H0723 TMA/PECR

RECRA ENVIRONMENTAL INC.

C0[illegible]34

Chemical and Environmental Measurement Information

Recra LabNet Philadelphia
Analytical Report

Client: TNU-HANFORD B99-093
RFW #: 0001L331
SDG/SAF #: H0723/B99-093

W.O. #: 10985-001-001-9999-00
Date Received: 01-29-2000

GC/MS VOLATILE

Eight (8) solid samples were collected on 01-27-2000.

The samples and their associated QC samples were analyzed according to criteria set forth in Recra OPs based on SW 846 Method 8260A for the client specified Volatile target compounds on 02-10,11-2000.

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. All samples were extracted within required holding time (4g extracted with 10 mL Methanol). The extracts of these samples were analyzed within the holding time; however, dilutions and the associated matrix QC were analyzed outside of holding time. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

3. All samples required medium level analysis and additional 10 to 100-fold dilutions due to high levels of target compounds.

4. All surrogate recoveries were within EPA QC limits.

5. All matrix spike recoveries were within EPA QC limits.

6. All blank spike recoveries were within EPA QC limits.

   The surrogate and matrix spike compounds were added to the methanol extracts prior to sample purging.

7. The method blanks contained the common laboratory contaminants Methylene Chloride at levels less than 2x the CRQL. The method blanks 00LVX903-MB1 and 00LVX002-MB1 also contained the target compounds 2-Hexanone and 1,1,2,2-Tetrachloroethane at levels less than the CRQL. The method blank 00LVX002-MB1 also contained the target compounds chloromethane, Bromomethane and Bromoform at levels less than the CRQL.

8. The %D for the target compound 1,1-Dichloroethene was 34.5% in the continuing calibration analyzed on 02-10-2000 at 20:55. This continuing calibration was associated with samples analyzed in the laboratory prep batch 00LVX903; however, 1,1-Dichloroethene was not detected in these analyses. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

RECEIVED
APR 11 2000
EDMC

MAR 2000
RECEIVED
Data
Log In

By [signature]
J. Michael Taylor
Vice President
Philadelphia Analytical Laboratory

03-13-00
Date

som\group\data\voa\tnu-hanford-01-331.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 2 8 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 Philadelphia **Sample Discrepancy Report (SDR)** SDR #: 00VT040

Initiator: Drychak RFW Batch: 0001L331 Parameter: 0624
Date: 2/11/00 Samples: all Matrix: Charcoal
Client: TNU Method: SW846/MCAWW/CLP/ Prep Batch: —
899-093 – H0723

1. Reason for SDR

a. COC Discrepancy __ Tech Profile Error __ Client Request __ Sampler Error on C-O-C
__ Transcription Error __ Wrong Test Code __ Other _____

b. General Discrepancy

__ Missing Sample/Extract __ Container Broken __ Wrong Sample Pulled __ Label ID's Illegible
__ Hold Time Exceeded __ Insufficient Sample __ Preservation Wrong __ Received Past Hold
__ Improper Bottle Type __ Not Amenable to Analysis

Note: Verified by [Log-In] or [Prep Group] (circle)...signature/date: _____

c. QC Problem (Include all relevant specific results; attach data if necessary) For CCL associated with second analysis of all samples except #8 which was the 1st analysis, 1,1-Dichloroethene exceeded 20% RSD method criteria due to increase in response (% D was 34.5) This compound was not identified in samples - that were charcoal matrix run as medium levels requiring 50-100 fold dilutions after medium extraction. Do to high concentration of carbon tetrachloride - Do not want to run these again.

2. Known or Probable Causes(s) – Also the Dilutions were analyzed out of Hold.

3. Discussion and Proposed Action Other Description:

__ Re-log
__ Entire Batch
__ Following Samples: _____
__ Re-leach
__ Re-extract
__ Re-digest
__ Revise EDD
__ Change Test Code to _____
__ Place On/Take Off Hold (circle)

report data

4. Project Manager Instructions...signature/date: [signature] 2/14/00

✓ Concur with Proposed Action
__ Disagree with Proposed Action; See Instruction
__ Include in Case Narrative
__ Client Contacted:
Date/Person _____
__ Add
__ Cancel

5. Final Action...signature/date: [signature] 3/10/00 Other Explanation:

__ Verified re-[log][leach][extract][digest][analysis] (circle)
✓ Included in Case Narrative
__ Hard Copy COC Revised
__ Electronic COC Revised
__ EDD Corrections Completed

When Final Action has been recorded, forward original to QA Specialist for distribution and filing.

