	30000	U	56000	U	620	U	620	U

*= Outside of EPA CLP QC limits.

RECRA LabNet Use Only

0003L614

Custody Transfer Record/Lab Work Request

Page 1 of 12

ALL FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

(8) wet Perrone Gonsiza

RECRA LabNet

Client: TMH-Hanford 399-093

Est. Final Proj. Sampling Date:

Project #: 10985-001-001-9999-00

Project Contact/Phone #:

RECRA Project Manager: DJ

QC: Spec Del: Std TAT: 30 45 days

Date Rec'd: 3-2-00 Date Due: 4-1-00

Account #:

Refrigerator #		1									5						
#/Type Container	Liquid																
	Solid	1qg									1qg						
Volume	Liquid	0															
	Solid	250									60						
Preservatives																	
ANALYSES REQUESTED →		ORGANIC: VOA	BNA	Pest/PCB	Herb				INORG: Metal	CN	Total Chlorine by Dest Cond						
RECRA LabNet Use Only		Ole24HX									IBomb	ICCL					

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	Ole24HX	IBomb	ICCL
001	BOX P49			SO	2/29/00	1038	X	X	
002	BOX P50			↓	↓	1052	X	X	
003	BOX P51					1106	X	X	
004	BOX P44					0948	X	X	
005	BOX P45					0954	X	X	
006	BOX P46					1004	X	X	
007	BOX P47					1015	X	X	
008	BOX P48					1027	X	X	
009	BOX P49 Bomb of 001			W	**	–			X
010	↓ 50 ↓ 002			↓	↓	↓			X

Special Instructions: Ref SAF 399-093

COMPOSITE WASTE

DATE/REVISIONS:

1. Run Matrix QC
2. ** See labchron
3. 3-7-00 Ole24H, IBomB, ICCL cancelled per Client
4. 3-7-00 Ole24HX (CCl4 only - medium level) added per Client
5.
6.

RECRA LabNet Use Only

Samples were: 1) Shipped ✓ or Hand Delivered ___

Airbill # N/A

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. 3.3 °C

Relinquished by	Received by	Date	Time
Ole Ex	D. Smith	3/2/00	0945

Relinquished by	Received	Date	Time
	ORIGINAL REWRITTEN		

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

NOTES: #4235 7953 4192

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		B99-093-10	Page 1 of 2
Collector: MD Winterrose	Company Contact: Rohay, VJ	Telephone No.: 509-372-9098	Project Coordinator: TRENT, SJ	Price Code: 9N; Air Quality ☐; Data Turnaround: 45 Days
Project Designation: 200-ZP-2 Passive Soil Vapor Extraction - Other Solid	Sampling Location: 200-ZP-2		SAF No.: B99-093	
Ice Chest No.: ERC 99-015	Field Logbook No.: EL-1381-3	COA: R20ZP2DP60	Method of Shipment: FED EX	
Shipped To: TMA/RECRA RECRA	Offsite Property No.: A000135		Bill of Lading/Air Bill No.: 42357953 4192	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C									
Type of Container	aG	aG									
No. of Container(s)	1	1									
Volume	60mL	250mL									
SAMPLE ANALYSIS	Total Chloride by Bomb Combustion	VOA - 8260A (TCL)									

Sample No.	Matrix *	Sample Date	Sample Time										
B0XP44	Other Solid	2/29/00	0948	X	X								
B0XP45	Other Solid	2/29/00	0954	X	X								
B0XP46	Other Solid	2/29/00	1004	X	X								
B0XP47	Other Solid	2/29/00	1015	X	X								
B0XP48	Other Solid	2/29/00	1027	X	X								

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS
Relinquished By: [signature] Date/Time: 2/29/00 13:10	Received By: REF 2B Date/Time: 2/29/00 13:10	Sample originated in non RAD Controlled area. <2000 pCi/g. No TA Req
Relinquished By: Ref 2B Date/Time: 3-1-00 ~~2-30-00~~ /0800	Received By: R. Thoren Date/Time: 3-1-00 ~~2-30-00~~ /0800	
Relinquished By: R. Thoren Date/Time: 3-1-00 ~~2-30-00~~ /1430	Received By: FED EX Date/Time:	
Relinquished By: Fed Ex Date/Time: 3-2-00 /0945	Received By: [signature] Date/Time: 3-2-00 /0945	
Relinquished By: Date/Time:	Received By: Date/Time:	
Relinquished By: Date/Time:	Received By: Date/Time:	

Matrix *: S=Soil, SE=Sediment, SO=Solid, S=Sludge, W=Water, O=Oil, A=Air, DS=Drum Solids, DL=Drum Liquids, T=Tissue, WI=Wipe, L=Liquid, V=Vegetation, X=Other

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

BHI-EE-011 (10/99)