Route	Distribution of Completed SDR	Route	Distribution of Completed SDR
2	X Initiator	__	__ Metals: Doughty
__	X Lab Manager: M. Taylor	__	__ Inorganic: Perrone
1	X Project Mgr: Stone/Carey/Schrenkel/Johnson	__	__ GC/LC: Schnell
__	X Section Mgr: Wesson/Daniels	__	__ MS: Taylor
__	X QA (file): Racioppi	__	__ Log-in: Janson
__	__ Data Management: Feldman	__	__ Admin: Soos
__	__ Sample Prep: Doughty/Kauffman	__	__ Other: _____

L-WI-006/E-03/99

Recra LabNet - Lionville Laboratory

Volatiles by GC/MS, HSL List

Report Date: 03/10/00 11:12

RFW Batch Number: **0001L331** Client: **TNU-HANFORD B99-093** Work Order: 10985001001 Page: 1a

	Cust ID:	B0XH07		B0XH08		B0XH08		B0XH09		B0XH09		B0XH10	
Sample Information	RFW#:	001		002		002 DL		003		003 DL		004	
	Matrix:	SOLID		SOLID		SOLID		SOLID		SOLID		SOLID	
	D.F.:	51.3		10.5		21.1		10.8		54.1		27.8	
	Units:	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
	Level:	MED		MED		MED		MED		MED		MED	
Surrogate Recovery	Toluene-d8	96	%	95	%	94	%	98	%	93	%	96	%
	Bromofluorobenzene	92	%	84	%	90	%	93	%	98	%	94	%
	1,2-Dichloroethane-d4	94	%	91	%	96	%	95	%	96	%	88	%
			fl		fl		fl		fl		fl		fl
Chloromethane		110000	U	25000	U	50000	U	26000	U	130000	U	49000	U
Bromomethane		110000	U	25000	U	50000	U	26000	U	130000	U	49000	U
Vinyl Chloride		110000	U	25000	U	50000	U	26000	U	130000	U	49000	U
Chloroethane		110000	U	25000	U	50000	U	26000	U	130000	U	49000	U
Methylene Chloride		29000	BJ	12000	BJ	12000	BJD	11000	BJ	34000	BJD	28000	B
Acetone		45000	BJ	23000	BJ	50000	U	26000	U	43000	BJD	30000	BJ
Carbon Disulfide		56000	U	12000	U	25000	U	13000	U	64000	U	24000	U
1,1-Dichloroethene		56000	U	12000	U	25000	U	13000	U	64000	U	24000	U
1,1-Dichloroethane		56000	U	12000	U	25000	U	13000	U	64000	U	24000	U
1,2-Dichloroethene (total)		56000	U	12000	U	25000	U	13000	U	64000	U	24000	U
Chloroform		51000	J	11000	J	14000	JD	26000		35000	JD	24000	J
1,2-Dichloroethane		56000	U	12000	U	25000	U	13000	U	64000	U	24000	U
2-Butanone		110000	U	11000	J	50000	U	26000	U	130000	U	49000	U
1,1,1-Trichloroethane		56000	U	12000	U	25000	U	13000	U	64000	U	24000	U
Carbon Tetrachloride		1600000		500000	E	530000	D	840000	E	900000	D	2100000	E
Bromodichloromethane		56000	U	12000	U	25000	U	13000	U	64000	U	24000	U
1,2-Dichloropropane		56000	U	12000	U	25000	U	13000	U	64000	U	24000	U
cis-1,3-Dichloropropene		56000	U	12000	U	25000	U	13000	U	64000	U	24000	U
Trichloroethene		56000	U	2400	J	25000	U	15000		16000	JD	24000	U
Dibromochloromethane		56000	U	12000	U	25000	U	13000	U	64000	U	24000	U
1,1,2-Trichloroethane		56000	U	12000	U	25000	U	13000	U	64000	U	24000	U
Benzene		56000	U	12000	U	25000	U	13000	U	64000	U	24000	U
Trans-1,3-Dichloropropene		56000	U	12000	U	25000	U	13000	U	64000	U	24000	U
Bromoform		56000	U	12000	U	25000	U	13000	U	64000	U	24000	U
4-Methyl-2-pentanone		110000	U	25000	U	50000	U	26000	U	130000	U	49000	U
2-Hexanone		110000	U	25000	U	50000	U	26000	U	130000	U	49000	U
Tetrachloroethene		56000	U	2300	J	25000	U	7600	J	64000	U	24000	U
1,1,2,2-Tetrachloroethane		56000	U	12000	U	25000	U	13000	U	64000	U	24000	U
Toluene		56000	U	12000	U	25000	U	13000	U	64000	U	24000	U

*= Outside of EPA CLP QC limits.

RFW Batch Number: **0001L331** Client: **TNU-HANFORD B99-093** Work Order: 10985001001 Page: 1b

Cust ID:	B0XH07		B0XH08		B0XH08		B0XH09		B0XH09		B0XH10	
RFW#:	001		002		002 DL		003		003 DL		004	
Level:	MED		MED		MED		MED		MED		MED	
Chlorobenzene	56000	U	12000	U	25000	U	13000	U	64000	U	24000	U
Ethylbenzene	56000	U	12000	U	25000	U	13000	U	64000	U	24000	U
Styrene	56000	U	12000	U	25000	U	13000	U	64000	U	24000	U
Xylene (total)	56000	U	12000	U	25000	U	13000	U	64000	U	24000	U

*= Outside of EPA CLP QC limits.

Recra LabNet - Lionville Laboratory

Volatiles by GC/MS, HSL List

Report Date: 03/10/00 11:12

RFW Batch Number: **0001L331** Client: **TNU-HANFORD B99-093** Work Order: 10985001001 Page: 2a

	Cust ID:	B0XH10		B0XH11		B0XH11		B0XH12		B0XH12		B0XH13	
Sample Information	RFW#:	004 DL		005		005 DL		006		006 DL		007	
	Matrix:	SOLID		SOLID		SOLID		SOLID		SOLID		SOLID	
	D.F.:	111		27.0		54.1		26.3		52.6		28.6	
	Units:	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
	Level:	MED		MED		MED		MED		MED		MED	
Surrogate Recovery	Toluene-d8	94	%	97	%	94	%	98	%	95	%	99	%
	Bromofluorobenzene	98	%	95	%	97	%	98	%	98	%	98	%
	1,2-Dichloroethane-d4	97	%	94	%	97	%	93	%	96	%	98	%
			fl		fl		fl		fl		fl		fl
Chloromethane		190000	U	61000	U	120000	U	60000	U	120000	U	55000	U
Bromomethane		190000	U	61000	U	120000	U	60000	U	120000	U	55000	U
Vinyl Chloride		190000	U	61000	U	120000	U	60000	U	120000	U	55000	U
Chloroethane		190000	U	61000	U	120000	U	60000	U	120000	U	55000	U
Methylene Chloride		48000	BJD	37000	B	25000	BJD	34000	B	27000	BJD	32000	B
Acetone		55000	BJD	34000	BJ	120000	U	60000	U	120000	U	32000	BJ
Carbon Disulfide		97000	U	30000	U	61000	U	30000	U	60000	U	28000	U
1,1-Dichloroethene		97000	U	30000	U	61000	U	30000	U	60000	U	28000	U
1,1-Dichloroethane		97000	U	30000	U	61000	U	30000	U	60000	U	28000	U
1,2-Dichloroethene (total)		97000	U	30000	U	61000	U	30000	U	60000	U	28000	U
Chloroform		53000	JD	31000		42000	JD	30000	J	46000	JD	20000	J
1,2-Dichloroethane		97000	U	30000	U	61000	U	30000	U	60000	U	28000	U
2-Butanone		190000	U	61000	U	120000	U	60000	U	120000	U	55000	U
1,1,1-Trichloroethane		97000	U	30000	U	61000	U	30000	U	60000	U	28000	U
Carbon Tetrachloride		3100000	D	1300000	E	1600000	D	1600000	E	2300000	D	1000000	
Bromodichloromethane		97000	U	30000	U	61000	U	30000	U	60000	U	28000	U
1,2-Dichloropropane		97000	U	30000	U	61000	U	30000	U	60000	U	28000	U
cis-1,3-Dichloropropene		97000	U	30000	U	61000	U	30000	U	60000	U	28000	U
Trichloroethene		97000	U	30000	U	61000	U	30000	U	60000	U	28000	U
Dibromochloromethane		97000	U	30000	U	61000	U	30000	U	60000	U	28000	U
1,1,2-Trichloroethane		97000	U	30000	U	61000	U	30000	U	60000	U	28000	U
Benzene		97000	U	30000	U	61000	U	30000	U	60000	U	28000	U
Trans-1,3-Dichloropropene		97000	U	30000	U	61000	U	30000	U	60000	U	28000	U
Bromoform		97000	U	30000	U	61000	U	30000	U	60000	U	28000	U
4-Methyl-2-pentanone		190000	U	61000	U	120000	U	60000	U	120000	U	55000	U
2-Hexanone		190000	U	61000	U	120000	U	60000	U	120000	U	55000	U
Tetrachloroethene		97000	U	30000	U	61000	U	30000	U	60000	U	28000	U
1,1,2,2-Tetrachloroethane		97000	U	30000	U	61000	U	30000	U	60000	U	28000	U
Toluene		97000	U	30000	U	61000	U	30000	U	60000	U	28000	U

*= Outside of EPA CLP QC limits.

Cust ID:	B0XH10		B0XH11		B0XH11		B0XH12		B0XH12		B0XH13	
RFW#:	004 DL		005		005 DL		006		006 DL		007	
Level:	MED		MED		MED		MED		MED		MED	
Chlorobenzene	97000	U	30000	U	61000	U	30000	U	60000	U	28000	U
Ethylbenzene	97000	U	30000	U	61000	U	30000	U	60000	U	28000	U
Styrene	97000	U	30000	U	61000	U	30000	U	60000	U	28000	U
Xylene (total)	97000	U	30000	U	61000	U	30000	U	60000	U	28000	U

*= Outside of EPA CLP QC limits.

Recra LabNet - Lionville Laboratory

Volatiles by GC/MS, HSL List

Report Date: 03/10/00 11:12

RFW Batch Number: **0001L331** Client: **TNU-HANFORD B99-093** Work Order: 10985001001 Page: 3a

	Cust ID:	B0XH13		B0XH13		B0XH14		VBLKPG		VBLKPE		VBLKPE BS	
Sample Information	RFW#:	007 MS		007 MSD		008		00LVX903-MB1		00LVX001-MB1		00LVX001-MB1	
	Matrix:	SOLID		SOLID		SOLID		SOIL		SOIL		SOIL	
	D.F.:	28.6		28.6		57.1		1.00		1.00		1.00	
	Units:	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
	Level:	MED		MED		MED		MED		MED		MED	
Surrogate Recovery	Toluene-d8	98	%	96	%	93	%	96	%	100	%	100	%
	Bromofluorobenzene	92	%	90	%	95	%	97	%	94	%	103	%
	1,2-Dichloroethane-d4	97	%	97	%	91	%	94	%	96	%	94	%
Chloromethane		55000	U	55000	U	140000	U	1200	U	1200	U	1200	U
Bromomethane		55000	U	55000	U	140000	U	1200	U	1200	U	1200	U
Vinyl Chloride		55000	U	55000	U	140000	U	1200	U	1200	U	1200	U
Chloroethane		55000	U	55000	U	140000	U	1200	U	1200	U	1200	U
Methylene Chloride		15000	BJ	18000	BJ	70000	U	400	J	850		340	BJ
Acetone		55000	U	55000	U	140000	U	710	J	1400		1500	B
Carbon Disulfide		28000	U	28000	U	70000	U	620	U	620	U	620	U
1,1-Dichloroethene		66	%	80	%	70000	U	620	U	620	U	159	%
1,1-Dichloroethane		28000	U	28000	U	70000	U	620	U	620	U	620	U
1,2-Dichloroethene (total)		28000	U	28000	U	70000	U	620	U	620	U	620	U
Chloroform		18000	J	18000	J	31000	J	620	U	620	U	620	U
1,2-Dichloroethane		28000	U	28000	U	70000	U	620	U	620	U	620	U
2-Butanone		55000	U	55000	U	140000	U	1200	U	1200	U	1200	U
1,1,1-Trichloroethane		28000	U	28000	U	70000	U	620	U	620	U	620	U
Carbon Tetrachloride		1100000	E	1100000		480000		620	U	620	U	620	U
Bromodichloromethane		28000	U	28000	U	70000	U	620	U	620	U	620	U
1,2-Dichloropropane		28000	U	28000	U	70000	U	620	U	620	U	620	U
cis-1,3-Dichloropropene		28000	U	28000	U	70000	U	620	U	620	U	620	U
Trichloroethene		94	%	94	%	70000	U	620	U	620	U	93	%
Dibromochloromethane		28000	U	28000	U	70000	U	620	U	620	U	620	U
1,1,2-Trichloroethane		28000	U	28000	U	70000	U	620	U	620	U	620	U
Benzene		102	%	99	%	70000	U	620	U	620	U	97	%
Trans-1,3-Dichloropropene		28000	U	28000	U	70000	U	620	U	620	U	620	U
Bromoform		28000	U	28000	U	70000	U	620	U	620	U	620	U
4-Methyl-2-pentanone		55000	U	55000	U	140000	U	1200	U	1200	U	1200	U
2-Hexanone		55000	U	55000	U	140000	U	150	J	1200	U	1200	U
Tetrachloroethene		28000	U	28000	U	70000	U	620	U	620	U	620	U
1,1,2,2-Tetrachloroethane		28000	U	28000	U	70000	U	200	J	620	U	620	U
Toluene		99	%	96	%	70000	U	620	U	620	U	95	%

*= Outside of EPA CLP QC limits.

RFW Batch Number: **0001L331** Client: **TNU-HANFORD B99-093** Work Order: 10985001001 Page: 3b

Cust ID:	B0XH13		B0XH13		B0XH14		VBLKPG		VBLKPE		VBLKPE BS	
RFW#:	007 MS		007 MSD		008		00LVX903-MB1		00LVX001-MB1		00LVX001-MB1	
Level:	MED		MED		MED		MED		MED		MED	
Chlorobenzene	94	%	91	%	70000	U	620	U	620	U	92	%
Ethylbenzene	28000	U	28000	U	70000	U	620	U	620	U	620	U
Styrene	28000	U	28000	U	70000	U	620	U	620	U	620	U
Xylene (total)	28000	U	28000	U	70000	U	620	U	620	U	620	U

*= Outside of EPA CLP QC limits.

Recra LabNet - Lionville Laboratory

Volatiles by GC/MS, HSL List

Report Date: 03/10/00 11:12

RFW Batch Number: **0001L331** Client: **TNU-HANFORD B99-093** Work Order: 10985001001 Page: 4a

	Cust ID:	**VBLKPH**		**VBLKPH BS**	
Sample Information	RFW#:	**00LVX002-MB1**		**00LVX002-MB1**	
	Matrix:	SOIL		SOIL	
	D.F.:	1.00		1.00	
	Units:	UG/KG		UG/KG	
	Level:	MED		MED	
Surrogate Recovery	Toluene-d8	97	%	97	%
	Bromofluorobenzene	94	%	99	%
	1,2-Dichloroethane-d4	98	%	91	%
Chloromethane		510	J	1200	U
Bromomethane		450	J	1200	U
Vinyl Chloride		1200	U	1200	U
Chloroethane		1200	U	1200	U
Methylene Chloride		240	J	630	B
Acetone		400	J	310	BJ
Carbon Disulfide		620	U	620	U
1,1-Dichloroethene		620	U	79	%
1,1-Dichloroethane		620	U	620	U
1,2-Dichloroethene (total)		620	U	620	U
Chloroform		620	U	620	U
1,2-Dichloroethane		620	U	620	U
2-Butanone		1200	U	1200	U
1,1,1-Trichloroethane		620	U	620	U
Carbon Tetrachloride		620	U	620	U
Bromodichloromethane		620	U	620	U
1,2-Dichloropropane		620	U	620	U
cis-1,3-Dichloropropene		620	U	620	U
Trichloroethene		620	U	98	%
Dibromochloromethane		620	U	620	U
1,1,2-Trichloroethane		620	U	620	U
Benzene		620	U	104	%
Trans-1,3-Dichloropropene		620	U	620	U
Bromoform		450	J	620	U
4-Methyl-2-pentanone		1200	U	1200	U
2-Hexanone		300	J	1200	U
Tetrachloroethene		620	U	620	U
1,1,2,2-Tetrachloroethane		850		620	U
Toluene		620	U	101	%

*= Outside of EPA CLP QC limits.

Cust ID:	**VBLKPH**		**VBLKPH BS**	
RFW#:	**00LVX002-MB1**		**00LVX002-MB1**	
Level:	MED		MED	
Chlorobenzene	620	U	96	%
Ethylbenzene	620	U	620	U
Styrene	620	U	620	U
Xylene (total)	620	U	620	U

*= Outside of EPA CLP QC limits.

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0XH07

Lab Name: Recra.LabNet Contract: 10985001001

Lab Code: Recra Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOLID Lab Sample ID: 0001L331-001

Sample wt/vol: 3.90 (g/mL) G Lab File ID: x021027

Level: (low/med) MED Date Received: 01/29/00

% Moisture: not dec. 42 Date Analyzed: 02/10/00

Column: (pack/cap) CAP Dilution Factor: 51.3

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

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1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0XH08

Lab Name: Recra.LabNet Contract: 10985001001

Lab Code: Recra Case No.: ____ SAS No.: ____ SDG No.: ____

Matrix: (soil/water) SOLID Lab Sample ID: 0001L331-002

Sample wt/vol: 3.80 (g/mL) G Lab File ID: x021012

Level: (low/med) MED Date Received: 01/29/00

% Moisture: not dec. 47 Date Analyzed: 02/10/00

Column: (pack/cap) CAP Dilution Factor: 10.5

Number TICs found: 3

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 76131	ETHANE, 1,1,2-TRICHLORO-1,2,	10.580	20000	NJ
2.	SILANE	15.355	90000	JB
3.	UNKNOWN	16.772	20000	JB

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0XH09

Lab Name: Recra.LabNet Contract: 10985001001

Lab Code: Recra Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOLID Lab Sample ID: 0001L331-003

Sample wt/vol: 3.70 (g/mL) G Lab File ID: x021013

Level: (low/med) MED Date Received: 01/29/00

% Moisture: not dec. 47 Date Analyzed: 02/10/00

Column: (pack/cap) CAP Dilution Factor: 10.8

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	SILANE	15.316	90000	JB
2.	UNKNOWN	16.754	30000	JB

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0XH10

Lab Name: Recra.LabNet Contract: 10985001001

Lab Code: Recra Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOLID Lab Sample ID: 0001L331-004

Sample wt/vol: 3.60 (g/mL) G Lab File ID: x021014

Level: (low/med) MED Date Received: 01/29/00

% Moisture: not dec. 29 Date Analyzed: 02/10/00

Column: (pack/cap) CAP Dilution Factor: 27.8

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 460004	BROMOFLUOROBENZENE	22.014	9000	J
2. 460004	BROMOFLUOROBENZENE	22.014	9000	J

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0XH11

Lab Name: Recra.LabNet Contract: 10985001001

Lab Code: Recra Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOLID Lab Sample ID: 0001L331-005

Sample wt/vol: 3.70 (g/mL) G Lab File ID: x021015

Level: (low/med) MED Date Received: 01/29/00

% Moisture: not dec. 44 Date Analyzed: 02/10/00

Column: (pack/cap) CAP Dilution Factor: 27.0

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	SILANE	15.311	200000	JB
2.	UNKNOWN	16.738	40000	JB

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0XH12

Lab Name: Recra.LabNet Contract: 10985001001

Lab Code: Recra Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOLID Lab Sample ID: 0001L331-006

Sample wt/vol: 3.80 (g/mL) G Lab File ID: x021016

Level: (low/med) MED Date Received: 01/29/00

% Moisture: not dec. 45 Date Analyzed: 02/10/00

Column: (pack/cap) CAP Dilution Factor: 26.3

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	SILANE	15.311	200000	JB

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VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0XH13

Lab Name: Recra.LabNet Contract: 10985001001

Lab Code: Recra Case No.: ____ SAS No.: ____ SDG No.: ____

Matrix: (soil/water) SOLID Lab Sample ID: 0001L331-007

Sample wt/vol: 3.50 (g/mL) G Lab File ID: x021017

Level: (low/med) MED Date Received: 01/29/00

% Moisture: not dec. 36 Date Analyzed: 02/10/00

Column: (pack/cap) CAP Dilution Factor: 28.6

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	SILANE	15.315	200000	JB

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VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0XH14

Lab Name: Recra.LabNet Contract: 10985001001

Lab Code: Recra Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOLID Lab Sample ID: 0001L331-008

Sample wt/vol: 3.50 (g/mL) G Lab File ID: x021026

Level: (low/med) MED Date Received: 01/29/00

% Moisture: not dec. 49 Date Analyzed: 02/10/00

Column: (pack/cap) CAP Dilution Factor: 57.1

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

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1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLKPG

Lab Name: Recra.LabNet Contract: 10985001001

Lab Code: Recra Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 00LVX903-MB1

Sample wt/vol: 4.00 (g/mL) G Lab File ID: x021025

Level: (low/med) MED Date Received: 02/10/00

% Moisture: not dec. 0 Date Analyzed: 02/10/00

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

FORM 1 VOA-TIC 1/87 Rev.

1E

VOLATILE ORGANICS ANALYSIS SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLKPE

Lab Name: Recra LabNet Contract: 10985001001

Lab Code: Recra Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 00LVX001-MB1

Sample wt/vol: 4.00 (g/mL) G Lab File ID: x021009

Level: (low/med) MED Date Received: 02/10/00

% Moisture: not dec. 0 Date Analyzed: 02/10/00

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	SILANE	15.315	5000	J
2.	UNKNOWN	16.743	1000	J

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLKPH

Lab Name: Recra.LabNet Contract: 10985001001

Lab Code: Recra Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 00LVX002-MB1

Sample wt/vol: 4.00 (g/mL) G Lab File ID: x021104

Level: (low/med) MED Date Received: 02/11/00

% Moisture: not dec. 0 Date Analyzed: 02/11/00

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	10.544	800	J
2.	UNKNOWN	15.329	2000	J

Recra LabNet - Lionville Laboratory
VOA ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD B99-093

DATE RECEIVED: 01/29/00 RFW LOT # :0001L331

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B0XH07	001 M1	SO	00LVX903	01/27/00	N/A	02/10/00
B0XH08	002 M1	SO	00LVX001	01/27/00	N/A	02/10/00
B0XH08	002 M2	SO	00LVX903	01/27/00	N/A	02/10/00
B0XH09	003 M1	SO	00LVX001	01/27/00	N/A	02/10/00
B0XH09	003 M2	SO	00LVX903	01/27/00	N/A	02/11/00
B0XH10	004 M1	SO	00LVX001	01/27/00	N/A	02/10/00
B0XH10	004 M2	SO	00LVX903	01/27/00	N/A	02/11/00
B0XH11	005 M1	SO	00LVX001	01/27/00	N/A	02/10/00
B0XH11	005 M2	SO	00LVX903	01/27/00	N/A	02/11/00
B0XH12	006 M1	SO	00LVX001	01/27/00	N/A	02/10/00
B0XH12	006 M2	SO	00LVX903	01/27/00	N/A	02/11/00
B0XH13	007 M1	SO	00LVX001	01/27/00	N/A	02/10/00
B0XH13	007 MS M1	SO	00LVX002	01/27/00	N/A	02/11/00
B0XH13	007 MSD M1	SO	00LVX002	01/27/00	N/A	02/11/00
B0XH14	008 M1	SO	00LVX903	01/27/00	N/A	02/10/00

LAB QC:

VBLKPG	MB1	S	00LVX903	N/A	N/A	02/10/00
VBLKPE	MB1	S	00LVX001	N/A	N/A	02/10/00
VBLKPE	MB1 BS	S	00LVX001	N/A	N/A	02/10/00
VBLKPH	MB1	S	00LVX002	N/A	N/A	02/11/00
VBLKPH	MB1 BS	S	00LVX002	N/A	N/A	02/11/00

RECRA LabNet Use Only
CC01L331

Custody Transfer Record/Lab Work Request

Page 1 of 2

TK 1-29-00

RECRA LabNet

ALL FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

(8) acms wet perrone

Client: TMU-Hanford B99-093

Est. Final Proj. Sampling Date:

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

Project Contact/Phone #:

RECRA Project Manager: OJ

QC: Spec Del: Std TAT: 30 days

Date Rec'd: 01-29-00 Date Due: 02-28-00

Account #:

Refrigerator #		1									4						
#/Type Container	Liquid																
	Solid	1Pkg									1Pkg						
Volume	Liquid																
	Solid	250									60						
Preservatives		-									-						
ANALYSES REQUESTED		ORGANIC							INORG								
		VOA	BNA	Pest/PCB	Herb				Metal	CN							
RECRA LabNet Use Only		CC24H									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	CC24H	IBomb	ICCL
001	BOXH07			SO	1-27-00	1237	✓	✓	
002	08					1247	✓	✓	
003	09					1305	✓	✓	
004	10					1315	✓	✓	
005	11					1325	✓	✓	
006	12					1337	✓	✓	
007	13					1345	✓	✓	
008	14					1400	✓	✓	
009	07 Bomb of cool			W	*	-			✓
010	08 002					-			✓

Special Instructions:

SAF #B99-093

COMPOSITE WASTE

DATE/REVISIONS:

1. Run Matrix QC
2. * See labchron
3. 2-11-00 IBomb, ICCL Cancelled per PM
4. 2-11-00 001-008 (VOA) relogged to CC02L423
5.
6.

Relinquished by	Received by	Date	Time
Fed Ex	Thoppel	1-29-00	1000

Relinquished by	Received by	Date	Time
	ORIGINAL REWRITTEN		

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

NOTES: *423574533597

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. 5.1 °C

RECRA LabNet Use Only

0001L331

Custody Transfer Record/Lab Work Request

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

RECRA LabNet

Client: TRU-Hanford B99-093

Est. Final Proj. Sampling Date:

Project #:

Project Contact/Phone #:

RECRA Project Manager:

QC: Del: TAT:

Date Rec'd: Date Due:

Account #:

Refrigerator #																	
#/Type Container	Liquid																
	Solid																
Volume	Liquid																
	Solid																
Preservatives																	
ANALYSES REQUESTED →		ORGANIC							INORG								
		VOA	BNA	Pest/ PCB	Herb				Metal	CN		TCL					
		RECRA LabNet Use Only															
												TCL					

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	TCL
011	B0XH09 Bomb of 003			W	*	–	✓
012	10 004					–	✓
013	11 005					–	✓
014	12 006					–	✓
015	13 007					–	✓
016	14 008					–	✓
017							
018							

TKL 1-29-00

Special Instructions:

DATE/REVISIONS:

1.
2.
3.
4.
5.
6.

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. ___ °C

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
FedEx	TKrippel	1-29-00	1000

Relinquished by	Received by	Date	Time

331 (32)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		B99-093-08	Page 1 of 1
Collector: winterrose	Company Contact: Rohay, VJ	Telephone No.: 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 west		SAF No.: B99-093	
Ice Chest No.: ERC 99-057 ~~ERC99-007~~ RAT 1-28-00	Field Logbook No.: EL ~~1424~~ 1435 RA 1-26-00	COA: R20ZP2DP60	Method of Shipment: Federal Express	
Shipped To: ~~TMA~~/RECRA WW 1-27-00	Offsite Property No.: AØØ01Ø4		Bill of Lading/Air Bill No.: 42357953 3597 S.V.C	

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										
B0XH07	Other Solid	1-27-00	12:37	X	X								
B0XH08	Other Solid	1-27-00	12:47	X	X								
B0XH09	Other Solid	1-27-00	13:05	X	X								
B0XH10	Other Solid	1-27-00	13:15	X	X								

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS	Matrix *
Relinquished By: Martin Winterrose Date/Time: 1-27-00 15:10	Received By: REF 2B Date/Time: 1-27-00 15:10	SAMPLES COLLECTED FROM NON RAD AREA. NO ACTIVITY REPORT REQ.	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
Relinquished By: Ref 2B Date/Time: 1-28-00/0930	Received By: R. Thoren Date/Time: 1-28-00/0930		
Relinquished By: R. Thoren Date/Time: 1-28-00/1430	Received By: FEDEX Date/Time:		
Relinquished By: FedEx Date/Time: 1-29-00 1000	Received By: TKoppel Date/Time: 1-29-00 1000		
Relinquished By: Date/Time:	Received By: Date/Time:		
Relinquished By: Date/Time:	Received By: Date/Time:		

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

BHI-EE-011 (10/99)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		B99-093-09	Page 1 of 1
Collector: winterrose	Company Contact: Rohay, VJ	Telephone No.: 372-9098	Project Coordinator: TRENT, SJ	Price Code: 9N; Data Turnaround: 45 Days
Project Designation: 200-ZP-2 Passive Soil Vapor Extraction - Other Solid	Sampling Location: 200 west		SAF No.: B99-093	Air Quality ☐
Ice Chest No. ERC99-057 ~~ERC 99-067~~ RAY 1.28.00	Field Logbook No. EL ~~1424~~ 1435 RF 1-2600	COA: R20ZP2DP60	Method of Shipment: Federal Express	
Shipped To: ~~TMA~~/RECRA MW 1-27-00	Offsite Property No. A000104		Bill of Lading/Air Bill No. 42357953 3597	

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										
B0XH11	Other Solid	1-27-00	13:25	X	X								
B0XH12	Other Solid	1-27-00	13:37	X	X								
B0XH13	Other Solid	1-27-00	13:45	X	X								
B0XH14	Other Solid	1-27-00	14:00	X	X								

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS	Matrix *
Relinquished By: [signature] Martin Winterrose Date/Time: 1-27-00 15:10	Received By: Ref 2B Date/Time: 1-27-00 15:10	Samples Collected From Non Rad Area. No Activity Report Req.	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
Relinquished By: Ref 2B Date/Time: 1-28-00/0930	Received By: R. Thoren Date/Time: 1-28-00/0930		
Relinquished By: R. Thoren Date/Time: 1-28-00/1430	Received By: FED EX Date/Time:		
Relinquished By: Fed EX Date/Time: 1-29-00 1000	Received By: T Koppel Date/Time: 1-29-00 1000		
Relinquished By: Date/Time:	Received By: Date/Time:		
Relinquished By: Date/Time:	Received By: Date/Time:		

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

BHI-EE-011 (10/99)